CSI - Ohio

The Common Sense Initiative

Business Impact Analysis

Agency Name: Ohio Board of Building Standards

Regulation/Package Title: HB 64 Ohio Building Code Amendments

Rule Number(s): 4101:1-2-01 & 4101:1-10-01

Date: December 9, 2015

Rule Type:

- ☐ New
- X Amended
- ☐ 5-Year Review
- ☐ Rescinded

The Common Sense Initiative was established by Executive Order 2011-01K and placed within the Office of the Lieutenant Governor. Under the CSI Initiative, agencies should balance the critical objectives of all regulations with the costs of compliance by the regulated parties. Agencies should promote transparency, consistency, predictability, and flexibility in regulatory activities. Agencies should prioritize compliance over punishment, and to that end, should utilize plain language in the development of regulations.

Regulatory Intent

1. **Please briefly describe the draft regulation in plain language.**
   Please include the key provisions of the regulation as well as any proposed amendments.

   The Ohio Board of Building Standards (Board) proposes to amend Ohio Administrative Code (OAC) Rules as follows:
   4101:1-2-01 to add definitions for Active Shooter Drill, Administrative Authority of a School Building, Emergency Situation, Institution of Higher Education, Private School, Public School, School Building, and Temporary Door Locking Device;

4101:1-10-01 to add exceptions to Sections 1008.1.9.1, 1008.1.9.3, 1008.1.9.5 for Temporary Door Locking Devices, and to add a new Section 1008.1.9.11 which addresses Temporary Door Locking Devices.

2. **Please list the Ohio statute authorizing the Agency to adopt this regulation.**

   Revised Code § 3781.106: http://codes.ohio.gov/orc/3781.106

3. **Does the regulation implement a federal requirement? Is the proposed regulation being adopted or amended to enable the state to obtain or maintain approval to administer and enforce a federal law or to participate in a federal program?**

   If yes, please briefly explain the source and substance of the federal requirement.

   No.

4. **If the regulation includes provisions not specifically required by the federal government, please explain the rationale for exceeding the federal requirement.**

   Not applicable.

5. **What is the public purpose for this regulation (i.e., why does the Agency feel that there needs to be any regulation in this area at all)?**

   House Bill 64 recently enacted by the Ohio General Assembly adopted new Revised Code § 3781.106. This new section directs the Board to adopt rules for the use a device by a staff member of a public or private school or institution of higher education that prevents both ingress and egress through a door in a school building, for a finite period of time, in an emergency situation, and during active shooter drills. Additionally, uncodified Section 737.20 of HB 64 requires the Board to adopt these rules not later than 180 days after the effective date of Section 737.20 which would be not later than March 27, 2016.

6. **How will the Agency measure the success of this regulation in terms of outputs and/or outcomes?**

   The enforcement of these rules will be implemented by certified township, city, and county building departments.

Development of the Regulation

7. **Please list the stakeholders included by the Agency in the development or initial review of the draft regulation.**
   If applicable, please include the date and medium by which the stakeholders were initially contacted.

On October 21, 2015, the Board sent an email to all agency stakeholders informing them of a scheduled stakeholder meeting on November 16, 2015 to hear comments and respond to questions on these rules. The email and stakeholder distribution list are attached as Exhibit A. The notice summarized the proposed amendments and also informed stakeholders that if they could not attend the stakeholder meeting, they could submit questions or comments via email or regular mail by November 27, 2015. On November 16, 2015, the Board conducted a stakeholder meeting on the proposed rules at 10:00 AM and the following individuals attended: Mike Froelich, Sylvania Twp FD; Craig Skeel, Genoa Twp Fire; Nick Keisel, Reynoldsburg City Schools; Joe Zvmpano, Door Lockdown Device; John Woestman, Builders Hardware Manufacturers Assn; Capt Mike Makowski, City of Mario FD; Brad Howard, Koorsen Fire & Security; Kim Fladung, Warren County Career Center; Andrew Welsh-Higgins, AP; Sam Mamula, Cincinnati Insurance; Brian Beach, Norwich Township Fire; Dave Belcher, VTFD/OFOA; Bruce Larcomb, OSPE/SFPE; Paul Payne, Ohio SRO Association; Tom Granata, Perrysburg Fire Dept; Jim Dussen, Maumee Fire Dept; Scott Young, National Inspection Corp; Jim Stocksdale, OBOA; Lee Bugglin, Bilco; Ronald Betschman, CML CFDI, Fire Door Inspector; Kari Parsons, Ohio School Resource Officers Assoc; Nicole Riley, Reynoldsburg PD; Kate Earley, WLJFD; J.Scott Brooks, West Chester Twp FD & SWOFSC; Phil Seyboldt, City of Richmond Hts; John Desbarteau, NEOFPA/City of Middleburg Hts; Sara Shaw, City of Oregon PD/OSRDA; Elizabeth Murphy, AIA Ohio; Bill Cushwa, NSCS Bearacade; David Soulsby, NSCS Bearacade; and Kacy Bullard, Commerce

The stakeholder meeting agenda and material distributed at the meeting are attached as Exhibit B.

8. What input was provided by the stakeholders, and how did that input affect the draft regulation being proposed by the Agency?

A copy of the correspondence the Board received in response to the October 21, 2015 email and a summary of the November 16, 2015 stakeholder meeting are attached as Exhibit C.

All comments received were reviewed by the Board's Code Committee at its December 3, 2015 meeting.

At the November 16th stakeholder meeting, Jim Stocksdale suggested keeping the same devices throughout a school building rather than allowing for multiple different devices. The Board's Code Committee reviewed the information submitted by Mr. Stocksdale and determined not to make a change as a result of the comment. The Board cannot anticipate all the configuration of school that may necessitate more than one compliant device be used. However, the Board did modify the rules to emphasize the development and adoption of school safety plan pursuant to § 3313.536 of the Revised Code as a condition precedent for approval of temporary door locking devices. While the Board has no

authority to dictate the contents of school safety plans, it is expected that the plan address the use of and training for compliant temporary door locking devices. Revised Code § 3313.536 requires that a school administrator for every school develop its plan with involvement of community law enforcement and safety officials, parents, teachers and nonteaching employees of the school.

At the November 16th stakeholder meeting, Phil Seyboldt suggested modifications to § 1008.1.9.11 to require training documents to also be submitted by the school to local fire officials. Mr. Seyboldt also submitted proposed language in writing. The Board's Code Committee reviewed the information submitted by Mr. Seyboldt and determined not to make a change as a result of the comment. See the reasoning set forth in the response to Mr. Stocksdale's comment above.

At the November 16th stakeholder meeting, Elizabeth Murphy submitted a Brief on Codes and Standards: "Active Shooter" from AIA Ohio in writing to the Board. The Board's Code Committee reviewed the information submitted by Ms. Murphy and determined not to make a change as a result of the comment. While the Board does not disagree with Ohio AIA's comments, the requested changes are inconsistent with the mandate established by the Ohio General Assembly in Revised Code § 3781.106.

At the November 16th stakeholder meeting, Bruce Larcomb suggested clarification regarding required approvals if an approved/compliant temporary door locking device is removed from a school. The Board's Code Committee reviewed the information submitted by Mr. Larcomb and determined not to make a change as a result of the comment. Current OBC § 3401 already addresses changes to existing buildings.

At the November 16th stakeholder meeting, Craig Skeel requested changes to require "no special knowledge" to remove a device. The Board's Code Committee reviewed the information submitted by Mr. Skeel and determined not to make a change as a result of the comment. See the reasoning set forth in the response to Mr. Stocksdale's comment above.

At the November 16th stakeholder meeting, Sara Shaw suggested that students should be trained to use the devices as well. The Board's Code Committee reviewed the information submitted by Ms. Shaw and determined not to make a change as a result of the comment. First, the requested changes are inconsistent with the mandate established by the Ohio General Assembly in Revised Code § 3781.106. Additionally, see the reasoning set forth in the response to Mr. Stocksdale's comment above.

At the November 16th stakeholder meeting, Scott Brooks requested changes to require the devices be listed and labeled. The Board's Code Committee reviewed the information submitted by Mr. Brooks and determined not to make a change as a result of the comment. First, the requested changes are inconsistent with the mandate established by the Ohio General Assembly in Revised Code § 3781.106. Additionally, there is no consensus standard for these devices, and any listing, labeling, testing by default is to a consensus standard.

At the November 16th stakeholder meeting, Mike Makowski requested changes to prescribe the standards that devices have to meet. The Board's Code Committee reviewed the information submitted by Mr. Makowski and determined not to make a change as a result of the comment based on the stated response by staff in the summary of the November 16, 2015 stakeholder meeting are attached as Exhibit C.

At the November 16th stakeholder meeting, Bill Cushwa made statements regarding the draft and submitted written comments with requested changes. The Board's Code Committee reviewed the comments and information submitted by Mr. Cushwa and determined not to make a change as a result of the comment. First, several of the requested changes are inconsistent with the mandate established by the Ohio General Assembly in Revised Code § 3781.106 and would too narrowly restrict compliance standards. The Board took the specific functionality requirements from Revised Code § 3781.106 and used those as the performance criteria. Finally, see the reasoning set forth in the response to Mr. Stocksdale's comment above.

At the November 16th stakeholder meeting, Brad Howard requested changes mandating the frequency of the required in service training. The Board's Code Committee reviewed the comments and information submitted by Mr. Howard and determined not to make a change as a result of the comment. See the reasoning set forth in the response to Mr. Stocksdale's comment above.

At the November 16th stakeholder meeting, Joe Zvampano also requested changes to establish the frequency of trainings and standardization of devices. The Board's Code Committee reviewed the comments and information submitted by Mr. Zvampano and determined not to make a change as a result of the comment. First, the Ohio Fire Code already addresses fire/lockdown drills and their frequency. Additionally, see reasoning set forth in the response to Mr. Stocksdale's comment above.

At the November 16th stakeholder meeting, John Woestman provided verbal comments and followed up with written comments regarding the requirements of Revised Code §3781.106 which are outside the scope of the Board's authority.

At the November 16th stakeholder meeting, Tom Granata requested changes for different standards for new vs existing schools. The Board's Code Committee reviewed the comments and information submitted by Mr. Granata and determined not to make a change as a result of the comment. The requested change is inconsistent with the mandate established by the Ohio General Assembly in Revised Code § 3781.106.

At the November 16th stakeholder meeting, John Desmarteau submitted both verbal and written comments requesting a change to § 1008.1.9.11 to only permit the devices when approved by a joint consensus of the building and fire official. The Board's Code Committee reviewed the comments and information submitted by Mr. Desmarteau and determined not to make a change as a result of the comment. See the reasoning set forth in the response to Mr. Stocksdale's comment above.

Jeff Wilcox, Emmanuel Christian Schools, submitted written comments included in the attached Exhibit C. The Board's Code Committee reviewed the comments and information submitted by Mr. Wilcox and determined not to make a change as a result of the comment. The requested change is inconsistent with the mandate established by the Ohio General Assembly in Revised Code § 3781.106.

Geoff Varga submitted written comments included in the attached Exhibit C regarding the requirements of Revised Code §3781.106 which are outside the scope of the Board's authority.

Mark Crumley submitted written comments included in the attached Exhibit C. The Board's Code Committee reviewed the comments and information submitted by Mr. Crumley and determined not to make a change as a result of the comment. See the reasoning set forth in the response to Mr. Stocksdale's comment above.

Dr. Richard Caster, Ohio School Boards Association, submitted written comments included in the attached Exhibit C. Dr. Caster's comments requested that the building code language provide schools an opportunity to implement the best strategy for survival in the event of threat and also be cost effective for schools facing budget issues. The Board's Code Committee reviewed the comments and information submitted by Mr. Caster and

determined that the draft rules do provide schools cost effective security options as intended by Revised Code § 3781.106.

Erin West submitted written comments included in the attached Exhibit C. Ms. West's comments expressed concern regarding the requirement in the draft rules for building official approval of temporary door locking devices for compliance. The Board's Code Committee reviewed the comments and information submitted by Ms. West and determined not to make a change as a result of the comment. Approval by the building official is required for any alteration to a building regulated by the OBC. See response to Question 13.

Lori Greene submitted written comments included in the attached Exhibit C. Ms. Greene's comments compared the draft rules with the Board's Classroom Barricade Forum Report issued by the Board on July 24, 2015. The Board's Code Committee reviewed the comments and information submitted by Ms. Greene and determined not to make a change as a result of the comment. While the Board does not disagree with Ms. Greene's analysis, any changes that would be made based on the comments or the Board's report would be inconsistent with the mandate established by the Ohio General Assembly in Revised Code § 3781.106. See response to Question 11 and the Board's July 24, 2015 Classroom Barricade Forum Report attached as Exhibit D.

Mark Williams, Partner Alliance for Safer Schools, submitted written comments included in the attached Exhibit C. Mr. Williams' comments compared the draft rules with the guidelines established by the National Association of State Fire Marshals (NASFM). The Board's Code Committee reviewed the comments and information submitted by Mr. Williams and determined not to make a change as a result of the comment. While the Board does not disagree with Mr. Williams' comments and the NASFM position, any changes that would be made based on the comments would be inconsistent with the mandate established by the Ohio General Assembly in Revised Code § 3781.106. See response to Question 11.

Robert Soloman, National Fire Protection Association (NFPA), submitted written comments included in the attached Exhibit C. Mr. Soloman's comments compared the draft rules with the approach NFPA is taking in its standards currently under development for barricade devices. The Board's Code Committee reviewed the comments and information submitted by Mr. Soloman and determined not to make a change as a result of the comment. While the Board does not disagree with Mr. Soloman's analysis and the direction that both NFPA and the International Code Council (ICC) is taking in their model codes and standards, any

changes that would be made based on the comments would be inconsistent with the mandate established by the Ohio General Assembly in Revised Code § 3781.106. See response to Question 11.

Ronald Betschman submitted written comments included in attached Exhibit C. Mr. Betschman's comments suggest that the reference to "finite period of time" in Revised Code § 3781.106 intends for the Board's rules for temporary door locking devices should be transitional rules only to give schools the time to raise money for code compliant hardware. The Board's Code Committee reviewed the comments and information submitted by Mr. Betschman and determined not to make a change as a result of the comment as it disagreed with Mr. Betschman's interpretation of the mandate established by the Ohio General Assembly in Revised Code § 3781.106. See response to Question 11.

9. What scientific data was used to develop the rule or the measurable outcomes of the rule? How does this data support the regulation being proposed?

These proposed rules provide security options for schools as directed by Revised Code § 3781.106. No consensus standard exists for their testing or use unlike all other materials used in building construction and regulated by the building code.

10. What alternative regulations (or specific provisions within the regulation) did the Agency consider, and why did it determine that these alternatives were not appropriate? If none, why didn't the Agency consider regulatory alternatives?

Not applicable. These proposed rules provide security options for schools as directed by Revised Code § 3781.106.

11. Did the Agency specifically consider a performance-based regulation? Please explain. ***Performance-based regulations define the required outcome, but don't dictate the process the regulated stakeholders must use to achieve compliance.***

No. As there has been no consensus standard developed for temporary door locking devices, the rules developed for their used as directed by Revised Code § 3781.106 must be prescriptive. Moreover, Revised Code § 3781.106 defines many of the prescriptive requirements devices must meet before they may be used:

- Prevents both ingress and egress through a door in a school building; and
- For a finite period of time, in an emergency situation, and during active shooter drills; and
- Minimal steps to remove after it is engaged; and

- Administrative authority of a building must notify the police chief and the fire chief that serves the political subdivision in which the building is located prior to the use of such devices in a building; and
- Not be permanently mounted to the door; and
- Each public and private school and institution of higher education shall provide its staff members in-service training on the use of the device; and
- School shall maintain a record verifying this training on file.

12. What measures did the Agency take to ensure that this regulation does not duplicate an existing Ohio regulation?

Revised Code § 3781.106 gives the Board sole authority to adopt rules the use devices by staff members of a public or private school or institution of higher education that prevents both ingress and egress through a door in a school building, for a finite period of time, in an emergency situation, and during active shooter drills.

13. Please describe the Agency's plan for implementation of the regulation, including any measures to ensure that the regulation is applied consistently and predictably for the regulated community.

For these rules to be enforced by a local government, its building department must be certified by the Board. The Board also certifies the personnel who work within these departments to ensure only qualified personnel are enforcing the Board's rules.

Adverse Impact to Business

14. Provide a summary of the estimated cost of compliance with the rule. Specifically, please do the following:

a. Identify the scope of the impacted business community;

Not applicable. These proposed rules provide security options for schools. If a school chooses to take advantage of these rules and utilize temporary door locking devices, it is the school, not the manufacturer of the device that is responsible for compliance.

b. Identify the nature of the adverse impact (e.g., license fees, fines, employer time for compliance); and

See above.

c. Quantify the expected adverse impact from the regulation.

The adverse impact can be quantified in terms of dollars, hours to comply, or other factors; and may be estimated for the entire regulated population or for a

"representative business." Please include the source for your information/estimated impact.

Not applicable.

15. Why did the Agency determine that the regulatory intent justifies the adverse impact to the regulated business community?

Not applicable.

Regulatory Flexibility

16. Does the regulation provide any exemptions or alternative means of compliance for small businesses? Please explain.

Not applicable. These proposed rules provide security options for schools. If a school chooses to take advantage of these rules and utilize temporary door locking devices, it is the school, not the manufacturer of the device that is responsible for compliance.

17. How will the agency apply Ohio Revised Code section 119.14 (waiver of fines and penalties for paperwork violations and first-time offenders) into implementation of the regulation?

Revised Code § 3781.102 does not authorize the Board to set the fees and/or penalties assessed by local certified building departments in connection with the enforcement of these rules. Compliance with the rules is accomplished through construction conforming to the certificate of plan approval (permit). Therefore, there are no potential paperwork violations of these rules.

18. What resources are available to assist small businesses with compliance of the regulation?

Not applicable. These proposed rules provide security options for schools. If a school chooses to take advantage of these rules and utilize temporary door locking devices, it is the school, not the manufacturer of the device that is responsible for compliance.

Exhibit A

Hanshaw, Regina

From: Lane, Michael
Sent: Wednesday, October 21, 2015 11:31 AM
To: Hanshaw, Regina; Regoli, Steve; Ohler, Debbie; Johnson, Robert
Subject: Board of Building Standards Proposed Rules/Stakeholder Meeting Notification
Attachments: Stakeholder Meeting Notification.pdf

Board of Building Standards Stakeholder:

You are receiving this message pursuant to the requirements of Executive Order 2011-01K and Senate Bill 2 of the 129th General Assembly, which require state agencies, including the Ohio Board of Building Standards (Board), to draft rules in collaboration with stakeholders, assess and justify any adverse impact on the business community, and provide opportunity for the affected public to provide input on the rules.

Stakeholder Meeting

The Board will conduct a Stakeholder Meeting to hear comments and respond to questions on the proposed amendments to the Ohio Building Code summarized below on November 16, 2015 at 10:00 AM in Training Room 1, 6606 Tussing Road, Reynoldsburg, Ohio 43068. All interested stakeholders are invited to attend.

Overview of Proposed Rule Changes

Proposed Ohio Building Code Rule Changes
The Board proposes to amend the Ohio Administrative Code in response to adoption of new Ohio Revised Code § 3781.106 included in HB 64 requiring the Board to develop rules for the use of a device by a staff member of a public or private school or institution of higher education that prevents both ingress and egress through a door in a school building, for a finite period of time, in an emergency situation, and during active shooter drills as follows: **4101:1-2-01** to add definitions for Active Shooter Drill, Administrative Authority of a School Building, Emergency Situation, Institution of Higher Education, Private School, Public School, School Building, and Temporary Door Locking Device; and **4101:1-10-01** to add exceptions to Sections 1008.1.9.1, 1008.1.9.3, 1008.1.9.5 for Temporary Door Locking Devices, and to add a new Section 1008.1.9.11 which establishes conditions for the use of Temporary Door Locking Devices.

These proposed rules can be viewed here: http://www.com.ohio.gov/documents/dico_HB64OBCRulesStakeholderMeetingNovember2015.pdf

Contact Information for Comments or Questions

If you cannot attend the above Stakeholder Meeting, you can submit written comments or questions on the proposed amendments to the Board. You may submit your comments via email at BBS@com.state.oh.us or U.S. Mail at Ohio Board of Building Standards, 6606 Tussing Rd, Reynoldsburg, Ohio 43068, Attn: Regina Hanshaw by November 27, 2015.

Sincerely,

Regina S. Hanshaw
Executive Secretary
Ohio Board of Building Standards

Stakeholder List 10/21/15

Abbott	abbott.architect@gmail.com
Abrams	dva59@aol.com
ADAM	ladam@masonoh.org
Adams	sec_fan@hotmail.com
Adams	bryan.adams@daytonohio.gov
ADAMS	scottinohio@roadrunner.com
ADKINS	wradkins@windstream.net
Adkinson	badkinson@richlandcountyoh.us
ADLEY	wadley@neo.rr.com
AFFOLTER	jeff@mmelectricinc.com
AKERS	heinz33346@roadrunner.com
Albayati	harith.albayati@klingconsult.com
ALBERT	joealbert@gmail.com
ALBRIGHT	galbright@horizonview.net
ALEKSICH	a.aleksich@femoran.com
Alesci	johnnyboy317@att.net
Alexander	jalexanderplumbing@yahoo.com
Alexander	oalexander@city.cleveland.oh.us
ALFORD	stevejalford@yahoo.com
ALI	columbuselectric@aol.com
ALLEN	jma819@juno.com
ALLINDER	callinder@columbus.gov
ALLRED	tallred@pfscorporation.com
ALT	jalt@altarchitecture.com
ALVAREZ	RA859@neo.rr.com
AMATO	jamato@co.delaware.oh.us
Amburgey	bamburgey@roadrunner.com
AMICK	dcamick@columbus.gov
AMOS	gamos@cityofwestlake.org
AMOS	amos@cityofmentor.com
ANDERSON	diana_lee_@hotmail.com
ANGLIN	paulanglin@jomory.com
ANKROM	jhankrom@yahoo.com
Antoine	asant411@gmail.com
ANTROBUS	rob.antrobus@ohiovalleymonitoring.com
APANASEWICZ	rapanasewicz@munibis.com
Arbogast	jarbogast@simplexgrinnell.com
ARDITO	Tom.Ardito@yahoo.com
Ark	reese@arkplumbingandpiping.com
Armeni	jnarmeni@sbcglobal.net
Arnold	arnoldb@ci.fairlawn.oh.us
ARNOLD	sarnold@city.cleveland.oh.us
ARNOLD	tatcahd@gmail.com
ARORA	ldarora@com.state.oh.us
ARRENDALE	rla4938@neo.rr.com
ARRIAGA	arriaga2012@yahoo.com

ARTERS	russa@cityofnorton.org
ARTHUR	karthur@richlandcountyoh.us
Artrup	bjartrup@hotmail.com
Artrup	bjartrup@grandviewheights.org
ARVIN	dkssarvin@yahoo.com
Asebrook	michaelasebrook@gmail.com
ATER	pggater@gmail.com
ATHANAS	tedathanas19633@gmail.com
ATHY	rich@systems28.com
ATHYA	k25velo@neo.rr.com
ATKINS	sgatkins@columbus.gov
Austin Jr	donald_austin@sbcglobal.net
AVEN	kaven@avenfire.com
Ayres	rayres@grandviewheights.org
BAGGETT	mbaggett@cinci.rr.com
Bailey	jbailey@newtechlexington.com
Bailey	baileyted39@yahoo.com
BAILEY	scott.bailey@koorsen.com
BAILEY	jbailey@vanguardalarms.com
Baker	gary.baker@cantonohio.gov
BAKER	leejbaker@gmail.com
BAKER	bakert67@aol.com
BAKER	tbaker@vandaliaohio.org
BALDAUF III	esi@vandaliaohio.org
BALDWIN	jeanlen@embarqmail.com
BALESTER	wbalester@seuclid.com
BALOGH	bobbun64@yahoo.com
BALOGH	kenketo@gmail.com
BALSER	j.balserjr@comcast.net
BALSER	jbmdia@comcast.net
Barber	ericbarber36@yahoo.com
Bargdill	joe.bargdill@westerville.org
Barisic	tonybarisic@aol.com
Barisic	tbarisic@city.cleveland.oh.us
BARKALOW	nealbarkalow@hotmail.com
Barker	barkerf@yahoo.com
Barnes	patrick.barnes@lakecountyohio.gov
Barnes III	rbarnes@city.cleveland.oh.us
BARNETT	bbarnett@masonoh.org
BARNETT II	paul.barnett11@gmail.com
Barnum	ericmbarnum@yahoo.com
Bartley	bbartley.mail@gmail.com
Barton	kn5dx@hotmail.com
Bass	jbass_0182@fuse.net
BASSETT	mark@bassettsprinkler.com
BASTIAN	don_bastian@yahoo.com
BAUER	bbauer@lycos.com

Bauer-Nilsen Jr	ottobn@gmail.com
Baughman	jrbaughman@muskingumcounty.org
BAUGHMAN	johnfireray@embarqmail.com
BAUMANN	proalert@fuse.net
BAUMGARDNER	lee_kbi@hotmail.com
BAUMGARTNER	baumgartnerfarm@msn.com
BAUSCHLINGER	jbauschlinger@cityofbarberton.com
BAUSCHLINGER	jbauschlinger@neo.rr.com
BAXTER	baxterskyles@hotmail.com
Baytos	jbaytos@romanoffgroup.cc
BAYUS	rebayus@earthlink.net
BEACH	brian_beach@norwichtownship.org
BEAM	mike.beam@communale.com
Bean	dbean5363@gmail.com
BEAN	electraglide1450@gmail.com
BEARDEN	bmonaro@yahoo.com
BECKER	dbecker@simplexgrinnell.com
BECKWITH	john.beckwith@comunale.com
Becoat	blanchelouis@yahoo.com
Becoat	mbecoat@city.cleveland.oh.us
BEDILION	williambedilion@windstream.net
BEELER	stan.beeler@yahoo.com
Beetz	rwb@beetzplumbing.com
BEIRNE	kfbeirne52@yahoo.com
BELLOMA	william.belloma@gmail.com
BENEDETTI	vinniebene@yahoo.com
Benjamin	thebenjfamily@yahoo.com
Benko	jbenko@medinaoh.org
BENNETT	jrbennett@neo.rr.com
BENNETT	mibennett@simplexgrinnell.com
BENNETT	rbennett@warren.org
BENSON	captain_hook@roadrunner.com
Bentley	sbentley@ci.union.oh.us
Beres	kurtb@ma-architects.com
Bergman	bnr5157@woh.rr.com
BERGMAN	billb@securcom.com
BERGMAN JR	bergman@englewood.oh.us
BERLING	gerry.berling@cincinnati-oh.gov
BERLINGER	mberlinger@totalsafety.com
Berry	jberry5684@gmail.com
Berry	bcbd@frontier.com
BERTEAU	rberteau@broadview-heights.org
BEUTLER	wbeutler@sbcglobal.net
BEVERLY JR	nithawk48@neo.rr.com
BEYER	jebeyer@columbus.gov
Bichara	cbichara@middleburgheights.com
BIDDISON	rbbiddison@columbus.gov

BIEDENBACH	plbiedenbach@aol.com
BIEDERMAN	1@biedermanfire.com
Bieler	michaelbieler@sbcglobal.net
BIERLEY	rebarch@aol.com
BIGELOW	rbigelow@co.delaware.oh.us
BIGELOW	rbigelow12@hotmail.com
Biggert	daveb@gatesmillsvillage.com
BIHLMAN	mbihlman@fuse.net
BILLS	tsbills@hometowncable.net
Binder Jr	rickbinder78@gmail.com
BINFORD	reggie.binford@cincinnati-oh.gov
BIONDILLO	tony.biondillo@strongsville.org
Birckelbaw	birckelbaw06@gmail.com
BISHOP	rod.bishop@atech-fire.com
BLAGG	blagg79@yahoo.com
BLAKEY	jerryblakey@yahoo.com
BLANKEMEYER	blankemeyerelectric@hotmail.com
BLATCHFORD	BA@studio-10.com
BLONDIN	jkbringer@sbcglobal.net
Blue Donald	ayonna.blue.donald.esq@gmail.com
BOARD	cboard@centralfp.com
BODO	abodo@cityofsteubenville.us
Bogart	bogart66@yahoo.com
BOGNER	jbogner3@neo.rr.com
BOHACHEK	kip.bohachek@ketteringoh.org
Bohland	tbohland257@att.net
Bohnert	scott.bohnert@cincinnati-oh.gov
Bolender	jeremybolender2@gmail.com
BOLES	dboles@ntainc.com
BOLL	bbbooll@windstream.net
Bonifas	bonifass@nwoss.com
BONNOUGH	tfd.darrell@yahoo.com
BOOGHIER	danaboo1@msn.com
BORDER	mcmayor46@yahoo.com
Boring	rboring@ntainc.com
BORYCA	mike@eco-arch.com
BOSHANE	cboshane@grandviewheights.org
BOSO	mboso@columbus.rr.com
BOSO	mboso@grovecityohio.gov
Bourquin	MTB@Copp.com
BOZAK	cubmstr161@yahoo.com
BOZEMAN JR	cbozeman@mjwood.com
Bozman	jbbozman@yahoo.com
BRADLEY	khbldz@neo.rr.com
BRADY	mbrady7411@gmail.com
BRAKHAGE	sbrakhage@3s-incorporated.com
BRANDT	t.a.brandt@att.net

BRANKATELLI	rossbrank@aol.com
BRANSON	ronnie.branson2@gmail.com
BRATHWAITE JR	wwbrathwaite@columbus.gov
BRATTON	hydromark@msn.com
BREEZE	breezea@ohio.edu
BREMMER	bremmer038@roadrunner.com
Brennan	sbrennan@cityofwillowick.com
Brill	dbrill@delawarehealth.org
Brinkley	kbrinkley@mcfs.us
BRINLEY	tbrinley@richlandcountyoh.us
Bristow	jeffrey.bristow@siemens.com
BROKAW	ROBERT.BROKAW1@GMAIL.COM
BROOKS	dbrooks@harrisonohio.gov
BROOKS	rbrooks@co.greene.oh.us
BROOKS	rjb086@woh.rr.com
BROOKS	mbrooks@integratedprotection.com
BROOKS	sbrooks@westchesteroh.org
BROWER	bmbrower@roadrunner.com
Brown	bbrown@cityofwarrensville.com
Brown	wbstevebrown@gmail.com
BROWN	fredbrown1947@fuse.net
BROWN	gary.brown@ketteringoh.org
BROWN	william.brown@cityhall.lima.oh.us
BROWN	larrybrown1st@aol.com
BROWN	sbrown3@city.cleveland.oh.us
BROWN	brownfcjr@sbcglobal.net
BROWN	mike.sdes@yahoo.com
BROWN	sbrown2@sbcglobal.net
BROWN	scbrown1@gmail.com
BROWN JR	rbrown@bedfordoh.gov
Brownlee	naemale@aol.com
Brownlee	nbrownlee@city.cleveland.oh.us
BRUEN	kenbruen@sbcglobal.net
Bruggeman	agbrugg1@gmail.com
BRULPORT	dbrulport@sidneyoh.com
Brumfield	brumfield.s@gmail.com
BRUNNER	james.brunner@cincinnati-oh.gov
Bruns	mbruns@moteassociates.com
Bryant	rjb298@hotmail.com
BRYKALSKI JR	resw7cmf@frontier.com
Buchelt	our3sons@bex.net
Buchler	gbuchler@ovis.cc
BUEHRER	pbuehrer@ci.oregon.oh.us
BUELOW	gwbinc@gmail.com
BUHROW	tbuhrow@co.ottawa.oh.us
BULL JR	jebulljr@aol.com
BUMBALIS	abumbalis@aol.com

BUNN	db333313@yahoo.com
BURDAY	curt7@windstream.net
BURG	gerald.burg@com.state.oh.us
BURG	s.l.burg@sbcglobal.net
BURNS	BILLBURNS08@AIM.COM
Burnside	tburnside@ci.lancaster.oh.us
BURRIS	deburris@columbus.gov
Burroughs	eburroughs@phoenixssinc.com
BUSCH	dave_busch@cityoflorain.org
BUTCHER	rcbutcvher@columbus.gov
BUTCHKO	bclick@butchkoelectric.com
Butkovic	jbutkovic@ipsid.com
BUTTS	jwbuttsjw@gmail.com
BUZA	sbuza@aol.com
CACIOPPO	cmykey@neo.rr.com
CAITO	larrycaito@gmail.com
CALAWAY	ccalaway@brunswick.oh.us
CALDWELL	jimc@firefoe.com
CALENDINE	acalendine@yahoo.com
Calkins	richard.calkins@cincinnati-oh.gov
CALLIHAN	callihan@callihanelectric.com
CAMBURU	acamburu@yahoo.com
CAMP	sparkette661@sbcglobal.net
CAMPBELL	blair.campbell@com.state.oh.us
CAMPBELL	mcampbell@dupps.com
CAMPION	rcampion@springdale.org
Canady Jr.	ptipton@midwestsprinkler.com
Canterbury	mike.canterbury@brewerfire.com
CANTRELL	jcantrell@miamicountyohio.gov
CANTU	ralph_cantu@cityoflorain.org
Cantu Jr	cantuforu@gmail.com
CAPLINGER	ron@craynonfireprotection.com
CAPUCINI	topdawg45@bex.net
Caraballo	wcaraballo2@city.cleveland.oh.us
CARBONE	pvcdwv@yahoo.com
CAREY JR	bcarey@stow.oh.us
CARLETON	tomster213@gmail.com
CARLSON	acarlson@pyramid1inc.com
CARLSON	sci@firedefense.com
CARMACK	tcarmack@afire1.com
Carney	milton.carney@gmail.com
CARR	admin@carr-electric.com
Carrabotta	carr4000@att.net
Carraher	vince_carraher@yahoo.com
CARROLL	carrollrandy15@gmail.com
CARTER	tcarter@silcofs.com
CARTWRIGHT	donaldl1998@yahoo.com

CARVER	rgcarver@columbus.gov
CASINI	ncasini@rcuarchitects.com
Catacutan	rcatacutan2@city.cleveland.oh.us
CATALONA	tcatalano@stow.oh.us
CATTRELL	bcattrell3802@wideopenwest.com
CAVAN	thc220@yahoo.com
CAVANAUGH	ajcavanaugh@starkcountyohio.gov
Cavender	bcavender@a1ssi.com
CEGELKA	dcegelka@twinsburg.oh.us
CENDOL	robert.cendol@toledo.oh.gov
CENZORI	ampy2000@sbcglobal.net
CEREPAK	tim.cerepak@comunale.com
Cerrone	arcerrone@aol.com
CHANDLER	schandler@healeyfire.com
Chapin Jr.	jchapin68@gmail.com
CHARTOUNI	char2ni705@comcast.net
CHATHAM	dchatham@wowway.com
CHEATHAM	jcheatham@safebuilt.com
CHINN	mchinn@grovecityohio.gov
CIEPIEL	paul@apmcabling.com
CIFRANIC	cifranic5052@gmail.com
CIRVENCIC	cirvann@sbcglobal.net
Clark	chris.clark@cincinnati-oh.gov
CLARK	jcflashusa2000@yahoo.com
CLARK	paultheelectrician@gmail.com
Claytor	claytorj@mymail.shawnee.edu
CLIFFORD	jcliffordc@mindspring.com
CLIFTON	jake4426@yahoo.com
Cline	mcline@schmidtsecurity.com
Clines	pjc8581@aol.com
CLINGMAN	ddclingman@columbus.gov
CLIPSON	addisonclipson@yahoo.com
CLOES	bcloes@ci.mansfield.oh.us
CLOUSE	jclouse@trarnold.com
CO	ctco40@aol.com
COAKLEY	kennycoak@gmail.com
Cockayne	robert.cockayne2@daytonohio.gov
COCKRELL	dcockrell@ntainc.com
COFFEY	dencoffey@hotmail.com
COHEN	sdc98@aol.com
COHN III	william.cohn@cincinnati-oh.gov
Coleman	bcoleman3@aol.com
COLLINS	dcollins@preview-group.com
COLOSIMO	kferris@gpsx.net
COLWELL	lcolwell@natinspect.com
COLWELL	robc@transtarcorp.com
COMBS	bruacom@gmail.com

COMBS	cbotex37@aol.com
CONNER	taconthehill@yahoo.com
CONNOLLY	wconnolly772@live.com
Conrad	mconradarchitect@gmail.com
CONROY II	billeconroy@gmail.com
CONVERY	tconvery@ameritech.net
Conway	bconway@dublin.oh.us
Cook	t_jcook@sbcglobal.net
Cook	hcook001@roadrunner.com
COOK	cookelectricinc.jc@gmail.com
Cooley	b4mookie@aol.com
Cooley	dcooley@city.cleveland.oh.us
COOPER	djcooper@roadrunner.com
COPELAND	mypc123@roadrunner.com
COPELAND	srcarchitect@sbcglobal.net
CORCORAN	cjcorcoran@oakgroupcode.com
Cormack Jr	ohioplumber@hotmail.com
CORRENTI	mcserinc@yahoo.com
Cossin	cbd288@att.net
COTRELL	rtcotrell@watchtv.net
COUCH	flloyd1@ameritech.net
COUNTS	djcounts@columbus.gov
COURTNEY	jac954547@gmail.com
Cowles	americanplumbing@oh.rr.com
Cox	dcox@simplexgrinnell.com
COX	gpldoyt@gmail.com
CRAIG JR	mittendiver@gmail.com
CRAWFORD	crawfordcdc@gmail.com
CREASE	proncon@windstream.net
CRIPPEN	rcrippen@clarkcountyohio.gov
CROMARTIE	mikec54@gmail.com
Cromer II	tcromer@medinaoh.org
CRONK	sdcronk@columbus.gov
CROSBY	fireguardinc@aol.com
Cross	cu95dad@gmail.com
Crutchley	mcrutch@tlglss.com
CUCCIA	mcuccia@brecksville.oh.us
Cueto	jrcueto@hotmail.com
CUEVAS	bgc161@yahoo.com
CUFFARI	paulcuffari@gmail.com
CUNNINGHAM	edward.cunningham@cincinnati-oh.gov
CUNNINGHAM	dave2063.dc@gmail.com
CUNNINGHAM	bldg@huntingvalley.net
CUNNINGHAM	m.cunningham@csuohio.edu
CUREE	cureeenterprises@aol.com
CURRIER	seth.currier@cincinnati-oh.gov
CURRY	tim@curryelectric.com

CURTIS	LIFTEDJEEP@ROADRUNNER.COM
CYPHERT	mcyphert@pfscorporation.com
CZAPP	louiecza@yahoo.com
DABDOUB	majed.dabdoub@cincinnati-oh.gov
DABDOUB	majed@dabdoub.net
D'Agostino	quinn090909@yahoo.com
Dahlberg	artdahlberg@mac.com
DAKIN	ben.dakin@vfpfire.us
DALEY	backtrax@ameritech.net
DANDO JR	jim.dando@troyohio.gov
D'Andrea	jdandrea@cinci.rr.com
DANE	ld4rn@yahoo.com
D'ANGELO	jimd@absolutefp.net
DANIEL	dldaniel@columbus.gov
DANN	bdann@columbus.rr.com
DANOLFO	witchatalinesman@att.net
DANTZLER	ddlad1@aol.com
Darragh	rdarragh@columbus.rr.com
Davis	msparky04@yahoo.com
Davis	fightingfire93@neo.rr.com
Davis	cdavis4@city.cleveland.oh.us
DAVIS	joshd@concordfp.com
DAVIS	john.davis@xentrysi.com
DAVIS	sdavis@woosteroh.com
DAVIS	cdavis3@city.cleveland.oh.us
DAVIS	gdavis@pickaway.org
DAWSON	dardawdude@yahoo.com
DAY	donmo10090@yahoo.com
DEAL	deals5526@hotmail.com
DeAmicis	david_deamicis@yahoo.com
DEBENEDICTIS	lance.license@gmail.com
DECKER	dandecker@safetysystems.net
DECKER JR	jedjrpe@oh.rr.com
DeGeorge	rdegeorge@neo.rr.com
DEICHMANN	pdeichmann@cityofparma-oh.gov
DeJesus Jr	cjabdejesus211@gmail.com
Delaney	jdelaney@ssoe.com
DELGIUDICE	ndgarchitect@yahoo.com
Delk Sr	delksrmichael89@yahoo.com
DeLorenzo	bobdelo@att.net
DELZANI	jdelzani@rrcity.com
DeMassimo	r.demassimo@yahoo.com
DEMEDAL	mdemedal@yahoo.com
DEMYAN	rdem1300@sbcglobal.net
DENICHOLAS	tdbyrd@zoominternet.net
DEROSA	satisfaction1001@yahoo.com
DERR	jack.derr@hamilton-co.org

Derrett	rderrett@city.cleveland.oh.us
DESVARI	desvar@aol.com
DETTMANN	tdettmann@mjwood.com
DEVITO JR	richarddevito@aol.com
DICKARD	dickardfamily@gmail.com
DICKERSON	adicke7092@yahoo.com
Dickey	jdickeydesigner@hotmail.com
Dickinson	mdickinson@vanguard-fire.com
Dicks	jdicks@trarnold.com
DIEHL	dadiehl34@gmail.com
DIETZ	CHARLES.DIETZ@HAMILTON-CO.ORG
DiFranco	mdifranco615@aol.com
DILES	dilessr@yahoo.com
Dinardo	rdinardo@sbcglobal.net
Dinardo	rdinardo@cedarwoodd.com
Dingle	dingle.p@gmail.com
Dinwiddie	rdinwiddie@firetechstl.com
DIZDAR	dizytocro@aol.com
Dizdarevic	benjod@cox.net
DODDS	edodds2393@aol.com
DODSON	carl@advantage-fire.com
DOEHNE	edoehne@cityofwestlake.org
Doll	jim@jacksonsprinkler.com
DOMER	nicet4@att.net
DOMINICK	jd9393@sbcglobal.net
DONOVAN	inspt99@yahoo.com
DOOLEY	pdooley1@yahoo.com
DORENKOTT	dorenkottn@north-olmsted.com
DORGAN	sdorgan@cinci.rr.com
DORN	tdorncdfp@fuse.net
DORN	chris.dorn@dornfireprotection.com
Dotson	dotsondwayne@ymail.com
DOTTS	rdotts@telgian.com
Downs Jr	jdowns@clarkcountyohio.gov
DOZER	rdozer@outlook.com
Draganoiu	gdraganoiu@cityofwestlake.org
Drago	h2odr1936@gmail.com
DREW	jdrew2@neo.rr.com
DRIGGS	ddriggs@co.ottawa.oh.us
Drobina	jdrobina98@gmail.com
DUBER	jduber@technearchitects.com
DUCKWORTH	ducks91804@yahoo.com
DUCKWORTH	rosscbo@horizonview.net
DUFFY	164alan@gmail.com
Duncan	gduncan@geaugacountyhealth.org
Dunham	lrd@usautomaticfire.com
DUNNING	cinnkid@zoomtown.com

DURANTE	electsummit@sbcglobal.net
DURBIN	davedurbin@embarqmail.com
Durflinger	helen.durflinger@gmail.com
DUVALL	rduvall@shambaugh.com
Dvorak	jdvorak@city.cleveland.oh.us
Dvorscak	ddvorscak@comcast.net
Dye	kenjoan02@aol.com
Dyer	dyermandg@gmail.com
Dziak	mdzhazmat@yahoo.com
DZURILLA	astech@nacs.net
Earley	kearley@westlickingfire.org
EASTEP	reastep@uaoh.net
EATON	Geaton@com.state.oh.us
Ebeling	gerald@3dfiredesign.com
EBY	jameseby65@gmail.com
Echeverri	john@ejengineering.com
Eckart	geman353@yahoo.com
ECKERT	doneckert@eckertfireprotection.com
ECKERT	jasoneck112@yahoo.com
EDDY	mike@elitesprinklerdesign.com
EDDY	chriseddy@roadrunner.com
EDDY	rpeddy@juno.com
Edwards	harry@chagrin-falls.org
Edwards	rzrfun111@gmail.com
EDWARDS	darryl.edwards@cincinnati-oh.gov
EDWARDS	tfaye@zoomtown.com
EDWARDS	dedwards2007@cinci.rr.com
EHRHARDT	atlas.fire@yahoo.com
EICHORN JR	b.eichorn@aol.com
EIFERT	ceifert@preferredfire.com
EIFERT	bob.eifert@hamilton-co.org
EISENHUTH	jeisenhuth@solonohio.org
ELASIVICH	llelasivich@zoominternet.net
ELEY	leley@delawareohio.net
ELLIOTT	ronelliottarchitect@live.com
Ellis	kellis@cityofparma-oh.gov
ELLIS	larrymellis@sbcglobal.net
ELLIS	jellislsr@yahoo.com
ELLISON	eellison@co.greene.oh.us
Elmi	ericelmi@yahoo.com
Elrod Jr	kelrodjr@gmail.com
Elza	royelza@yahoo.com
EMLING	temling@middleburgheights.com
ENGLAND JR	rob16u@aol.com
English	cory.english@orrprotection.com
Enterman	centerman@westcarrollton.org
Erb	terb0@aol.com

Erbe	rxerbe@franklincountyohio.gov
ERITANO	teritano@akronohio.gov
Etherington	thebruce97@yahoo.com
ETHERINGTON	ketherington@co.logan.oh.us
Etzwiler	tetzwiler@wayneoh.org
EUDELL	marcuseudell@hotmail.com
Evans	chris.evans@vfpfire.us
Evans	ejevans943@ctcn.net
EVANS	beevans@hardfire.com
FAGRELL	bfagrell@ci.lancaster.oh.us
FAHRNI	kfahrni@woosteroh.com
FAHRNI	kfahrni1923@gmail.com
FAIR	rfair@masonoh.org
FAIRFAX	sefairfax@yahoo.com
FALK SR	jcf_sr@yahoo.com
Faller	mfaller@ntainc.com
Fandrich	jrfandrich@outlook.com
FARKAS	dfarkas@cityofelyria.org
FARMWALD	kofarmwa@franklincountyohio.gov
FARRELL III	mfarrelliii@yahoo.com
FAULKNER	ed.faulkner@ci.fairborn.oh.us
FAULKNER	rick.faulkner@hamilton-co.org
FAULKNER	rickandregina@yahoo.com
FAY	kevin@absolutefireky.com
Feathers-Edlund	afeathers@trarnold.com
FEHN	mike.fehn@cincinnati-oh.gov
Feick	feickja@aol.com
FELGER	bfelger@grovecityohio.gov
Felice	mfelice1949@aol.com
FERGUSON	katray7@msn.com
FERREE	brian.ferree@troyohio.gov
Ferritto	ajax1369@gmail.com
FICKERT	rfickert@a1ssi.com
FIEDLER	ameky@hotmail.com
Fields	dfields@city.cleveland.oh.us
Filarski	jfilarski@munibis.com
FILASETA	dfilaseta@centervilleohio.gov
Filby	filby69@gmail.com
Fillar	jfillar@safebuilt.com
FINCH	finchacn@yahoo.com
FINK	john.fink@ci.fairborn.oh.us
Finney II	bob.finney@ci.ravenna.oh.us
FISHER	rofisher@columbus.gov
Fistek	ttf1002@hotmail.com
FITZGERALD	efitzgerald@brooklynohio.gov
FITZPATRICK	DanF@cityofspringboro.com
FITZPATRICK	danbev86@roadrunner.com

Fitzwater	fitz3747@yahoo.com
FLANIK	skillbuilder64@aol.com
Flannery	matthew.flannery@cincinnati-oh.gov
FLICK	jerryflick@msn.com
FLOOD	dflood@brunswick.oh.us
FLOOK JR	jim_flook@comcast.net
Flora	bflora@wtwp.com
FLOWERS	msgflowers@hotmail.com
Floyd III	donfloyd55@yahoo.com
FLUM	fluma@ci.hamilton.oh.us
FODOR	afodor1881@gmail.com
FOLGER	empiress@att.net
FOLSOM	cobradf54@aol.com
FOOTE	mfoote@city.cleveland.oh.us
FORD	dfordsr@gmail.com
FORD	cwford@sbcglobal.net
FORD SR	fordsteven62@yahoo.com
Forrester	meishack@hotmail.com
FORT	gafort@gmail.com
FOSTER	roger.foster@cincinnati-oh.gov
FOULKES JR	keith.foulkes@strongsville.org
Fourman	brent_fourman@yahoo.com
FOWLER	ffowler@co.delaware.oh.us
Fox	afoxj@aol.com
FRANCISCO	richard_francisco@att.net
Franke	ian.franke@cincinnati-oh.gov
FRANKINO	jcf212@att.net
Frankl	berniefrankl@gmail.com
FRANKLIN	kfranklin@city.cleveland.oh.us
FRANKS	efranks36@gmail.com
FREDERICK	kfred1125@hotmail.com
FREIMAN	FREIMANK@YAHOO.COM
FREY	mike.frey@gahanna.gov
FRITTS	fsfzz@aol.com
FRITZ	aafritz1699@sbcglobal.net
FULKS	roberttfulks@hotmail.com
FULTZ	ken.fultz@gahanna.gov
FURSDON	gfursdon@nridgeville.org
FUSSNER	pfussner.ipe@att.net
FYFE	waterboy55@sbcglobal.net
GALASKA SR	emgalaska@hotmail.com
GALDUN	galduns@yahoo.com
GALL	ngall271@gmail.com
GALLAGHER	bgallagher@ctconsultants.com
GALLAGHER-BONVENUTO	tgallagher@eastlakeohio.com
Gallo	agallo@strolloarchitects.com
Gamble	gambledoug66@yahoo.com

GARCIA	dgarcia2@city.cleveland.oh.us
Gardner	sgardner@cityofeuclid.com
GAREAU	gareaud@north-olmsted.com
GATES	bgates@newconcord-oh.gov
Gaus	lgaus@roadrunner.com
GAVER	jgaver@ci.springfield.oh.us
Gaylord	rgaylord@cityofsteubenville.us
GEIGER	rgeiger@uaoh.net
Geiser	srgeiser@gmail.com
GEORGE	jimgeorge8@gmail.com
GERBER	jeraldgerber@aol.com
GERO	mjgero@sbcglobal.net
GHOSH	aghosh@columbus.gov
GIFFORD	mike.gifford@vfpfire.us
GIFFORD	accounting@centralfp.com
GIFFORD	neptune235@aol.com
Gill	gilbert6464@hotmail.com
GILLY JR	pgilly53@aol.com
GILMORE	jgilmore@oregonohio.org
GILREATH	dlgilreath@insight.rr.com
Gilyard	dgilyard@city.cleveland.oh.us
GIRBINO	mgirbino@mayfieldvillage.com
Givens	s4c11g6@suddenlink.net
GLADD	bigladd@co.trumbull.oh.us
GLADISH	dangladish@msn.com
GLADISH	dgladish@medinaoh.org
Gleason	sgleason@earthlink.net
Gleisinger	lgleisinger@embarqmail.com
Glenn	andyglenn@reagan.com
Glover	rdg@tlglss.com
GLUZINSKI	vgluzinski@yahoo.com
GOLDEN	tdgolden@wowway.com
GOLDEN	tgolden@cityofelyria.org
GOLIS	david.golis@toledo.oh.gov
GOLIS	davidgolis@aol.com
GONZALEZ	joseanddee@ncwcom.com
GOODALL	cg.arch@earthlink.net
GORBETT	edplumb55@aol.com
GRABFELDER	dgrabfelder@highlandhts.com
GRACE	twoamaze2@msn.com
Grady	sunrise_1959@hotmail.com
GRASSI	inspectorgrassi@gmail.com
Graves	tim@megacityfire.com
Graves	dcg412@att.net
GRAVES	jgraves@ci.worthington.oh.us
GRAYEM	grayem04@yahoo.com
GRAYSHAW	paul.grayshaw@att.net

GREBER	cgreber@fuse.net
Green	greent@jacksontwp.org
Green	greenanthony@msn.com
Green	bgreen8539@aol.com
GREEN	Pgreen@ryanfp.com
GREENWALT	electricwe@aol.com
Greer	greer8870@gmail.com
GREGGERSON	nicholas.greggerso@sbcglobal.net
GRGIC	mgrgic@city.cleveland.oh.us
GRIESHOP	jamgrieshop@aol.com
Griffiths	mark.griffiths@comunale.com
GRIMES	nathang1077@gmail.com
GRISWOLD	griswoldw@yahoo.com
GRIVENSKY	centralelectricinspection@yahoo.com
GRIZZLE	randallgrizzle.rg@gmail.com
GRIZZLE	grizzlerw@butlercountyohio.org
GROB	grmxride@hotmail.com
GROGEAN	rgrogean@beavercreektownship.org
Grubbs	twgrubbs60@wowway.com
GRUBER	mgruber@simplexgrinnell.com
GRUSENMEYER	jagarch@wowway.com
GUDAT	kgudat@city.cleveland.oh.us
GUNSALUS	Dgunsalus@hotmail.com
GUSTAFSON	jgustafson@hwceng.com
GYURE	gyure@windstream.net
HAAG	harley0523@gmail.com
Hackney	mehackney@gmail.com
Hackney	mehackney@columbus.gov
HAFELE	steve.hafele@cincinnati-oh.gov
HAGAN	pawsrus8@frontier.com
HAHN	c.k.hahn@att.net
HALE	thale@clarkcountyohio.gov
Hall	tomhall@alarmdesignspecialists.com
Hall	khall@wadsworthcity.org
Hall	aph585@aol.com
HALL	koleary@cityofgirard.com
HALL	thallsr@adelphia.net
HALL	mr_wesley@yahoo.com
HALL	jhestic@juno.com
HALLORAN	nhalloran33@att.net
HALUSKER	hesinc690@sbcglobal.net
Hamdallah	taemuslim@att.net
Hampton	hamptonmark40@yahoo.com
HAMPTON	tom@rthampton.com
Hanigan	rdh@asebrook.com
HANKEY	mgmidget73@yahoo.com
Hanley	bhanley01@comcast.net

HANNA	hannaeric3@aol.com
Hannan	jthannan@yahoo.com
HANSON	ehanson@cityofavon.com
HARD	mike@hardfire.com
HARDER	tharder@co.ottawa.oh.us
HARDING	stharding@yahoo.com
HARDY JR	dhardyjr@zoominternet.net
HAREN	dave.haren@comunale.com
HARLER	inspector522@yahoo.com
HARPER	mharper@harstone.com
HARPHAM	rmharpham@gmail.com
Harpster	amy.harpster@cityhall.lima.oh.us
HARRIS	harrist@mcohio.org
Hart	ghart@landmarksprinkler.com
HARTINGER	dave.hartinger@cincinnati-oh.gov
Hartman	ladymedic991@yahoo.com
HARTUNG	albert.hartung@cincinnati-oh.gov
Hatchett	chatchett@city.cleveland.oh.us
HATFIELD	poppajoe01@yahoo.com
Hatton	whhatton@columbus.gov
HATTON	james.hatton@cincinnati-oh.gov
HAUGHN	tony@starelectricgc.com
HAUGHN	tlhaughn@franklincountyohio.gov
HAUSMANN	bhausmann@a1ssi.com
Hayek	zhayek@universityheights.com
Hayes	rhayes@tyco.com
HAYNES JR	jhaynes@ovsi.net
HAYNES JR	bud.haynes@hamilton-co.org
HAYS	glhays@adt.com
HAYS	whays2@columbus.rr.com
Heckelmoser	dheckelmoser@city.cleveland.oh.us
Heckelmoser	donn.heck@gmail.com
HECKENMUELLER	mheckenmueller@masonoh.org
Hed	rhed@summitfire.com
HEFFRON	aircrue@hotmail.com
HEIDEN	lheiden@co.geauga.oh.us
HEIDENESCHER	raheidenscher@columbus.gov
Heilman	laura6111@roadrunner.com
Heimbach	adam@pennfire.com
Heise	debheise@hotmail.com
Heitkamp	firefighter_nb29@yahoo.com
HELMER	shelmer@nkyei.com
HELMS	erichelms@woh.rr.com
Helsel	ron3636@hotmail.com
HELSINGER	rhelsinger@fairfield-city.org
Hemchak	rjh71truck@aol.com
HEMMING	mghemmin@dps.k12.oh.us

HEMPFLING	marylee502@yahoo.com
Henderson	ihenderson@p-e-i.com
HENDERSON	nec_inspector@yahoo.com
HENDLEY	jhendley@beavercreektownship.org
HENDRICKS	bmh@bshm-architects.com
HENSLEY	dhensley@fairfield-city.org
Herda	mherda@simplexgrinnell.com
Hermanson	bhermanson@tristarfire.com
HERNANDEZ-DENTINGER	dentinm@ameritech.net
HERWERDEN	nherwerden@middleburgheights.com
HESTER	john9@zoomtown.com
Hettinger	jr_hettinger@yahoo.com
HIATT	mhiatt@a1ssi.com
Hickman	joto_hicks@yahoo.com
HICKMAN	jhick007@gmail.com
HICKMAN II	rhickman@neo.rr.com
Hicks	bhicks@bass-security.com
HICKS	jrhicks2@gmail.com
HILDITCH	dave.hilditch@comunale.com
HILL	gailene.hill@cincinnati-oh.gov
Hinders	paulhinders@aol.com
Hindi	h.hizar@yahoo.com
Hinkle	jeffery.hinkle@cincinnati-oh.gov
HISSEY	jehissy@columbus.gov
HITTINGER	davidhittinger@gmail.com
Hlad	mhlad@macedonia.oh.us
HOBART	info@dynastyinspections.com
Hobby	hobbywoodbutcher@gmail.com
HOBGOOD	esi942@woh.rr.com
HOBSON	mhobson@calcominc.com
HOCEVAR	dhocevar@outlook.com
Hoffman	rick.hoffman@cantonohio.gov
HOFFMAN	r.hoffman@ieee.org
Holbert	hholbert@sycamoretownship.org
Holbrook	jholbrook@co.delaware.oh.us
HOLDERMAN	holdermand@zoominternet.net
Holfeltz	jacobman1@sbcglobal.net
Holland	dajenro@gmail.com
HOLMAN	gholman1@hotmail.com
HONEYCUTT	alleycatlures@yahoo.com
HONG	corkyhong@totalink.net
HOOVER	kelly.neal@vosbohio.com
HOPLAND	jerhopland@pfscorporation.com
HOPPER	chet.hopper@gmail.com
Hormann	randyh@firecodeacademy.com
HORNER	whorner@woh.rr.com
HORSEMAN	buildinginspector007@msn.com

HORVATH	shorvath002@neo.rr.com
HORVATH JR	chorvath@northrandall.com
HOUPT	rhoupt2000@yahoo.com
Houston	jhouston@city.cleveland.oh.us
HOVANCSEK	hovancsekl@orangevillage.com
HOWARD	brentdhoward@gmail.com
HOWARD	markhoward607@gmail.com
Hribar	lhribar@sbcglobal.net
HRICZIK	j.hriczik@csuohio.edu
Hubbard	dan.hubbard@uponor.com
HUBBS	gary.hubbs@co.warren.oh.us
HUBER	chuber@medinaco.org
HUBER	chuber3@neo.rr.com
HUELSMAN	fpdinc@gmail.com
Hughes	bhughes@cityofeuclid.com
HUGHES	dcharchitect@sbcglobal.net
HUGHES	darhughes@aol.com
HUIET	tomh@cityofmiddletown.org
HULSEY	mike@lima.parable.com
HUMMEL	dkhum67@aol.com
HUMPHREY	humphreyjohn@sbcglobal.net
HUNNELL	mark@capfire.com
Hunter	anthonyhunter@att.net
HUNZIKER	ahoakwood@hotmail.com
HURST	jhurst@cityofbrookpark.com
Hussain	nhussain@city.cleveland.oh.us
HUSTON	mhuston@baymec.com
HUTSON	shutson@sonitrolsw.com
ICE	aaron.ice@cincinnati-oh.gov
ILIANO	miliano@city.cleveland.oh.us
INGRAM	dri53@aol.com
INMAN	michael.inman@hamilton-co.org
IRVINE	insp1332@gmail.com
IRVINE JR	dirvinejr@brigadefire.com
IVENSO	manny.ivenso@cincinnati-oh.gov
IWAN	MIwan@city.cleveland.oh.us
Iwenofu	aiwenofu@city.cleveland.oh.us
Jackson	drj@reagan.com
JACKSON	bobjackson@windstream.net
JACOBS	inspector509@yahoo.com
JACOBS	larry.jacobs@daytonohio.gov
JACOBSEN	curt.jacobsen@nordyne.com
JACQUES	anthony.jacques@com.state.oh.us
James	micjam1965@yahoo.com
JAMES	terry.james@cincinnati-oh.gov
JAMIESON	tomjamieson@mayfieldheights.org
JAMISON JR	jackjamisonjr@comcast.net

JANKOWSKI	mjankowski@p-e-i.com
JARUS	tjarus@hotmail.com
Jemison Sr.	mose.jemison@cincinnati-oh.gov
Jenkins	zachjenkins07@yahoo.com
JENKINS	dewayne.jenkins@ketteringoh.org
JENSEN	al.jensen@securitycorp.com
JERN	jeff.jern@koorsen.com
JEWETT	tim.jewett@westerville.org
JEWITT	mark.jewitt@lakewoodoh.net
JIANG	ytjiang@com.state.oh.us
JINDAL	sudhir.jindal@com.ohio.gov
Johnson	wayne.johnson@shakeronline.com
Johnson	eric49115@gmail.com
Johnson	gjohnson@ntainc.com
JOHNSON	corvette721946@hotmail.com
JOHNSON	lynn.johnson@hamilton-co.org
JOHNSON	johnsonralphy@yahoo.com
JOHNSON	prjaia@wowway.com
JOHNSON	2specfad@gmail.com
JOHNSON	stephjohns@gmail.com
JOHNSON	bjohnson@co.delaware.oh.us
Joly	martin.joly@vfpfire.us
Jones	rijones@simplexgrinnell.com
Jones	rjones@simplexgrinnell.com
Jones	mejarch@gmail.com
Jones	radco.pitt@gmail.com
JONES	jw54s7@cinci.rr.com
JONES	dmjmgt@yahoo.com
Joseph	alan.joseph@siemens.com
JOSEPH	josephbd1321@yahoo.com
Jump	bjump@fairfield-city.org
Justice	markjustice1@aol.com
JUSTICE	mjustice4198@gmail.com
KACZOR	plansappr@att.net
Kalman	kalmanr@waltonhillsohio.gov
KAMINSKI	pdkaminski@aol.com
KAMMER	CAK1050@yahoo.com
KAMPHAKE	tvskamphake@fuse.net
Kareha	3nid@sbcglobal.net
KARR	mark@mgfiredesign.com
KASUNICK	jkasunick@city.cleveland.oh.us
KAUFMAN	rkaufmans@aol.com
KAUH	jae.kauh@com.state.oh.us
KAVARAS	kavaras.mark@att.net
KEARNS	dkearns@fokeng.com
KEEN	chriskeen@woh.rr.com
KELLEHER	kellehermike1@gmail.com

KELLER	darkeller@gmail.com
Kellerman	deborah.kellerman@cincinnati-oh.gov
Kelley	jkelley8474@yahoo.com
KELLEY	kevin.kelley@lakewoodoh.net
KELLEY	bobkelley@triscontrols.com
KELLY	skelly@a1ssi.com
KELLY	markpkelly@bex.net
KENT	GRKENT@CO.STARK.OH.US
Kepple	djkepple@gmail.com
KERST	rak1776@earthlink.net
KESSINGER	firealarm_911@hotmail.com
KESSLER	kesslergl@butlercountyohio.org
KESSLER	lkessler@tyco.com
KESSLER	jkessler@zenithsystemsllc.com
Kidd	kidda@chsmco.com
Kidd	kiddg2@netzero.com
KIEFFER	lkieffer@mac.com
Kiel	chriskiel.az@gmail.com
KIGHT	kelly.kight@ci.chillicothe.oh.us
Kilbane	jjk5755@hotmail.com
KILEY	dkiley@kaarchitecture.com
Kilgore Jr.	dkilgore@telgian.com
King	cking@landmarksprinkler.com
KING	kk7105@sssnet.com
KING	gekmb@msn.com
Kipp	joekipp94@yahoo.com
KIRBY JR	ferd.terri@gmail.com
Kissner	grkissner@gmail.com
KITCHEN	lkitchen99@aol.com
KITTRICK	alexplus5@aol.com
KITZMILLER	rgkitz@yahoo.com
Klakamp	bklakamp@sbcglobal.net
KLEIN	jklein_3@yahoo.com
Klenke	jklenke@clarkcountyohio.gov
KLETECKA	charles.v.kletecka@jci.com
KLINAR	richard_klinar@cityoflorain.org
KLOCINSKI	pklocin@co.lucas.oh.us
Klubnik	john.klubnik@comunale.com
Kneidl	ronkneidl@fuse.net
KNIESS	phillkniess@sbcglobal.net
KNIGHT	whk03@hotmail.com
KNILANS	rknilans@clarkandpost.com
KNISLEY	jimbobalan@yahoo.com
KNOX	docdestructo@yahoo.com
KOCAB	mkocab@willoughbyohio.com
KOEHLER	jamespaul.koehler@gmail.com
KOKEN	smokinkoken@sbcglobal.net

Koller	tskoller@columbus.gov
KOLMAN	jkolassociates@gmail.com
Konenkamp	jkonenkamp@centuryfp.com
KONYS	pkonys@gmail.com
KOOGAN	koogan@buckeye-express.com
KORNICK	jbkornick@aol.com
KOSKI	ckoski@embarqmail.com
KOSSLER	randC816@gmail.com
KOSSLER	rkossler@simplexgrinnell.com
KOSZTALA	sk9@fuse.net
KOSZTALA	steve.kosztala@hamilton-co.org
KOVACS	skovacs1503@comcast.net
KOWALCZYK	pkowalczyk@seuclid.com
KRAMER	mkramer@ohiovalleyelectric.com
Krill	thomasjknill@gmail.com
KRINER	hkriner@warren.org
Krisjanis	tom.krisjanis@gmail.com
Ksiri	aksiri@columbus.rr.com
Kueffner	mike.kueffner@hamilton-co.org
KULCHYTSKY	danylo@sbcglobal.net
KULCSAR	dkulcsar@brooklynohio.gov
KULCSAR	sel.kulcsar@fairviewpark.org
KUNZ	tpk25@roadrunner.com
KURELIC	1buckeyetom@gmail.com
KURTZ	inspectorkurtz@yahoo.com
KURZEN	jbkurzen@msn.com
KUSS	jonaku@aol.com
KUZMA	akuzma@co.greene.oh.us
Kuznik	rkuznik@cityofbayvillage.com
Kuznik	rkuznik17@gmail.com
LABRIOLA	jlabriola@summitoh.net
LABUDA	rainman109@neo.rr.com
LACAVA	glml86@roadrunner.com
LACKEY JR	eugene.lackey@cincinnati-oh.gov
LACKEY JR	eugene.lackey@gmail.com
LAHETTA	plahetta@cityofelyria.org
LaLonde	llnddg@bex.net
Lalvani	latika.lalvani@hamilton-co.org
LAMB	chrisl@concordfp.com
LAMPING	clamping@clermontcountyohio.gov
LANDEG	blandeg@lakecountyohio.gov
Landis	llandis@ci.springfield.oh.us
LANZER	stuart.lanzer@siemens.com
LARGE	klarge@aol.com
LARKIN	dan@larkinelectric.com
Larkins	slarkins@city.cleveland.oh.us
LASKO	jlasko@com.state.oh.us

LATTARULO	william.lattarulo@hamilton-co.org
Lauer	bigtrain10@yahoo.com
LAVALLE	gene.lavalle@wowway.com
LAW	wesleyelaw@gmail.com
Lawrence	glawrence@simplexgrinnell.com
LAZAROWSKI	g.lazarowski@gmail.com
LECHER	rricklecher@aol.com
Ledbetter	bledbetter@ntainc.com
Ledbetter	ledbetter48@aol.com
Lee	rlee@ntainc.com
Leffel	mleffel@garfieldhts.org
Leffingwell	dleffingwell@hardfire.com
Lehman	llehman@ntainc.com
LEHMAN	jlehman@bw.edu
LEHMAN	clehman@ntainc.com
Leitner	gary_leitner@yahoo.com
LEMAITRE	rlemaitre@oregonohio.org
LEMAITRE	gracie-pie@bex.net
Lemanski	lemanskijon@aol.com
LEMASTER	lemastere@mcohio.org
Lemasters Jr	bill.lemasters@hotmail.com
LE-MON	cindyle-mon@neo.rr.com
Lenardos	dlenardos@simplexgrinnell.com
LENKO	blenko@dublin.oh.us
LENZ	lenzgroup@gmail.com
LEONARD	rleonard@ntainc.com
LEOVIC	dleovic@wickliffefire.org
Leslie	pjleslie@aol.com
LESZCZYNSKI	rlesczcynski@telgian.com
LEWIS	glewis@shambaugh.com
LEWIS	llewis.obcc@gmail.com
LEWIS	dlewis@lifesafetyllc.com
LEWIS	MLEWIS@STOW.OH.US
Lewis Sr	jlewissr@sbcglobal.net
LIEBIG	hjliebig@aol.com
Limes	dlimes0669@gmail.com
Lindsay	mlindsay@ntainc.com
LINN	linnwilliam@yahoo.com
LISTERMANN	davel@concordfp.com
Little	mlittle@newtechlexington.com
Little	ricklittle1219@aol.com
LIVECCHI	rlivecchi@netzero.net
LLOYD	bill.lloyd@ci.fairborn.oh.us
LOBOSCHEFSKI	loboschefski-brandon@maumee.org
LOCKHORN	dave.lockhorn@gmail.com
LOCONTI	rickloconti@outlook.com
LOGUE	mlogue@cityofgirard.com

LOGUE JR	vloguejr@gmail.com
Lonchar	lalonchar@gmail.com
Long	roderick.long@daytonohio.gov
LONG	dlong004@insight.rr.com
LONG	david.long@whitehall-oh.us
LONG	mlong@washingtontwp.org
Longbottom	llongbottom628@yahoo.com
LOPER	eloper@dublin.oh.us
Lopez	llopez@city.cleveland.oh.us
Loree	mattloree@yahoo.com
LOTUS	lotuselectrix@yahoo.com
Loury-Blockum	gblockum@city.cleveland.oh.us
Loury-Blockum	leeloury@yahoo.com
LOVELL	tlovell@nridgeville.org
Lu	dweilu@ibts.org
LUCKETT JR	tom.luckett@ketteringoh.org
LUDOLFF	mludolff@gmail.com
LUSTER SR	cincystop@yahoo.com
Lutz	brettlutz@mdia.us
LYDA	jerrylyda@aol.com
LYDAY	dlyday@groveport.org
LYNAM JR	rjaylynam@tpmechanical.com
Lyons	rlyons@cityofbayvillage.com
LYONS	mlfiredesign@gmail.com
LYONS	jlyons@hwceng.com
Macartney	macartney620@yahoo.com
MacBride	dona149@dom.com
MacBride	pmacbride@cityofwestlake.org
MACIASZEK	jimmyemac@gmail.com
MACK	jmack@ecohba.com
Mackless	j1060@roadrunner.com
MAGUIRE	allan.maguire@comcast.net
MAHAFFEY	ronmahaffey@cinci.rr.com
MAHONEY	mjxmahoney@earthlink.net
MAICHLE	john.maichle@beachwoodohio.com
Maitino	paulmaitino@windstream.net
MALONEY	malotm@co.warren.oh.us
MANDATO	mandatoj@lyndhurst-oh.com
Mandic	stevan2207@gmail.com
MANFRASS	ted@tgmaia.com
MANGAN	manganj@mcohio.org
MANGIO	amangio@yahoo.com
MANION	tjmanion@columbus.gov
MANION	memanion@columbus.gov
MANOS	moveup01@msn.com
MANSOUR	jmmansour@columbus.gov
Marburger	gmarburger@uprightsprinkler.com

MAREK	bn.marek@roadrunner.com
MARINUCCI	ncx@msn.com
MARRELLI JR	jmarrelli@mayfieldvillage.com
MARRIOTT	kmarriott@city.cleveland.oh.us
MARSH	jmarsh56@cox.net
MARSHALL	acmarshall@msn.com
MARSTILLER	team.marstil@yahoo.com
MARTI	marti@cityofmentor.com
MARTIN	RMARTIN15@WOH.RR.COM
MARTIN	martinr@mcohio.org
MARTIN	kenmartinarchitect@att.net
MARTIN	bobm675@fuse.net
MARTIN JR	martinsprinklerdesign@yahoo.com
Martinez	martinez.sito@gmail.com
MASON	rwmason@ashtabulacounty.us
Massacci	bimassac@co.trumbull.oh.us
MASSON	gmasson@cityofavon.com
MASTANDREA	rmastandrea@solonohio.org
MASTRINO	cmastrino@woh.rr.com
MATAN	dbmatan@columbus.gov
Mate	bmate@wideopenwest.com
Matheis	bikerbyjesus@gmail.com
Mathews	aray1230@gmail.com
Mathez	raym@firecontrolinc.net
MATLACK	dmatlack@co.delaware.oh.us
Matthews	cmatt2@roadrunner.com
MAXWELL	troublmax@gmail.com
MAYNARD	walt@maynardent.com
MCBRIDE	aweinspired777@gmail.com
MCBRIDE	david.mcbride@whitehall-oh.us
MCCARTHY	chris.mccarthy@fs.utc.com
MCCLINTOCK	timothymcclintock@icloud.com
MCCOLGAN	jwm2@hotmail.com
McCORKENDALE	ryan@americanfiretech.com
MCCOURT	mmccourt2@cox.net
MCCOURT	mmccourt@cityofbrookpark.com
McCullah	mikemccullah@yahoo.com
MCCUNE	russmccune@gmail.com
MCCURDY	mmccurdy@wowway.com
MCDANIEL	jmcdaniel@telgian.com
MCDERMITT	dmcdermitt@cityofgreenville.org
MCDONOUGH	timothyj.mcdonough@gmail.com
MCDOUGAL	toddmcdougal@aol.com
McDowell	damcdowell@columbus.gov
McElroy	brian.mcelroy@hamilton-co.org
MCERLANE	wmcerlane@springdale.org
MCFANN	searayone19@aol.com

MCFARLAND	james.mcfarland@cincinnati-oh.gov
McGinley	mmcginley@city.cleveland.oh.us
MCGLOTHEN	david.mcglothen@ci.fairborn.oh.us
MCGURN III	McGurn.Joe@gmail.com
MCINTYRE	rmcintyre@fairfieldtwp.org
MCINTYRE	sighomeinc@aol.com
MCLAUGHLIN	rrmcl@ameritech.net
MCLAUGHLIN	cjmarct@yahoo.com
McMichael	jmcmichael@city.cleveland.oh.us
MCMULDREN	rmcmuldren@medinaco.org
MCNAMARA	casey.mcnamara@hamilton-co.org
MCREYNOLDS	jmcreynolds1492@yahoo.com
Medancic	medancicb@gmail.com
MEDANCIC	muci9119@gmail.com
MEDLEY	bmedley@columbus.rr.com
MEEHAN	tudorlawn@gmail.com
MEEKER	rmeek2@hotmail.com
MEEKS	doug.meeks@brewerfire.com
Meiring	glenntmeiring@gmail.com
Mejias-Yancey	joanne.mejias@ketteringoh.org
MEMORY	kvolt45@yahoo.com
MENKE	jmenke@a1ssi.com
MENN	dmenn@eastlakeohio.com
MENSTER	wmenster@comcast.net
MEOLA	jmeola@ctconsultants.com
MERCER	dmercer1@cinci.rr.com
MERZ	mmerz@hilliardohio.gov
MESSING	ccmessing@cobexdesign.com
MESSNER	326mmessner@lightstream.net
Metrick	metricksprinkler@yahoo.com
METZ	rmetz@wcgov.org
Meyer	pmeyer@ahernfire.com
Meyer	tmeyerarch@neo.rr.com
MEYER	chrism@concordfp.com
MEYER	gerald.meyer@cincinnati-oh.gov
MEYER	mmeyer@co.wood.oh.us
MEYER	mey_chas2704@fuse.net
MEYERS	joseph.meyers@lakewoodoh.net
MICK	rmick@ci.springfield.oh.us
MIDGLEY	kenneth1@aol.com
MIELKE	terry@mwmielke.com
MIHALISIN	mmihalisin@co.geauga.oh.us
Milinkovich	marcvich@zoominternet.net
Miller	kdelectric@yahoo.com
Miller	gmiller@co.delaware.oh.us
MILLER	Randy.miller@comunale.com
MILLER	kamlmm@netscape.net

MILLER	mike.miller@strongsville.org
MILLER	cmiller@cedcolumbusoh.com
MILLER	ididitnooneelse@yahoo.com
MILLER	bobmiller2110@yahoo.com
Mindyas	jeff.mindyas@strongsville.org
MINIHAN	sean.minihan@cincinnati-oh.gov
Minnick	duder29@gmail.com
Miracle	customhi@aol.com
MISENKO	jjmisenko@aol.com
Mitchell	m.ronald@sbcglobal.net
MITCHELL	jmitchell@centuryfp.com
MITCHELL	jimm@ma-architects.com
MITCHELL	mitchell.8@osu.edu
MLYNAR	patronml@aol.com
MODAFARI	jmodafari@simplexgrinnell.com
Moeller	wmoeller@cityofstbernard.org
Molinski	m_molinski@yahoo.com
Molnar	dmolnar1@hotmail.com
Monaco	mxm32167@yahoo.com
MONACO	sky88line@hotmail.com
MONACO	ninomonaco@sbcglobal.net
MONEA	tmonea@woosteroh.com
Mong	cmong352@yahoo.com
Monroe	ljmrc29@yahoo.com
MONTAN	nmontan@ecohba.com
MONTGOMERY	lamontgomery@columbus.gov
Moore	pmoore20@yahoo.com
Moore	hardwkr17@yahoo.com
MOORE	tmoore1767@aol.com
MOORE	smoore019@columbus.rr.com
MOORE	sean.moore@hamilton-co.org
MORAN	kmoran256@aol.com
MORATH	dmorath@cinci.rr.com
MORELOCK	reasemo@yahoo.com
Morgan	angela.morgan@daytonohio.gov
Morgano	lennmorg@sbcglobal.net
MORO	mmoro001@ameritech.net
Morris	pyro34230@gmail.com
MORRIS	morris06@adelphia.net
MOSER	jm26km24@roadrunner.com
Mould	jmould@emdstudioinc.com
MUCCI	statese@gmail.com
MUELLER	jmueller@epssecurity.com
Muir	jlmuir@columbus.gov
MULARONI	mularoni@aol.com
MULLENS	mmullens@hilliardohio.gov
Mullins	lmullins@selectsecurity.com

Mullins	dmullins0982@yahoo.com
MUMFREY	mmumfrey@inspectionbureau.com
Munz	dmunz@ntainc.com
Murawski Jr	benniemurawski@yahoo.com
MURPHY	murphyfiredesign@yahoo.com
MURRAY	lgmurray@netzero.com
Murray Jr	tjmurray73@yahoo.com
MURRY	robertm@securitec1.com
MUSKA	davidw.muska@energizer.com
MYERS	bdp@cityofstbernard.org
MYERS	jay.myers@fayette-co-oh.com
NADEAU	wcnadeau@yahoo.com
NADER	joe.nader@kzf.com
NAGY JR	pnagy11@bex.net
NAKOUZI	raficn@forestpark.org
NAPLES	john.naples@com.state.oh.us
NASH	emscoord@westcarrollton.org
Nause	pnause@mcfd71.org
NEAL	blneal@columbus.rr.com
NEAL JR	lnealabco@woh.rr.com
NEAL JR	billaur95@hotmail.com
Neargarder	steve.neargarder@chapel.com
Neff	neffshack@roadrunner.com
NEFF	dneff@koester-corp.com
NEFF	roger.neff@evendaleohio.org
NEIGHBOR	banvln@aol.com
Nelson	glasshouse1863@gmail.com
Nelson	pnelsond@gmail.com
NELSON	rnelson@medinaco.org
NEMCHIK	davidnemchik@msn.com
NEMEC	steve200769@yahoo.com
NEUMEYER	neumeyerken@yahoo.com
Nicholas	jimn@firefoe.com
NICHOLAS	earniesr@firefoe.com
NICHOLLS	gnicholls@preview-group.com
NICHOLSON	frankn@speelmanelectric.com
NIED	walnutrdg@gmail.com
NIMON	jnimon@newalbanyohio.org
Nissel	dnissel@sbcglobal.net
NITZSCHE	nitz424@gmail.com
Nochta	michelle.nochta@lakewoodoh.net
NOE	cnoe@cityofsharonville.com
NOE	claude.noe@gmail.com
NOLAND	L7445@aol.com
NORRIS	donn63@comcast.net
NORTH	kevinnorth@firedande.com
NOTTER	hnotter@suite224.net

NOTTURNIANO	tonynotturniano@gmail.com
NOVAK	nj8464@sbcglobal.net
Nugent	pnugent@rrcity.com
NUSKY	nuskydl@butlercountyohio.org
Nussbaum	mnussbaum@woosteroh.com
OBERG	wireguy68@gmail.com
OBERST	koberst@integratedprotection.com
O'BRIAN	reo'brian@columbus.gov
OCKINGTON	tockington@frontier.com
O'CONNELL	mvoconnell@sbcglobal.net
O'CONNELL	moconnell@city.cleveland.oh.us
O'CONNORS	boconno@live.com
O'CONNORS	boconnors@elford.com
O'Donnell	jodonnell@cityofeuclid.com
OHLER	dohler@com.state.oh.us
Ohmer	sheishyii@yahoo.com
Ohrstedt	mohrstedt@sbcglobal.net
Okoye	nwikebokoye@hotmail.com
Oldham	bill@apfire.net
Oliver	mark.oliver@cincinnati-oh.gov
Oliver	olivers1092@yahoo.com
OLIVER JR	ned.oliver@koorsen.com
OLIVER JR	joliver@city.cleveland.oh.us
Olszewski	volszewski@co.union.oh.us
Olszewski	vicolszewski@gmail.com
OPATRNY	carlopatrny@sbcglobal.net
OPREA	steve.oprea@strongsville.org
O'REGAN	pipewerx@yahoo.com
ORR	thebear4945@yahoo.com
OSGOOD	rosgood@cityofsharonville.com
OSPELT	ospelt@sbcglobal.net
OSSEGE	sossege@cinci.rr.com
OSTERDAY JR	costerday@ntainc.com
OSTERTAG	bobostertag@roadrunner.com
OTTO	eric.otto@cincinnati-oh.gov
OYSTER	royster@simplexgrinnell.com
PACHAN	wmichael9@gmail.com
PACKARD	spackard1@msn.com
PAHANISH	BPahanish@aol.com
PAIGE	george.paige@ci.ravenna.oh.us
PAISLEY	kpaisley@hotmail.com
Palfi	s.palfi@sbcglobal.net
PALL	richspall@aol.com
Palladino	njp.vplarch@sbcglobal.net
Panichi	julie.panichi@gmail.com
Papp	spapp@middleburgheights.com
Pare III	gerard.pare@cincinnati-oh.gov

Parker	bparker@co.champaign.oh.us
PARKER	jparker81546@aol.com
Parks	mikeparks58@icloud.com
Parmelee	christopherparmelee@yahoo.com
Parmelee	christopher.parmelee@lakewoodoh.net
PARROTT	bparrott@columbus.rr.com
PARSLEY	parsley8993@msn.com
PARSONS	larryeparsons65@yahoo.com
PARSONS	larry@cityofspringboro.com
PARTEE	lpartee@simplexgrinnell.com
Partridge	philip.partridge@cincinnati-oh.gov
Passarell	pbihomeimprovement@gmail.com
Patchen	bpatchen2000@yahoo.com
Pate	dpate@mapleheightsohio.com
PATEL	rpatel@city.cleveland.oh.us
PATRICK	duanekpatrick@gmail.com
PATRICK	rlpelectric@aol.com
PATTERSON	mpatterson@live.com
PATTERSON	doug.patterson@atech-fire.com
PATTON	rp4290160@aol.com
PATZKOWSKY	chpatzkowsky@msn.com
PAULLIN	devonddp@gmail.com
Paulsen	jpaulsen@co.champaign.oh.us
PAULSEN	john@crwnfire.com
PAYNE	jwpayne99@gmail.com
PAYNE	talt4093@yahoo.com
Pearce	jpearce@superiorfire.net
PECH	apech@arpheating.com
Peiker	npeiker@earthlink.net
PELLERANO	mpell199@aol.com
Peltz	peltzd@north-olmsted.com
Peniston	wpeniston@numail.org
PENNIX	jerod.pennix@cantonohio.gov
Peoples	royp.1271@hotmail.com
Perkins	bperkins@simplexgrinnell.com
PERKINS	aperkins@wtwp.com
PEROTTI	timperotti@sbcglobal.net
Peterman	steven.peterman@cincinnati-oh.gov
PETERS	bpeters@preferredfire.com
PETERSON	bipeters@co.trumbull.oh.us
PETERSON	speterson1960@gmail.com
PETO	fpeto@att.net
Petrecca	jpetrecca@jcparchitectural.com
Petrecca	jpetrecca@zoominternet.net
PETRIE	dpetrie@cebridge.net
Petrou	candtp@live.com
Petrucci	dpetrucci@progressivemech.com

PETTIT II	RPETTIT@CO.UNION.OH.US
PHILLIPS	jeffphillips1@frontier.com
PHILLIPS	william.phillips@com.state.oh.us
PHILLIPS JR	dphillips@columbus.rr.com
Phipps	mphipps@delawareohio.net
PIASECKI JR	jerry@gfpadvantage.com
PIATAK	jpiatak@sbcglobal.net
Piatt	mpiatt@integratedprotection.com
PIATT	mpiatt@fairfield-city.org
PIAZZA	donald53@juno.com
PIETRZAK	rdy2race02@woh.rr.com
PINKERMAN	esinspector@ameritech.net
PINKNEY	pincdogg@sbcglobal.net
PINNEY	jepinneys@gmail.com
PIRKO	johnpirko@att.net
PISCOPO	rapiscopo@roadrunner.com
PITZER	gpitzer@clermontcountyohio.gov
PITZER	inspector510@yahoo.com
Pizzuti	gpizzuti@glennpizzutiarchitect.com
PLANT	hplant@uaschools.org
PLATTON	mplatton@aol.com
PLAZA	saul_plaza@cityoflorain.org
Pochatek	jpochatek@cityofberea.org
POE	gpoe@inspectionbureau.com
POIRIER	m-epoirier@sbcglobal.net
POIRIER	mpoirier@groveport.org
POLAND	icerun@woh.rr.com
POLING	troy@affordablefirepro.com
POLINSKI	spolinski@cityofoberlin.com
POLINSKI	stevepolinski@adelphia.net
POLLEY	pjpolley@earthlink.net
POLLOCK JR	pol8129@yahoo.com
Ponchak	gponchak@ipsid.com
Pool	timpool@sbcglobal.net
Poorman	jarrodp@xfireprotection.com
PORTER	weilerot@gmail.com
POST	op317@sbcglobal.net
POTTLITZER	todd@vulcanfiresystems.com
POTTS	robpotts1@woh.rr.com
POULIMENOS	j.poulimenos@femoran.com
POULOS	poulosarc@aol.com
Poulton	ltctrpret@yahoo.com
Powell	roger@summitsprinklerdesign.com
Powell Jr	larryjr_5@yahoo.com
Powers	rpowers@trarnold.com
POWERS	robert.powers@fayette-co-oh.com
Preston	prestonatorx@gmail.com

Preston	cpreston@universityheights.com
Price	matt@capfire.com
PRICE	rprice14@columbus.rr.com
PROPHATER	kprophater@orrprotection.com
PRYKAN	cactus6118@yahoo.com
PRYOR	jpryor@lcounty.com
Pullins	tp4plumbing@gmail.com
Purkey	npurkey@comcast.net
PUSKAS	larrypuskas@yahoo.com
PUSKAS	puskasl@lyndhurst-oh.com
PUSTI	dpusti@mparc.com
Puterbaugh	jsputerbaugh@juno.com
PUTNAM	kwputt@horizonview.net
PYERS	gwpyers@columbus.gov
PYERS	georgepyers@yahoo.com
Quesenberry	jasonryan2778@yahoo.com
RABE	rrabe@shambaugh.com
RABER	john.raber@koorsen.com
RADY	brady@painesville.com
Ramos	jramos@city.cleveland.oh.us
RAMSER	smrandajr@yahoo.com
Ramsey	rodney_ramsey@att.net
Randles	randlesc@hotmail.com
RANKIN	carankin@columbus.gov
Rao	lkss3941@aol.com
Rapnicki	mjrapnicki@sbcglobal.net
RASKIN	stanraskin@aol.com
RAUCH	crauch@washingtontwp.org
RAWSON	jrawson@villageofnewalbany.org
REAPE	reapemechanical@hotmail.com
REAPER	wayne.reaper@gmail.com
Reed	jreed@woosteroh.com
REEVES	MACREEVES52@CINCI.RR.COM
REFFITT	mreffitt@prtcnet.org
Regan	michael.regan@com.state.oh.us
REGOLI	spregoli@juno.com
Reich	rayreich68@gmail.com
REID	rreid@co.union.oh.us
Reiff	casey.reiff@koorsen.com
REINSMITH	lreinsmith1@ci.wilmington.oh.us
Reisdorf	mreisdorf@richlandcountyoh.us
Renzulli	vrenzulli@simplexgrinnell.com
Retherford	retherfordmd@butlercountyohio.org
Retherford	MR05HD@aol.com
RETTBERG	inspector64@att.net
REVILOCK	gtrcom@ameritech.net
Reynolds	miker69.mr@gmail.com

RHODES	kevin.rhodes@cincinnati-oh.gov
RHUDE	maryetta@centurylink.net
RHYM	rrhym@sbcglobal.net
Rice	ricepaddy1@hotmail.com
Rice	srice@abcofire.com
RICHARDS	cathyjrich@aol.com
RICHARDSON JR	jarichardson@columbus.gov
RICHCREEK	LLRichcreek@muskingumcounty.org
RICHHART	danrch@aol.com
Richter	drichter@ntainc.com
RIEDE	briede@silcofs.com
Riley	brock.riley25@yahoo.com
Riley	don.riley@checkview.com
RILEY	gunneriley@gmail.com
Rinehart	rinehartwl@yahoo.com
RISSER	stephen.risser@gmail.com
Ritchey	djritchey@herculesfire.com
Ritchey	fxritchey@columbus.gov
RITZENTHALER	scritzelec@gmail.com
Rivera	cgcrivera@yahoo.com
RIVERA	riverak@ci.hamilton.oh.us
Rizor	kjr248@gmail.com
ROAHRIG	clroahrig@columbus.gov
ROBBINS	chad.robbins1973@yahoo.com
Roberts	joe.roberts@cincinnati-oh.gov
ROBERTS	swilkie25@gmail.com
ROBERTS	proberts721@yahoo.com
ROBERTS	rer2295@neo.rr.com
ROBERTSON JR	xtreamcomfortsystems@gmail.com
ROBINSON	ttlogann@gmail.com
ROBINSON	chrobinson82@yahoo.com
ROBINSON	jeff.robinson@comunale.com
Robison	rrobison@cityofdefiance.com
Robison	rexandlori@aol.com
RODIC	bobrodic@mayfieldheights.org
RODIC	rrodic@twinsburg.oh.us
Rodriguez	jill.rodriguez@convergint.com
ROE	roefire@twc.com
ROENIGK	baroenigk@msn.com
ROGERS	grogers815@aol.com
ROGGE	crogge@preferredfire.com
Romanyak	andrew.romanyak@grunau.com
Romp	jmromp@yahoo.com
ROOSA	inspecluso851@yahoo.com
Rosato	lelandrosato@gmail.com
ROSE	denniswrose04@yahoo.com
ROSE	brian.rose@fairfield-city.org

Ross	paul.ross@cincinnati-oh.gov
ROSS	rossarch@msn.com
ROSS	metdross@hotmail.com
Rossi	adrossi@americanfs.net
Roulette	japadyn@columbus.rr.com
ROUSH	maroush@columbus.gov
ROYAL	seroyal@currenthvac.com
ROZANSKI	jrozanski@dublin.oh.us
Rubadue	tim@rubadueconstruction.com
RUCKER	jrucker3@woh.rr.com
RUDA	mjrgfps@yahoo.com
RUDEY	mrudey@co.wood.oh.us
RUFFIN	jruffin@city.cleveland.oh.us
RUMMEL	bob@rummelelectric.net
Rupert	rupertd@ci.hamilton.oh.us
RUSANOWSKY	jerusanowsky@gmail.com
Rush	jeffrush2112@gmail.com
Rush	lwb704@hotmail.com
RUSINOW	chunkner@aol.com
Russ	charles_russ1964@yahoo.com
RUSSELL	dandrrussell@sbcglobal.net
RUSSELL	inspectorrussell@yahoo.com
RUSSO	arusso3@oh.rr.com
RUST	rj51rust@cinci.rr.com
Ryan	ronaldl.ryan@yahoo.com
RYAN	DSRYAN@FUSE.NET
SABOLIK	vince@wtfp.net
Sack	rsack@cityofwickliffe.com
SALATA	dukdipple@roadrunner.com
SALLAZ	charnsal@att.net
SALMEN	steve.salmen@comunale.com
SAMMON JR	dsammon@centervilleohio.gov
SAMPSEL	msampsel@co.union.oh.us
SANDER	tal61@aol.com
Sanders	jsanders@co.greene.oh.us
SANKAL	sank2new@yahoo.com
Santillo	vsantillo@city.cleveland.oh.us
SANTORA	rsantora@city.cleveland.oh.us
SANTORO	santoro@one.net
Saunders	radconc@rtmc.net
Savasta	mgsavasta@msn.com
Saxe	dsaxe@macedonia.oh.us
Sayre	rjgard950@aol.com
Sayre	rcgard950@aol.com
SCHAEFER	jcschaefer@columbus.gov
Schaefer IV	jschaefer@claypoolelectric.com
SCHAFER	ohbeemer2004@yahoo.com

SCHAFFNER	tschaffner@villageofnewalbany.org
SCHARTON	johnscharton@schartonelectric.net
SCHERRY	dscherry@herschmanarchitects.com
SCHIFERL	dsqualityfire@embarqmail.com
SCHILLING	rschill@hughes.net
SCHMENK	wschmenk@att.net
Schmersal	schmersal.sa@me.com
Schmidt	randall_ds@yahoo.com
SCHMIDT	fsdinc@hotmail.com
SCHMIDT	rschmidt@ovis.cc
Schmitt	jtschmitt26@yahoo.com
SCHMITT	schmitt.ronald@gmail.com
SCHMITZ	schmitzjsj@hotmail.com
SCHNEIDER	schneiderj@north-olmsted.com
SCHOENER	steve.schoener@daytonohio.gov
SCHOFIELD	dsa001@sbcglobal.net
SCHOLL	sscholl@fmsarchitects.com
SCHREINER	paulmschreiner@gmail.com
SCHRIEWER	richard.schriewer@cincinnati-oh.gov
SCHROEDER	schroeder_252@yahoo.com
SCHUELER	jeschueler@fuse.net
SCHULKE	wgschulke@woh.rr.com
SCHULTZ	gaschultz@columbus.gov
SCHUMACHER	william.l.schumacher@jci.com
SCHUTZ	rjschutz@aol.com
Schwonek	pschwonek@yahoo.com
Scott	stevescott723@gmail.com
SCOTT	dascott@dependablefireprotection.com
Scudder	bscudder@telgian.com
SEBASTIAN	sebastianlr@msn.com
SEGUIN	jseguin@firelinesprinkler.com
SEIBERT	anseib@atmc.net
SELLERS JR	ernie.sellers@cantonohio.gov
SELLERS JR	sellersbuilding9@hotmail.com
SELLS	levisells@eckertfireprotection.com
SEMPSROTT	ron.sempsrott@co.warren.oh.us
SERINA	pserina@sbcglobal.net
SETTERS	dts@dts-llc.com
SEYBOLDT	pseyboldt@sbcglobal.net
Seymore	cseymore@ntainc.com
SHAFFER	tshaffer@clarkcountyohio.gov
Shane	pshane@summitoh.net
SHANER	mshanermike@aol.com
SHARP	dsharp@avenfire.com
SHARP	wsharp@cincylifesafety.com
Shaver	shaver.20@sbcglobal.net
SHAVER	mshaver@maverickfirepro.com

SHAW	rs60rs@buckeye-access.com
SHAWVER	dshawver@co.greene.oh.us
Sheaf	sasheaf@columbus.gov
SHEETS	larry.sheets@strongsville.org
SHELDON	roundtowncbo@hotmail.com
Shelley	joshanddanashelley@gmail.com
SHENOT	mshenot@summitoh.net
Shepherd	shepherd@buckeye-express.com
Sherman	sherman.james.r@gmail.com
Shewfelt	nshewfelt@telgian.com
SHIELDS	william_shields@earthlink.net
SHIELDS	806gtp@gmail.com
SHILLING	jshilling72@gmail.com
Shirey	danshirey575@gmail.com
Shockley	mshockley@city.cleveland.oh.us
SHOEMAKER	tshoe140@horizonview.net
SHORTER	estringshorter@yahoo.com
SHULL	bshull@brigadefire.net
SHUMAKER	deshumaker@att.net
Siebert	m_siebert@att.net
SIEHL	siehl@englewood.oh.us
SIERKS	rsierks@trarnold.com
SIEVERS	ssievers1@hotmail.com
SILLA	fsilla@massillonohio.com
SILVER	charlesshelley@aol.com
SIMMONS	dsimmons@karpinskieng.com
SIMMONS	wj.simmons@earthlink.net
SIMON	mrsimonarchitect@gmail.com
SIMONS	wsimons@eriecohealthohio.org
SINCLAIR	msinclair@city.cleveland.oh.us
SINCLAIR	ksinclair@integratedprotection.com
SINES III	rsines@simplexgrinnell.com
SINGLETON	jsingleton@westlickingfire.org
SIPKA	jksipka@neo.rr.com
Sisia	tyler@pdssystems.com
Sisia	philip@pdssystems.com
SIVINSKI	dsivinski@sbcglobal.net
SKAPIN	jskapin@aol.com
SKELDON	sskeldon@wtwp.com
SKVASIK	mjskvasik@gmail.com
SLIWINSKI	bisliwin@co.trumbull.oh.us
Slota	fcslota@hotmail.com
Slota	fslota@ci.reynoldsburg.oh.us
SMEREK	smerekroseann@yahoo.com
SMEREK	dsmerek@northroyalton.org
Smith	bjsmith@woh.rr.com
Smith	65cls@columbus.rr.com

Smith	csmith2@city.cleveland.oh.us
SMITH	smithgrs@fuse.net
SMITH	rick.smith@comunale.com
SMITH	rick@hamrickfire.com
SMITH	smithcandrew@aol.com
SMITH	greg.smith@daytonohio.gov
SMITH	smithrd@ci.hamilton.oh.us
SMITH	tsmith@coz.org
SMITH	jps4444@gmail.com
SMITH	smith1282@roadrunner.com
SMITH	geojsmith@windstream.net
SMITH	jasmith7520@yahoo.com
SMITH	niceter4@grandecom.net
SMYCZEK	ongeeson@att.net
SMYTHE	rsmythe@ohioelectricservices.com
Snider	justin.snider@jesshoward.com
SNODGRASS	PEDBZI@westcarrollton.org
Snyderburn	msnyderb04@hughes.net
SOCOLOFF	shelnan1@roadrunner.com
Sonenstein	howardsonenstein@aol.com
SOULES	rsoules@neo.rr.com
Sowers	jsowers@miamicountyohio.gov
Spada	dwsrt74@aol.com
Sparks	jpsparkscompany@yahoo.com
Spayth	tspayth@co.madison.oh.us
Spears	adrianspears@ymail.com
SPEARS	tearle.spears@toledo.oh.gov
SPENCER	spncr497@aol.com
SPEWEIKE	speweike@msn.com
Sphon	northcoastatv@gmail.com
SPIERS	espiers@co.delaware.oh.us
Spies	espies@zoomtown.com
SPILLE	kjspille@aol.com
SPIVEY	sspydux@aol.com
SPLAWN	shannon.splawn@jacobs.com
SPRAGG	mspragg437@comcast.net
Spruill Jr	jcspruill@columbus.gov
SPRY	michael.spry@cincinnati-oh.gov
SPRY	mtspry@fuse.net
SPURLING	spurjp@co.warren.oh.us
SPURLING	wls@zoomtown.com
SPURLING	dspurling@centervilleohio.gov
STACY	mstacy1@columbus.rr.com
STADLER	robert_g_stadler@keybank.com
STADLER	stadra@co.warren.oh.us
Stadtman	rstadtman@fire101.net
Stahl	jacksue_1981@yahoo.com

Stalnaker	rewire70@gmail.com
STALTER	donalde.stalter@energizer.com
Standering	standering@aol.com
Stanford	stanfordplumbing@aol.com
Stanich	stanich.chris@gmail.com
STANLEY	gws@wiginton.net
Starks	duane.starks@cincinnati-oh.gov
States	stateselectric@outlook.com
Steele	burlsteele@buckeye-express.com
STEELE	andrew.steele@daytonohio.gov
Stefancin	captainstefancin@aol.com
STEHLIN	mstehlin@gmail.com
Steidel	yarn2crochet@yahoo.com
Steigerwald	petesteigerwald@aol.com
Steiner	electric65@ymail.com
STEINGASSER	sarahjo4@comcast.net
STELZER	rstelzer@insight.rr.com
STEMM	DCCS@COZ.ORG
STEPPENBACKER	dsteppenbacker@twinsburg.oh.us
STEWART	lstewart@brigadefire.net
STEWART	phil_stewart1224@yahoo.com
STEWART	Petegstewart@gmail.com
STIEB	bobstieb@gmail.com
STIGALT	jstigalt@aol.com
STITT	tbr1563@aol.com
STOCKSDALE	jestocksdale@columbus.gov
STOCKY	mstocky9@gmail.com
STOECKEL	stoeckel@eckertfireprotection.com
STOKER	gerry@stoker.org
STOLL	tad.stoll@cityofspringboro.com
Stoltz	bstoltz1@hotmail.com
Stone	fyerguy1998@sbcglobal.net
Stone	mrcstn458@gmail.com
STONE	jstone11@neo.rr.com
STONER	sues@wolverinefp.com
STOROZUK	mstrohz51@gmail.com
STOUFFER	ilovemyzee@yahoo.com
Stover	john.stover@continental-fire.com
Straub	lori.straub@toledo.oh.gov
STRAYER	lstrayer@columbus.rr.com
Streng	aaronstreng@zoominternet.net
STRICHKO	david.strichko@lakecountyohio.gov
STRICKLAND	durango105@sbcglobal.net
STROME	bob.strome@cityofmiamisburg.org
Strong	jstrong@ntainc.com
STROUD	dhoodman43@yahoo.com
STROUT	richard.strout@siemens.com

STUDER	tastuder@hotmail.com
STUMP	sstumpnsf@hotmail.com
STYBORSKI	kcajski@ameritech.net
Sugar	asugar@city.cleveland.oh.us
SUGAR	elvissugar@hotmail.com
SUGAR	esugar@city.cleveland.oh.us
Sullivan	msul@ma.rr.com
Sullivan	jsullivan518@yahoo.com
SURELLA	surella@wowway.com
SUSAK	meighansmimi@aol.com
SUSONG	rsusong@woh.rr.com
Sutphin	chazmsut@bex.net
SUTTER	bsutter@washingtontwp.org
SWAN	swanstef@bex.net
SWARTZ	klswartz@hotmail.com
SWEENEY	michael.sweeney@cincinnati-oh.gov
SWEIGARD	david.sweigard@outlook.com
Sweitzer	rjsweitzer@verizon.net
SWICK	edwardhswick@sbcglobal.net
Switzer	therentedpencil@roadrunner.com
SWOPE	gswope@co.wood.oh.us
SWYMELER	todd.swymeler@gmail.com
SYLVESTER	john@sylvesterdesign.com
Taborn	jeff.taborn@ci.chillicothe.oh.us
Taddonio	tom.taddonio@toledo.oh.gov
TALBOTT	rstalbott@brewersprinkler.com
Tanner	tanner.jr@fuse.net
TANSY	btansy@dalmatianfire.net
TAPPER	wjtapper@hotmail.com
TARKEY	tarkey@sbcglobal.net
TARVIN	tarvinelectric@zoomtown.com
TATRO	ldtatro@muskingumcounty.org
Taylor	ltaylor@a1ssi.com
Taylor	dtaylor@bass-security.com
Taylor	co8fireman@yahoo.com
Taylor	btaylor92577@yahoo.com
TAYLOR	rtaylor@city.cleveland.oh.us
TAYLOR	tytaylor@hotmail.com
TAYLOR	twtaylor@columbus.gov
TAYLOR	al.taylor@cincinnati-oh.gov
TAYLOR	taylorbros@att.net
TAYLOR	kmjt2000@cox.net
TEAL	phillip.teal@com.state.oh.us
TEGELER	tooltime4ever@gmail.com
Temkiewicz	tooski@gmail.com
TEMME	ltem32@yahoo.com
TENSI	davetensi@yahoo.com

TEPE	darlenetepe@gmail.com
TERRACE	terrace@englewood.oh.us
TESAR	timothytesar@mayfieldheights.org
Thom	sthom@ecghd.org
Thomas	mthomas@progressivemech.com
Thomas	jt92577@yahoo.com
Thomas	ohioarchitect@gmail.com
Thomas	bradenthomas1@gmail.com
THOMAS	rthomas3801@gmail.com
Thompson	rethompson1961@gmail.com
THOMPSON	tfpdllc@gmail.com
THOMPSON	mttdesigner@comcast.net
THOMPSON	ncfire@earthlink.net
THOMPSON	Pappaw0057@yahoo.com
THOMPSON	jntcrafts@msn.com
THOMPSON	michael.thompson@com.state.oh.us
THOMPSON	lynn.thompson@toledo.oh.gov
THORNTON	pthornton@sixmoae.com
TILLER	davetiller@aol.com
TIPTON	onedogand3cats@aol.com
TIROLY	atiroly@atcofirepro.com
TODD	inspector521@yahoo.com
TOMPOS	dtompos@ntainc.com
TOMPOS	gtompos@ntainc.com
TOOLE	wrt@tooleinspectors.com
TORDIFF JR	rftordiff@hotmail.com
TOTH	nicetdesigner@gmail.com
TOY JR	evtoy612@zoominternet.net
Travis	franktravis62@gmail.com
TREBISKY	dtrebisky@simplexgrinnell.com
Trent	n2_actn@yahoo.com
TRENTMAN	trents82@hotmail.com
TRIBOLET	ctribolet@frontier.com
Tschida	davidt@firepros.com
TUCKER	jtucker4@frontier.com
TUCK-MACALLA	ericmacalla@yahoo.com
TUDOR	gatudor@columbus.gov
TUNISON	tunisonj@mcohio.org
TURCHANIK	bob@foxfireprotection.com
TURNER	maturner50@cinci.rr.com
TURNER	turner1750@comcast.net
TURNER	gturner7_23@yahoo.com
TURNER	lcturner44@aol.com
TUSING	ron@rontusing.com
TUTTLE	larryt@cityofmiddletown.org
TYLER	jtyler@dublin.oh.us
UBELHOR	du374@aol.com

ULRICH	bruce@jacksonsprinkler.com
ULRICH	bulrich@co.lucas.oh.us
UNGAR	cungar@columbus.rr.com
UNGERER	gary@technicondesigngroup.com
URANKAR	jurankar@outlook.com
UROSEVA	juroseva@sbcglobal.net
UTER III	uterplumbing2007@yahoo.com
UTIS	innau@sbcglobal.net
Vail	pvail@ci.lancaster.oh.us
Valerius	tvalerius23@aol.com
VAN GORDER	tvangorder@silcofs.com
VANBENSCHOTEN	phil.vanbenschoten@hamilton-co.org
VANCE	richard.vance@com.state.oh.us
Vance Jr.	bobvance@brownandbills.com
Vanderman	tvanderman38@fuse.net
VANHART	vanhartengr@yahoo.com
VANOVER	tomvanover1@gmail.com
VANTINE	chuck.vantine@honeywell.com
VAUGHN SR	rvaughn@orrprotection.com
Velez	evelez@city.cleveland.oh.us
Velez	davidvelezelectrical@yahoo.com
VELLIQUETTE	denvelliquette@rocketmail.com
VENDELAND	normanvendeland@yahoo.com
VERBIAR	j.verbiar@yahoo.com
Veronie	gveronie@bex.net
VESELSKY	dveselsky@city.cleveland.oh.us
VICARS	wcvicars@frontier.com
Viglione	vinnie.viglione@grunau.us
VIGORITO	tvigorito@thecityofniles.com
VILKAS	robert.vilkas@hotmail.com
VINAY	mvinay@cityofbarberton.com
VINCENT III	wcviii@yahoo.com
VIOLA	mark@sasipmvarchitect.com
Virosteck	tteck67@yahoo.com
VITTARDI	blueboy7661@yahoo.com
VODANOFF	nick@thearchitectsinc.com
VOGEL	steevo6161@yahoo.com
VOLLE	dvolle@cityofavon.com
VON DUHN	mikevonduhn@hotmail.com
Vorhees	karen_e_2002@yahoo.com
VOROS	jvoros@nridgeville.org
VUKETICH	ronaldvuke@aol.com
WADE	clwade@columbus.gov
WAGENKNECHT	kewagenknecht@columbus.gov
Wagner	robert.wagner@cincinnati-oh.gov
WAGNER	mark@psdg.us
Wakeley	bwakeley@wcgov.org

WAKELEY	twakeley@co.union.oh.us
WALDEN	katwalden@live.com
Walker	dwalker1340@yahoo.com
WALKER	napskarenwalker@yahoo.com
WALKER JR	DWalker@northcantonohio.com
WALKER JR	heywalk2000@yahoo.com
WALSH	tim@bci-tech.com
WALSH	mwalsh@colerain.org
WALSH	epayer@eastlakeohio.com
Walters	swalt007@gmail.com
WALTERS	dynatimhd@yahoo.com
WALTERS	mwfpd7@yahoo.com
WALTERS	hwalters25@gmail.com
WALTERS	inspector514@yahoo.com
WALTON JR	jwaltonbuckeye@comcast.net
WAMBO	patrick.wambo@sbcglobal.net
Ward	michaelward9744@sbcglobal.net
WARD	rlw8169@yahoo.com
Warner	jwarner@delawareohio.net
Warnock	twarnock@lcounty.com
WASKIELIS	robert.waskielis@comunale.com
WASSERMAN	gwasserman@ci.oregon.oh.us
Watercutter	mkwatercutter@myfrontiermail.com
WATKINS	troywatkins1111@gmail.com
WATSON	mwatson9287@aol.com
WAYMER	jwaymer@roadrunner.com
Webber	radco@bnin.net
Weber	rgweber159j@aol.com
WEBER	frankweber@oh.rr.com
WEHRKAMP	mwehrkamp@aol.com
WEIL	eweil@zoomtown.com
Weishaupt	ericweishaupt@gmail.com
WEIZER	res727@att.net
Welch	bobby.welch@veteranfireprotection.com
WELKER	terry.welker@ketteringoh.org
Wells	jp@landmarksprinkler.com
Wells	rwells@city.cleveland.oh.us
WELLS	2mjwells@gmail.com
WELLS	dwells@richlandhealth.org
WELTNER	jweltner@simplexgrinnell.com
WENECK	dennis@weneck.com
WENNER	neal_06harley@yahoo.com
WENZEL	dwenzel@cityofpowell.us
WENZLER	twenzler@moraineoh.org
WERTZ	kathyawertz@yahoo.com
WERVEY	billwervey@adelphia.net
WEST	mwest@dalmatianfire.net

WESTBROOK	rwestbrook@wtwp.com
Westcott III	bighouse@bex.net
WESTFALL	rkitect76@sssnet.com
Weston	eric@firefoe.com
Westphal	dwestphal55@yahoo.com
Westphal	dwestphal@wayneoh.org
WETTRICK	rwet314@sbcglobal.net
WETZEL	swetzel779@aol.com
WEYGANDT	john.weygandt@comunale.com
Whalen Jr	gerald.whalen@yahoo.com
Wheeler	jwheeler@3s-incorporated.com
Whewell	awhewell@3s-incorporated.com
White	white@englewood.oh.us
WHITE	inspectormw@aol.com
WHITE	bwhite@milfordohio.org
WHITE	michael.s.white@siemens.com
WHITE	inspectorfw@aol.com
WHOLF	wholf-bruce@maumee.org
WHOLF	bwholfman@yahoo.com
Wiblin	builddept@hotmail.com
WICKMAN	mawickman@aol.com
WICKMAN	jeffwickman@msn.com
Widlak	gwidlak@att.net
WIELAND	rwieland@fieldsfire.com
WIEMAN	tsfadscott@aim.com
WIESMAN	wiesman@fuse.net
WILCOX JR	rtwilcox@cinci.rr.com
WILDER	rwilder@cityofwestlake.org
WILDERMUTH	mhwildermuth@oh.rr.com
WILES	greg.wiles@cincinnati-oh.gov
Wiley	wilos@hotmail.com
WILHELM	garylwilhelm@aol.com
WILHELM	gary@wristengineering.com
Wilkin	twilkin@hillsboroohio.net
Williams	jwilliams@mov-is.com
Williams	lwilliams22@city.cleveland.oh.us
WILLIAMS	william.williams@co.warren.oh.us
WILLIAMS	blwarchitect@yahoo.com
WILLIAMS	twilliams@genesishcs.org
WILLIAMS	willifam@wcoil.com
WILLIAMS	rjwilliams@columbus.gov
WILLMAN	131313@firehousemail.com
WILLS	mrwills@columbus.gov
WILMOT	danielwilmot@earthlink.net
WILSON	rwilson@firematic.comcastbiz.net
WILSON	polkaplayer9@gmail.com
WILSON	kwilson@cityofpowell.us

WINKEL	winkelectric@hotmail.com
WINN	swinn@miamicountyohio.gov
Wise	tom.wise@cincinnati-oh.gov
WISE	lonnie.wise@cincinnati-oh.gov
Wissinger	dwissinger9@wowway.com
WOJKOWSKI JR	joewojkowski@yahoo.com
WOJTILA	fire5cpa@hotmail.com
WOLFE	wwolfe3120@aol.com
WOLFF	norma.wolff@cityofmiamisburg.org
WOLNY	larry@rlawconstruction.com
WOLNY	kellie@rlawconstruction.com
WONG	gwong@cityofsharonville.com
WOOD	bobbye.wood@cincinnati-oh.gov
Woodarski	woodarski@zoominternet.net
WOOLACE	amber@woolace.com
Woolum	rwoolum@earthlink.net
WORKLEY	tkworkley@yahoo.com
WORKMAN	joe_w31@yahoo.com
Wray	mwray1444@hotmail.com
Wright	ebwright61@gmail.com
WRIGHT	rochellew@rwjsprinkler.com
WRIGHT	lloyd.wright@vfpfire.us
WURTH	pfwurth@bex.net
WYCKOFF	wyckoffm@mcohio.org
Wygonski Jr	mrfixit4u@cox.net
Wyss Jr	fdenningwyss@yahoo.com
Wyss Jr	fredwyss@willoughbyhills-oh.gov
Yarrow	jyarrow@garberconnect.com
Yates	cycc5526@gmail.com
Yoder	yoderplumbing@att.net
YODER	dyoder@brigadefire.com
YOST III	nyost@trarnold.com
Young	ryoung@cityofbayvillage.com
YOUNG	watchman1@roadrunner.com
YOUNG	syoung@natinspect.com
YOUNG	myoung@completegeneral.com
YUPA	misterbob2462@hotmail.com
Yutzy	yutzyheat@gmail.com
ZAHN	ddzahn@gmail.com
ZALA	lzala@roadrunner.com
ZBASNIK	jzbasnik@neo.rr.com
ZELEZNIKAR	frankzeleznikar@yahoo.com
ZELLE JR	chukzel@hotmail.com
ZIEGLER	zieglerjamesp@gmail.com
ZIMMER II	skip.zimmer@cincinnati-oh.gov
Zimmerman	tzimmerman@napoleonohio.com
ZIMMERMAN	azimmerman@shambaugh.com

ZIMMERMAN	jaz@hurontwp.org
ZINN	markzinn@att.net
ZOFKO	dezcon@penn.com
ZOMBEK	tzombek@aol.com
ZRONEK	zzronek@city.cleveland.oh.us
ZYTOWIECKI JR	rzytowiecki@wayneoh.org
Alliance	eng.bld.zon@allianceoh.gov
Amherst	building@amherstohio.org
Anna	rengland@miamicountyohio.gov
Arlington Heights	plans@natinspect.com
Ashland	kremser.shane@ashland-ohio.com
Ashville	agrube@ashvilleohio.gov
Aurora	januskad@auroraoh.com
Aurora	crainec@auroraoh.com
Avon	bschumacher@cityofavon.com
Avon Lake	tcarleton@avonlake.org
Barberton	lhowe@cityofbarberton.com
Beachwood	building@beachwoodohio.com
Bedford	cbeverly@bedfordoh.gov
Bedford Heights	rloconti@munibis.com
Berea	buildingdept@cityofberea.org
Bexley	rshetler@bexley.org
Blendon Township	bryan.rhoads@blendontwp.org
Bratenahl	building@bratenahl.org
Brecksville	nwerner@brecksville.oh.us
Brecksville	spackard@brecksville.oh.us
Brecksville	ssynek@brecksville.oh.us
Broadview Heights	rwestfall@broadview-heights.org
Broadview Heights	building@broadview-heights.org
Brook Park	buildingdept@cityofbrookpark.com
Brooklyn Heights	ssocoloff@brooklynhts.org
Brown County	building@browncountyohio.gov
Butler County	dickardda@butlercountyohio.org
Canal Fulton	tward@massillonohio.com
Canal Winchester	tbuchanan@canalwinchesterohio.gov
Canton	david.molnar@cantonohio.gov
Carlisle	gwallace@carlisleoh.org
Carroll	CLA@asebrook.com
Centerville	buildinginspection@centervilleohio.gov
Champaign County	prittenhouse@co.champaign.oh.us
Circleville	dmorrow@pickaway.org
Cleveland	tvanover@city.cleveland.oh.us
Cleveland Heights	rferritto@clvhts.com
Clinton County	clintoncobuildingzoning@yahoo.com
Columbiana	acerrone@columbianaohio.gov
Columbus	rjschutz@columbus.gov
Crestline	mmilliron@crestlineoh.com

Cuyahoga Heights	w.heinzman@cuyahogaheights.com
Dayton	scott.adams@daytonohio.gov
Defiance	cseimet@cityofdefiance.com
Doylestown	jgardner@doylestown.com
Dublin	dfite@dublin.oh.us
East Cleveland	swallace@eastcleveland.org
East Cleveland	tbumbalis@eastcleveland.org
Eaton	ebd@cityofeaton.org
Euclid	buildingdept@munibis.com
Euclid	lbock@cityofeuclid.com
Evendale	donald.mercer@evendaleohio.org
Fairfax	jhester@fairfaxoh.org
Fairfield	rick1@one.net
Fairlawn	randlesc@ci.fairlawn.oh.us
Fairlawn	shell@ci.fairlawn.oh.us
Fairview Park	leanne.fuller@fairviewpark.org
Franklin County	mxkelleh@franklincountyohio.gov
Gahanna	building@gahanna.gov
Galion	bobjohnston@ci.galion.oh.us
Garfield Heights	wwervey@garfieldhts.org
Girard	petecgirardcity@hotmail.com
Glenwillow	mskvasik@glenwillow-oh.gov
Grafton	jklein@villageofgrafton.org
Greenfield	davidduckworth@rosscountyohio.gov
Groveport	smoore@groveport.org
Hamilton County	joy.peak@hamilton-co.org
Hartville	office@hartvilleoh.com
Highland Hills	bldg@vhhohio.org
Hillsboro	thobgood@hillsboroohio.net
Independence	gerom@independenceohio.org
Independence	gerom@independence.org
Kent	brownk@kent-ohio.org
Kent	nitzsche@kent-ohio.org
Lakewood	michael.molinski@lakewoodoh.net
Lebanon	anna.helton@co.warren.oh.us
London	vbenedetti@ci.london.oh.us
Lorain	carmencita_mchugh@cityoflorain.org
Louisville	planningdirector@louisvilleohio.org
Louisville	citymanager@louisvilleohio.org
Loveland	eparker@lovelandoh.com
Lucas County	dsmith@co.lucas.oh.us
Lyndhurst	kunzt@lyndhurst-oh.com
Lyndhurst	manfredis@lyndhurst-oh.com
Madison County	dhughes@co.madison.oh.us
Mahoning County	aferns@mahoningcountyoh.gov
Mansfield	lprice@ci.mansfield.oh.us
Mansfield	grice@ci.mansfield.oh.us

Mariemont	commish40@gmail.com
Mariemont	bldgdept@mariemont.org
Marietta	conniejh@wcgov.org
Mayfield	dgarbo@mayfieldvillage.com
Medina	tmorris@medinaoh.org
Miami County	nharleman@miamicountyohio.gov
Moreland Hills	building@morelandhills.com
Mount Healthy	rosgood@mthealthy.org
Muskingum County	jetrout@muskingumcounty.org
New Albany	tschaffner@newalbanyohio.org
North Canton	jfitch@northcantonohio.com
North Olmsted	grusenmeyerj@north-olmsted.com
North Royalton	dkulchytsky@northroyalton.org
Norwood	gstoker@norwood-ohio.com
Oberlin	sphillips@cityofoberlin.com
Oberlin	smularoni@cityofoberlin.com
Obetz	llewis@obetz.oh.us
Olmsted Falls	building@olmstedfalls.org
Olmsted Township	jmcreynolds@olmstedtownship.org
Orange	dstrichko@munibis.com
Orange	strichkod@orangevillage.com
Oregon	jgilmore@ci.oregon.oh.us
Ottawa County	dbarnes@co.ottawa.oh.us
Painesville	dzofko@painesville.com
Parma	building@cityofparma-oh.gov
Parma Heights	building@parmaheightsoh.gov
Pepper Pike	building@pepperpike.org
Perkins Township	beckys@perkinstownship.com
Pickerington	swhittington@pickerington.net
Portage County	rroberts@portageco.com
Portsmouth	pgillland2@portsmouthoh.org
Reminderville	tbowlin@reminderville.com
Richland County	srisser@richlandcountyoh.us
Rocky River	rockyriver@rrcity.com
Ross County	jillthomas@rosscountyohio.gov
Sandusky	building@ci.sandusky.oh.us
Seven Hills	building@sevenhillsohio.org
Shaker Heights	paul.konys@shakeronline.com
Sheffield Village	lesliee@sheffieldvillage.com
Solon	cboshane@solonohio.org
South Amherst	clerk@neohio.twcbc.com
South Bloomfield	southbloomfield@hotmail.com
South Russell	building@southrussell.com
Springdale	building@springdale.org
Springfield	jtuttle@ci.springfield.oh.us
Stark County	srbergener@starkcountyohio.gov
Steubenville	cdp@cityofsteubenville.us

Streetsboro	chaylett@cityofstreetsboro.com
Strongsville	kathy.zamrzla@strongsville.org
Summit County	kbrown@summitoh.net
Terrace Park	jhester@terracepark.org
Trenton	rob@cityoftrenton.com
Union	ggreen@ci.union.oh.us
University Heights	building@universityheights.com
Valley View	lellis@valleyview.net
Vandalia	tbaker@ci.vandalia.oh.us
Vermilion	bobkurtz@vermilion.net
Violet Township	don.day@violet.oh.us
Warren	inspect1@warren.org
Warrensville Heights	nmonaco@cityofwarrensville.com
Washington County	cwilson@wcgov.org
Washington Court House	rbryant@cityofwch.com
Wauseon	thomas.hall@cityofwauseon.com
Wauseon	trudi.mahnke@cityofwauseon.com
Wayne County	vwidmer@wayneoh.org
West Carrollton	Rsnodgrass@westcarrollton.org
Westerville	edward.ungar@westerville.org
Westlake	lschaefer@cityofwestlake.org
Willard	manager@willard-oh.com
Willoughby	dkeller@willoughbyohio.com
Willoughby Hills	building@willoughbyhills-oh.gov
Wilmington	mhorner@ci.wilmington.oh.us
Woodlawn	bknight@beautifulwoodlawn.us
Woodmere	dgray@woodmerevillage.com
Worthington	dphillips@ci.worthington.oh.us
Wyoming	tvanderman@wyomingohio.gov
Zanesville	buildingcode@coz.org
Board - Gerry Holland	scoop494@aol.com
Joe Denk	jdenk@denkassoc.com
Tim Galvin	tim.galvin@brextonllc.com
John Johnson	John@tacomaenergy.org
Don Leach	don.leach@dinslaw.com
Terry McCafferty	tmccafferty@pipefitters120.org
Doug Scholz	scholz.doug@unibilt.com
Carl Schultz	carl.schultz@urs.com
Jeff Samuelson	jeff@jzcompanies.com
John Pavlis	jpavlis@neo.rr.com
David Collins	dcollins@preview-group.com
Shayne Manning	smanning@thpltd.com
Chris Miller	christopher.miller@icemiller.com
Bailey Stansbery	abstanbery@stanberyhomesinc.com
Don McIlroy	Don.mcilroy@ci.circleville.oh.us
Alkayali, Ayman	doorlockdown@gmail.com
Allegion (Mike Fox Jr.)	mike.fox@allegion.com

Alliance to Save Energy (Maria Ellingson)	mellingson@ase.org
American Council of Engineering Companie	acec@acec.org
American Institute of Architects	infocentral@aia.org
American Institute of Architects (David Fiel	david@assnoffices.com
Architectural Products Resource (Alicia Holl	alicia@apresource.us.com
Baldwin, Mike	mikebaldwin@metlabs.com
Bartley, Ronald K.	bartleyrk@att.net
Bearacade (David Salsby)	dave@doorbearacade.com
Bearacade (Bill Cushua)	bill@doorbearacade.com
Berardi and Partners (Chris Bruzzese)	cbruzzese@berardipartners.com
Berardi and Partners (Larry Brehm)	lbrehm@berardipartners.com
Buckeye Assn of School Administrators (Axı	axner@basa-ohio.org
Buckeye Assn of School Administrators (Asl	ash@basa-ohio.org
Buckeye Power (Teresa Staats)	tstaats@buckeyepower.com
Building Code Compliance	geaton@com.state.oh.us
Building Code Compliance	yjiang@com.state.oh.us
Building Industry Association of Central Ohi	jim@biahomebuilders.com
Building Owners and Managers Association	sesterly@bomacleveland.org
Campbell Equipment (Chad Dupler)	chadd@campbellequipment.com
Central Ohio Fraternal Order of Police (Pos	ltposey@trurotwp.org
Chidester, Christine	cbrownchid@gmail.com
Claremont County Public Health (Kevin Jest	kjester@clermontcountyohio.gov
Clearcreek Fire District (Chris Vecchi)	chris.vecchi@clearcreektownship.com
Compton, Blake	bcompton@comptonllc.com
Construction Specifications Institute (Rich F	rpontius@thomas-marker.com
Cornwell, Paul (Architect)	pvcornwell@yahoo.com
CR Architecture and Design	j.berry@cr-architects.com
Cuyahoga Falls (Tim Mier)	miertp@cityofcf.com
Dayton, City of	andrew.steele@daytonohio.gov
Dewi, Shirley	shirley.dewi@iapmort.org
Door Security and Safety Foundation	lori.greene@allegion.com
Driscoll, Liana	neffcoinc@aol.com
Duecker, Bill	William.duecker@resservices.com
Eisenhart, Greg	plumber@spii.net
Emmanuel Christian School (Jeff Wilcox)	jwilcox@ecstoledo.org
Episcopo, Paul	paul@vipplumbing.com
Erb, Ron	rerb@smeinc.com
Fairfield Union (Jan Broughton)	janbroughton@fairfieldunion.org
Fairview Park City Council	clerkofcouncil@fairviewpark.org
Federal Emergency Management Agency	fema-correspondence-unit@dhs.gov
Fetz, Rob	rfetz@ctcn.net
Finley, Tony	tonyf@inverness-usa.com
Frederick, Karl	kfred1125@hotmail.com
Freund, Freeze, and Arnold (John Witherspı	jwitherspoon@ffalaw.com
Gieseke Rosenthal Architecture	rosenthal@grad.cc
Gieseke Rosenthal Architecture (Joseph Mc	moss@grad.cc
Gretter, Joanne	joanne.gretter@gmail.com

Gross Builders (Rick Porter)	Rick@Grossbuilders.com
Grundahl, Kirk	kgrundahl@qualtim.com
Haberek, Jim	office@haberek.com
Heger, Jeff	jeff@nixcoplumbing.com
Heritage Ohio	jbarrett@heritageohio.org
Herman Gibans Fodor Architects	afodor@hgfarchitects.com
Hicks Partners (Tony Brigano)	tony.brigano@hickspartners.com
Hirt, Bill	bhirt@anab-aclass.org
Home Builders Association of Greater Cinci	ddressman@cincybuilders.com
Home Builders Association of Greater Cinci	ghand@westernhomesllc.com
Hostetler Builders (Susanna Strauss)	susannakstrauss@aol.com
Hudson, C. David	cdavid@fuse.net
IAEI Western Reserve Division (Joe Cenzori)	ampy2000@sbcglobal.net
IAF	secretary1@iaf.nu
Image Line Design (John Bacik)	imageline@sbcglobal.net
Innovative Engineering Group (Behzad Ved	bvedaie@iegi.com
Insurance Services Offices	csfeedback@iso.com
International Accreditation Service	hbrewer@iasonline.org
International Accreditation Service	smccracken@iasonline.org
International Accreditation Service	rcoiner@iasonline.org
International Accreditation Service	pmccullen@iasonline.org
International Accreditation Service	msabaratnam@iasonline.org
International Accreditation Service	rnathan@iccsafe.org
International Accreditation Service	cramani@iccsafe.org
International Association of Electrical Inspe	timmcclintock@gmail.com
International Brotherhood of Electrical Wo	pwilliams@ibew540.org
International Code Council	croblee@iccsafe.org
International Code Council Evaluation Servi	smoinian@iccsafe.org
International Code Council Evaluation Servi	gnichols@iccsafe.org
Intertek	michael.beaton@intertek.com
J. B. Hamlin & Co. (Jillian Hanes)	hanes@jbhco.com
JDI Group (Jim Sarks)	jsarks@thejdigroup.com
Jackson Local Schools (Barry Mason)	bdm2jc@jackson.sparcc.org
Jackson Township Fire Dept (Scott Burris)	burriss@jacksontwp.org
Johns Manville	jeannette.voelzke@jm.com
Johnson, Jarrod	jjohnson@qai.org
Jonhenry, Nathanael	nathanael.jonhenry@squiresanders.com
K&A Architecture	dkiley@kaarchitecture.com
Kale, Justin (Efficiency Smart)	jkale@efficiencysmart.org
Kale, Justin (VEIC)	jkale@veic.org
St. Kateri Schools (Karen Weber)	kweber@katerischools.org
Koken, Michael	smokinkoken@sbcglobal.net
Kellen (John Woestman)	jwoestman@kellencompany.com
Kennedy, Tom	tknorwoodian@msn.com
Licking County Sheriff (Guy Moore)	gmoore@lcounty.com
Luketic, Tony	archluketic@sbcglobal.net
Lyndhurst Fire Department	carrollm@lyndhurst-oh.com

Mayfield Village	mgirbino@mayfieldvillage.com
Mayfield Village	gcarcioppolo@mayfieldvillage.com
Mayfield Village	jmarrelli@mayfieldvillage.com
McGovern, Kevin	kevin@kmahvac.com
Mechanical Contractors Association of Cen	mcaco@mcaco.org
Menard's Sidney (Jody Harris)	sdnymcam@menards.com
Mentor Fire Dept (Rich Harvey)	harvey.rich@icloud.com
Midwest Energy Alliance	adwoodworth@aol.com
Miller Coors (John Wells)	john.wells@millercoors.com
Miller Coors (Mark Koch)	mark.koch@millercoors.com
Miller Engineering	jackjamisonjr@comcast.net
MKC Associates (Rachel Beecher)	rbeecher@mkcinc.com
Motter & Meadow Architects	dpatterson@mottermeadows.com
Motter & Meadow Architects	rmeadows@mottermeadows.com
National Council of Architectural Registrati	jameslinkearchitect@hotmail.com
National Fire Protection Association	stds_admin@nfpa.org
National Fire Sprinkler Association	info@nfsa.org
National Heating (Steve Lynch)	lynch80national@gmail.com
National Institute of Building Sciences	nibs@nibs.org
National Institute of Standards and Techno	kandy.hauk@nist.gov
National School Control Systems (Bill Cushv	bill@doorbearacade.com
Nationwide Insurance	weaverl1@nationwide.com
Newport Partners (Joe Nebbia)	jnebbia@newportpartnersllc.com
Nieman, Brian	brian@niemanplumbing.com
Nightlock Lockdown (Jack Taylor)	jack@nightlock.com
No-Burn (Lindsay Lenze)	lindsay@noburn.com
NTA (Ryan Knowles)	rknowles@ntainc.com
NVR/Ryan Homes (John Hedden)	jhedden@nvrinc.com
Oak Group	cjcorcoran@oakgroupcode.com
Oberst, Ken	koberst@att.net
Ohio Association of Consulting Engineers	info@acecohio.org
Ohio Association of Plumbing Inspectors	ronnie.branson2@gmail.com
Ohio Association of Realtors	williams@ohiorealtors.org
Ohio Building Officials Association	rick1@one.net
Ohio Construction Industry Licencing Board	carol.ross@com.state.oh.us
Ohio Construction Industry Licencing Board	michelle.moye@com.state.oh.us
Ohio Department of Commerce	Stephen.Darling@com.ohio.gov
Ohio Department of Commerce	ebailik@com.state.oh.us
Ohio Department of Commerce	jhutchins@com.state.oh.us
Ohio Department of Commerce	jhowdyshell@com.state.oh.us
Ohio Department of Commerce	ppainter@com.state.oh.us
Ohio Department of Commerce	fbrown@com.state.oh.us
Ohio Department of Commerce	kacy.bullard@com.ohio.gov
Ohio Department of Commerce	jack.soma@com.state.oh.us
Ohio Department of Commerce	timothy.thompson@com.state.oh.us
Ohio Department of Commerce	tracie.boyd@com.state.oh.us
Ohio Department of Commerce	jeffrey.leaming@com.state.oh.us

Ohio Department of Commerce	brian.whitten@com.state.oh.us
Ohio Department of Health	Kathryn.kimmet@odh.ohio.gov
Ohio Department of Health	rebecca.fugitt@odh.ohio.gov
Ohio Fire Chiefs Association	info@ohiofirechiefs.com
Ohio Fire Chiefs Association (William Shaw)	chief.w.shaw@gmail.com
Ohio Home Builders Association	build@ohiohba.com
Ohio Hospital Association	ricks@ohanet.org
Ohio House of Representatives (Bryan Gray	bryan.gray@ohiohouse.gov
Ohio Manufactured Homes Association	info@welcomehomeohio.com
Ohio Petroleum Marketers and Convenienc	info@opmca.org
Ohio Petroleum Marketers and Convenienc	bbehrendt@opmca.org
Ohio School Boards Assn (Richard Caster)	rcaster@ohioschoolboards.org
Ohio School Resource Officers Association	kari.parsons@osroa.org
Ohio Secretary of State	BHarbage@ohiosecretaryofstate.gov
Ohio Society of Professional Engineers	ospe@ohioengineer.com
Ohio State Building Trades (Dennis Duffey)	osbctc@ohiostatebtc.org
Ohio State Fire Marshal (Thomas Miller)	tmiller@com.state.oh.us
Ohio State Fire Marshal (Larry Flowers)	larry.flowers@com.state.oh.us
Ohio State Fire Marshal (Jeff Leaming)	jleaming@com.ohio.gov
Ohio State Fire Marshal (Lindsey Burnworth	lindsey.burnworth@com.state.oh.us
Ohio Statewide Independent Living Council	kgrier@ohiosilc.org
Ohio Township Association	cochran@ohiotownships.org
Ohio University Police (Andrew Powers)	powers@ohio.edu
Olson Architectural Products (Adam Olson)	adam@oapinc.us
Pacific Northwest National Laboratories	inquiry@pnnl.gov
Paino, Peter	peter-paino@neo.rr.com
Perkins Schools (Greg Linkenbach)	glinkenbach@perkinsschools.org
Pontia Architecture	pcornwell@dpaarchitecture.com
Pontia Architecture	dpontia@dpaarchitecture.com
Preview Group	srice@preview-group.com
Ptacek and Sons Fire Equipment (Jim Davis)	jdavis@gpsfire.com
Pulte Homebuilders	keith.filipkowski@pulte.com
Revill, Scott	srevill@cox.net
Redinger, Dane	daner@resourceinternational.com
Reed, Jeff	jreed@customairco.com
Reich, Richard	richard@reich.co.uk
Reliable Electric Services (Larry)	famlywiz@aol.com
Reynoldsburg Police Dept (Nick Keisel)	nkeisel@reypd.com
RNR Designs (Rich Rokisky)	rich@rnrdesigns.net
Russell Fire Department (John Frazier)	frazierj@russellfd.com
Safeguard Risk Solutions (Gary Sigrist)	gary@safeguardrisksolutions.com
Schaefer Associates	mpc@ssastructural.com
Schlekie, Dennis	dennis@approvedplumbing.com
Schmitt, Ron	schmitt.ronald@gmail.com
Seaman, Marty	mseaman@epssecurity.com
Securitech (Mark Berger)	mberger@securitech.com
Seifert, Rick	ricks@crowngroupohio.com

Shambaugh and Sons (Ron Stewart)	rstewart@shambaugh.com
Shiffler Equipment (Steve Webb)	s.webb@shifflerequip.com
Shiffler Equipment (Mark West)	m.lewis@shifflerequip.com
Shiffler Equipment (John Shiffler)	jws@shifflerequip.com
Sinagra, Chris	csinagra18@gmail.com
Smith Hughes	brad@smithhughes.com
Southwest Fire Safety Committee	jason.eckert@daytonohio.gov
Southwest Ohio Fire Safety Council	dmcdermitt@cityofgreenville.org
Sperber, Eric	esperber@altwitzig.com
Sprinkler Fitters Local #669 (Tim Skinner)	tskinner669@aol.com
Stahl, John	stahljhn@aol.com
State Fire Marshal (Tracie Boyd)	tboyd@com.state.oh.us
Status Solutions (Danielle Myers)	dmyers@statussolutions.com
Status Solutions (T. J. Ammond)	tjammond@statussolutions.com
Stayflex (John Stahl)	john.stahl@stayflex.com
Stebbins, Bruce	stebplumb@gmail.com
Steer, Susan	susan.steer@com.state.oh.us
Stoutenborough Electric (Bill Brown)	stoutyelectric@gmail.com
Strauss Construction (Randy Strauss)	randykstrauss@aol.com
Sweitzer, Rodger	baumannplumbing@ameritech.net
Sycamore Township (Harry Holbert)	hholbert@sycamoretownship.org
Sylvania Township Fire (Mike Froelich)	mfroelich@sylvaniatownshipfire.com
Tanner, Tom	ttanner@tannerhvac.com
Therm-All	mburns@therm-all.com
Todd, John	jtodd@arrowhc.com
Underwriters Laboratories	john.k.taecker@ul.com
Unibilt	cook.dave@unibilt.com
Unibilt (Doug Scholz)	scholz.doug@unibilt.com
US Department of Justice	askdoj@usdoj.gov
VaporPower (Dupuis)	mdupuis@vaporpower.com
Vector Security (Steve Miller)	sjmiller@vectorsecurity.com
WDC Group (Jason Funderburg)	funderburgj@wdc-group.com
Washington Township Fire Department	crauch@washingtontwp.org
West, Erin	ewest@broadstreetcorp.com
West Licking Joint Fire (Kate Earley)	kearley@westlickingfire.org
Wolfe, Dave	dwolfe@watkem.com
Debbie R's List - Boeckermann, Mike	boeckermann@fuse.net
Branson, Ron	ronb@zmchd.org
Brooks, Rob	rob.brooks.mail@gmail.com
Brown, Ron	brown@nfsa.org
Calta, Diane	dacalta@diemertlaw.com
Campbell, Kelly	kelly@noburn.com
DeCrane, Sean	rovloc93@aol.com
DeVries, Robert	rdevries@nuwool.com
Fana, Rocco	rocco@phccohio.org
Flowers, Larry	larry.flowers@com.state.oh.us
Francis, Sam	sfrancis@awc.org

Hausmann, B	bhausmann@spkr.com
Johnson, Ric	ric@rightathometechnologies.us
Kaufholz, Bill	bkaufholz@fischerhomes.com
Klaus, Kris	kklaus@ohiohba.com
Krugh, William	william.krugh@com.state.oh.us
Lenz, Lindsay	lindsay@noburn.com
Miller, Jennifer	jennifer.miller@sierraclub.org
Moore, Tom	tmoore1767@aol.com
Osmun, Sean	sean.osmun@weyerhaeuser.com
Peters, Matthew	mpeters@exchange.state.oh.us
Quackenbush, Brian	bquackenbush@emht.com
Roblee, Corey	croblee@iccsafe.org
Senhauser, John	senhauser@fuse.net
Shumaker, Jason	jason.shumaker@weyerhaeuser.com
Skinner, Tim	tskinner669@aol.com
Thompson, Larry	lthompson@thompsonelectric.com
Thompson, Michael	michael.thompson@com.state.oh.us
Tsonton, Chris	ctsonton@gmail.com
Tuckerman, Craig	craig@tuckermanhomegroup.com
Werling, Bud	budwerling@gmail.com
Dean Jagger's List - Black	lawrence_r_black@hsb.com
Burkhard	piperdavidl@aol.com
Butler	tbutler@niulpe.org
Chaney	jchaney@ovec.com
Combeq	combeq@gmail.com
Davidson	WDAVIDSO@travelers.com
Dreyer	tdreyer@whgardiner.com
Furst	tfurst@brunercorp.com
Geraghty	greg.geraghty@zurichna.com
Jim	jim@delval.com
Kelly	gkelly@keldenequipment.com
Klein	jklein@ohiochemistry.org
KMA	joe@kmahvac.com
Linn	LLINN@travelers.com
Malkin	dennis.malkin@robertsmech.com
McAdams	amcadams@parkertrutec.com
Mengon	mark.mengon@fmglobal.com
Miller	Michael_Miller@CINFIN.com
Miller, Brittany	brittany_miller@cargill.com
Moore	Brian_Moore@hsb.com
Nickerson	r.nickerson@econtrol.com
Pierce	rpierce@hurstboiler.com
Rob	rob@boilerspecialists.com
Roberts	groberts@robertsmech.com
Safarz	jsafarz@combustionsafety.com
Schmidt	tes@stoermer-anderson.com
Schaefer, Benjamin (AEP)	bschaefer@aep.com

Smith	rick.smith@ate-inc.com
Stoermer	KAW@stoermer-anderson.com
Sullivan, Robert	sullivan.rl.2@pg.com
Walters	walters@boilerworks.com
Wilson	steamworksllc@att.net
Plumbing-Heating-Cooling Contractors of O	rocco@phccohio.org
American Society of Mechanical Engineers	infocentral@asme.org
Arise Boiler Inspection and Insurance Comp	paul.welch@ariseinc.com
Chubb and Son	vsordillo@chubb.com
Cincinnati Insurance Companies	wayne_pinney@cinfin.com
Eagle Mechanical	eaglemechanical@neo.rr.com
Eastgate Graphics (Tom Ludeke)	tomludeke@eastgategraphics.com
Factory Mutual Insurance Company	phillip.cole@fmglobal.com
Information Handling Services	Bryan.Forrest@ihs.com
National Board of Boiler & Pressure Vessel	ddouin@nationalboard.org
National Board of Boiler & Pressure Vessel	fbrown@nationalboard.org
National Board of Boiler & Pressure Vessel	information@nationalboard.org
Ohio Hospital Association	rickf@ohanet.org
Ohio Manufacturer's Association	oma@ohiomfg.com
OneCIS America Insurance Company	ed.whittle@onecis.com
Travelers Risk	ckent@travelers.com
XL Insurance America	gary.cox@bpcllcga.com
Zurich Services Corporation	tim.zoltowski@zurichna.com
PHCC/ACCA Aire-Flo (Steve Alexander)	steve@aire-flo.com
Airtron Heating and Air (William Duecker)	william.duecker@resservices.com
Approved Plumbing (Dennis Schlekie)	dennis@approvedplumbing.com
Approved Plumbing (Jeff Schleckie)	jeff@approvedplumbing.com
Approved Plumbing (Larry Betlejewski)	larry@approvedplumbing.com
Arrow Heating and Cooling (John Todd)	jtodd@arrowhc.com
Arrow Heating and Cooling (Nate Alwood)	nalwood@arrowhc.com
Beckwith Heating and Cooling (Bruce Beckv	bruce@beckwithheatcool.com
Bemer Plumbing (Dan Bemer)	danielbemer@yahoo.com
Beresford P-H-C	beresford@fuse.net
Brockman and Sons (George Brockman)	george@brockmanhc.com
BTU Comfort Solutions (Don Van Horn)	dvanhorn1@btucomfort.com
Carpenter Heating and Cooling (Douglas Ca	doug@carpentercomfort.com
Ciro's Sewer Cleaning (Ciro Grandini)	cg@cirossewer.com
Cleveland Air Comfort (Al DiLauro)	adilauro2@neohio.twcbc.com
Custom Air (Jeff Reed)	jreed@customairco.com
Efficient Heating and Cooling (Jim Ellia)	jimellia@ameritech.net
Esther Price Candies (Doug Dressman)	ddressman@epcandies.com
Fetz Plumbing, Heating, and Air (Rob Fetz)	fetzphc@ctcn.net
Flow Care (Dwayne Schlabach)	flowcare@aol.com
Gundlach Sheet Metal Works (Roger Gundl	roger@gsmwi.com
H&S Plumbing (Randy Shoup)	randy@hsplumbing.net
Haberek Plumbing and Heating (Jim Habere	office@haberek.com
Harner Plumbing (Ray Harner)	ray@harnerplumbing.com

Jerome Plumbing (Steve Jerome)	Stevie@jeromeplumbing.com
Keister Plumbing and Heating (Kavid Keisler	dkeister@keisterplumbing.com
McIntire Plumbing (Doug McIntire)	mcintireplumbing@gmail.com
Nieman Plumbing (Brian Nieman)	brian@niemanplumbing.com
Plumbing Source (Greg Faustina)	gregf@plumbingsource.net
Portage Plumbing and Heating (Robert Paln	portplb@sbcglobal.net
Ratcliff's Heat and Air (Deborah Ratcliff)	dratcliff@columbus.rr.com
Sanford Plumbing (Greg Eisenhart)	plumber@spii.net
Stack Heating and Cooling (Andy Stack)	andy@stackheating.com
Stack Heating and Cooling (Brian Stack)	brian@stackheating.com
Stack Heating and Cooling (Dan Faulk)	dfaulk@stackheating.com
Stack Heating and Cooling (Kevin Stack)	kevin@stackheating.com
Stack Heating and Cooling (Tim Cooke)	tcooke@stackheating.com
Stebbins Plumbing (Bruce Stebbins)	stebplumb@gmail.com
VIP Plumbing (Paul Episcopo)	paul@vipplumbing.com
Waterworks (David Specht)	dspecht@thewaterworks.com
Waterworks (Terry Trimmer)	ttrimmer@thewaterworks.com
Wat-Kem Mechanical (Steve Meier)	smeier@watkem.com
Wiese Plumbing (Jamie Wiese)	jamiew@wieseplumbingandheating.com

Exhibit B

Stakeholder Meeting
Proposed Ohio Building Code Rules
November 16, 2015
10:00 AM

The Board is conducting this stakeholder meeting as part of the Common Sense Initiative (CSI) Business Regulation Impact process to provide information on proposed rules and respond to questions from interested persons prior to formal rule-filing. After review of all comments submitted in writing and at today's meeting, the Board will incorporate any approved changes as a result of the comments and document the reasons for the changes in a Business Regulatory Impact Analysis. The revised rules and the Business Regulatory Impact Analysis will then be filed with the CSI Office for review and recommendation and resent to stakeholders via e-notification. After receipt of the CSI Office recommendations, the Board will formally file these rules, as revised, with the Joint Committee on Agency Rule Review (JCARR) and conduct a public hearing prior to their adoption as required by Revised Code Chapter 119.

Proposed Ohio Building Code Rule Changes

The Board proposes to amend the Ohio Administrative Code as follows: **4101:1-2-01** to add definitions for Active Shooter Drill, Administrative Authority of a School Building, Emergency Situation, Institution of Higher Education, Private School, Public School, School Building, and Temporary Door Locking Device and **4101:1-10-01** to add exceptions to Sections 1008.1.9.1, 1008.1.9.3, 1008.1.9.5 for Temporary Door Locking Devices, and to add a new Section 1008.1.9.11 which addresses Temporary Door Locking Devices.

3781.106 Devices to regulate ingress and egress through doors in school buildings.

(A) The board of building standards shall adopt rules, in accordance with Chapter 119. of the Revised Code, for the use of a device by a staff member of a public or private school or institution of higher education that prevents both ingress and egress through a door in a school building, for a finite period of time, in an emergency situation, and during active shooter drills. The rules shall provide that the use of a device is permissible only if the device requires minimal steps to remove it after it is engaged.

The rules shall provide that the administrative authority of a building notify the police chief, or equivalent, of the law enforcement agency that has jurisdiction over the building, and the fire chief, or equivalent, of the fire department that serves the political subdivision in which the building is located, prior to the use of such devices in a building.

The rules may require that the device be visible from the exterior of the door.

(B) The device described in division (A) of this section shall not be permanently mounted to the door.

(C) Each public and private school and institution of higher education shall provide its staff members in-service training on the use of the device described in division (A) of this section. The school shall maintain a record verifying this training on file.

(D) In consultation with the state board of education and the chancellor of higher education, the board shall determine and include in the rules a definition of "emergency situation." These rules shall apply to both existing and new school buildings.

(E) As used in this section:

(1) "Institution of higher education" means a state institution of higher education as defined in section 3345.011 of the Revised Code, a private nonprofit college or university located in this state that possesses a certificate of authorization issued pursuant to Chapter 1713. of the Revised Code, or a school located in this state that possesses a certificate of registration and one or more program authorizations issued by the state board of career colleges and schools under Chapter 3332. of the Revised Code.

(2) "Private school" means a chartered nonpublic school or a nonchartered nonpublic school.

(3) "Public school" means any school operated by a school district board of education, any community school established under Chapter 3314. of the Revised Code, any STEM school established under Chapter 3326. of the Revised Code, and any college-preparatory boarding school established under Chapter 3328. of the Revised Code.

(4) "School building" means a structure used for the instruction of students by a public or private school or institution of higher education.

Added by 131st General Assembly File No. TBD, HB 64, §101.01, eff. 9/29/2015.

Ohio Board of Building Standards
Tentative HB 64 Rule Development Timeline

June 30, 2015	HB 64 enacted - New RC § 3781.106 adopted effective September 29, 2015 requiring the Board of Building Standards (Board) to adopt rules for the use of a device by a staff member of a public or private school or institution of higher education that prevents both ingress and egress through a door in a school building, for a finite period of time, in an emergency situation, and during active shooter drills.
October 16, 2014	Board scheduled stakeholder meeting for November 16, 2016 on draft rules and directed staff to distribute draft rules to stakeholders for review and comment.
November 16, 2015	Stakeholder Meeting
December 4, 2015	Board action to file rules with CSI Office and send rules out for stakeholder review through E-Notification.
January 14, 2016	Board Code Committee review of E-Notification Comments.
January 15, 2016	Board action to file rules with JCARR and schedule Public Hearing.
February 26, 2016	Public Hearing.
April 8, 2016	Board adopts rules and sets effective date.

Department of Commerce

Division of Industrial Compliance

John R. Kasich, Governor
Jacqueline T. Williams, Director

NOVEMBER 2015 STAKEHOLDER MEETING
2011 OHIO BUILDING CODE PROPOSED CHANGES

Ohio Administrative Code Rule Number	OBC Section	Reason for Proposed Change
4101:1-2-01	"ACTIVE SHOOTER DRILL" definition	To add definition
	"ADMINISTRATIVE AUTHORITY OF A SCHOOL BUILDING" definition	To add definition
	"EMERGENCY SITUATION" definition	To add definition
	"INSTITUTION OF HIGHER EDUCATION" definition	To add definition
	"PRIVATE SCHOOL" definition	To add definition
	"PUBLIC SCHOOL" definition	To add definition
	"SCHOOL BUILDING" definition	To add definition
	"TEMPORARY DOOR LOCKING DEVICE" definition	To add definition
4101:1-10-01	1008.1.9.1	To add an exception to the Door Hardware requirements of the OBC
	1008.1.9.3	To add an exception to the Locks and Latches requirements of the OBC
	1008.1.9.5	To add an exception to the Unlatching requirements of the OBC
	1008.1.9.11	To add a new section addressing Temporary Door Locking Devices used in school buildings.

Ohio Board of Building Standards
6606 Tussing Road
PO Box 4009
Reynoldsburg, OH 43068-9009 U.S.A.

Gerald O. Holland, Chairman

614 | 644 2613
Fax 614 | 644 3147
TTY/TDD 800 | 750 0750
www.com.ohio.gov

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4101:1-2-01 Definitions.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:1-35-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:1-1-01 of the Administrative Code.]

SECTION 201
GENERAL

201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

Terms defined in other codes. Where terms are not defined in this code and are defined in the *"International Fuel Gas Code", fire code, mechanical code* or *plumbing code,* such terms shall have the meanings ascribed to them as in those codes.

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

SECTION 202
DEFINITIONS

24-HOUR CARE. *The actual time that a person is an occupant within a facility for the purpose of receiving care. It shall not include a facility that is open for 24 hours and is capable of providing care to someone visiting the facility during any segment of the 24 hours.*

AAC MASONRY. See Section 2102.1.

ABOVE-GROUND STORAGE TANK. *A vessel, intended for fixed installation above grade, at grade, or below grade without backfill, used for the purpose of bulk storage, dispensing, handling or processing of hazardous, flammable or*

combustible liquids or gases and not connected to and utilized for the operation of building service equipment.

ACCESSIBLE. See Section 1102.1.

ACCESSIBLE MEANS OF EGRESS. See Section 1002.1.

ACCESSIBLE ROUTE. See Section 1102.1.

ACCESSIBLE UNIT. See Section 1102.1.

ACCREDITATION BODY. See Section 2302.1.

ACTIVE SHOOTER DRILL. *An exercise performed by staff and occupants to evaluate their efficiency and effectiveness in executing an adopted school safety plan to respond to an active shooter event by sheltering and securing occupants in place within a building when normal evacuation would put occupants at risk. See 1008.1.9.11.*

ADDITION. An extension or increase in floor area or height of a building or structure.

ADHERED MASONRY VENEER. See Section 1402.1.

ADMINISTRATIVE AUTHORITY OF A SCHOOL BUILDING. *The superintendent, principal, chief administrative officer, or other person having supervisory authority of a school building. See section 1008.1.9.11.*

ADOBE CONSTRUCTION. See Section 2102.1.

Adobe, stabilized. See Section 2102.1.

Adobe, unstabilized. See Section 2102.1.

AEROSOL. See Section 307.2.

Level 1 aerosol products. See Section 307.2.
Level 2 aerosol products. See Section 307.2.
Level 3 aerosol products. See Section 307.2.

AEROSOL CONTAINER. See Section 307.2.

AGGREGATE. See Section 1502.1.

AGRICULTURAL, BUILDING. A structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products. *(see "**AGRICULTURAL PURPOSES**", section 101.2, and section 312 of this code).*

AGRICULTURAL LABOR CAMPS. *Camps as defined in section 3733.41 of the Revised Code.*

AGRICULTURAL PURPOSES*: Includes agriculture, farming, dairying, pasturage, apiculture, horticultural, floriculture, viticulture, ornamental horticulture, olericulture, pomiculture, animal and poultry husbandry, etc.*

AIR-INFLATED STRUCTURE. See Section 3102.2.

AIR-SUPPORTED STRUCTURE. See Section 3102.2.
Double skin. See Section 3102.2.
Single skin. See Section 3102.2.

AIRCRAFT HANGER, RESIDENTIAL. *See section 412.3.1.*

AISLE. See Section 1002.1.

AISLE ACCESSWAY. See Section 1002.1.

ALARM NOTIFICATION APPLIANCE. See Section 902.1.

ALARM SIGNAL. See Section 902.1.

ALARM VERIFICATION FEATURE. See Section 902.1.

ALLOWABLE STRESS DESIGN. See Section 1602.1.

ALTERATION. Any construction or renovation to an existing structure other than repair or *addition*.

ALTERNATING TREAD DEVICE. See Section 1002.1.

AMBULATORY CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to individuals who are rendered incapable of self-preservation *by the services provided*.

AMUSEMENT RIDE. *Any mechanical, aquatic, or inflatable device, or combination of those devices that carries or conveys passengers on, along, around, over, or through a fixed or restricted course or within a defined area for the purpose of providing amusement, pleasure, or excitement and includes carnival rides, bungee jumping facilities, and fair rides but does not include passenger tramways as defined in section 4169.01 of the Revised Code or amusement rides operated solely at trade shows for a limited period of time. For regulation and definitions, see sections 1711.50 to 1711.57 of the Revised Code. Amusement rides are not regulated by this code but are regulated by the Ohio department of agriculture. Also see section 411, Special Amusement Buildings.*

ANCHOR. See Section 2102.1.

ANCHOR BUILDING. See Section 402.2.

ANCHORED MASONRY VENEER. See Section 1402.1.

ANNULAR SPACE. See Section 702.1.

ANNUNCIATOR. See Section 902.1.

APPROVED. *Determined to be in compliance by the authority having jurisdiction in accordance with the rules of the board.*

APPROVED AGENCY. *An established and accredited testing laboratory, listing agency, inspection body, or field evaluation body recognized by the board of*

building standards providing services consistent with their accreditation and the code section requiring the approved agency service.

APPROVED FABRICATOR. See Section 1702.1.

APPROVED NATIONAL AND ACCREDITATION SERVICE*. An established and nationally recognized service regularly engaged in evaluating the competency of agencies to conduct tests and inspections required by the rules of the board.*

APPROVED SOURCE. *Deleted.*

ARCHITECTURAL TERRA COTTA. See Section 2102.1.

AREA (for masonry). See Section 2102.1.
Bedded. See Section 2102.1.
Gross cross-sectional. See Section 2102.1.
Net cross-sectional. See Section 2102.1.

AREA, BUILDING. See Section 502.1.

AREA OF REFUGE. See Section 1002.1.

AREAWAY. A subsurface space adjacent to a building open at the top or protected at the top by a grating or guard.

ASSISTED LIVING FACILITIES. See Section 310.2, "Residential Care/Assisted living facilities."

ATRIUM. See Section 404.1.1.

ATTIC. The space between the ceiling beams of the top story and the roof rafters.

AUDIBLE ALARM NOTIFICATION APPLIANCE. See Section 902.1.

AUTOCLAVED AERATED CONCRETE (AAC). See Section 2102.1.

AUTOMATIC. See Section 902.1.

AUTOMATIC FIRE-EXTINGUISHING SYSTEM. See Section 902.1.

AUTOMATIC SMOKE DETECTION SYSTEM. See Section 902.1.

AUTOMATIC SPRINKLER SYSTEM. See Section 902.1.

AVERAGE AMBIENT SOUND LEVEL. See Section 902.1.

AWNING. An architectural projection that provides weather protection, identity or decoration and is wholly supported by the building to which it is attached. An awning is comprised of a lightweight frame structure over which a covering is attached.

BACKING. See Section 1402.1.

BALED COTTON. See Section 307.2.

BALED COTTON, DENSELY PACKED. See Section 307.2.

BALLAST. See Section 1502.1.

BARRICADE. See Section 307.2.
Artificial barricade. See Section 307.2.
Natural barricade. See Section 307.2.

BASE FLOOD. See Section 1612.2.

BASE FLOOD ELEVATION. See Section 1612.2.

BASEMENT (for other than flood loads). See Section 502.1.

BASEMENT (for flood loads). See Section 1612.2.

BEARING WALL STRUCTURE. See Section 1614.2.

BED JOINT. See Section 2102.1.

BLEACHERS. See Section 1002.1.

BOARDING HOUSE. See Section 310.2.

BOILING POINT. See Section 307.2.

BOND BEAM. See Section 2102.1.

BRACED WALL LINE. See Section 2302.1.

BRACED WALL PANEL. See Section 2302.1.

BRICK. See Section 2102.1.

Calcium silicate (sand lime brick). See Section 2102.1.

Clay or shale. See Section 2102.1.

Concrete. See Section 2102.1.

BUILDING. *Any structure consisting of foundations, walls, columns, girders, beams, floors, and roof, or a combination of any number of these parts, with or without other parts or appurtenances.*

BUILDING DEPARTMENT. *An agency, department or division of the state or of the government of a municipal corporation, township, or county, which has been created and authorized in conformity with law for the purpose of enforcing construction code provisions of the board's rules applicable to structures specified in section 3781.06 of the Revised Code.*

BUILDING LINE. The line established by law, beyond which a building shall not extend, except as specifically provided by law.

BUILDING OFFICIAL. The *superintendent of the division of industrial compliance of the Ohio department of commerce or the person appointed by the superintendent to enforce this code in that division, or the designated authority charged with the administration and enforcement of this code, approved by the board in accordance with section 103 of this code, in a municipal corporation, township or county having a building department, certified by the board pursuant to section 3781.10 of the Revised Code, or the health commissioner or his authorized representative in health districts, whichever one has jurisdiction.*

BUILDING SERVICE EQUIPMENT. *Equipment, appliances, materials, devices, and systems integrated into a building which provide space heating, air conditioning, ventilation, fire protection, lighting, electricity, sanitation, water,*

heating, cooking, medical gas, medical vacuum, and clothes drying. Building service equipment begins from the connected stored source of liquid or gas fuel or electrical power supplying the equipment or the utility service point /point of delivery and extends through the point of use but does not include process equipment that may also be connected to the same source.

BUILDING SERVICES PIPING. *All piping systems and their component parts that are part of a building system and that promote the safe, sanitary, and energy efficient occupancy of a building. Building services piping includes, but is not limited to, cold and hot potable water distribution for plumbing fixtures; sanitary lines from plumbing fixtures; nonflammable medical gas systems; medical oxygen systems; medical vacuum systems; fire protection piping systems and compressed air in dry systems; refrigeration, chilled water, condenser and cooling tower water, brine, and water/antifreeze systems; steam, steam condensate, and hot water piping systems; and fuel oil piping and fuel gas piping for heating, cooling, and cooking applications.*

BUILT-UP ROOF COVERING. See Section 1502.1.

CABLE-RESTRAINED, AIR-SUPPORTED STRUCTURE. See Section 3102.2.

CANOPY. A permanent structure or architectural projection of rigid construction over which a covering is attached that provides weather protection, identity or decoration, and shall be structurally independent or supported by attachment to a building on one end and by not less than one stanchion on the outer end.

CARBON DIOXIDE EXTINGUISHING SYSTEMS. See Section 902.1.

CAST STONE. See Section 2102.1.

CEILING LIMIT. See Section 902.1.

CEILING RADIATION DAMPER. See Section 702.1.

CELL. See Section 408.1.1.

CELL (masonry). See Section 2102.1.

CELL TIER. See Section 408.1.1.

CEMENT PLASTER. See Section 2502.1.

CERAMIC FIBER BLANKET. See Section 721.1.1.

CERTIFICATE OF COMPLIANCE. See Section 1702.1.

CHILD CARE FACILITIES. See Section 308.3.1. *Also see TYPE A FAMILY DAY-CARE HOME AND TYPE B FAMILY DAY-CARE HOME.*

CHIMNEY. See Section 2102.1.

CHIMNEY TYPES. See Section 2102.1.
- **High-heat appliance type.** See Section 2102.1.
- **Low-heat appliance type**. See Section 2102.1.
- **Masonry type.** See Section 2102.1.
- **Medium-heat appliance type.** See Section 2102.1.

CIRCULATION PATH. See Section 1102.1.

CLEAN AGENT. See Section 902.1.

CLEANOUT. See Section 2102.1.

CLINIC, OUTPATIENT. See Section 304.1.1.

CLOSED CONSTRUCTION. *See section 114.*

CLOSED SYSTEM. See Section 307.2.

COLLAR JOINT. See Section 2102.1.

COLLECTOR. See Section 2302.1.

COMBINATION FIRE/SMOKE DAMPER. See Section702.1.

COMBUSTIBLE DUST. See Section 307.2.

COMBUSTIBLE FIBERS. See Section 307.2.

COMBUSTIBLE LIQUID. See Section 307.2.
Class II. See Section 307.2.
Class IIIA. See Section 307.2.
Class IIIB. See Section 307.2.

COMBUSTIBLE MATERIAL. *See section 703.4.*

COMMERCIAL COOKING RECIRCULATING SYSTEM. *Self-contained system consisting of the exhaust hood, the cooking equipment, the filters, and the fire suppression system. The system is designed to capture cooking vapors and residues generated from commercial cooking equipment. The system removes contaminants from the exhaust air and recirculates the air to the space from which it was withdrawn.*

COMMON USE. See Section 1102.1.

COMMON PATH OF EGRESS TRAVEL. See Section 1002.1.

COMPRESSED GAS. See Section 307.2.

COMPRESSIVE STRENGTH OF MASONRY. See Section 2102.1.

CONCRETE, CARBONATE AGGREGATE. See Section 721.1.1.

CONCRETE, CELLULAR. See Section 721.1.1.

CONCRETE, LIGHTWEIGHT AGGREGATE. See Section 721.1.1.

CONCRETE, PERLITE. See Section 721.1.1.

CONCRETE, SAND-LIGHTWEIGHT. See Section 721.1.1.

CONCRETE, SILICEOUS AGGREGATE. See Section 721.1.1.

CONCRETE, VERMICULITE. See Section 721.1.1.

CONGREGATE LIVING FACILITIES. See Section 310.2.

CONNECTOR. See Section 2102.1.

CONSTANTLY ATTENDED LOCATION. See Section 902.1.

CONSTRUCTION DOCUMENTS. Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining *plan approval in accordance with section 106*.

CONSTRUCTION TYPES. See Section 602.

Type I. See Section 602.2.

Type II. See Section 602.2.

Type III. See Section 602.3.

Type IV. See Section 602.4.

Type V. See Section 602.5.

CONTINUOUS GAS DETECTION SYSTEM. See Section 415.2.

CONTROL AREA. See Section 307.2.

CONTROLLED LOW-STRENGTH MATERIAL. A self-compacted, cementitious material used primarily as a backfill in place of compacted fill.

CONVENTIONAL LIGHT-FRAME CONSTRUCTION. See Section 2302.1.

CORRIDOR. See Section 1002.1.

CORROSION RESISTANCE. The ability of a material to withstand deterioration of its surface or its properties when exposed to its environment.

CORROSIVE. See Section 307.2.

COURT. An open, uncovered space, unobstructed to the sky, bounded on three or more sides by exterior building walls or other enclosing devices.

COVER. See Section 2102.1.

COVERED MALL BUILDING. See Section 402.2.
Mall. See Section 402.2.
Open mall. See Section 402.2.
Open mall building. See Section 402.2.

CREDENTIALS. *The badge of office, certificate, or letter issued by a governmental department to an employee for the identification of said employee in the performance of his duties.*

CRIPPLE WALL. See Section 2302.1.

CRYOGENIC FLUID. See Section 307.2.

CUSTODIAL CARE. *Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. Custodial care includes care for occupants that have the ability to respond to emergency situations and evacuate at a slower rate and/or who have mental and psychiatric complications.*

DALLE GLASS. See Section 2402.1.

DAMPER. See Section 702.1.

DANGEROUS. See Section 3402.1.

DAY BOX. See Section 307.2.

DEAD LOADS. See Section 1602.1.

DECORATIVE GLASS. See Section 2402.1.

DECORATIVE MATERIALS. All materials applied over the building interior finish for decorative, acoustical or other effect (such as curtains, draperies, fabrics, streamers and surface coverings), and all other materials utilized for decorative effect (such as batting, cloth, cotton, hay, stalks, straw, vines, leaves, trees, moss and similar items), including foam plastics and materials containing foam plastics. Decorative materials do not include floor coverings, ordinary window shades,

interior finish and materials 0.025 inch (0.64 mm) or less in thickness applied directly to and adhering tightly to a substrate.

DEEP FOUNDATION. See Section 1802.1.

DEFLAGRATION. See Section 307.2.

DELUGE SYSTEM. See Section 902.1.

DESIGN DISPLACEMENT. See Section 1908.1.1.

DESIGN EARTHQUAKE GROUND MOTION. See Section 1613.2.

DESIGN FLOOD. See Section 1612.2.

DESIGN FLOOD ELEVATION. See Section 1612.2.

DESIGN STRENGTH. See Section 1602.1.

DESIGNATED SEISMIC SYSTEM. See Section 1702.1.

DETACHED BUILDING. See Section 415.2.

DETAILED PLAIN CONCRETE STRUCTURAL WALL. See Section 1908.1.1.

DETECTABLE WARNING. See Section 1102.1.

DETECTOR, HEAT. See Section 902.1.

DETONATION. See Section 307.2.

DETOXIFICATION FACILITY. See Section 308.3.1.

DIAPHRAGM. See Sections 1602.1 and 2302.1.

Diaphragm, blocked. See Section 1602.1.

Diaphragm, boundary. See Section 1602.1.

Diaphragm, chord. See Section 1602.1.

Diaphragm, flexible. See Section 1602.1.

Diaphragm, rigid. See Section 1602.1.
Diaphragm, unblocked. See Section 2302.1.

DIMENSIONS. See Section 2102.1.
Actual. See Section 2102.1.
Nominal. See Section 2102.1.
Specified. See Section 2102.1.

DISPENSING. See Section 307.2.

DOOR, BALANCED. See Section 1002.1.

DORMITORY. See Section 310.2.

DRAFTSTOP. See Section 702.1.

DRAG STRUT. See Section 2302.1.

DRILLED SHAFT. See Section 1802.1.
Socketed drilled shaft. See Section 1802.1.

DRY-CHEMICAL EXTINGUISHING AGENT. See Section 902.1.

DRY FLOODPROOFING. See Section 1612.2.

DURATION OF LOAD. See Section 1602.1.

DWELLING. *Any building that exclusively contains one, two, or three dwelling units, each of which may be occupied by a family and no more than five lodgers or boarders, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that is occupied for living purposes, physically separated from adjacent structures, and with an independent exit from each dwelling unit.*

DWELLING, ONE-, TWO-, OR THREE- FAMILY. *See Dwelling.*

DWELLING UNIT. A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation. *The dwelling unit may include any accessory space intended for the exclusive use of the occupants of an individual dwelling unit such as a private garage, greenhouse, etc.*

DWELLING UNIT OR SLEEPING UNIT, MULTISTORY. See Section 1102.1.

DWELLING UNIT OR SLEEPING UNIT, TYPE A. See Section 1102.1.

DWELLING UNIT OR SLEEPING UNIT, TYPE B. See Section 1102.1.

EGRESS COURT. See Section 1002.1.

ELEVATOR GROUP. See Section 902.1.

EMERGENCY ALARM SYSTEM. See Section 902.1.

EMERGENCY CONTROL STATION. See Section 415.2.

EMERGENCY ESCAPE AND RESCUE OPENING. See Section 1002.1.

EMERGENCY SITUATION. *An incident requiring a response to prevent loss of life or injury at a school building involving an active shooter or similar occurrence where normal evacuation could put occupants at risk, but shall not include fire, tornado/earthquake, building collapse, boiler failure, or similar occurrence caused by natural activity or building failure. See section 1008.1.9.11.*

EMERGENCY VOICE/ALARM COMMUNICATIONS. See Section 902.1.

EMPLOYEE WORK AREA. See Section 1102.1.

ENGINE-MOUNTED TANK. *A fuel tank furnished by the engine manufacturer or the emergency power system supplier and mounted on the engine, the engine-frame, or under as a subbase.*

EQUIPMENT PLATFORM. See Section 502.1.

ESSENTIAL FACILITIES. See Section 1602.1.

EXHAUSTED ENCLOSURE. See Section 415.2.

EXISTING CONSTRUCTION. See Section 1612.2.

EXISTING STRUCTURE. A structure *regulated by this code that was erected or one for which a plan approval* has been issued. See also Section 1612.2.

EXIT. See Section 1002.1.

EXIT ACCESS. See Section 1002.1.

EXIT ACCESS DOORWAY. See Section 1002.1.

EXIT DISCHARGE. See Section 1002.1.

EXIT DISCHARGE, LEVEL OF. See Section 1002.1.

EXIT ENCLOSURE. See Section 1002.1.

EXIT, HORIZONTAL. See Section 1002.1.

EXIT PASSAGEWAY. See Section 1002.1.

EXPANDED VINYL WALL COVERING. See Section 802.1.

EXPLOSION. See Section 307.2.

EXPLOSIVE. See Section 307.2.
- **High explosive.** See Section 307.2.
- **Low explosive.** See Section 307.2.
- **Mass detonating explosives.** See Section 307.2.
- **UN/DOTn Class 1 Explosives.** See Section 307.2.
  - **Division 1.1.** See Section 307.2.
  - **Division 1.2.** See Section 307.2.
  - **Division 1.3.** See Section 307.2.
  - **Division 1.4.** See Section 307.2.
  - **Division 1.5.** See Section 307.2.
  - **Division 1.6.** See Section 307.2.

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS). See Section 1402.1.

EXTERIOR INSULATION AND FINISH SYSTEM

(EIFS) WITH DRAINAGE. See Section 1402.1.

EXTERIOR SURFACES. See Section 2502.1.

EXTERIOR WALL. See Section 1402.1.

EXTERIOR WALL COVERING. See Section 1402.1.

EXTERIOR WALL ENVELOPE. See Section 1402.1.

F RATING. See Section 702.1.

FABRIC PARTITION. See Section 1602.1.

FABRICATED ITEM. See Section 1702.1.

FABRICATION AREA. See Section 415.2.

FACILITY. See Section 1102.1.

FACTORED LOAD. See Section 1602.1.

FIBER CEMENT SIDING. See Section 1402.1.

FIBER REINFORCED POLYMER. See Section 2602.1.
Fiberglass Reinforced Polymer. See Section 2602.1.

FIBERBOARD. See Section 2302.1.

FIRE ALARM BOX, MANUAL. See Section 902.1.

FIRE ALARM CONTROL UNIT. See Section 902.

FIRE ALARM SIGNAL. See Section 902.1.

FIRE ALARM SYSTEM. See Section 902.1.

FIRE AREA. See Section 902.1.

FIRE BARRIER. See Section 702.1.

FIRE CODE. "*Ohio Fire Code"*.

FIRE COMMAND CENTER. See Section 902.1.

FIRE DAMPER. See Section 702.1.

FIRE DETECTOR, AUTOMATIC. See Section 902.1.

FIRE DOOR. See Section 702.1.

FIRE DOOR ASSEMBLY. See Section 702.1.

FIRE EXIT HARDWARE. See Section 1002.1.

FIRE LANE. A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

FIRE PARTITION. See Section 702.1.

FIRE PREVENTION. *The preventative measures which provide for the safe conduct and operation of hazardous processes, storage of combustible and flammable materials, conducting of fire drills and the maintenance of fire protection, detection and extinguishing service equipment and good housekeeping conditions.*

FIRE PROTECTION RATING. See Section 702.1.

FIRE PROTECTION SYSTEM. See Section 902.1.

FIRE RESISTANCE. See Section 702.1.

FIRE-RESISTANCE RATING. See Section 702.1.

FIRE-RESISTANT JOINT SYSTEM. See Section 702.1.

FIRE SAFETY FUNCTIONS. See Section 902.1.

FIRE SEPARATION DISTANCE. See Section 702.1.

FIRE WALL. See Section 702.1.

FIRE WINDOW ASSEMBLY. See Section 702.1.

FIREBLOCKING. See Section 702.1.

FIREPLACE. See Section 2102.1.

FIREPLACE THROAT. See Section 2102.1.

FIREWORKS. See Section 307.2.
Fireworks, 1.3G. See Section 307.2.
Fireworks, 1.4G. See Section 307.2.

FIXED BASE OPERATOR (FBO). See Section 412.2.

FLAME SPREAD. See Section 802.1.

FLAME SPREAD INDEX. See Section 802.1.

FLAMMABLE GAS. See Section 307.2.

FLAMMABLE LIQUEFIED GAS. See Section 307.2.

FLAMMABLE LIQUID. See Section 307.2.
Class IA. See Section 307.2.
Class IB. See Section 307.2.
Class IC. See Section 307.2.

FLAMMABLE MATERIAL. See Section 307.2.

FLAMMABLE SOLID. See Section 307.2.

FLAMMABLE VAPORS OR FUMES. See Section 415.2.

FLASH POINT. See Section 307.2.

FLIGHT. See Section 1002.1.

FLOOD OR FLOODING. See Section 1612.2.

FLOOD DAMAGE-RESISTANT MATERIALS. See Section 1612.2.

FLOOD HAZARD AREA. See Section 1612.2.

FLOOD HAZARD AREA SUBJECT TO HIGH-VELOCITY WAVE ACTION. See Section 1612.2.

FLOOD INSURANCE RATE MAP (FIRM). See Section 1612.2.

FLOOD INSURANCE STUDY. See Section 1612.2.

FLOODWAY. See Section 1612.2.

FLOOR AREA, GROSS. See Section 1002.1.

FLOOR AREA, NET. See Section 1002.1.

FLOOR FIRE DOOR ASSEMBLY. See Section 702.1.

FLY GALLERY. See Section 410.2.

FOAM-EXTINGUISHING SYSTEMS. See Section 902.1.

FOAM PLASTIC INSULATION. See Section 2602.1.

FOLDING AND TELESCOPIC SEATING. See Section 1002.1.

FOOD COURT. See Section 402.2.

FOUNDATION PIER. See Section 2102.1.

FRAME STRUCTURE. See Section 1614.2.

FUEL TANK. *A tank containing fuel for an engine(s) or appliance.*

FURNACE ROOM. *A room primarily utilized for the installation of fuel-burning space-heating and water-heating appliances other than boilers.*

GAS CABINET. See Section 415.2.

GAS ROOM. See Section 415.2.

GASEOUS HYDROGEN SYSTEM. See Section 421.2.

GLASS FIBERBOARD. See Section 721.1.1.

GLUED BUILT-UP MEMBER. See Section 2302.1.

GRADE FLOOR OPENING. A window or other opening located such that the sill height of the opening is not more than 44 inches (1118 mm) above or below the finished ground level adjacent to the opening.

GRADE (LUMBER). See Section 2302.1.

GRADE PLANE. See Section 502.1.

GRANDSTAND. See Section 1002.1.

GRIDIRON. See Section 410.2.

GROSS LEASABLE AREA. See Section 402.2.

GROUTED MASONRY. See Section 2102.1.
Grouted hollow-unit masonry. See Section 2102.1.
Grouted multiwythe masonry. See Section 2102.1.

GUARD. See Section 1002.1.

GYPSUM BOARD. See Section 2502.1.

GYPSUM PLASTER. See Section 2502.1.

GYPSUM VENEER PLASTER. See Section 2502.1.

HABITABLE SPACE. A space in a building for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces.

HALOGENATED EXTINGUISHING SYSTEMS. See Section 902.1.

HANDLING. See Section 307.2.

HANDRAIL. See Section 1002.1.

HARDBOARD. See Section 2302.1.

HAZARDOUS MATERIALS. See Section 307.2.

HAZARDOUS PRODUCTION MATERIAL (HPM). See Section 415.2.

HEAD JOINT. See Section 2102.1.

HEALTH HAZARD. See Section 307.2.

HEIGHT, BUILDING. See Section 502.1.

HEIGHT, WALLS. See Section 2102.1.

HELICAL PILE. See Section 1802.1.

HELIPORT. See Section 412.2.

HELISTOP. See Section 412.2.

HIGH-RISE BUILDING. A building with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

HIGHLY TOXIC. See Section 307.2.

HISTORIC BUILDINGS. Buildings that are listed in or eligible for listing in the "National Register of Historic Places," or designated as historic *by certified local governments in accordance with the National Historic Preservation Act of 1966 as amended.* See *3409.*

HOME. *An institution, residence, or facility, required to be licensed by the Ohio Department of Health, that provides, for a period of more than twenty-four hours, whether for a consideration or not, accommodations to three or more unrelated individuals who are dependent upon the services of others, including a nursing home, residential care facility, home for the aging, a veterans' home operated under Chapter 5907. of the Revised Code, and a county home or district home that is or has been licensed as a residential care facility. For the purposes of licensure of homes, pursuant to Chapter 3721. of the Revised Code, any residence, institution, hotel, congregate housing project, or similar facility that meets the definition of a home under this section is such a home regardless of how the facility holds itself out to the public.*

HOME, COUNTY AND DISTRICT. *A county home or district home operated under Chapter 5155. of the Revised Code.*

HOME FOR THE AGING*. A home that provides services as a residential care facility and a nursing home, except that the home provides its services only to individuals who are dependent on the services of others by reason of both age and physical or mental impairment. The part or unit of a home for the aging that provides services only as a residential care facility is required to be licensed by the Ohio Department of Health as a residential care facility. The part or unit that may provide skilled nursing care beyond the extent authorized by section 3721.011 [3721.01.1] of the Revised Code is required to be licensed as a nursing home.*

HOME, NURSING. *A home used for the reception and care of individuals who by reason of illness or physical or mental impairment require skilled nursing care and of individuals who require personal care services but not skilled nursing care. A nursing home is required to be licensed by the Ohio Department of Health to provide personal care services and skilled nursing care.*

HOME, TYPE A FAMILY DAY-CARE. *A home where the administrator permanently resides and where care is provided for seven to twelve children under six years of age or four to twelve children when at least four are under two years of age. Licensure is required of these homes by the Ohio Department of Job and Family Services when at least one of the children cared for is not a sibling of the others and the home is not the permanent residence of the children. These homes are also referred to as Type A Homes and Type A Child Care and are exempt from the rules of the board. Also see Chapter 5104. of the Revised Code*

HOME, TYPE B FAMILY DAY-CARE. *A home where the administrator permanently resides and where care is provided for one to six children under six years of age with no more than three children under two years of age when at least one of the children cared for is not a sibling of the others and the home is not the permanent residence of the children. These homes are also referred to as Type B Homes and Type B Child Care and are exempt from the rules of the board. Also see Chapter 5104. of the Revised Code.*

HORIZONTAL ASSEMBLY. See Section 702.1.

HOSPITALS AND MENTAL HOSPITALS. See Section 308.3.1.

HOUSING UNIT. See Section 408.1.1.

HPM FLAMMABLE LIQUID. See Section 415.2.

HPM ROOM. See Section 415.2. **HURRICANE-PRONE REGIONS.** See Section 1609.2.

HYDROGEN CUTOFF ROOM. See Section 421.2.

IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH). See Section 415.2.

IMPACT LOAD. See Section 1602.1.

INCAPABLE OF SELF-PRESERVATION. *Persons because of age, physical limitations, mental limitations, chemical dependency, or medical treatment who cannot respond as an individual to an emergency situation.*

INCOMPATIBLE MATERIALS. See Section 307.2.

INDUSTRIALIZED UNITS. *See section 117.*

INERT GAS. See Section 307.2.

INITIATING DEVICE. See Section 902.1.

INSPECTION CERTIFICATE. See Section 1702.1.

INSTITUTION OF HIGHER EDUCATION. *A state institution of higher education as defined in section 3345.011 of the Revised Code, a private nonprofit college or university located in this state that possesses a certificate of authorization issued pursuant to Chapter 1713. of the Revised Code, or a school located in this state that possesses a certificate of registration and one or more program authorizations issued by the state board of career colleges and schools under Chapter 3322. of the Revised Code. See School Building.*

INTENDED TO BE OCCUPIED AS A RESIDENCE. See Section 1102.1.

INTERIOR FINISH. See Section 802.1.

INTERIOR FLOOR FINISH. See Section 802.1.

INTERIOR FLOOR-WALL BASE. See Section 802.1.

INTERIOR SURFACES. See Section 2502.1.

INTERIOR WALL AND CEILING FINISH. See Section 802.1.

INTERLAYMENT. See Section 1502.1.

INTUMESCENT FIRE-RESISTANT COATINGS. See Section 1702.1.

JOINT. See Section 702.1.

JURISDICTION. The *authority to enforce this code by municipal corporations, townships or counties certified by the board in accordance with section 3781.10 of the Revised Code or the division of industrial compliance in the department of commerce.*

LABEL. An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of an approved agency and that indicates that the representative sample of the product or material has been tested and evaluated by an approved agency (see Section 1703.5 and "Inspection certificate," "Manufacturer's designation" and "Mark").

LABELED. Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that

maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

LIGHT-DIFFUSING SYSTEM. See Section 2602.1.

LIGHT-FRAME CONSTRUCTION. A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood or cold-formed steel framing members.

LIGHT-TRANSMITTING PLASTIC ROOF PANELS. See Section 2602.1.

LIGHT-TRANSMITTING PLASTIC WALL PANELS. See Section 2602.1.

LIMIT STATE. See Section 1602.1.

LIMITED SPRAYING SPACE. *An area in which spraying operations for touch-up or spot painting of a surface area of nine square feet (0.84 m^2) or less are conducted.*

LIQUID. See Section 415.2.

LIQUID STORAGE ROOM. See Section 415.2.

LIQUID USE, DISPENSING AND MIXING ROOM. See Section 415.2.

LISTED. Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

LIVE LOADS. See Section 1602.1.

LIVE LOADS (ROOF). See Section 1602.1.

LIVE/WORK UNIT. *A dwelling unit or sleeping unit in which a significant portion of the space includes a nonresidential use that is operated by the tenant. See Section 419.*

LOAD AND RESISTANCE FACTOR DESIGN (LRFD). See Section 1602.1.

LOAD EFFECTS. See Section 1602.1.

LOAD FACTOR. See Section 1602.1.

LOADS. See Section 1602.1.

LOT. A portion or parcel of land considered as a unit.

LOT LINE. A line dividing one lot from another, or from a street or any public place.

LOWER FLAMMABLE LIMIT (LFL). See Section 415.2.

LOWEST FLOOR. See Section 1612.2.

MAIN WINDFORCE-RESISTING SYSTEM. See Section 1702.1.

MANUAL FIRE ALARM BOX. See Section 902.1.

MANUFACTURER'S DESIGNATION. An identification applied on a product by the manufacturer indicating that a product or material complies with a specified standard or set of rules (see also "Inspection certificate," "Label" and "Mark").

MARK. An identification applied on a product by the manufacturer indicating the name of the manufacturer and the function of a product or material (see also "Inspection certificate," "Label" and "Manufacturer's designation").

MARQUEE. A permanent roofed structure *projecting over an entrance attached to and supported by a building for the purpose of supporting a marquee sign.*

MASONRY. See Section 2102.1.
- **Ashlar masonry.** See Section 2102.1.
- **Coursed ashlar.** See Section 2102.1.
- **Glass unit masonry.** See Section 2102.1.
- **Plain masonry.** See Section 2102.1.
- **Random ashlar.** See Section 2102.1.
- **Reinforced masonry.** See Section 2102.1.
- **Solid masonry.** See Section 2102.1.
- **Unreinforced (plain) masonry.** See Section 2102.1.

MASONRY UNIT. See Section 2102.1.
Clay. See Section 2102.1.
Concrete. See Section 2102.1.
Hollow. See Section 2102.1.
Solid. See Section 2102.1.

MASTIC FIRE-RESISTANT COATINGS. See Section 1702.1.

MAXIMUM CONSIDERED EARTHQUAKE GROUND MOTION. See Section 1613.2.

MEANS OF EGRESS. See Section 1002.1.

MECHANICAL-ACCESS OPEN PARKING GARAGES. See Section 406.3.2.

MECHANICAL CODE. *The "Ohio Mechanical Code."*

MECHANICAL EQUIPMENT SCREEN. See Section 1502.1.

MECHANICAL SYSTEMS. See Section 1613.2.

MEMBRANE-COVERED CABLE STRUCTURE. See Section 3102.2.

MEMBRANE-COVERED FRAME STRUCTURE. See Section 3102.2.

MEMBRANE PENETRATION. See Section 702.1.

MEMBRANE-PENETRATION FIRESTOP. See Section 702.1.

MENTAL HOSPITALS. See Section 308.3.1.

MERCHANDISE PAD. See Section 1002.1.

METAL COMPOSITE MATERIAL (MCM). See Section1402.1.

METAL COMPOSITE MATERIAL (MCM) SYSTEM. See Section 1402.1.

METAL ROOF PANEL. See Section 1502.1.

METAL ROOF SHINGLE. See Section 1502.1.

MEZZANINE. See Section 502.1.

MICROPILE. See Section 1802.1.

MINERAL BOARD. See Section 721.1.1.

MINERAL FIBER. See Section 702.1.

MINERAL WOOL. See Section 702.1.

MINOR REPAIR. *See REPAIR, MINOR.*

MODIFIED BITUMEN ROOF COVERING. See Section 1502.1.

MORTAR. See Section 2102.1.

MORTAR, SURFACE-BONDING. See Section 2102.1.

MULTILEVEL ASSEMBLY SEATING. See Section 1102.1.

MULTIPLE-STATION ALARM DEVICE. See Section 902.1.

MULTIPLE-STATION SMOKE ALARM. See Section 902.1.

MULTISTORY UNITS. See Section 1102.1.

NAILING, BOUNDARY. See Section 2302.1.

NAILING, EDGE. See Section 2302.1.

NAILING, FIELD. See Section 2302.1.

NATURAL GAS PROCESSING FACILITIES *– Installations, including associated buildings, pipes, valves, tanks, and other equipment, used to separate various fluids, hydrocarbons, natural gas liquids, and impurities from the raw natural gas, manufacturing residue gas suitable for transmission and distribution to end users.*

NATURAL GAS LIQUIDS FRACTIONATION FACILITIES *– Installations, including associated buildings, pipes, valves, tanks, and other equipment, used for the separation of mixtures of light hydrocarbons or natural gas liquids into individual, purity natural gas liquid products, which include ethane, propane, normal butane, iso-butane, and natural gasolines.*

NATURALLY DURABLE WOOD. See Section 2302.1.
Decay resistant. See Section 2302.1.
Termite resistant. See Section 2302.1.

NOMINAL LOADS. See Section 1602.1.

NOMINAL SIZE (LUMBER). See Section 2302.1.

NONCOMBUSTIBLE MEMBRANE STRUCTURE. See Section 3102.2.

NORMAL TEMPERATURE AND PRESSURE (NTP). See Section 415.2.

NOSING. See Section 1002.1.

NOTIFICATION ZONE. See Section 902.1.

NUISANCE ALARM. See Section 902.1.

NURSING HOMES. See Section 308.3.1.

OCCUPANCY. *The purpose for which a building, or portion thereof, is used.*

OCCUPANCY, CHANGE OF. *See section 3402.*

OCCUPANCY CATEGORY. See Section 1602.1.

OCCUPANT LOAD. See Section 1002.1.

OCCUPIABLE SPACE. A room or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes or in which occupants are engaged at labor, and which is equipped with means of egress and light and ventilation facilities meeting the requirements of this code.

OPEN PARKING GARAGE. See Section 406.3.2.

OPEN SYSTEM. See Section 307.2.

OPERATING BUILDING. See Section 307.2.

ORDINARY PRECAST STRUCTURAL WALL. See Section 1908.1.1.

ORDINARY REINFORCED CONCRETE STRUCTURAL WALL. See Section 1908.1.1.

ORDINARY STRUCTURAL PLAIN CONCRETE WALL. See Section 1908.1.1.

ORGANIC PEROXIDE. See Section 307.2.
Class I. See Section 307.2.
Class II. See Section 307.2.
Class III. See Section 307.2.
Class IV. See Section 307.2.
Class V. See Section 307.2.
Unclassified detonable. See Section 307.2.

ORTHOGONAL. See Section 1613.2.

OTHER STRUCTURES. See Section 1602.1.

OWNER. Any person, agent, firm or corporation having a legal or equitable interest in the property.

OXIDIZER. See Section 307.2.
Class 4. See Section 307.2.
Class 3. See Section 307.2.
Class 2. See Section 307.2.
Class 1. See Section 307.2.

OXIDIZING GAS. See Section 307.2.

PANEL (PART OF A STRUCTURE). See Section 1602.1.

PANIC HARDWARE. See Section 1002.1.

PARTICLEBOARD. See Section 2302.1.

PENETRATION FIRESTOP. See Section 702.1.

PENTHOUSE. See Section 1502.1.

PERMIT. *Deleted*

PERSON. An individual, heirs, executors, administrators or assigns, and also includes a firm, partnership or corporation, its or their successors or assigns, or the agent of any of the aforesaid. *Whenever the word "person" is used in any section of this code prescribing a penalty or fine, as to partnerships or associations, the word shall include the partners or members thereof, and as to corporations, shall include the officer, agents or members thereof who are responsible for any violation of such section.*

PERSONAL CARE SERVICE. See Section 310.2.

PHOTOLUMINESCENT. See Section 1002.1.

PHYSICAL HAZARD. See Section 307.2.

PHYSIOLOGICAL WARNING THRESHOLD LEVEL. See Section 415.2.

PINRAIL. See Section 410.2.

PLASTIC, APPROVED. See Section 2602.1.

PLASTIC GLAZING. See Section 2602.1.

PLATFORM. See Section 410.2.

PLUMBING CODE. *The "Ohio Plumbing Code."*

POSITIVE ROOF DRAINAGE. See Section 1502.1.

POWER PIPING. *Piping systems and their component parts that are not building services piping systems, and that may be installed within electric power generating stations, industrial and institutional plants, utility geothermal heating systems, and central and district heating and cooling systems. Power piping includes, but is not limited to, piping used in the distribution of plant and process steam at boiler pressures greater than fifteen pounds per square inch gauge, high temperature water piping from high pressure and high temperature boilers, power boiler steam condensate piping, high pressure and high temperature water condensate piping, and compressed air and hydraulic piping upstream of the first stop valve off a system distribution header.*

PREFABRICATED WOOD I-JOIST. See Section 2302.1.

PREMISES. *A lot, plot or parcel of land, including any structure thereon.*

PRESTRESSED MASONRY. See Section 2102.1.

PRIMARY FUNCTION. See Section 3402.1.

PRIMARY STRUCTURAL FRAME. The primary structural frame shall include all of the following structural members:

1 The columns;
2 Structural members having direct connections to the columns, including girders, beams, trusses and spandrels;
3 Members of the floor construction and roof construction having direct connections to the columns; and
4 Bracing members that are essential to the vertical stability of the primary structural frame under gravity loading shall be considered part of the primary structural frame whether or not the bracing member carries gravity loads.

PRISM. See Section 2102.1.

PRIVATE SCHOOL. *A chartered nonpublic school or a nonchartered nonpublic school. See School Building.*

PROCESS PIPING. *Piping systems and their component parts that are not building services or power piping systems and that may be installed in petroleum*

refineries; chemical, pharmaceutical, textile, paper, semiconductor, and cryogenic plants; and related processing plants and terminals.

PROCESSING EQUIPMENT. *Equipment, machinery and devices specifically intended and used exclusively for manufacturing and other similar purposes. Processing equipment does not include the building electrical service and distribution system, mechanical and plumbing systems related to space heating, air conditioning, ventilation, water distribution and sanitation or other systems regulated by board rules.*

PROSCENIUM WALL. See Section 410.2.

PUBLIC ENTITY. *(1) Any state or local government; (2)Any department, agency, special purpose district, or other instrumentality of Ohio or local government; and (3) The national railroad passenger corporation, and any commuter authority (as defined in section 103(8) of the "Rail Passenger Service Act").*

PUBLIC ENTRANCE. See Section 1102.1.

PUBLIC SCHOOL. *Any school operated by a school district board of education, any community school established under Chapter 3314. of the Revised Code, any STEM school established under Chapter 3326. of the Revised Code, and any college-preparatory boarding school established under Chapter 3328. of the Revised Code. See School Building.*

PUBLIC-USE AREAS. See Section 1102.1.

PUBLIC WAY. See Section 1002.1.

PYROPHORIC. See Section 307.2.

PYROTECHNIC COMPOSITION. See Section 307.2.

RAMP. See Section 1002.1.

RAMP-ACCESS OPEN PARKING GARAGES. See Section 406.3.2.

RECORD DRAWINGS. See Section 902.1.

REFLECTIVE PLASTIC CORE FOIL INSULATION.

An insulation material packaged in rolls, that is less than 0.5 inches thick, with at least one exterior low emittance surface (0.1 or less) and a core material containing voids or cells.

REGISTERED DESIGN PROFESSIONAL. *Any architect holding a certificate issued under sections 4703.10 and 4703.36 of the Revised Code or any engineer holding a certificate issued under section 4733.14 of the Revised Code.*

REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. *Deleted*

RELIGIOUS WORSHIP, PLACE OF. A building or portion thereof intended for the performance of religious services.

REPAIR. The reconstruction or renewal of any part of an existing building for the purpose of its maintenance.

REPAIR, MINOR. *The reconstruction or renewal of any part of an existing building for the purpose of its maintenance when the work has limited impact on access, safety or health. Minor repairs do not include the cutting away of any wall, partition or portions of walls, the removal or cutting of any structural beam or load bearing support, or the removal or change of any required element of accessibility, means of egress, or rearrangement of parts of a structure affecting the egress requirements. Minor repairs do not include addition to, alteration of, replacement or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas, soil, waste, vent or similar piping, electric wiring or mechanical or other work affecting public health or general safety.*

REROOFING. See Section 1502.1.

RESIDENTIAL AIRCRAFT HANGAR. See Section 412.2.

RESIDENTIAL CARE/ASSISTED LIVING FACILITIES. See Section 310.2.

RESISTANCE FACTOR. See Section 1602.1.

RESTRICTED ENTRANCE. See Section 1102.1.

RETRACTABLE AWNING. See Section 3105.2.

REVISED CODE. *All statutes of a permanent and general nature of this state as revised and consolidated into general provisions, titles, chapters, and sections.*

ROOF ASSEMBLY. See Section 1502.1.

ROOF COVERING. See Section 1502.1.

ROOF COVERING SYSTEM. See Section 1502.1.

ROOF DECK. See Section 1502.1.

ROOF RECOVER. See Section 1502.1.

ROOF REPAIR. See Section 1502.1.

ROOF REPLACEMENT. See Section 1502.1.

ROOF VENTILATION. See Section 1502.1.

ROOFTOP STRUCTURE. See Section 1502.1.

RUBBLE MASONRY. See Section 2102.1.
Coursed rubble. See Section 2102.1.
Random rubble. See Section 2102.1.
Rough or ordinary rubble. See Section 2102.1.

RUNNING BOND. See Section 2102.1.

SAFE. *As applied to a building, means free from danger or hazard to the life, safety, health or welfare of persons occupying or frequenting it, or of the public, and from danger of settlement, movement, disintegration, or collapse, whether such danger arises from the method or materials of its construction or from equipment installed therein, for the purpose of lighting, heating, the transmission or utilization of electric current, or from its location or otherwise.*

SALLYPORT. *See section 408.1.1.*

SANITARY. *As applied to a building, means free from danger or hazard to the health of persons occupying or frequenting it or to that of the public, if such danger arises from the method or materials of its construction or from any equipment installed therein for the purpose of lighting, heating, ventilating, or plumbing.*

SALLYPORT. See Section 408.1.1.

SCISSOR STAIR. See Section 1002.1.

SCHOOL BUILDING. *A structure used for the instruction of students by a public or private school or institution of higher education.*

SCUPPER. See Section 1502.1.

SECONDARY MEMBERS. The following structural members shall be considered secondary members and not part of the primary structural frame:

1 Structural members not having direct connections to the columns;
2 Members of the floor construction not having direct connections to the columns; and
3 Bracing members other than those that are part of the primary structural frame.

SEISMIC DESIGN CATEGORY. See Section 1613.2.

SEISMIC-FORCE-RESISTING SYSTEM. See Section 1613.2.

SELF-CLOSING. See Section 702.1.

SELF-LUMINOUS. See Section 1002.1.

SELF-SERVICE STORAGE FACILITY. See Section 1102.1.

SERIOUS HAZARD. *A hazard of considerable consequence to safety or health through the design, location, construction, or equipment of a building, or the condition thereof, which hazard has been established through experience to be of certain or probable consequence, or which can be determined to be, or which is obviously such a hazard.*

SERVICE CORRIDOR. See Section 415.2.

SERVICE ENTRANCE. See Section 1102.1.

SHAFT. See Section 702.1.

SHAFT ENCLOSURE. See Section 702.1.

SHALLOW FOUNDATION. See Section 1802.1.

SHEAR WALL. See Sections 2102.1 and 2302.1.
Detailed plain masonry shear wall. See Section 2102.1.
Intermediate prestressed masonry shear wall. See Section 2102.1.
Intermediate reinforced masonry shear wall. See Section 2102.1.
Ordinary plain masonry shear wall. See Section 2102.1.
Ordinary plain prestressed masonry shear wall. See Section 2102.1.
Ordinary reinforced masonry shear wall. See Section2102.1.
Perforated shear wall. See Section 2302.1.
Perforated shear wall segment. See Section 2302.1.
Special prestressed masonry shear wall. See Section 2102.1.
Special reinforced masonry shear wall. See Section 2102.1.

SHELL. See Section 2102.1.

SINGLE-PLY MEMBRANE. See Section 1502.1.

SINGLE-STATION SMOKE ALARM. See Section 902.1.

SITE. See Section 1102.1.

SITE CLASS. See Section 1613.2.

SITE COEFFICIENTS. See Section 1613.2.

SITE-FABRICATED STRETCH SYSTEM. See Section 802.1.

SKYLIGHT, UNIT. A factory-assembled, glazed fenestration unit, containing one panel of glazing material that allows for natural lighting through an opening in the roof assembly while preserving the weather-resistant barrier of the roof.

SKYLIGHTS AND SLOPED GLAZING. Glass or other transparent or translucent glazing material installed at a slope of 15 degrees (0.26 rad) or more from vertical. Glazing material in skylights, including unit skylights, solariums, sunrooms, roofs and sloped walls, are included in this definition.

SLEEPING UNIT. A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit are not sleeping units.

SMOKE ALARM. See Section 902.1.

SMOKE BARRIER. See Section 702.1.

SMOKE COMPARTMENT. See Section 702.1.

SMOKE DAMPER. See Section 702.1.

SMOKE DETECTOR. See Section 902.1.

SMOKE-DEVELOPED INDEX. See Section 802.1.

SMOKE-PROTECTED ASSEMBLY SEATING. See Section 1002.1.

SMOKEPROOF ENCLOSURE. See Section 902.1.

SOLID. See Section 415.2.

SPECIAL AMUSEMENT BUILDING. See Section 411.2.

SPECIAL FLOOD HAZARD AREA. See Section 1612.2.

SPECIAL INSPECTION. See Section 1702.1.

SPECIAL INSPECTION AGENCY. *See Section 1702.1*.

SPECIAL INSPECTION, CONTINUOUS. See Section 1702.1.

SPECIAL INSPECTION, PERIODIC. See Section 1702.1.

SPECIAL INSPECTOR. *See Section 1702.1*.

SPECIAL STRUCTURAL WALL. See Section 1908.1.1.

SPECIFIED. See Section 2102.1.

SPECIFIED COMPRESSIVE STRENGTH OF MASONRY (f'm). See Section 2102.1.

SPLICE. See Section 702.1.

SPRAY BOOTH. *A mechanically ventilated appliance of varying dimensions and construction provided to enclose or accommodate a spraying operation and to confine and limit the escape of spray vapor and residue and to exhaust it safely.*

SPRAY ROOM. *A room designed to accommodate spraying operations constructed in accordance with this code and separated from the remainder of the building by a minimum one-hour fire barrier.*

SPRAYED FIRE-RESISTANT MATERIALS. See Section 1702.1.

SPRAYING SPACE. *An area in which dangerous quantities of flammable vapors or combustible residues, dusts or deposits are present due to the operation of spraying processes. The building official is authorized to define the limits of the spraying space in any specific case.*

SRO (Single room occupancy) FACILITY. *A facility with more than five sleeping rooms that is kept, used, maintained, advertised or held out to the public as a place where each individual is provided with separate sleeping accommodations which is intended to be the permanent residence of a single occupant. SRO facilities are required to be licensed by the Ohio Fire Marshal and do not include agricultural labor camps, apartment houses, lodging houses, rooming houses or college dormitories.*

STACK BOND. See Section 2102.1.

STAGE. See Section 410.2.

STAIR. See Section 1002.1.

STAIRWAY. See Section 1002.1.

STAIRWAY, EXTERIOR. See Section 1002.1.

STAIRWAY, INTERIOR. See Section 1002.1.

STAIRWAY, SPIRAL. See Section 1002.1.

STANDPIPE SYSTEM, CLASSES OF. See Section 902.1.
Class I system. See Section 902.1.
Class II system. See Section 902.1.
Class III system. See Section 902.1.

STANDPIPE, TYPES OF. See Section 902.1.
Automatic dry. See Section 902.1.
Automatic wet. See Section 902.1.
Manual dry. See Section 902.1.
Manual wet. See Section 902.1.
Semiautomatic dry. See Section 902.1.

START OF CONSTRUCTION. See Section 1612.2.

STEEL CONSTRUCTION, COLD-FORMED. See Section 2202.1.

STEEL JOIST. See Section 2202.1.

STEEL MEMBER, STRUCTURAL. See Section 2202.1.

STEEP SLOPE. A roof slope greater than two units vertical in 12 units horizontal (17-percent slope).

STONE MASONRY. See Section 2102.1.
Ashlar stone masonry. See Section 2102.1.
Rubble stone masonry. See Section 2102.1.

STORAGE, HAZARDOUS MATERIALS. See Section 415.2.

STORM SHELTER. See Section 423.2.
Community storm shelter. See Section 423.2.
Residential storm shelter. See Section 423.2.

STORY. That portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above (also see “Basement,” “Mezzanine” and Section 502.1). It is measured as the vertical distance from top to top of two successive tiers of beams or finished floor surfaces and, for the topmost story, from the top of the floor finish to the top of the ceiling joists or, where there is not a ceiling, to the top of the roof rafters.

STORY ABOVE GRADE PLANE. Any story having its finished floor surface entirely above grade plane, or in which the finished surface of the floor next above is:

1. More than 6 feet (1829 mm) above grade plane; or
2. More than 12 feet (3658 mm) above the finished ground level at any point.

STRENGTH. See Section 2102.1.
Design strength. See Section 2102.1.
Nominal strength. See Sections 1602.1 and 2102.1.
Required strength. See Sections 1602.1 and 2102.1.

STRENGTH DESIGN. See Section 1602.1.

STRUCTURAL COMPOSITE LUMBER. See Section 2302.1.
Laminated veneer lumber (LVL). See Section 2302.1.
Parallel strand lumber (PSL). See Section 2302.1.

STRUCTURAL GLUED-LAMINATED TIMBER. See Section 2302.1.

STRUCTURAL OBSERVATION. See Section 1702.1.

STRUCTURE. That which is built or constructed.

SUBDIAPHRAGM. See Section 2302.1.

SUBSTANTIAL DAMAGE. See Section 1612.2.

SUBSTANTIAL IMPROVEMENT. See Section 1612.2.

SUBSTANTIAL STRUCTURAL DAMAGE. See Section 3402.1.

SUITE. See Section 1002.1.

SUNROOM. See Section 1202.1.

SUPERVISING STATION. See Section 902.1.

SUPERVISORY SERVICE. See Section 902.1.

SUPERVISORY SIGNAL. See Section 902.1.

SUPERVISORY SIGNAL-INITIATING DEVICE. See Section 902.1.

SWIMMING POOLS. See Section 3109.2.

T RATING. See Section 702.1.

TECHNICALLY INFEASIBLE. See Section 3402.1.

TEMPORARY DOOR LOCKING DEVICE. *An assembly of parts intended to be engaged by a trained school staff member in a school building for the purpose of preventing both ingress and egress through a door in a school building for a finite period of time in an emergency situation and during active shooter drills. See Section 1008.1.9.11.*

TENT. A structure, enclosure or shelter, with or without sidewalls or drops, constructed of fabric or pliable material supported in any manner except by air or the contents it protects.

THERMAL ISOLATION. See Section 1202.1.

THERMOPLASTIC MATERIAL. See Section 2602.1.

THERMOSETTING MATERIAL. See Section 2602.1.

THIN-BED MORTAR. See Section 2102.1.

THROUGH PENETRATION. See Section 702.1.

THROUGH-PENETRATION FIRESTOP SYSTEM. See Section 702.1.

TIE-DOWN (HOLD-DOWN). See Section 2302.1.

TIE, LATERAL. See Section 2102.1.

TIE, WALL. See Section 2102.1.

TILE. See Section 2102.1.

TILE, STRUCTURAL CLAY. See Section 2102.1.

TIRES, BULK STORAGE OF. See Section 902.1.

TOWNHOUSE. A single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof.

TOXIC. See Section 307.2.

TRANSIENT, *PRIMARILY*. See Section 310.2.

TRANSIENT AIRCRAFT. See Section 412.2.

TREATED WOOD. See Section 2302.1.
Fire-retardant-treated wood. See Section 2302.1.
Preservative-treated wood. See Section 2302.1.

TRIM. See Section 802.1.

TROUBLE SIGNAL. See Section 902.1.

TYPE A FAMILY DAY-CARE HOME. *See HOME, TYPE A FAMILY DAY-CARE*

TYPE B FAMILY DAY-CARE HOME. *See HOME, TYPE B FAMILY DAY-CARE*

TYPE A UNIT. See Section 1102.1.

TYPE B UNIT. See Section 1102.1.

UNDERLAYMENT. See Section 1502.1.

UNSTABLE (REACTIVE) MATERIAL. See Section 307.2.
Class 4. See Section 307.2.

Class 3. See Section 307.2.
Class 2. See Section 307.2.
Class 1. See Section 307.2.

USE (MATERIAL). See Section 415.2.

VAPOR AREA. *An area containing flammable vapors in the vicinity of dip tanks, drain boards or associated drying, conveying or other equipment during operation or shutdown periods. The code official is authorized to determine the extent of the vapor area, taking into consideration the characteristics of the liquid, the degree of sustained ventilation and the nature of the operations.*

VAPOR-PERMEABLE MEMBRANE. A material or covering having a permeance rating of 5 perms ($52.9 \cdot 10^{-10}$ kg/Pa • s • m^2) or greater, when tested in accordance with the dessicant method using Procedure A of ASTM E 96. A vapor-permeable material permits the passage of moisture vapor.

VAPOR RETARDER CLASS. A measure of a material or assembly's ability to limit the amount of moisture that passes
through that material or assembly. Vapor retarder class shall be defined using the desiccant method of ASTM E 96 as follows:

Class I: 0.1 perm or less.

Class II: 0.1 < perm ≤ 1.0 perm.

Class III: 1.0 < perm ≤ 10 perm.

VEHICLE BARRIER SYSTEM. See Section 1602.1.

VEHICULAR GATE. See Section 3110.2.

VENEER. See Section 1402.1.

VENTILATION. The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

VINYL SIDING. See Section 1402.1.

VISIBLE ALARM NOTIFICATION APPLIANCE. See Section 902.1.

WALKWAY, PEDESTRIAN. A walkway used exclusively as a pedestrian

trafficway.

WALL. See Section 2102.1.

Cavity wall. See Section 2102.1.

Composite wall. See Section 2102.1.

Dry-stacked, surface-bonded wall. See Section 2102.1.

Masonry-bonded hollow wall. See Section 2102.1.

Parapet wall. See Section 2102.1.

WALL, LOAD-BEARING. Any wall meeting either of the following classifications:

1 Any metal or wood stud wall that supports more than 100 pounds per linear foot (1459 N/m) of vertical load in addition to its own weight.
2 Any masonry or concrete wall that supports more than 200 pounds per linear foot (2919 N/m) of vertical load in addition to its own weight.

WALL, NONLOAD-BEARING. Any wall that is not a load-bearing wall.

WALL PIER. See Section 1908.1.1.

WATER-REACTIVE MATERIAL. See Section 307.2.

Class 3. See Section 307.2.

Class 2. See Section 307.2.

Class 1. See Section 307.2.

WATER-RESISTIVE BARRIER. See Section 1402.1.

WEATHER-EXPOSED SURFACES. See Section 2502.1.

WEB. See Section 2102.1.

WET-CHEMICAL EXTINGUISHING SYSTEM. See Section 902.1.

WHEELCHAIR SPACE. See Section 1102.1.

WIND-BORNE DEBRIS REGION. See Section 1609.2.

WINDER. See Section 1002.1.

WIRE BACKING. See Section 2502.1.

WIRELESS PROTECTION SYSTEM. See Section 902.1.

WOOD SHEAR PANEL. See Section 2302.1.

WOOD STRUCTURAL PANEL. See Section 2302.1.
Composite panels. See Section 2302.1.
Oriented strand board (OSB). See Section 2302.1.
Plywood. See Section 2302.1.

WORKSTATION. See Section 415.2.

WYTHE. See Section 2102.1.

YARD. An open space, other than a court, unobstructed from the ground to the sky, except where specifically provided by this code, on the lot on which a building is situated.

ZONE. See Section 902.1.

ZONE, NOTIFICATION. See Section 902.1.

4101:1-10-01 Means of egress.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:1-35-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:1-1-01 of the Administrative Code.]

SECTION 1001
ADMINISTRATION

1001.1 General. Buildings or portions thereof shall be provided with a means of egress system as required by this chapter. The provisions of this chapter shall control the design, construction and arrangement of means of egress components required to provide an approved means of egress from structures and portions thereof. *Where Chapter 11 and this chapter have provisions relating to the same content, both chapters shall apply.*

1001.2 Minimum requirements. It shall be unlawful to alter a building or structure in a manner that will reduce the number of exits or the capacity of the means of egress to less than required by this code.

1001.3 Maintenance. Means of egress shall be maintained in accordance with the *fire code*.

1001.4 Fire safety and evacuation plans. *Fire safety and evacuation plans shall be provided for all occupancies and buildings where required by the fire code. Such fire safety and evacuation plans shall comply with the applicable provisions of Sections 401.2 and 404 of the fire code.*

SECTION 1002
DEFINITIONS

1002.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

ACCESSIBLE MEANS OF EGRESS. A continuous and unobstructed way of egress travel from any accessible point in a building or facility to a public way.

AISLE. An unenclosed exit access component that defines and provides a path of egress travel.

AISLE ACCESSWAY. That portion of an exit access that leads to an aisle.

ALTERNATING TREAD DEVICE. A device that has a series of steps between 50 and 70 degrees (0.87 and 1.22 rad) from horizontal, usually attached to a center support rail in an alternating manner so that the user does not have both feet on the same level at the same time.

AREA OF REFUGE. An area where persons unable to use stairways can remain temporarily to await instructions or assistance during emergency evacuation.

BLEACHERS. Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see "Grandstands").

COMMON PATH OF EGRESS TRAVEL. That portion of exit access which the occupants are required to traverse before two separate and distinct paths of egress travel to two exits are available. Paths that merge are common paths of travel. Common paths of egress travel shall be included within the permitted travel distance.

CORRIDOR. An enclosed exit access component that defines and provides a path of egress travel to an exit.

DOOR, **BALANCED**. A door equipped with double-pivoted hardware so designed as to cause a semi-counter balanced swing action when opening.

EGRESS COURT. A court or yard which provides access to a public way for one or more exits.

EMERGENCY ESCAPE AND RESCUE OPENING. An operable window, door or other similar device that provides for a means of escape and access for rescue in the event of an emergency.

EXIT. That portion of a means of egress *system between the exit access and the exit discharge or public way. Exit components include exterior exit doors at the level of exit discharge, interior exit stairways, interior exit ramps, exit passageways, exterior exit stairways and exit ramps and horizontal exits*.

EXIT ACCESS. That portion of a means of egress system that leads from any occupied portion of a building or structure to an exit.

EXIT ACCESS DOORWAY. A door or access point along the path of egress travel from an occupied room, area or space where the path of egress enters an intervening room, corridor, exit access stair or exit access ramp.

EXIT ACCESS RAMP. *An interior ramp that is not a required interior exit*

ramp.

EXIT ACCESS STAIRWAY. *An interior stairway that is not a required interior exit stairway.*

EXIT DISCHARGE. That portion of a means of egress system between the termination of an exit and a public way.

EXIT DISCHARGE, LEVEL OF. The story at the point at which an exit terminates and an exit discharge begins.

EXIT ENCLOSURE. An exit component that is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives, and provides for a protected path of egress travel in a vertical or horizontal direction to the exit discharge or the public way.

EXIT, HORIZONTAL. A path of egress travel from one building to an area in another building on approximately the same level, or a path of egress travel through or around a wall or partition to an area on approximately the same level in the same building, which affords safety from fire and smoke from the area of incidence and areas communicating therewith.

EXIT PASSAGEWAY. An exit component that is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives, and provides for a protected path of egress travel in a horizontal direction to the exit discharge or the public way.

FIRE EXIT HARDWARE. Panic hardware that is listed for use on fire door assemblies.

FIXED SEATING. *Furniture or fixture designed and installed for the use of sitting and secured in place including bench-type seats with or without backs or arm rests.*

FLIGHT. A continuous run of rectangular treads, winders or combination thereof from one landing to another.

FLOOR AREA, GROSS. The floor area within the inside perimeter of the exterior walls of the building under consideration, exclusive of vent shafts and

courts, without deduction for corridors, stairways, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include shafts with no openings or interior courts.

FLOOR AREA, NET. The actual occupied area not including unoccupied accessory areas such as corridors, stairways, toilet rooms, mechanical rooms and closets.

FOLDING AND TELESCOPIC SEATING. Tiered seating having an overall shape and size that is capable of being reduced for purposes of moving or storing and is not a building element.

GRANDSTAND. Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see "Bleachers").

GUARD. A building component or a system of building components located at or near the open sides of elevated walking surfaces that minimizes the possibility of a fall from the walking surface to a lower level.

HANDRAIL. A horizontal or sloping rail intended for grasping by the hand for guidance or support.

INTERIOR EXIT RAMP. *An exit component that serves to meet one or more means of egress design requirements, such as required number of exits or exit access travel distance, and provides for a protected path of egress travel to the exit discharge or public way.*

INTERIOR EXIT STAIRWAY. *An exit component that serves to meet one or more means of egress design requirements, such as required number of exits or exit access travel distance, and provides for a protected path of egress travel to the exit discharge or public way.*

MEANS OF EGRESS. A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way. A means of egress consists of three separate and distinct parts: the exit access, the exit and the exit discharge.

MERCHANDISE PAD. A merchandise pad is an area for display of merchandise surrounded by aisles, permanent fixtures or walls. Merchandise pads contain elements such as nonfixed and moveable fixtures, cases, racks, counters and partitions as indicated in Section 105.2 from which customers browse or shop.

NOSING. The leading edge of treads of stairs and of landings at the top of

stairway flights.

OCCUPANT LOAD. The number of persons for which the means of egress of a building or portion thereof is designed.

PANIC HARDWARE. A door-latching assembly incorporating a device that releases the latch upon the application of a force in the direction of egress travel.

PHOTOLUMINESCENT. Having the property of emitting light that continues for a length of time after excitation by visible or invisible light has been removed.

PUBLIC WAY. A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet (3048 mm).

RAMP. A walking surface that has a running slope steeper than one unit vertical in 20 units horizontal (5-percent slope).

SCISSOR STAIR. Two interlocking stairways providing two separate paths of egress located within one stairwell enclosure.

SELF-LUMINOUS. Illuminated by a self-contained power source, other than batteries, and operated independently of external power sources.

SMOKE-PROTECTED ASSEMBLY SEATING. Seating served by means of egress that is not subject to smoke accumulation within or under a structure.

STAIR. A change in elevation, consisting of one or more risers.

STAIRWAY. One or more flights of stairs, either exterior or interior, with the necessary landings and platforms connecting them, to form a continuous and uninterrupted passage from one level to another.

STAIRWAY, EXTERIOR. A stairway that is open on at least one side, except for required structural columns, beams, handrails and guards. The adjoining open areas shall be either yards, courts or public ways. The other sides of the exterior stairway need not be open.

STAIRWAY, **INTERIOR**. A stairway not meeting the definition of an exterior stairway.

STAIRWAY, **SPIRAL**. A stairway having a closed circular form in its plan view with uniform section-shaped treads attached to and radiating from a minimum-diameter supporting column.

SUITE. *When used in provisions of this code relating to I-2 occupancies,* a group of patient treatment rooms or patient sleeping rooms where staff are in attendance within the suite, for supervision of all patients within the suite and the suite is in compliance with the requirements of Sections 1014.2.2 through 1014.2.7.

WINDER. A tread with nonparallel edges.

SECTION 1003
GENERAL MEANS OF EGRESS

1003.1 Applicability. The general requirements specified in Sections 1003 through 1013 shall apply to all three elements of the means of egress system, in addition to those specific requirements for the exit access, the exit and the exit discharge detailed elsewhere in this chapter.

1003.2 Ceiling height. The means of egress shall have a ceiling height of not less than 7 feet 6 inches (2286 mm).

Exceptions:

1. Sloped ceilings in accordance with Section 1208.2.
2. Ceilings of dwelling units and sleeping units within residential occupancies in accordance with Section 1208.2.
3. Allowable projections in accordance with Section 1003.3.
4. Stair headroom in accordance with Section 1009.2.
5. Door height in accordance with Section 1008.1.1.
6. Ramp headroom in accordance with Section 1010.5.2.
7. The clear height of floor levels in vehicular and pedestrian traffic areas in parking garages in accordance with Section 406.2.2.
8. Areas above and below mezzanine floors in accordance with Section 505.1.

1003.3 Protruding objects. Protruding objects shall comply with the requirements of Sections 1003.3.1 through 1003.3.4.

1003.3.1 Headroom. Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 provided a minimum headroom of 80 inches (2032 mm) shall be provided for any walking surface, including walks, corridors, aisles and passageways. Not more than 50 percent of the ceiling area of a means of egress shall be reduced in height by protruding objects.

Exception: Door closers and stops shall not reduce headroom to less than 78 inches (1981 mm).

A barrier shall be provided where the vertical clearance is less than 80 inches (2032 mm) high. The leading edge of such a barrier shall be located 27 inches (686 mm) maximum above the floor.

1003.3.2 Post-mounted objects. A free-standing object mounted on a post or pylon shall not overhang that post or pylon more than 4 inches (102 mm) where

the lowest point of the leading edge is more than 27 inches (686 mm) and less than 80 inches (2032 mm) above the walking surface. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (686 mm) maximum or 80 inches (2032 mm) minimum above the finished floor or ground.

Exception: These requirements shall not apply to sloping portions of handrails between the top and bottom riser of stairs and above the ramp run.

1003.3.3 Horizontal projections. Structural elements, fixtures or furnishings shall not project horizontally from either side more than 4 inches (102 mm) over any walking surface between the heights of 27 inches (686 mm) and 80 inches (2032 mm) above the walking surface.

Exception: Handrails are permitted to protrude 4 ½ inches (114 mm) from the wall.

1003.3.4 Clear width. Protruding objects shall not reduce the minimum clear width of accessible routes.

1003.4 Floor surface. Walking surfaces of the means of egress shall have a slip-resistant surface and be securely attached.

1003.5 Elevation change. Where changes in elevation of less than 12 inches (305 mm) exist in the means of egress, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), ramps complying with Section 1010 shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the ramp shall be equipped with either handrails or floor finish materials that contrast with adjacent floor finish materials.

Exceptions:

1. A single step with a maximum riser height of 7 inches (178 mm) is permitted for buildings with occupancies in Groups F, H, R-2, R-3, S and U at exterior doors not required to be accessible by Chapter 11.
2. A stair with a single riser or with two risers and a tread is permitted at locations not required to be accessible by Chapter 11, provided that the risers and treads comply with Section 1009.4, the minimum depth of the tread is 13 inches (330 mm) and at least one handrail complying with Section 1012 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the stair.
3. A step is permitted in aisles serving seating that has a difference in elevation less than 12 inches (305 mm) at locations not required to be accessible by Chapter 11, provided that the risers and treads comply with Section 1028.11 and the aisle is provided with a handrail complying with

Section 1028.13.

Throughout a story in a Group I-2 occupancy, any change in elevation in portions of the *means of egress* that serve non-ambulatory persons shall be by means of a ramp or sloped walkway.

1003.6 Means of egress continuity. The path of egress travel along a means of egress shall not be interrupted by any building element other than a means of egress component as specified in this chapter. Obstructions shall not be placed in the required width of a means of egress except projections permitted by this chapter. The required capacity of a means of egress system shall not be diminished along the path of egress travel.

1003.7 Elevators, escalators and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required means of egress from any other part of the building.

Exception: Elevators used as an accessible means of egress in accordance with Section 1007.4.

SECTION 1004
OCCUPANT LOAD

1004.1 Design occupant load. In determining means of egress requirements, the number of occupants for whom means of egress facilities shall be provided shall be determined in accordance with this section. Where occupants from accessory areas egress through a primary space, the calculated occupant load for the primary space shall include the total occupant load of the primary space plus the number of occupants egressing through it from the accessory area.

1004.1.1 Areas without fixed seating. The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.1.1. For areas without fixed seating, the occupant load shall not be less than that number determined by dividing the floor area under consideration by the occupant per unit of area factor assigned to the occupancy as set forth in Table 1004.1.1. Where an intended use is not listed in Table 1004.1.1, the building official shall establish a use based on a listed use that most nearly resembles the intended use.

Exception: Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by calculation, shall be permitted to be used in the determination of the design occupant load.

1004.2 Increased occupant load. The occupant load permitted in any building, or

portion thereof, is permitted to be increased from that number established for the occupancies in Table 1004.1.1, provided that all other requirements of the code are also met based on such modified number and the occupant load does not exceed one occupant per 7 square feet (0.65 m^2)of occupiable floor space. Where required by the building official, an approved aisle, seating or fixed equipment diagram substantiating any increase in occupant load shall be submitted. Where required by the building official, such diagram shall be posted.

1004.3 Posting of occupant load. Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or authorized agent.

1004.4 Exiting from multiple levels. Where exits serve more than one floor, only the occupant load of each floor considered individually shall be used in computing the required capacity of the exits at that floor, provided that the exit capacity shall not decrease in the direction of egress travel.

1004.5 Egress convergence. Where means of egress from floors above and below converge at an intermediate level, the capacity of the means of egress from the point of convergence shall not be less than the sum of the two floors.

1004.6 Mezzanine levels. The occupant load of a mezzanine level with egress onto a room or area below shall be added to that room or area's occupant load, and the capacity of the exits shall be designed for the total occupant load thus established.

1004.7 Fixed seating. For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The occupant load for areas in which fixed seating is not installed, such as waiting spaces and wheelchair spaces, shall be determined in accordance with Section 1004.1.1 and added to the number of fixed seats.

The occupant load of wheelchair spaces and the associated companion seat shall be based on one occupant for each wheelchair space and one occupant for the associated companion seat provided in accordance with Section 1108.2.3.

For areas having fixed seating without dividing arms, the occupant load shall not be less than the number of seats based on one person for each 18 inches (457 mm) of seating length.

The occupant load of seating booths shall be based on one person for each 24 inches (610 mm) of booth seat length measured at the backrest of the seating booth.

1004.8 Outdoor areas. Yards, patios, courts and similar outdoor areas accessible to and usable by the building occupants shall be provided with means of egress as required by this chapter. The occupant load of such outdoor areas shall be assigned by the building official in accordance with the anticipated use.
Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, means of egress requirements for the building shall be based on the sum of the occupant loads of the building plus the outdoor areas.

Exceptions

1. Outdoor areas used exclusively for service of the building need only have one means of egress.
2. Outdoor areas *dedicated to individual dwelling units in* Group R-3 and Group R-2.

TABLE 1004.1.1
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	FLOOR AREA IN SQ. FT. PER OCCUPANT
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal Baggage claim Baggage handling Concourse Waiting areas	 20 gross 300 gross 100 gross 15 gross
Assembly Gaming floors (keno, slots, etc.)	 11 gross
Assembly with fixed seats	See Section 1004.7
Assembly without fixed seats Concentrated (chairs only—not fixed) Standing space Unconcentrated (tables and chairs)	7 net 5 net 15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	100 gross
Courtrooms—other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross

Educational Classroom area Shops and other vocational room areas	 20 net 50 net
Exercise rooms	50 gross
H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas Inpatient treatment areas Outpatient areas Sleeping areas	 240 gross 100 gross 120 gross
Kitchens, commercial	200 gross
Library Reading rooms Stack area	 50 net 100 gross
Locker rooms	50 gross
Mercantile Areas on other floors Basement and grade floor areas Storage, stock, shipping areas	 60 gross 30 gross 300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools Rink and pool Decks	 50 gross 15 gross
Stages and platforms	15 net
Warehouses	500 gross

For SI: 1 square foot = 0.0929 m^2.

1004.9 Multiple occupancies. Where a building contains two or more occupancies, the means of egress requirements shall apply to each portion of the building based on the occupancy of that space. Where two or more occupancies utilize portions of the same means of egress system, those egress components shall meet the more stringent requirements of all occupancies that are served.

SECTION 1005
EGRESS WIDTH

1005.1 Minimum required *capacity based on occupant load.* *The required capacity, in inches (mm), of the means of egress for any room, area, space or story shall not be less than that determined in accordance with Sections 1005.1.1 and 1005.1.2.*

1005.1.1 Stairways. *The capacity, in inches (mm), of means of egress stairways shall be calculated by multiplying the occupant load served by such stairway by a means of egress capacity factor of 0.3 inch (7.6 mm) per occupant. Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the stairways serving that story.*

> ***Exception:*** *For other than Group H and I---2 occupancies, the capacity, in inches (mm), of means of egress stairways shall be calculated by multiplying the occupant load served by such stairway by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm communication system in accordance with Section 907.5.2.2.*

1005.1.2 Other egress components. *The capacity, in inches (mm), of means of egress components other than stairways shall be calculated by multiplying the occupant load served by such component by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant.*

> ***Exception:*** *For other than Group H and I---2 occupancies, the capacity, in inches (mm), of means of egress components other than stairways shall be calculated by multiplying the occupant load served by such component by a means of egress capacity factor of 0.15 inch (3.8 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm communication system in accordance with Section 907.5.2.2.*

1005.2 Door encroachment. Doors, when fully opened, and handrails shall not reduce the required means of egress width by more than 7 inches (178 mm). Doors in any position shall not reduce the required width by more than one-half. Other nonstructural projections such as trim and similar decorative features shall be permitted to project into the required width a maximum of 1½ inches (38 mm) on each side.

> **Exception:** The restrictions on a door swing shall not apply to doors within individual dwelling units and sleeping units of Group R-2 and dwelling units of Group R-3.

1005.3 Door hardware encroachment. Surface-mounted latch release hardware shall be exempt from inclusion in the 7-inch (178 mm) maximum projection requirement of Section 1005.2 when:

1. The hardware is mounted to the side of the door facing the corridor width when the door is in the open position; and
2. The hardware is mounted not less than 34 inches (865 mm) or more than 48 inches (1220 mm) above the finished floor.

1005.4 Other projections. *Handrail projections shall be in accordance with the provisions of Section 1012.8. Other nonstructural projections such as trim and similar decorative features shall be permitted to project into the required width a maximum of 1½ inches (38 mm) on each side.*

Exception: *Projections are permitted in corridors within Group I-2 nursing homes in accordance with Section 407.3.3.*

SECTION 1006
MEANS OF EGRESS ILLUMINATION

1006.1 Illumination required. The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress is occupied.

Exceptions:

1. Occupancies in Group U.
2. Aisle accessways in Group A.
3. Dwelling units and sleeping units in Groups R-1, R-2 and R-3.
4. Sleeping units of Group I occupancies.

1006.2 Illumination level. The means of egress illumination level shall not be less than 1 foot-candle (11 lux) at the walking surface.

Exception: For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination at the walking surface is permitted to be reduced during performances to not less than 0.2 foot-candle (2.15 lux), provided that the required illumination is automatically restored upon activation of a premises' fire alarm system where such system is provided.

1006.3 Illumination emergency power. The power supply for means of egress illumination shall normally be provided by the premises' electrical supply.

In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:

1. Aisles and unenclosed egress stairways in rooms and spaces that require two or more means of egress.
2. Corridors, exit enclosures, *ramps* and exit passageways in buildings required to have two or more exits.

3. Exterior egress components at other than their levels of exit discharge until exit discharge is accomplished for buildings required to have two or more exits.
4. Interior exit discharge elements, as permitted in Section 1027.1, in buildings required to have two or more exits.
5. Exterior landings as required by Section 1008.1.6 for exit discharge doorways in buildings required to have two or more exits.

The emergency power system shall provide power for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Chapter 27.

1006.4 Performance of system. Emergency lighting facilities shall be arranged to provide initial illumination that is at least an average of 1 foot-candle (11 lux) and a minimum at any point of 0.1 foot-candle (1 lux) measured along the path of egress at floor level. Illumination levels shall be permitted to decline to 0.6 foot-candle (6 lux) average and a minimum at any point of 0.06 foot-candle (0.6 lux) at the end of the emergency lighting time duration. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.

SECTION 1007
ACCESSIBLE MEANS OF EGRESS

1007.1 Accessible means of egress required. Accessible means of egress shall comply with this section. Accessible spaces shall be provided with not less than one accessible means of egress. Where more than one means of egress are required by Section 1015.1 or 1021.1 from any accessible space, each accessible portion of the space shall be served by not less than two accessible means of egress.

Exceptions:

1. Accessible means of egress are not required in alterations to existing buildings.
2. One accessible means of egress is required from an accessible mezzanine level in accordance with Section 1007.3, 1007.4 or 1007.5.
3. In assembly areas with sloped or stepped aisles, one accessible means of egress is permitted where the common path of travel is accessible and meets the requirements in Section 1028.8.

1007.2 Continuity and components. Each required accessible means of egress

shall be continuous to a public way and shall consist of one or more of the following components:

1. Accessible routes complying with Section 1104.
2. Interior exit stairways complying with Sections 1007.3 and 1022.
3. Exterior exit stairways complying with Sections 1007.3 and 1026.
4. Elevators complying with Section 1007.4.
5. Platform lifts complying with Section 1007.5.
6. Horizontal exits complying with Section 1025.
7. Ramps complying with Section 1010.
8. Areas of refuge complying with Section 1007.6.

Exceptions:

1. Where the exit discharge is not accessible, an exterior area for assisted rescue must be provided in accordance with Section 1007.7.
2. Where the exit stairway is open to the exterior, the accessible means of egress shall include either an area of refuge in accordance with Section 1007.6 or an exterior area for assisted rescue in accordance with Section 1007.7.

1007.2.1 Elevators required. In buildings where a required accessible floor is four or more stories above or below a level of exit discharge, at least one required accessible means of egress shall be an elevator complying with Section 1007.4.

Exceptions:

1. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a horizontal exit and located at or above the levels of exit discharge.
2. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a ramp conforming to the provisions of Section 1010.

1007.3 Stairways. In order to be considered part of an accessible means of egress, an exit access stairway as permitted by Section 1016.1 or exit stairway shall have a clear width of 48 inches (1219 mm) minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from either an area of refuge complying with Section 1007.6 or a horizontal exit.

Exceptions:

1. The area of refuge is not required at open exit access or exit stairways as permitted by Sections 1016.1 and 1022.1 in buildings that are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The clear width of 48 inches (1219 mm) between handrails is not required at exit access stairway as permitted by Section 1016.1 or exit stairways in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Areas of refuge are not required at exit stairways in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
4. The clear width of 48 inches (1219 mm) between handrails is not required for exit stairways accessed from a horizontal exit.
5. Areas of refuge are not required at exit stairways serving open parking garages.
6. Areas of refuge are not required for smoke protected seating areas complying with Section 1028.6.2.
7. The areas of refuge are not required in Group R-2 occupancies.

1007.4 Elevators. In order to be considered part of an accessible means of egress, an elevator shall comply with the emergency operation and signaling device requirements of Section 2.27 of ASME A17.1. Standby power shall be provided in accordance with Chapter 27 and Section 3003. The elevator shall be accessed from either an area of refuge complying with Section 1007.6 or a horizontal exit.

Exceptions:

1. Elevators are not required to be accessed from an area of refuge or horizontal exit in open parking garages.
2. Elevators are not required to be accessed from an area of refuge or horizontal exit in buildings and facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Elevators not required to be located in a shaft in accordance with Section 708.2 are not required to be accessed from an area of refuge or horizontal exit.
4. Elevators are not required to be accessed from an area of refuge or horizontal exit for smoke protected seating areas complying with Section 1028.6.2.

1007.5 Platform lifts. Platform (wheelchair) lifts shall not serve as part of an accessible means of egress, except where allowed as part of a required accessible route in Section 1109.7. Standby power shall be provided in accordance with

Chapter 27 for platform lifts permitted to serve as part of a means of egress.

1007.5.1 Openness. Platform lifts on an accessible means of egress shall not be installed in a fully enclosed hoistway .

1007.6 Areas of refuge. Every required area of refuge shall be accessible from the space it serves by an accessible means of egress. The maximum travel distance from any accessible space to an area of refuge shall not exceed the travel distance permitted for the occupancy in accordance with Section 1016.1. Every required area of refuge shall have direct access to a stairway within an exit enclosure complying with Sections 1007.3 and 1022 or an elevator complying with Section 1007.4. Where an elevator lobby is used as an area of refuge, the shaft and lobby shall comply with Section 1022.9 for smokeproof enclosures except where the elevators are in an area of refuge formed by a horizontal exit or smoke barrier.

Exceptions:

1. A stairway serving an area of refuge is not required to be enclosed where permitted in Sections 1016.1 and 1022.1.
2. Smokeproof enclosure is not required for an elevator lobby used as an area of refuge not required to be enclosed.

1007.6.1 Size. Each area of refuge shall be sized to accommodate one wheelchair space of 30 inches by 48 inches (762 mm by1219 mm) for each 200 occupants or portion thereof, based on the occupant load of the area of refuge and areas served by the area of refuge. Such wheelchair spaces shall not reduce the required means of egress width. Access to any of the required wheelchair spaces in an area of refuge shall not be obstructed by more than one adjoining wheelchair space.

1007.6.2 Separation. Each area of refuge shall be separated from the remainder of the story by a smoke barrier complying with Section 710 or a horizontal exit complying with Section 1025. Each area of refuge shall be designed to minimize the intrusion of smoke.

Exception: Areas of refuge located within an exit enclosure.

1007.6.3 Two-way communication. Areas of refuge shall be provided with a two-way communication system complying with Sections 1007.8.1 and 1007.8.2.

1007.7 Exterior area for assisted rescue. *Exterior areas for assisted rescue shall be accessed by an accessible route from the area served.* The exterior area for

assisted rescue must be open to the outside air and meet the requirements of Section 1007.6.1. Separation walls shall comply with the requirements of Section 705 for exterior walls. Where walls or openings are between the area for assisted rescue and the interior of the building, the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than ¾ hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor level of the area for assisted rescue or to the roof line, whichever is lower.

1007.7.1 Openness. The exterior area for assisted rescue shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

1007.7.2 Exterior exit stairway. Exterior exit stairways that are part of the means of egress for the exterior area for assisted rescue shall provide a clear width of 48 inches (1219 mm) between handrails.

1007.8 Two-way communication. A two-way communication system shall be provided at the elevator landing on each accessible floor that is one or more stories above or below the story of exit discharge complying with Sections 1007.8.1 and 1007.8.2.

Exceptions:

1. Two-way communication systems are not required at the elevator landing where the two-way communication system is provided within areas of refuge in accordance with Section 1007.6.3.
2. Two-way communication systems are not required on floors provided with exit ramps conforming to the provisions of Section 1010.

1007.8.1 System requirements. Two-way communication systems shall provide communication between each required location and the fire command center or a central control point location approved by the fire department. Where the central control point is not constantly attended, a two-way communication system shall have a timed automatic telephone dial-out capability to a monitoring location or 911. The two-way communication system shall include both audible and visible signals.

1007.8.2 Directions. Directions for the use of the two-way communication system, instructions for summoning assistance via the two-way communication system and written identification of the location shall be posted adjacent to the two-way communication system.

1007.9 Signage. Signage indicating special accessibility provisions shall be provided as shown:

1. Each door providing access to an area of refuge from an adjacent floor area shall be identified by a sign stating: AREA OF REFUGE.
2. Each door providing access to an exterior area for assisted rescue shall be identified by a sign stating: EXTERIOR AREA FOR ASSISTED RESCUE.

Signage shall comply with the ICC A117.1 requirements for visual characters and include the International Symbol of Accessibility. Where exit sign illumination is required by Section 1011.2, the signs shall be illuminated. Additionally, tactile signage complying with ICC A117.1 shall be located at each door to an area of refuge and exterior area for assisted rescue in accordance with Section 1011.3.

1007.10 Directional signage. Direction signage indicating the location of the other means of egress and which are accessible means of egress shall be provided at the following:

1. At exits serving a required accessible space but not providing an approved accessible means of egress.
2. At elevator landings.
3. Within areas of refuge.

1007.11 Instructions. In areas of refuge and exterior areas for assisted rescue, instructions on the use of the area under emergency conditions shall be posted. The instructions shall include all of the following:

1. Persons able to use the exit stairway do so as soon as possible, unless they are assisting others.
2. Information on planned availability of assistance in the use of stairs or supervised operation of elevators and how to summon such assistance.
3. Directions for use of the two-way communications system where provided.

SECTION 1008
DOORS, GATES AND TURNSTILES

1008.1 Doors. Means of egress doors shall meet the requirements of this section. Doors serving a means of egress system shall meet the requirements of this section and Section 1020.2. Doors provided for egress purposes in numbers greater than required by this code shall meet the requirements of this section.

Means of egress doors shall be readily distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Mirrors or similar reflecting materials shall not be used on means of egress doors. Means of egress doors shall not be concealed by curtains, drapes, decorations or similar materials.

1008.1.1 Size of doors. The minimum width of each door opening shall be sufficient for the occupant load thereof and shall provide a clear width of 32 inches (813 mm). Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 32 inches (813 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. Means of egress doors in a Group I-2 occupancy used for the movement of beds shall provide a clear width not less than 41 ½ inches (1054 mm). The height of door openings shall not be less than 80 inches (2032 mm).

Exceptions:

1. The minimum and maximum width shall not apply to door openings that are not part of the required means of egress in Group R-2 and R-3 occupancies.
2. Door openings to resident sleeping units *not required to be accessible*, in Group I-3 occupancies, shall have a clear width of not less than 28 inches (711 mm).
3. Door openings to *reach-in* storage closets less than 10 square feet (0.93 m^2) in area shall not be limited by the minimum width.
4. Width of door leaves in revolving doors that comply with Section 1008.1.4.1 shall not be limited.
5. Door openings within a dwelling unit or sleeping unit shall not be less than 78 inches (1981 mm) in height.
6. Exterior door openings in dwelling units and sleeping units, other than the required exit door, shall not be less than 76 inches (1930 mm) in height.
7. In other than Group R-1 occupancies, the minimum widths shall not apply to interior egress doors within a dwelling unit or sleeping unit that is not

required to be an Accessible unit, Type A unit or Type B unit.

8. Door openings required to be accessible within Type B units shall have a minimum clear width of 31.75 inches (806mm).

1008.1.1.1 Projections into clear width. There shall not be projections into the required clear width lower than 34 inches (864 mm) above the floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (102 mm).

Exception: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the floor.

1008.1.2 Door swing. Egress doors shall be of the pivoted or side-hinged swinging type.

Exceptions:

1. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
2. Group I-3 occupancies used as a place of detention.
3. Critical or intensive care patient rooms within suites of health care facilities.
4. Doors within or serving a single dwelling unit in Groups R-2 and R-3.
5. In other than Group H occupancies, revolving doors complying with Section 1008.1.4.1.
6. In other than Group H occupancies, horizontal sliding doors complying with Section 1008.1.4.3 are permitted in a means of egress.
7. Power-operated doors in accordance with Section 1008.1.4.2.
8. Doors serving a bathroom within an individual sleeping unit in Group R-1.
9. In other than Group H occupancies, manually operated horizontal sliding doors are permitted in a means of egress from spaces with an occupant load of 10 or less.

Doors shall swing in the direction of egress travel where serving an occupant load of 50 or more persons or a Group H occupancy.

1008.1.3 Door opening force. The force for pushing or pulling open interior swinging egress doors, other than fire doors, shall not exceed 5 pounds (22 N). For other swinging doors, as well as sliding and folding doors, the door latch shall release when subjected to a 15-pound (67 N) force. The door shall be set in motion when subjected to a 30-pound (133 N) force. The door shall swing to a full-open position when subjected to a 15-pound (67 N) force.

1008.1.3.1 Location of applied forces. Forces shall be applied to the latch side of the door.

1008.1.4 Special doors. Special doors and security grilles shall comply with the requirements of Sections 1008.1.4.1 through 1008.1.4.5.

1008.1.4.1 Revolving doors. Revolving doors shall comply with the following:

1. Each revolving door shall be capable of collapsing into a bookfold position with parallel egress paths providing an aggregate width of 36 inches (914 mm).
2. A revolving door shall not be located within 10 feet (3048 mm) of the foot of or top of stairs or escalators. A dispersal area shall be provided between the stairs or escalators and the revolving doors.
3. The revolutions per minute (rpm) for a revolving door shall not exceed those shown in Table 1008.1.4.1.
4. Each revolving door shall have a side-hinged swinging door which complies with Section 1008.1 in the same wall and within 10 feet (3048 mm) of the revolving door.
5. Revolving doors shall not be part of an accessible route required by Section 1007 and Chapter 11.

TABLE 1008.1.4.1
REVOLVING DOOR SPEEDS

INSIDE DIAMETER (feet-inches)	POWER-DRIVEN-TYPE SPEED CONTROL (rpm)	MANUAL-TYPE SPEED CONTROL (rpm)
6-6	11	12
7-0	10	11
7-6	9	11
8-0	9	10
8-6	8	9
9-0	8	9
9-6	7	8
10-0	7	8

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

1008.1.4.1.1 Egress component. A revolving door used as a component of a means of egress shall comply with Section 1008.1.4.1 and the following three conditions:

1. Revolving doors shall not be given credit for more than 50 percent of

the required egress capacity.

2. Each revolving door shall be credited with no more than a 50-person capacity.
3. Each revolving door shall be capable of being collapsed when a force of not more than 130 pounds (578 N) is applied within 3 inches (76 mm) of the outer edge of a wing.

1008.1.4.1.2 Other than egress component. A revolving door used as other than a component of a means of egress shall comply with Section 1008.1.4.1. The collapsing force of a revolving door not used as a component of a means of egress shall not be more than 180 pounds (801 N).

Exception: A collapsing force in excess of 180 pounds (801 N) is permitted if the collapsing force is reduced to not more than 130 pounds (578 N) when at least one of the following conditions is satisfied:

1. There is a power failure or power is removed to the device holding the door wings in position.
2. There is an actuation of the automatic sprinkler system where such system is provided.
3. There is an actuation of a smoke detection system which is installed in accordance with Section 907 to provide coverage in areas within the building which are within 75 feet (22 860 mm) of the revolving doors.
4. There is an actuation of a manual control switch, in an approved location and clearly defined, which reduces the holding force to below the 130-pound (578 N) force level.

1008.1.4.2 Power-operated doors. Where means of egress doors are operated by power, such as doors with a photoelectric-actuated mechanism to open the door upon the approach of a person, or doors with power-assisted manual operation, the design shall be such that in the event of power failure, the door is capable of being opened manually to permit means of egress travel or closed where necessary to safeguard means of egress. The forces required to open these doors manually shall not exceed those specified in Section 1008.1.3, except that the force to set the door in motion shall not exceed 50 pounds (220 N). The door shall be capable of swinging from any position to the full width of the opening in which such door is installed when a force is applied to the door on the side from which egress is made. Full-power-operated doors shall comply with BHMA A156.10. Power-assisted and low-energy doors shall comply with BHMA A156.19.

Exceptions:

1. Occupancies in Group I-3.
2. Horizontal sliding doors complying with Section 1008.1.4.3.
3. For a bi-parting door in the emergency breakout mode, a door leaf located within a multiple-leaf opening shall be exempt from the minimum 32-inch (813 mm) single-leaf requirement of Section 1008.1.1, provided a minimum 32-inch (813 mm) clear opening is provided when the two biparting leaves meeting in the center are broken out.

1008.1.4.3 Horizontal sliding doors. In other than Group H occupancies, horizontal sliding doors permitted to be a component of a means of egress in accordance with Exception 6 to Section 1008.1.2 shall comply with all of the following criteria:

1. The doors shall be power operated and shall be capable of being operated manually in the event of power failure.
2. The doors shall be openable by a simple method from both sides without special knowledge or effort.
3. The force required to operate the door shall not exceed 30 pounds (133 N) to set the door in motion and 15 pounds (67 N) to close the door or open it to the minimum required width.
4. The door shall be openable with a force not to exceed 15 pounds (67 N) when a force of 250 pounds (1100 N) is applied perpendicular to the door adjacent to the operating device.
5. The door assembly shall comply with the applicable fire protection rating and, where rated, shall be self-closing or automatic closing by smoke detection in accordance with Section 715.4.8.3, shall be installed in accordance with NFPA 80 and shall comply with Section 715.
6. The door assembly shall have an integrated standby power supply.
7. The door assembly power supply shall be electrically supervised.
8. The door shall open to the minimum required width within 10 seconds after activation of the operating device.

1008.1.4.4 Access-controlled egress doors. The entrance doors in a means of egress in buildings with an occupancy in Group A, B, E, I-2, M, R-1 or R-2 and entrance doors to tenant spaces in occupancies in Groups A, B, E, I-2, M, R-1 and R-2 are permitted to be equipped with an approved entrance and egress access control system which shall be installed in accordance with all of the following criteria:

1. A sensor shall be provided on the egress side arranged to detect an occupant approaching the doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor.
2. Loss of power to that part of the access control system which locks the doors shall automatically unlock the doors.
3. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the lock—independent of the access control system electronics—and the doors shall remain unlocked for a minimum of 30 seconds.
4. Activation of the building fire alarm system, if provided, shall automatically unlock the doors, and the doors shall remain unlocked until the fire alarm system has been reset.
5. Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has been reset.
6. Entrance doors in buildings with an occupancy in Group A, B, E or M shall not be secured from the egress side during periods that the building is open to the general public.

1008.1.4.5 Security grilles. In Groups B, F, M and S, horizontal sliding or vertical security grilles are permitted at the main exit and shall be openable from the inside without the use of a key or special knowledge or effort during periods that the space is occupied. The grilles shall remain secured in the full-open position during the period of occupancy by the general public. Where two or more means of egress are required, not more than one-half of the exits or exit access doorways shall be equipped with horizontal sliding or vertical security grilles.

1008.1.5 Floor elevation. There shall be a floor or landing on each side of a door. Such floor or landing shall be at the same elevation on each side of the door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed *one* unit vertical in *fifty* units horizontal (2-percent slope).

Exceptions:

1. Doors serving individual dwelling units in Groups R-2 and R-3 where the following apply:

1.1. A door is permitted to open at the top step of an interior flight of stairs, provided the door does not swing over the top step.
1.2. Screen doors and storm doors are permitted to swing over stairs or landings.

2. Exterior doors as provided for in Section 1003.5, Exception 1, and Section 1020.2, which are not on an accessible route.
3. In Group R-3 occupancies not required to be Accessible units, Type A units or Type B units, the landing at an exterior doorway shall not be more than 7 ¾ inches (197 mm) below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the landing.
4. *In units not required to be Type A, Type B or accessible,* variations in elevation due to differences in finish materials, but not more than ½ inch (12.7 mm).
5. Exterior decks, patios or balconies that are part of Type B dwelling units, have impervious surfaces and that are not more than 4 inches (102 mm) below the finished floor level of the adjacent interior space of the dwelling unit.

1008.1.6 Landings at doors. Landings shall have a width not less than the width of the stairway or the door, whichever is greater. Doors in the fully open position shall not reduce a required dimension by more than 7 inches (178 mm). When a landing serves an occupant load of 50 or more, doors in any position shall not reduce the landing to less than one-half its required width. Landings shall have a length measured in the direction of travel of not less than 44 inches (1118 mm).

Exception: Landing length in the direction of travel in Groups R-3 and U and within individual units of Group R-2 need not exceed 36 inches (914 mm) *when the units are not required to be accessible or Type A units.*

1008.1.7 Thresholds. Thresholds at doorways shall not exceed ¾ inch (19.1 mm) in height for sliding doors serving dwelling units or ½ inch (12.7 mm) for other doors. Raised thresholds and floor level changes greater than ¼ inch (6.4 mm) at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal (50-percent slope).

Exception: The threshold height shall be limited to 7¾ inches (197 mm) where the occupancy is Group R-2 or R-3; the door is an exterior door that is not a component of the required means of egress; the door, other than an exterior storm or screen door, does not swing over the landing or step; and the doorway is not on an accessible route as required by Chapter 11 and is not part of an Accessible unit, Type A unit or Type B unit.

1008.1.8 Door arrangement. Space between two doors in a series shall be 48 inches (1219 mm) minimum plus the width of a door swinging into the space. Doors in a series shall swing either in the same direction or away from the space between the doors.

Exceptions:

1. The minimum distance between horizontal sliding power-operated doors in a series shall be 48 inches (1219 mm).
2. Storm and screen doors serving individual dwelling units in Groups R-2 and R-3 need not be spaced 48 inches (1219 mm) from the other door.
3. Doors within individual dwelling units in Groups R-2 and R-3 other than within Type A dwelling units.

1008.1.9 Door operations. Except as specifically permitted by this section egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1008.1.9.1 Hardware. Door handles, pulls, latches, locks and other operating devices on doors required to be accessible by Chapter 11 shall not require tight grasping, tight pinching or twisting of the wrist to operate.

Exception: *Non-fixed portions of door or gate hardware, including keys, access cards and temporary door locking devices.*

1008.1.9.2 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.

Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.

1008.1.9.3 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

1. Places of detention or restraint.
2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main exterior

door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

2.1 The locking device is readily distinguishable as locked;

2.2 A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background; and

2.3 The use of the key-operated locking device is revocable by the building official for due cause.

3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.

4. Doors from individual dwelling or sleeping units of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

5. Fire doors after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures.

6. *Temporary door locking device used in accordance with section 1008.1.9.11.*

1008.1.9.4 Bolt locks. Manually operated flush bolts or surface bolts are not permitted.

Exceptions:

1. On doors not required for egress in individual dwelling units or sleeping units.
2. Where a pair of doors serves a storage or equipment room, manually operated edge-or surface-mounted bolts are permitted on the inactive leaf.
3. Where a pair of doors serves an occupant load of less than 50 persons in a Group B, F or S occupancy, manually operated edge-or surface-mounted bolts are permitted on the inactive leaf. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.
4. Where a pair of doors serves a Group B, F or S occupancy, manually operated edge-or surface-mounted bolts are permitted on the inactive leaf provided such inactive leaf is not needed to meet egress width requirements and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.
5. Where a pair of doors serves patient care rooms in Group I-2 occupancies,

self-latching edge-or surface-mounted bolts are permitted on the inactive leaf provided that the inactive leaf is not needed to meet egress width requirements and the inactive leaf contains no doorknobs, panic bars or similar operating hardware.

1008.1.9.5 Unlatching. The unlatching of any door or leaf shall not require more than one operation.

Exceptions:

1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1008.1.9.4.
3. Doors with automatic flush bolts as permitted by Section 1008.1.9.3, Exception 3.
4. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1008.1.9.3, Exception 4.
5. *Temporary door locking device used in accordance with section 1008.1.9.11.*

1008.1.9.5.1 Closet and bathroom doors in *Groups I-1 and* R-4 occupancies. In Group *I-1 and* R-4 occupancies, closet doors that latch in the closed position shall be *operable* from inside the closet, and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side.

1008.1.9.6 Special *egress locks for* Group I-2. Approved *special egress locks* ~~*in*~~ shall be permitted in a Group I-2 occupancy where the clinical needs of persons receiving care require such locking. *Special egress locks* shall be permitted in such occupancies where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 *or* an approved automatic smoke or heat detection system installed *throughout the locked space* in accordance with *Section 907,* provided that the doors unlock in accordance with Items 1 through *7. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.*

1. *The doors unlock upon loss of power controlling the lock or lock mechanism.*
2. *The door locks shall have the capability of being unlocked by a signal from the fire command center, a nursing station or other approved location.*
3. *A building occupant shall not be required to pass through more than one door equipped with a special egress lock before entering an exit.*

4. *The procedures for the operation(s) of the unlocking system shall be described and approved as part of the emergency planning and preparedness required by Chapter 4 of the fire code.*
5. *All clinical staff shall have the keys, codes or other means necessary to operate the locking devices.*
6. *Emergency lighting shall be provided at the door.*

Exception: *Items 1 through 4 shall not apply to doors to areas where persons, which because of clinical needs, require restraint or containment as part of the function of a psychiatric treatment area.*

1008.1.9.7 Delayed egress locks. Approved, listed, delayed egress locks shall be permitted to be installed on doors serving any occupancy except Group A, E and H occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through 6 below. *A delayed egress locking system shall be permitted to be installed in an I-2 occupancy when installed in accordance with section 1008.1.9.7.1.* A building occupant shall not be required to pass through more than one door equipped with a delayed egress lock before entering an exit.

1. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.
2. The doors unlock upon loss of power controlling the lock or lock mechanism.
3. The door locks shall have the capability of being unlocked by a signal from the fire command center.
4. The initiation of an irreversible process which will release the latch in not more than 15 seconds when a force of not more than 15 pounds (67 N) is applied for 1 second to the release device. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the door lock has been released by the application of force to the releasing device, relocking shall be by manual means only.
   Exception: Where approved, a delay of not more than 30 seconds is permitted.
5. A sign shall be provided on the door located above and within 12 inches (305 mm) of the release device reading: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.
6. Emergency lighting shall be provided at the door.

1008.1.9.7.1 Delayed egress locks in I-2 occupancies. *Delayed egress locks shall be permitted in I-2 occupancies where the clinical needs of persons receiving care require such locking and where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through 6 below. A building occupant shall not be required to pass through more than one door equipped with a special egress lock before entering an exit.*

1. *The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.*
2. *The doors unlock upon loss of power controlling the lock or lock mechanism.*
3. *The door locks shall have the capability of being unlocked by a signal from the fire command center, a nursing station or other approved location.*
4. *The procedures for the operation(s) of the unlocking system shall be described and approved as part of the emergency planning and preparedness required by Chapter 4 of the fire code.*
5. *All clinical staff shall have the keys, codes or other means necessary to operate the locking devices.*
6. *Emergency lighting shall be provided at the door.*

Exception: *Items 1 through 3 shall not apply to doors to areas where persons, because of clinical needs, require restraint or containment as part of the function of a mental hospital.*

1008.1.9.8 Electromagnetically locked egress doors.
Doors in the means of egress that are not otherwise required to have panic hardware in buildings with an occupancy in Group A, B, E, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, M, R-1 or R-2 shall be permitted to be electromagnetically locked if equipped with listed hardware that incorporates a built-in switch and meet the requirements below:

1. The listed hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The listed hardware is capable of being operated with one hand.
3. Operation of the listed hardware releases to the electromagnetic lock and unlocks the door immediately.
4. Loss of power to the listed hardware automatically unlocks the door.

1008.1.9.9 Locking arrangements in correctional facilities. In occupancies in

Groups A-2, A-3, A-4, B, E, F, I-2, I-3, M and S within correctional and detention facilities, doors in means of egress serving rooms or spaces occupied by persons whose movements are controlled for security reasons shall be permitted to be locked when equipped with egress control devices which shall unlock manually and by at least one of the following means:

1. Activation of an automatic sprinkler system installed in accordance with Section 903.3.1.1;
2. Activation of an approved manual alarm box; or
3. A signal from a constantly attended location.

1008.1.9.10 Stairway doors. Interior stairway means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1. Stairway discharge doors shall be openable from the egress side and shall only be locked from the opposite side.
2. This section shall not apply to doors arranged in accordance with Section 403.5.3.
3. In stairways serving not more than four stories, doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building.

1008.1.9.11 Temporary door locking device in school buildings. *A temporary door locking device shall be permitted when approved by the building official and noted on the certificate of occupancy only in school buildings where the requirements of sections 1008.1.9.11.1 and 1008.1.9.11.2 are met.*

1008.1.9.11.1 Conditions of use*. A temporary door locking device shall only be used on doors under the following conditions:*

1. The temporary door locking device shall only be used in an emergency situation and during active shooter drills; and

2. The temporary door locking device is engaged only by a staff member of the school building; and

3. The temporary door locking device shall only be engaged for a finite period of time as determined by the administrative authority of a school building in accordance with an adopted school safety plan; and

4. Evidence is provided that the administrative authority of a school

building has notified the police and fire officials having jurisdiction for the school building prior to the use of the temporary door locking device; and

5. *In-service training on the use of the temporary door locking device is provided for school staff members and records verifying this training shall be maintained on file and provided to the fire official upon request.*

***1008.1.9.11.2 Operational requirements**. The temporary door locking device shall be permitted to be used in accordance with the following items:*

1. The temporary door locking device shall not be permanently mounted to the door.

***Exception:** Individual parts of the temporary door locking device assembly such as bolts, stops, brackets, pins, etc. that do not prevent normal ingress and egress through the door may be permanently mounted provided that when such parts are mounted on a labeled fire door assembly such installation does not affect the fire rating of the fire door assembly.*

2. The removal of the temporary door locking device, after it is engaged, shall not require more than one operation.

***Exception:** Two operations may be permitted to remove a temporary door locking device, after it is engaged, if the school building is equipped throughout with an automatic sprinkler system in accordance section 903.3.1.1.*

Provisions of the "Americans with Disabilities Act of 1990," 104 Stat. 327, 42 U.S.C.A. 12101, as amended, may apply to the use of the temporary door locking device but are outside the scope of this code.

1008.1.10 Panic and fire exit hardware. Doors serving a Group H occupancy and doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.

Exception: A main exit of a Group A occupancy in compliance with Section 1008.1.9.3, Item 2.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide that contain overcurrent devices, switching devices or control devices with exit or exit access doors shall be equipped with panic hardware or fire exit hardware. The doors shall swing in the direction of egress travel.

1008.1.10.1 Installation. Where panic or fire exit hardware is installed, it shall comply with the following:

1. Panic hardware shall be listed in accordance with UL 305;
2. Fire exit hardware shall be listed in accordance with UL 10C and UL 305;
3. The actuating portion of the releasing device shall extend at least one-half of the door leaf width; and
4. The maximum unlatching force shall not exceed 15 pounds (67 N).

1008.1.10.2 Balanced doors. If balanced doors are used and panic hardware is required, the panic hardware shall be the push-pad type and the pad shall not extend more than one-half the width of the door measured from the latch side.

1008.2 Gates. Gates serving the means of egress system shall comply with the requirements of this section. Gates used as a component in a means of egress shall conform to the applicable requirements for doors.

Exception: Horizontal sliding or swinging gates exceeding the 4-foot (1219 mm) maximum leaf width limitation are permitted in fences and walls surrounding a stadium**.**

1008.2.1 Stadiums. Panic hardware is not required on gates surrounding stadiums where such gates are under constant immediate supervision while the public is present, and where safe dispersal areas based on 3 square feet (0.28 m^2) per occupant are located between the fence and enclosed space. Such required safe dispersal areas shall not be located less than 50 feet (15 240 mm) from the enclosed space. See Section 1027.6 for means of egress from safe dispersal areas.

1008.3 Turnstiles. Turnstiles or similar devices that restrict travel to one direction shall not be placed so as to obstruct any required means of egress.

Exception: Each turnstile or similar device shall be credited with no more than a 50-person capacity where all of the following provisions are met:

1. Each device shall turn free in the direction of egress travel when primary power is lost, and upon the manual release by an employee in the area.

2. Such devices are not given credit for more than 50 percent of the required egress capacity.
3. Each device is not more than 39 inches (991 mm) high.
4. Each device has at least $16^{1}/2$ inches (419 mm) clear width at and below a height of 39 inches (991 mm) and at least 22 inches (559 mm) clear width at heights above 39 inches (991 mm).

Where located as part of an accessible route, turnstiles shall have at least 36 inches (914 mm) clear at and below a height of 34 inches (864 mm), at least 32 inches (813 mm) clear width between 34 inches (864 mm) and 80 inches (2032 mm) and shall consist of a mechanism other than a revolving device.

1008.3.1 High turnstile. Turnstiles more than 39 inches (991 mm) high shall meet the requirements for revolving doors.

1008.3.2 Additional door. Where serving an occupant load greater than 300, each turnstile that is not portable shall have a side-hinged swinging door which conforms to Section 1008.1 within 50 feet (15 240 mm).

SECTION 1009
STAIRWAYS

1009.1 Stairway width. The width of stairways shall be determined as specified in Section 1005.1, but such width shall not be less than 44 inches (1118 mm). See Section 1007.3 for accessible means of egress stairways.

Exceptions:

1. Stairways serving an occupant load of less than 50 shall have a width of not less than 36 inches (914 mm).
2. Spiral stairways as provided for in Section 1009.9.
3. Aisle stairs complying with Section 1028.
4. Where an incline platform lift or stairway chairlift is installed on stairways serving occupancies in Group R-3, or within dwelling units in occupancies in Group R-2, a clear passage width not less than 20 inches (508 mm) shall be provided. If the seat and platform can be folded when not in use, the distance shall be measured from the folded position.

1009.2 Headroom. Stairways shall have a minimum headroom clearance of 80 inches (2032 mm) measured vertically from a line connecting the edge of the nosings. Such headroom shall be continuous above the stairway to the point where the line intersects the landing below, one tread depth beyond the bottom riser. The minimum clearance shall be maintained the full width of the stairway

and landing.

Exceptions:

1. Spiral stairways complying with Section 1009.9 are permitted a 78-inch (1981 mm) headroom clearance.
2. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; where the nosings of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall be allowed to project horizontally into the required headroom a maximum of 4 ¾ inches (121 mm).

1009.3 Walkline. The walkline across winder treads shall be concentric to the direction of travel through the turn and located 12 inches (305 mm) from the side where the winders are narrower. The 12-inch (305 mm) dimension shall be measured from the widest point of the clear stair width at the walking surface of the winder.If winders are adjacent within the flight, the point of the widest clear stair width of the adjacent winders shall be used.

1009.4 Stair treads and risers. Stair treads and risers shall comply with Sections 1009.4.1 through 1009.4.5.

1009.4.1 Dimension reference surfaces. For the purpose of this section, all dimensions are exclusive of carpets, rugs or runners.

1009.4.2 Riser height and tread depth. Stair riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the leading edges of adjacent treads. Rectangular tread depths shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. Winder treads shall have a minimum tread depth of 11 inches (279 mm) measured between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline and a minimum tread depth of 10 inches (254 mm) within the clear width of the stair.

Exceptions:

1. Alternating tread devices in accordance with Section 1009.10.
2. Ship ladders in accordance with Section 1009.11.
3. Spiral stairways in accordance with Section 1009.9.
4. Aisle stairs in assembly seating areas where the stair pitch or slope is set, for sightline reasons, by the slope of the adjacent seating area in

accordance with Section 1028.11.2.

5. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; the maximum riser height shall be *8 ¼* inches (197 mm); the minimum tread depth shall be *9* inches (254 mm); the minimum winder tread depth at the walkline shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152 mm). A nosing not less than ¾ inch (19.1 mm) but not more than 1 ¼ inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).
6. See Section 3404.1 for the replacement of existing stairways.
7. In Group I-3 facilities, stairways providing access to guard towers, observation stations and control rooms, not more than 250 square feet (23 m^2)in area, shall be permitted to have a maximum riser height of 8 inches (203 mm) and a minimum tread depth of 9 inches (229 mm).

1009.4.3 Winder treads. Winder treads are not permitted in means of egress stairways except within a dwelling unit.

Exceptions:

1. Curved stairways in accordance with Section 1009.8.
2. Spiral stairways in accordance with Section 1009.9.

1009.4.4 Dimensional uniformity. Stair treads and risers shall be of uniform size and shape. The tolerance between the largest and smallest riser height or between the largest and smallest tread depth shall not exceed 3/8 inch (9.5 mm) in any flight of stairs. The greatest winder tread depth at the walkline within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

Exceptions:

1. Nonuniform riser dimensions of aisle stairs complying with Section 1028.11.2.
2. Consistently shaped winders, complying with Section 1009.4.2, differing from rectangular treads in the same stairway flight.

Where the bottom or top riser adjoins a sloping public way, walkway or driveway having an established grade and serving as a landing, the bottom or top riser is permitted to be reduced along the slope to less than 4 inches (102 mm) in height, with the variation in height of the bottom or top riser not to exceed one unit vertical in 12 units horizontal (8-percent slope) of stairway

width. The nosings or leading edges of treads at such nonuniform height risers shall have a distinctive marking stripe, different from any other nosing marking provided on the stair flight. The distinctive marking stripe shall be visible in descent of the stair and shall have a slip-resistant surface. Marking stripes shall have a width of at least 1 inch (25 mm) but not more than 2 inches (51 mm).

1009.4.5 Profile. The radius of curvature at the leading edge of the tread shall be not greater than 9/16 inch (14.3 mm). Beveling of nosings shall not exceed 9/16 inch (14.3 mm). Risers shall be solid and vertical or sloped under the tread above from the underside of the nosing above at an angle not more than 30 degrees (0.52 rad) from the vertical. The leading edge (nosing) of treads shall project not more than 1 ¼ inches (32 mm) beyond the tread below and all projections of the leading edges shall be of uniform size, including the leading edge of the floor at the top of a flight.

Exceptions:

1. Solid risers are not required for stairways that are not required to comply with Section 1007.3, provided that the opening between treads does not permit the passage of a sphere with a diameter of 4 inches (102 mm).
2. Solid risers are not required for occupancies in Group I-3 or in Group F, H and S occupancies other than areas accessible to the public. There are no restrictions on the size of the opening in the riser.
3. Solid risers are not required for spiral stairways constructed in accordance with Section 1009.9.
4. Solid risers are not required for alternating tread devices constructed in accordance with Section 1009.10.

1009.5 Stairway landings. There shall be a floor or landing at the top and bottom of each stairway. The width of landings shall not be less than the width of stairways they serve. Every landing shall have a minimum dimension measured in the direction of travel equal to the width of the stairway. Such dimension need not exceed 48 inches (1219 mm) where the stairway has a straight run. Doors opening onto a landing shall not reduce the landing to less than one-half the required width. When fully open, the door shall not project more than 7 inches (178 mm) into a landing. When wheelchair spaces are required on the stairway landing in accordance with Section 1007.6.1, the wheelchair space shall not be located in the required width of the landing and doors shall not swing over the wheelchair spaces.

Exception: Aisle stairs complying with Section 1028.

1009.6 Stairway construction. All stairways shall be built of materials

consistent with the types permitted for the type of construction of the building, except that wood handrails shall be permitted for all types of construction.

1009.6.1 Stairway walking surface. The walking surface of treads and landings of a stairway shall not be sloped steeper than one unit vertical in 48 units horizontal (2-percent slope) in any direction. Stairway treads and landings shall have a solid surface. Finish floor surfaces shall be securely attached.

Exceptions:

1. Openings in stair walking surfaces shall be a size that does not permit the passage of ½ -inch-diameter (12.7 mm) sphere. Elongated opening shall be placed so that the long dimension is perpendicular to the direction of travel.
2. In Group F, H and S occupancies, other than areas of parking structures accessible to the public, openings in treads and landings shall not be prohibited provided a sphere with a diameter of 1-1/8 inches (29 mm) cannot pass through the opening.

1009.6.2 Outdoor conditions. Outdoor stairways and outdoor approaches to stairways shall be designed so that water will not accumulate on walking surfaces.

1009.6.3 Enclosures under stairways. The walls and soffits within enclosed usable spaces under enclosed and unenclosed stairways shall be protected by 1-hour fire-resistance-rated construction or the fire-resistance rating of the stairway enclosure, whichever is greater. Access to the enclosed space shall not be directly from within the stair enclosure.

Exception: Spaces under stairways serving and contained within a single residential dwelling unit in Group R-2 or R-3 shall be permitted to be protected on the enclosed side with ½ inch (12.7 mm) gypsum board.

There shall be no enclosed usable space under exterior exit stairways unless the space is completely enclosed in 1-hour fire-resistance-rated construction. The open space under exterior stairways shall not be used for any purpose.

1009.7 Vertical rise. A flight of stairs shall not have a vertical rise greater than 12 feet (3658 mm) between floor levels or landings.

Exceptions:

1. Aisle stairs complying with Section 1028.
2. Alternating tread devices used as a means of egress shall not have a rise greater than 20 feet (6096 mm) between floor levels or landings.

1009.8 Curved stairways. Curved stairways with winder treads shall have treads

and risers in accordance with Section 1009.4 and the smallest radius shall not be less than twice the required width of the stairway.

Exception: The radius restriction shall not apply to curved stairways for occupancies in Group R-3 and within individual dwelling units in occupancies in Group R-2.

1009.9 Spiral stairways. Spiral stairways are permitted to be used as a component in the means of egress only within dwelling units or from a space not more than 250 square feet (23 m^2) in area and serving not more than five occupants, or from galleries, catwalks and gridirons in accordance with Section 1015.6.

A spiral stairway shall have a 7 ½ -inch (191 mm) minimum clear tread depth at a point 12 inches (305 mm) from the narrow edge. The risers shall be sufficient to provide a headroom of 78 inches (1981 mm) minimum, but riser height shall not be more than 9 ½ inches (241 mm). The minimum stairway clear width at and below the handrail shall be 26 inches (660 mm).

1009.10 Alternating tread devices. Alternating tread devices are limited to an element of a means of egress in buildings of Groups F, H and S from a mezzanine not more than 250 square feet (23 m^2) in area and which serves not more than five occupants; in buildings of Group I-3 from a guard tower, observation station or control room not more than 250 square feet (23 m^2) in area and for access to unoccupied roofs.

1009.10.1 Handrails of alternating tread devices. Handrails shall be provided on both sides of alternating tread devices and shall comply with Section 1012.

1009.10.2 Treads of alternating tread devices. Alternating tread devices shall have a minimum projected tread of 5 inches (127 mm), a minimum tread depth of 8 ½ inches (216 mm), a minimum tread width of 7 inches (178 mm) and a maximum riser height of 9 ½ inches (241 mm). The projected tread depth shall be measured horizontally between the vertical planes of the foremost projections of adjacent treads. The riser height shall be measured vertically between the leading edges of adjacent treads. The combination of riser height and projected tread depth provided shall result in an alternating tread device angle that complies with Section 1002. The initial tread of the device shall begin at the same elevation as the platform, landing or floor surface.

Exception: Alternating tread devices used as an element of a means of egress in buildings from a mezzanine area not more than 250 square feet (23 m^2) in area which serves not more than five occupants shall have a minimum projected tread of 8 ½ inches (216 mm) with a minimum tread depth of 10 ½

inches (267 mm). The rise to the next alternating tread surface should not be more than 8 inches (203 mm).

1009.11 Ship ladders. Ship ladders are permitted to be used in Group I-3 as a component of a means of egress to and from control rooms or elevated facility observation stations not more than 250 square feet (23 m^2) with not more than three occupants and for access to unoccupied roofs.

Ship ladders shall have a minimum tread depth of 5 inches (127 mm). The tread shall be projected such that the total of the tread depth plus the nosing projection is no less than 8 ½ inches (216 mm). The maximum riser height shall be 9 ½ inches (241 mm).

Handrails shall be provided on both sides of ship ladders. The minimum clear width at and below the handrails shall be 20 inches (508 mm).

1009.12 Handrails. Stairways shall have handrails on each side and shall comply with Section 1012. Where glass is used to provide the handrail, the handrail shall also comply with Section 2407.

Exceptions:

1. Handrails for aisle stairs are not required where permitted by Section 1028.13.
2. Stairways within dwelling units, spiral stairways and aisle stairs serving seating only on one side are permitted to have a handrail on one side only.
3. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require handrails.
4. In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require handrails.
5. Changes in room elevations of three or fewer risers within dwelling units and sleeping units in Group R-2 and R-3 do not require handrails.

1009.13 Stairway to roof. In buildings four or more stories above grade plane, one stairway shall extend to the roof surface, unless the roof has a slope steeper than four units vertical in 12 units horizontal (33-percent slope). In buildings without an occupied roof, access to the roof from the top story shall be permitted to be by an alternating tread device.

1009.13.1 Roof access. Where a stairway is provided to a roof, access to the roof shall be provided through a penthouse complying with Section 1509.2.

Exception: In buildings without an occupied roof, access to the roof shall be permitted to be a roof hatch or trap door not less than 16 square feet (1.5 m^2) in area and having a minimum dimension of 2 feet (610 mm).

1009.13.2 Protection at roof hatch openings. Where the roof hatch opening providing the required access is located within 10 feet (3049 mm) of the roof edge, such roof access or roof edge shall be protected by guards installed in accordance with the provisions of Section 1013.

1009.14 Stairway to elevator equipment. *Deleted.*

SECTION 1010
RAMPS

1010.1 Scope. The provisions of this section shall apply to ramps used as a component of a means of egress.

Exceptions:

1. Other than ramps that are part of the accessible routes providing access in accordance with Sections 1108.2 through 1108.2.4 and 1108.2.6, ramped aisles within assembly rooms or spaces shall conform with the provisions in Section 1028.11.
2. Curb ramps shall comply with *ICC A117.1*.
3. Vehicle ramps in parking garages for pedestrian exit access shall not be required to comply with Sections 1010.3 through 1010.9 when they are not an accessible route serving accessible parking spaces, other required accessible elements or part of an accessible means of egress.

1010.2 Slope. Ramps used as part of a means of egress shall have a running slope not steeper than one unit vertical in 12 units horizontal (8-percent slope). The slope of other pedestrian ramps shall not be steeper than one unit vertical in eight units horizontal (12.5-percent slope).

Exception: Aisle ramp slope in occupancies of Group A or assembly occupancies accessory to Group E occupancies shall comply with Section 1028.11.

1010.3 Cross slope. The slope measured perpendicular to the direction of travel of a ramp shall not be steeper than one unit vertical in 48 units horizontal (2-percent slope).

1010.4 Vertical rise. The rise for any ramp run shall be 30 inches (762 mm) maximum.

1010.5 Minimum dimensions. The minimum dimensions of means of egress ramps shall comply with Sections 1010.5.1 through 1010.5.3.

1010.5.1 Width. The minimum width of a means of egress ramp shall not be less than that required for corridors by Section 1018.2. The clear width of a ramp between handrails, if provided, or other permissible projections shall be 36 inches (914 mm) minimum.

1010.5.2 Headroom. The minimum headroom in all parts of the means of egress ramp shall not be less than 80 inches (2032 mm).

1010.5.3 Restrictions. Means of egress ramps shall not reduce in width in the direction of egress travel. Projections into the required ramp and landing width are prohibited. Doors opening onto a landing shall not reduce the clear width to less than 42 inches (1067 mm).

1010.6 Landings. Ramps shall have landings at the bottom and top of each ramp, points of turning, entrance, exits and at doors. Landings shall comply with Sections 1010.6.1 through 1010.6.5.

1010.6.1 Slope. Landings shall have a slope not steeper than one unit vertical in 48 units horizontal (2-percent slope) in any direction. Changes in level are not permitted.

1010.6.2 Width. The landing shall be at least as wide as the widest ramp run adjoining the landing.

1010.6.3 Length. The landing length shall be 60 inches (1525 mm) minimum.

Exceptions:

1. In Group R-2 and R-3 individual dwelling and sleeping units that are not required to be Accessible units, Type A units or Type B units in accordance with Section 1107, landings are permitted to be 36 inches (914 mm) minimum.
2. Where the ramp is not a part of an accessible route, the length of the landing shall not be required to be more than 48 inches (1220 mm) in the direction of travel.

1010.6.4 Change in direction. Where changes in direction of travel occur at landings provided between ramp runs, the landing shall be 60 inches by 60 inches (1524 mm by 1524 mm) minimum.

Exception: In Group R-2 and R-3 individual dwelling or sleeping units that are not required to be Accessible units, Type A units or Type B units in accordance with Section 1107, landings are permitted to be 36 inches by 36 inches (914 mm by 914 mm) minimum.

1010.6.5 Doorways. Where doorways are located adjacent to a ramp landing, maneuvering clearances required by ICC A117.1 are permitted to overlap the

required landing area.

1010.7 Ramp construction. All ramps shall be built of materials consistent with the types permitted for the type of construction of the building, except that wood handrails shall be permitted for all types of construction. Ramps used as an exit shall conform to the applicable requirements of Sections 1022.1 through 1022.6 for exit enclosures.

1010.7.1 Ramp surface. The surface of ramps shall be of slip-resistant materials that are securely attached.

1010.7.2 Outdoor conditions. Outdoor ramps and outdoor approaches to ramps shall be designed so that water will not accumulate on walking surfaces.

1010.8 Handrails. Ramps with a rise greater than 6 inches (152 mm) shall have handrails on both sides. Handrails shall comply with Section 1012.

Exception: Handrails for ramped aisles are not required where permitted by Section 1028.13.

1010.9 Edge protection. Edge protection complying with Section 1010.9.1 or 1010.9.2 shall be provided on each side of ramp runs and at each side of ramp landings.

Exceptions:

1. Edge protection is not required on ramps that are not required to have handrails, provided they have flared sides that comply with the ICC A117.1 curb ramp provisions.
2. Edge protection is not required on the sides of ramp landings serving an adjoining ramp run or stairway.
3. Edge protection is not required on the sides of ramp landings having a vertical drop off of not more than ½ inch (12.7 mm) within 10 inches (254 mm) horizontally of the required landing area.
4. In assembly spaces with fixed seating, edge protection is not required on the sides of ramps where the ramps provide access to the adjacent seating and aisle accessways.

1010.9.1 Curb, rail, wall or barrier. A curb, rail, wall or barrier shall be provided to serve as edge protection. A curb must be a minimum of 4 inches (102 mm) in height. Barriers must be constructed so that the barrier prevents the passage of a 4-inch-diameter (102 mm) sphere, where any portion of the sphere is within 4 inches (102 mm) of the floor or ground surface.

1010.9.2 Extended floor or ground surface. The floor or ground surface of the ramp run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with Section 1012.

1010.10 Guards. Guards shall be provided where required by Section 1013 and shall be constructed in accordance with Section 1013.

SECTION 1011
EXIT SIGNS

1011.1 Where required. Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. The path of egress travel to exits and within exits shall be marked by readily visible exit signs to clearly indicate the direction of egress travel in cases where the exit or the path of egress travel is not immediately visible to the occupants. Intervening means of egress doors within exits shall be marked by exit signs. Exit sign placement shall be such that no point in an exit access corridor or exit passageway is more than 100 feet (30 480 mm) or the listed viewing distance for the sign, whichever is less, from the nearest visible exit sign.

Exceptions:

1. Exit signs are not required in rooms or areas that require only one exit or exit access.
2. Main exterior exit doors or gates that are obviously and clearly identifiable as exits need not have exit signs where approved by the building official.
3. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3.
4. Exit signs are not required in dayrooms, sleeping rooms or dormitories in occupancies in *Group I*.
5. In occupancies in Groups A-4 and A-5, exit signs are not required on the seating side of vomitories or openings into seating areas where exit signs are provided in the concourse that are readily apparent from the vomitories. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.

1011.2 Illumination. Exit signs shall be internally or externally illuminated.

Exception: Tactile signs required by Section 1011.3 need not be provided with illumination.

1011.3 Tactile exit signs. A tactile sign stating EXIT and complying with *Chapter 11* shall be provided adjacent to each door to an area of refuge, an exterior area for assisted rescue, an exit stairway, an exit ramp, an exit passageway and the exit discharge.

1011.4 Internally illuminated exit signs. Electrically powered, self-luminous and photoluminescent exit signs shall be listed and labeled in accordance with UL

924 and shall be installed in accordance with the manufacturer's instructions and Chapter 27. Exit signs shall be illuminated at all times.

1011.5 Externally illuminated exit signs. Externally illuminated exit signs shall comply with Sections 1011.5.1 through 1011.5.3.

1011.5.1 Graphics. Every exit sign and directional exit sign shall have plainly legible letters not less than 6 inches (152 mm) high with the principal strokes of the letters not less than $^{3}/4$ inch (19.1 mm) wide. The word "EXIT" shall have letters having a width not less than 2 inches (51 mm) wide, except the letter "I," and the minimum spacing between letters shall not be less than 3/8 inch (9.5 mm). Signs larger than the minimum established in this section shall have letter widths, strokes and spacing in proportion to their height.

The word "**EXIT**" shall be in high contrast with the background and shall be clearly discernible when the means of exit sign illumination is or is not energized. If a chevron directional indicator is provided as part of the exit sign, the construction shall be such that the direction of the chevron directional indicator cannot be readily changed.

1011.5.2 Exit sign illumination. The face of an exit sign illuminated from an external source shall have an intensity of not less than 5 foot-candles (54 lux).

1011.5.3 Power source. Exit signs shall be illuminated at all times. To ensure continued illumination for a duration of not less than 90 minutes in case of primary power loss, the sign illumination means shall be connected to an emergency power system provided from storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Chapter 27.

Exception: Approved exit sign illumination means that provide continuous illumination independent of external power sources for a duration of not less than 90 minutes, in case of primary power loss, are not required to be connected to an emergency electrical system.

SECTION 1012
HANDRAILS

1012.1 Where required. Handrails for stairways and ramps shall be adequate in strength and attachment in accordance with Section 1607.7. Handrails required for stairways by Section 1009.12 shall comply with Sections 1012.2 through 1012.9. Handrails required for ramps by Section 1010.8 shall comply with Sections 1012.2 through 1012.8.

1012.2 Height. Handrail height, measured above stair tread nosings, or finish surface of ramp slope, shall be uniform, not less than 34 inches (864 mm) and not more than 38 inches (965 mm). Handrail height of alternating tread devices and ship ladders, measured above tread nosings, shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).

1012.3 Handrail graspability. All required handrails shall comply with Section 1012.3.1 or shall provide equivalent graspability.

Exception: In Group R-3 occupancies; within dwelling units *not required to be accessible, Type A or Type B* in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; handrails shall be Type I in accordance with Section 1012.3.1, Type II in accordance with Section 1012.3.2 or shall provide equivalent graspability.

1012.3.1 Type I. Handrails with a circular cross section shall have an outside diameter of at least 1 ¼ inches (32 mm) and not greater than 2 inches (51 mm). If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches (102 mm) and not greater than 6 ¼ inches (160 mm) with a maximum cross-section dimension of 2 ¼ inches (57 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

1012.3.2 Type II. Handrails with a perimeter greater than 6 ¼ inches (160 mm) shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of ¾ inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inch (8 mm) within 7/8 inch (22 mm) below the widest portion of the profile. This required depth shall continue for at least 3/8 inch (10 mm) to a level that is not less than 1 ¾ inches (45 mm) below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 1 ¼ inches (32 mm) to a maximum of 2 ¾ inches (70 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

1012.4 Continuity. Handrail-gripping surfaces shall be continuous, without interruption by newel posts or other obstructions.

Exceptions:

1. Handrails within dwelling units are permitted to be interrupted by a newel post at a turn or landing.
2. Within a dwelling unit, the use of a volute, turnout, starting easing or starting newel is allowed over the lowest tread.
3. Handrail brackets or balusters attached to the bottom surface of the handrail that do not project horizontally beyond the sides of the

handrail within 1 ½ inches (38 mm) of the bottom of the handrail shall not be considered obstructions. For each ½ inch (12.7 mm) of additional handrail perimeter dimension above 4 inches (102 mm), the vertical clearance dimension of 1 ½ inches (38 mm) shall be permitted to be reduced by 1/8 inch (3 mm).

4. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of the handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.

1012.5 Fittings. Handrails shall not rotate within their fittings.

1012.6 Handrail extensions. Handrails shall return to a wall, guard or the walking surface or shall be continuous to the handrail of an adjacent stair flight. Where handrails are not continuous between flights the handrails shall extend horizontally at least 12 inches (305 mm) beyond the top riser and continue to slope for the depth of one tread beyond the bottom *riser*. At ramps where handrails are not continuous between runs, the handrails shall extend horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of ramp runs. The extensions of handrails shall be in the same direction of the stair flights at stairways and the ramp runs at ramps.

Exceptions:

1. Handrails within a dwelling unit that is not required to be accessible need extend only from the top riser to the bottom riser.
2. Aisle handrails in *rooms or spaces used for assembly purposes* in accordance with Section 1028.13.
3. Handrails for alternating tread devices and ship ladders are permitted to terminate at a location vertically above the top and bottom risers. Handrails for alternating tread devices are not required to be continuous between flights or to extend beyond the top or bottom risers.

1012.7 Clearance. Clear space between a handrail and a wall or other surface shall be a minimum of 1 ½ inches (38 mm). A handrail and a wall or other surface adjacent to the handrail shall be free of any sharp or abrasive elements.

1012.8 Projections. On ramps, the clear width between handrails shall be 36 inches (914 mm) minimum. Projections into the required width of stairways and ramps at each handrail shall not exceed 4 ½ inches (114 mm) at or below the handrail height. Projections into the required width shall not be limited above the minimum headroom height required in Section 1009.2.

1012.9 Intermediate handrails. Stairways shall have intermediate handrails located in such a manner that all portions of the stairway width required for egress

capacity are within 30 inches (762 mm) of a handrail. On monumental stairs, handrails shall be located along the most direct path of egress travel.

SECTION 1013
GUARDS

1013.1 Where required. Guards shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, stairs, ramps and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Guards shall be adequate in strength and attachment in accordance with Section 1607.7.

Exception: Guards are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of stages and raised platforms, including steps leading up to the stage and raised platforms.
3. On raised stage and platform floor areas, such as runways, ramps and side stages used for entertainment or presentations.
4. At vertical openings in the performance area of stages and platforms.
5. At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating where guards in accordance with Section 1028.14 are permitted and provided.

1013.1.1 Glazing. Where glass is used to provide a guard or as a portion of the guard system, the guard shall also comply with Section 2407. Where the glazing provided does not meet the strength and attachment requirements of Section 1607.7, complying guards shall also be located along glazed sides of open-sided walking surfaces.

1013.2 Height. Required guards shall be not less than 42 inches (1067 mm) high, measured vertically above the adjacent walking surfaces, adjacent fixed seating or the line connecting the leading edges of the treads.

Exceptions:

1. For occupancies in Group R-3, and within individual dwelling units in occupancies in Group R-2, guards on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
2. For occupancies in Group R-3, and within individual dwelling units in

occupancies in Group R-2, where the top of the guard also serves as a handrail on the open sides of stairs, the top of the guard shall not be less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

3. The height in assembly seating areas shall be in accordance with Section 1028.14.
4. Along alternating tread devices and ship ladders, guards whose top rail also serves as a handrail, shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread nosing.

1013.3 Opening limitations. Required guards shall not have openings which allow passage of a sphere 4 inches (102 mm) in diameter from the walking surface to the required guard height.

Exceptions:

1. *Deleted*
2. The triangular openings at the open sides of a stair, formed by the riser, tread and bottom rail shall not allow passage of a sphere 6 inches (152 mm) in diameter.
3. At elevated walking surfaces for access to and use of electrical, mechanical or plumbing systems or equipment, guards shall not have openings which allow passage of a sphere 21 inches (533 mm) in diameter.
4. In areas that are not open to the public within occupancies in Group I-3, F, H or S, and for alternating tread devices and ship ladders, guards shall not have openings which allow passage of a sphere 21 inches (533 mm) in diameter.
5. In assembly seating areas, guards at the end of aisles where they terminate at a fascia of boxes, balconies and galleries shall not have openings which allow passage of a sphere 4 inches in diameter (102 mm) up to a height of 26 inches (660 mm). From a height of 26 inches (660 mm) to 42 inches (1067 mm) above the adjacent walking surfaces, guards shall not have openings which allow passage of a sphere 8 inches (203 mm) in diameter.
6. *Deleted*

1013.4 Screen porches. Porches and decks which are enclosed with insect screening shall be provided with guards where the walking surface is located more than 30 inches (762 mm) above the floor or grade below.

1013.5 Mechanical equipment. Guards shall be provided where appliances, equipment, fans, roof hatch openings or other components that require service are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter. The guard shall extend not less than 30 inches (762 mm) beyond each end of such appliance, equipment, fan or component.

1013.6 Roof access. Guards shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

SECTION 1014
EXIT ACCESS

1014.1 General. The exit access shall comply with the applicable provisions of Sections 1003 through 1013. Exit access arrangement shall comply with Sections 1014 through 1019.

1014.2 Egress through intervening spaces. Egress through intervening spaces shall comply with this section.

1. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit.

   Exception: Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy when the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.
2. An exit access shall not pass through a room that can be locked to prevent egress.
3. Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.
4. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.

   Exceptions:

   1. Means of egress are not prohibited through a kitchen area

serving adjoining rooms constituting part of the same dwelling unit or sleeping unit.

2. Means of egress are not prohibited through stockrooms in Group M occupancies when all of the following are met:
   2.1. The stock is of the same hazard classification as that found in the main retail area;
   2.2. Not more than 50 percent of the exit access is through the stockroom;
   2.3. The stockroom is not subject to locking from the egress side; and
   2.4. There is a demarcated, minimum 44-inch-wide (1118 mm) aisle defined by full-or partial-height fixed walls or similar construction that will maintain the required width and lead directly from the retail area to the exit without obstructions.

1014.2.1 Multiple tenants. Where more than one tenant occupies any one floor of a building or structure, each tenant space, dwelling unit and sleeping unit shall be provided with access to the required exits without passing through adjacent tenant spaces, dwelling units and sleeping units.

Exception: The means of egress from a smaller tenant space shall not be prohibited from passing through a larger adjoining tenant space where such rooms or spaces of the smaller tenant occupy less than 10 percent of the area of the larger tenant space through which they pass; are the same or similar occupancy group; a discernable path of egress travel to an exit is provided; and the means of egress into the adjoining space is not subject to locking from the egress side. A required means of egress serving the larger tenant space shall not pass through the smaller tenant space or spaces.

1014.2.2 Group I-2. Habitable rooms or suites in Group I-2 occupancies shall have an exit access door leading directly to a corridor.

Exception: Rooms with exit doors opening directly to the outside at ground level.

1014.2.3 Suites in patient sleeping areas. Patient sleeping areas in Group I-2 occupancies shall be permitted to be divided into suites with one intervening room if one of the following conditions is met:

1. The intervening room within the suite is not used as an exit access for more than eight patient beds.
2. The arrangement of the suite allows for direct and constant visual

supervision by nursing personnel.

1014.2.3.1 Area. Suites of sleeping rooms shall not exceed 5,000 square feet (465 m^2).

1014.2.3.2 Exit access. Any patient sleeping room, or any suite that includes patient sleeping rooms, of more than 1,000 square feet (93 m^2) shall have at least two exit access doors remotely located from each other.

1014.2.3.3 Travel distance. The travel distance between any point in a suite of sleeping rooms and an exit access door of that suite shall not exceed 100 feet (30 480 mm).

1014.2.4 Suites in areas other than patient sleeping areas. Areas other than patient sleeping areas in Group I-2 occupancies shall be permitted to be divided into suites.

1014.2.4.1 Area. Suites of rooms, other than patient sleeping rooms, shall not exceed 10,000 square feet (929 m^2).

1014.2.4.2 Exit access. Any room or suite of rooms, other than patient sleeping rooms, of more than 2,500 square feet (232 m^2) shall have at least two exit access doors remotely located from each other.

1014.2.4.3 One intervening room. For rooms other than patient sleeping rooms, suites of rooms are permitted to have one intervening room if the travel distance within the suite to the exit access door is not greater than 100 feet (30 480 mm).

1014.2.4.4 Two intervening rooms. For rooms other than patient sleeping rooms located within a suite, exit access travel from within the suite shall be permitted through two intervening rooms where the travel distance to the exit access door is not greater than 50 feet (15 240 mm).

1014.2.5 Exit access through suites. Exit access from all other portions of a building not classified as a suite in a Group I-2 occupancy shall not pass through a suite.

1014.2.6 Travel distance. The travel distance between any point in a Group I-2 occupancy patient sleeping room and an exit access door in that room shall not exceed 50 feet (15240 mm).

1014.2.7 Separation. Suites in Group I-2 occupancies shall be separated from other portions of the building by a smoke partition complying with Section 711.

1014.3 Common path of egress travel. In occupancies other than Groups H-1, H-2 and H-3, the common path of egress travel shall not exceed 75 feet (22 860 mm). In Group H-1, H-2 and H-3 occupancies, the common path of egress travel

shall not exceed 25 feet (7620 mm). For common path of egress travel in Group A occupancies and assembly occupancies accessory to Group E occupancies having fixed seating, see Section 1028.8.

Exceptions:

1. The length of a common path of egress travel in Group B, F and S occupancies shall not be more than 100 feet (30 480 mm), provided that the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
2. Where a tenant space in Group B, S and U occupancies has an occupant load of not more than 30, the length of a common path of egress travel shall not be more than 100 feet (30 480 mm).
3. The length of a common path of egress travel in a Group I-3 occupancy shall not be more than 100 feet (30 480 mm).

The length of a common path of egress travel in a Group R-2 occupancy shall not be more than 125 feet (38 100 mm), provided that the building is protected throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

SECTION 1015
EXIT AND EXIT ACCESS DOORWAYS

1015.1 Exits or exit access doorways from spaces. Two exits or exit access doorways from any space shall be provided where one of the following conditions exists:

Exception: Group I-2 occupancies shall comply with Section 1014.2.2 through 1014.2.7.

1. The occupant load of the space exceeds one of the values in Table 1015.1.

   Exception: In Group R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

2. The common path of egress travel exceeds one of the limitations of Section 1014.3.
3. Where required by Section 1015.3, 1015.4, 1015.5, 1015.6 or 1015.6.1.

Where a building contains mixed occupancies, each individual occupancy shall comply with the applicable requirements for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1.

TABLE 1015.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E[a], F, M, U	49
H-1, H-2, H-3	3
H-4, H-5, I-1, I-3, I-4, R	10
S	29

a. Day care maximum occupant load is 10.

1015.1.1 Three or more exits or exit access doorways.
Three exits or exit access doorways shall be provided from any space with an occupant load of 501 to 1,000. Four exits or exit access doorways shall be provided from any space with an occupant load greater than 1,000.

1015.2 Exit or exit access doorway arrangement. Required exits shall be located in a manner that makes their availability obvious. Exits shall be unobstructed at all times. Exit and exit access doorways shall be arranged in accordance with Sections 1015.2.1 and 1015.2.2.

1015.2.1 Two exits or exit access doorways. Where two exits or exit access doorways are required from any portion of the exit access,the exit doors or exit access doorways shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exit doors or exit access doorways. Interlocking or scissor stairs shall be counted as one exit stairway.

Exceptions:

1. Where exit enclosures are provided as a portion of the required exit and are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1018, the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the

separation distance of the exit doors or exit access doorways shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

1015.2.2 Three or more exits or exit access doorways.
Where access to three or more exits is required, at least two exit doors or exit access doorways shall be arranged in accordance with the provisions of Section 1015.2.1.

1015.3 Boiler, incinerator and furnace rooms. Two exit access doorways are required in boiler, incinerator and furnace rooms where the area is over 500 square feet (46 m^2) and any fuel-fired equipment exceeds 400,000 British thermal units (Btu) (422 000 KJ) input capacity. Where two exit access doorways are required, one is permitted to be a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the length of the maximum overall diagonal dimension of the room.

1015.4 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m^2) shall have not less than two exits or exit access doors. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of room.

All portions of machinery rooms shall be within 150 feet (45 720 mm) of an exit or exit access doorway. An increase in travel distance is permitted in accordance with Section 1016.1.

Doors shall swing in the direction of egress travel, regardless of the occupant load served. Doors shall be tight fitting and self-closing.

1015.5 Refrigerated rooms or spaces. Rooms or spaces having a floor area larger than 1,000 square feet (93 m^2), containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two exits or exit access doors.

Travel distance shall be determined as specified in Section 1016.1, but all portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an exit or exit access door where such rooms are not protected by an approved automatic sprinkler system. Egress is allowed through adjoining refrigerated rooms or spaces.

Exception: Where using refrigerants in quantities limited to the amounts based on the volume set forth in the *mechanical code*.

1015.6 Stage means of egress. Where two means of egress are required, based on

the stage size or occupant load, one means of egress shall be provided on each side of the stage.

1015.6.1 Gallery, gridiron and catwalk means of egress. The means of egress from lighting and access catwalks, galleries and gridirons shall meet the requirements for occupancies in Group F-2.

Exceptions:

1. A minimum width of 22 inches (559 mm) is permitted for lighting and access catwalks.
2. Spiral stairs are permitted in the means of egress.
3. Stairways required by this subsection need not be enclosed.
4. Stairways with a minimum width of 22 inches (559 mm), ladders or spiral stairs are permitted in the means of egress.
5. A second means of egress is not required from these areas where a means of escape to a floor or to a roof is provided. Ladders, alternating tread devices or spiral stairs are permitted in the means of escape.
6. Ladders are permitted in the means of egress.

SECTION 1016
EXIT ACCESS TRAVEL DISTANCE

1016.1 Travel distance limitations. Exits shall be so located on each story such that the maximum length of exit access travel, measured from the most remote point within a story along the natural and unobstructed path of egress travel to an exterior exit door at the level of exit discharge, an entrance to a vertical exit enclosure, an exit passageway, a horizontal exit, an exterior exit stairway or an exterior exit ramp, shall not exceed the distances given in Table 1016.1.

Exceptions:

1. Travel distance in open parking garages is permitted to be measured to the closest riser of open exit stairways.
2. In outdoor facilities with open exit access components and open exterior exit stairways or exit ramps, travel distance is permitted to be measured to the closest riser of an exit stairway or the closest slope of the exit ramp.
3. In other than occupancy Groups H and I, the exit access travel distance to a maximum of 50 percent of the exits is permitted to be measured from the most remote point within a building to an exit using unenclosed exit access stairways or ramps when connecting a maximum of two stories. The two connected stories shall be provided with at least two means of egress. Such interconnected stories shall not be open to

other stories.

4. In other than occupancy Groups H and I, exit access travel distance is permitted to be measured from the most remote point within a building to an exit using unenclosed exit access stairways or ramps in the first and second stories above grade plane in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The first and second stories above grade plane shall be provided with at least two means of egress. Such interconnected stories shall not be open to other stories.

Where applicable, travel distance on unenclosed exit access stairways or ramps and on connecting stories shall also be included in the travel distance measurement. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.

TABLE 1016.1
EXIT ACCESS TRAVEL DISTANCE[a]

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250[b]
I-1	Not Permitted	250[c]
B	200	300[c]
F-2, S-2, U	300	400[c]
H-1	Not Permitted	75[c]
H-2	Not Permitted	100[c]
H-3	Not Permitted	150[c]
H-4	Not Permitted	175[c]
H-5	Not Permitted	200[c]
I-2, I-3, I-4	Not Permitted	200[c]

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:
Section 402.4: For the distance limitation in malls.
Section 404.9: For the distance limitation through an atrium space.
Section 407.4: For the distance limitation in Group I-2.
Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.
Section 411.4: For the distance limitation in special amusement buildings.
Section 1014.2.2:For the distance limitation in Group I-2 hospital suites.
Section 1015.4: For the distance limitation in refrigeration machinery rooms.
Section 1015.5: For the distance limitation in refrigerated rooms and spaces.

Section 1016.3: For increased limitation in Groups F-1 and S-1.
Section 1021.2: For buildings with one exit.
Section 1028.7: For increased limitation in assembly seating.
Section 1028.7: For increased limitation for assembly open-air seating.
Section 3103.4: For temporary structures.
Section 3104.9: For pedestrian walkways.

b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

1016.2 Exterior egress balcony increase. Travel distances specified in Section 1016.1 shall be increased up to an additional 100 feet (30 480 mm) provided the last portion of the exit access leading to the exit occurs on an exterior egress balcony constructed in accordance with Section 1019. The length of such balcony shall not be less than the amount of the increase taken.

1016.3 Group F-1 and S-1 increase. *The maximum exit access travel distance shall be 400 feet (121,920 mm) in Group F-1 and S-1 occupancies where all of the following are met:*

1. *The portion of the building classified as Group F-1 or S-1 is limited to one story in height; and*
2. *The minimum height from the finished floor to the bottom of the ceiling or roof slab or deck is 24 feet (7315 mm); and*
3. *The portion of the building classified as Group F-1 or S-1 is equipped throughout with an early suppression fast response (ESFR) automatic fire sprinkler system in accordance with Section 903.3.1.1; and*
4. *The portion of the building classified as Group F-1 or S-1 is equipped with a manually activated smoke exhaust system complying with Section 910.5.*

SECTION 1017
AISLES

1017.1 General. Aisles serving as a portion of the exit access in the means of egress system shall comply with the requirements of this section. Aisles shall be provided from all occupied portions of the exit access which contain seats, tables, furnishings, displays and similar fixtures or equipment. Aisles serving assembly areas shall comply with Section 1028. Aisles serving reviewing stands, grandstands and bleachers shall also comply with Section 1028. The required width of aisles shall be unobstructed.

Exception: Doors complying with Section 1005.2.

1017.2 Aisles in Groups B and M. In Group B and M occupancies, the minimum clear aisle width shall be determined by Section 1005.1 for the occupant load served, but shall not be less than 36 inches (914 mm).

Exception: Nonpublic aisles serving less than 50 people and not required to be accessible by Chapter 11 need not exceed 28 inches (711 mm) in width.

1017.3 Aisle accessways in Group M. An aisle accessway shall be provided on at least one side of each element within the merchandise pad. The minimum clear width for an aisle accessway not required to be accessible shall be 30 inches (762 mm). The required clear width of the aisle accessway shall be measured perpendicular to the elements and merchandise within the merchandise pad. The 30-inch (762 mm) minimum clear width shall be maintained to provide a path to an adjacent aisle or aisle accessway. The common path of travel shall not exceed 30 feet (9144 mm) from any point in the merchandise pad.

Exception: For areas serving not more than 50 occupants, the common path of travel shall not exceed 75 feet (22 880 mm).

1017.4 Seating at tables. Where seating is located at a table or counter and is adjacent to an aisle or aisle accessway, the measurement of required clear width of the aisle or aisle accessway shall be made to a line 19 inches (483 mm) away from and parallel to the edge of the table or counter. The 19-inch (483 mm) distance shall be measured perpendicular to the side of the table or counter. In the case of other side boundaries for aisle or aisle accessways, the clear width shall be measured to walls, edges of seating and tread edges, except that handrail projections are permitted.

Exception: Where tables or counters are served by fixed seats, the width of the aisle accessway shall be measured from the back of the seat.

1017.4.1 Aisle accessway for tables and seating. Aisle accessways serving arrangements of seating at tables or counters shall have sufficient clear width to conform to the capacity requirements of Section 1005.1 but shall not have less than the appropriate minimum clear width specified in Section 1017.4.2.

1017.4.2 Table and seating accessway width. Aisle accessways shall provide a minimum of 12 inches (305 mm) of width plus ½ inch (12.7 mm) of width for each additional 1 foot (305 mm), or fraction thereof, beyond 12 feet (3658 mm) of aisle accessway length measured from the center of the seat farthest from an aisle.

Exception: Portions of an aisle accessway having a length not exceeding 6

feet (1829 mm) and used by a total of not more than four persons.

1017.4.3 Table and seating aisle accessway length. The length of travel along the aisle accessway shall not exceed 30 feet (9144 mm) from any seat to the point where a person has a choice of two or more paths of egress travel to separate exits.

SECTION 1018
CORRIDORS

1018.1 Construction. Corridors shall be fire-resistance rated in accordance with Table 1018.1. The corridor walls required to be fire-resistance rated shall comply with Section 709 for fire partitions.

Exceptions:

1. A fire-resistance rating is not required for corridors in an occupancy in Group E where each room that is used for instruction has at least one door opening directly to the exterior and rooms for assembly purposes have at least one-half of the required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. A fire-resistance rating is not required for corridors contained within a dwelling or sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B which is a space requiring only a single means of egress complying with Section 1015.1.

TABLE 1018.1
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	Not Permitted [d]	0.5
I-2a, I-4	All	Not Permitted	0

I-1, I-3	All	Not Permitted	1[b]

a. For requirements for occupancies in Group I-2, see Sections 407.2 and 407.3.
b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.8.
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.
d. One hour when design qualifies in accordance with Section 903.2.8, exception 3.

1018.2 Corridor width. The minimum corridor width shall be as determined in Section 1005.1, but not less than 44 inches (1118 mm).

Exceptions:

1. Twenty-four inches (610 mm)—For access to and utilization of electrical, mechanical or plumbing systems or equipment.
2. Thirty-six inches (914 mm)—With a required occupant capacity of less than 50.
3. Thirty-six inches (914 mm)—Within a dwelling unit.
4. Seventy-two inches (1829 mm)—In Group E with a corridor having a required capacity of 100 or more.
5. Seventy-two inches (1829 mm)—In corridors and areas serving gurney traffic in occupancies where patients receive outpatient medical care, which causes the patient to be not capable of self-preservation.
6. Ninety-six inches (2438 mm)—In Group I-2 in areas where required for bed movement. *Corridors are not required to have a clear width of 96 inches (2438 mm) in areas where there will not be stretcher or bed movement for access to care or as part of the defend in place strategy.*

1018.3 Corridor obstruction. The required width of corridors shall be unobstructed.

Exception: Doors complying with Section 1005.2.

1018.4 Dead ends. Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet (6096 mm) in length.

Exceptions:

1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see Section 308.4), the dead end in a corridor shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B, E, F, I-1, M, R-1, R-2, R-4, S and U, where the building is equipped throughout with an automatic sprinkler

system in accordance with Section 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet (15 240 mm).

3. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.

1018.5 Air movement in corridors. Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.

Exceptions:

1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor.
2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.
3. Where located within tenant spaces of 1,000 square feet (93 m^2) or less in area, utilization of corridors for conveying return air is permitted.
4. Incidental air movement from pressurized rooms within health care facilities, provided that the corridor is not the primary source of supply or return to the room.

1018.5.1 Corridor ceiling. Use of the space between the corridor ceiling and the floor or roof structure above as a return air plenum is permitted for one or more of the following conditions:

1. The corridor is not required to be of fire-resistance-rated construction;
2. The corridor is separated from the plenum by fire-resistance-rated construction;
3. The air-handling system serving the corridor is shut down upon activation of the air-handling unit smoke detectors required by the International Mechanical Code;
4. The air-handling system serving the corridor is shut down upon detection of sprinkler waterflow where the building is equipped throughout with an automatic sprinkler system; or
5. The space between the corridor ceiling and the floor or roof structure above the corridor is used as a component of an approved engineered smoke control system.

1018.6 Corridor continuity. Fire-resistance-rated corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening

rooms.

Exception: Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.

SECTION 1019
EGRESS BALCONIES

1019.1 General. Balconies used for egress purposes shall conform to the same requirements as corridors for width, headroom, dead ends and projections.

1019.2 Wall separation. Exterior egress balconies shall be separated from the interior of the building by walls and opening protectives as required for corridors.

Exception: Separation is not required where the exterior egress balcony is served by at least two stairs and a dead-end travel condition does not require travel past an unprotected opening to reach a stair.

1019.3 Openness. The long side of an egress balcony shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

SECTION 1020
EXITS

1020.1 General. Exits shall comply with Sections 1020 through 1026 and the applicable requirements of Sections 1003 through 1013. An exit shall not be used for any purpose that interferes with its function as a means of egress. Once a given level of exit protection is achieved, such level of protection shall not be reduced until arrival at the exit discharge.

1020.2 Exterior exit doors. Buildings or structures used for human occupancy shall have at least one exterior door that meets the requirements of Section 1008.1.1.

1020.2.1 Detailed requirements. Exterior exit doors shall comply with the applicable requirements of Section 1008.1.

1020.2.2 Arrangement. Exterior exit doors shall lead directly to the exit discharge or the public way.

SECTION 1021
NUMBER OF EXITS AND CONTINUITY

1021.1 Exits from stories. All spaces within each story shall have access to the minimum number of approved independent exits as specified in Table 1021.1 based on the occupant load of the story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories.

Exceptions:

1. As modified by Section 403.5.2.
2. As modified by Section 1021.2.
3. Exit access stairways and ramps that comply with Exception 3 or 4 of Section 1016.1 shall be permitted to provide the minimum number of approved independent exits required by Table 1021.1 on each story.
4. In Group R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
5. Within a story, rooms and spaces complying with Section 1015.1 with exits that discharge directly to the exterior at the level of exit discharge, are permitted to have one exit.

TABLE 1021.1

MINIMUM NUMBER OF EXITS FOR OCCUPANT LOAD

OCCUPANT LOAD (persons per story)	MINIMUM NUMBER OF EXITS (per story)
1-500	2
501-1,000	3
More than 1,000	4

1021.1.1 Exits maintained. The required number of exits from any story shall be maintained until arrival at grade or the public way.

1021.1.2 Parking structures. Parking structures shall not have less than two exits from each parking tier, except that only one exit is required where vehicles are mechanically parked. Vehicle ramps shall not be considered as required exits unless pedestrian facilities are provided.

1021.1.3 Helistops. The means of egress from helistops shall comply with the provisions of this chapter, provided that landing areas located on buildings or structures shall have two or more exits. For landing platforms or roof areas less than 60 feet (18 288 mm) long, or less than 2,000 square feet (186 m^2) in area,

the second means of egress is permitted to be a fire escape, alternating tread device or ladder leading to the floor below.

1021.2 Single exits. Only one exit shall be required from Group R-3 occupancy buildings or from stories of other buildings as indicated in Table 1021.2. Occupancies shall be permitted to have a single exit in buildings otherwise required to have more than one exit if the areas served by the single exit do not exceed the limitations of Table 1021.2. Mixed occupancies shall be permitted to be served by single exits provided each individual occupancy complies with the applicable requirements of Table 1021.2 for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1. Basements with a single exit shall not be located more than one story below grade plane.

TABLE 1021.2
STORIES WITH ONE EXIT

STORY	OCCUPANCY	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
First story or basement	A, B[d], E[e], F[d], M, U, S[d]	49 occupants and 75 feet travel distance
	H-2, H-3	3 occupants and 25 feet travel distance
	H-4, H-5, I, R	10 occupants and 75 feet travel distance
	S[a]	29 occupants and 100 feet travel distance
Second story	B[b], F, M, S[a]	29 occupants and 75 feet travel distance
	R-2	4 dwelling units and 50 feet travel distance
Third story	R-2[c]	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 304.8 mm.
a. For the required number of exits for parking structures, see Section 1021.1.2.
b. For the required number of exits for air traffic control towers, see Section 412.3.
c. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
d. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
e. Day care occupancies shall have a maximum occupant load of 10.

1021.3 Exit continuity. Exits shall be continuous from the point of entry into the exit to the exit discharge.

1021.4 Exit door arrangement. Exit door arrangement shall meet the requirements of Sections 1015.2 through 1015.2.2.

SECTION 1022
EXIT ENCLOSURES

1022.1 Enclosures required. Interior exit stairways and interior exit ramps shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both. Exit enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the exit enclosure shall include any basements but not any mezzanines. Exit enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. Exit enclosures shall lead directly to the exterior of the building or shall be extended to the exterior of the building with an exit passageway conforming to the requirements of Section 1023, except as permitted in Section 1027.1. An exit enclosure shall not be used for any purpose other than means of egress.

Exceptions:

1. In all occupancies, other than Group H and I occupancies, a stairway is not required to be enclosed when the stairway serves an occupant load of less than 10 and the stairway complies with either Item 1.1 or 1.2. In all cases, the maximum number of connecting open stories shall not exceed two.
    - 1.1 The stairway is open to not more than one story above its level of exit discharge; or
    - 1.2 The stairway is open to not more than one story below its level of exit discharge.
2. Exits in buildings of Group A-5 where all portions of the means of egress are essentially open to the outside need not be enclosed.
3. Stairways serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.
4. Stairways in open parking structures that serve only the parking structure are not required to be enclosed.
5. Stairways in Group I-3 occupancies, as provided for in Section 408.3.8, are not required to be enclosed.
6. Means of egress stairways as required by Sections 410.5.3 and 1015.6.1 are not required to be enclosed.
7. Means of egress stairways from balconies, galleries or press boxes as provided for in Section 1028.5.1 are not required to be enclosed.

1022.2 Termination. Exit enclosures shall terminate at an exit discharge or a public way.

Exception: An exit enclosure shall be permitted to terminate at an exit passageway complying with Section 1023, provided the exit passageway terminates at an exit discharge or a public way.

1022.2.1 Extension. Where an exit enclosure is extended to an exit discharge or a public way by an exit passageway, the exit enclosure shall be separated from the exit passageway by a fire barrier constructed in accordance with Section 707 or a horizontal assembly constructed in accordance with Section 712, or both. The fire-resistance rating shall be at least equal to that required for the exit enclosure. A fire door assembly complying with Section 715.4 shall be installed in the fire barrier to provide a means of egress from the exit enclosure to the exit passageway. Openings in the fire barrier other than the fire door assembly are prohibited. Penetrations of the fire barrier are prohibited.

Exception: Penetrations of the fire barrier in accordance with Section 1022.4 shall be permitted.

1022.3 Openings and penetrations. Exit enclosure opening protectives shall be in accordance with the requirements of Section 715.

Openings in exit enclosures other than unprotected exterior openings shall be limited to those necessary for exit access to the enclosure from normally occupied spaces and for egress from the enclosure.

Elevators shall not open into an exit enclosure.

1022.4 Penetrations. Penetrations into and openings through an exit enclosure are prohibited except for required exit doors, equipment and ductwork necessary for independent ventilation or pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication systems and electrical raceway serving the exit enclosure and terminating at a steel box not exceeding 16 square inches (0.010 m^2). Such penetrations shall be protected in accordance with Section 713. There shall be no penetrations or communication openings, whether protected or not, between adjacent exit enclosures.

1022.5 Ventilation. Equipment and ductwork for exit enclosure ventilation as permitted by Section 1022.4 shall comply with one of the following items:

1. Such equipment and ductwork shall be located exterior to the building and shall be directly connected to the exit enclosure by ductwork enclosed in construction as required for shafts.
2. Where such equipment and ductwork is located within the exit enclosure, the intake air shall be taken directly from the outdoors and the exhaust air shall be discharged directly to the outdoors, or such air shall be conveyed through ducts enclosed in construction as required for shafts.

3. Where located within the building, such equipment and ductwork shall be separated from the remainder of the building, including other mechanical equipment, with construction as required for shafts.

In each case, openings into the fire-resistance-rated construction shall be limited to those needed for maintenance and operation and shall be protected by opening protectives in accordance with Section 715 for shaft enclosures.

Exit enclosure ventilation systems shall be independent of other building ventilation systems.

1022.6 Exit enclosure exterior walls. Exterior walls of an exit enclosure shall comply with the requirements of Section 705 for exterior walls. Where nonrated walls or unprotected openings enclose the exterior of the stairway and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than ¾ hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the topmost landing of the stairway or to the roof line, whichever is lower.

1022.7 Discharge identification. A stairway in an exit enclosure shall not continue below its level of exit discharge unless an approved barrier is provided at the level of exit discharge to prevent persons from unintentionally continuing into levels below. Directional exit signs shall be provided as specified in Section 1011.

1022.8 Floor identification signs. A sign shall be provided at each floor landing in exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom of the exit enclosure and the identification of the stair or ramp. The signage shall also state the story of, and the direction to, the exit discharge and the availability of roof access from the enclosure for the fire department. The sign shall be located 5 feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions. Floor level identification signs in tactile characters complying with *Chapter 11* shall be located at each floor level landing adjacent to the door leading from the enclosure into the corridor to identify the floor level.

1022.8.1 Signage requirements. Stairway identification signs shall comply with *Chapter 11 and* all of the following requirements:

1. The signs shall be a minimum size of 18 inches (457 mm) by 12 inches (305 mm).
2. The letters designating the identification of the stair enclosure shall be a minimum of 1 ½ inches (38 mm) in height.

3. The number designating the floor level shall be a minimum of 5 inches (127 mm) in height and located in the center of the sign.
4. All other lettering and numbers shall be a minimum of 1 inch (25 mm) in height.
5. Characters and their background shall have a nonglare finish. Characters shall contrast with their background, with either light characters on a dark background or dark characters on a light background.
6. When signs required by Section 1022.8 are installed in interior exit enclosures of buildings subject to Section 1024, the signs shall be made of the same materials as required by Section 1024.4.

1022.9 Smokeproof enclosures and pressurized stairways. In buildings required to comply with Section 403 or 405, each of the exit enclosures serving a story with a floor surface located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access or more than 30 feet (9144 mm) below the finished floor of a level of exit discharge serving such stories shall be a smokeproof enclosure or pressurized stairway in accordance with Section 909.20.

1022.9.1 Termination and extension. A smokeproof enclosure or pressurized stairway shall terminate at an exit discharge or a public way. The smokeproof enclosure or pressurized stairway shall be permitted to be extended by an exit passageway in accordance with Section 1022.2. The exit passageway shall be without openings other than the fire door assembly required by Section 1022.2 and those necessary for egress from the exit passageway. The exit passageway shall be separated from the remainder of the building by 2-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both.

Exceptions:

1. Openings in the exit passageway serving a smokeproof enclosure are permitted where the exit passageway is protected and pressurized in the same manner as the smokeproof enclosure, and openings are protected as required for access from other floors.
2. Openings in the exit passageway serving a pressurized stairway are permitted where the exit passageway is protected and pressurized in the same manner as the pressurized stairway.
3. The fire barrier separating the smokeproof enclosure or pressurized stairway from the exit passageway is not required, provided the exit passageway is protected and pressurized in the same manner as the smokeproof enclosure or pressurized stairway.
4. A smokeproof enclosure or pressurized stairway shall be permitted to

egress through areas on the level of discharge or vestibules as permitted by Section 1027.

1022.9.2 Enclosure access. Access to the stairway within a smokeproof enclosure shall be by way of a vestibule or an open exterior balcony.

Exception: Access is not required by way of a vestibule or exterior balcony for stairways using the pressurization alternative complying with Section 909.20.5.

SECTION 1023
EXIT PASSAGEWAYS

1023.1 Exit passageway. Exit passageways serving as an exit component in a means of egress system shall comply with the requirements of this section. An exit passageway shall not be used for any purpose other than as a means of egress.

1023.2 Width. The width of exit passageways shall be determined as specified in Section 1005.1 but such width shall not be less than 44 inches (1118 mm), except that exit passageways serving an occupant load of less than 50 shall not be less than 36 inches (914 mm) in width. The required width of exit passageways shall be unobstructed.

Exception: Doors complying with Section 1005.2.

1023.3 Construction. Exit passageway enclosures shall have walls, floors and ceilings of not less than 1-hour fire-resistance rating, and not less than that required for any connecting exit enclosure. Exit passageways shall be constructed as fire barriers in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both.

1023.4 Termination. Exit passageways shall terminate at an exit discharge or a public way.

1023.5 Openings and penetrations. Exit passageway opening protectives shall be in accordance with the requirements of Section 715.

Except as permitted in Section 402.4.6, openings in exit passageways other than exterior openings shall be limited to those necessary for exit access to the exit passageway from normally occupied spaces and for egress from the exit passageway.

Where an exit enclosure is extended to an exit discharge or a public way by an exit passageway, the exit passageway shall also comply with Section 1022.2.1.

Elevators shall not open into an exit passageway.

1023.6 Penetrations. Penetrations into and openings through an exit passageway are prohibited except for required exit doors, equipment and ductwork necessary for independent pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway and terminating at a steel box not exceeding 16 square inches (0.010 m^2). Such penetrations shall be protected in accordance with Section 713. There shall be no penetrations or communicating openings, whether protected or not, between adjacent exit passageways.

SECTION 1024
LUMINOUS EGRESS PATH MARKINGS

Deleted

SECTION 1025
HORIZONTAL EXITS

1025.1 Horizontal exits. Horizontal exits serving as an exit in a means of egress system shall comply with the requirements of this section. A horizontal exit shall not serve as the only exit from a portion of a building, and where two or more exits are required, not more than one-half of the total number of exits or total exit width shall be horizontal exits.

Exceptions:

1. Horizontal exits are permitted to comprise two-thirds of the required exits from any building or floor area for occupancies in Group I-2.
2. Horizontal exits are permitted to comprise 100 percent of the exits required for occupancies in Group I-3. At least 6 square feet (0.6 m^2) of accessible space per occupant shall be provided on each side of the horizontal exit for the total number of people in adjoining compartments.

1025.2 Separation. The separation between buildings or refuge areas connected by a horizontal exit shall be provided by a fire wall complying with Section 706; or it shall be provided by a fire barrier complying with Section 707 or a horizontal assembly complying with Section 712, or both. The minimum fire-resistance rating of the separation shall be 2 hours. Opening protectives in horizontal exits shall also comply with Section 715. Duct and air transfer openings in a fire wall or fire barrier that serves as a horizontal exit shall also comply with Section 716. The horizontal exit separation shall extend vertically through all levels of the building unless floor assemblies have a fire-resistance rating of not less than 2

hours with no unprotected openings.

Exception: A fire-resistance rating is not required at horizontal exits between a building area and an above-grade pedestrian walkway constructed in accordance with Section 3104, provided that the distance between connected buildings is more than 20 feet (6096 mm).

Horizontal exits constructed as fire barriers shall be continuous from exterior wall to exterior wall so as to divide completely the floor served by the horizontal exit.

1025.3 Opening protectives. Fire doors in horizontal exits shall be self-closing or automatic-closing when activated by a smoke detector in accordance with Section 715.4.8.3. Doors, where located in a cross-corridor condition, shall be automatic-closing by activation of a smoke detector installed in accordance with Section 715.4.8.3.

1025.4 Capacity of refuge area. The refuge area of a horizontal exit shall be a space occupied by the same tenant or a public area and each such refuge area shall be adequate to accommodate the original occupant load of the refuge area plus the occupant load anticipated from the adjoining compartment. The anticipated occupant load from the adjoining compartment shall be based on the capacity of the horizontal exit doors entering the refuge area. The capacity of the refuge area shall be computed based on a net floor area allowance of 3 square feet (0.2787 m^2) for each occupant to be accommodated therein.

Exception: The net floor area allowable per occupant shall be as follows for the indicated occupancies:

1. Six square feet (0.6 m^2) per occupant for occupancies in Group I-3.
2. Fifteen square feet (1.4 m^2) per occupant for ambulatory occupancies in Group I-2.
3. Thirty square feet (2.8 m^2) per occupant for nonambulatory occupancies in Group I-2.

The refuge area into which a horizontal exit leads shall be provided with exits adequate to meet the occupant requirements of this chapter, but not including the added occupant load imposed by persons entering it through horizontal exits from other areas. At least one refuge area exit shall lead directly to the exterior or to an exit enclosure.

Exception: The adjoining compartment shall not be required to have a stairway or door leading directly outside, provided the refuge area into which a horizontal exit leads has stairways or doors leading directly outside and are so arranged that egress shall not require the occupants to return through the compartment from which egress originates.

SECTION 1026
EXTERIOR EXIT RAMPS AND STAIRWAYS

1026.1 Exterior exit ramps and stairways. Exterior exit ramps and stairways serving as an element of a required means of egress shall comply with this section.

Exception: Exterior exit ramps and stairways for outdoor stadiums complying with Section 1022.1, Exception 2.

1026.2 Use in a means of egress. Exterior exit stairways shall not be used as an element of a required means of egress for *Groups* I-2, *I-4 and child care facilities in E* occupancies**.** For occupancies in other than Group I-2, *I-4 and child care facilities in E occupancies,* exterior exit ramps and stairways shall be permitted as an element of a required means of egress for buildings not exceeding six stories above grade plane or having occupied floors more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

1026.3 Open side. Exterior exit ramps and stairways serving as an element of a required means of egress shall be open on at least one side. An open side shall have a minimum of 35 square feet (3.3 m^2) of aggregate open area adjacent to each floor level and the level of each intermediate landing. The required open area shall be located not less than 42 inches (1067 mm) above the adjacent floor or landing level.

1026.4 Side yards. The open areas adjoining exterior exit ramps or stairways shall be either yards, courts or public ways; the remaining sides are permitted to be enclosed by the exterior walls of the building.

1026.5 Location. Exterior exit ramps and stairways shall be located in accordance with Section 1027.3.

1026.6 Exterior ramps and stairway protection. Exterior exit ramps and stairways shall be separated from the interior of the building as required in Section 1022.1. Openings shall be limited to those necessary for egress from normally occupied spaces.

Exceptions:

1. Separation from the interior of the building is not required for occupancies, other than those in Group R-1 or R-2, in buildings that are no more than two stories above grade plane where a level of exit discharge serving such occupancies is the first story above grade plane.
2. Separation from the interior of the building is not required where the

exterior ramp or stairway is served by an exterior ramp or balcony that connects two remote exterior stairways or other approved exits, with a perimeter that is not less than 50 percent open. To be considered open, the opening shall be a minimum of 50 percent of the height of the enclosing wall, with the top of the openings no less than 7 feet (2134 mm) above the top of the balcony.

3. Separation from the interior of the building is not required for an exterior ramp or stairway located in a building or structure that is permitted to have unenclosed interior stairways in accordance with Section 1022.1.
4. Separation from the interior of the building is not required for exterior ramps or stairways connected to open-ended corridors, provided that Items 4.1 through 4.4 are met:

   4.1. The building, including corridors and ramps and stairs, shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

   4.2. The open-ended corridors comply with Section 1018.

   4.3. The open-ended corridors are connected on each end to an exterior exit ramp or stairway complying with Section 1026.

   4.4. At any location in an open-ended corridor where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 m^2) or an exterior ramp or stairway shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

SECTION 1027
EXIT DISCHARGE

1027.1 General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide direct access to grade. The exit discharge shall not reenter a building. The combined use of Exceptions 1 and 2 below shall not exceed 50 percent of the number and capacity of the required exits.

Exceptions:

1. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through areas on the level of discharge provided all of the following are met:

1.1. Such exit enclosures egress to a free and unobstructed path of travel to an exterior exit door and such exit is readily visible and identifiable from the point of termination of the exit enclosure.

1.2. The entire area of the level of exit discharge is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure.

1.3. The egress path from the exit enclosure on the level of exit discharge is protected throughout by an approved automatic sprinkler system. All portions of the level of exit discharge with access to the egress path shall either be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of exits.

2. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through a vestibule provided all of the following are met:

2.1. The entire area of the vestibule is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure.

2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).

2.3. The area is separated from the remainder of the level of exit discharge by construction providing protection at least the equivalent of approved wired glass in steel frames.

2.4. The area is used only for means of egress and exits directly to the outside.

3. Stairways in open parking garages complying with Section 1022.1, Exception 4, are permitted to egress through the open parking garage at their levels of exit discharge.

4. Horizontal exits complying with Section 1025 shall not be required to discharge directly to the exterior of the building.

1027.2 Exit discharge capacity. The capacity of the exit discharge shall be not less than the required discharge capacity of the exits being served.

1027.3 Exit discharge location. Exterior balconies, stairways and ramps shall be located at least 10 feet (3048 mm) from adjacent lot lines and from other buildings on the same lot unless the adjacent building exterior walls and openings

are protected in accordance with Section 705 based on fire separation distance.

1027.4 Exit discharge components. Exit discharge components shall be sufficiently open to the exterior so as to minimize the accumulation of smoke and toxic gases.

1027.5 Egress courts. Egress courts serving as a portion of the exit discharge in the means of egress system shall comply with the requirements of Section 1027.

1027.5.1 Width. The width of egress courts shall be determined as specified in Section 1005.1, but such width shall not be less than 44 inches (1118 mm), except as specified herein. Egress courts serving Group R-3 and U occupancies shall not be less than 36 inches (914 mm) in width. The required width of egress courts shall be unobstructed to a height of 7 feet (2134 mm).

Exception: Doors complying with Section 1005.2.

Where an egress court exceeds the minimum required width and the width of such egress court is then reduced along the path of exit travel, the reduction in width shall be gradual. The transition in width shall be affected by a guard not less than 36 inches (914 mm) in height and shall not create an angle of more than 30 degrees (0.52 rad) with respect to the axis of the egress court along the path of egress travel. In no case shall the width of the egress court be less than the required minimum.

1027.5.2 Construction and openings. Where an egress court serving a building or portion thereof is less than 10 feet (3048 mm) in width, the egress court walls shall have not less than 1-hour fire-resistance-rated construction for a distance of 10 feet (3048 mm) above the floor of the court. Openings within such walls shall be protected by opening protectives having a fire protection rating of not less than ¾ hour.

Exceptions:

1. Egress courts serving an occupant load of less than 10.
2. Egress courts serving Group R-3.

1027.6 Access to a public way. The exit discharge shall provide a direct and unobstructed access to a public way.

Exception: Where access to a public way cannot be provided, a safe dispersal area shall be provided where all of the following are met:

1. The area shall be of a size to accommodate at least 5 square feet (0.46 m^2) for each person.
2. The area shall be located on the same lot at least 50 feet (15 240 mm) away from the building requiring egress.

3. The area shall be permanently maintained and identified as a safe dispersal area.
4. The area shall be provided with a safe and unobstructed path of travel from the building.

SECTION 1028
ASSEMBLY

1028.1 General. Occupancies in Group A and assembly occupancies accessory to Group E which contain seats, tables, displays, equipment or other material shall comply with this section.

1028.1.1 Bleachers. Bleachers, grandstands and folding and telescopic seating, that are not building elements, shall comply *with Chapters 1-4 of* ICC 300.

1028.2 Assembly main exit. Group A occupancies and assembly occupancies accessory to Group E occupancies that have an occupant load of greater than 300 shall be provided with a main exit. The main exit shall be of sufficient width to accommodate not less than one-half of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. Where the building is classified as a Group A occupancy, the main exit shall front on at least one street or an unoccupied space of not less than 10 feet (3048 mm) in width that adjoins a street or public way.

Exception: In assembly occupancies where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width.

1028.3 Assembly other exits. In addition to having access to a main exit, each level in Group A occupancies or assembly occupancies accessory to Group E occupancies having an occupant load greater than 300, shall be provided with additional means of egress that shall provide an egress capacity for at least one-half of the total occupant load served by that level and comply with Section 1015.2.

Exception: In assembly occupancies where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building, provided that the total width of egress is not less than 100 percent of the required width.

1028.4 Foyers and lobbies. In Group A-1 occupancies, where persons are admitted to the building at times when seats are not available, such persons shall be allowed to wait in a lobby or similar space, provided such lobby or similar space shall not encroach upon the required clear width of the means of egress. Such foyer, if not directly connected to a public street by all the main entrances or

exits, shall have a straight and unobstructed corridor or path of travel to every such main entrance or exit.

1028.5 Interior balcony and gallery means of egress. For balconies, galleries or press boxes having a seating capacity of 50 or more located in Group A occupancies, at least two means of egress shall be provided, with one from each side of every balcony, gallery or press box and at least one leading directly to an exit.

1028.5.1 Enclosure of openings. Interior stairways and other vertical openings shall be enclosed in an exit enclosure as provided in Section 1022.1, except that stairways are permitted to be open between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities. At least one accessible means of egress is required from a balcony, gallery or press box level containing accessible seating locations in accordance with Section 1007.3 or 1007.4.

1028.6 Width of means of egress for assembly. The clear width of aisles and other means of egress shall comply with Section 1028.6.1 where smoke-protected seating is not provided and with Section 1028.6.2 or 1028.6.3 where smoke-protected seating is provided. The clear width shall be measured to walls, edges of seating and tread edges except for permitted projections.

1028.6.1 Without smoke protection. The clear width of the means of egress shall provide sufficient capacity in accordance with all of the following, as applicable:

1. At least 0.3 inch (7.6 mm) of width for each occupant served shall be provided on stairs having riser heights 7 inches (178 mm) or less and tread depths 11 inches (279 mm) or greater, measured horizontally between tread nosings.
2. At least 0.005 inch (0.127 mm) of additional stair width for each occupant shall be provided for each 0.10 inch (2.5 mm) of riser height above 7 inches (178 mm).
3. Where egress requires stair descent, at least 0.075 inch (1.9 mm) of additional width for each occupant shall be provided on those portions of stair width having no handrail within a horizontal distance of 30 inches (762 mm).
4. Ramped means of egress, where slopes are steeper than one unit vertical in 12 units horizontal (8-percent slope), shall have at least 0.22 inch (5.6 mm) of clear width for each occupant served. Level or ramped means of egress, where slopes are not steeper than one unit vertical in 12 units horizontal (8-percent slope), shall have at least 0.20 inch (5.1 mm) of clear width for each occupant served.

1028.6.2 Smoke-protected seating. The clear width of the means of egress for smoke-protected assembly seating shall not be less than the occupant load served by the egress element multiplied by the appropriate factor in Table 1028.6.2. The total number of seats specified shall be those within the space exposed to the same smoke-protected environment. Interpolation is permitted between the specific values shown. A life safety evaluation, complying with NFPA 101, shall be done for a facility utilizing the reduced width requirements of Table 1028.6.2 for smoke-protected assembly seating.

Exception: For an outdoor smoke-protected assembly with an occupant load not greater than 18,000, the clear width shall be determined using the factors in Section 1028.6.3.

1028.6.2.1 Smoke control. Means of egress serving a smoke-protected assembly seating area shall be provided with a smoke control system complying with Section 909 or natural ventilation designed to maintain the smoke level at least 6 feet (1829 mm) above the floor of the means of egress.

1028.6.2.2 Roof height. A smoke-protected assembly seating area with a roof shall have the lowest portion of the roof deck not less than 15 feet (4572 mm) above the highest aisle or aisle accessway.

Exception: A roof canopy in an outdoor stadium shall be permitted to be less than 15 feet (4572 mm) above the highest aisle or aisle accessway provided that there are no objects less than 80 inches (2032 mm) above the highest aisle or aisle accessway.

1028.6.2.3 Automatic sprinklers. Enclosed areas with walls and ceilings in buildings or structures containing smoke-protected assembly seating shall be protected with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

Exceptions:

1. The floor area used for contests, performances or entertainment provided the roof construction is more than 50 feet (15 240 mm) above the floor level and the use is restricted to low fire hazard uses.
2. Press boxes and storage facilities less than 1,000 square feet (93 m^2) in area.
3. Outdoor seating facilities where seating and the means of egress in the seating area are essentially open to the outside.

1028.6.3 Width of means of egress for outdoor smoke-protected assembly.

The clear width in inches (mm) of aisles and other means of egress shall be not less than the total occupant load served by the egress element multiplied by 0.08 (2.0 mm) where egress is by aisles and stairs and multiplied by 0.06 (1.52 mm) where egress is by ramps, corridors, tunnels or vomitories.

Exception: The clear width in inches (mm) of aisles and other means of egress shall be permitted to comply with Section 1028.6.2 for the number of seats in the outdoor smoke-protected assembly where Section 1028.6.2 permits less width.

1028.7 Travel distance. Exits and aisles shall be so located that the travel distance to an exit door shall not be greater than 200 feet (60 960 mm) measured along the line of travel in nonsprinklered buildings. Travel distance shall not be more than 250 feet (76 200 mm) in sprinklered buildings. Where aisles are provided for seating, the distance shall be measured along the aisles and aisle accessway without travel over or on the seats.

Exceptions:

1. Smoke-protected assembly seating: The travel distance from each seat to the nearest entrance to a vomitory or concourse shall not exceed 200 feet (60 960 mm). The travel distance from the entrance to the vomitory or concourse to a stair, ramp or walk on the exterior of the building shall not exceed 200 feet (60 960 mm).
2. Open-air seating: The travel distance from each seat to the building exterior shall not exceed 400 feet (122 m). The travel distance shall not be limited in facilities of Type I or II construction.

1028.8 Common path of egress travel. The common path of egress travel shall not exceed 30 feet (9144 mm) from any seat to a point where an occupant has a choice of two paths of egress travel to two exits.

Exceptions:

1. For areas serving less than 50 occupants, the common path of egress travel shall not exceed 75 feet (22 860 mm).
2. For smoke-protected assembly seating, the common path of egress travel shall not exceed 50 feet (15 240 mm).

TABLE 1028.6.2
WIDTH OF AISLES FOR SMOKE-PROTECTED ASSEMBLY

TOTAL NUMBER OF SEATS IN THE SMOKE-PROTECTED ASSEMBLY OCCUPANCY	INCHES OF CLEAR WIDTH PER SEAT SERVED			
	Stairs and aisle steps with handrails within 30 inches	Stairs and aisle steps without handrails within 30 inches	Passageways, doorways and ramps not steeper than 1 in 10 in slope	Ramps steeper than 1 in 10 in slope
Equal to or less than 5,000	0.200	0.250	0.150	0.165
10,000	0.130	0.163	0.100	0.110
15,000	0.096	0.120	0.070	0.077
20,000	0.076	0.095	0.056	0.062
Equal to or greater than 25,000	0.060	0.075	0.044	0.048

For SI: 1 inch = 25.4 mm.

1028.8.1 Path through adjacent row. Where one of the two paths of travel is across the aisle through a row of seats to another aisle, there shall be not more than 24 seats between the two aisles, and the minimum clear width between rows for the row between the two aisles shall be 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row between aisles.

Exception: For smoke-protected assembly seating there shall not be more than 40 seats between the two aisles and the minimum clear width shall be 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat.

1028.9 Assembly aisles are required. Every occupied portion of any occupancy in Group A or assembly occupancies accessory to Group E that contains seats, tables, displays, similar fixtures or equipment shall be provided with aisles leading to exits or exit access doorways in accordance with this section. Aisle accessways for tables and seating shall comply with Section 1017.4.

1028.9.1 Minimum aisle width. The minimum clear width for aisles shall be as shown:

1. Forty-eight inches (1219 mm) for aisle stairs having seating on each side.
   Exception: Thirty-six inches (914 mm) where the aisle serves less than 50 seats.
2. Thirty-six inches (914 mm) for aisle stairs having seating on only one side.
3. Twenty-three inches (584 mm) between an aisle stair handrail or guard and seating where the aisle is subdivided by a handrail.

4. Forty-two inches (1067 mm) for level or ramped aisles having seating on both sides.
   Exceptions:
   1. Thirty-six inches (914 mm) where the aisle serves less that 50 seats.
   2. Thirty inches (762 mm) where the aisle does not serve more than 14 seats.
5. Thirty-six inches (914 mm) for level or ramped aisles having seating on only one side.

   Exceptions:

   1. Thirty inches (762 mm) where the aisle does not serve more than 14 seats.
   2. Twenty-three inches (584 mm) between an aisle stair handrail and seating where an aisle does not serve more than five rows on one side.

1028.9.2 Aisle width. The aisle width shall provide sufficient egress capacity for the number of persons accommodated by the catchment area served by the aisle. The catchment area served by an aisle is that portion of the total space that is served by that section of the aisle. In establishing catchment areas, the assumption shall be made that there is a balanced use of all means of egress, with the number of persons in proportion to egress capacity.

1028.9.3 Converging aisles. Where aisles converge to form a single path of egress travel, the required egress capacity of that path shall not be less than the combined required capacity of the converging aisles.

1028.9.4 Uniform width. Those portions of aisles, where egress is possible in either of two directions, shall be uniform in required width.

1028.9.5 Assembly aisle termination. Each end of an aisle shall terminate at cross aisle, foyer, doorway, vomitory or concourse having access to an exit.

Exceptions:

1. Dead-end aisles shall not be greater than 20 feet (6096 mm) in length.
2. Dead-end aisles longer than 20 feet (6096 mm) are permitted where seats beyond the 20-foot (6096 mm) dead-end aisle are no more than 24 seats from another aisle, measured along a row of seats having a minimum clear width of 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row.
3. For smoke-protected assembly seating, the dead-end aisle length of vertical aisles shall not exceed a distance of 21 rows.

4. For smoke-protected assembly seating, a longer dead-end aisle is permitted where seats beyond the 21-row dead-end aisle are not more than 40 seats from another aisle, measured along a row of seats having an aisle accessway with a minimum clear width of 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat above seven in the row.

1028.9.6 Assembly aisle obstructions. There shall be no obstructions in the required width of aisles except for handrails as provided in Section 1028.13.

1028.10 Clear width of aisle accessways serving seating. Where seating rows have 14 or fewer seats, the minimum clear aisle accessway width shall not be less than 12 inches (305 mm) measured as the clear horizontal distance from the back of the row ahead and the nearest projection of the row behind. Where chairs have automatic or self-rising seats, the measurement shall be made with seats in the raised position. Where any chair in the row does not have an automatic or self-rising seat, the measurements shall be made with the seat in the down position. For seats with folding tablet arms, row spacing shall be determined with the tablet arm in the used position.

Exception: For seats with folding tablet arms, row spacing is permitted to be determined with the tablet arm in the stored position where the tablet arm when raised manually to vertical position in one motion automatically returns to the stored position by force of gravity.

1028.10.1 Dual access. For rows of seating served by aisles or doorways at both ends, there shall not be more than 100 seats per row. The minimum clear width of 12 inches (305 mm) between rows shall be increased by 0.3 inch (7.6 mm) for every additional seat beyond 14 seats, but the minimum clear width is not required to exceed 22 inches (559 mm).

Exception: For smoke-protected assembly seating, the row length limits for a 12-inch-wide (305 mm) aisle accessway, beyond which the aisle accessway minimum clear width shall be increased, are in Table 1028.10.1.

TABLE 1028.10.1
SMOKE-PROTECTED
ASSEMBLY AISLE ACCESSWAYS

TOTAL NUMBER OF SEATS IN THE SMOKE-PROTECTED ASSEMBLY OCCUPANCY	MAXIMUM NUMBER OF SEATS PER ROW PERMITTED TO HAVE A MINIMUM 12-INCH CLEAR WIDTH AISLE ACCESSWAY	
	Aisle or doorway at both ends of row	Aisle or doorway at one end of row only
Less than 4,000	14	7

4,000	15	7
7,000	16	8
10,000	17	8
13,000	18	9
16,000	19	9
19,000	20	10
22,000 and greater	21	11

For SI: 1 inch = 25.4 mm.

1028.10.2 Single access. For rows of seating served by an aisle or doorway at only one end of the row, the minimum clear width of 12 inches (305 mm) between rows shall be increased by 0.6 inch (15.2 mm) for every additional seat beyond seven seats, but the minimum clear width is not required to exceed 22 inches (559 mm).

Exception: For smoke-protected assembly seating, the row length limits for a 12-inch-wide (305 mm) aisle accessway, beyond which the aisle accessway minimum clear width shall be increased, are in Table 1028.10.1.

1028.11 Assembly aisle walking surfaces. Aisles with a slope not exceeding one unit vertical in eight units horizontal (12.5-percent slope) shall consist of a ramp having a slip-resistant walking surface. Aisles with a slope exceeding one unit vertical in eight units horizontal (12.5-percent slope) shall consist of a series of risers and treads that extends across the full width of aisles and complies with Sections 1028.11.1 through 1028.11.3.

1028.11.1 Treads. Tread depths shall be a minimum of 11 inches (279 mm) and shall have dimensional uniformity.

Exception: The tolerance between adjacent treads shall not exceed 0.188 inch (4.8 mm).

1028.11.2 Risers. Where the gradient of aisle stairs is to be the same as the gradient of adjoining seating areas, the riser height shall not be less than 4 inches (102 mm) nor more than 8 inches (203 mm) and shall be uniform within each flight.

Exceptions:

1. Riser height nonuniformity shall be limited to the extent necessitated by changes in the gradient of the adjoining seating area to maintain adequate sightlines. Where nonuniformities exceed 0.188 inch (4.8 mm) between adjacent risers, the exact location of such nonuniformities shall be indicated with a distinctive marking stripe on each tread at the nosing or leading edge adjacent to the nonuniform risers. Such stripe shall be a

minimum of 1 inch (25 mm), and a maximum of 2 inches (51 mm), wide. The edge marking stripe shall be distinctively different from the contrasting marking stripe.

2. Riser heights not exceeding 9 inches (229 mm) shall be permitted where they are necessitated by the slope of the adjacent seating areas to maintain sightlines.

1028.11.3 Tread contrasting marking stripe. A contrasting marking stripe shall be provided on each tread at the nosing or leading edge such that the location of each tread is readily apparent when viewed in descent. Such stripe shall be a minimum of 1 inch (25 mm), and a maximum of 2 inches (51 mm), wide.

Exception: The contrasting marking stripe is permitted to be omitted where tread surfaces are such that the location of each tread is readily apparent when viewed in descent.

1028.12 Seat stability. In places of assembly, the seats shall be securely fastened to the floor.

Exceptions:

1 In places of assembly or portions thereof without ramped or tiered floors for seating and with 200 or fewer seats, the seats shall not be required to be fastened to the floor.

2 In places of assembly or portions thereof with seating at tables and without ramped or tiered floors for seating, the seats shall not be required to be fastened to the floor.

3 In places of assembly or portions thereof without ramped or tiered floors for seating and with greater than 200 seats, the seats shall be fastened together in groups of not less than three or the seats shall be securely fastened to the floor.

4 In places of assembly where flexibility of the seating arrangement is an integral part of the design and function of the space and seating is on tiered levels, a maximum of 200 seats shall not be required to be fastened to the floor. Plans showing seating, tiers and aisles shall be submitted for approval.

5 Groups of seats within a place of assembly separated from other seating by railings, guards, partial height walls or similar barriers with level floors and having no more than 14 seats per group shall not be required to be fastened to the floor.

6 Seats intended for musicians or other performers and separated by railings, guards, partial height walls or similar barriers shall not be required to be fastened to the floor.

1028.13 Handrails. Ramped aisles having a slope exceeding one unit vertical in 15 units horizontal (6.7-percent slope) and aisle stairs shall be provided with handrails located either at the side or within the aisle width.

Exceptions:

1. Handrails are not required for ramped aisles having a gradient no greater than one unit vertical in eight units horizontal (12.5-percent slope) and seating on both sides.
2. Handrails are not required if, at the side of the aisle, there is a guard that complies with the graspability requirements of handrails.
3. Handrail extensions are not required at the top and bottom of aisle stairs and aisle ramp runs to permit crossovers within the aisles.

1028.13.1 Discontinuous handrails. Where there is seating on both sides of the aisle, the handrails shall be discontinuous with gaps or breaks at intervals not exceeding five rows to facilitate access to seating and to permit crossing from one side of the aisle to the other. These gaps or breaks shall have a clear width of at least 22 inches (559 mm) and not greater than 36 inches (914 mm), measured horizontally, and the handrail shall have rounded terminations or bends.

1028.13.2 Intermediate handrails. Where handrails are provided in the middle of aisle stairs, there shall be an additional intermediate handrail located approximately 12 inches (305 mm) below the main handrail.

1028.14 Assembly guards. Assembly guards shall comply with Sections 1028.14.1 through 1028.14.3.

1028.14.1 Cross aisles. Cross aisles located more than 30 inches (762 mm) above the floor or grade below shall have guards in accordance with Section 1013.

Where an elevation change of 30 inches (762 mm) or less occurs between a cross aisle and the adjacent floor or grade below, guards not less than 26 inches (660 mm) above the aisle floor shall be provided.

Exception: Where the backs of seats on the front of the cross aisle project 24 inches (610 mm) or more above the adjacent floor of the aisle,a guard need not be provided.

1028.14.2 Sightline-constrained guard heights. Unless subject to the requirements of Section 1028.14.3, a fascia or railing system in accordance with the guard requirements of Section 1013 and having a minimum height of 26 inches (660 mm) shall be provided where the floor or footboard elevation is

more than 30 inches (762 mm) above the floor or grade below and the fascia or railing would otherwise interfere with the sightlines of immediately adjacent seating. At bleachers, a guard must be provided where required by ICC 300.

1028.14.3 Guards at the end of aisles. A fascia or railing system complying with the guard requirements of Section 1013 shall be provided for the full width of the aisle where the foot of the aisle is more than 30 inches (762 mm) above the floor or grade below. The fascia or railing shall be a minimum of 36 inches (914 mm) high and shall provide a minimum 42 inches (1067 mm) measured diagonally between the top of the rail and the nosing of the nearest tread.

1028.15 Bench seating. Where bench seating is used, the number of persons shall be based on one person for each 18 inches (457 mm) of length of the bench.

SECTION 1029
EMERGENCY ESCAPE AND RESCUE

1029.1 General. In addition to the means of egress required by this chapter, provisions shall be made for emergency escape and rescue in Group R and I-1 occupancies. Basements and sleeping rooms below the fourth story above grade plane shall have at least one exterior emergency escape and rescue opening in accordance with this section. Where basements contain one or more sleeping rooms, emergency escape and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Such openings shall open directly into a public way or to a yard or court that opens to a public way.

Exceptions:

1. In other than Group R-3 occupancies, buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
2. In other than Group R-3 occupancies, sleeping rooms provided with a door to a fire-resistance-rated corridor having access to two remote exits in opposite directions.
3. The emergency escape and rescue opening is permitted to open onto a balcony within an atrium in accordance with the requirements of Section 404, provided the balcony provides access to an exit and the dwelling unit or sleeping unit has a means of egress that is not open to the atrium.
4. Basements with a ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue windows.
5. High-rise buildings in accordance with Section 403.

6. Emergency escape and rescue openings are not required from basements or sleeping rooms that have an exit door or exit access door that opens directly into a public way or to a yard, court or exterior exit balcony that opens to a public way.
7. Basements without habitable spaces and having no more than 200 square feet (18.6 m^2) in floor area shall not be required to have emergency escape windows.

1029.2 Minimum size. Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet
(0.53 m^2).

Exception: The minimum net clear opening for emergency escape and rescue grade-floor openings shall be 5 square feet (0.46 m^2).

1029.2.1 Minimum dimensions. The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

1029.3 Maximum height from floor. Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) measured from the floor.

1029.4 Operational constraints. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools. Bars, grilles, grates or similar devices are permitted to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with Section 1029.2 and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the escape and rescue opening. Where such bars, grilles, grates or similar devices are installed in existing buildings, smoke alarms shall be installed in accordance with Section 907.2.11 regardless of the valuation of the alteration.

1029.5 Window wells. An emergency escape and rescue opening with a finished sill height below the adjacent ground level shall be provided with a window well in accordance with Sections 1029.5.1 and 1029.5.2.

1029.5.1 Minimum size. The minimum horizontal area of the window well shall be 9 square feet (0.84 m^2), with a minimum dimension of 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

1029.5.2 Ladders or steps. Window wells with a vertical depth of more than 44 inches (1118 mm) shall be equipped with an approved permanently affixed ladder

or steps. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center (o.c.) vertically for the full height of the window well. The ladder or steps shall not encroach into the required dimensions of the window well by more than 6 inches (152 mm). The ladder or steps shall not be obstructed by the emergency escape and rescue opening. Ladders or steps required by this section are exempt from the stairway requirements of Section 1009.

Exhibit C

November 16, 2015 Stakeholder Meeting
Ohio Building Code Rules – HB 64

Attendees:

Mike Froelich, Sylvania Twp FD
Craig Skeel, Genoa Twp Fire
Nick Keisel, Reynoldsburg City Schools
Joe Zvmpano, Door Lockdown Device
John Woestman, Builders Hardware Manufacturers Assn
Capt Mike Makowski, City of Mario FD
Brad Howard, Koorsen Fire & Security
Kim Fladung, Warren County Career Center
Adiren Welsh-Higgins, AP
Sam Mamula, Cincinnati Insurance
Brian Beach, Norwich Township Fire
Dave Belcher, VTFD/OFOA
Bruce Larcom, OSPE/SFPE
Paul Payne, Ohio SRO Association
Tom Granata, Perrysburg Fire Dept
Jim Dussen, Maumee Fire Dept
Scott Young, National Inspection Corp
Jim Stocksdale, OBOA
Lee Bugglin, Bilco
Ronald Betschman, CML CFDI, Fire Door Inspector
Kari Parsons, Ohio School Resource Officers Assoc
Nicole Riley, Reynoldsburg PD
Kate Earley, WLJFD
J.Scott Brooks, West Chester Twp FD & SWOFSC
Phil Seyboldt, City of Richmond Hts
John Desbarteau, NEOFPA/City of Middleburg Hts
Sara Shaw, City of Oregon PD/OSRDA
Elizabeth Murphy, AIA Ohio
Bill Cushwa, NSCS Bearacade
David Soulsby, NSCS Bearacade
Kacy Bullard, Commerce

Board Members Present:

Gerald Holland
Terry McCafferty
Chris Miller

David Collins
Bailey Stanberry

Staff Present:

Regina Hanshaw
Steve Regoli
Debbie Ohler

Comments Submitted:

Jim Stocksdale, OBOA, asked about keeping the same devices throughout a school building rather than allowing for multiple different devices.

Phil Seyboldt, OBOA, asked about the conditions of use sections #4 & #5 which recognizes the involvement of fire service and requirement for documentation of training. Mr. Seyboldt stated that a section should be added to § 1008.1.9.11 requiring training documents to also be submitted by the school to local fire official. Mr. Seyboldt submitted proposed language in writing to the Board and is incorporated as Attachment A.

Elizabeth Murphy, AIA Ohio, read a statement from AIA Ohio and submitted a Brief on Codes and Standards: "Active Shooter" in writing to the Board and both are incorporated as Attachment B.

Bruce Larcomb, OSPE, asked what happens if the school chooses to take the devices out of the school, will building and fire will be notified. If the installation of the device requires an approval, whether the removal of the device would require an approval as well?

Craig Skeel, Genoa Twp FD, asked about single and double action of the building is suppressed, but unlike other locking devices addressed in the code, the language does not address no special knowledge to remove the device. The no special knowledge is important because what happens if we lose the teacher. Also, there is no provision the device must meet certain standards. Would like to see something that makes the device restrictive that it is only the teacher can install the device or is designed that it can only be installed by an authorized person. Staff responded that there is no current consensus standard for listing/labeling for these devices. Mr. Skeel asked about adding language requiring no special knowledge. Staff responded that language as well as no tight pinching or twisting has been traditionally in the code for decades, but the Board staff recently spoke with the Department of Justice and the Access Board who indicated that keys and other security devices that are not permanently attached to the door are not regulated by ADA.

Dave Collins stated that the rules are permissive, the devices are allowed to be used, they are not required to be used.

Sara Shaw, City of Oregon Police/OSROA, commented on language in rules regarding use of device only by staff member. Ms. Shaw stated that in their schools they train all of the students on how to utilize their particular barricade device. Ms. Shaw said it would be a mistake to only train staff members.

Scott Brooks, West Chester FD, asked about the devices being listed and labeled. Why is that language not included? He stated that some of the devices he has seen are just some guy off the street that will lock a door down, but nowhere in the language does the device have to be tested, proven that works and not some guy making a few bucks. Staff responded that there is no consensus standard for these devices, and any listing, labeling, testing by default is to a consensus standard.

Mike Makowski, City of Marion FD, NEOFPA, asked that without a consensus standard, wouldn't the Board have to write the standards that the devices have to meet. Staff responded that the development of a standard takes about 2-3 years, but the Board is required by the legislature to develop these rules within a certain time period. Staff further stated that the Board took the functionality requirements in from the law and used those as the criteria.

Bill Cushwa, NSCS, stated that it appears that the comments and concerns are related to unintended consequences, so according to the rules a device can be secretly put in place without any exterior notification. It appears that the a device can be put in place without any requirement that it be defaulted from the ingress side and that it could be taken from an inward swinging door to a door down the hall to an outward swinging door and be used to trap someone in classroom. Also, there is no mention of the concept of strength, so if a teacher became incapacitated would not be undo to evacuate. Some other states prohibit more than one device to be used on a door at the same time. Mr Cushwa submitted additional comments in writing to the Board which are incorporated as Attachment C.

Brad Howard, Koorsen Fire & Security, asked about in service training referenced on page 33 of the rules. He asked about the frequency of the training. He stated that is should be at specified that the training should be conducted at least annually. He stated that once these devices are installed that they may be good for the first couple years, but fire or ten years later the staff may not even know where they are kept anymore.

Joe Zvampano, Door Lockdown Device, stated as a teacher it is important to act sooner rather than later but understand the importance of rules, but the training that he had recently is less effective than any device that we have on the market. Like for fire and tornado, there are specified number of times schools must be trained, that it is recommended that have training a number of time during the school year. Also, the rules should specify that the devices be standardized. Also first responders, police and fire, and school administers should have some knowledge how to disengage a particular device from the hallway.

Craig Skeel, Genoa Twp FD, asked about requirement that they be disengaged from the hallway. Staff responded that issue should be part of the safety planning and decision to use devices and would incorporate input from fire and first responders.

Phil Seyboldt, OBOA, stated that item number 7 for in service training should include requirement that proof of the training be mailed to the building official once a year if not checked by the fire official especially in smaller communities that do not have fire prevention departments.

Joe Zvampano, Door Lockdown Device, suggested that the training should be more than annually, two or three times a year.

Paul Payne, Ohio SRO Assoc, stated that schools are required to conduct lockdown drills 3 times a year and the Board should state in the rules a similar requirement.

Kim Fladung, Warren County Career Center, stated that in the Board's report there was concern from parents groups of the cost of code-compliant hardware and asked if there was any discussion in the legislature of instead of moving to these devices to give schools assistance to buy code-compliant devices. Staff responded that there is grant funding for schools to enhance security of entrances but are unaware of a similar program for classrooms.

Mike Makowski, City of Marion FD, stated that (1) that there he understands that there are code-compliant devices out there and that this is an option, but still think that it is critical to have these concerns addressed because they are going to be used and (2) the exception an additional motion if school is suppressed does not help anyone if they are bleeding and you got to get in there fast. Encourage the Board to remove the exception.

A representative from Door Lockdown Device asked whether the exception would apply if the school does not have suppression but has fire extinguishers. Staff responded no, that it specifies suppression.

Johns Woestman, Builders Hardware Manufacturers Assoc, stated that the rules are crappy code language, that under conditions of use Items 1-5 don't belong in the building code at all, they belong in the fire code. The definition for emergency situation conflicts for the term already used in the building code. The language for non-fixed parts needs definition because that can interpreted a lot of difference ways. He stated that he knows the Board of Building Standards knows how to write code language. This is crappy code language. He stated that his only conclusion is the Board did what the law said to do. He stated that if he was sitting in those shoes, that is what he would do but would also do not much more because the language that is in the law is really bad stuff. So anything to take away from this meeting is to figure out a way to change the law, because this is heading Ohio down the path of unintended consequences that nobody wants to talk about. The students will know how to use these devices. Student on student or teacher violence is much more common than an active shooter and in more than half shootings the shooter is already in the room.

Joe Zvampano, Door Lockdown Device, stated that he understands the comments made but also if there are going to be those unintended consequences, those can happen today. The purpose of the device is to give that teacher a tool and to not have to go into harms way in the event of an active shooter. The training takes place at the adult level, do not suggest that all kids in classroom are trained.

Sara Shaw, City of Oregon Police/OSROA, stated that it all comes back to the training. She stated that they have been teaching every student how to respond to active shooter situation and yes they could be training someone that could be that shooter someday, but they know what they are up against if the come into their district. She stated that the follow ALICE concepts. The students, staff, and teachers are very passionate about the devices that they have available to them to use. They are very proud. She stated that they have not had one incident where someone was playing around with the device and it is taught to them that if they touch the device it is treated as if they pulled a fire alarm.

Scott Brooks, West Chester FD, expressed concerns about schools already using devices that currently violate the fire code. Staff responded that the Board issued an advisory cautioning schools from using or purchasing devices as some currently on the market will probably not comply with the rules once adopted.

Elizabeth Murphy, AIA Ohio, referred to the 1908 Collinwood School Fire where 172 were trapped inside a building and perished. She stated that this happened in our own state. For over 100 years, building code officials, architects and engineers have been working to make it so that never happens again. It is a very difficult and emotional situation to purposely put students in a situation where they cannot get out of building in case of a fire. She stated that in the interest of saving our children we are setting ourselves back 100 years.

Tom Granata, City of Perrysburg Fire, asked whether there were any provisions for new buildings and not cheapening the door locks. Staff responded that the law required the Board's rules apply to both new and existing schools.

John Desmarteau, City of Middleburg Hts, NEOFPA, referred to previous comment for need to for building and fire officials to work closely together. He stated that NEOFPA is recommending that § 1008.1.9.11 be modified to only permit the devices when approved by a joint consensus of the building and fire official. He stated that this is for when the first responders arrive they know what they are up against and they can have it preplanned. With the building and fire officials working hand in hand, they can strongly encourage schools to use code-compliant hardware as a first choice especially in new construction. Mr. Desmarteau submitted additional comments from NEOFPA in writing to the Board which are incorporated as Attachment D.

Attachment A

AIA
Ohio

November 16, 2015

Ohio Board of Building Standards
6606 Tussing Road
P.O. Box 4009
Reynoldsburg, Ohio 43068

Dear Members of the Board,

AIA Ohio, A Society of the American Institute of Architects, represents Architects and member firms in the State of Ohio. After reviewing the Classroom Barricade Forum Report of July 24, 2015, AIA Ohio would like to offer our input on the proposed language.

First and foremost, the safety of building occupants is an architect's highest priority in building design. It is of particular importance when dealing with children as they are not as well-equipped to deal with the wide variety of emergencies that can occur in a building. The American Institute of Architects supports efforts to make buildings safer.

AIA Ohio has two main areas of concern with the rules as currently drafted.

The proposed language introduces the term "Temporary Door Locking Device" which is defined as an assembly of parts intended to be engaged by a trained school staff member. Presumably, an item requiring training by an adult to install could be problematic for an untrained child to install or release if the trained adult is incapacitated. These devices prevent ingress, but also prevent egress from classrooms. The devices have no clear definition of function.

Any item or system installed in a building so critical to life safety typically requires meeting standards established by Underwriters Laboratory (UL), American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), or other testing agency. No such process has been followed in this case. These devices are being proposed primarily in response to an "active shooter" scenario, however, AIA Ohio believes the potential implications of other scenarios have not been fully explored. The International Code Council (ICC) is currently working on code language to address these "active shooter" situations. AIA Ohio believes waiting for the model code to fully integrate these devices would be prudent. The model building code is very complex and revisions to it are thoroughly vetted to prevent unintended consequences.

17 South High Street, Suite 200
Columbus, OH 43215-3458
614-221-0338 • Fax 614-221-1989
Email: aiaohio@assnoffices.com

Secondly, AIA Ohio cannot condone code language that intentionally ignores the American with Disabilities Act as written in new paragraph 1008.1.9.11.2, by stating that the provisions are outside of the scope of the code. The code includes references to the ICC Standard required by the ADA and includes a chapter on accessibility. Items found to be in conflict with the ADA are routinely identified in corrections letters from plans examiners. It is difficult to understand how consideration for people with disabilities is outside of the scope of Ohio Building Code.

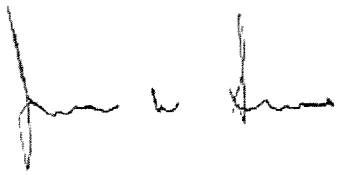
In addition to this presentation, AIA Ohio is providing for the Board of Building Standards, a brief that that includes items researched in developing a position on this issue that includes a summary of positions other states have taken in regard to "active shooter" situations.

In closing, AIA Ohio member architects and firms would like to reiterate no opposition to the intent of this discussion. An unimpeded path of egress from a building is essential to life safety; devices that prevent egress are being proposed in the name of school safety. Please consider investing more time and research in the implementation and standards established for the devices being proposed.

Thank you for your consideration.

Respectfully submitted,

Elizabeth Corbin Murphy, FAIA
Immediate Past President
AIA Ohio



James W. Sarks, AIA
President AIA Ohio

AIA Ohio

November 16, 2015

AIA Ohio – Brief on Codes and Standards: "Active Shooter"

Introduction

Based on legislative activity earlier this year, AIA Ohio sought information and guidance from the broader AIA community, including SGN (State Government Network) and national staff on the issue of classroom barricades. Based on the data received during this process, the information has been compiled into this Issue Brief that reviews the use and appropriateness of ancillary barricades. This Issue Brief is specific to the needs of Ohio, but points to a much larger need for a coordinated, national effort to define, as it relates to building code standards, appropriate responses to security issues during "active shooter" or similar lockdown or emergency situations.

Issue / Question:

Changes to the Ohio Building Code requiring an exception to include the use of ancillary barricades in school classrooms for "active shooter" scenario.

Overview of Proposed Rule Changes in Ohio:

Proposed Ohio Building Code Rule Changes

The Board proposes to amend the Ohio Administrative Code in response to adoption of new Ohio Revised Code § 3781.106 included in HB 64 requiring the Board to develop rules for the use of a device by a staff member of a public or private school or institution of higher education that prevents both ingress and egress through a door in a school building, for a finite period of time, in an emergency situation, and during active shooter drills as follows: **4101:1-2-01** to add definitions for Active Shooter Drill, Administrative Authority of a School Building, Emergency Situation, Institution of Higher Education, Private School, Public School, School Building, and Temporary Door Locking Device; and **4101:1-10-01** to add exceptions to Sections 1008.1.9.1, 1008.1.9.3, 1008.1.9.5 for Temporary Door Locking Devices, and to add a new Section 1008.1.9.11 which establishes conditions for the use of Temporary Door Locking Devices.

These proposed rules can be viewed here:
http://www.com.ohio.gov/documents/dico_HB64OBCRulesStakeholderMeetingNovember2015.pdf

Initial Evaluation by Industry Groups Inconclusive. Regarding school classroom barricades, there has been significant work performed by various groups, including the Ohio BBS, NFPA, NASFM, Sandy Hook Advisory Commission, PASS, and the ICC to put the subject in perspective and to make recommendations (see resources below). What has not happened on a national scale is a consolidation of those resources into a comprehensive compendium on the subject that organizations who advocate for the

17 South High Street, Suite 200
Columbus, OH 43215-3458
614-221-0338 • Fax 614-221-1989
Email: aiaohio@assnoffices.com

development and adoption of building codes, such as AIA, can rely upon in seeking a technologically feasible solution to the problem at hand.

Concerns regarding the use of Barricades in General:

Industry reports and groups tend to show that the technologies are varied and unproven: they represent a technological change in the manipulation of existing door hardware requirements that has not been tested and vetted by the leading independent technical testing organizations, and are so varied in operation, that there is no clear standard.

The leading fire and safety organizations do not think barricades are a good idea, insomuch as they would require changes to the codes

There are potential dangerous conflicts with ADA when the devices are put to use, and installations may make it impossible for children or disabled persons to escape from fire or other emergency when the devices are deployed

In addition, door barricades are not within the normal hardware family of devices used by designers nor within the model building codes today:

- IBC, IFC, NFPA 101 all prohibit their use.
- Lack of standards for performance, material quality control, etc.
- Lack of testing based on standards and measurement of performance
- Creation of unintended consequences – create a secure environment for molestation, etc.

Further, none of the national code organizations have finalized any decisions on how best to address the issue. The building codes produced by the International Code Council (ICC) are the farthest along in finalizing proposals for incorporation in its 2018 codes. A final vote on these changes should occur prior to the end of this year. The ICC code development process is ideally positioned to provide the debate and testing of change proposals to the model codes regarding barricade devices. Similarly, NFPA is taking up the issue of classroom security. In particular:

- ICC Code Changes are pending to address how best to address classroom security issues.
- NFPA 101 is evaluating changes to incorporate answers to the question of classroom security.
- NFPA 730 has begun to incorporate elements into standard for security and classrooms.

AIA's Applicable Policies and Position Statements

The AIA maintains a public policy on the adoption and enforcement of building codes, which states:

The AIA supports regulation by a single set of comprehensive, coordinated, and contemporary codes and standards, which establish sound threshold values of health, safety, and the protection of the public welfare throughout the United States. To that end, the AIA espouses the development and adoption of model building codes that:

- *Include participation by architects and the public in a consensus process;*
- *Are the product of informed education and research;*
- *Are without favoritism or bias to any special interest;*
- *Include provisions for a prompt appeals procedure for all that might be aggrieved;*
- *Are cost-effective in relation to the public benefit; and*
- *Promote building code provisions that set performance rather than prescriptive criteria.*

(approved through December 31, 2016)

Not in a consensus-based model code. Based on this policy, a concern for the AIA organizationally with regard to the proposed change to the Ohio Building Code enters around the addition of devices that are not included in the scope of the national model building code, and mandated for use outside the purview of the debate and vetting that occurs within the code development process.

Unknown Code Conflicts. Although changes to the codes are made by states and local jurisdictions, the proposed changes raise the potential for fundamental conflicts between the current building code and ADA, egress and life safety concerns. For this reason alone it makes the most sense to allow the consideration of these devices to happen at the national model code development processes already taking up the issue, and allow for that process to determine a way forward for the inclusion of new technologies. The proposed devices do not necessarily respond to or comply with any prescriptive requirements for performance, and the proposed rules do not address other safety concerns or potential liability related to improper use, storage or deployment.

Current Codes Protect HSW. Speaking from a perspective of professionals licensed to protect the health, safety, and welfare of the public, enforcement of current codes will make occupants safer; when effectively enforced, the codes do protect the health, safety and welfare of building occupants.

Informed Research. Allowing untested devices, and mandating the allowing of their use "by code" goes against AIA's established policy that codes be the "product of informed education and research." Though manufacturers have and will likely continue to offer unique solutions to the active shooter scenario and invent new ways to barricade openings, it is not clear what building science literature and testing has to say about their function and use. The key to informed research in the building industry is third party evaluation and the application of established standards.

Bias. The AIA promotes codes that are created without bias to commercial interests. There has been no determination on whether the proposed code change would favor one manufacturer over the other, or a certain device over another. Much like other new technologies introduced into the

codes, a full development process is needed to determine what the standards for technology, irrespective of the manufacturer, should be in the model code and in Ohio.

Current Status of Barricades in State Codes:

California, 2010

"On and after July 1, 2011, all new construction projects submitted to the Division of the State Architect pursuant to this chapter shall include locks that allow doors to classrooms and any room with an occupancy of five or more persons to be locked from the inside."

New Jersey, 2013

"Classroom doors can be locked to prevent entry from the outside of the classroom if in compliance with Section 1008.1.8 which requires the door to be openable from the side of egress without the use of a key or special knowledge or effort.

A device that slides under the door to prevent entry can be acceptable if staff is trained in its use and is constantly positioned inside to remove it if necessary. The installation or use of a hasp lock mechanism, a slide bolt or a door wedge is absolutely prohibited.

Another device that is being used on classroom door frames is magnetic strips that cover the latch opening. This strip prevents the door latch from latching or locking and is removed in an emergency allowing the door to latch and lock. This is permitted as long as egress can be made from the occupied side and the door is not part of an opening protective in a fire rated assembly.

In any case where the actual door hardware is being altered or changed, a construction permit is required."

Arkansas, 2015

"A person may install and use a temporary door barricade device or security lockdown device for security purposes to protect individuals during active shooter events or other similar situations."

Colorado, 2015

"In classrooms within group E occupancies, hardware shall include a means to manually lock egress doors from inside the classroom. Such means shall not prevent these doors from being readily openable from the egress side without key or special knowledge or effort."

Minnesotta, May 2015

"Classroom security concerns during a lockdown emergency are well understood, and fortunately this problem is easily addressed via the use of code-compliant egress/security hardware. Proper door hardware eliminates the need for security and barricade devices while maintaining free egress. Commonly known as a classroom security lockset, this type of hardware allows exit doors to be quickly and securely locked from the classroom side, and may even include a deadbolt feature for

added security. Activation of the locking hardware is quick and simple by operation of a thumb-turn device or key from the classroom side (these locks are available in either configuration). Such hardware fully complies with both the state fire and building codes because normal operation of the handle on the classroom side automatically releases the latch and deadbolt, allowing for free egress."

Ohio, pending 2016

"Temporary Door Locking Device .... to prevent ingress and egress. A temporary door locking device shall be permitted when approved by the building official only in school buildings where:

The device is engaged only by a staff member of the school building; and
The temporary door locking device shall only be engaged for a finite period of time .... and
The temporary door locking device shall only be used in an emergency situation .... and
.... the administrative authority of a school building has notified the police and fire officials prior to the use of the temporary door locking device; and
.... training on the use of the temporary door locking device is provided

Operational requirements:

The temporary door locking device shall not be permanently mounted to the door (see exceptions).
The removal .... shall not require more than one operation. Two operations may be permitted .... if the school building is equipped throughout with an automatic sprinkler system ....

Additional Resources:

- NFPA, Research Report, *Workshop on School Safety, Codes and Security, Final Report* – December 3-4, 2014
- Ohio BBS, *Classroom Barricade Forum Report - July 24, 2015*
- NASFM resolution, July 2015
- Sandy Hook Advisory Commission, *Report of the school Safety Infrastructure Council, June 27, 2014*
- PASS, *Safety and Security Guidelines for K-12 Schools – April 2015*
- ICC Code Changes – *MOE E57-15 & IEBC EB25-15*

For coverage of the Ohio BBS action July 24, 2015 see also Andrew Welsh Huggins, "Should Active Shooter Barricades be in Ohio Schools?" July 24, 2015
http://www.cincinnati.com/story/news/politics/2015/07/24/active-shooter-barricades-ohio-schools/30615269/

Attachment B Phil Seybolt
PSeybolt@
sbcglobal.net

106.1.2 (5) When a certified building department receives an application for plan approval in a jurisdiction in which the local fire official has requested an opportunity to provide input to the certified building department on issues related to ~~fire protection~~, the building official shall require that the applicant provide a set of relevant ~~construction~~ (Temporary Door Locking Device Specifications) documents* for the local fire official. The building official shall evaluate the local fire official's comments related ~~to fire protection~~ (egress) provisions of this code that are received within the timeframe established by the building official and section 3791.04 of the Revised Code prior to issuing the plan approval certification.

901.2.1.1 Input from the fire official In jurisdictions where the local fire official has requested the opportunity to provide input into the ~~fire protection system~~ (Temporary Door Locking Device) approval process conducted by the building official, the ~~owner or the owner's~~ agent (of the School District Administration) is required to submit a copy of ~~construction~~ documents related to ~~fire protection~~ (Temporary Door Locking Devices) to the local fire official for review in accordance with Section 106.1.2 (5).

OR device specifications

Public Comment
Bill Cushwa, Founder, NSCS/Inventor
6763 St. James Circle
Hudson, Ohio 44236
(330) 715-4382 mobile

Attachment C

NOVEMBER 16, 2015 STAKEHOLDER MEETING
2011 OHIO BUILDING CODE PROPOSED CHANGES

The Board proposes to amend the Ohio Administrative Code in response to adoption of new Ohio Revised Code § 3781.106 included in HB 64 requiring the Board to develop rules for the use of a device by a staff member of a public or private school or institution of higher education that prevents both ingress and egress through a door in a school building, for a finite period of time, in an emergency situation, and during active shooter drills as follows: 4101:1-2-01 to add definitions for Active Shooter Drill, Administrative Authority of a School Building, Emergency Situation, Institution of Higher Education, Private School, Public School, School Building, and Temporary Door-Locking Device; and 4101:1-10-01 to add exceptions to Sections 1008.1.9.1, 1008.1.9.3, 1008.1.9.5 for Temporary Door-Locking Devices, and to add a new Section 1008.1.9.11 which establishes conditions for the use of Temporary Door-Locking Devices.

ACTIVE SHOOTER DRILL. An exercise performed by staff and occupants to evaluate their efficiency and effectiveness in executing an adopted school safety plan to respond to an active shooter event by sheltering and securing occupants in place within a building when normal evacuation would put occupants at risk. See 1008.1.9.11.

< We have different definitions of lockdown drills – "instructional lockdown" or "lockdown"

An "Active Shooter Drill" may include practice evacuating a building or a unique reunification location or a unique meeting location.

ADMINISTRATIVE AUTHORITY OF A SCHOOL BUILDING. The superintendent, principal, chief administrative officer, or other person having supervisory authority of a school building. See section 1008.1.9.11.

EMERGENCY SITUATION. An incident requiring a response to prevent loss of life or injury at a school building involving an active shooter or similar occurrence where normal evacuation could put occupants at risk, but shall not include fire, tornado/earthquake, building collapse, boiler failure, or similar occurrence caused by natural activity or building failure. See section 1008.1.9.11.

PRIVATE SCHOOL. A chartered nonpublic school or a nonchartered nonpublic school. See School Building.

PUBLIC SCHOOL. Any school operated by a school district board of education, any community school established under Chapter 3314 of the Revised Code, any STEM school established under Chapter 3326 of the Revised Code, and any college-preparatory boarding school established under Chapter 3328 of the Revised Code. See School Building.

INSTITUTION OF HIGHER EDUCATION. A state institution of higher education as defined in section 3345.011 of the Revised Code, a private nonprofit college or university located in this state that possesses a certificate of authorization issued pursuant to Chapter 1713. of the Revised Code, or a school located in this state that possesses a certificate of registration and one or more program authorizations issued by the state board of career colleges and schools under Chapter 3322. of the Revised Code. See School Building.

SCHOOL BUILDING. A structure used for the instruction of students by a public or private school or institution of higher education.

TEMPORARY DOOR LOCKING DEVICE. An assembly of parts intended to be engaged by a trained school staff member in a school building for the purpose of preventing both ingress and egress through a door in a school building for a finite period of time in an emergency situation and during active shooter drills. See Section 1008.1.9.11.

1008.1.3 DOOR OPENING FORCE. The force for pushing or pulling open interior swinging egress doors, other than fire doors, shall not exceed 5 pounds (22 N). For other swinging doors, as well as sliding and folding doors, the door latch shall release when subjected to a 15-pound (67 N) force. The door shall be set in motion when subjected to a 30-pound (133 N) force. The door shall swing to a full-open position when subjected to a 15-pound (67 N) force.

1008.1.9 DOOR OPERATIONS. Except as specifically permitted by this section egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

< What about non-school hostile intruder response options? Will all of this work need to be addressed for other settings? We work with institutional users in other settings - government buildings, churches, medical centers, offices, retail, restaurant, etc.

< What about the scenarios of many school shootings where students need to take action due to the absence or death of staff?

< This is of critical importance. What if a device is engaged to such an extent that it requires significant strength to disengage? Ex: One demonstrated device required a lever to generate significant pressure. One required ratcheting or tightening of an element to bind the door shut. Could someone of less strength be able to evacuate?
< What about some that require a special sequence of steps – A, B, C, D to disengage?

1008.1.9.1 HARDWARE. Door handles, pulls, latches, locks and other operating devices on doors required to be accessible by Chapter 11 shall not require tight grasping, tight pinching or twisting of the wrist to operate.
Exception: Non-fixed portions of door or gate hardware, including keys, access cards and temporary door-locking devices.

< Again, this goes toward effort and strength. Will you have to define the term "tight"?

1008.1.9.2 HARDWARE HEIGHT. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.
Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.

< This is one of the points in the existing code that supports our design and protocol for deployment/use.

1008.1.9.3 LOCKS AND LATCHES. Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

1. Places of detention or restraint.

2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

2.1 The locking device is readily distinguishable as locked;

2.2 A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background; and

2.3 The use of the key-operated locking device is revocable by the building official for due cause.

3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.

< The words "Places of detention or restraint" are not defined anywhere in this code, the International Fire Code, or elsewhere. They are only used twice in the code – both in this section.
Our partner institutions and their code officials deem a hostile intruder shelter-in-place lockdown as a "Place of detention or restraint" for a finite period of time.

4. Doors from individual dwelling or sleeping units of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

5. Fire doors after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures.

6. *Temporary door locking device used in accordance with section 1008.1.9.11.*

1008.1.9.4 BOLT LOCKS. Manually operated flush bolts or surface bolts are not permitted.
Exceptions:

1. On doors not required for egress in individual dwelling units or sleeping units.
2. Where a pair of doors serves a storage or equipment room, manually operated edge-or surface-mounted bolts are permitted on the inactive leaf.
3. Where a pair of doors serves an occupant load of less than 50 persons in a Group B, F or S occupancy, manually operated edge-or surface-mounted bolts are permitted on the inactive leaf. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.
4. Where a pair of doors serves a Group B, F or S occupancy, manually operated edge-or surface-mounted bolts are permitted on the inactive leaf provided such inactive leaf is not needed to meet egress width requirements and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.
5. Where a pair of doors serves patient care rooms in Group I-2 occupancies, self-latching edge-or surface-mounted bolts are permitted on the inactive leaf provided that the inactive leaf is not needed to meet egress width requirements and the inactive leaf contains no doorknobs, panic bars or similar operating hardware.

< What if your "assembly of parts," once assembled is now a manually operated flush bolt or surface bolt?

1008.1.9.5 UNLATCHING. The unlatching of any door or leaf shall not require more than one operation.
Exceptions:

1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1008.1.9.4.
3. Doors with automatic flush bolts as permitted by Section 1008.1.9.3, Exception 3.
4. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1008.1.9.3, Exception 4.
5. ***Temporary door-locking device used in accordance with section 1008.1.9.11.***

< Again, "Places of detention or restraint" seems to already handle the issue. This is the second and last use of this term within the code.

1008.1.9.11 TEMPORARY DOOR-LOCKING DEVICE IN SCHOOL BUILDINGS. A temporary door-locking device shall be permitted when approved by the building official and noted on the certificate of occupancy only in school buildings where the requirements of sections 1008.1.9.11.1 and 1008.1.9.11.2 are met.

< For existing buildings, with existing certificates of occupancy, are you requiring new certificate of occupancy? Are you positioning the building official as a required approval?

1008.1.9.11.1 CONDITIONS OF USE. A temporary door-locking device shall only be used on doors under the following conditions:

1. ***The temporary door locking device shall only be used in an emergency situation and during active shooter drills; and***

< Rooms where a barricade is located – or a barricade-enabled room should be noted on the official Emergency Operations Plans and floor plans required by the State of Ohio.

2. ***The temporary door locking device is engaged only by a staff member of the school building; and***

< The students at Virginia Tech or Chardon that took their own actions to barricade would not be able to now?

3. ***The temporary door locking device shall only be engaged for a finite period of time as determined by the administrative authority of a school building in accordance with an adopted school safety plan; and***

4. ***Evidence is provided that the administrative authority of a school building has notified the police and fire officials having jurisdiction for the school building prior to the use of the temporary door locking device; and***

5. ***In-service training on the use of the temporary door-locking device is provided for school staff members and records verifying this training shall be maintained on file and provided to the fire official upon request.***

< Frequency of in-service training and training of substitute teachers is not detailed in the law or these proposed code changes.

1008.1.9.11.2 OPERATIONAL REQUIREMENTS. The temporary door-locking device shall be permitted to be used in accordance with the following items:

1. *The temporary door-locking device shall not be permanently mounted to the door.*
   Exception: Individual parts of the temporary door locking device assembly such as bolts, stops, brackets, pins, etc. that do not prevent normal ingress and egress through the door may be permanently mounted provided that when such parts are mounted on a labeled fire door assembly such installation does not affect the fire rating of the fire door assembly.

< When the fire rating of a door assembly is not known? Historic structures?

2. *The removal of the temporary door-locking device, after it is engaged, shall not require more than one operation.*

   Exception: Two operations may be permitted to remove a temporary door-locking device, after it is engaged, if the school building is equipped throughout with an automatic sprinkler system in accordance section 903.3.1.1.

   Provisions of the "Americans with Disabilities Act of 1990," 104 Stat. 327, 42 U.S.C.A. 12101, as amended, may apply to the use of the temporary door-locking device but are outside the scope of this code.

< Is turning an element of a device multiple times considered "one operation"? Do you have to define "operation"?

< What about special knowledge or special sequence of operations? If a staff member becomes incapacitated, could other occupants evacuate should circumstances change? What about the concept of duress and the breakdown of fine motor skills? What does being trapped in a room with a bully, harasser, or assaulter have to do with a fire suppression system?

Chair Holland, Board Members, and Members of the Staff,

Since February of this year, many have tried to brand all solutions as ill-conceived, or medieval, or without care for codes. This is an unfair categorization and frankly, insulting.

Prior to designing and producing our first device, we spent hundreds of hours meeting with officials in Ohio and throughout the Midwest. We talk about the intention of such an aftermarket solution and the things that scared all of us from a fire, building, life safety, and daily school administration perspective. I offered many of these in my June 5 public comments before this board. Those points remain the same and are attached.

The law of unintended consequences, often cited but rarely defined, is that actions of people—and especially of government—always have effects that are unanticipated or unintended. Any intervention in a complex system may or may not have the intended result, but will inevitably create unanticipated and often undesirable outcomes.

According to your proposed rules:

- A device could be secretly put in place without any exterior notification at any time.

According to your proposed rules:

- A device could be deployed without the requirement of being able to be defaulted by building administration or safety forces. First, it would not be known that it is in place or where on the door it is in place. Secondly, gaining access would be difficult to impossible.

According to your proposed rules:

- A device without exterior notification and without a defaulting protocol could be used to further some other more-likely crime like bullying, assault, harassment, or theft.
- As you know, individuals like my oldest daughter who teaches in high school or my two youngest who are still in school, are far more likely to be victims of some other crime.

According to your proposed rules:

- A device could be taken from an inward-swinging door in one portion of a school building and used to trap individuals in a room with an outward-swinging door elsewhere.

According to your proposed rules:

- A hostile intruder lockdown response device could not be used by students such as those at Chardon High School that took shelter in a room without a staff member and moved a piano in front of the door, the student at Umpqua Community College trying to prevent access to a classroom, or students at Virginia Tech.

According to your proposed rules:

- A device could require significant strength to deploy and/or deactivate. Should someone strong put a device in place outside of a true lockdown to trap one of my daughters, could they be able to deactivate it quickly? Easily?

According to your proposed rules:

- More than one device could be used on a door – creating an even worse, worst-case scenario.

I firmly believe that – with the exception of clarity with regard to Places of detention or restraint – that the current code should stand as the rules.

Those rules are the guiderails for design.

If a solution is developed within those guiderails, the user, those we protect, and the general public will not see something meant to fix one solution now create a handful of unintended, negative, or more dangerous situations.

Thank you.

Bill Cushwa

Public Comment by Bill Cushwa, National School Control Systems
bill@doorbearacade.com **or 855-350-2321, ext. 101**

State of Ohio Board of Building Standards – Classroom Barricading Forum
June 5, 2015

Chairman Holland, Board Members, Executive Director Hanshaw,

My name is Bill Cushwa. I am a Co-Founder of National School Control Systems in Hudson, Ohio and one of the inventors of the Bearacade Door Control System now in schools and other institutions in 22 states and Canada. Thank you for the opportunity to provide comment here this morning.

By this time, you have heard about the hundreds of schools and businesses in Ohio that have adopted barricading in place training as one possible response action within their Emergency Operations Planning. In your preparation as a board, you have learned more about such protocols as Run-Hide-Fight, Avoid-Deny-Defend, Get Out-Hide Out-Take Out, and other nonprofit and for profit consulting services with great acronyms. You are also fully aware of House Bill 64, House Bill 114, and Senate Bill 125.

Lockdowns, barricading, blockading, and sheltering-in-place are well-documented response protocols from the FBI and US Homeland Security to the State of Ohio Attorney General's School Safety Task Force and Model School Emergency Operations Plans.

Our story begins with the February 2012 Chardon High School shooting, just north of my home in Hudson, where students moved a piano in front of a door, some classroom doors would not lock, and, were it not for the actions of Coach Frank Hall, the shooter had additional ammunition and easy access to many hallways and rooms. Three children died that day and one was severely paralyzed. Nine and a half months later, I was in a school leadership team meeting when my phone buzzed with news of a school shooting in Newtown, Connecticut.

As a school administrator at Seton Catholic School, I sat on Hudson's School Safety Committee and was the Keep Hudson Safe Initiative. Along with other school administrators, fire, police, and EMS, we talked at length about the concept of barricading when evacuation may not be the best safety move due to lack of information, distance to a building's exterior, or lack of time for a large class. Making such a decision is not solely a law enforcement decision. Neither is it just a fire decision. Trying to blindly solve one concern can enable or create many more concerns over the course of a school year. This is a comprehensive community decision.

In the months following Chardon High School, I created a prototype device that looked to incorporate the feedback of local police, fire, and school administrators. Following the Sandy

Hook atrocities and throughout Christmas break of 2012, with the superintendent of our school district, I traveled and presented the concept to the Ohio School Board Association and Buckeye Association of School Administrators. With our fire chief, we traveled and presented to the Fire Marshal's office and representatives from this office almost exactly two years from today. We met with several members of Mike DeWine's School Safety Task Force as well.

We began by looking at the code, being sensitive to fire, building, and life safety. Our mission was code first, creating an effective time barricade second.

Our questions to the state officials, architects, engineers, and administrators are direct:

- By creating an aftermarket piece that is not an architectural element of the building, how is this creation viewed differently than a piano or chair in the code?
- If it is not an operating mechanism on a door, does the code have any say as to whether a school can or cannot purchase this device?

We attempted to address this issue from two different angles. The first viewpoint is **the code has nothing to do with our device** <u>until it is deployed</u>. Really, just as the code has nothing to do with the piano at Chardon High School or a table and shoe at Virginia Tech.

As a school administrator, we have in-service training on AEDs and EpiPens. We are also knowledgeable in fire extinguishers. Those items are the civilian response before professional safety forces arrive. Could we make a similar civilian response for a hostile intruder incident before professional safety forces arrive?

The other angle was to adhere to the code as if we were a lock, latch, or operating system. (Though I can argue that we are not.)

- Our device is not mounted to the door or doorframe.
- There is no core drilling to compromise the fire rating of a door.
- It is visually identifiable as in place – from both the egress and ingress sides of the door. Requiring an External Notification Panel is something specifically desired by many of our school partners for times both during and outside of a lockdown.
- Our view – and that of many local AHJs – is that during a lockdown, a room becomes a Place of Detention and Restraint.
- The code provides for exceptions to lock or latch heights and number of motions for Places of Detention and Restraint.
- Our device requires only one motion to deactivate – pull the pin and go. There is no pinching, twisting, or turning of the wrist to deactivate. There is no special sequence of steps needed to deactivate.
- Our device can only be placed on the doors predetermined by schools and their safety forces.
- Our device can only be placed in one direction on those doors and could not be taken from one location and used to trap individuals in another room.

- Our device can be defaulted by school administrators and safety forces to gain entry should an occupant become incapacitated or the device be deployed outside of a lockdown.
- The Student Code of Conduct, student, and employee handbooks are amended to reflect this device and any misuse.
- In-service training is provided and documented at our partner institutions.
- We do not recommend our device for dormitories or residential use. There are products and allowances in the code for enhanced security for those occupancy uses.
- Should an inspection occur and a device be deployed on a door, it could be cited as a violation ... just as this is the case if boxes of debris were in front of an exit door of our gymnasium after a school dance.

We would like the state to provide clarity that such a device is compliant and that such a device could be handled and used during drills. Just as we activate a fire alarm to conduct fire drills, we should be able to handle and conduct drills with the Bearacade.

Outside of a drill or actual hostile intruder event – an active shooter, domestic dispute that spills over into our school setting, a scare over a custody challenge – all of our doors should meet every aspect of the current code. Those rules are there for specific reasons.

Considering a child is more likely to be bullied, harassed, or assaulted during the course of a school day, there is more to trying to barricade than the narrow viewpoint of an active shooter. As a father of younger school-age children and with my oldest now a high school AP biology teacher, giving someone an easy, surreptitious way to blockade a door outside of a lockdown situation scared me. It still scares me. We don't want a solution to one apparent weakness, only to create a handful of new safety concerns.

I believe that with proper attention to the current code and the exceptions already provided within the code, there are only a few clarifying points needed for our state to better protect those in our care. Having our device close by, ready to go, does not violate code. Using it during a hostile intruder incident when exceptions already present should also not violate code.

Again, thank you again for the opportunity. I welcome any questions.

BEARACADE®

Sample Code of Conduct Language

Nordonia Hills School District expects all students to conduct themselves in an appropriate and civil manner, with proper regard for the rights and welfare of other students, school personnel, and other members of the school community, and for the care of school facilities and equipment. Students who will not accept responsibility for their own behavior and who violate school rules will be required to accept the penalties for their conduct. In addition, students may be subject to criminal prosecution and/or civil liability.

Students may be subject to disciplinary action, up to and including expulsion from school, when they engage in conduct that is violent, intentionally damage or destroy school property, or engage in conduct that endangers the safety, morals, health, or welfare of others. No student shall place a false bomb threat or fire alarm; use without authorization, tamper with, or discharge/employ safety devices and/or any other emergency equipment, including fire extinguishers, smoke detectors, automated external defibrillators (AED), and Bearacade® devices.

[Company Name]

[Company Header, if desired]

Bearacade® Door Control System Training Module/Class/Inservice

Date of Training Session:_____

I confirm that I attended the training class/inservice training session listed above. I listened, read, and understood the training, and I understand that it is my responsibility to abide by [Company Name] policy and procedures, in accordance with the training.

If I have questions about the training, materials presented or [Company Name] policy and procedures, I understand it is my responsibility to seek clarification from the Principal, Superintendent, or Human Resources Department.

Employee Signature: _____

Date:_____

Print name: _____

HR Office Staff or Training Coordinator Instructions: Place a copy of this signature page in the employee's personnel file. To audit compliance with any required training period, track the training using local reporting systems. Make sure that the employee, supervisor, or manager is scheduled and attends refresher training as outlined by [*Company Name*].

BEARACADE®

Bearacade In-Service Record Sheet

Instructions:

- ☐ **Complete one for each In-Service, as a summary of the training.**
- ☐ **Attach a copy of the presentation and any handouts.**

Date/Time:
Conducted By (Please Print):
Purpose: (refresher, new policy, etc.)
Summary of Presentation:
Handouts (if any):
Any comments by participants – positive or negative?
Any recommendations for next time?
Who attended? (Number _____) Use additional page for names if necessary.
Completed by:

- ☐ There is more information on the back
- ☐ Additional materials attached

Attachment D

NEOFPA
North Eastern Ohio
Fire Prevention Association

November 16, 2015

Board of Building Standards
P.O. Box 4009
6606 Tussing Road
Reynoldsburg, OH 43068

Dear Board Members,

The executive board and members of the North Eastern Ohio Fire Prevention Association have reviewed the new proposed school lockdown device code language drafted by the Board of Building Standards as required by House Bill 64. Our organization would like you to strongly consider making a slight change to the wording. Our executive board and membership feel that the devices should be approved by both the building official and the fire official. Proposed wording is:

(Section 1008.1.911: ...permitted when approved by a joint consensus of the building official and fire official...).

Since the emergency responders from law enforcement and fire / EMS will be the ones faced with breeching these devices in an emergency situation, we feel it is critical for the safety of all occupants that the fire service is involved in the decision making process of which devices will be utilized in the school buildings in our response districts. The fire service has been working closely for years with our building officials in the plan review and construction process, so we propose that same thought process in reviewing and approving these specialty lockdown devices.

Thank you for your consideration in this matter.

Respectfully,

John C. Desmarteau

John C. Desmarteau
President

neofpa@neofpa.org P.O. Box 23795 Chagrin Falls, Ohio 44023

Hanshaw, Regina

From: Brad Howard <Brad.Howard@koorsen.com>
Sent: Tuesday, October 20, 2015 9:05 AM
To: Ohler, Debbie
Subject: HB 64

Debbie,

I just read the proposed rules and think the BBS covered the bases. I am just concerned about the training and usage by school officials. I am wondering if there can be a mandatory reporting of schools to the building and fire officials of the prescribed training and during the usage of these devices added to the bill?

Sincerely,

Bradley T. Howard, PhD, SET | Fire Protection Designer
KOORSEN FIRE & SECURITY
727 Manor Park Drive, Columbus, Ohio 43228
P 614.853.5673 | F 614.878.2028 |
brad.howard@koorsen.com | www.koorsen.com

Hanshaw, Regina

From: Jeff Wilcox <JWilcox@ecstoledo.org>
Sent: Thursday, October 22, 2015 7:39 AM
To: Lane, Michael
Cc: Hanshaw, Regina; Ron Farrington; Bob Flamm
Subject: RE: Board of Building Standards Proposed Rules/Stakeholder Meeting Notification

Regina and Michael,
Thank you for adding me to your email distribution list. We will be providing our comments and input for this meeting. If possible we will attend in person otherwise we will provide written comments and input.
Thanks again.
Jeffrey D. Wilcox
Superintendent
Emmanuel Christian School
4607 West Laskey Rd.
Toledo, OH 43623
419-885-3558 school
765-623-4475 cell
www.ecstoledo.org

From: Michael.Lane@com.state.oh.us [mailto:Michael.Lane@com.state.oh.us]
Sent: Wednesday, October 21, 2015 11:27 AM
To: Michael.Lane@com.state.oh.us
Subject: Board of Building Standards Proposed Rules/Stakeholder Meeting Notification
Board of Building Standards Stakeholder:
You are receiving this message pursuant to the requirements of Executive Order 2011-01K and Senate Bill 2 of the 129th General Assembly, which require state agencies, including the Ohio Board of Building Standards (Board), to draft rules in collaboration with stakeholders, assess and justify any adverse impact on the business community, and provide opportunity for the affected public to provide input on the rules.

Stakeholder Meeting

The Board will conduct a Stakeholder Meeting to hear comments and respond to questions on the proposed amendments to the Ohio Building Code summarized below on November 16, 2015 at 10:00 AM in Training Room 1, 6606 Tussing Road, Reynoldsburg, Ohio 43068. All interested stakeholders are invited to attend.

Overview of Proposed Rule Changes

Proposed Ohio Building Code Rule Changes

The Board proposes to amend the Ohio Administrative Code in response to adoption of new Ohio Revised Code § 3781.106 included in HB 64 requiring the Board to develop rules for the use of a device by a staff member of a public or private school or institution of higher education that prevents both ingress and egress through a door in a school building, for a finite period of time, in an emergency situation, and during active shooter drills as follows: **4101:1-2-01** to add definitions for Active Shooter Drill, Administrative Authority of a School Building, Emergency Situation, Institution of Higher Education, Private School, Public School, School Building, and Temporary Door Locking Device; and **4101:1-10-01** to add exceptions to Sections 1008.1.9.1, 1008.1.9.3, 1008.1.9.5 for Temporary Door Locking Devices, and to add a new Section 1008.1.9.11 which establishes conditions for the use of Temporary Door Locking Devices.
These proposed rules can be viewed here: http://www.com.ohio.gov/documents/dico_HB64OBCRulesStakeholderMeetingNovember2015.pdf

Contact Information for Comments or Questions

If you cannot attend the above Stakeholder Meeting, you can submit written comments or questions on the proposed amendments to the Board. You may submit your comments via email at BBS@com.state.oh.us or U.S.

Mail at Ohio Board of Building Standards, 6606 Tussing Rd, Reynoldsburg, Ohio 43068, Attn: Regina Hanshaw by November 27, 2015.
Sincerely,
Regina S. Hanshaw
Executive Secretary
Ohio Board of Building Standards
****
*
The information transmitted is intended solely for the individual or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of or taking action in reliance upon this information by persons or entities other than the intended recipient is prohibited. If you have received this email in error please contact the sender and delete the material from any computer.
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****
*

Hanshaw, Regina

From: Geoff Varga <geoffvarga1120@gmail.com>
Sent: Monday, October 26, 2015 12:48 PM
To: Hanshaw, Regina
Subject: School Door Barricade

This is a dangerous proposed changed. Under no circumstances should any "temporary" suspensions of the OBC be made that effects 'health, safety and welfare' issues. Things can only go wrong with the conditions of the proposal. This proposed rule will only put children at risk where no risk now exists. It is a reactionary step. solve the real problem, not attach a bandaid.
I will not be held responsible for the outcome of this bill.

Geoff Varga

Hanshaw, Regina

From: Mark Crumley <mcrumley@medinaoh.org>
Sent: Thursday, October 29, 2015 9:11 AM
To: BBS, BBSOfficAsst3
Subject: Comments on the Proposed Ohio Building Code Rule Changes

Dear Board Members,

I would like to comment in regards to section 1008.1.9.11 propose changes of the Ohio Building Code. The new section only requires the approval from the building official.

1008.1.9.11 Temporary door locking device in school buildings. *A temporary door locking device shall be permitted when approved by the building official and noted on the certificate of occupancy only in school buildings where the requirements of sections 1008.1.9.11.1 and 1008.1.9.11.2 are met.*

This section should include approval by the Police and Fire Official as they will be the responding agencies during a lock down type emergency and prior knowledge of the type device being installed would be beneficial to these agencies if they have to breach the doors that these devices will be securing.

Thank you,

Mark Crumley, Asst. Chief
City of Medina Fire Department
300 W. Reagan Pkwy.
Medina, Ohio 44256

Office: 330-723-5704
Cell: 330-350-0128

Ohio School Boards Association

TO: The Ohio Board of Building Standards

FROM: Dr. Richard J. Caster, School Safety and Security Consultant
Ohio School Boards Association

DATE: November 4, 2015

RE: **PROPOSED CHANGES REGARDING BARRICADING DOORS**

Thank you for the opportunity to address the Board regarding proposed changes to the code in regards to barricading doors. Current "best practices" recommends barricading a classroom door during the threat of someone entering the building with the intent of inflicting lethal harm to those inside. This is but one of a number of strategies that must be deployed to minimize risk and harm to all who are inside.

While most of us are prepared for disasters such as fire, tornado, etc., incidents of intentional violence to students and teachers is beyond our comprehension. Building codes are developed to codify what must be done to protect humans during emergencies. However, I am unaware of any building code that addresses the issue of someone with a weapon entering attempting to inflict deadly violence.

Schools now find themselves in the challenge of barricading students and barring entry to a possible killer even though they may be violating a building code. No school district should be placed in that position. When a fire alarm sounds, you are expected to exit the building as quickly and safely as possible. The goal is to get as far away from the fire as necessary. When a lockdown signal sounds, you need to place all students in as safe an environment as possible. The goal is to prevent the armed intruder from entering a classroom to commit a violent crime.

Our schools must prepare for a wide range of potential dangers to students and staff. They must determine the best ways to approach a threat based upon the nature of the threat. Staff must be given permission to "think on their feet." The adage "The perfect plan never survives first contact" is very true. My recommendation is to modify the code language to permit a door to be barricaded during drills or in the event of an actual active shooter incident.

8050 North High Street
Suite 100
Columbus, Ohio 43235-6481

(614) 540-4000
(800) 589-OSBA
(614) 540-4100 [fax]
www.ohioschoolboards.org

OSBA leads the way to educational excellence by serving Ohio's public school board members and the diverse districts they represent through superior service, unwavering advocacy and creative solutions.

Please note that schools face many situations on an almost daily basis where irate parents, neighbors, divorced parents and others who may come into school angry, and that anger may possibly escalate into a lethal threat. Code language must provide schools with an opportunity to implement the best strategy for survival and be cost effective for districts already facing serious budget issues.

I wish to end by asking you to put yourselves in the place of a school principal who asks the question "What can I do to keep my kids alive until help arrives?" I ask you to consider code language that will give appropriate regulations to answer that question.

Hanshaw, Regina

From: Erin West <ewest@broadstreetcorp.com>
Sent: Wednesday, November 11, 2015 9:50 AM
To: BBS, BBSOfficAsst3
Subject: Question for Chairman Holland

Hi Regina –

I was wondering if you could forward this to Chairman Holland. When I talked to him last he told me that if I ever needed anything to let him know.

Thanks!!!

Erin

Hi Chairman Holland –

I am writing because I need your help. I received a copy of the proposed rules related to the barricades and overall I thought they were really well done. However, the following highlighted wording is causing me a lot of concern. The way I read this wording, it says that the devices can only be used if approved by the building official.

1008.1.9.11 Temporary door locking device in school buildings. *A temporary door locking device shall be permitted when approved by the building official and noted on the certificate of occupancy only in school buildings where the requirements of sections 1008.1.9.11.1 and 1008.1.9.11.2 are met.*

In Licking County that building official for a number of our schools is Jack Prior (Pataskala Elementary would be someone different). Jack is adamantly against door barricades and has gone out of his way to attend meetings to voice that opinion. Based on this, I can only conclude that despite the law saying that the barricades are allowed, we will not be able to use them in 4 of our 5 schools. This makes no sense.

I know that I have ruffled a lot of feathers in the Commerce Department over the past year but I have done so for the best reason that I can possibly think of....to do more to keep our kids safe. I couldn't just stand by and hope that an shooter would never enter my son's school. And now, I can't stand by and let some kids in the state be protected whiles other are not (especially my son).

Chairman Holland, I am humbly coming to you for your help. I don't know where to turn or who to discuss this with to come to a better outcome. If you could possibly lead me in the right direction I would be extremely grateful.

My very best regards,

Erin West
614-296-1698

November 12, 2015

Ohio Board of Building Standards
6606 Tussing Rd.
Reynoldsburg, OH 3068

On behalf of Emmanuel Christian School thank you for taking comments on proposed rule changes for locking devices. Our comments seem to be specifically in regards to Section 1008.1.9.11 Temporary Door Locking Device in School Buildings. But in general we desire the means to quickly and as effectively as possible address an active shooter situation.

Times have changed over the past 50-75 years. Serious fire injuries and casualties in a school setting have become nearly non-existent. These concerns were some of the original reasons for some of the provisions in the building code. However, injury and death because of an active shooter is now the concern.

Emmanuel had investigated, chosen and set an installation date for Rhinoware Door Barricades when we learned two weeks before installation that this device would not meet code. So we cancelled the installation. See website link. http://campussafetyproducts.com/door-barricades. We believe a device like this should be allowed in the Ohio Building Standards. Here are three of our perspectives on this.

First, it seems that a temporary locking device may be permanently installed on the door frame, door jam or adjacent wall but the device may not be permanently mounted on the door itself. This logic is unclear to us. We believe that there is no difference between a device permanently mounted around the door and a device permanently installed on the door. Particularly a device of the Rhinoware design.

Second, we also believe that the location of the device on the door should be allowed to be on the bottom of the door opposite the hinges or placement where the device functions well.

Lastly, we believe that it is acceptable for a student to engage such a device. A teacher or other adult may not be present at that exact moment or they may be incapacitated for some reason. Students are known to take heroic actions. This may be one of them.

We are certain that all parents are highly concerned with the physical safety of their children. This is one more excellent and effective step to ensuring that safety. We believe an exception in the code should be made for devices like Rhinoware Door Barricade.

Thank you for your listening ear.

Sincerely,

Jeffrey D. Wilcox
Superintendent

MAKING DISCIPLES OF JESUS CHRIST

4607 Laskey Road • Toledo • Ohio 43623
419-885-3558 • www.ecstoledo.org

Hanshaw, Regina

From: Regoli, Steve
Sent: Tuesday, November 17, 2015 9:00 AM
To: Hanshaw, Regina; Ohler, Debbie
Subject: FW: Ohio BBS - Potential Revisions to Legislative Requirements for TDLDs
Attachments: Ohio House Bill 64, Budget, As Enrolled, 2015, School Classroom Door Devices, Potential Revisions 20151116.docx

Here is something from John Woestman as to a legislative fix. Not sure how acceptable it would be, as he said, but it would be consistent with the normal scope of the Codes.

Steven P. Regoli
Architect Administrator
Ohio Board of Building Standards
6606 Tussing Road
P.O. Box 4009
Reynoldsburg, Ohio 43068-9009
614-644-2613
spregoli@com.state.oh.us

From: Woestman, John [mailto:JWoestman@kellencompany.com]
Sent: Monday, November 16, 2015 4:02 PM
To: Regoli, Steve ; Collins, Dave
Subject: Ohio BBS - Potential Revisions to Legislative Requirements for TDLDs

Steve and Dave,
Numerous times in today's discussion was stated the desire to revise the legislative requirements . . . .

OK, wondering what the desired modifications may be, I explored a bit in the attached document.
I sure don't know when or how, but if I were asked what I would suggest for revisions to the legislative requirements, perhaps it may be good if I had given it some thought.

Attached captures my initial thinking. I took the language passed into law this past summer, removed the underscore, and then typed potential revisions using Track Changes.
I suspect nobody would be happy with this. I know our BHMA members would be concerned that more than one operation would be allowed for egress.
I suspect the TDLD vendors would also be concerned because of the functional requirements.

Thanks
John

John Woestman
Builders Hardware Manufacturers Association
355 Lexington Ave., 15th Floor
New York, NY 10017-6603
www.buildershardware.com
jwoestman@kellencompany.com
515-422-6027 (direct / mobile)

Text extracted and converted to Word from Ohio's approved budget bill, Ohio House Bill 64 signed into law June 30, 2015 by Ohio Governor Kasich, regarding requirements for the Ohio Board of Building Standards to adopt rules for classroom door (barricade) devices.

Discussion today during the BBS stakeholder meeting encouraged further revisions to the legislative requirements. Wondering what those revisions could be, experimented a bit:

Sec. 3781.106. (A) The board of building standards and the state fire marshal shall adopt rules, in accordance with Chapter 119. of the Revised Code, for the use of a device ~~by a staff member of~~ in a public or private school or institution of higher education that prevents ~~both~~ ingress ~~and egress~~ through a door in a school building, for a finite period of time, in ~~an emergency~~ a threatening situation, and during active shooter drills. The rules shall provide that the use of a device is permissible only if the device requires minimal steps to remove it after it is engaged, the device does not require a key, a tool, special knowledge or effort to remove after it is engaged, the device does not require tight grasping, tight pinching, or twisting of the wrist to remove after it is engaged, the operable parts of the device are located between 34 and 48 inches above the floor, and the device is able to be disengaged from outside the room by the use of a key or other approved means.

The rules shall provide that the administrative authority of a building notify the police chief, or equivalent, of the law enforcement agency that has jurisdiction over the building, and the fire chief, or equivalent, of the fire department that serves the political subdivision in which the building is located, prior to the use of such devices in a building.

The rules may require that the device be visible from the exterior of the door.

(B) The device described in division (A) of this section shall not be permanently mounted to the door.

(C) Each public and private school and institution of higher education shall provide its staff members in-service training on the use of the device described in division (A) of this section. The school shall maintain a record verifying this training on file.

(D) In consultation with the state board of education and the chancellor of higher education, the board shall determine and include in the rules a definition of "emergency situation." These rules shall apply to both existing and new school buildings.

(E) As used in this section:

(1) "Institution of higher education" means a state institution of higher education as defined in section 3345.011 of the Revised Code, a private nonprofit college or university located in this state that possesses a certificate of authorization issued pursuant to Chapter 1713. of the Revised Code, or a school located in this state that possesses a certificate of registration and one or more program authorizations issued by the state board of career colleges and schools under Chapter 3332. of the Revised Code.

(2) "Private school" means a chartered nonpublic school or a nonchartered nonpublic school.

(3) "Public school" means any school operated by a school district board of education, any community school established under Chapter 3314. of the Revised Code, any STEM school

established under Chapter 3326. of the Revised Code, and any college-preparatory boarding school established under Chapter 3328. of the Revised Code.

(4) "School building" means a structure used for the instruction of students by a public or private school or institution of higher education.

Hanshaw, Regina

From: Greene, Lori <Lori.Greene@allegion.com>
Sent: Wednesday, November 25, 2015 1:11 PM
To: Hanshaw, Regina; BBS, BBSOfficAsst3
Subject: Temporary Door Locking Devices

Dear Ms. Hanshaw and the Ohio Board of Building Standards:

I was unable to attend the meeting last week regarding the proposed code language for temporary door locking devices used in schools, and I would like to submit my comments via email. I have been following this situation closely for many months, and I'm quite confused about the code change proposal. I understand that the law passed in June seems to override the expertise of the Board, but I expected that some safeguards would be included in the code to minimize the risks of these devices. When I compared the July report from the OBBS with the proposed code change, I saw many direct conflicts between the recommendations of the report and the protocols that would be acceptable under the revised code.

Here are a few of the conflicts I noted:

OBBS Final Report: *"First, these egress doors must be readily openable from the egress side without the use of a key or special knowledge or effort. While security is important — the code already attempts to balance security and safe egress — the life safety of occupants is essential. Special knowledge or effort would dictate the need for unusual and unexpected physical ability to unlock the egress door or make it fully available for egress and would thus increase the time necessary to exit. Fine motor skills are severely compromised in a time of emergency. Using devices that require specialized skill or knowledge will interfere with occupant egress, or possibly even prevent it altogether."*

Comment: Many of the temporary door locking devices on the market today require "special knowledge or effort" and/or fine motor skills to install or remove. The only criteria mandated by the code change proposal is that one additional operation may be used to remove the device, two additional operations if the building is sprinklered. There is no other guidance regarding the ease of removal of the device. The revised code should require products which can be removed without the use of a key or special knowledge or effort – otherwise, what's to prevent schools from padlocking their doors?

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Ohio BBS Final Report: *"Next, egress doors must not require that the doors and their operating components require tight grasping, tight pinching or twisting of the wrist to operate. People with disabilities are often unable to grasp objects with their hands or are unable to reach above or below the normal reach range specified in the building code and federal law (34" to 48" above the floor). Lever-operated mechanisms, push-type mechanisms and U-shaped door pulls accommodate the greatest range of users. This fundamental requirement minimizes the risk for the greatest number of occupants."*

Comment: The code change proposal states, *"Provisions of the 'Americans with Disabilities Act of 1990,' 104 Stat. 327, 42 U.S.C.A. 12101, as amended, may apply to the use of the temporary door locking device but are outside the scope of this code."* I have yet to see a classroom barricade device that meets the requirements of the ADA. Many are mounted outside of the acceptable range – sometimes within the 10-inch flush area at the bottom of the door, or they require tight grasping, tight pinching, or twisting of the wrist to operate. According to the FBI Guide for Developing High Quality School Emergency Operations Plans (page 15) – school emergency plans are required to meet the ADA. The revised code language should stipulate that the devices must be operated with no tight grasping, tight pinching, or twisting of the wrist, in order to be operated by everyone – including people with disabilities. Devices should be mounted within
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the allowable reach range, and there should be no protruding hardware within the bottom 10 inches of the door on the push side, as required by the accessibility standards.

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OBBS Final Report: *"Lastly, the unlatching of any door or leaf must not require more than one operation. Requiring more than one motion – or adding multiple devices that must be engaged or disengaged to accomplish egress – compromises the safety of building occupants. There are several code-compliant options that meet this fundamental code requirement. More than one operation could be a safety hazard in an emergency situation, especially when the stress of such situations affects the abilities of individual users to quickly identify and operate such devices under emergency conditions. These essential requirements are reflected in the Ohio Building Code §§ 1008.1.9, 1008.1.9.1, and 1008.1.9.5, respectively."*

Comment: Although the final report states that the safety of building occupants is compromised by products that require more than one operation to release, the code change proposal allows up to two additional operations. Along with the existing lockset or latchset, this means that up to 3 operations are acceptable in order to release the latch(es) and allow egress, when the report states that *"more than one operation could be a safety hazard."* Perhaps one additional operation is a necessary compromise, but I fail to understand the need to allow 2 additional operations, considering the Board's concerns.

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OBBS Final Report: *"The building code is a compilation of criteria with which materials, equipment, devices, and systems must comply to be suitable for a particular use and application in a building. Virtually every component used in building construction today has been tested, is listed, or is labeled evidencing its compliance with consensus standards. Through the Board's certification the certified building departments evaluate the materials, equipment, devices and systems submitted to them for approval as code compliant and, when compliance is determined, approves them for use in a building."*

Comment: No testing or listings are required by the code change proposal for temporary door locking devices. Why is it that *"virtually every component used in building construction today has been tested, is listed, or is labeled"* but these devices – installed on doors in a means of egress and sometimes on fire doors - are not held to the same standard? What happens when a barricade device is in place and an intruder gives the door a few kicks? Can the device still be removed by the teacher to allow evacuation? That's one of the questions that would be answered by testing and listing these products. Of course there would be a cost associated with the listings, but it is a cost that manufacturers of other products have paid for decades.

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OBBS Final Report: *"Likewise, ingress or access by emergency responders for treatment or search-and-rescue appear to be crucially impeded especially in the deployment of secondary door locking or barricade devices that are inherently designed to be un-openable from the exterior of the barricaded room. Many devices have no provisions for them to be deactivated from the outside by first responders or have some non-standard proprietary tools that first responders must carry and use in order for the devices to be overcome."*

Comment: There is no requirement in the proposed code language addressing authorized access for emergency responders when a classroom barricade device is installed. Authorized access is one of the recommendations of the National Association of State Fire Marshals (NASFM), and is also included in the code change proposal for the 2018 International Building Code, which is awaiting final approval. Given the possibility of a student or other unauthorized person installing the temporary door locking device in order to commit a crime within the classroom, emergency access is extremely important. Although the proposed code change states that the device is only to be engaged by a staff member, how is that controlled?
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OBBS Final Report: *"Additionally, most of the devices are neither visible nor identifiable from the exterior of the barricaded or blocked door. This condition would be especially difficult for mutual aid first responders who may not be familiar with the use of a particular device or a device different from that used in their home community."*

Comment: The proposed code language does not address the problem of being unable to identify barricaded doors from the outside, or the possibility that an emergency responder from another jurisdiction may not be familiar with the device. Valuable time is lost in a hostage/barricade situation while emergency responders attempt to breach barricaded doors, and there have already been barricading incidents in schools that resulted in fatalities. Placing a temporary door locking device beside the classroom door where it can be quickly deployed in the unlikely event of an active shooter, could encourage unauthorized use of the device. There will be no way to know from the outside that the device has been installed, and for most devices, no way for anyone to enter the room to aid the victims.

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OBBS Final Report: *"It is also important to realize that most secondary locking/barricade devices require that the existing door or door frame be altered or have devices, brackets, stops, or guides installed on them. The action of drilling or mounting unlisted and unlabeled hardware on a rated door assembly can alter or affect the fire rating of the assembly."*

Comment: The requirement for devices to be temporary restricts the development of permanently-installed, listed products that would meet the current model code requirements for egress, fire protection, and accessibility, and allow authorized access from the outside. Are temporary devices required because the ADA only addresses components that are permanently attached to the door? The proposal does state that these components must not affect the fire rating if the door is a fire door assembly, but it would be more prescriptive and easier to enforce if the code required compliance with NFPA 80 – Standard for Fire Doors and Other Opening Protectives.

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It seems like the code change proposal was written in such a way as to prevent the restriction of any currently-available classroom barricade products, rather than written to ensure life safety, accessibility, and fire protection. Given the high incidence of non-fatal victimizations in schools, temporary door locking devices that can be installed on the door at any time, by anyone, will endanger students and staff rather than protecting them. Considering the possibility of unauthorized use of the device, the prevention of access by staff and emergency responders, and the delays in evacuation that could be caused by these devices, I'm very surprised that school districts would put students and teachers at risk and take on the associated liability. I hope that the proposed code change will be revised to include some additional criteria to help ensure safety in Ohio's schools.

Thank you for the opportunity to share my concerns.

- Lori

Lori Greene, AHC/CDC, CCPR, FDAI, FDHI
Manager, Codes & Resources
Allegion
Mobile: 617-966-1688
Email: lori.greene@allegion.com
us.allegion.com
iDigHardware.com
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Hanshaw, Regina

From:	Mark Williams <mark.williams833@gmail.com>
Sent:	Wednesday, November 25, 2015 3:20 PM
To:	BBS, BBSOfficAsst3
Subject:	Comments on Barricade Device Issue - Ohio Revised Code § 3781.106 included in HB 64
Attachments:	PASS-White-Paper-Classroom-Barricade-Devices-Final.pdf; PASS Endorsing Organizations.docx

To whom it may concern:

As a Director on the Partner Alliance for Safer Schools (PASS) Steering Committee, I have been asked to submit the attached whitepaper on behalf of PASS as it pertains to the proposed Ohio Building Code changes and our opposition to their deployment. Please find attached the white paper which can be found on our website (http://passk12.org). This whitepaper reflects the position of PASS, the PASS Guidelines for School Security and includes the positions/opinions of code and life safety experts (ie., NASFM - National Association of State Fire Marshals), educators and organizations with first hand experience in active shooter situations.

A list of organizations endorsing PASS is also attached for your information.

Thank you for your consideration of these documents.

Regards,

Mark
Williams
Director, PASS Steering Committee

Position Statement
Classroom Barricade Devices

There is a question currently under debate in several jurisdictions across the country: ***Should barricade devices be used to secure classroom doors during an active-shooter incident?*** These devices have emerged in the last few years in response to fears that inadequate security may leave classrooms vulnerable. The devices are typically designed to be installed on classroom doors during a lockdown in addition to the existing hardware.

Barricade devices are perceived to be generally less expensive to purchase, and easier to procure and install than traditional security devices such as locksets or access control products. While securing the door with a classroom barricade device may seem to address the immediate need for security, one should consider the safety concerns associated with this practice.

Conventional locksets meet code requirements for free egress (allowing occupants to exit without obstruction), fire protection (compartmentalizing the building to deter the spread of smoke and flames), and accessibility (ensuring access for all, including people with disabilities). These locksets effectively secure classrooms against active shooters; in fact, testimony presented to the Sandy Hook Advisory Commission indicated that an active shooter has never breached a locked classroom door by defeating the lock[1].

By definition, "barricade" means *"to block (something) so people or things cannot enter or leave.[2]"* Most codes require doors in a means of egress to provide free egress at all times, which allows building occupants to evacuate quickly if necessary. Some proponents of barricade devices suggest that, because the device is intended for use only when an active shooter is in the building, securing the door takes priority over allowing safe evacuation.

Those on the other side of the debate believe that, because there is no guarantee the device will only be installed under these limited circumstances, the devices could be misused, preventing authorized access by staff and emergency responders, as well as delaying or preventing egress.

Fig. 1: Exit doors in a school, chained to provide security. This locking method does not meet IBC, IFC, or NFPA 101 requirements for free egress. Photo: Wayne Ficklin, Architect

Some advocates of barricade devices have stated that, if the product is not permanently attached to the door, it is not under the jurisdiction of the code official and is not subject to the same

[1] Sandy Hook Advisory Commission, Final Report. *(2015): n. pag. 32 Mar. 2015. Web.*
[2] Merriam-Webster. Barricade. Merriam-Webster, n.d. Web. 28 Sept. 2015.

requirements that door locks and security hardware must comply with.

Following this premise, panic hardware secured with padlocks and chains would not be under the code officials' jurisdiction either. In reality, code officials address these unsafe temporary locking methods frequently; most codes do not differentiate between a device used temporarily and a permanently installed device. Fire doors blocked open with wood wedges or other creative (but "temporary") hold-open devices create obvious fire protection problems; again, the code official is responsible for enforcing the code requirements even though the offending devices are not permanently attached.

Comparisons have been drawn between the use of furniture as a barricade, and the installation of a barricade device. Barricading a location with furniture and other environmental items is a secondary response for incidents of active shooter and terrorism, and is recommended if evacuation as a primary response is not possible.

Barricading with environmental objects is recommended by many organizations, including the ALICE Training Institute, U.S. Department of Homeland Security, U.S. Department of Education, Federal Emergency Management Agency (FEMA), U.S. Department of Justice, and Federal Bureau of Investigation (FBI). None of these recommendations, however, involve the installation of secondary door-locking devices. Barricading uses gross motor skills, is applicable in any location, and does not require a door or special door-locking device.

The ALICE Training Institute recently published a document[3] that includes guidance with regard to a barricade vs. a door-locking device. The first item on this list reads (in part): *"Door-locking devices are subject to approval. According to the fire code, 'Security devices affecting means of egress shall be subject to approval of the fire code official.' Ensure that any application of a door-locking device is not in violation of the fire code. A door-locking device accepted by one fire marshal may be rejected by another jurisdiction."*

Because barricade devices are installed during a lockdown, some may consider them safe for this limited period of time. There are currently no widely used standards for school security, and schools frequently call lockdowns for events that do not involve an active shooter. If a lockdown plan includes the use of barricade devices on the classroom doors, the devices could be installed for extended periods of time whether the danger is inside the building or somewhere in the vicinity.

It is not uncommon to find 20 or more lockdown incidents mentioned in national news within a day – with very few involving a direct threat to the school. There are many situations that could require an evacuation while a school is in lockdown, and doors must provide free egress to facilitate evacuation. The school shooting at Columbine High School reportedly involved a firebomb, propane tanks converted to bombs placed in the cafeteria, and dozens of explosive devices[4]. In case of a scenario like this, maintaining free egress is an important part of a school security plan.

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[3] *ALICE Training Institute. Barricade vs. Door-Locking Device - There is a Difference. (2015): n. pag. 11 Mar. 2015. Web.*

[4] Columbine Review Commission, The Report of Governor Bill Owens. *(2011): n. pag. iii, 12, 23, Web.*

Code Considerations

Given the increased focus on school security, the discussion about using a barricade device or alternative method to secure a classroom door has likely taken place with code officials in every state. A set of guidelines[5] published by the National Association of State Fire Marshals (NASFM) includes a "Suggested Classroom Door Checklist," which identifies many parameters that should be satisfied when selecting and installing hardware intended to increase classroom security:

- *The door should be lockable from inside the classroom without requiring the door to be opened.*
- *Egress from the classroom through the classroom door should be without the use of a key, tool, special knowledge, or effort.*
- *For egress, unlatching the classroom door from inside the classroom should be accomplished with one operation.*
- *The classroom door should be lockable and unlockable from outside the classroom.*
- *Door-operating hardware shall be operable without tight grasping, pinching, or twisting of the wrist.*
- *Door hardware operable parts should be located between 34 and 48 inches above the floor.*
- *The bottom 10 inches of the "push" side of the door surface should be smooth.*
- *If the school building does not have an automatic fire sprinkler system, the classroom door and door hardware may be required to be fire-rated, and the door should be self-closing and self-latching.*
- *If the door is required to be fire-rated, the door should not be modified in a way that invalidates the required fire-rating of the door and/or door hardware.*

The NASFM guidelines also note that, although the word "should" is used in the checklist, these requirements may be mandatory depending on applicable codes, laws, and regulations. The International Building Code (IBC), International Fire Code (IFC), and/or NFPA 101 – Life Safety Code have been adopted in most states, and these three publications include the egress, fire, and accessibility requirements in NASFM's checklist (NASFM, 2015).

These model codes are revised on a three-year cycle to take into account changing environments and new technologies, using a consensus process with careful consideration by technical committees and ample time for public comment. States and local jurisdictions may modify these codes, so it's very important to be aware of local code requirements, including the jurisdiction's position on barricade devices.

The NASFM checklist parameters for A) classroom doors to be lockable from inside the classroom without opening the door, and B) classroom doors to be lockable and unlockable from outside the classroom, are not currently included in the three model codes referenced above, but code change proposals have been submitted by the Builders Hardware Manufacturers Association (BHMA) which will add these requirements if the proposals are approved (BHMA, 2015). The prescriptive documentation included in the model codes ensure that requirements for free egress, fire protection, and accessibility are met in addition to providing adequate security.

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[5] National Association of State Fire Marshals (NASFM). "Classroom Door Security & Locking Hardware." (2015): 1. 22 Mar. 2015. Web.

At NASFM's 2015 annual conference, members approved a resolution[6] supporting the NASFM Classroom Door Security & Locking Hardware guidelines. In an excerpt from this resolution, the state fire marshals warn against the use of classroom barricade devices:

"WHEREAS, when selecting hardware that allows classroom doors to be lockable from inside the classroom, consideration should be given to the risks and potential consequences of utilizing a device that blocks the classroom door from the inside. For example, devices that prevent classroom doors from being unlocked and openable from outside the classroom may place the inhabitants of the room in peril. In addition to the requirement that classroom doors must be unlatchable in a single motion from inside the classroom, these doors should always be unlockable and openable from outside the classroom by authorized persons."

Local Jurisdictions

Many code officials have responded to questions about school security by reiterating that egress doors (including classroom doors) must meet the requirements of the adopted codes. The model codes may be modified locally, which could make the local requirements less stringent (for example, allowing one additional operation to unlatch the door) or more stringent.

Some states, such as Florida[7] and California[8], have already adopted requirements or guidelines for classroom doors to be lockable from the inside, with classroom security locks being the preferred lock function. For these states, the local guidelines are more stringent than the current model codes.

Some states have not modified their codes, but have published directives supporting their current code requirements. The New York State Education Department issued a bulletin on "Fire Safety and Proper Classroom Door Locks," which cites the state fire code and the New York State Education Department Manual of Planning Standards code. This document clearly prohibits classroom barricade devices, reinforces the requirements for free egress, and recommends classroom security locksets (Thurnau).

The Minnesota State Fire Marshal's office has published an information sheet titled *Security and Barricade Devices on Classroom Doors*, which also recommends classroom security locks and explains their rationale for code-compliant methods (Minnesota Department of Public Safety State Fire Marshal Division, May 2015).

Minnesota's position on classroom security is very compelling, as Minnesota is the location of the 2005 school shooting at Red Lake High School[9], where a 16-year-old killed seven people and wounded five others.

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[6] National Association of State Fire Marshals (NASFM). "Resolution on Classroom Door Security & Locking Hardware." (n.d.): n. pag. 27 July 2015. Web.

[7] Florida Department of Education. State Requirements for Educational Facilities (2014): n. pag. Nov. 2014. Web.

[8] Mendoza, Tony. "School Facilities: Classroom Security Lock." *AB 211 (Mendoza)*. N.p., 29 Sept. 2010. Web.

[9] WW: "Shattered Security – Surviving Red Lake Teacher Calls for Change." N.p., 11 Feb. 2015. Web.

Although the classroom doors were locked, the shooter broke the glass and gained access to the classroom by turning the inside lever, but Minnesota has not responded to this incident by choosing inexpensive security over free egress, fire protection, and accessibility. There are glazing products and films that will delay access to the inside lever, and would be a much more logical solution than installing a barricade device.

In some jurisdictions, there is political pressure to relax the code requirements in favor of approving the use of barricade devices, even when code officials oppose the change. In 2015, Ohio lawmakers passed a law requiring the Ohio Board of Building Standards to adopt rules for the use of classroom barricade devices. The board conducted an examination of the state's current codes to decide whether changes should be made due to emerging threats to public safety. After extensive review, including two hearings where parties on both sides of the issue presented information, the board determined that no changes needed to be made to the current building and fire codes. Regardless of the board's conclusion, the new state law mandates the creation of rules for the use of barricade devices[10].

In Arkansas, the state fire marshal voiced strong objections to a senate bill that would amend the fire code requirements and allow the use of barricade devices in schools, noting potential issues with emergency egress and removal of the device. The Arkansas State Senate voted unanimously to approve the fire code change, despite the fire marshal's objections, as well as the financial interest of an Arkansas state legislator in a company that manufactures barricade devices.

Other states have independently issued directives or adopted code changes that vary from state to state. For example, Colorado[11] has adopted a code change that allows temporary security measures only until Jan. 1, 2018 (Colorado Department of Public Safety Division of Fire Prevention and Control).

The state fire marshal in Kansas issued a memo allowing temporary security devices to be used (Jorgenson, 2014), Louisiana allows a deadbolt that requires one additional operation to unlatch the door (Browning, 2013), and New Jersey permits some types of devices but not others (New Jersey Department of Community Affairs, 2013).

These policies lack consistency from one state to the next. A more efficient and effective approach would be to incorporate school security requirements into the model codes used across the country, utilizing the expertise and experience of code officials and others who are knowledgeable about all aspects of the issue.

Other Potential Consequences

In addition to code considerations, another concern is that barricade devices can be used by anyone who has access to them, including someone who wants to barricade himself along with others in a room to commit harm or take hostages.

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[10] "Ohio school safety policy should be barricaded from politics," SchoolSecurity.org, (March 7, 2015)

[11] *Colorado Department of Public Safety Division of Fire Prevention and Control. "Code Enforcement and Certification of Inspectors for Public Schools, Charter Schools, and Junior Colleges." N.p., n.d. Web.*

Addressing this possibility by storing the device in a locked drawer or location known only to the teacher could result in a delay in installing the device at a critical time. A substitute teacher may not have the means or knowledge to secure the door.

Although every school shooting is tragic, and we must do all we can to prevent them, these events are rare; nonfatal victimizations at school are thousands of times more likely to occur, and unauthorized lockdown of a classroom could help to create a haven for someone attempting to commit a crime. According to the National Center for Education Statistics (NCES) (NCES, 2013):

- *"In 2012, students ages 12-18 were victims of about 1,364,900 nonfatal victimizations at school, including 615,600 thefts and 749,200 violent victimizations, 89,000 of which were serious violent victimizations."*
- *"During the 2009-10 school year, 85 percent of public schools recorded that one or more of these incidents of violence, theft, or other crimes had taken place, amounting to an estimated 1.9 million crimes."*
- *"During the 2011-12 school year, nine percent of school teachers reported being threatened with injury by a student from their school. The percentage of teachers reporting that they had been physically attacked by a student from their school in 2011-12 (five percent) was higher than in any previous survey year (ranging from three to four percent)."*

In addition to the negative impact on egress, most barricade devices prevent access from the outside, so even a staff member or emergency responder with a key would not be able to enter. While there is debate on whether or not barricade devices should be allowed for use, schools should also consider their liability in using such devices. What if a barricade device was used by an unauthorized person to secure a classroom and commit an assault or other crime, leaving staff and/or law enforcement unable to access the room because of the device?

As every school administrator knows, and as documented by the Centers for Disease Control and Prevention (CDC) and by the FBI, the people most likely to commit violence on school grounds are students themselves.

A person injured in a barricaded classroom might have a strong argument that the school district should have recognized that a

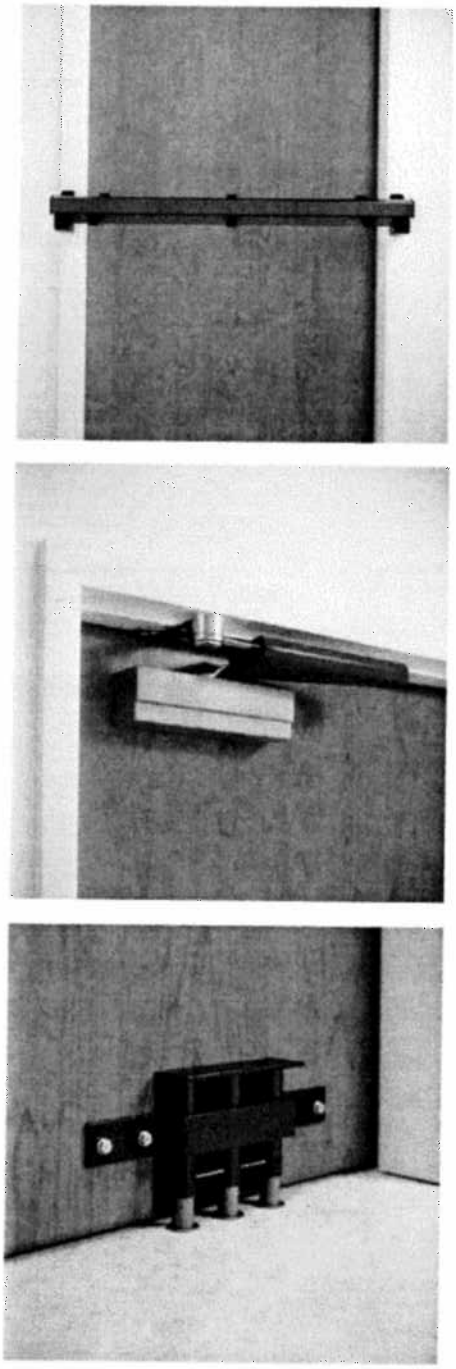

Fig. 2: Examples of various classroom barricade devices.

student, or someone else lawfully on the premises, could use a barricade to lock others into a classroom and prevent safety officers from entering. More generally, obstacles to egress can be fatal for both children and adults during an emergency. Modern codes exist because of hard lessons learned from school fires and other tragedies. A district considering whether to install classroom barricades should take into account the possibility of an exit being accidentally or maliciously blocked during an emergency (School Liability and the Law of Unintended Consequences, 2015).

There have already been school shootings where the intruder brought materials with them to barricade the doors, including the incidents at Virginia Tech, the West Nickel Mines School, and Platte Canyon High School[12]. At Platte Canyon High School, explosives were used by emergency responders to gain access to the classroom, and a student hostage was killed by the shooter during the chaos. After the West Nickel Mines School shooting at an Amish schoolhouse, several news reports discussed law enforcement officers' concerns that they are not equipped to overcome classroom barricades.

A shooting at Chardon High School in Chardon, OH, has been cited in support of the state legislation to allow barricade devices; however, when the former superintendent of the Chardon School District, Joseph Bergant, was asked whether he would be in favor of using classroom security devices, he told members of the Ohio Board of Building Standards that barricades have the potential to backfire and make active shooter situations more dangerous.

"There was a situation in Colorado ... where a gentleman came into the school, went up the hallway, went into a classroom, and he barricaded himself in that particular room and ended up killing one child," he said. "The police had a difficult time getting into that room because the door opened in the opposite way, and they actually had to blow the door off with some kind of explosive." He said that barricades could be dangerous if a bomb started a fire in the school or if a teacher left a room unattended with a barricade available. "In a lot of situations, people need to get out of the building in some capacity," he said. "There have been situations where kids have locked other kids in classrooms. I have huge anxiety with that. If the teacher is not in the room, what do you do? Somebody could barricade themselves in a room and kill everybody." (Bergant).

In the words of Police Lieutenant Joseph Hendry, "The fact is, these devices can easily be used against us. From a tactical standpoint, hanging the device next to the door is an invitation to disaster. It gives any threat the ability to secure a room with potential victims inside with little recourse for staff or law enforcement except to breach using physical force. The fact that vendors are touting the devices by posting videos of law enforcement using current assigned tools that cannot breach the door gives threats a tactical advantage in planning and use in a facility that is already a soft target."

References from Safety Guidelines

There are many publications that address recommended locking methods for classroom doors, the need for code compliance, and support for incorporating school security requirements into the model codes.

None of the following include recommendations for installing secondary locking devices:

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[12] Platte Canyon High School Shooting, After Action Report. *(2006): n. pag. 6 Dec. 31, 2006. Web.*

- The final report of the Sandy Hook Advisory Commission includes many recommendations for school safety, including Recommendation No. 1: Classroom doors should be lockable from inside the classroom. The report states: *"The testimony and other evidence presented to the commission reveals that there has never been an event in which an active shooter breached a locked classroom door."* There are other factors to consider, such as impact resistance of glass adjacent to door hardware, distribution of keys to all staff (including substitute teachers), methods of securing exterior doors, visitor protocols, and procedures, communication, training, and drills. Barricading of doors is not mentioned in the commission's report (Sandy Hook Advisory Commission, 2015)
- FEMA-428 – Buildings and Infrastructure Protection Series Primer to Design Safe School Projects in Case of Terrorist Attacks and School Shootings (2012) states that all locks on egress doors in schools must comply with the requirements of NFPA 101 – Life Safety Code. The FEMA publication also discusses the importance of lockable classroom doors: *"While the interior locks on classroom doors saved many lives at Columbine High School, they were not available in classrooms in Norris Hall at the Virginia Tech campus. Although attempts were made to barricade the doors with furniture or live bodies, they were not successful and the death toll was much greater."* (FEMA, 2012)
- The International Fire Code Commentary is a companion publication to the IFC, and includes a section addressing lockdown requirements. The 2012 IFC Commentary for section 404.3.3 Lockdown Plans, reads (in part): *"Note that the code does not require a lockdown plan; however, if a lockdown plan is developed, it must be strictly supervised in order to maintain occupant safety at an acceptable level. Many facilities are adopting procedures that can significantly affect fire and life safety, such as using the fire alarm system to signal a security emergency, locking doors with devices that prevent egress in violation of the provisions of Chapter 10 of the code, and chaining exit discharge doors from the inside to prevent occupants from leaving the building. It is important that plans for security threats do not include procedures that result in violations of life safety and actually increase the hazard to the occupants."* (IFC, 2012)
- The Occupational Safety and Health Administration (OSHA) regulation 1926.34 prohibits devices that impede egress: *"No lock or fastening to prevent free escape from the inside of any building shall be installed except in mental, penal, or corrective institutions where supervisory personnel is continually on duty and effective provisions are made to remove occupants in case of fire or other emergency."* In some states, OSHA regulations do not cover state and local government employees (including school staff), but many states adopt the OSHA regulations as part of their workplace safety requirements. In those states, OSHA requirements for free egress may apply to schools (OSHA).
- Some proponents of barricade devices have suggested that it is safe to relax the code requirements addressing fire protection because fatal school fires are no longer common. The NFPA reports that, *"U.S. fire departments responded to an estimated average of 5,690 structure fires in educational properties in 2007-2011 annually. These fires caused annual averages of 85 civilian fire injuries and $92 million in direct property damage. An average of one death occurred in daycare properties." (NFPA Structure Fires in Educational Properties Fact Sheet)* (Campbell, 2013). Any one of these fires could have been tragic, as fatalities in school fires were not uncommon before the codes were put in place and enforced. Although it has been more than 55

years since 95 lives were lost in the fire at Our Lady of the Angels School in Chicago, it seems likely that the strength of current codes and enforcement have played a role in the improved safety of our schools (Steffen, 2009).

- In the March/April 2015 issue of *NFPA Journal*, Ron Coté notes that guidelines do not exist currently that would *"allow a classroom door to be locked against opening from the corridor side while still ensuring the door can be opened by any classroom occupant, or that emergency responders can access the classroom in time to prevent an occupant from causing harm to those within the room."* In December 2014, NFPA held a two-day school security workshop, attended by more than 60 stakeholders. The purpose of the workshop was to look at issues affecting schools as they balance security with fire and life safety, and propose solutions to those problems. Upcoming meetings of several NFPA technical committees are expected to discuss provisions for blending school security with fire safety, which could lead to changes in the 2018 edition of NFPA 101 (Coté, 2015).

Conclusion

The instinctive reaction to the fear surrounding school shootings is to do everything possible to protect students and teachers from being in the line of fire. The desire to react quickly and within budgetary restrictions sometimes leads to choices that may solve one problem but inadvertently create others. The requirements for free egress, fire protection, and accessibility must be considered in conjunction with the need for security. Unauthorized lockdown and emergency responder access are important considerations, although not currently addressed by the model codes.

Changes made to codes or laws at a national level would establish more consistent requirements than addressing this issue individually. When a jurisdiction chooses to modify the model codes, requirements should be prescriptive, and an all-hazards approach should be taken, considering not just active shooters and terrorism, but also fire, severe weather, natural disasters, and other types of emergencies.

The reasoning behind proposed changes is often based on the misconception that barricading the door is the only way to protect students and teachers in the classroom. There are code-compliant locks readily available from many lock manufacturers that provide the needed security without compromising safety in favor of lower cost. While locks address one aspect of classroom security requirements, there are other factors to consider, such as the door, frame, glass, key distribution, communication, and lockdown procedures.

Many school security experts recommend classroom security locks, which can be locked from within the classroom using a key (mechanical locks) or electronic fob (electrified locks) (Timm, 2014). Other lock functions can be used, depending on existing conditions, the needs of the facility, and the budget. All lock functions that would typically be installed on a classroom door allow free egress as well as authorized access by staff and emergency responders, and will provide the necessary balance between the security of teachers and students within the classroom and safety for a range of hazards that may occur.

Additional Resources

PASS

As the Security Industry Association (SIA) and National Systems Contractors Association (NSCA) received questions from the educational community about what can be done to better secure our schools – and how these security projects can be funded – it became quickly evident that there were no easy answers. School budgets are tight, and funding is difficult to pull together for potential security threats that, statistically, have a very low probability of occurring.

The PASS story is one born out of concern and commitment for school safety. When a school system makes an investment in security, we want to help them make sure their money spent on the right solutions. The PASS guidelines:

- Define threats common to schools at each educational level
- Offer recommendations on parental and community involvement
- Detail a layered security approach that combats common threats and mitigates risks related to active shooters
- Provide information for integrators, school administrators, resource officers, and IT staff on technology-focused solutions like video surveillance, duress alarms, and electronic access control
- Deliver scalable/tiered measures that administrators can implement based on available resources and local risk levels

We also provide integrators with risk assessments and white papers that can be used when working with schools to evaluate and establish the best security protection for their building.

Several industry organizations have stated their position regarding classroom barricade devices:

- Associated Locksmiths of America – Institutional Locksmiths
- Builders Hardware Manufacturers Association – BHMA has put forth code amendment proposals around the use of barricades devices
- Door Security and Safety Foundation
- Security Industry Association (SIA)

DISCLAIMER OF LEGAL LIABILITY: The materials and information in the Partner Alliance for Safer School "Safety and Security Guidelines for K-12 Schools" (the "Guidelines") are provided by the Security Industry Association ("SIA"), the National Systems Contractors Association ("NSCA") and other participating organizations for informational purposes and are to be used as a tool to help school officials navigate the challenges associated with security equipment and processes. SIA and NSCA have taken reasonable efforts to ensure that all materials and information included in the Guidelines are accurate and consistent with standards of good practice in the general security industry. As new risks and life safety issues emerge, however, security approaches and recommendations may change. For this reason, it is recommended that school officials evaluate the applicability of the Guidelines in light of particular situations and changing standards. The review of the Guidelines is not a substitute for obtaining security advice from qualified security providers and other professionals.

The information presented in the Guidelines is provided "as is" without representation or warranty of any kind. In no event shall SIA or NSCA, or their respective directors, officers or employees, be held liable for any losses, injuries, damages or any other consequences resulting from, or arising in connection with, the use or reliance on the Guidelines, or any information or materials contained therein.

Supporting materials such as whitepapers, assessment tools, design images and device placement recommendations and position statements will be produced to support these guidelines and are developed to help navigate the complexities that exist.

These documents are also provided without representation or warranty. They are developed as a general recommendation by consensus of the PASS K-12 organization and follow the same good practices used in development and updating of the guidelines.

Endorsing Organizations

The PASS K-12 guidelines from the Partner Alliance for Safer Schools is made possible only through the selfless participation and support of dedicated endorsing organizations. These individuals and companies from the information technology, education, and public safety fields, as well as security consultants, engineers, security system integrators, and manufacturers worked hundreds of hours to create a document that we hope will serve as a foundation for enhancing the safety of our most important national resource: our children. PASS endorsing organizations include:

School Members

- Jeff Bajgot, Executive Vice President for Network Communication Services and Chief Technology Officer, Center for Educational Leadership
- Dr. Richard Caster, Senior Consultant, Ohio School Boards Association
- Brian Gard, Manager of Safety and Security, National Heritage Academies
- Guy Grace, Security Director, Littleton Public Schools, Colorado
- Paul Haltrich, Fulton County Schools, Georgia
- Stan Howell, IT Physical Security, DeKalb County Schools, Georgia
- Chuck Hutcheson, Systems Manager, DeKalb County Schools, Georgia
- Shelley Klingerman, President and Parent Advocate, Stiletto Agency
- Tom Mayfield, Director of Security, Excelsior Springs School District, Missouri
- Tom Vaccarello, Director of Safety and Security, Fairfax County Public Schools, Virginia
- David Walker, Security Associate, DeKalb County Schools, Georgia
- Walter William, Security Director, Birmingham School District, Alabama

Integrators

- Ray Bailey, President, Lone Star Communications
- Mike Bradley, CEO, ECD Systems
- Mike Hester, Managing Partner, Beacon Communications
- Scott Lord, Director of Innovation and National Accounts, All Systems
- Rob Simopoulos, President, Advance Technology
- Paul Thomas, Northland Controls
- Eric Yunag, President/CEO, Dakota Security Systems

Law Enforcement

- Chief Dan Flynn, IACP Liaison, Marietta Police Department, Georgia
- Sergeant Grant Foster, SRO Supervisor, Marietta Police Department, Georgia
- Sergeant Paul White, SRO, Excelsior Springs Police Department, Missouri

Consultants

- Jim Crumbley, Owner, Risk Response Team
- John Fannin, President/CEO SafePlace Corp
- Neil Lakomiak, Director of Business Development & Innovation, UL
- Dan O'Neill, President/CEO, ADRM

Manufacturers

- Laurie Aaron, Executive Vice President & Chief Marketing Officer, Building Intelligence Inc.
- Stephanie Andersen, Managing Partner, ZulaFly
- Ron Baer, Director of Business Development, ASSA ABLOY
- Manish Dalal, General Manager, ZK Technology
- April Dalton-Noblitt, Director, Vertical Marketing, Allegion PLC
- Scott Dunn, Director of Business Development Solutions & Services, Axis Communications
- Tim Ferrian, Director of Sales & Marketing, Pro-Tec Design
- Jim Finnell, Chief Executive Officer, Prepared Response Solutions
- Jerry Johnston, District Manager, Eaton Cooper Notification
- Sal Marinello, Regional Manager, Rauland-Borg
- Todd Meininge, K-12 End User Specialist, ASSA ABLOY
- Manny Kitagawa, Director of Education Solutions, Atlas/IED
- Danielle Myers, Director of Sales Programs, Status Solutions
- Rob Schorr, Regional Sales Manager, Paxton
- Bob Shanes, Vice President–Sales, Talk-A-Phone
- Don Strauch, Senior Account Executive, iView Solutions
- Kevin Taylor, Region Sales Manager, Axis Communications

Hanshaw, Regina

From: Thompson, Tim
Sent: Wednesday, October 28, 2015 12:40 PM
To: Hanshaw, Regina
Subject: FW: Board of Building Standards Proposed Rules/Stakeholder Meeting Notification
Attachments: dico_HB64OBCRulesStakeholderMeetingNovember2015.pdf

FYI.

Tim Thompson
Division Counsel
Ohio Department of Commerce
Division of State Fire Marshal
8895 East Main Street, Reynoldsburg, Ohio 43068
(614) 752-2073

This message and any response to it may constitute a public record and thus may be publicly available to anyone who requests it.

From: Flowers, Larry
Sent: Wednesday, October 28, 2015 11:14 AM
To: Leaming, Jeff ; Whitten, Brian ; Thompson, Tim
Subject: FW: Board of Building Standards Proposed Rules/Stakeholder Meeting Notification

Comments from Robert of NFPA. LF

From: Solomon, Robert [mailto:rsolomon@NFPA.org]
Sent: Wednesday, October 28, 2015 10:28 AM
To: Sanders, Russ <RSanders@NFPA.org>
Cc: Flowers, Larry <Larry.Flowers@com.state.oh.us>
Subject: RE: Board of Building Standards Proposed Rules/Stakeholder Meeting Notification

My comments are embedded in the PDF. The proposed OBC rules don't go into as much performance detail when compared to where we are heading in NFPA 1, NFPA 101 and NFPA 5000.

robert
Robert Solomon, PE
NFPA

From: Sanders, Russ
Sent: Wednesday, October 21, 2015 12:15 PM
To: Solomon, Robert <rsolomon@NFPA.org>
Cc: Flowers, Larry (Larry.flowers@com.state.oh.us) <Larry.flowers@com.state.oh.us>
Subject: FW: Board of Building Standards Proposed Rules/Stakeholder Meeting Notification

Robert:

Please see below and enclosed. Would you be available to testify? SFM Flowers, who I have copied on this message, advised that the draft language is getting a little closer to what he would be comfortable with, but would welcome your testimony.

Please advise.

Russ

From: Sanders, Russ
Sent: Wednesday, October 21, 2015 12:05 PM
To: 'Larry.Flowers@com.state.oh.us' <Larry.Flowers@com.state.oh.us>
Subject: RE: Board of Building Standards Proposed Rules/Stakeholder Meeting Notification

Larry:

Do you want me to see if Robert Solomon is available on November 16 to testify? Or, will there be an opportunity (or need) for NFPA to testify?

Thanks,

Russ

From: Larry.Flowers@com.state.oh.us [mailto:Larry.Flowers@com.state.oh.us]
Sent: Wednesday, October 21, 2015 12:01 PM
To: Shaw Bill <chief.w.shaw@gmail.com>; Jerry L Lupfer (chief_171@juno.com) <chief_171@juno.com>; Scott Skeldon (ChiefSkeldon@jerometwpfire.org) <ChiefSkeldon@jerometwpfire.org>; Chip Welch (PWelch@sciototownship.com) <PWelch@sciototownship.com>; Matt Noble (mnoble@orangetwp.org) <mnoble@orangetwp.org>; Dave Belcher (Dave.Belcher@violet.oh.us) <Dave.Belcher@violet.oh.us>; 'Dan.graham@evendaleohio.org' <Dan.graham@evendaleohio.org>; Sanders, Russ <RSanders@NFPA.org>; Richard Caster (rcaster@ohioschoolboards.org) <rcaster@ohioschoolboards.org>
Subject: FW: Board of Building Standards Proposed Rules/Stakeholder Meeting Notification

FYI, LF

From: Lane, Michael
Sent: Wednesday, October 21, 2015 11:30 AM
To: Lane, Michael <Michael.Lane@com.state.oh.us>
Subject: Board of Building Standards Proposed Rules/Stakeholder Meeting Notification

Board of Building Standards Stakeholder:

You are receiving this message pursuant to the requirements of Executive Order 2011-01K and Senate Bill 2 of the 129th General Assembly, which require state agencies, including the Ohio Board of Building Standards (Board), to draft rules in collaboration with stakeholders, assess and justify any adverse impact on the business community, and provide opportunity for the affected public to provide input on the rules.

Stakeholder Meeting

The Board will conduct a Stakeholder Meeting to hear comments and respond to questions on the proposed amendments to the Ohio Building Code summarized below on November 16, 2015 at 10:00 AM in Training Room 1, 6606 Tussing Road, Reynoldsburg, Ohio 43068. All interested stakeholders are invited to attend.

Overview of Proposed Rule Changes

Proposed Ohio Building Code Rule Changes
The Board proposes to amend the Ohio Administrative Code in response to adoption of new Ohio Revised Code § 3781.106 included in HB 64 requiring the Board to develop rules for the use of a device by a staff member of a public or private school or institution of higher education that prevents both ingress and egress through a door in a school building, for a finite period of time, in an emergency situation, and during active shooter drills as follows: **4101:1-2-01** to add definitions for Active Shooter Drill, Administrative Authority of a School Building, Emergency Situation, Institution of Higher Education, Private School, Public School, School Building, and Temporary Door Locking Device; and **4101:1-10-01** to add exceptions to Sections 1008.1.9.1, 1008.1.9.3, 1008.1.9.5 for Temporary Door Locking Devices, and to add a new Section 1008.1.9.11 which establishes conditions for the use of Temporary Door Locking Devices.

These proposed rules can be viewed here: http://www.com.ohio.gov/documents/dico_HB64OBCRulesStakeholderMeetingNovember2015.pdf

Contact Information for Comments or Questions

If you cannot attend the above Stakeholder Meeting, you can submit written comments or questions on the proposed amendments to the Board. You may submit your comments via email at BBS@com.state.oh.us or U.S. Mail at Ohio Board of Building Standards, 6606 Tussing Rd, Reynoldsburg, Ohio 43068, Attn: Regina Hanshaw by November 27, 2015.

Sincerely,

Regina S. Hanshaw
Executive Secretary
Ohio Board of Building Standards

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The information transmitted is intended solely for the individual or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of or taking action in reliance upon this information by persons or entities other than the intended recipient is prohibited. If you have received this email in error please contact the sender and delete the material from any computer.
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Department of Commerce

Division of Industrial Compliance

John R. Kasich, Governor
Jacqueline T. Williams, Director

we have been using the term active threat. Shooter is too limiting.

NOVEMBER 2015 STAKEHOLDER MEETING
2011 OHIO BUILDING CODE PROPOSED CHANGES

Ohio Administrative Code Rule Number	OBC Section	Reason for Proposed Change
4101:1-2-01	"ACTIVE SHOOTER DRILL" definition	To add definition
	"ADMINISTRATIVE AUTHORITY OF A SCHOOL BUILDING" definition	To add definition
	"EMERGENCY SITUATION" definition	To add definition
	"INSTITUTION OF HIGHER EDUCATION" definition	To add definition
	"PRIVATE SCHOOL" definition	To add definition
	"PUBLIC SCHOOL" definition	To add definition
	"SCHOOL BUILDING" definition	To add definition
	"TEMPORARY DOOR LOCKING DEVICE" definition	To add definition
4101:1-10-01	1008.1.9.1	To add an exception to the Door Hardware requirements of the OBC
	1008.1.9.3	To add an exception to the Locks and Latches requirements of the OBC
	1008.1.9.5	To add an exception to the Unlatching requirements of the OBC
	1008.1.9.11	To add a new section addressing Temporary Door Locking Devices used in school buildings.

Ohio Board of Building Standards
6606 Tussing Road
PO Box 4009
Reynoldsburg, OH 43068-9009 U.S.A.

Gerald O. Holland, Chairman

614 | 644 2613
Fax 614 | 644 3147
TTY/TDD 800 | 750 0750
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4101:1-2-01 Definitions.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:1-35-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:1-1-01 of the Administrative Code.]

SECTION 201
GENERAL

201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

Terms defined in other codes. Where terms are not defined in this code and are defined in the *"International Fuel Gas Code", fire code, mechanical code* or *plumbing code,* such terms shall have the meanings ascribed to them as in those codes.

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

SECTION 202
DEFINITIONS

24-HOUR CARE. *The actual time that a person is an occupant within a facility for the purpose of receiving care. It shall not include a facility that is open for 24 hours and is capable of providing care to someone visiting the facility during any segment of the 24 hours.*

AAC MASONRY. See Section 2102.1.

ABOVE-GROUND STORAGE TANK. *A vessel, intended for fixed installation above grade, at grade, or below grade without backfill, used for the purpose of bulk storage, dispensing, handling or processing of hazardous, flammable or*

combustible liquids or gases and not connected to and utilized for the operation of building service equipment.

ACCESSIBLE. See Section 1102.1.

ACCESSIBLE MEANS OF EGRESS. See Section 1002.1.

ACCESSIBLE ROUTE. See Section 1102.1.

ACCESSIBLE UNIT. See Section 1102.1.

ACCREDITATION BODY. See Section 2302.1.

THREAT. Need to consider knife, sword (see last weeks news in Europe) and other weapons.

ACTIVE ~~SHOOTER~~ DRILL. *An exercise performed by staff and occupants to evaluate their efficiency and effectiveness in executing an adopted school safety plan to respond to an active shooter event by sheltering and securing occupants in place within a building when normal evacuation would put occupants at risk. See 1008.1.9.11.*

ADDITION. An extension or increase in floor area or height of a building or structure.

ADHERED MASONRY VENEER. See Section 1402.1.

ADMINISTRATIVE AUTHORITY OF A SCHOOL BUILDING. *The superintendent, principal, chief administrative officer, or other person having supervisory authority of a school building. See section 1008.1.9.11.*

ADOBE CONSTRUCTION. See Section 2102.1.

Adobe, stabilized. See Section 2102.1.

Adobe, unstabilized. See Section 2102.1.

AEROSOL. See Section 307.2.

Level 1 aerosol products. See Section 307.2.
Level 2 aerosol products. See Section 307.2.
Level 3 aerosol products. See Section 307.2.

AEROSOL CONTAINER. See Section 307.2.

AGGREGATE. See Section 1502.1.

AGRICULTURAL, BUILDING. A structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products. *(see "**AGRICULTURAL PURPOSES**", section 101.2, and section 312 of this code).*

AGRICULTURAL LABOR CAMPS. *Camps as defined in section 3733.41 of the Revised Code.*

***AGRICULTURAL PURPOSES**: Includes agriculture, farming, dairying, pasturage, apiculture, horticultural, floriculture, viticulture, ornamental horticulture, olericulture, pomiculture, animal and poultry husbandry, etc.*

AIR-INFLATED STRUCTURE. See Section 3102.2.

AIR-SUPPORTED STRUCTURE. See Section 3102.2.
Double skin. See Section 3102.2.
Single skin. See Section 3102.2.

AIRCRAFT HANGER, RESIDENTIAL. *See section 412.3.1.*

AISLE. See Section 1002.1.

AISLE ACCESSWAY. See Section 1002.1.

ALARM NOTIFICATION APPLIANCE. See Section 902.1.

ALARM SIGNAL. See Section 902.1.

ALARM VERIFICATION FEATURE. See Section 902.1.

ALLOWABLE STRESS DESIGN. See Section 1602.1.

ALTERATION. Any construction or renovation to an existing structure other than repair or *addition.*

ALTERNATING TREAD DEVICE. See Section 1002.1.

AMBULATORY CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to individuals who are rendered incapable of self-preservation *by the services provided.*

AMUSEMENT RIDE. *Any mechanical, aquatic, or inflatable device, or combination of those devices that carries or conveys passengers on, along, around, over, or through a fixed or restricted course or within a defined area for the purpose of providing amusement, pleasure, or excitement and includes carnival rides, bungee jumping facilities, and fair rides but does not include passenger tramways as defined in section 4169.01 of the Revised Code or amusement rides operated solely at trade shows for a limited period of time. For regulation and definitions, see sections 1711.50 to 1711.57 of the Revised Code. Amusement rides are not regulated by this code but are regulated by the Ohio department of agriculture. Also see section 411, Special Amusement Buildings.*

ANCHOR. See Section 2102.1.

ANCHOR BUILDING. See Section 402.2.

ANCHORED MASONRY VENEER. See Section 1402.1.

ANNULAR SPACE. See Section 702.1.

ANNUNCIATOR. See Section 902.1.

APPROVED. *Determined to be in compliance by the authority having jurisdiction in accordance with the rules of the board.*

APPROVED AGENCY. *An established and accredited testing laboratory, listing agency, inspection body, or field evaluation body recognized by the board of*

building standards providing services consistent with their accreditation and the code section requiring the approved agency service.

APPROVED FABRICATOR. See Section 1702.1.

***APPROVED NATIONAL AND ACCREDITATION SERVICE**. An established and nationally recognized service regularly engaged in evaluating the competency of agencies to conduct tests and inspections required by the rules of the board.*

APPROVED SOURCE. *Deleted.*

ARCHITECTURAL TERRA COTTA. See Section 2102.1.

AREA (for masonry). See Section 2102.1.
Bedded. See Section 2102.1.
Gross cross-sectional. See Section 2102.1.
Net cross-sectional. See Section 2102.1.

AREA, BUILDING. See Section 502.1.

AREA OF REFUGE. See Section 1002.1.

AREAWAY. A subsurface space adjacent to a building open at the top or protected at the top by a grating or guard.

ASSISTED LIVING FACILITIES. See Section 310.2, "Residential Care/Assisted living facilities."

ATRIUM. See Section 404.1.1.

ATTIC. The space between the ceiling beams of the top story and the roof rafters.

AUDIBLE ALARM NOTIFICATION APPLIANCE. See Section 902.1.

AUTOCLAVED AERATED CONCRETE (AAC). See Section 2102.1.

AUTOMATIC. See Section 902.1.

AUTOMATIC FIRE-EXTINGUISHING SYSTEM. See Section 902.1.

AUTOMATIC SMOKE DETECTION SYSTEM. See Section 902.1.

AUTOMATIC SPRINKLER SYSTEM. See Section 902.1.

AVERAGE AMBIENT SOUND LEVEL. See Section 902.1.

AWNING. An architectural projection that provides weather protection, identity or decoration and is wholly supported by the building to which it is attached. An awning is comprised of a lightweight frame structure over which a covering is attached.

BACKING. See Section 1402.1.

BALED COTTON. See Section 307.2.

BALED COTTON, DENSELY PACKED. See Section 307.2.

BALLAST. See Section 1502.1.

BARRICADE. See Section 307.2.
- **Artificial barricade.** See Section 307.2.
- **Natural barricade.** See Section 307.2.

BASE FLOOD. See Section 1612.2.

BASE FLOOD ELEVATION. See Section 1612.2.

BASEMENT (for other than flood loads). See Section 502.1.

BASEMENT (for flood loads). See Section 1612.2.

BEARING WALL STRUCTURE. See Section 1614.2.

BED JOINT. See Section 2102.1.

BLEACHERS. See Section 1002.1.

BOARDING HOUSE. See Section 310.2.

BOILING POINT. See Section 307.2.

BOND BEAM. See Section 2102.1.

BRACED WALL LINE. See Section 2302.1.

BRACED WALL PANEL. See Section 2302.1.

BRICK. See Section 2102.1.

Calcium silicate (sand lime brick). See Section 2102.1.

Clay or shale. See Section 2102.1.

Concrete. See Section 2102.1.

BUILDING. *Any structure consisting of foundations, walls, columns, girders, beams, floors, and roof, or a combination of any number of these parts, with or without other parts or appurtenances.*

BUILDING DEPARTMENT. *An agency, department or division of the state or of the government of a municipal corporation, township, or county, which has been created and authorized in conformity with law for the purpose of enforcing construction code provisions of the board's rules applicable to structures specified in section 3781.06 of the Revised Code.*

BUILDING LINE. The line established by law, beyond which a building shall not extend, except as specifically provided by law.

BUILDING OFFICIAL. The *superintendent of the division of industrial compliance of the Ohio department of commerce or the person appointed by the superintendent to enforce this code in that division, or the designated authority charged with the administration and enforcement of this code, approved by the board in accordance with section 103 of this code, in a municipal corporation, township or county having a building department, certified by the board pursuant to section 3781.10 of the Revised Code, or the health commissioner or his authorized representative in health districts, whichever one has jurisdiction.*

BUILDING SERVICE EQUIPMENT. *Equipment, appliances, materials, devices, and systems integrated into a building which provide space heating, air conditioning, ventilation, fire protection, lighting, electricity, sanitation, water,*

heating, cooking, medical gas, medical vacuum, and clothes drying. Building service equipment begins from the connected stored source of liquid or gas fuel or electrical power supplying the equipment or the utility service point /point of delivery and extends through the point of use but does not include process equipment that may also be connected to the same source.

BUILDING SERVICES PIPING. *All piping systems and their component parts that are part of a building system and that promote the safe, sanitary, and energy efficient occupancy of a building. Building services piping includes, but is not limited to, cold and hot potable water distribution for plumbing fixtures; sanitary lines from plumbing fixtures; nonflammable medical gas systems; medical oxygen systems; medical vacuum systems; fire protection piping systems and compressed air in dry systems; refrigeration, chilled water, condenser and cooling tower water, brine, and water/antifreeze systems; steam, steam condensate, and hot water piping systems; and fuel oil piping and fuel gas piping for heating, cooling, and cooking applications.*

BUILT-UP ROOF COVERING. See Section 1502.1.

CABLE-RESTRAINED, AIR-SUPPORTED STRUCTURE. See Section 3102.2.

CANOPY. A permanent structure or architectural projection of rigid construction over which a covering is attached that provides weather protection, identity or decoration, and shall be structurally independent or supported by attachment to a building on one end and by not less than one stanchion on the outer end.

CARBON DIOXIDE EXTINGUISHING SYSTEMS. See Section 902.1.

CAST STONE. See Section 2102.1.

CEILING LIMIT. See Section 902.1.

CEILING RADIATION DAMPER. See Section 702.1.

CELL. See Section 408.1.1.

CELL (masonry). See Section 2102.1.

CELL TIER. See Section 408.1.1.

CEMENT PLASTER. See Section 2502.1.

CERAMIC FIBER BLANKET. See Section 721.1.1.

CERTIFICATE OF COMPLIANCE. See Section 1702.1.

CHILD CARE FACILITIES. See Section 308.3.1. *Also see TYPE A FAMILY DAY-CARE HOME AND TYPE B FAMILY DAY-CARE HOME.*

CHIMNEY. See Section 2102.1.

CHIMNEY TYPES. See Section 2102.1.
- **High-heat appliance type.** See Section 2102.1.
- **Low-heat appliance type.** See Section 2102.1.
- **Masonry type.** See Section 2102.1.
- **Medium-heat appliance type.** See Section 2102.1.

CIRCULATION PATH. See Section 1102.1.

CLEAN AGENT. See Section 902.1.

CLEANOUT. See Section 2102.1.

CLINIC, OUTPATIENT. See Section 304.1.1.

CLOSED CONSTRUCTION. *See section 114.*

CLOSED SYSTEM. See Section 307.2.

COLLAR JOINT. See Section 2102.1.

COLLECTOR. See Section 2302.1.

COMBINATION FIRE/SMOKE DAMPER. See Section702.1.

COMBUSTIBLE DUST. See Section 307.2.

COMBUSTIBLE FIBERS. See Section 307.2.

COMBUSTIBLE LIQUID. See Section 307.2.
Class II. See Section 307.2.
Class IIIA. See Section 307.2.
Class IIIB. See Section 307.2.

COMBUSTIBLE MATERIAL. *See section 703.4.*

COMMERCIAL COOKING RECIRCULATING SYSTEM. *Self-contained system consisting of the exhaust hood, the cooking equipment, the filters, and the fire suppression system. The system is designed to capture cooking vapors and residues generated from commercial cooking equipment. The system removes contaminants from the exhaust air and recirculates the air to the space from which it was withdrawn.*

COMMON USE. See Section 1102.1.

COMMON PATH OF EGRESS TRAVEL. See Section 1002.1.

COMPRESSED GAS. See Section 307.2.

COMPRESSIVE STRENGTH OF MASONRY. See Section 2102.1.

CONCRETE, CARBONATE AGGREGATE. See Section 721.1.1.

CONCRETE, CELLULAR. See Section 721.1.1.

CONCRETE, LIGHTWEIGHT AGGREGATE. See Section 721.1.1.

CONCRETE, PERLITE. See Section 721.1.1.

CONCRETE, SAND-LIGHTWEIGHT. See Section 721.1.1.

CONCRETE, SILICEOUS AGGREGATE. See Section 721.1.1.

CONCRETE, VERMICULITE. See Section 721.1.1.

CONGREGATE LIVING FACILITIES. See Section 310.2.

CONNECTOR. See Section 2102.1.

CONSTANTLY ATTENDED LOCATION. See Section 902.1.

CONSTRUCTION DOCUMENTS. Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining *plan approval in accordance with section 106.*

CONSTRUCTION TYPES. See Section 602.

Type I. See Section 602.2.

Type II. See Section 602.2.

Type III. See Section 602.3.

Type IV. See Section 602.4.

Type V. See Section 602.5.

CONTINUOUS GAS DETECTION SYSTEM. See Section 415.2.

CONTROL AREA. See Section 307.2.

CONTROLLED LOW-STRENGTH MATERIAL. A self-compacted, cementitious material used primarily as a backfill in place of compacted fill.

CONVENTIONAL LIGHT-FRAME CONSTRUCTION. See Section 2302.1.

CORRIDOR. See Section 1002.1.

CORROSION RESISTANCE. The ability of a material to withstand deterioration of its surface or its properties when exposed to its environment.

CORROSIVE. See Section 307.2.

COURT. An open, uncovered space, unobstructed to the sky, bounded on three or more sides by exterior building walls or other enclosing devices.

COVER. See Section 2102.1.

COVERED MALL BUILDING. See Section 402.2.
Mall. See Section 402.2.
Open mall. See Section 402.2.
Open mall building. See Section 402.2.

CREDENTIALS. *The badge of office, certificate, or letter issued by a governmental department to an employee for the identification of said employee in the performance of his duties.*

CRIPPLE WALL. See Section 2302.1.

CRYOGENIC FLUID. See Section 307.2.

CUSTODIAL CARE. *Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. Custodial care includes care for occupants that have the ability to respond to emergency situations and evacuate at a slower rate and/or who have mental and psychiatric complications.*

DALLE GLASS. See Section 2402.1.

DAMPER. See Section 702.1.

DANGEROUS. See Section 3402.1.

DAY BOX. See Section 307.2.

DEAD LOADS. See Section 1602.1.

DECORATIVE GLASS. See Section 2402.1.

DECORATIVE MATERIALS. All materials applied over the building interior finish for decorative, acoustical or other effect (such as curtains, draperies, fabrics, streamers and surface coverings), and all other materials utilized for decorative effect (such as batting, cloth, cotton, hay, stalks, straw, vines, leaves, trees, moss and similar items), including foam plastics and materials containing foam plastics. Decorative materials do not include floor coverings, ordinary window shades,

interior finish and materials 0.025 inch (0.64 mm) or less in thickness applied directly to and adhering tightly to a substrate.

DEEP FOUNDATION. See Section 1802.1.

DEFLAGRATION. See Section 307.2.

DELUGE SYSTEM. See Section 902.1.

DESIGN DISPLACEMENT. See Section 1908.1.1.

DESIGN EARTHQUAKE GROUND MOTION. See Section 1613.2.

DESIGN FLOOD. See Section 1612.2.

DESIGN FLOOD ELEVATION. See Section 1612.2.

DESIGN STRENGTH. See Section 1602.1.

DESIGNATED SEISMIC SYSTEM. See Section 1702.1.

DETACHED BUILDING. See Section 415.2.

DETAILED PLAIN CONCRETE STRUCTURAL WALL. See Section 1908.1.1.

DETECTABLE WARNING. See Section 1102.1.

DETECTOR, HEAT. See Section 902.1.

DETONATION. See Section 307.2.

DETOXIFICATION FACILITY. See Section 308.3.1.

DIAPHRAGM. See Sections 1602.1 and 2302.1.
- **Diaphragm, blocked.** See Section 1602.1.
- **Diaphragm, boundary.** See Section 1602.1.
- **Diaphragm, chord.** See Section 1602.1.
- **Diaphragm, flexible.** See Section 1602.1.

Diaphragm, rigid. See Section 1602.1.
Diaphragm, unblocked. See Section 2302.1.

DIMENSIONS. See Section 2102.1.
Actual. See Section 2102.1.
Nominal. See Section 2102.1.
Specified. See Section 2102.1.

DISPENSING. See Section 307.2.

DOOR, BALANCED. See Section 1002.1.

DORMITORY. See Section 310.2.

DRAFTSTOP. See Section 702.1.

DRAG STRUT. See Section 2302.1.

DRILLED SHAFT. See Section 1802.1.
Socketed drilled shaft. See Section 1802.1.

DRY-CHEMICAL EXTINGUISHING AGENT. See Section 902.1.

DRY FLOODPROOFING. See Section 1612.2.

DURATION OF LOAD. See Section 1602.1.

DWELLING. *Any building that exclusively contains one, two, or three dwelling units, each of which may be occupied by a family and no more than five lodgers or boarders, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that is occupied for living purposes, physically separated from adjacent structures, and with an independent exit from each dwelling unit.*

DWELLING, ONE-, TWO-, OR THREE- FAMILY. *See Dwelling.*

DWELLING UNIT. A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation. *The dwelling unit may include any accessory space intended for the exclusive use of the occupants of an individual dwelling unit such as a private garage, greenhouse, etc.*

DWELLING UNIT OR SLEEPING UNIT, MULTISTORY. See Section 1102.1.

DWELLING UNIT OR SLEEPING UNIT, TYPE A. See Section 1102.1.

DWELLING UNIT OR SLEEPING UNIT, TYPE B. See Section 1102.1.

EGRESS COURT. See Section 1002.1.

ELEVATOR GROUP. See Section 902.1.

EMERGENCY ALARM SYSTEM. See Section 902.1.

I would not use such a generic term for such a specific scenario. Maybe something like SCHOOL EMERGENCY EVENT

EMERGENCY CONTROL STATION. See Section 415.2.

EMERGENCY ESCAPE AND RESCUE OPENING. See Section 1002.1.

EMERGENCY SITUATION. *An incident requiring a response to prevent loss of life or injury at a school building involving an active shooter or similar occurrence where normal evacuation could put occupants at risk, but shall not include fire, tornado/earthquake, building collapse, boiler failure, or similar occurrence caused by natural activity or building failure. See section 1008.1.9.11.*

EMERGENCY VOICE/ALARM COMMUNICATIONS. See Section 902.1.

EMPLOYEE WORK AREA. See Section 1102.1.

ENGINE-MOUNTED TANK. *A fuel tank furnished by the engine manufacturer or the emergency power system supplier and mounted on the engine, the engine-frame, or under as a subbase.*

EQUIPMENT PLATFORM. See Section 502.1.

ESSENTIAL FACILITIES. See Section 1602.1.

EXHAUSTED ENCLOSURE. See Section 415.2.

EXISTING CONSTRUCTION. See Section 1612.2.

EXISTING STRUCTURE. A structure *regulated by this code that was erected or one for which a plan approval* has been issued. See also Section 1612.2.

EXIT. See Section 1002.1.

EXIT ACCESS. See Section 1002.1.

EXIT ACCESS DOORWAY. See Section 1002.1.

EXIT DISCHARGE. See Section 1002.1.

EXIT DISCHARGE, LEVEL OF. See Section 1002.1.

EXIT ENCLOSURE. See Section 1002.1.

EXIT, HORIZONTAL. See Section 1002.1.

EXIT PASSAGEWAY. See Section 1002.1.

EXPANDED VINYL WALL COVERING. See Section 802.1.

EXPLOSION. See Section 307.2.

EXPLOSIVE. See Section 307.2.
- **High explosive.** See Section 307.2.
- **Low explosive.** See Section 307.2.
- **Mass detonating explosives.** See Section 307.2.
- **UN/DOTn Class 1 Explosives.** See Section 307.2.
  - **Division 1.1.** See Section 307.2.
  - **Division 1.2.** See Section 307.2.
  - **Division 1.3.** See Section 307.2.
  - **Division 1.4.** See Section 307.2.
  - **Division 1.5.** See Section 307.2.
  - **Division 1.6.** See Section 307.2.

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS). See Section 1402.1.

EXTERIOR INSULATION AND FINISH SYSTEM

(EIFS) WITH DRAINAGE. See Section 1402.1.

EXTERIOR SURFACES. See Section 2502.1.

EXTERIOR WALL. See Section 1402.1.

EXTERIOR WALL COVERING. See Section 1402.1.

EXTERIOR WALL ENVELOPE. See Section 1402.1.

F RATING. See Section 702.1.

FABRIC PARTITION. See Section 1602.1.

FABRICATED ITEM. See Section 1702.1.

FABRICATION AREA. See Section 415.2.

FACILITY. See Section 1102.1.

FACTORED LOAD. See Section 1602.1.

FIBER CEMENT SIDING. See Section 1402.1.

FIBER REINFORCED POLYMER. See Section 2602.1.
Fiberglass Reinforced Polymer. See Section 2602.1.

FIBERBOARD. See Section 2302.1.

FIRE ALARM BOX, MANUAL. See Section 902.1.

FIRE ALARM CONTROL UNIT. See Section 902.

FIRE ALARM SIGNAL. See Section 902.1.

FIRE ALARM SYSTEM. See Section 902.1.

FIRE AREA. See Section 902.1.

FIRE BARRIER. See Section 702.1.

FIRE CODE. *"Ohio Fire Code".*

FIRE COMMAND CENTER. See Section 902.1.

FIRE DAMPER. See Section 702.1.

FIRE DETECTOR, AUTOMATIC. See Section 902.1.

FIRE DOOR. See Section 702.1.

FIRE DOOR ASSEMBLY. See Section 702.1.

FIRE EXIT HARDWARE. See Section 1002.1.

FIRE LANE. A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

FIRE PARTITION. See Section 702.1.

FIRE PREVENTION. *The preventative measures which provide for the safe conduct and operation of hazardous processes, storage of combustible and flammable materials, conducting of fire drills and the maintenance of fire protection, detection and extinguishing service equipment and good housekeeping conditions.*

FIRE PROTECTION RATING. See Section 702.1.

FIRE PROTECTION SYSTEM. See Section 902.1.

FIRE RESISTANCE. See Section 702.1.

FIRE-RESISTANCE RATING. See Section 702.1.

FIRE-RESISTANT JOINT SYSTEM. See Section 702.1.

FIRE SAFETY FUNCTIONS. See Section 902.1.

FIRE SEPARATION DISTANCE. See Section 702.1.

FIRE WALL. See Section 702.1.

FIRE WINDOW ASSEMBLY. See Section 702.1.

FIREBLOCKING. See Section 702.1.

FIREPLACE. See Section 2102.1.

FIREPLACE THROAT. See Section 2102.1.

FIREWORKS. See Section 307.2.
Fireworks, 1.3G. See Section 307.2.
Fireworks, 1.4G. See Section 307.2.

FIXED BASE OPERATOR (FBO). See Section 412.2.

FLAME SPREAD. See Section 802.1.

FLAME SPREAD INDEX. See Section 802.1.

FLAMMABLE GAS. See Section 307.2.

FLAMMABLE LIQUEFIED GAS. See Section 307.2.

FLAMMABLE LIQUID. See Section 307.2.
Class IA. See Section 307.2.
Class IB. See Section 307.2.
Class IC. See Section 307.2.

FLAMMABLE MATERIAL. See Section 307.2.

FLAMMABLE SOLID. See Section 307.2.

FLAMMABLE VAPORS OR FUMES. See Section 415.2.

FLASH POINT. See Section 307.2.

FLIGHT. See Section 1002.1.

FLOOD OR FLOODING. See Section 1612.2.

FLOOD DAMAGE-RESISTANT MATERIALS. See Section 1612.2.

FLOOD HAZARD AREA. See Section 1612.2.

FLOOD HAZARD AREA SUBJECT TO HIGH-VELOCITY WAVE ACTION. See Section 1612.2.

FLOOD INSURANCE RATE MAP (FIRM). See Section 1612.2.

FLOOD INSURANCE STUDY. See Section 1612.2.

FLOODWAY. See Section 1612.2.

FLOOR AREA, GROSS. See Section 1002.1.

FLOOR AREA, NET. See Section 1002.1.

FLOOR FIRE DOOR ASSEMBLY. See Section 702.1.

FLY GALLERY. See Section 410.2.

FOAM-EXTINGUISHING SYSTEMS. See Section 902.1.

FOAM PLASTIC INSULATION. See Section 2602.1.

FOLDING AND TELESCOPIC SEATING. See Section 1002.1.

FOOD COURT. See Section 402.2.

FOUNDATION PIER. See Section 2102.1.

FRAME STRUCTURE. See Section 1614.2.

FUEL TANK. *A tank containing fuel for an engine(s) or appliance.*

FURNACE ROOM. *A room primarily utilized for the installation of fuel-burning space-heating and water-heating appliances other than boilers.*

GAS CABINET. See Section 415.2.

GAS ROOM. See Section 415.2.

GASEOUS HYDROGEN SYSTEM. See Section 421.2.

GLASS FIBERBOARD. See Section 721.1.1.

GLUED BUILT-UP MEMBER. See Section 2302.1.

GRADE FLOOR OPENING. A window or other opening located such that the sill height of the opening is not more than 44 inches (1118 mm) above or below the finished ground level adjacent to the opening.

GRADE (LUMBER). See Section 2302.1.

GRADE PLANE. See Section 502.1.

GRANDSTAND. See Section 1002.1.

GRIDIRON. See Section 410.2.

GROSS LEASABLE AREA. See Section 402.2.

GROUTED MASONRY. See Section 2102.1.
Grouted hollow-unit masonry. See Section 2102.1.
Grouted multiwythe masonry. See Section 2102.1.

GUARD. See Section 1002.1.

GYPSUM BOARD. See Section 2502.1.

GYPSUM PLASTER. See Section 2502.1.

GYPSUM VENEER PLASTER. See Section 2502.1.

HABITABLE SPACE. A space in a building for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces.

HALOGENATED EXTINGUISHING SYSTEMS. See Section 902.1.

HANDLING. See Section 307.2.

HANDRAIL. See Section 1002.1.

HARDBOARD. See Section 2302.1.

HAZARDOUS MATERIALS. See Section 307.2.

HAZARDOUS PRODUCTION MATERIAL (HPM). See Section 415.2.

HEAD JOINT. See Section 2102.1.

HEALTH HAZARD. See Section 307.2.

HEIGHT, BUILDING. See Section 502.1.

HEIGHT, WALLS. See Section 2102.1.

HELICAL PILE. See Section 1802.1.

HELIPORT. See Section 412.2.

HELISTOP. See Section 412.2.

HIGH-RISE BUILDING. A building with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

HIGHLY TOXIC. See Section 307.2.

HISTORIC BUILDINGS. Buildings that are listed in or eligible for listing in the "National Register of Historic Places," or designated as historic *by certified local governments in accordance with the National Historic Preservation Act of 1966 as amended.* See *3409.*

HOME. *An institution, residence, or facility, required to be licensed by the Ohio Department of Health, that provides, for a period of more than twenty-four hours, whether for a consideration or not, accommodations to three or more unrelated individuals who are dependent upon the services of others, including a nursing home, residential care facility, home for the aging, a veterans' home operated under Chapter 5907. of the Revised Code, and a county home or district home that is or has been licensed as a residential care facility. For the purposes of licensure of homes, pursuant to Chapter 3721. of the Revised Code, any residence, institution, hotel, congregate housing project, or similar facility that meets the definition of a home under this section is such a home regardless of how the facility holds itself out to the public.*

HOME, COUNTY AND DISTRICT. *A county home or district home operated under Chapter 5155. of the Revised Code.*

HOME FOR THE AGING. *A home that provides services as a residential care facility and a nursing home, except that the home provides its services only to individuals who are dependent on the services of others by reason of both age and physical or mental impairment. The part or unit of a home for the aging that provides services only as a residential care facility is required to be licensed by the Ohio Department of Health as a residential care facility. The part or unit that may provide skilled nursing care beyond the extent authorized by section 3721.011 [3721.01.1] of the Revised Code is required to be licensed as a nursing home.*

HOME, NURSING. *A home used for the reception and care of individuals who by reason of illness or physical or mental impairment require skilled nursing care and of individuals who require personal care services but not skilled nursing care. A nursing home is required to be licensed by the Ohio Department of Health to provide personal care services and skilled nursing care.*

HOME, TYPE A FAMILY DAY-CARE. *A home where the administrator permanently resides and where care is provided for seven to twelve children under six years of age or four to twelve children when at least four are under two years of age. Licensure is required of these homes by the Ohio Department of Job and Family Services when at least one of the children cared for is not a sibling of the others and the home is not the permanent residence of the children. These homes are also referred to as Type A Homes and Type A Child Care and are exempt from the rules of the board. Also see Chapter 5104. of the Revised Code*

HOME, TYPE B FAMILY DAY-CARE. *A home where the administrator permanently resides and where care is provided for one to six children under six years of age with no more than three children under two years of age when at least one of the children cared for is not a sibling of the others and the home is not the permanent residence of the children. These homes are also referred to as Type B Homes and Type B Child Care and are exempt from the rules of the board. Also see Chapter 5104. of the Revised Code.*

HORIZONTAL ASSEMBLY. See Section 702.1.

HOSPITALS AND MENTAL HOSPITALS. See Section 308.3.1.

HOUSING UNIT. See Section 408.1.1.

HPM FLAMMABLE LIQUID. See Section 415.2.

HPM ROOM. See Section 415.2. **HURRICANE-PRONE REGIONS.** See Section 1609.2.

HYDROGEN CUTOFF ROOM. See Section 421.2.

IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH). See Section 415.2.

IMPACT LOAD. See Section 1602.1.

INCAPABLE OF SELF-PRESERVATION. *Persons because of age, physical limitations, mental limitations, chemical dependency, or medical treatment who cannot respond as an individual to an emergency situation.*

INCOMPATIBLE MATERIALS. See Section 307.2.

INDUSTRIALIZED UNITS. *See section 117.*

INERT GAS. See Section 307.2.

INITIATING DEVICE. See Section 902.1.

INSPECTION CERTIFICATE. See Section 1702.1.

INSTITUTION OF HIGHER EDUCATION. *A state institution of higher education as defined in section 3345.011 of the Revised Code, a private nonprofit college or university located in this state that possesses a certificate of authorization issued pursuant to Chapter 1713. of the Revised Code, or a school located in this state that possesses a certificate of registration and one or more program authorizations issued by the state board of career colleges and schools under Chapter 3322. of the Revised Code. See School Building.*

INTENDED TO BE OCCUPIED AS A RESIDENCE. See Section 1102.1.

INTERIOR FINISH. See Section 802.1.

INTERIOR FLOOR FINISH. See Section 802.1.

INTERIOR FLOOR-WALL BASE. See Section 802.1.

INTERIOR SURFACES. See Section 2502.1.

INTERIOR WALL AND CEILING FINISH. See Section 802.1.

INTERLAYMENT. See Section 1502.1.

INTUMESCENT FIRE-RESISTANT COATINGS. See Section 1702.1.

JOINT. See Section 702.1.

JURISDICTION. The *authority to enforce this code by municipal corporations, townships or counties certified by the board in accordance with section 3781.10 of the Revised Code or the division of industrial compliance in the department of commerce.*

LABEL. An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of an approved agency and that indicates that the representative sample of the product or material has been tested and evaluated by an approved agency (see Section 1703.5 and "Inspection certificate," "Manufacturer's designation" and "Mark").

LABELED. Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that

maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

LIGHT-DIFFUSING SYSTEM. See Section 2602.1.

LIGHT-FRAME CONSTRUCTION. A type of construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood or cold-formed steel framing members.

LIGHT-TRANSMITTING PLASTIC ROOF PANELS. See Section 2602.1.

LIGHT-TRANSMITTING PLASTIC WALL PANELS. See Section 2602.1.

LIMIT STATE. See Section 1602.1.

LIMITED SPRAYING SPACE. *An area in which spraying operations for touch-up or spot painting of a surface area of nine square feet (0.84 m^2) or less are conducted.*

LIQUID. See Section 415.2.

LIQUID STORAGE ROOM. See Section 415.2.

LIQUID USE, DISPENSING AND MIXING ROOM. See Section 415.2.

LISTED. Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

LIVE LOADS. See Section 1602.1.

LIVE LOADS (ROOF). See Section 1602.1.

LIVE/WORK UNIT. *A dwelling unit or sleeping unit in which a significant portion of the space includes a nonresidential use that is operated by the tenant. See Section 419.*

LOAD AND RESISTANCE FACTOR DESIGN (LRFD). See Section 1602.1.

LOAD EFFECTS. See Section 1602.1.

LOAD FACTOR. See Section 1602.1.

LOADS. See Section 1602.1.

LOT. A portion or parcel of land considered as a unit.

LOT LINE. A line dividing one lot from another, or from a street or any public place.

LOWER FLAMMABLE LIMIT (LFL). See Section 415.2.

LOWEST FLOOR. See Section 1612.2.

MAIN WINDFORCE-RESISTING SYSTEM. See Section 1702.1.

MANUAL FIRE ALARM BOX. See Section 902.1.

MANUFACTURER'S DESIGNATION. An identification applied on a product by the manufacturer indicating that a product or material complies with a specified standard or set of rules (see also "Inspection certificate," "Label" and "Mark").

MARK. An identification applied on a product by the manufacturer indicating the name of the manufacturer and the function of a product or material (see also "Inspection certificate," "Label" and "Manufacturer's designation").

MARQUEE. A permanent roofed structure *projecting over an entrance attached to and supported by a building for the purpose of supporting a marquee sign.*

MASONRY. See Section 2102.1.
- **Ashlar masonry.** See Section 2102.1.
- **Coursed ashlar.** See Section 2102.1.
- **Glass unit masonry.** See Section 2102.1.
- **Plain masonry.** See Section 2102.1.
- **Random ashlar.** See Section 2102.1.
- **Reinforced masonry.** See Section 2102.1.
- **Solid masonry.** See Section 2102.1.
- **Unreinforced (plain) masonry.** See Section 2102.1.

MASONRY UNIT. See Section 2102.1.
Clay. See Section 2102.1.
Concrete. See Section 2102.1.
Hollow. See Section 2102.1.
Solid. See Section 2102.1.

MASTIC FIRE-RESISTANT COATINGS. See Section 1702.1.

MAXIMUM CONSIDERED EARTHQUAKE GROUND MOTION. See Section 1613.2.

MEANS OF EGRESS. See Section 1002.1.

MECHANICAL-ACCESS OPEN PARKING GARAGES. See Section 406.3.2.

MECHANICAL CODE. *The "Ohio Mechanical Code."*

MECHANICAL EQUIPMENT SCREEN. See Section 1502.1.

MECHANICAL SYSTEMS. See Section 1613.2.

MEMBRANE-COVERED CABLE STRUCTURE. See Section 3102.2.

MEMBRANE-COVERED FRAME STRUCTURE. See Section 3102.2.

MEMBRANE PENETRATION. See Section 702.1.

MEMBRANE-PENETRATION FIRESTOP. See Section 702.1.

MENTAL HOSPITALS. See Section 308.3.1.

MERCHANDISE PAD. See Section 1002.1.

METAL COMPOSITE MATERIAL (MCM). See Section1402.1.

METAL COMPOSITE MATERIAL (MCM) SYSTEM. See Section 1402.1.

METAL ROOF PANEL. See Section 1502.1.

METAL ROOF SHINGLE. See Section 1502.1.

MEZZANINE. See Section 502.1.

MICROPILE. See Section 1802.1.

MINERAL BOARD. See Section 721.1.1.

MINERAL FIBER. See Section 702.1.

MINERAL WOOL. See Section 702.1.

MINOR REPAIR. *See REPAIR, MINOR.*

MODIFIED BITUMEN ROOF COVERING. See Section 1502.1.

MORTAR. See Section 2102.1.

MORTAR, SURFACE-BONDING. See Section 2102.1.

MULTILEVEL ASSEMBLY SEATING. See Section 1102.1.

MULTIPLE-STATION ALARM DEVICE. See Section 902.1.

MULTIPLE-STATION SMOKE ALARM. See Section 902.1.

MULTISTORY UNITS. See Section 1102.1.

NAILING, BOUNDARY. See Section 2302.1.

NAILING, EDGE. See Section 2302.1.

NAILING, FIELD. See Section 2302.1.

NATURAL GAS PROCESSING FACILITIES – *Installations, including associated buildings, pipes, valves, tanks, and other equipment, used to separate various fluids, hydrocarbons, natural gas liquids, and impurities from the raw natural gas, manufacturing residue gas suitable for transmission and distribution to end users.*

NATURAL GAS LIQUIDS FRACTIONATION FACILITIES *– Installations, including associated buildings, pipes, valves, tanks, and other equipment, used for the separation of mixtures of light hydrocarbons or natural gas liquids into individual, purity natural gas liquid products, which include ethane, propane, normal butane, iso-butane, and natural gasolines.*

NATURALLY DURABLE WOOD. See Section 2302.1.
Decay resistant. See Section 2302.1.
Termite resistant. See Section 2302.1.

NOMINAL LOADS. See Section 1602.1.

NOMINAL SIZE (LUMBER). See Section 2302.1.

NONCOMBUSTIBLE MEMBRANE STRUCTURE. See Section 3102.2.

NORMAL TEMPERATURE AND PRESSURE (NTP). See Section 415.2.

NOSING. See Section 1002.1.

NOTIFICATION ZONE. See Section 902.1.

NUISANCE ALARM. See Section 902.1.

NURSING HOMES. See Section 308.3.1.

OCCUPANCY. *The purpose for which a building, or portion thereof, is used.*

OCCUPANCY, CHANGE OF. *See section 3402.*

OCCUPANCY CATEGORY. See Section 1602.1.

OCCUPANT LOAD. See Section 1002.1.

OCCUPIABLE SPACE. A room or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes or in which occupants are engaged at labor, and which is equipped with means of egress and light and ventilation facilities meeting the requirements of this code.

OPEN PARKING GARAGE. See Section 406.3.2.

OPEN SYSTEM. See Section 307.2.

OPERATING BUILDING. See Section 307.2.

ORDINARY PRECAST STRUCTURAL WALL. See Section 1908.1.1.

ORDINARY REINFORCED CONCRETE STRUCTURAL WALL. See Section 1908.1.1.

ORDINARY STRUCTURAL PLAIN CONCRETE WALL. See Section 1908.1.1.

ORGANIC PEROXIDE. See Section 307.2.
- **Class I.** See Section 307.2.
- **Class II.** See Section 307.2.
- **Class III.** See Section 307.2.
- **Class IV.** See Section 307.2.
- **Class V.** See Section 307.2.
- **Unclassified detonable.** See Section 307.2.

ORTHOGONAL. See Section 1613.2.

OTHER STRUCTURES. See Section 1602.1.

OWNER. Any person, agent, firm or corporation having a legal or equitable interest in the property.

OXIDIZER. See Section 307.2.
- **Class 4.** See Section 307.2.
- **Class 3.** See Section 307.2.
- **Class 2.** See Section 307.2.
- **Class 1.** See Section 307.2.

OXIDIZING GAS. See Section 307.2.

PANEL (PART OF A STRUCTURE). See Section 1602.1.

PANIC HARDWARE. See Section 1002.1.

PARTICLEBOARD. See Section 2302.1.

PENETRATION FIRESTOP. See Section 702.1.

PENTHOUSE. See Section 1502.1.

PERMIT. *Deleted*

PERSON. An individual, heirs, executors, administrators or assigns, and also includes a firm, partnership or corporation, its or their successors or assigns, or the agent of any of the aforesaid. *Whenever the word "person" is used in any section of this code prescribing a penalty or fine, as to partnerships or associations, the word shall include the partners or members thereof, and as to corporations, shall include the officer, agents or members thereof who are responsible for any violation of such section.*

PERSONAL CARE SERVICE. See Section 310.2.

PHOTOLUMINESCENT. See Section 1002.1.

PHYSICAL HAZARD. See Section 307.2.

PHYSIOLOGICAL WARNING THRESHOLD LEVEL. See Section 415.2.

PINRAIL. See Section 410.2.

PLASTIC, APPROVED. See Section 2602.1.

PLASTIC GLAZING. See Section 2602.1.

PLATFORM. See Section 410.2.

PLUMBING CODE. *The "Ohio Plumbing Code."*

POSITIVE ROOF DRAINAGE. See Section 1502.1.

POWER PIPING. *Piping systems and their component parts that are not building services piping systems, and that may be installed within electric power generating stations, industrial and institutional plants, utility geothermal heating systems, and central and district heating and cooling systems. Power piping includes, but is not limited to, piping used in the distribution of plant and process steam at boiler pressures greater than fifteen pounds per square inch gauge, high temperature water piping from high pressure and high temperature boilers, power boiler steam condensate piping, high pressure and high temperature water condensate piping, and compressed air and hydraulic piping upstream of the first stop valve off a system distribution header.*

PREFABRICATED WOOD I-JOIST. See Section 2302.1.

PREMISES. *A lot, plot or parcel of land, including any structure thereon.*

PRESTRESSED MASONRY. See Section 2102.1.

PRIMARY FUNCTION. See Section 3402.1.

PRIMARY STRUCTURAL FRAME. The primary structural frame shall include all of the following structural members:

1 The columns;
2 Structural members having direct connections to the columns, including girders, beams, trusses and spandrels;
3 Members of the floor construction and roof construction having direct connections to the columns; and
4 Bracing members that are essential to the vertical stability of the primary structural frame under gravity loading shall be considered part of the primary structural frame whether or not the bracing member carries gravity loads.

PRISM. See Section 2102.1.

PRIVATE SCHOOL. *A chartered nonpublic school or a nonchartered nonpublic school. See School Building.*

PROCESS PIPING. *Piping systems and their component parts that are not building services or power piping systems and that may be installed in petroleum*

refineries; chemical, pharmaceutical, textile, paper, semiconductor, and cryogenic plants; and related processing plants and terminals.

PROCESSING EQUIPMENT. *Equipment, machinery and devices specifically intended and used exclusively for manufacturing and other similar purposes. Processing equipment does not include the building electrical service and distribution system, mechanical and plumbing systems related to space heating, air conditioning, ventilation, water distribution and sanitation or other systems regulated by board rules.*

PROSCENIUM WALL. See Section 410.2.

PUBLIC ENTITY. *(1) Any state or local government; (2)Any department, agency, special purpose district, or other instrumentality of Ohio or local government; and (3) The national railroad passenger corporation, and any commuter authority (as defined in section 103(8) of the "Rail Passenger Service Act").*

PUBLIC ENTRANCE. See Section 1102.1.

PUBLIC SCHOOL. *Any school operated by a school district board of education, any community school established under Chapter 3314. of the Revised Code, any STEM school established under Chapter 3326. of the Revised Code, and any college-preparatory boarding school established under Chapter 3328. of the Revised Code. See School Building.*

I presume this includes VO-TEC Schools??

PUBLIC-USE AREAS. See Section 1102.1.

PUBLIC WAY. See Section 1002.1.

PYROPHORIC. See Section 307.2.

PYROTECHNIC COMPOSITION. See Section 307.2.

RAMP. See Section 1002.1.

RAMP-ACCESS OPEN PARKING GARAGES. See Section 406.3.2.

RECORD DRAWINGS. See Section 902.1.

REFLECTIVE PLASTIC CORE FOIL INSULATION.

An insulation material packaged in rolls, that is less than 0.5 inches thick, with at least one exterior low emittance surface (0.1 or less) and a core material containing voids or cells.

REGISTERED DESIGN PROFESSIONAL. *Any architect holding a certificate issued under sections 4703.10 and 4703.36 of the Revised Code or any engineer holding a certificate issued under section 4733.14 of the Revised Code.*

REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. *Deleted*

RELIGIOUS WORSHIP, PLACE OF. A building or portion thereof intended for the performance of religious services.

REPAIR. The reconstruction or renewal of any part of an existing building for the purpose of its maintenance.

REPAIR, MINOR. *The reconstruction or renewal of any part of an existing building for the purpose of its maintenance when the work has limited impact on access, safety or health. Minor repairs do not include the cutting away of any wall, partition or portions of walls, the removal or cutting of any structural beam or load bearing support, or the removal or change of any required element of accessibility, means of egress, or rearrangement of parts of a structure affecting the egress requirements. Minor repairs do not include addition to, alteration of, replacement or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas, soil, waste, vent or similar piping, electric wiring or mechanical or other work affecting public health or general safety.*

REROOFING. See Section 1502.1.

RESIDENTIAL AIRCRAFT HANGAR. See Section 412.2.

RESIDENTIAL CARE/ASSISTED LIVING FACILITIES. See Section 310.2.

RESISTANCE FACTOR. See Section 1602.1.

RESTRICTED ENTRANCE. See Section 1102.1.

RETRACTABLE AWNING. See Section 3105.2.

REVISED CODE. *All statutes of a permanent and general nature of this state as revised and consolidated into general provisions, titles, chapters, and sections.*

ROOF ASSEMBLY. See Section 1502.1.

ROOF COVERING. See Section 1502.1.

ROOF COVERING SYSTEM. See Section 1502.1.

ROOF DECK. See Section 1502.1.

ROOF RECOVER. See Section 1502.1.

ROOF REPAIR. See Section 1502.1.

ROOF REPLACEMENT. See Section 1502.1.

ROOF VENTILATION. See Section 1502.1.

ROOFTOP STRUCTURE. See Section 1502.1.

RUBBLE MASONRY. See Section 2102.1.
Coursed rubble. See Section 2102.1.
Random rubble. See Section 2102.1.
Rough or ordinary rubble. See Section 2102.1.

RUNNING BOND. See Section 2102.1.

SAFE. *As applied to a building, means free from danger or hazard to the life, safety, health or welfare of persons occupying or frequenting it, or of the public, and from danger of settlement, movement, disintegration, or collapse, whether such danger arises from the method or materials of its construction or from equipment installed therein, for the purpose of lighting, heating, the transmission or utilization of electric current, or from its location or otherwise.*

SALLYPORT. *See section 408.1.1.*

SANITARY. *As applied to a building, means free from danger or hazard to the health of persons occupying or frequenting it or to that of the public, if such danger arises from the method or materials of its construction or from any equipment installed therein for the purpose of lighting, heating, ventilating, or plumbing.*

SALLYPORT. See Section 408.1.1.

SCISSOR STAIR. See Section 1002.1.

SCHOOL BUILDING. *A structure used for the instruction of students by a public or private school or institution of higher education.*

SCUPPER. See Section 1502.1.

SECONDARY MEMBERS. The following structural members shall be considered secondary members and not part of the primary structural frame:

1 Structural members not having direct connections to the columns;

2 Members of the floor construction not having direct connections to the columns; and

3 Bracing members other than those that are part of the primary structural frame.

SEISMIC DESIGN CATEGORY. See Section 1613.2.

SEISMIC-FORCE-RESISTING SYSTEM. See Section 1613.2.

SELF-CLOSING. See Section 702.1.

SELF-LUMINOUS. See Section 1002.1.

SELF-SERVICE STORAGE FACILITY. See Section 1102.1.

SERIOUS HAZARD. *A hazard of considerable consequence to safety or health through the design, location, construction, or equipment of a building, or the condition thereof, which hazard has been established through experience to be of certain or probable consequence, or which can be determined to be, or which is obviously such a hazard.*

SERVICE CORRIDOR. See Section 415.2.

SERVICE ENTRANCE. See Section 1102.1.

SHAFT. See Section 702.1.

SHAFT ENCLOSURE. See Section 702.1.

SHALLOW FOUNDATION. See Section 1802.1.

SHEAR WALL. See Sections 2102.1 and 2302.1.
Detailed plain masonry shear wall. See Section 2102.1.
Intermediate prestressed masonry shear wall. See Section 2102.1.
Intermediate reinforced masonry shear wall. See Section 2102.1.
Ordinary plain masonry shear wall. See Section 2102.1.
Ordinary plain prestressed masonry shear wall. See Section 2102.1.
Ordinary reinforced masonry shear wall. See Section2102.1.
Perforated shear wall. See Section 2302.1.
Perforated shear wall segment. See Section 2302.1.
Special prestressed masonry shear wall. See Section 2102.1.
Special reinforced masonry shear wall. See Section 2102.1.

SHELL. See Section 2102.1.

SINGLE-PLY MEMBRANE. See Section 1502.1.

SINGLE-STATION SMOKE ALARM. See Section 902.1.

SITE. See Section 1102.1.

SITE CLASS. See Section 1613.2.

SITE COEFFICIENTS. See Section 1613.2.

SITE-FABRICATED STRETCH SYSTEM. See Section 802.1.

SKYLIGHT, UNIT. A factory-assembled, glazed fenestration unit, containing one panel of glazing material that allows for natural lighting through an opening in the roof assembly while preserving the weather-resistant barrier of the roof.

SKYLIGHTS AND SLOPED GLAZING. Glass or other transparent or translucent glazing material installed at a slope of 15 degrees (0.26 rad) or more from vertical. Glazing material in skylights, including unit skylights, solariums, sunrooms, roofs and sloped walls, are included in this definition.

SLEEPING UNIT. A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit are not sleeping units.

SMOKE ALARM. See Section 902.1.

SMOKE BARRIER. See Section 702.1.

SMOKE COMPARTMENT. See Section 702.1.

SMOKE DAMPER. See Section 702.1.

SMOKE DETECTOR. See Section 902.1.

SMOKE-DEVELOPED INDEX. See Section 802.1.

SMOKE-PROTECTED ASSEMBLY SEATING. See Section 1002.1.

SMOKEPROOF ENCLOSURE. See Section 902.1.

SOLID. See Section 415.2.

SPECIAL AMUSEMENT BUILDING. See Section 411.2.

SPECIAL FLOOD HAZARD AREA. See Section 1612.2.

SPECIAL INSPECTION. See Section 1702.1.

SPECIAL INSPECTION AGENCY. *See Section 1702.1.*

SPECIAL INSPECTION, CONTINUOUS. See Section 1702.1.

SPECIAL INSPECTION, PERIODIC. See Section 1702.1.

SPECIAL INSPECTOR. *See Section 1702.1.*

SPECIAL STRUCTURAL WALL. See Section 1908.1.1.

SPECIFIED. See Section 2102.1.

SPECIFIED COMPRESSIVE STRENGTH OF MASONRY (f'm). See Section 2102.1.

SPLICE. See Section 702.1.

SPRAY BOOTH. *A mechanically ventilated appliance of varying dimensions and construction provided to enclose or accommodate a spraying operation and to confine and limit the escape of spray vapor and residue and to exhaust it safely.*

SPRAY ROOM. *A room designed to accommodate spraying operations constructed in accordance with this code and separated from the remainder of the building by a minimum one-hour fire barrier.*

SPRAYED FIRE-RESISTANT MATERIALS. See Section 1702.1.

SPRAYING SPACE. *An area in which dangerous quantities of flammable vapors or combustible residues, dusts or deposits are present due to the operation of spraying processes. The building official is authorized to define the limits of the spraying space in any specific case.*

SRO (Single room occupancy) FACILITY. *A facility with more than five sleeping rooms that is kept, used, maintained, advertised or held out to the public as a place where each individual is provided with separate sleeping accommodations which is intended to be the permanent residence of a single occupant. SRO facilities are required to be licensed by the Ohio Fire Marshal and do not include agricultural labor camps, apartment houses, lodging houses, rooming houses or college dormitories.*

STACK BOND. See Section 2102.1.

STAGE. See Section 410.2.

STAIR. See Section 1002.1.

STAIRWAY. See Section 1002.1.

STAIRWAY, EXTERIOR. See Section 1002.1.

STAIRWAY, INTERIOR. See Section 1002.1.

STAIRWAY, SPIRAL. See Section 1002.1.

STANDPIPE SYSTEM, CLASSES OF. See Section 902.1.
Class I system. See Section 902.1.
Class II system. See Section 902.1.
Class III system. See Section 902.1.

STANDPIPE, TYPES OF. See Section 902.1.
Automatic dry. See Section 902.1.
Automatic wet. See Section 902.1.
Manual dry. See Section 902.1.
Manual wet. See Section 902.1.
Semiautomatic dry. See Section 902.1.

START OF CONSTRUCTION. See Section 1612.2.

STEEL CONSTRUCTION, COLD-FORMED. See Section 2202.1.

STEEL JOIST. See Section 2202.1.

STEEL MEMBER, STRUCTURAL. See Section 2202.1.

STEEP SLOPE. A roof slope greater than two units vertical in 12 units horizontal (17-percent slope).

STONE MASONRY. See Section 2102.1.
Ashlar stone masonry. See Section 2102.1.
Rubble stone masonry. See Section 2102.1.

STORAGE, HAZARDOUS MATERIALS. See Section 415.2.

STORM SHELTER. See Section 423.2.
Community storm shelter. See Section 423.2.
Residential storm shelter. See Section 423.2.

STORY. That portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above (also see "Basement," "Mezzanine" and Section 502.1). It is measured as the vertical distance from top to top of two successive tiers of beams or finished floor surfaces and, for the topmost story, from the top of the floor finish to the top of the ceiling joists or, where there is not a ceiling, to the top of the roof rafters.

STORY ABOVE GRADE PLANE. Any story having its finished floor surface entirely above grade plane, or in which the finished surface of the floor next above is:

1. More than 6 feet (1829 mm) above grade plane; or
2. More than 12 feet (3658 mm) above the finished ground level at any point.

STRENGTH. See Section 2102.1.
Design strength. See Section 2102.1.
Nominal strength. See Sections 1602.1 and 2102.1.
Required strength. See Sections 1602.1 and 2102.1.

STRENGTH DESIGN. See Section 1602.1.

STRUCTURAL COMPOSITE LUMBER. See Section 2302.1.
Laminated veneer lumber (LVL). See Section 2302.1.
Parallel strand lumber (PSL). See Section 2302.1.

STRUCTURAL GLUED-LAMINATED TIMBER. See Section 2302.1.

STRUCTURAL OBSERVATION. See Section 1702.1.

STRUCTURE. That which is built or constructed.

SUBDIAPHRAGM. See Section 2302.1.

SUBSTANTIAL DAMAGE. See Section 1612.2.

SUBSTANTIAL IMPROVEMENT. See Section 1612.2.

SUBSTANTIAL STRUCTURAL DAMAGE. See Section 3402.1.

SUITE. See Section 1002.1.

SUNROOM. See Section 1202.1.

SUPERVISING STATION. See Section 902.1.

SUPERVISORY SERVICE. See Section 902.1.

SUPERVISORY SIGNAL. See Section 902.1.

SUPERVISORY SIGNAL-INITIATING DEVICE. See Section 902.1.

SWIMMING POOLS. See Section 3109.2.

T RATING. See Section 702.1.

TECHNICALLY INFEASIBLE. See Section 3402.1.

TEMPORARY DOOR LOCKING DEVICE. *An assembly of parts intended to be engaged by a trained school staff member in a school building for the purpose of preventing both ingress and egress through a door in a school building for a finite period of time in an emergency situation and during active shooter drills. See Section 1008.1.9.11.*

This an overall bad idea and leaves the types of devices wide open that might be considered. See comment later on that establishes some performance criteria.

TENT. A structure, ops, constructed of fabric c ir or the contents it protects

THERMAL ISOLATION. See Section 1202.1.

THERMOPLASTIC MATERIAL. See Section 2602.1.

THERMOSETTING MATERIAL. See Section 2602.1.

THIN-BED MORTAR. See Section 2102.1.

THROUGH PENETRATION. See Section 702.1.

THROUGH-PENETRATION FIRESTOP SYSTEM. See Section 702.1.

TIE-DOWN (HOLD-DOWN). See Section 2302.1.

TIE, LATERAL. See Section 2102.1.

TIE, WALL. See Section 2102.1.

TILE. See Section 2102.1.

TILE, STRUCTURAL CLAY. See Section 2102.1.

TIRES, BULK STORAGE OF. See Section 902.1.

TOWNHOUSE. A single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof.

TOXIC. See Section 307.2.

TRANSIENT, *PRIMARILY*. See Section 310.2.

TRANSIENT AIRCRAFT. See Section 412.2.

TREATED WOOD. See Section 2302.1.
Fire-retardant-treated wood. See Section 2302.1.
Preservative-treated wood. See Section 2302.1.

TRIM. See Section 802.1.

TROUBLE SIGNAL. See Section 902.1.

TYPE A FAMILY DAY-CARE HOME. *See HOME, TYPE A FAMILY DAY-CARE*

TYPE B FAMILY DAY-CARE HOME. *See HOME, TYPE B FAMILY DAY-CARE*

TYPE A UNIT. See Section 1102.1.

TYPE B UNIT. See Section 1102.1.

UNDERLAYMENT. See Section 1502.1.

UNSTABLE (REACTIVE) MATERIAL. See Section 307.2.
Class 4. See Section 307.2.

Class 3. See Section 307.2.
Class 2. See Section 307.2.
Class 1. See Section 307.2.

USE (MATERIAL). See Section 415.2.

VAPOR AREA. *An area containing flammable vapors in the vicinity of dip tanks, drain boards or associated drying, conveying or other equipment during operation or shutdown periods. The code official is authorized to determine the extent of the vapor area, taking into consideration the characteristics of the liquid, the degree of sustained ventilation and the nature of the operations.*

VAPOR-PERMEABLE MEMBRANE. A material or covering having a permeance rating of 5 perms ($52.9 \cdot 10^{-10}$ kg/Pa • s • m^2) or greater, when tested in accordance with the dessicant method using Procedure A of ASTM E 96. A vapor-permeable material permits the passage of moisture vapor.

VAPOR RETARDER CLASS. A measure of a material or assembly's ability to limit the amount of moisture that passes
through that material or assembly. Vapor retarder class shall be defined using the desiccant method of ASTM E 96 as follows:

Class I: 0.1 perm or less.

Class II: 0.1 < perm ≤ 1.0 perm.

Class III: 1.0 < perm ≤ 10 perm.

VEHICLE BARRIER SYSTEM. See Section 1602.1.

VEHICULAR GATE. See Section 3110.2.

VENEER. See Section 1402.1.

VENTILATION. The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

VINYL SIDING. See Section 1402.1.

VISIBLE ALARM NOTIFICATION APPLIANCE. See Section 902.1.

WALKWAY, PEDESTRIAN. A walkway used exclusively as a pedestrian

trafficway.

WALL. See Section 2102.1.
Cavity wall. See Section 2102.1.
Composite wall. See Section 2102.1.
Dry-stacked, surface-bonded wall. See Section 2102.1.
Masonry-bonded hollow wall. See Section 2102.1.
Parapet wall. See Section 2102.1.

WALL, LOAD-BEARING. Any wall meeting either of the following classifications:

1 Any metal or wood stud wall that supports more than 100 pounds per linear foot (1459 N/m) of vertical load in addition to its own weight.
2 Any masonry or concrete wall that supports more than 200 pounds per linear foot (2919 N/m) of vertical load in addition to its own weight.

WALL, NONLOAD-BEARING. Any wall that is not a load-bearing wall.

WALL PIER. See Section 1908.1.1.

WATER-REACTIVE MATERIAL. See Section 307.2.
Class 3. See Section 307.2.
Class 2. See Section 307.2.
Class 1. See Section 307.2.

WATER-RESISTIVE BARRIER. See Section 1402.1.

WEATHER-EXPOSED SURFACES. See Section 2502.1.

WEB. See Section 2102.1.

WET-CHEMICAL EXTINGUISHING SYSTEM. See Section 902.1.

WHEELCHAIR SPACE. See Section 1102.1.

WIND-BORNE DEBRIS REGION. See Section 1609.2.

WINDER. See Section 1002.1.

WIRE BACKING. See Section 2502.1.

WIRELESS PROTECTION SYSTEM. See Section 902.1.

WOOD SHEAR PANEL. See Section 2302.1.

WOOD STRUCTURAL PANEL. See Section 2302.1.
Composite panels. See Section 2302.1.
Oriented strand board (OSB). See Section 2302.1.
Plywood. See Section 2302.1.

WORKSTATION. See Section 415.2.

WYTHE. See Section 2102.1.

YARD. An open space, other than a court, unobstructed from the ground to the sky, except where specifically provided by this code, on the lot on which a building is situated.

ZONE. See Section 902.1.

ZONE, NOTIFICATION. See Section 902.1.

4101:1-10-01 Means of egress.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:1-35-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:1-1-01 of the Administrative Code.]

SECTION 1001
ADMINISTRATION

1001.1 General. Buildings or portions thereof shall be provided with a means of egress system as required by this chapter. The provisions of this chapter shall control the design, construction and arrangement of means of egress components required to provide an approved means of egress from structures and portions thereof. *Where Chapter 11 and this chapter have provisions relating to the same content, both chapters shall apply.*

1001.2 Minimum requirements. It shall be unlawful to alter a building or structure in a manner that will reduce the number of exits or the capacity of the means of egress to less than required by this code.

1001.3 Maintenance. Means of egress shall be maintained in accordance with the *fire code.*

1001.4 Fire safety and evacuation plans. *Fire safety and evacuation plans shall be provided for all occupancies and buildings where required by the fire code. Such fire safety and evacuation plans shall comply with the applicable provisions of Sections 401.2 and 404 of the fire code.*

SECTION 1002
DEFINITIONS

1002.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

ACCESSIBLE MEANS OF EGRESS. A continuous and unobstructed way of egress travel from any accessible point in a building or facility to a public way.

AISLE. An unenclosed exit access component that defines and provides a path of egress travel.

AISLE ACCESSWAY. That portion of an exit access that leads to an aisle.

ALTERNATING TREAD DEVICE. A device that has a series of steps between 50 and 70 degrees (0.87 and 1.22 rad) from horizontal, usually attached to a center support rail in an alternating manner so that the user does not have both feet on the same level at the same time.

AREA OF REFUGE. An area where persons unable to use stairways can remain temporarily to await instructions or assistance during emergency evacuation.

BLEACHERS. Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see "Grandstands").

COMMON PATH OF EGRESS TRAVEL. That portion of exit access which the occupants are required to traverse before two separate and distinct paths of egress travel to two exits are available. Paths that merge are common paths of travel. Common paths of egress travel shall be included within the permitted travel distance.

CORRIDOR. An enclosed exit access component that defines and provides a path of egress travel to an exit.

DOOR, BALANCED. A door equipped with double-pivoted hardware so designed as to cause a semi-counter balanced swing action when opening.

EGRESS COURT. A court or yard which provides access to a public way for one or more exits.

EMERGENCY ESCAPE AND RESCUE OPENING. An operable window, door or other similar device that provides for a means of escape and access for rescue in the event of an emergency.

EXIT. That portion of a means of egress *system between the exit access and the exit discharge or public way. Exit components include exterior exit doors at the level of exit discharge, interior exit stairways, interior exit ramps, exit passageways, exterior exit stairways and exit ramps and horizontal exits.*

EXIT ACCESS. That portion of a means of egress system that leads from any occupied portion of a building or structure to an exit.

EXIT ACCESS DOORWAY. A door or access point along the path of egress travel from an occupied room, area or space where the path of egress enters an intervening room, corridor, exit access stair or exit access ramp.

EXIT ACCESS RAMP. *An interior ramp that is not a required interior exit*

ramp.

EXIT ACCESS STAIRWAY. *An interior stairway that is not a required interior exit stairway.*

EXIT DISCHARGE. That portion of a means of egress system between the termination of an exit and a public way.

EXIT DISCHARGE, LEVEL OF. The story at the point at which an exit terminates and an exit discharge begins.

EXIT ENCLOSURE. An exit component that is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives, and provides for a protected path of egress travel in a vertical or horizontal direction to the exit discharge or the public way.

EXIT, HORIZONTAL. A path of egress travel from one building to an area in another building on approximately the same level, or a path of egress travel through or around a wall or partition to an area on approximately the same level in the same building, which affords safety from fire and smoke from the area of incidence and areas communicating therewith.

EXIT PASSAGEWAY. An exit component that is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives, and provides for a protected path of egress travel in a horizontal direction to the exit discharge or the public way.

FIRE EXIT HARDWARE. Panic hardware that is listed for use on fire door assemblies.

FIXED SEATING. *Furniture or fixture designed and installed for the use of sitting and secured in place including bench-type seats with or without backs or arm rests.*

FLIGHT. A continuous run of rectangular treads, winders or combination thereof from one landing to another.

FLOOR AREA, GROSS. The floor area within the inside perimeter of the exterior walls of the building under consideration, exclusive of vent shafts and

courts, without deduction for corridors, stairways, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include shafts with no openings or interior courts.

FLOOR AREA, NET. The actual occupied area not including unoccupied accessory areas such as corridors, stairways, toilet rooms, mechanical rooms and closets.

FOLDING AND TELESCOPIC SEATING. Tiered seating having an overall shape and size that is capable of being reduced for purposes of moving or storing and is not a building element.

GRANDSTAND. Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see "Bleachers").

GUARD. A building component or a system of building components located at or near the open sides of elevated walking surfaces that minimizes the possibility of a fall from the walking surface to a lower level.

HANDRAIL. A horizontal or sloping rail intended for grasping by the hand for guidance or support.

INTERIOR EXIT RAMP. *An exit component that serves to meet one or more means of egress design requirements, such as required number of exits or exit access travel distance, and provides for a protected path of egress travel to the exit discharge or public way.*

INTERIOR EXIT STAIRWAY. *An exit component that serves to meet one or more means of egress design requirements, such as required number of exits or exit access travel distance, and provides for a protected path of egress travel to the exit discharge or public way.*

MEANS OF EGRESS. A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way. A means of egress consists of three separate and distinct parts: the exit access, the exit and the exit discharge.

MERCHANDISE PAD. A merchandise pad is an area for display of merchandise surrounded by aisles, permanent fixtures or walls. Merchandise pads contain elements such as nonfixed and moveable fixtures, cases, racks, counters and partitions as indicated in Section 105.2 from which customers browse or shop.

NOSING. The leading edge of treads of stairs and of landings at the top of

stairway flights.

OCCUPANT LOAD. The number of persons for which the means of egress of a building or portion thereof is designed.

PANIC HARDWARE. A door-latching assembly incorporating a device that releases the latch upon the application of a force in the direction of egress travel.

PHOTOLUMINESCENT. Having the property of emitting light that continues for a length of time after excitation by visible or invisible light has been removed.

PUBLIC WAY. A street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet (3048 mm).

RAMP. A walking surface that has a running slope steeper than one unit vertical in 20 units horizontal (5-percent slope).

SCISSOR STAIR. Two interlocking stairways providing two separate paths of egress located within one stairwell enclosure.

SELF-LUMINOUS. Illuminated by a self-contained power source, other than batteries, and operated independently of external power sources.

SMOKE-PROTECTED ASSEMBLY SEATING. Seating served by means of egress that is not subject to smoke accumulation within or under a structure.

STAIR. A change in elevation, consisting of one or more risers.

STAIRWAY. One or more flights of stairs, either exterior or interior, with the necessary landings and platforms connecting them, to form a continuous and uninterrupted passage from one level to another.

STAIRWAY, EXTERIOR. A stairway that is open on at least one side, except for required structural columns, beams, handrails and guards. The adjoining open areas shall be either yards, courts or public ways. The other sides of the exterior stairway need not be open.

STAIRWAY, INTERIOR. A stairway not meeting the definition of an exterior stairway.

STAIRWAY, SPIRAL. A stairway having a closed circular form in its plan view with uniform section-shaped treads attached to and radiating from a minimum-diameter supporting column.

SUITE. *When used in provisions of this code relating to I-2 occupancies,* a group of patient treatment rooms or patient sleeping rooms where staff are in attendance within the suite, for supervision of all patients within the suite and the suite is in compliance with the requirements of Sections 1014.2.2 through 1014.2.7.

WINDER. A tread with nonparallel edges.

SECTION 1003
GENERAL MEANS OF EGRESS

1003.1 Applicability. The general requirements specified in Sections 1003 through 1013 shall apply to all three elements of the means of egress system, in addition to those specific requirements for the exit access, the exit and the exit discharge detailed elsewhere in this chapter.

1003.2 Ceiling height. The means of egress shall have a ceiling height of not less than 7 feet 6 inches (2286 mm).

Exceptions:

1. Sloped ceilings in accordance with Section 1208.2.
2. Ceilings of dwelling units and sleeping units within residential occupancies in accordance with Section 1208.2.
3. Allowable projections in accordance with Section 1003.3.
4. Stair headroom in accordance with Section 1009.2.
5. Door height in accordance with Section 1008.1.1.
6. Ramp headroom in accordance with Section 1010.5.2.
7. The clear height of floor levels in vehicular and pedestrian traffic areas in parking garages in accordance with Section 406.2.2.
8. Areas above and below mezzanine floors in accordance with Section 505.1.

1003.3 Protruding objects. Protruding objects shall comply with the requirements of Sections 1003.3.1 through 1003.3.4.

1003.3.1 Headroom. Protruding objects are permitted to extend below the minimum ceiling height required by Section 1003.2 provided a minimum headroom of 80 inches (2032 mm) shall be provided for any walking surface, including walks, corridors, aisles and passageways. Not more than 50 percent of the ceiling area of a means of egress shall be reduced in height by protruding objects.

Exception: Door closers and stops shall not reduce headroom to less than 78 inches (1981 mm).

A barrier shall be provided where the vertical clearance is less than 80 inches (2032 mm) high. The leading edge of such a barrier shall be located 27 inches (686 mm) maximum above the floor.

1003.3.2 Post-mounted objects. A free-standing object mounted on a post or pylon shall not overhang that post or pylon more than 4 inches (102 mm) where

the lowest point of the leading edge is more than 27 inches (686 mm) and less than 80 inches (2032 mm) above the walking surface. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (686 mm) maximum or 80 inches (2032 mm) minimum above the finished floor or ground.

Exception: These requirements shall not apply to sloping portions of handrails between the top and bottom riser of stairs and above the ramp run.

1003.3.3 Horizontal projections. Structural elements, fixtures or furnishings shall not project horizontally from either side more than 4 inches (102 mm) over any walking surface between the heights of 27 inches (686 mm) and 80 inches (2032 mm) above the walking surface.

Exception: Handrails are permitted to protrude 4 ½ inches (114 mm) from the wall.

1003.3.4 Clear width. Protruding objects shall not reduce the minimum clear width of accessible routes.

1003.4 Floor surface. Walking surfaces of the means of egress shall have a slip-resistant surface and be securely attached.

1003.5 Elevation change. Where changes in elevation of less than 12 inches (305 mm) exist in the means of egress, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), ramps complying with Section 1010 shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the ramp shall be equipped with either handrails or floor finish materials that contrast with adjacent floor finish materials.

Exceptions:

1. A single step with a maximum riser height of 7 inches (178 mm) is permitted for buildings with occupancies in Groups F, H, R-2, R-3, S and U at exterior doors not required to be accessible by Chapter 11.
2. A stair with a single riser or with two risers and a tread is permitted at locations not required to be accessible by Chapter 11, provided that the risers and treads comply with Section 1009.4, the minimum depth of the tread is 13 inches (330 mm) and at least one handrail complying with Section 1012 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the stair.
3. A step is permitted in aisles serving seating that has a difference in elevation less than 12 inches (305 mm) at locations not required to be accessible by Chapter 11, provided that the risers and treads comply with Section 1028.11 and the aisle is provided with a handrail complying with

Section 1028.13.

Throughout a story in a Group I-2 occupancy, any change in elevation in portions of the *means of egress* that serve non-ambulatory persons shall be by means of a ramp or sloped walkway.

1003.6 Means of egress continuity. The path of egress travel along a means of egress shall not be interrupted by any building element other than a means of egress component as specified in this chapter. Obstructions shall not be placed in the required width of a means of egress except projections permitted by this chapter. The required capacity of a means of egress system shall not be diminished along the path of egress travel.

1003.7 Elevators, escalators and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required means of egress from any other part of the building.

Exception: Elevators used as an accessible means of egress in accordance with Section 1007.4.

SECTION 1004
OCCUPANT LOAD

1004.1 Design occupant load. In determining means of egress requirements, the number of occupants for whom means of egress facilities shall be provided shall be determined in accordance with this section. Where occupants from accessory areas egress through a primary space, the calculated occupant load for the primary space shall include the total occupant load of the primary space plus the number of occupants egressing through it from the accessory area.

1004.1.1 Areas without fixed seating. The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.1.1. For areas without fixed seating, the occupant load shall not be less than that number determined by dividing the floor area under consideration by the occupant per unit of area factor assigned to the occupancy as set forth in Table 1004.1.1. Where an intended use is not listed in Table 1004.1.1, the building official shall establish a use based on a listed use that most nearly resembles the intended use.

Exception: Where approved by the building official, the actual number of occupants for whom each occupied space, floor or building is designed, although less than those determined by calculation, shall be permitted to be used in the determination of the design occupant load.

1004.2 Increased occupant load. The occupant load permitted in any building, or

portion thereof, is permitted to be increased from that number established for the occupancies in Table 1004.1.1, provided that all other requirements of the code are also met based on such modified number and the occupant load does not exceed one occupant per 7 square feet (0.65 m^2)of occupiable floor space. Where required by the building official, an approved aisle, seating or fixed equipment diagram substantiating any increase in occupant load shall be submitted. Where required by the building official, such diagram shall be posted.

1004.3 Posting of occupant load. Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or authorized agent.

1004.4 Exiting from multiple levels. Where exits serve more than one floor, only the occupant load of each floor considered individually shall be used in computing the required capacity of the exits at that floor, provided that the exit capacity shall not decrease in the direction of egress travel.

1004.5 Egress convergence. Where means of egress from floors above and below converge at an intermediate level, the capacity of the means of egress from the point of convergence shall not be less than the sum of the two floors.

1004.6 Mezzanine levels. The occupant load of a mezzanine level with egress onto a room or area below shall be added to that room or area's occupant load, and the capacity of the exits shall be designed for the total occupant load thus established.

1004.7 Fixed seating. For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The occupant load for areas in which fixed seating is not installed, such as waiting spaces and wheelchair spaces, shall be determined in accordance with Section 1004.1.1 and added to the number of fixed seats.

The occupant load of wheelchair spaces and the associated companion seat shall be based on one occupant for each wheelchair space and one occupant for the associated companion seat provided in accordance with Section 1108.2.3.

For areas having fixed seating without dividing arms, the occupant load shall not be less than the number of seats based on one person for each 18 inches (457 mm) of seating length.

The occupant load of seating booths shall be based on one person for each 24 inches (610 mm) of booth seat length measured at the backrest of the seating booth.

1004.8 Outdoor areas. Yards, patios, courts and similar outdoor areas accessible to and usable by the building occupants shall be provided with means of egress as required by this chapter. The occupant load of such outdoor areas shall be assigned by the building official in accordance with the anticipated use.
Where outdoor areas are to be used by persons in addition to the occupants of the building, and the path of egress travel from the outdoor areas passes through the building, means of egress requirements for the building shall be based on the sum of the occupant loads of the building plus the outdoor areas.

Exceptions

1. Outdoor areas used exclusively for service of the building need only have one means of egress.
2. Outdoor areas *dedicated to individual dwelling units in* Group R-3 and Group R-2.

TABLE 1004.1.1
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	FLOOR AREA IN SQ. FT. PER OCCUPANT
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal Baggage claim Baggage handling Concourse Waiting areas	 20 gross 300 gross 100 gross 15 gross
Assembly Gaming floors (keno, slots, etc.)	 11 gross
Assembly with fixed seats	See Section 1004.7
Assembly without fixed seats Concentrated (chairs only—not fixed) Standing space Unconcentrated (tables and chairs)	7 net 5 net 15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	100 gross
Courtrooms—other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross

Educational Classroom area Shops and other vocational room areas	 20 net 50 net
Exercise rooms	50 gross
H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas Inpatient treatment areas Outpatient areas Sleeping areas	 240 gross 100 gross 120 gross
Kitchens, commercial	200 gross
Library Reading rooms Stack area	 50 net 100 gross
Locker rooms	50 gross
Mercantile Areas on other floors Basement and grade floor areas Storage, stock, shipping areas	 60 gross 30 gross 300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools Rink and pool Decks	 50 gross 15 gross
Stages and platforms	15 net
Warehouses	500 gross

For SI: 1 square foot = 0.0929 m^2.

1004.9 Multiple occupancies. Where a building contains two or more occupancies, the means of egress requirements shall apply to each portion of the building based on the occupancy of that space. Where two or more occupancies utilize portions of the same means of egress system, those egress components shall meet the more stringent requirements of all occupancies that are served.

SECTION 1005
EGRESS WIDTH

1005.1 Minimum required ***capacity based on occupant load.*** *The required capacity, in inches (mm), of the means of egress for any room, area, space or story shall not be less than that determined in accordance with Sections 1005.1.1 and 1005.1.2.*

1005.1.1 Stairways. *The capacity, in inches (mm), of means of egress stairways shall be calculated by multiplying the occupant load served by such stairway by a means of egress capacity factor of 0.3 inch (7.6 mm) per occupant. Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required capacity of the stairways serving that story.*

> ***Exception:*** *For other than Group H and I---2 occupancies, the capacity, in inches (mm), of means of egress stairways shall be calculated by multiplying the occupant load served by such stairway by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm communication system in accordance with Section 907.5.2.2.*

1005.1.2 Other egress components. *The capacity, in inches (mm), of means of egress components other than stairways shall be calculated by multiplying the occupant load served by such component by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant.*

> ***Exception:*** *For other than Group H and I---2 occupancies, the capacity, in inches (mm), of means of egress components other than stairways shall be calculated by multiplying the occupant load served by such component by a means of egress capacity factor of 0.15 inch (3.8 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm communication system in accordance with Section 907.5.2.2.*

1005.2 Door encroachment. Doors, when fully opened, and handrails shall not reduce the required means of egress width by more than 7 inches (178 mm). Doors in any position shall not reduce the required width by more than one-half. Other nonstructural projections such as trim and similar decorative features shall be permitted to project into the required width a maximum of 1½ inches (38 mm) on each side.

> **Exception:** The restrictions on a door swing shall not apply to doors within individual dwelling units and sleeping units of Group R-2 and dwelling units of Group R-3.

1005.3 Door hardware encroachment. Surface-mounted latch release hardware shall be exempt from inclusion in the 7-inch (178 mm) maximum projection requirement of Section 1005.2 when:

1. The hardware is mounted to the side of the door facing the corridor width when the door is in the open position; and
2. The hardware is mounted not less than 34 inches (865 mm) or more than 48 inches (1220 mm) above the finished floor.

***1005.4 Other projections**. Handrail projections shall be in accordance with the provisions of Section 1012.8. Other nonstructural projections such as trim and similar decorative features shall be permitted to project into the required width a maximum of 1½ inches (38 mm) on each side.*

***Exception:** Projections are permitted in corridors within Group I-2 nursing homes in accordance with Section 407.3.3.*

SECTION 1006
MEANS OF EGRESS ILLUMINATION

1006.1 Illumination required. The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress is occupied.

Exceptions:

1. Occupancies in Group U.
2. Aisle accessways in Group A.
3. Dwelling units and sleeping units in Groups R-1, R-2 and R-3.
4. Sleeping units of Group I occupancies.

1006.2 Illumination level. The means of egress illumination level shall not be less than 1 foot-candle (11 lux) at the walking surface.

Exception: For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination at the walking surface is permitted to be reduced during performances to not less than 0.2 foot-candle (2.15 lux), provided that the required illumination is automatically restored upon activation of a premises' fire alarm system where such system is provided.

1006.3 Illumination emergency power. The power supply for means of egress illumination shall normally be provided by the premises' electrical supply.

In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:

1. Aisles and unenclosed egress stairways in rooms and spaces that require two or more means of egress.
2. Corridors, exit enclosures, *ramps* and exit passageways in buildings required to have two or more exits.

3. Exterior egress components at other than their levels of exit discharge until exit discharge is accomplished for buildings required to have two or more exits.
4. Interior exit discharge elements, as permitted in Section 1027.1, in buildings required to have two or more exits.
5. Exterior landings as required by Section 1008.1.6 for exit discharge doorways in buildings required to have two or more exits.

The emergency power system shall provide power for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Chapter 27.

1006.4 Performance of system. Emergency lighting facilities shall be arranged to provide initial illumination that is at least an average of 1 foot-candle (11 lux) and a minimum at any point of 0.1 foot-candle (1 lux) measured along the path of egress at floor level. Illumination levels shall be permitted to decline to 0.6 foot-candle (6 lux) average and a minimum at any point of 0.06 foot-candle (0.6 lux) at the end of the emergency lighting time duration. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.

SECTION 1007
ACCESSIBLE MEANS OF EGRESS

1007.1 Accessible means of egress required. Accessible means of egress shall comply with this section. Accessible spaces shall be provided with not less than one accessible means of egress. Where more than one means of egress are required by Section 1015.1 or 1021.1 from any accessible space, each accessible portion of the space shall be served by not less than two accessible means of egress.

Exceptions:

1. Accessible means of egress are not required in alterations to existing buildings.
2. One accessible means of egress is required from an accessible mezzanine level in accordance with Section 1007.3, 1007.4 or 1007.5.
3. In assembly areas with sloped or stepped aisles, one accessible means of egress is permitted where the common path of travel is accessible and meets the requirements in Section 1028.8.

1007.2 Continuity and components. Each required accessible means of egress

shall be continuous to a public way and shall consist of one or more of the following components:

1. Accessible routes complying with Section 1104.
2. Interior exit stairways complying with Sections 1007.3 and 1022.
3. Exterior exit stairways complying with Sections 1007.3 and 1026.
4. Elevators complying with Section 1007.4.
5. Platform lifts complying with Section 1007.5.
6. Horizontal exits complying with Section 1025.
7. Ramps complying with Section 1010.
8. Areas of refuge complying with Section 1007.6.

Exceptions:

1. Where the exit discharge is not accessible, an exterior area for assisted rescue must be provided in accordance with Section 1007.7.
2. Where the exit stairway is open to the exterior, the accessible means of egress shall include either an area of refuge in accordance with Section 1007.6 or an exterior area for assisted rescue in accordance with Section 1007.7.

1007.2.1 Elevators required. In buildings where a required accessible floor is four or more stories above or below a level of exit discharge, at least one required accessible means of egress shall be an elevator complying with Section 1007.4.

Exceptions:

1. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a horizontal exit and located at or above the levels of exit discharge.
2. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a ramp conforming to the provisions of Section 1010.

1007.3 Stairways. In order to be considered part of an accessible means of egress, an exit access stairway as permitted by Section 1016.1 or exit stairway shall have a clear width of 48 inches (1219 mm) minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from either an area of refuge complying with Section 1007.6 or a horizontal exit.

Exceptions:

1. The area of refuge is not required at open exit access or exit stairways as permitted by Sections 1016.1 and 1022.1 in buildings that are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The clear width of 48 inches (1219 mm) between handrails is not required at exit access stairway as permitted by Section 1016.1 or exit stairways in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Areas of refuge are not required at exit stairways in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
4. The clear width of 48 inches (1219 mm) between handrails is not required for exit stairways accessed from a horizontal exit.
5. Areas of refuge are not required at exit stairways serving open parking garages.
6. Areas of refuge are not required for smoke protected seating areas complying with Section 1028.6.2.
7. The areas of refuge are not required in Group R-2 occupancies.

1007.4 Elevators. In order to be considered part of an accessible means of egress, an elevator shall comply with the emergency operation and signaling device requirements of Section 2.27 of ASME A17.1. Standby power shall be provided in accordance with Chapter 27 and Section 3003. The elevator shall be accessed from either an area of refuge complying with Section 1007.6 or a horizontal exit.

Exceptions:

1. Elevators are not required to be accessed from an area of refuge or horizontal exit in open parking garages.
2. Elevators are not required to be accessed from an area of refuge or horizontal exit in buildings and facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Elevators not required to be located in a shaft in accordance with Section 708.2 are not required to be accessed from an area of refuge or horizontal exit.
4. Elevators are not required to be accessed from an area of refuge or horizontal exit for smoke protected seating areas complying with Section 1028.6.2.

1007.5 Platform lifts. Platform (wheelchair) lifts shall not serve as part of an accessible means of egress, except where allowed as part of a required accessible route in Section 1109.7. Standby power shall be provided in accordance with

Chapter 27 for platform lifts permitted to serve as part of a means of egress.

1007.5.1 Openness. Platform lifts on an accessible means of egress shall not be installed in a fully enclosed hoistway .

1007.6 Areas of refuge. Every required area of refuge shall be accessible from the space it serves by an accessible means of egress. The maximum travel distance from any accessible space to an area of refuge shall not exceed the travel distance permitted for the occupancy in accordance with Section 1016.1. Every required area of refuge shall have direct access to a stairway within an exit enclosure complying with Sections 1007.3 and 1022 or an elevator complying with Section 1007.4. Where an elevator lobby is used as an area of refuge, the shaft and lobby shall comply with Section 1022.9 for smokeproof enclosures except where the elevators are in an area of refuge formed by a horizontal exit or smoke barrier.

Exceptions:

1. A stairway serving an area of refuge is not required to be enclosed where permitted in Sections 1016.1 and 1022.1.
2. Smokeproof enclosure is not required for an elevator lobby used as an area of refuge not required to be enclosed.

1007.6.1 Size. Each area of refuge shall be sized to accommodate one wheelchair space of 30 inches by 48 inches (762 mm by1219 mm) for each 200 occupants or portion thereof, based on the occupant load of the area of refuge and areas served by the area of refuge. Such wheelchair spaces shall not reduce the required means of egress width. Access to any of the required wheelchair spaces in an area of refuge shall not be obstructed by more than one adjoining wheelchair space.

1007.6.2 Separation. Each area of refuge shall be separated from the remainder of the story by a smoke barrier complying with Section 710 or a horizontal exit complying with Section 1025. Each area of refuge shall be designed to minimize the intrusion of smoke.

Exception: Areas of refuge located within an exit enclosure.

1007.6.3 Two-way communication. Areas of refuge shall be provided with a two-way communication system complying with Sections 1007.8.1 and 1007.8.2.

1007.7 Exterior area for assisted rescue. *Exterior areas for assisted rescue shall be accessed by an accessible route from the area served.* The exterior area for

assisted rescue must be open to the outside air and meet the requirements of Section 1007.6.1. Separation walls shall comply with the requirements of Section 705 for exterior walls. Where walls or openings are between the area for assisted rescue and the interior of the building, the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than ¾ hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor level of the area for assisted rescue or to the roof line, whichever is lower.

1007.7.1 Openness. The exterior area for assisted rescue shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

1007.7.2 Exterior exit stairway. Exterior exit stairways that are part of the means of egress for the exterior area for assisted rescue shall provide a clear width of 48 inches (1219 mm) between handrails.

1007.8 Two-way communication. A two-way communication system shall be provided at the elevator landing on each accessible floor that is one or more stories above or below the story of exit discharge complying with Sections 1007.8.1 and 1007.8.2.

Exceptions:

1. Two-way communication systems are not required at the elevator landing where the two-way communication system is provided within areas of refuge in accordance with Section 1007.6.3.
2. Two-way communication systems are not required on floors provided with exit ramps conforming to the provisions of Section 1010.

1007.8.1 System requirements. Two-way communication systems shall provide communication between each required location and the fire command center or a central control point location approved by the fire department. Where the central control point is not constantly attended, a two-way communication system shall have a timed automatic telephone dial-out capability to a monitoring location or 911. The two-way communication system shall include both audible and visible signals.

1007.8.2 Directions. Directions for the use of the two-way communication system, instructions for summoning assistance via the two-way communication system and written identification of the location shall be posted adjacent to the two-way communication system.

1007.9 Signage. Signage indicating special accessibility provisions shall be provided as shown:

1. Each door providing access to an area of refuge from an adjacent floor area shall be identified by a sign stating: AREA OF REFUGE.
2. Each door providing access to an exterior area for assisted rescue shall be identified by a sign stating: EXTERIOR AREA FOR ASSISTED RESCUE.

Signage shall comply with the ICC A117.1 requirements for visual characters and include the International Symbol of Accessibility. Where exit sign illumination is required by Section 1011.2, the signs shall be illuminated. Additionally, tactile signage complying with ICC A117.1 shall be located at each door to an area of refuge and exterior area for assisted rescue in accordance with Section 1011.3.

1007.10 Directional signage. Direction signage indicating the location of the other means of egress and which are accessible means of egress shall be provided at the following:

1. At exits serving a required accessible space but not providing an approved accessible means of egress.
2. At elevator landings.
3. Within areas of refuge.

1007.11 Instructions. In areas of refuge and exterior areas for assisted rescue, instructions on the use of the area under emergency conditions shall be posted. The instructions shall include all of the following:

1. Persons able to use the exit stairway do so as soon as possible, unless they are assisting others.
2. Information on planned availability of assistance in the use of stairs or supervised operation of elevators and how to summon such assistance.
3. Directions for use of the two-way communications system where provided.

SECTION 1008
DOORS, GATES AND TURNSTILES

1008.1 Doors. Means of egress doors shall meet the requirements of this section. Doors serving a means of egress system shall meet the requirements of this section and Section 1020.2. Doors provided for egress purposes in numbers greater than required by this code shall meet the requirements of this section.

Means of egress doors shall be readily distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Mirrors or similar reflecting materials shall not be used on means of egress doors. Means of egress doors shall not be concealed by curtains, drapes, decorations or similar materials.

1008.1.1 Size of doors. The minimum width of each door opening shall be sufficient for the occupant load thereof and shall provide a clear width of 32 inches (813 mm). Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 32 inches (813 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. Means of egress doors in a Group I-2 occupancy used for the movement of beds shall provide a clear width not less than 41 ½ inches (1054 mm). The height of door openings shall not be less than 80 inches (2032 mm).

Exceptions:

1. The minimum and maximum width shall not apply to door openings that are not part of the required means of egress in Group R-2 and R-3 occupancies.
2. Door openings to resident sleeping units *not required to be accessible,* in Group I-3 occupancies, shall have a clear width of not less than 28 inches (711 mm).
3. Door openings to *reach-in* storage closets less than 10 square feet (0.93 m^2) in area shall not be limited by the minimum width.
4. Width of door leaves in revolving doors that comply with Section 1008.1.4.1 shall not be limited.
5. Door openings within a dwelling unit or sleeping unit shall not be less than 78 inches (1981 mm) in height.
6. Exterior door openings in dwelling units and sleeping units, other than the required exit door, shall not be less than 76 inches (1930 mm) in height.
7. In other than Group R-1 occupancies, the minimum widths shall not apply to interior egress doors within a dwelling unit or sleeping unit that is not

required to be an Accessible unit, Type A unit or Type B unit.

8. Door openings required to be accessible within Type B units shall have a minimum clear width of 31.75 inches (806mm).

1008.1.1.1 Projections into clear width. There shall not be projections into the required clear width lower than 34 inches (864 mm) above the floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (102 mm).

Exception: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the floor.

1008.1.2 Door swing. Egress doors shall be of the pivoted or side-hinged swinging type.

Exceptions:

1. Private garages, office areas, factory and storage areas with an occupant load of 10 or less.
2. Group I-3 occupancies used as a place of detention.
3. Critical or intensive care patient rooms within suites of health care facilities.
4. Doors within or serving a single dwelling unit in Groups R-2 and R-3.
5. In other than Group H occupancies, revolving doors complying with Section 1008.1.4.1.
6. In other than Group H occupancies, horizontal sliding doors complying with Section 1008.1.4.3 are permitted in a means of egress.
7. Power-operated doors in accordance with Section 1008.1.4.2.
8. Doors serving a bathroom within an individual sleeping unit in Group R-1.
9. In other than Group H occupancies, manually operated horizontal sliding doors are permitted in a means of egress from spaces with an occupant load of 10 or less.

Doors shall swing in the direction of egress travel where serving an occupant load of 50 or more persons or a Group H occupancy.

1008.1.3 Door opening force. The force for pushing or pulling open interior swinging egress doors, other than fire doors, shall not exceed 5 pounds (22 N). For other swinging doors, as well as sliding and folding doors, the door latch shall release when subjected to a 15-pound (67 N) force. The door shall be set in motion when subjected to a 30-pound (133 N) force. The door shall swing to a full-open position when subjected to a 15-pound (67 N) force.

1008.1.3.1 Location of applied forces. Forces shall be applied to the latch side of the door.

1008.1.4 Special doors. Special doors and security grilles shall comply with the requirements of Sections 1008.1.4.1 through 1008.1.4.5.

1008.1.4.1 Revolving doors. Revolving doors shall comply with the following:

1. Each revolving door shall be capable of collapsing into a bookfold position with parallel egress paths providing an aggregate width of 36 inches (914 mm).
2. A revolving door shall not be located within 10 feet (3048 mm) of the foot of or top of stairs or escalators. A dispersal area shall be provided between the stairs or escalators and the revolving doors.
3. The revolutions per minute (rpm) for a revolving door shall not exceed those shown in Table 1008.1.4.1.
4. Each revolving door shall have a side-hinged swinging door which complies with Section 1008.1 in the same wall and within 10 feet (3048 mm) of the revolving door.
5. Revolving doors shall not be part of an accessible route required by Section 1007 and Chapter 11.

TABLE 1008.1.4.1
REVOLVING DOOR SPEEDS

INSIDE DIAMETER (feet-inches)	POWER-DRIVEN-TYPE SPEED CONTROL (rpm)	MANUAL-TYPE SPEED CONTROL (rpm)
6-6	11	12
7-0	10	11
7-6	9	11
8-0	9	10
8-6	8	9
9-0	8	9
9-6	7	8
10-0	7	8

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

1008.1.4.1.1 Egress component. A revolving door used as a component of a means of egress shall comply with Section 1008.1.4.1 and the following three conditions:

1. Revolving doors shall not be given credit for more than 50 percent of

the required egress capacity.

2. Each revolving door shall be credited with no more than a 50-person capacity.
3. Each revolving door shall be capable of being collapsed when a force of not more than 130 pounds (578 N) is applied within 3 inches (76 mm) of the outer edge of a wing.

1008.1.4.1.2 Other than egress component. A revolving door used as other than a component of a means of egress shall comply with Section 1008.1.4.1. The collapsing force of a revolving door not used as a component of a means of egress shall not be more than 180 pounds (801 N).

Exception: A collapsing force in excess of 180 pounds (801 N) is permitted if the collapsing force is reduced to not more than 130 pounds (578 N) when at least one of the following conditions is satisfied:

1. There is a power failure or power is removed to the device holding the door wings in position.
2. There is an actuation of the automatic sprinkler system where such system is provided.
3. There is an actuation of a smoke detection system which is installed in accordance with Section 907 to provide coverage in areas within the building which are within 75 feet (22 860 mm) of the revolving doors.
4. There is an actuation of a manual control switch, in an approved location and clearly defined, which reduces the holding force to below the 130-pound (578 N) force level.

1008.1.4.2 Power-operated doors. Where means of egress doors are operated by power, such as doors with a photoelectric-actuated mechanism to open the door upon the approach of a person, or doors with power-assisted manual operation, the design shall be such that in the event of power failure, the door is capable of being opened manually to permit means of egress travel or closed where necessary to safeguard means of egress. The forces required to open these doors manually shall not exceed those specified in Section 1008.1.3, except that the force to set the door in motion shall not exceed 50 pounds (220 N). The door shall be capable of swinging from any position to the full width of the opening in which such door is installed when a force is applied to the door on the side from which egress is made. Full-power-operated doors shall comply with BHMA A156.10. Power-assisted and low-energy doors shall comply with BHMA A156.19.

Exceptions:

1. Occupancies in Group I-3.
2. Horizontal sliding doors complying with Section 1008.1.4.3.
3. For a bi-parting door in the emergency breakout mode, a door leaf located within a multiple-leaf opening shall be exempt from the minimum 32-inch (813 mm) single-leaf requirement of Section 1008.1.1, provided a minimum 32-inch (813 mm) clear opening is provided when the two biparting leaves meeting in the center are broken out.

1008.1.4.3 Horizontal sliding doors. In other than Group H occupancies, horizontal sliding doors permitted to be a component of a means of egress in accordance with Exception 6 to Section 1008.1.2 shall comply with all of the following criteria:

1. The doors shall be power operated and shall be capable of being operated manually in the event of power failure.
2. The doors shall be openable by a simple method from both sides without special knowledge or effort.
3. The force required to operate the door shall not exceed 30 pounds (133 N) to set the door in motion and 15 pounds (67 N) to close the door or open it to the minimum required width.
4. The door shall be openable with a force not to exceed 15 pounds (67 N) when a force of 250 pounds (1100 N) is applied perpendicular to the door adjacent to the operating device.
5. The door assembly shall comply with the applicable fire protection rating and, where rated, shall be self-closing or automatic closing by smoke detection in accordance with Section 715.4.8.3, shall be installed in accordance with NFPA 80 and shall comply with Section 715.
6. The door assembly shall have an integrated standby power supply.
7. The door assembly power supply shall be electrically supervised.
8. The door shall open to the minimum required width within 10 seconds after activation of the operating device.

1008.1.4.4 Access-controlled egress doors. The entrance doors in a means of egress in buildings with an occupancy in Group A, B, E, I-2, M, R-1 or R-2 and entrance doors to tenant spaces in occupancies in Groups A, B, E, I-2, M, R-1 and R-2 are permitted to be equipped with an approved entrance and egress access control system which shall be installed in accordance with all of the following criteria:

1. A sensor shall be provided on the egress side arranged to detect an occupant approaching the doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor.
2. Loss of power to that part of the access control system which locks the doors shall automatically unlock the doors.
3. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the lock—independent of the access control system electronics—and the doors shall remain unlocked for a minimum of 30 seconds.
4. Activation of the building fire alarm system, if provided, shall automatically unlock the doors, and the doors shall remain unlocked until the fire alarm system has been reset.
5. Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has been reset.
6. Entrance doors in buildings with an occupancy in Group A, B, E or M shall not be secured from the egress side during periods that the building is open to the general public.

1008.1.4.5 Security grilles. In Groups B, F, M and S, horizontal sliding or vertical security grilles are permitted at the main exit and shall be openable from the inside without the use of a key or special knowledge or effort during periods that the space is occupied. The grilles shall remain secured in the full-open position during the period of occupancy by the general public. Where two or more means of egress are required, not more than one-half of the exits or exit access doorways shall be equipped with horizontal sliding or vertical security grilles.

1008.1.5 Floor elevation. There shall be a floor or landing on each side of a door. Such floor or landing shall be at the same elevation on each side of the door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed *one* unit vertical in *fifty* units horizontal (2-percent slope).

Exceptions:

1. Doors serving individual dwelling units in Groups R-2 and R-3 where the following apply:

1.1. A door is permitted to open at the top step of an interior flight of stairs, provided the door does not swing over the top step.
1.2. Screen doors and storm doors are permitted to swing over stairs or landings.

2. Exterior doors as provided for in Section 1003.5, Exception 1, and Section 1020.2, which are not on an accessible route.
3. In Group R-3 occupancies not required to be Accessible units, Type A units or Type B units, the landing at an exterior doorway shall not be more than 7 ¾ inches (197 mm) below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the landing.
4. *In units not required to be Type A, Type B or accessible,* variations in elevation due to differences in finish materials, but not more than ½ inch (12.7 mm).
5. Exterior decks, patios or balconies that are part of Type B dwelling units, have impervious surfaces and that are not more than 4 inches (102 mm) below the finished floor level of the adjacent interior space of the dwelling unit.

1008.1.6 Landings at doors. Landings shall have a width not less than the width of the stairway or the door, whichever is greater. Doors in the fully open position shall not reduce a required dimension by more than 7 inches (178 mm). When a landing serves an occupant load of 50 or more, doors in any position shall not reduce the landing to less than one-half its required width. Landings shall have a length measured in the direction of travel of not less than 44 inches (1118 mm).

Exception: Landing length in the direction of travel in Groups R-3 and U and within individual units of Group R-2 need not exceed 36 inches (914 mm) *when the units are not required to be accessible or Type A units.*

1008.1.7 Thresholds. Thresholds at doorways shall not exceed ¾ inch (19.1 mm) in height for sliding doors serving dwelling units or ½ inch (12.7 mm) for other doors. Raised thresholds and floor level changes greater than ¼ inch (6.4 mm) at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal (50-percent slope).

Exception: The threshold height shall be limited to 7¾ inches (197 mm) where the occupancy is Group R-2 or R-3; the door is an exterior door that is not a component of the required means of egress; the door, other than an exterior storm or screen door, does not swing over the landing or step; and the doorway is not on an accessible route as required by Chapter 11 and is not part of an Accessible unit, Type A unit or Type B unit.

1008.1.8 Door arrangement. Space between two doors in a series shall be 48 inches (1219 mm) minimum plus the width of a door swinging into the space. Doors in a series shall swing either in the same direction or away from the space between the doors.

Exceptions:

1. The minimum distance between horizontal sliding power-operated doors in a series shall be 48 inches (1219 mm).
2. Storm and screen doors serving individual dwelling units in Groups R-2 and R-3 need not be spaced 48 inches (1219 mm) from the other door.
3. Doors within individual dwelling units in Groups R-2 and R-3 other than within Type A dwelling units.

1008.1.9 Door operations. Except as specifically permitted by this section egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1008.1.9.1 Hardware. Door handles, pulls, latches, locks and other operating devices on doors required to be accessible by Chapter 11 shall not require tight grasping, tight pinching or twisting of the wrist to operate.

Exception: *Non-fixed portions of door or gate hardware, including keys, access cards and temporary door locking devices.*

1008.1.9.2 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.

Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.

1008.1.9.3 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

1. Places of detention or restraint.
2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main exterior

door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

2.1 The locking device is readily distinguishable as locked;

2.2 A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background; and

2.3 The use of the key-operated locking device is revocable by the building official for due cause.

3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.

4. Doors from individual dwelling or sleeping units of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

5. Fire doors after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures.

6. *Temporary door locking device used in accordance with section 1008.1.9.11.*

1008.1.9.4 Bolt locks. Manually operated flush bolts or surface bolts are not permitted.

Exceptions:

1. On doors not required for egress in individual dwelling units or sleeping units.
2. Where a pair of doors serves a storage or equipment room, manually operated edge-or surface-mounted bolts are permitted on the inactive leaf.
3. Where a pair of doors serves an occupant load of less than 50 persons in a Group B, F or S occupancy, manually operated edge-or surface-mounted bolts are permitted on the inactive leaf. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.
4. Where a pair of doors serves a Group B, F or S occupancy, manually operated edge-or surface-mounted bolts are permitted on the inactive leaf provided such inactive leaf is not needed to meet egress width requirements and the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.
5. Where a pair of doors serves patient care rooms in Group I-2 occupancies,

self-latching edge-or surface-mounted bolts are permitted on the inactive leaf provided that the inactive leaf is not needed to meet egress width requirements and the inactive leaf contains no doorknobs, panic bars or similar operating hardware.

1008.1.9.5 Unlatching. The unlatching of any door or leaf shall not require more than one operation.

Exceptions:

1. Places of detention or restraint.
2. Where manually operated bolt locks are permitted by Section 1008.1.9.4.
3. Doors with automatic flush bolts as permitted by Section 1008.1.9.3, Exception 3.
4. Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1008.1.9.3, Exception 4.
5. *Temporary door locking device used in accordance with section 1008.1.9.11.*

1008.1.9.5.1 Closet and bathroom doors in *Groups I-1 and* R-4 occupancies. In Group *I-1 and* R-4 occupancies, closet doors that latch in the closed position shall be *operable* from inside the closet, and bathroom doors that latch in the closed position shall be capable of being unlocked from the ingress side.

1008.1.9.6 Special *egress locks for* Group I-2. Approved *special egress locks* ~~in~~ shall be permitted in a Group I-2 occupancy where the clinical needs of persons receiving care require such locking. *Special egress locks* shall be permitted in such occupancies where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 *or* an approved automatic smoke or heat detection system installed *throughout the locked space* in accordance with *Section 907,* provided that the doors unlock in accordance with Items 1 through *7. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.*

1. *The doors unlock upon loss of power controlling the lock or lock mechanism.*
2. *The door locks shall have the capability of being unlocked by a signal from the fire command center, a nursing station or other approved location.*
3. *A building occupant shall not be required to pass through more than one door equipped with a special egress lock before entering an exit.*

4. *The procedures for the operation(s) of the unlocking system shall be described and approved as part of the emergency planning and preparedness required by Chapter 4 of the fire code.*
5. *All clinical staff shall have the keys, codes or other means necessary to operate the locking devices.*
6. *Emergency lighting shall be provided at the door.*

Exception: *Items 1 through 4 shall not apply to doors to areas where persons, which because of clinical needs, require restraint or containment as part of the function of a psychiatric treatment area.*

1008.1.9.7 Delayed egress locks. Approved, listed, delayed egress locks shall be permitted to be installed on doors serving any occupancy except Group A, E and H occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through 6 below. *A delayed egress locking system shall be permitted to be installed in an I-2 occupancy when installed in accordance with section 1008.1.9.7.1.* A building occupant shall not be required to pass through more than one door equipped with a delayed egress lock before entering an exit.

1. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.
2. The doors unlock upon loss of power controlling the lock or lock mechanism.
3. The door locks shall have the capability of being unlocked by a signal from the fire command center.
4. The initiation of an irreversible process which will release the latch in not more than 15 seconds when a force of not more than 15 pounds (67 N) is applied for 1 second to the release device. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the door lock has been released by the application of force to the releasing device, relocking shall be by manual means only.
   Exception: Where approved, a delay of not more than 30 seconds is permitted.
5. A sign shall be provided on the door located above and within 12 inches (305 mm) of the release device reading: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.
6. Emergency lighting shall be provided at the door.

1008.1.9.7.1 Delayed egress locks in I-2 occupancies. *Delayed egress locks shall be permitted in I-2 occupancies where the clinical needs of persons receiving care require such locking and where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through 6 below. A building occupant shall not be required to pass through more than one door equipped with a special egress lock before entering an exit.*

1. *The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.*
2. *The doors unlock upon loss of power controlling the lock or lock mechanism.*
3. *The door locks shall have the capability of being unlocked by a signal from the fire command center, a nursing station or other approved location.*
4. *The procedures for the operation(s) of the unlocking system shall be described and approved as part of the emergency planning and preparedness required by Chapter 4 of the fire code.*
5. *All clinical staff shall have the keys, codes or other means necessary to operate the locking devices.*
6. *Emergency lighting shall be provided at the door.*

Exception: *Items 1 through 3 shall not apply to doors to areas where persons, because of clinical needs, require restraint or containment as part of the function of a mental hospital.*

1008.1.9.8 Electromagnetically locked egress doors.
Doors in the means of egress that are not otherwise required to have panic hardware in buildings with an occupancy in Group A, B, E, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, M, R-1 or R-2 shall be permitted to be electromagnetically locked if equipped with listed hardware that incorporates a built-in switch and meet the requirements below:

1. The listed hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The listed hardware is capable of being operated with one hand.
3. Operation of the listed hardware releases to the electromagnetic lock and unlocks the door immediately.
4. Loss of power to the listed hardware automatically unlocks the door.

1008.1.9.9 Locking arrangements in correctional facilities. In occupancies in

Groups A-2, A-3, A-4, B, E, F, I-2, I-3, M and S within correctional and detention facilities, doors in means of egress serving rooms or spaces occupied by persons whose movements are controlled for security reasons shall be permitted to be locked when equipped with egress control devices which shall unlock manually and by at least one of the following means:

1. Activation of an automatic sprinkler system installed in accordance with Section 903.3.1.1;
2. Activation of an approved manual alarm box; or
3. A signal from a constantly attended location.

1008.1.9.10 Stairway doors. Interior stairway means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1. Stairway discharge doors shall be openable from the egress side and shall only be locked from the opposite side.
2. This section shall not apply to doors arranged in accordance with Section 403.5.3.
3. In stairways serving not more than four stories, doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building.

1008.1.9.11 Temporary door locking device in school buildings. *A temporary door locking device shall be permitted when approved by the building official and noted on the certificate of occupancy only in school buildings where the requirements of sections 1008.1.9.11.1 and 1008.1.9.11.2 are met.*

1008.1.9.11.1 Conditions of use. *A temporary door locking device shall only be used on doors under the following conditions:*

1. The temporary door locking device shall only be used in an emergency situation and during active shooter drills; and
2. The temporary door locking device is engaged only by a staff member of the school building; and
3. The temporary door locking device shall only be engaged for a finite period of time as determined by the administrative authority of a school building in accordance with an adopted school safety plan; and
4. Evidence is provided that the administrative authority of a school

building has notified the police and fire officials having jurisdiction for the school building prior to the use of the temporary door locking device; and

5. *In-service training on the use of the temporary door locking device is provided for school staff members and records verifying this training shall be maintained on file and provided to the fire official upon request.*

***1008.1.9.11.2 Operational requirements**. The temporary door locking device shall be permitted to be used in accordance with the following items:*

1. The temporary door locking device shall not be permanently mounted to the door.

> ***Exception:** Individual parts of the temporary door locking device assembly such as bolts, stops, brackets, pins, etc. that do not prevent normal ingress and egress through the door may be permanently mounted provided that when such parts are mounted on a labeled fire door assembly such installation does not affect the fire rating of the fire door assembly.*

2. The removal of the temporary door locking device, after it is engaged, shall not require more than one operation.

> ***Exception:** Two operations may be permitted to remove a temporary door locking device, after it is engaged, if the school building is equipped throughout with an automatic sprinkler system in accordance section 903.3.1.1.*

Provisions of the "Americans with Disabilities Act of 1990," 104 Stat. 327, 42 U.S.C.A. 12101, as amended, may apply to the use of the temporary door locking device but are outside the scope of this code.

We have established (proposed) 11 conditions door locking. The OBC language has some but not all of those provisions. The result would appear to allow use of improvised, inexpensive, cheap devices that might prohibit authorized personnel from gaining entry to the room-as well as impacting performance and rating of doors. Also, does the OBC normally cover operational/adminsiatrtiove items or should thet be in the fire code??

Classroom Door Locking to Prevent Unwanted Entry.

The locking means is approved.

The locking means can be engaged without opening the door.

The unlocking and unlatching from the classroom side of the door can be accomplished without the use of a key or tool.

The unlocking and unlatching requires not more than one releasing operation.

The unlocking and unlatching means are mounted at a height not exceeding 48 in. (1220 mm) above the finished floor.

Locks, if remotely engaged, can be unlocked from the classroom side.

The door is capable of being unlocked and opened from outside the room by staff with the necessary key or other credential.

The locking means does not modify the door closer, panic hardware, or fire exit hardware.

Modifications to fire door assemblies, including door hardware, shall be in accordance with NFPA 80.

1008.1.10.1 Installation. Where panic or fire exit hardware is installed, it shall comply with the following:

1. Panic hardware shall be listed in accordance with UL 305;
2. Fire exit hardware shall be listed in accordance with UL 10C and UL 305;
3. The actuating portion of the releasing device shall extend at least one-half of the door leaf width; and
4. The maximum unlatching force shall not exceed 15 pounds (67 N).

1008.1.10.2 Balanced doors. If balanced doors are used and panic hardware is required, the panic hardware shall be the push-pad type and the pad shall not extend more than one-half the width of the door measured from the latch side.

1008.2 Gates. Gates serving the means of egress system shall comply with the requirements of this section. Gates used as a component in a means of egress shall conform to the applicable requirements for doors.

Exception: Horizontal sliding or swinging gates exceeding the 4-foot (1219 mm) maximum leaf width limitation are permitted in fences and walls surrounding a stadium.

1008.2.1 Stadiums. Panic hardware is not required on gates surrounding stadiums where such gates are under constant immediate supervision while the public is present, and where safe dispersal areas based on 3 square feet (0.28 m^2) per occupant are located between the fence and enclosed space. Such required safe dispersal areas shall not be located less than 50 feet (15 240 mm) from the enclosed space. See Section 1027.6 for means of egress from safe dispersal areas.

1008.3 Turnstiles. Turnstiles or similar devices that restrict travel to one direction shall not be placed so as to obstruct any required means of egress.

Exception: Each turnstile or similar device shall be credited with no more than a 50-person capacity where all of the following provisions are met:

1. Each device shall turn free in the direction of egress travel when primary power is lost, and upon the manual release by an employee in the area.

2. Such devices are not given credit for more than 50 percent of the required egress capacity.
3. Each device is not more than 39 inches (991 mm) high.
4. Each device has at least 16 1/2 inches (419 mm) clear width at and below a height of 39 inches (991 mm) and at least 22 inches (559 mm) clear width at heights above 39 inches (991 mm).

Where located as part of an accessible route, turnstiles shall have at least 36 inches (914 mm) clear at and below a height of 34 inches (864 mm), at least 32 inches (813 mm) clear width between 34 inches (864 mm) and 80 inches (2032 mm) and shall consist of a mechanism other than a revolving device.

1008.3.1 High turnstile. Turnstiles more than 39 inches (991 mm) high shall meet the requirements for revolving doors.

1008.3.2 Additional door. Where serving an occupant load greater than 300, each turnstile that is not portable shall have a side-hinged swinging door which conforms to Section 1008.1 within 50 feet (15 240 mm).

SECTION 1009
STAIRWAYS

1009.1 Stairway width. The width of stairways shall be determined as specified in Section 1005.1, but such width shall not be less than 44 inches (1118 mm). See Section 1007.3 for accessible means of egress stairways.

Exceptions:

1. Stairways serving an occupant load of less than 50 shall have a width of not less than 36 inches (914 mm).
2. Spiral stairways as provided for in Section 1009.9.
3. Aisle stairs complying with Section 1028.
4. Where an incline platform lift or stairway chairlift is installed on stairways serving occupancies in Group R-3, or within dwelling units in occupancies in Group R-2, a clear passage width not less than 20 inches (508 mm) shall be provided. If the seat and platform can be folded when not in use, the distance shall be measured from the folded position.

1009.2 Headroom. Stairways shall have a minimum headroom clearance of 80 inches (2032 mm) measured vertically from a line connecting the edge of the nosings. Such headroom shall be continuous above the stairway to the point where the line intersects the landing below, one tread depth beyond the bottom riser. The minimum clearance shall be maintained the full width of the stairway

and landing.

Exceptions:

1. Spiral stairways complying with Section 1009.9 are permitted a 78-inch (1981 mm) headroom clearance.
2. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; where the nosings of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall be allowed to project horizontally into the required headroom a maximum of 4 ¾ inches (121 mm).

1009.3 Walkline. The walkline across winder treads shall be concentric to the direction of travel through the turn and located 12 inches (305 mm) from the side where the winders are narrower. The 12-inch (305 mm) dimension shall be measured from the widest point of the clear stair width at the walking surface of the winder.If winders are adjacent within the flight, the point of the widest clear stair width of the adjacent winders shall be used.

1009.4 Stair treads and risers. Stair treads and risers shall comply with Sections 1009.4.1 through 1009.4.5.

1009.4.1 Dimension reference surfaces. For the purpose of this section, all dimensions are exclusive of carpets, rugs or runners.

1009.4.2 Riser height and tread depth. Stair riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the leading edges of adjacent treads. Rectangular tread depths shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. Winder treads shall have a minimum tread depth of 11 inches (279 mm) measured between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline and a minimum tread depth of 10 inches (254 mm) within the clear width of the stair.

Exceptions:

1. Alternating tread devices in accordance with Section 1009.10.
2. Ship ladders in accordance with Section 1009.11.
3. Spiral stairways in accordance with Section 1009.9.
4. Aisle stairs in assembly seating areas where the stair pitch or slope is set, for sightline reasons, by the slope of the adjacent seating area in

accordance with Section 1028.11.2.

5. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; the maximum riser height shall be *8 ¼* inches (197 mm); the minimum tread depth shall be *9* inches (254 mm); the minimum winder tread depth at the walkline shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152 mm). A nosing not less than ¾ inch (19.1 mm) but not more than 1 ¼ inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).
6. See Section 3404.1 for the replacement of existing stairways.
7. In Group I-3 facilities, stairways providing access to guard towers, observation stations and control rooms, not more than 250 square feet (23 m^2)in area, shall be permitted to have a maximum riser height of 8 inches (203 mm) and a minimum tread depth of 9 inches (229 mm).

1009.4.3 Winder treads. Winder treads are not permitted in means of egress stairways except within a dwelling unit.

Exceptions:

1. Curved stairways in accordance with Section 1009.8.
2. Spiral stairways in accordance with Section 1009.9.

1009.4.4 Dimensional uniformity. Stair treads and risers shall be of uniform size and shape. The tolerance between the largest and smallest riser height or between the largest and smallest tread depth shall not exceed 3/8 inch (9.5 mm) in any flight of stairs. The greatest winder tread depth at the walkline within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

Exceptions:

1. Nonuniform riser dimensions of aisle stairs complying with Section 1028.11.2.
2. Consistently shaped winders, complying with Section 1009.4.2, differing from rectangular treads in the same stairway flight.

Where the bottom or top riser adjoins a sloping public way, walkway or driveway having an established grade and serving as a landing, the bottom or top riser is permitted to be reduced along the slope to less than 4 inches (102 mm) in height, with the variation in height of the bottom or top riser not to exceed one unit vertical in 12 units horizontal (8-percent slope) of stairway

width. The nosings or leading edges of treads at such nonuniform height risers shall have a distinctive marking stripe, different from any other nosing marking provided on the stair flight. The distinctive marking stripe shall be visible in descent of the stair and shall have a slip-resistant surface. Marking stripes shall have a width of at least 1 inch (25 mm) but not more than 2 inches (51 mm).

1009.4.5 Profile. The radius of curvature at the leading edge of the tread shall be not greater than 9/16 inch (14.3 mm). Beveling of nosings shall not exceed 9/16 inch (14.3 mm). Risers shall be solid and vertical or sloped under the tread above from the underside of the nosing above at an angle not more than 30 degrees (0.52 rad) from the vertical. The leading edge (nosing) of treads shall project not more than 1 ¼ inches (32 mm) beyond the tread below and all projections of the leading edges shall be of uniform size, including the leading edge of the floor at the top of a flight.

Exceptions:

1. Solid risers are not required for stairways that are not required to comply with Section 1007.3, provided that the opening between treads does not permit the passage of a sphere with a diameter of 4 inches (102 mm).
2. Solid risers are not required for occupancies in Group I-3 or in Group F, H and S occupancies other than areas accessible to the public. There are no restrictions on the size of the opening in the riser.
3. Solid risers are not required for spiral stairways constructed in accordance with Section 1009.9.
4. Solid risers are not required for alternating tread devices constructed in accordance with Section 1009.10.

1009.5 Stairway landings. There shall be a floor or landing at the top and bottom of each stairway. The width of landings shall not be less than the width of stairways they serve. Every landing shall have a minimum dimension measured in the direction of travel equal to the width of the stairway. Such dimension need not exceed 48 inches (1219 mm) where the stairway has a straight run. Doors opening onto a landing shall not reduce the landing to less than one-half the required width. When fully open, the door shall not project more than 7 inches (178 mm) into a landing. When wheelchair spaces are required on the stairway landing in accordance with Section 1007.6.1, the wheelchair space shall not be located in the required width of the landing and doors shall not swing over the wheelchair spaces.

Exception: Aisle stairs complying with Section 1028.

1009.6 Stairway construction. All stairways shall be built of materials

consistent with the types permitted for the type of construction of the building, except that wood handrails shall be permitted for all types of construction.

1009.6.1 Stairway walking surface. The walking surface of treads and landings of a stairway shall not be sloped steeper than one unit vertical in 48 units horizontal (2-percent slope) in any direction. Stairway treads and landings shall have a solid surface. Finish floor surfaces shall be securely attached.

Exceptions:

1. Openings in stair walking surfaces shall be a size that does not permit the passage of ½ -inch-diameter (12.7 mm) sphere. Elongated opening shall be placed so that the long dimension is perpendicular to the direction of travel.
2. In Group F, H and S occupancies, other than areas of parking structures accessible to the public, openings in treads and landings shall not be prohibited provided a sphere with a diameter of 1-1/8 inches (29 mm) cannot pass through the opening.

1009.6.2 Outdoor conditions. Outdoor stairways and outdoor approaches to stairways shall be designed so that water will not accumulate on walking surfaces.

1009.6.3 Enclosures under stairways. The walls and soffits within enclosed usable spaces under enclosed and unenclosed stairways shall be protected by 1-hour fire-resistance-rated construction or the fire-resistance rating of the stairway enclosure, whichever is greater. Access to the enclosed space shall not be directly from within the stair enclosure.

Exception: Spaces under stairways serving and contained within a single residential dwelling unit in Group R-2 or R-3 shall be permitted to be protected on the enclosed side with ½ inch (12.7 mm) gypsum board.

There shall be no enclosed usable space under exterior exit stairways unless the space is completely enclosed in 1-hour fire-resistance-rated construction. The open space under exterior stairways shall not be used for any purpose.

1009.7 Vertical rise. A flight of stairs shall not have a vertical rise greater than 12 feet (3658 mm) between floor levels or landings.

Exceptions:

1. Aisle stairs complying with Section 1028.
2. Alternating tread devices used as a means of egress shall not have a rise greater than 20 feet (6096 mm) between floor levels or landings.

1009.8 Curved stairways. Curved stairways with winder treads shall have treads

and risers in accordance with Section 1009.4 and the smallest radius shall not be less than twice the required width of the stairway.

Exception: The radius restriction shall not apply to curved stairways for occupancies in Group R-3 and within individual dwelling units in occupancies in Group R-2.

1009.9 Spiral stairways. Spiral stairways are permitted to be used as a component in the means of egress only within dwelling units or from a space not more than 250 square feet (23 m^2) in area and serving not more than five occupants, or from galleries, catwalks and gridirons in accordance with Section 1015.6.

A spiral stairway shall have a 7 ½ -inch (191 mm) minimum clear tread depth at a point 12 inches (305 mm) from the narrow edge. The risers shall be sufficient to provide a headroom of 78 inches (1981 mm) minimum, but riser height shall not be more than 9 ½ inches (241 mm). The minimum stairway clear width at and below the handrail shall be 26 inches (660 mm).

1009.10 Alternating tread devices. Alternating tread devices are limited to an element of a means of egress in buildings of Groups F, H and S from a mezzanine not more than 250 square feet (23 m^2) in area and which serves not more than five occupants; in buildings of Group I-3 from a guard tower, observation station or control room not more than 250 square feet (23 m^2) in area and for access to unoccupied roofs.

1009.10.1 Handrails of alternating tread devices. Handrails shall be provided on both sides of alternating tread devices and shall comply with Section 1012.

1009.10.2 Treads of alternating tread devices. Alternating tread devices shall have a minimum projected tread of 5 inches (127 mm), a minimum tread depth of 8 ½ inches (216 mm), a minimum tread width of 7 inches (178 mm) and a maximum riser height of 9 ½ inches (241 mm). The projected tread depth shall be measured horizontally between the vertical planes of the foremost projections of adjacent treads. The riser height shall be measured vertically between the leading edges of adjacent treads. The combination of riser height and projected tread depth provided shall result in an alternating tread device angle that complies with Section 1002. The initial tread of the device shall begin at the same elevation as the platform, landing or floor surface.

Exception: Alternating tread devices used as an element of a means of egress in buildings from a mezzanine area not more than 250 square feet (23 m^2) in area which serves not more than five occupants shall have a minimum projected tread of 8 ½ inches (216 mm) with a minimum tread depth of 10 ½

inches (267 mm). The rise to the next alternating tread surface should not be more than 8 inches (203 mm).

1009.11 Ship ladders. Ship ladders are permitted to be used in Group I-3 as a component of a means of egress to and from control rooms or elevated facility observation stations not more than 250 square feet (23 m^2) with not more than three occupants and for access to unoccupied roofs.

Ship ladders shall have a minimum tread depth of 5 inches (127 mm). The tread shall be projected such that the total of the tread depth plus the nosing projection is no less than 8 ½ inches (216 mm). The maximum riser height shall be 9 ½ inches (241 mm).

Handrails shall be provided on both sides of ship ladders. The minimum clear width at and below the handrails shall be 20 inches (508 mm).

1009.12 Handrails. Stairways shall have handrails on each side and shall comply with Section 1012. Where glass is used to provide the handrail, the handrail shall also comply with Section 2407.

Exceptions:

1. Handrails for aisle stairs are not required where permitted by Section 1028.13.
2. Stairways within dwelling units, spiral stairways and aisle stairs serving seating only on one side are permitted to have a handrail on one side only.
3. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require handrails.
4. In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require handrails.
5. Changes in room elevations of three or fewer risers within dwelling units and sleeping units in Group R-2 and R-3 do not require handrails.

1009.13 Stairway to roof. In buildings four or more stories above grade plane, one stairway shall extend to the roof surface, unless the roof has a slope steeper than four units vertical in 12 units horizontal (33-percent slope). In buildings without an occupied roof, access to the roof from the top story shall be permitted to be by an alternating tread device.

1009.13.1 Roof access. Where a stairway is provided to a roof, access to the roof shall be provided through a penthouse complying with Section 1509.2.

Exception: In buildings without an occupied roof, access to the roof shall be permitted to be a roof hatch or trap door not less than 16 square feet (1.5 m^2) in area and having a minimum dimension of 2 feet (610 mm).

1009.13.2 Protection at roof hatch openings. Where the roof hatch opening providing the required access is located within 10 feet (3049 mm) of the roof edge, such roof access or roof edge shall be protected by guards installed in accordance with the provisions of Section 1013.

1009.14 Stairway to elevator equipment. *Deleted.*

SECTION 1010
RAMPS

1010.1 Scope. The provisions of this section shall apply to ramps used as a component of a means of egress.

Exceptions:

1. Other than ramps that are part of the accessible routes providing access in accordance with Sections 1108.2 through 1108.2.4 and 1108.2.6, ramped aisles within assembly rooms or spaces shall conform with the provisions in Section 1028.11.
2. Curb ramps shall comply with *ICC A117.1*.
3. Vehicle ramps in parking garages for pedestrian exit access shall not be required to comply with Sections 1010.3 through 1010.9 when they are not an accessible route serving accessible parking spaces, other required accessible elements or part of an accessible means of egress.

1010.2 Slope. Ramps used as part of a means of egress shall have a running slope not steeper than one unit vertical in 12 units horizontal (8-percent slope). The slope of other pedestrian ramps shall not be steeper than one unit vertical in eight units horizontal (12.5-percent slope).

Exception: Aisle ramp slope in occupancies of Group A or assembly occupancies accessory to Group E occupancies shall comply with Section 1028.11.

1010.3 Cross slope. The slope measured perpendicular to the direction of travel of a ramp shall not be steeper than one unit vertical in 48 units horizontal (2-percent slope).

1010.4 Vertical rise. The rise for any ramp run shall be 30 inches (762 mm) maximum.

1010.5 Minimum dimensions. The minimum dimensions of means of egress ramps shall comply with Sections 1010.5.1 through 1010.5.3.

1010.5.1 Width. The minimum width of a means of egress ramp shall not be less than that required for corridors by Section 1018.2. The clear width of a ramp between handrails, if provided, or other permissible projections shall be 36 inches (914 mm) minimum.

1010.5.2 Headroom. The minimum headroom in all parts of the means of egress ramp shall not be less than 80 inches (2032 mm).

1010.5.3 Restrictions. Means of egress ramps shall not reduce in width in the direction of egress travel. Projections into the required ramp and landing width are prohibited. Doors opening onto a landing shall not reduce the clear width to less than 42 inches (1067 mm).

1010.6 Landings. Ramps shall have landings at the bottom and top of each ramp, points of turning, entrance, exits and at doors. Landings shall comply with Sections 1010.6.1 through 1010.6.5.

1010.6.1 Slope. Landings shall have a slope not steeper than one unit vertical in 48 units horizontal (2-percent slope) in any direction. Changes in level are not permitted.

1010.6.2 Width. The landing shall be at least as wide as the widest ramp run adjoining the landing.

1010.6.3 Length. The landing length shall be 60 inches (1525 mm) minimum.

Exceptions:

1. In Group R-2 and R-3 individual dwelling and sleeping units that are not required to be Accessible units, Type A units or Type B units in accordance with Section 1107, landings are permitted to be 36 inches (914 mm) minimum.
2. Where the ramp is not a part of an accessible route, the length of the landing shall not be required to be more than 48 inches (1220 mm) in the direction of travel.

1010.6.4 Change in direction. Where changes in direction of travel occur at landings provided between ramp runs, the landing shall be 60 inches by 60 inches (1524 mm by 1524 mm) minimum.

Exception: In Group R-2 and R-3 individual dwelling or sleeping units that are not required to be Accessible units, Type A units or Type B units in accordance with Section 1107, landings are permitted to be 36 inches by 36 inches (914 mm by 914 mm) minimum.

1010.6.5 Doorways. Where doorways are located adjacent to a ramp landing, maneuvering clearances required by ICC A117.1 are permitted to overlap the

required landing area.

1010.7 Ramp construction. All ramps shall be built of materials consistent with the types permitted for the type of construction of the building, except that wood handrails shall be permitted for all types of construction. Ramps used as an exit shall conform to the applicable requirements of Sections 1022.1 through 1022.6 for exit enclosures.

1010.7.1 Ramp surface. The surface of ramps shall be of slip-resistant materials that are securely attached.

1010.7.2 Outdoor conditions. Outdoor ramps and outdoor approaches to ramps shall be designed so that water will not accumulate on walking surfaces.

1010.8 Handrails. Ramps with a rise greater than 6 inches (152 mm) shall have handrails on both sides. Handrails shall comply with Section 1012.

Exception: Handrails for ramped aisles are not required where permitted by Section 1028.13.

1010.9 Edge protection. Edge protection complying with Section 1010.9.1 or 1010.9.2 shall be provided on each side of ramp runs and at each side of ramp landings.

Exceptions:

1. Edge protection is not required on ramps that are not required to have handrails, provided they have flared sides that comply with the ICC A117.1 curb ramp provisions.
2. Edge protection is not required on the sides of ramp landings serving an adjoining ramp run or stairway.
3. Edge protection is not required on the sides of ramp landings having a vertical drop off of not more than ½ inch (12.7 mm) within 10 inches (254 mm) horizontally of the required landing area.
4. In assembly spaces with fixed seating, edge protection is not required on the sides of ramps where the ramps provide access to the adjacent seating and aisle accessways.

1010.9.1 Curb, rail, wall or barrier. A curb, rail, wall or barrier shall be provided to serve as edge protection. A curb must be a minimum of 4 inches (102 mm) in height. Barriers must be constructed so that the barrier prevents the passage of a 4-inch-diameter (102 mm) sphere, where any portion of the sphere is within 4 inches (102 mm) of the floor or ground surface.

1010.9.2 Extended floor or ground surface. The floor or ground surface of the ramp run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with Section 1012.

1010.10 Guards. Guards shall be provided where required by Section 1013 and shall be constructed in accordance with Section 1013.

SECTION 1011
EXIT SIGNS

1011.1 Where required. Exits and exit access doors shall be marked by an approved exit sign readily visible from any direction of egress travel. The path of egress travel to exits and within exits shall be marked by readily visible exit signs to clearly indicate the direction of egress travel in cases where the exit or the path of egress travel is not immediately visible to the occupants. Intervening means of egress doors within exits shall be marked by exit signs. Exit sign placement shall be such that no point in an exit access corridor or exit passageway is more than 100 feet (30 480 mm) or the listed viewing distance for the sign, whichever is less, from the nearest visible exit sign.

Exceptions:

1. Exit signs are not required in rooms or areas that require only one exit or exit access.
2. Main exterior exit doors or gates that are obviously and clearly identifiable as exits need not have exit signs where approved by the building official.
3. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3.
4. Exit signs are not required in dayrooms, sleeping rooms or dormitories in occupancies in *Group I.*
5. In occupancies in Groups A-4 and A-5, exit signs are not required on the seating side of vomitories or openings into seating areas where exit signs are provided in the concourse that are readily apparent from the vomitories. Egress lighting is provided to identify each vomitory or opening within the seating area in an emergency.

1011.2 Illumination. Exit signs shall be internally or externally illuminated.

Exception: Tactile signs required by Section 1011.3 need not be provided with illumination.

1011.3 Tactile exit signs. A tactile sign stating EXIT and complying with *Chapter 11* shall be provided adjacent to each door to an area of refuge, an exterior area for assisted rescue, an exit stairway, an exit ramp, an exit passageway and the exit discharge.

1011.4 Internally illuminated exit signs. Electrically powered, self-luminous and photoluminescent exit signs shall be listed and labeled in accordance with UL

924 and shall be installed in accordance with the manufacturer's instructions and Chapter 27. Exit signs shall be illuminated at all times.

1011.5 Externally illuminated exit signs. Externally illuminated exit signs shall comply with Sections 1011.5.1 through 1011.5.3.

1011.5.1 Graphics. Every exit sign and directional exit sign shall have plainly legible letters not less than 6 inches (152 mm) high with the principal strokes of the letters not less than $^{3}/4$ inch (19.1 mm) wide. The word "EXIT" shall have letters having a width not less than 2 inches (51 mm) wide, except the letter "I," and the minimum spacing between letters shall not be less than 3/8 inch (9.5 mm). Signs larger than the minimum established in this section shall have letter widths, strokes and spacing in proportion to their height.

The word "**EXIT**" shall be in high contrast with the background and shall be clearly discernible when the means of exit sign illumination is or is not energized. If a chevron directional indicator is provided as part of the exit sign, the construction shall be such that the direction of the chevron directional indicator cannot be readily changed.

1011.5.2 Exit sign illumination. The face of an exit sign illuminated from an external source shall have an intensity of not less than 5 foot-candles (54 lux).

1011.5.3 Power source. Exit signs shall be illuminated at all times. To ensure continued illumination for a duration of not less than 90 minutes in case of primary power loss, the sign illumination means shall be connected to an emergency power system provided from storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Chapter 27.

Exception: Approved exit sign illumination means that provide continuous illumination independent of external power sources for a duration of not less than 90 minutes, in case of primary power loss, are not required to be connected to an emergency electrical system.

SECTION 1012
HANDRAILS

1012.1 Where required. Handrails for stairways and ramps shall be adequate in strength and attachment in accordance with Section 1607.7. Handrails required for stairways by Section 1009.12 shall comply with Sections 1012.2 through 1012.9. Handrails required for ramps by Section 1010.8 shall comply with Sections 1012.2 through 1012.8.

1012.2 Height. Handrail height, measured above stair tread nosings, or finish surface of ramp slope, shall be uniform, not less than 34 inches (864 mm) and not more than 38 inches (965 mm). Handrail height of alternating tread devices and ship ladders, measured above tread nosings, shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).

1012.3 Handrail graspability. All required handrails shall comply with Section 1012.3.1 or shall provide equivalent graspability.

Exception: In Group R-3 occupancies; within dwelling units *not required to be accessible, Type A or Type B* in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; handrails shall be Type I in accordance with Section 1012.3.1, Type II in accordance with Section 1012.3.2 or shall provide equivalent graspability.

1012.3.1 Type I. Handrails with a circular cross section shall have an outside diameter of at least 1 ¼ inches (32 mm) and not greater than 2 inches (51 mm). If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches (102 mm) and not greater than 6 ¼ inches (160 mm) with a maximum cross-section dimension of 2 ¼ inches (57 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

1012.3.2 Type II. Handrails with a perimeter greater than 6 ¼ inches (160 mm) shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of ¾ inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inch (8 mm) within 7/8 inch (22 mm) below the widest portion of the profile. This required depth shall continue for at least 3/8 inch (10 mm) to a level that is not less than 1 ¾ inches (45 mm) below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 1 ¼ inches (32 mm) to a maximum of 2 ¾ inches (70 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

1012.4 Continuity. Handrail-gripping surfaces shall be continuous, without interruption by newel posts or other obstructions.

Exceptions:

1. Handrails within dwelling units are permitted to be interrupted by a newel post at a turn or landing.
2. Within a dwelling unit, the use of a volute, turnout, starting easing or starting newel is allowed over the lowest tread.
3. Handrail brackets or balusters attached to the bottom surface of the handrail that do not project horizontally beyond the sides of the

handrail within 1 ½ inches (38 mm) of the bottom of the handrail shall not be considered obstructions. For each ½ inch (12.7 mm) of additional handrail perimeter dimension above 4 inches (102 mm), the vertical clearance dimension of 1 ½ inches (38 mm) shall be permitted to be reduced by 1/8 inch (3 mm).

4. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of the handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.

1012.5 Fittings. Handrails shall not rotate within their fittings.

1012.6 Handrail extensions. Handrails shall return to a wall, guard or the walking surface or shall be continuous to the handrail of an adjacent stair flight. Where handrails are not continuous between flights the handrails shall extend horizontally at least 12 inches (305 mm) beyond the top riser and continue to slope for the depth of one tread beyond the bottom *riser*. At ramps where handrails are not continuous between runs, the handrails shall extend horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of ramp runs. The extensions of handrails shall be in the same direction of the stair flights at stairways and the ramp runs at ramps.

Exceptions:

1. Handrails within a dwelling unit that is not required to be accessible need extend only from the top riser to the bottom riser.
2. Aisle handrails in *rooms or spaces used for assembly purposes* in accordance with Section 1028.13.
3. Handrails for alternating tread devices and ship ladders are permitted to terminate at a location vertically above the top and bottom risers. Handrails for alternating tread devices are not required to be continuous between flights or to extend beyond the top or bottom risers.

1012.7 Clearance. Clear space between a handrail and a wall or other surface shall be a minimum of 1 ½ inches (38 mm). A handrail and a wall or other surface adjacent to the handrail shall be free of any sharp or abrasive elements.

1012.8 Projections. On ramps, the clear width between handrails shall be 36 inches (914 mm) minimum. Projections into the required width of stairways and ramps at each handrail shall not exceed 4 ½ inches (114 mm) at or below the handrail height. Projections into the required width shall not be limited above the minimum headroom height required in Section 1009.2.

1012.9 Intermediate handrails. Stairways shall have intermediate handrails located in such a manner that all portions of the stairway width required for egress

capacity are within 30 inches (762 mm) of a handrail. On monumental stairs, handrails shall be located along the most direct path of egress travel.

SECTION 1013
GUARDS

1013.1 Where required. Guards shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, stairs, ramps and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Guards shall be adequate in strength and attachment in accordance with Section 1607.7.

Exception: Guards are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of stages and raised platforms, including steps leading up to the stage and raised platforms.
3. On raised stage and platform floor areas, such as runways, ramps and side stages used for entertainment or presentations.
4. At vertical openings in the performance area of stages and platforms.
5. At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating where guards in accordance with Section 1028.14 are permitted and provided.

1013.1.1 Glazing. Where glass is used to provide a guard or as a portion of the guard system, the guard shall also comply with Section 2407. Where the glazing provided does not meet the strength and attachment requirements of Section 1607.7, complying guards shall also be located along glazed sides of open-sided walking surfaces.

1013.2 Height. Required guards shall be not less than 42 inches (1067 mm) high, measured vertically above the adjacent walking surfaces, adjacent fixed seating or the line connecting the leading edges of the treads.

Exceptions:

1. For occupancies in Group R-3, and within individual dwelling units in occupancies in Group R-2, guards on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
2. For occupancies in Group R-3, and within individual dwelling units in

occupancies in Group R-2, where the top of the guard also serves as a handrail on the open sides of stairs, the top of the guard shall not be less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

3. The height in assembly seating areas shall be in accordance with Section 1028.14.
4. Along alternating tread devices and ship ladders, guards whose top rail also serves as a handrail, shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread nosing.

1013.3 Opening limitations. Required guards shall not have openings which allow passage of a sphere 4 inches (102 mm) in diameter from the walking surface to the required guard height.

Exceptions:

1. *Deleted*
2. The triangular openings at the open sides of a stair, formed by the riser, tread and bottom rail shall not allow passage of a sphere 6 inches (152 mm) in diameter.
3. At elevated walking surfaces for access to and use of electrical, mechanical or plumbing systems or equipment, guards shall not have openings which allow passage of a sphere 21 inches (533 mm) in diameter.
4. In areas that are not open to the public within occupancies in Group I-3, F, H or S, and for alternating tread devices and ship ladders, guards shall not have openings which allow passage of a sphere 21 inches (533 mm) in diameter.
5. In assembly seating areas, guards at the end of aisles where they terminate at a fascia of boxes, balconies and galleries shall not have openings which allow passage of a sphere 4 inches in diameter (102 mm) up to a height of 26 inches (660 mm). From a height of 26 inches (660 mm) to 42 inches (1067 mm) above the adjacent walking surfaces, guards shall not have openings which allow passage of a sphere 8 inches (203 mm) in diameter.
6. *Deleted*

1013.4 Screen porches. Porches and decks which are enclosed with insect screening shall be provided with guards where the walking surface is located more than 30 inches (762 mm) above the floor or grade below.

1013.5 Mechanical equipment. Guards shall be provided where appliances, equipment, fans, roof hatch openings or other components that require service are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter. The guard shall extend not less than 30 inches (762 mm) beyond each end of such appliance, equipment, fan or component.

1013.6 Roof access. Guards shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

SECTION 1014
EXIT ACCESS

1014.1 General. The exit access shall comply with the applicable provisions of Sections 1003 through 1013. Exit access arrangement shall comply with Sections 1014 through 1019.

1014.2 Egress through intervening spaces. Egress through intervening spaces shall comply with this section.

1. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit.

   Exception: Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy when the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.
2. An exit access shall not pass through a room that can be locked to prevent egress.
3. Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.
4. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.

   Exceptions:

   1. Means of egress are not prohibited through a kitchen area

serving adjoining rooms constituting part of the same dwelling unit or sleeping unit.

2. Means of egress are not prohibited through stockrooms in Group M occupancies when all of the following are met:
   2.1. The stock is of the same hazard classification as that found in the main retail area;
   2.2. Not more than 50 percent of the exit access is through the stockroom;
   2.3. The stockroom is not subject to locking from the egress side; and
   2.4. There is a demarcated, minimum 44-inch-wide (1118 mm) aisle defined by full-or partial-height fixed walls or similar construction that will maintain the required width and lead directly from the retail area to the exit without obstructions.

1014.2.1 Multiple tenants. Where more than one tenant occupies any one floor of a building or structure, each tenant space, dwelling unit and sleeping unit shall be provided with access to the required exits without passing through adjacent tenant spaces, dwelling units and sleeping units.

Exception: The means of egress from a smaller tenant space shall not be prohibited from passing through a larger adjoining tenant space where such rooms or spaces of the smaller tenant occupy less than 10 percent of the area of the larger tenant space through which they pass; are the same or similar occupancy group; a discernable path of egress travel to an exit is provided; and the means of egress into the adjoining space is not subject to locking from the egress side. A required means of egress serving the larger tenant space shall not pass through the smaller tenant space or spaces.

1014.2.2 Group I-2. Habitable rooms or suites in Group I-2 occupancies shall have an exit access door leading directly to a corridor.

Exception: Rooms with exit doors opening directly to the outside at ground level.

1014.2.3 Suites in patient sleeping areas. Patient sleeping areas in Group I-2 occupancies shall be permitted to be divided into suites with one intervening room if one of the following conditions is met:

1. The intervening room within the suite is not used as an exit access for more than eight patient beds.
2. The arrangement of the suite allows for direct and constant visual

supervision by nursing personnel.

1014.2.3.1 Area. Suites of sleeping rooms shall not exceed 5,000 square feet (465 m^2).

1014.2.3.2 Exit access. Any patient sleeping room, or any suite that includes patient sleeping rooms, of more than 1,000 square feet (93 m^2) shall have at least two exit access doors remotely located from each other.

1014.2.3.3 Travel distance. The travel distance between any point in a suite of sleeping rooms and an exit access door of that suite shall not exceed 100 feet (30 480 mm).

1014.2.4 Suites in areas other than patient sleeping areas. Areas other than patient sleeping areas in Group I-2 occupancies shall be permitted to be divided into suites.

1014.2.4.1 Area. Suites of rooms, other than patient sleeping rooms, shall not exceed 10,000 square feet (929 m^2).

1014.2.4.2 Exit access. Any room or suite of rooms, other than patient sleeping rooms, of more than 2,500 square feet (232 m^2) shall have at least two exit access doors remotely located from each other.

1014.2.4.3 One intervening room. For rooms other than patient sleeping rooms, suites of rooms are permitted to have one intervening room if the travel distance within the suite to the exit access door is not greater than 100 feet (30 480 mm).

1014.2.4.4 Two intervening rooms. For rooms other than patient sleeping rooms located within a suite, exit access travel from within the suite shall be permitted through two intervening rooms where the travel distance to the exit access door is not greater than 50 feet (15 240 mm).

1014.2.5 Exit access through suites. Exit access from all other portions of a building not classified as a suite in a Group I-2 occupancy shall not pass through a suite.

1014.2.6 Travel distance. The travel distance between any point in a Group I-2 occupancy patient sleeping room and an exit access door in that room shall not exceed 50 feet (15240 mm).

1014.2.7 Separation. Suites in Group I-2 occupancies shall be separated from other portions of the building by a smoke partition complying with Section 711.

1014.3 Common path of egress travel. In occupancies other than Groups H-1, H-2 and H-3, the common path of egress travel shall not exceed 75 feet (22 860 mm). In Group H-1, H-2 and H-3 occupancies, the common path of egress travel

shall not exceed 25 feet (7620 mm). For common path of egress travel in Group A occupancies and assembly occupancies accessory to Group E occupancies having fixed seating, see Section 1028.8.

Exceptions:

1. The length of a common path of egress travel in Group B, F and S occupancies shall not be more than 100 feet (30 480 mm), provided that the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
2. Where a tenant space in Group B, S and U occupancies has an occupant load of not more than 30, the length of a common path of egress travel shall not be more than 100 feet (30 480 mm).
3. The length of a common path of egress travel in a Group I-3 occupancy shall not be more than 100 feet (30 480 mm).

The length of a common path of egress travel in a Group R-2 occupancy shall not be more than 125 feet (38 100 mm), provided that the building is protected throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

SECTION 1015
EXIT AND EXIT ACCESS DOORWAYS

1015.1 Exits or exit access doorways from spaces. Two exits or exit access doorways from any space shall be provided where one of the following conditions exists:

Exception: Group I-2 occupancies shall comply with Section 1014.2.2 through 1014.2.7.

1. The occupant load of the space exceeds one of the values in Table 1015.1.

   Exception: In Group R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

2. The common path of egress travel exceeds one of the limitations of Section 1014.3.
3. Where required by Section 1015.3, 1015.4, 1015.5, 1015.6 or 1015.6.1.

Where a building contains mixed occupancies, each individual occupancy shall comply with the applicable requirements for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1.

TABLE 1015.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E[a], F, M, U	49
H-1, H-2, H-3	3
H-4, H-5, I-1, I-3, I-4, R	10
S	29

a. Day care maximum occupant load is 10.

1015.1.1 Three or more exits or exit access doorways.
Three exits or exit access doorways shall be provided from any space with an occupant load of 501 to 1,000. Four exits or exit access doorways shall be provided from any space with an occupant load greater than 1,000.

1015.2 Exit or exit access doorway arrangement. Required exits shall be located in a manner that makes their availability obvious. Exits shall be unobstructed at all times. Exit and exit access doorways shall be arranged in accordance with Sections 1015.2.1 and 1015.2.2.

1015.2.1 Two exits or exit access doorways. Where two exits or exit access doorways are required from any portion of the exit access,the exit doors or exit access doorways shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exit doors or exit access doorways. Interlocking or scissor stairs shall be counted as one exit stairway.

Exceptions:

1. Where exit enclosures are provided as a portion of the required exit and are interconnected by a 1-hour fire-resistance-rated corridor conforming to the requirements of Section 1018, the required exit separation shall be measured along the shortest direct line of travel within the corridor.
2. Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the

separation distance of the exit doors or exit access doorways shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

1015.2.2 Three or more exits or exit access doorways.
Where access to three or more exits is required, at least two exit doors or exit access doorways shall be arranged in accordance with the provisions of Section 1015.2.1.

1015.3 Boiler, incinerator and furnace rooms. Two exit access doorways are required in boiler, incinerator and furnace rooms where the area is over 500 square feet (46 m^2) and any fuel-fired equipment exceeds 400,000 British thermal units (Btu) (422 000 KJ) input capacity. Where two exit access doorways are required, one is permitted to be a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the length of the maximum overall diagonal dimension of the room.

1015.4 Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m^2) shall have not less than two exits or exit access doors. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of room.

All portions of machinery rooms shall be within 150 feet (45 720 mm) of an exit or exit access doorway. An increase in travel distance is permitted in accordance with Section 1016.1.

Doors shall swing in the direction of egress travel, regardless of the occupant load served. Doors shall be tight fitting and self-closing.

1015.5 Refrigerated rooms or spaces. Rooms or spaces having a floor area larger than 1,000 square feet (93 m^2), containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two exits or exit access doors.

Travel distance shall be determined as specified in Section 1016.1, but all portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an exit or exit access door where such rooms are not protected by an approved automatic sprinkler system. Egress is allowed through adjoining refrigerated rooms or spaces.

Exception: Where using refrigerants in quantities limited to the amounts based on the volume set forth in the *mechanical code*.

1015.6 Stage means of egress. Where two means of egress are required, based on

the stage size or occupant load, one means of egress shall be provided on each side of the stage.

1015.6.1 Gallery, gridiron and catwalk means of egress. The means of egress from lighting and access catwalks, galleries and gridirons shall meet the requirements for occupancies in Group F-2.

Exceptions:

1. A minimum width of 22 inches (559 mm) is permitted for lighting and access catwalks.
2. Spiral stairs are permitted in the means of egress.
3. Stairways required by this subsection need not be enclosed.
4. Stairways with a minimum width of 22 inches (559 mm), ladders or spiral stairs are permitted in the means of egress.
5. A second means of egress is not required from these areas where a means of escape to a floor or to a roof is provided. Ladders, alternating tread devices or spiral stairs are permitted in the means of escape.
6. Ladders are permitted in the means of egress.

SECTION 1016
EXIT ACCESS TRAVEL DISTANCE

1016.1 Travel distance limitations. Exits shall be so located on each story such that the maximum length of exit access travel, measured from the most remote point within a story along the natural and unobstructed path of egress travel to an exterior exit door at the level of exit discharge, an entrance to a vertical exit enclosure, an exit passageway, a horizontal exit, an exterior exit stairway or an exterior exit ramp, shall not exceed the distances given in Table 1016.1.

Exceptions:

1. Travel distance in open parking garages is permitted to be measured to the closest riser of open exit stairways.
2. In outdoor facilities with open exit access components and open exterior exit stairways or exit ramps, travel distance is permitted to be measured to the closest riser of an exit stairway or the closest slope of the exit ramp.
3. In other than occupancy Groups H and I, the exit access travel distance to a maximum of 50 percent of the exits is permitted to be measured from the most remote point within a building to an exit using unenclosed exit access stairways or ramps when connecting a maximum of two stories. The two connected stories shall be provided with at least two means of egress. Such interconnected stories shall not be open to

other stories.

4. In other than occupancy Groups H and I, exit access travel distance is permitted to be measured from the most remote point within a building to an exit using unenclosed exit access stairways or ramps in the first and second stories above grade plane in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The first and second stories above grade plane shall be provided with at least two means of egress. Such interconnected stories shall not be open to other stories.

Where applicable, travel distance on unenclosed exit access stairways or ramps and on connecting stories shall also be included in the travel distance measurement. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.

TABLE 1016.1
EXIT ACCESS TRAVEL DISTANCE[a]

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250[b]
I-1	Not Permitted	250[c]
B	200	300[c]
F-2, S-2, U	300	400[c]
H-1	Not Permitted	75[c]
H-2	Not Permitted	100[c]
H-3	Not Permitted	150[c]
H-4	Not Permitted	175[c]
H-5	Not Permitted	200[c]
I-2, I-3, I-4	Not Permitted	200[c]

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:
Section 402.4: For the distance limitation in malls.
Section 404.9: For the distance limitation through an atrium space.
Section 407.4: For the distance limitation in Group I-2.
Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.
Section 411.4: For the distance limitation in special amusement buildings.
Section 1014.2.2:For the distance limitation in Group I-2 hospital suites.
Section 1015.4: For the distance limitation in refrigeration machinery rooms.
Section 1015.5: For the distance limitation in refrigerated rooms and spaces.

Section 1016.3: For increased limitation in Groups F-1 and S-1.
Section 1021.2: For buildings with one exit.
Section 1028.7: For increased limitation in assembly seating.
Section 1028.7: For increased limitation for assembly open-air seating.
Section 3103.4: For temporary structures.
Section 3104.9: For pedestrian walkways.

b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

1016.2 Exterior egress balcony increase. Travel distances specified in Section 1016.1 shall be increased up to an additional 100 feet (30 480 mm) provided the last portion of the exit access leading to the exit occurs on an exterior egress balcony constructed in accordance with Section 1019. The length of such balcony shall not be less than the amount of the increase taken.

1016.3 Group F-1 and S-1 increase. *The maximum exit access travel distance shall be 400 feet (121,920 mm) in Group F-1 and S-1 occupancies where all of the following are met:*

1. *The portion of the building classified as Group F-1 or S-1 is limited to one story in height; and*
2. *The minimum height from the finished floor to the bottom of the ceiling or roof slab or deck is 24 feet (7315 mm); and*
3. *The portion of the building classified as Group F-1 or S-1 is equipped throughout with an early suppression fast response (ESFR) automatic fire sprinkler system in accordance with Section 903.3.1.1; and*
4. *The portion of the building classified as Group F-1 or S-1 is equipped with a manually activated smoke exhaust system complying with Section 910.5.*

SECTION 1017
AISLES

1017.1 General. Aisles serving as a portion of the exit access in the means of egress system shall comply with the requirements of this section. Aisles shall be provided from all occupied portions of the exit access which contain seats, tables, furnishings, displays and similar fixtures or equipment. Aisles serving assembly areas shall comply with Section 1028. Aisles serving reviewing stands, grandstands and bleachers shall also comply with Section 1028. The required width of aisles shall be unobstructed.

Exception: Doors complying with Section 1005.2.

1017.2 Aisles in Groups B and M. In Group B and M occupancies, the minimum clear aisle width shall be determined by Section 1005.1 for the occupant load served, but shall not be less than 36 inches (914 mm).

Exception: Nonpublic aisles serving less than 50 people and not required to be accessible by Chapter 11 need not exceed 28 inches (711 mm) in width.

1017.3 Aisle accessways in Group M. An aisle accessway shall be provided on at least one side of each element within the merchandise pad. The minimum clear width for an aisle accessway not required to be accessible shall be 30 inches (762 mm). The required clear width of the aisle accessway shall be measured perpendicular to the elements and merchandise within the merchandise pad. The 30-inch (762 mm) minimum clear width shall be maintained to provide a path to an adjacent aisle or aisle accessway. The common path of travel shall not exceed 30 feet (9144 mm) from any point in the merchandise pad.

Exception: For areas serving not more than 50 occupants, the common path of travel shall not exceed 75 feet (22 880 mm).

1017.4 Seating at tables. Where seating is located at a table or counter and is adjacent to an aisle or aisle accessway, the measurement of required clear width of the aisle or aisle accessway shall be made to a line 19 inches (483 mm) away from and parallel to the edge of the table or counter. The 19-inch (483 mm) distance shall be measured perpendicular to the side of the table or counter. In the case of other side boundaries for aisle or aisle accessways, the clear width shall be measured to walls, edges of seating and tread edges, except that handrail projections are permitted.

Exception: Where tables or counters are served by fixed seats, the width of the aisle accessway shall be measured from the back of the seat.

1017.4.1 Aisle accessway for tables and seating. Aisle accessways serving arrangements of seating at tables or counters shall have sufficient clear width to conform to the capacity requirements of Section 1005.1 but shall not have less than the appropriate minimum clear width specified in Section 1017.4.2.

1017.4.2 Table and seating accessway width. Aisle accessways shall provide a minimum of 12 inches (305 mm) of width plus ½ inch (12.7 mm) of width for each additional 1 foot (305 mm), or fraction thereof, beyond 12 feet (3658 mm) of aisle accessway length measured from the center of the seat farthest from an aisle.

Exception: Portions of an aisle accessway having a length not exceeding 6

feet (1829 mm) and used by a total of not more than four persons.

1017.4.3 Table and seating aisle accessway length. The length of travel along the aisle accessway shall not exceed 30 feet (9144 mm) from any seat to the point where a person has a choice of two or more paths of egress travel to separate exits.

SECTION 1018
CORRIDORS

1018.1 Construction. Corridors shall be fire-resistance rated in accordance with Table 1018.1. The corridor walls required to be fire-resistance rated shall comply with Section 709 for fire partitions.

Exceptions:

1. A fire-resistance rating is not required for corridors in an occupancy in Group E where each room that is used for instruction has at least one door opening directly to the exterior and rooms for assembly purposes have at least one-half of the required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. A fire-resistance rating is not required for corridors contained within a dwelling or sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B which is a space requiring only a single means of egress complying with Section 1015.1.

TABLE 1018.1
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	Not Permitted [d]	0.5
I-2a, I-4	All	Not Permitted	0

I-1, I-3	All	Not Permitted	1[b]

a. For requirements for occupancies in Group I-2, see Sections 407.2 and 407.3.
b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.8.
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.
d. One hour when design qualifies in accordance with Section 903.2.8, exception 3.

1018.2 Corridor width. The minimum corridor width shall be as determined in Section 1005.1, but not less than 44 inches (1118 mm).

Exceptions:

1. Twenty-four inches (610 mm)—For access to and utilization of electrical, mechanical or plumbing systems or equipment.
2. Thirty-six inches (914 mm)—With a required occupant capacity of less than 50.
3. Thirty-six inches (914 mm)—Within a dwelling unit.
4. Seventy-two inches (1829 mm)—In Group E with a corridor having a required capacity of 100 or more.
5. Seventy-two inches (1829 mm)—In corridors and areas serving gurney traffic in occupancies where patients receive outpatient medical care, which causes the patient to be not capable of self-preservation.
6. Ninety-six inches (2438 mm)—In Group I-2 in areas where required for bed movement. *Corridors are not required to have a clear width of 96 inches (2438 mm) in areas where there will not be stretcher or bed movement for access to care or as part of the defend in place strategy.*

1018.3 Corridor obstruction. The required width of corridors shall be unobstructed.

Exception: Doors complying with Section 1005.2.

1018.4 Dead ends. Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 20 feet (6096 mm) in length.

Exceptions:

1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see Section 308.4), the dead end in a corridor shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B, E, F, I-1, M, R-1, R-2, R-4, S and U, where the building is equipped throughout with an automatic sprinkler

system in accordance with Section 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet (15 240 mm).

3. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.

1018.5 Air movement in corridors. Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.

Exceptions:

1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor.
2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.
3. Where located within tenant spaces of 1,000 square feet (93 m^2) or less in area, utilization of corridors for conveying return air is permitted.
4. Incidental air movement from pressurized rooms within health care facilities, provided that the corridor is not the primary source of supply or return to the room.

1018.5.1 Corridor ceiling. Use of the space between the corridor ceiling and the floor or roof structure above as a return air plenum is permitted for one or more of the following conditions:

1. The corridor is not required to be of fire-resistance-rated construction;
2. The corridor is separated from the plenum by fire-resistance-rated construction;
3. The air-handling system serving the corridor is shut down upon activation of the air-handling unit smoke detectors required by the International Mechanical Code;
4. The air-handling system serving the corridor is shut down upon detection of sprinkler waterflow where the building is equipped throughout with an automatic sprinkler system; or
5. The space between the corridor ceiling and the floor or roof structure above the corridor is used as a component of an approved engineered smoke control system.

1018.6 Corridor continuity. Fire-resistance-rated corridors shall be continuous from the point of entry to an exit, and shall not be interrupted by intervening

rooms.

Exception: Foyers, lobbies or reception rooms constructed as required for corridors shall not be construed as intervening rooms.

SECTION 1019
EGRESS BALCONIES

1019.1 General. Balconies used for egress purposes shall conform to the same requirements as corridors for width, headroom, dead ends and projections.

1019.2 Wall separation. Exterior egress balconies shall be separated from the interior of the building by walls and opening protectives as required for corridors.

Exception: Separation is not required where the exterior egress balcony is served by at least two stairs and a dead-end travel condition does not require travel past an unprotected opening to reach a stair.

1019.3 Openness. The long side of an egress balcony shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

SECTION 1020
EXITS

1020.1 General. Exits shall comply with Sections 1020 through 1026 and the applicable requirements of Sections 1003 through 1013. An exit shall not be used for any purpose that interferes with its function as a means of egress. Once a given level of exit protection is achieved, such level of protection shall not be reduced until arrival at the exit discharge.

1020.2 Exterior exit doors. Buildings or structures used for human occupancy shall have at least one exterior door that meets the requirements of Section 1008.1.1.

1020.2.1 Detailed requirements. Exterior exit doors shall comply with the applicable requirements of Section 1008.1.

1020.2.2 Arrangement. Exterior exit doors shall lead directly to the exit discharge or the public way.

SECTION 1021
NUMBER OF EXITS AND CONTINUITY

1021.1 Exits from stories. All spaces within each story shall have access to the minimum number of approved independent exits as specified in Table 1021.1 based on the occupant load of the story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories.

Exceptions:

1. As modified by Section 403.5.2.
2. As modified by Section 1021.2.
3. Exit access stairways and ramps that comply with Exception 3 or 4 of Section 1016.1 shall be permitted to provide the minimum number of approved independent exits required by Table 1021.1 on each story.
4. In Group R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
5. Within a story, rooms and spaces complying with Section 1015.1 with exits that discharge directly to the exterior at the level of exit discharge, are permitted to have one exit.

TABLE 1021.1

MINIMUM NUMBER OF EXITS FOR OCCUPANT LOAD

OCCUPANT LOAD (persons per story)	MINIMUM NUMBER OF EXITS (per story)
1-500	2
501-1,000	3
More than 1,000	4

1021.1.1 Exits maintained. The required number of exits from any story shall be maintained until arrival at grade or the public way.

1021.1.2 Parking structures. Parking structures shall not have less than two exits from each parking tier, except that only one exit is required where vehicles are mechanically parked. Vehicle ramps shall not be considered as required exits unless pedestrian facilities are provided.

1021.1.3 Helistops. The means of egress from helistops shall comply with the provisions of this chapter, provided that landing areas located on buildings or structures shall have two or more exits. For landing platforms or roof areas less than 60 feet (18 288 mm) long, or less than 2,000 square feet (186 m^2) in area,

the second means of egress is permitted to be a fire escape, alternating tread device or ladder leading to the floor below.

1021.2 Single exits. Only one exit shall be required from Group R-3 occupancy buildings or from stories of other buildings as indicated in Table 1021.2. Occupancies shall be permitted to have a single exit in buildings otherwise required to have more than one exit if the areas served by the single exit do not exceed the limitations of Table 1021.2. Mixed occupancies shall be permitted to be served by single exits provided each individual occupancy complies with the applicable requirements of Table 1021.2 for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1. Basements with a single exit shall not be located more than one story below grade plane.

TABLE 1021.2
STORIES WITH ONE EXIT

STORY	OCCUPANCY	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
First story or basement	A, B[d], E[e], F[d], M, U, S[d]	49 occupants and 75 feet travel distance
	H-2, H-3	3 occupants and 25 feet travel distance
	H-4, H-5, I, R	10 occupants and 75 feet travel distance
	S[a]	29 occupants and 100 feet travel distance
Second story	B[b], F, M, S[a]	29 occupants and 75 feet travel distance
	R-2	4 dwelling units and 50 feet travel distance
Third story	R-2[c]	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 304.8 mm.
a. For the required number of exits for parking structures, see Section 1021.1.2.
b. For the required number of exits for air traffic control towers, see Section 412.3.
c. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
d. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
e. Day care occupancies shall have a maximum occupant load of 10.

1021.3 Exit continuity. Exits shall be continuous from the point of entry into the exit to the exit discharge.

1021.4 Exit door arrangement. Exit door arrangement shall meet the requirements of Sections 1015.2 through 1015.2.2.

SECTION 1022
EXIT ENCLOSURES

1022.1 Enclosures required. Interior exit stairways and interior exit ramps shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both. Exit enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the exit enclosure shall include any basements but not any mezzanines. Exit enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. Exit enclosures shall lead directly to the exterior of the building or shall be extended to the exterior of the building with an exit passageway conforming to the requirements of Section 1023, except as permitted in Section 1027.1. An exit enclosure shall not be used for any purpose other than means of egress.

Exceptions:

1. In all occupancies, other than Group H and I occupancies, a stairway is not required to be enclosed when the stairway serves an occupant load of less than 10 and the stairway complies with either Item 1.1 or 1.2. In all cases, the maximum number of connecting open stories shall not exceed two.
    - 1.1 The stairway is open to not more than one story above its level of exit discharge; or
    - 1.2 The stairway is open to not more than one story below its level of exit discharge.
2. Exits in buildings of Group A-5 where all portions of the means of egress are essentially open to the outside need not be enclosed.
3. Stairways serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.
4. Stairways in open parking structures that serve only the parking structure are not required to be enclosed.
5. Stairways in Group I-3 occupancies, as provided for in Section 408.3.8, are not required to be enclosed.
6. Means of egress stairways as required by Sections 410.5.3 and 1015.6.1 are not required to be enclosed.
7. Means of egress stairways from balconies, galleries or press boxes as provided for in Section 1028.5.1 are not required to be enclosed.

1022.2 Termination. Exit enclosures shall terminate at an exit discharge or a public way.

Exception: An exit enclosure shall be permitted to terminate at an exit passageway complying with Section 1023, provided the exit passageway terminates at an exit discharge or a public way.

1022.2.1 Extension. Where an exit enclosure is extended to an exit discharge or a public way by an exit passageway, the exit enclosure shall be separated from the exit passageway by a fire barrier constructed in accordance with Section 707 or a horizontal assembly constructed in accordance with Section 712, or both. The fire-resistance rating shall be at least equal to that required for the exit enclosure. A fire door assembly complying with Section 715.4 shall be installed in the fire barrier to provide a means of egress from the exit enclosure to the exit passageway. Openings in the fire barrier other than the fire door assembly are prohibited. Penetrations of the fire barrier are prohibited.

Exception: Penetrations of the fire barrier in accordance with Section 1022.4 shall be permitted.

1022.3 Openings and penetrations. Exit enclosure opening protectives shall be in accordance with the requirements of Section 715.

Openings in exit enclosures other than unprotected exterior openings shall be limited to those necessary for exit access to the enclosure from normally occupied spaces and for egress from the enclosure.

Elevators shall not open into an exit enclosure.

1022.4 Penetrations. Penetrations into and openings through an exit enclosure are prohibited except for required exit doors, equipment and ductwork necessary for independent ventilation or pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication systems and electrical raceway serving the exit enclosure and terminating at a steel box not exceeding 16 square inches (0.010 m^2). Such penetrations shall be protected in accordance with Section 713. There shall be no penetrations or communication openings, whether protected or not, between adjacent exit enclosures.

1022.5 Ventilation. Equipment and ductwork for exit enclosure ventilation as permitted by Section 1022.4 shall comply with one of the following items:

1. Such equipment and ductwork shall be located exterior to the building and shall be directly connected to the exit enclosure by ductwork enclosed in construction as required for shafts.
2. Where such equipment and ductwork is located within the exit enclosure, the intake air shall be taken directly from the outdoors and the exhaust air shall be discharged directly to the outdoors, or such air shall be conveyed through ducts enclosed in construction as required for shafts.

3. Where located within the building, such equipment and ductwork shall be separated from the remainder of the building, including other mechanical equipment, with construction as required for shafts.

In each case, openings into the fire-resistance-rated construction shall be limited to those needed for maintenance and operation and shall be protected by opening protectives in accordance with Section 715 for shaft enclosures.

Exit enclosure ventilation systems shall be independent of other building ventilation systems.

1022.6 Exit enclosure exterior walls. Exterior walls of an exit enclosure shall comply with the requirements of Section 705 for exterior walls. Where nonrated walls or unprotected openings enclose the exterior of the stairway and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than ¾ hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the topmost landing of the stairway or to the roof line, whichever is lower.

1022.7 Discharge identification. A stairway in an exit enclosure shall not continue below its level of exit discharge unless an approved barrier is provided at the level of exit discharge to prevent persons from unintentionally continuing into levels below. Directional exit signs shall be provided as specified in Section 1011.

1022.8 Floor identification signs. A sign shall be provided at each floor landing in exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom of the exit enclosure and the identification of the stair or ramp. The signage shall also state the story of, and the direction to, the exit discharge and the availability of roof access from the enclosure for the fire department. The sign shall be located 5 feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions. Floor level identification signs in tactile characters complying with *Chapter 11* shall be located at each floor level landing adjacent to the door leading from the enclosure into the corridor to identify the floor level.

1022.8.1 Signage requirements. Stairway identification signs shall comply with *Chapter 11 and* all of the following requirements:

1. The signs shall be a minimum size of 18 inches (457 mm) by 12 inches (305 mm).
2. The letters designating the identification of the stair enclosure shall be a minimum of 1 ½ inches (38 mm) in height.

3. The number designating the floor level shall be a minimum of 5 inches (127 mm) in height and located in the center of the sign.
4. All other lettering and numbers shall be a minimum of 1 inch (25 mm) in height.
5. Characters and their background shall have a nonglare finish. Characters shall contrast with their background, with either light characters on a dark background or dark characters on a light background.
6. When signs required by Section 1022.8 are installed in interior exit enclosures of buildings subject to Section 1024, the signs shall be made of the same materials as required by Section 1024.4.

1022.9 Smokeproof enclosures and pressurized stairways. In buildings required to comply with Section 403 or 405, each of the exit enclosures serving a story with a floor surface located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access or more than 30 feet (9144 mm) below the finished floor of a level of exit discharge serving such stories shall be a smokeproof enclosure or pressurized stairway in accordance with Section 909.20.

1022.9.1 Termination and extension. A smokeproof enclosure or pressurized stairway shall terminate at an exit discharge or a public way. The smokeproof enclosure or pressurized stairway shall be permitted to be extended by an exit passageway in accordance with Section 1022.2. The exit passageway shall be without openings other than the fire door assembly required by Section 1022.2 and those necessary for egress from the exit passageway. The exit passageway shall be separated from the remainder of the building by 2-hour fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both.

Exceptions:

1. Openings in the exit passageway serving a smokeproof enclosure are permitted where the exit passageway is protected and pressurized in the same manner as the smokeproof enclosure, and openings are protected as required for access from other floors.
2. Openings in the exit passageway serving a pressurized stairway are permitted where the exit passageway is protected and pressurized in the same manner as the pressurized stairway.
3. The fire barrier separating the smokeproof enclosure or pressurized stairway from the exit passageway is not required, provided the exit passageway is protected and pressurized in the same manner as the smokeproof enclosure or pressurized stairway.
4. A smokeproof enclosure or pressurized stairway shall be permitted to

egress through areas on the level of discharge or vestibules as permitted by Section 1027.

1022.9.2 Enclosure access. Access to the stairway within a smokeproof enclosure shall be by way of a vestibule or an open exterior balcony.

Exception: Access is not required by way of a vestibule or exterior balcony for stairways using the pressurization alternative complying with Section 909.20.5.

SECTION 1023
EXIT PASSAGEWAYS

1023.1 Exit passageway. Exit passageways serving as an exit component in a means of egress system shall comply with the requirements of this section. An exit passageway shall not be used for any purpose other than as a means of egress.

1023.2 Width. The width of exit passageways shall be determined as specified in Section 1005.1 but such width shall not be less than 44 inches (1118 mm), except that exit passageways serving an occupant load of less than 50 shall not be less than 36 inches (914 mm) in width. The required width of exit passageways shall be unobstructed.

Exception: Doors complying with Section 1005.2.

1023.3 Construction. Exit passageway enclosures shall have walls, floors and ceilings of not less than 1-hour fire-resistance rating, and not less than that required for any connecting exit enclosure. Exit passageways shall be constructed as fire barriers in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both.

1023.4 Termination. Exit passageways shall terminate at an exit discharge or a public way.

1023.5 Openings and penetrations. Exit passageway opening protectives shall be in accordance with the requirements of Section 715.

Except as permitted in Section 402.4.6, openings in exit passageways other than exterior openings shall be limited to those necessary for exit access to the exit passageway from normally occupied spaces and for egress from the exit passageway.

Where an exit enclosure is extended to an exit discharge or a public way by an exit passageway, the exit passageway shall also comply with Section 1022.2.1.

Elevators shall not open into an exit passageway.

1023.6 Penetrations. Penetrations into and openings through an exit passageway are prohibited except for required exit doors, equipment and ductwork necessary for independent pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway and terminating at a steel box not exceeding 16 square inches (0.010 m^2). Such penetrations shall be protected in accordance with Section 713. There shall be no penetrations or communicating openings, whether protected or not, between adjacent exit passageways.

SECTION 1024
LUMINOUS EGRESS PATH MARKINGS

Deleted

SECTION 1025
HORIZONTAL EXITS

1025.1 Horizontal exits. Horizontal exits serving as an exit in a means of egress system shall comply with the requirements of this section. A horizontal exit shall not serve as the only exit from a portion of a building, and where two or more exits are required, not more than one-half of the total number of exits or total exit width shall be horizontal exits.

Exceptions:

1. Horizontal exits are permitted to comprise two-thirds of the required exits from any building or floor area for occupancies in Group I-2.
2. Horizontal exits are permitted to comprise 100 percent of the exits required for occupancies in Group I-3. At least 6 square feet (0.6 m^2) of accessible space per occupant shall be provided on each side of the horizontal exit for the total number of people in adjoining compartments.

1025.2 Separation. The separation between buildings or refuge areas connected by a horizontal exit shall be provided by a fire wall complying with Section 706; or it shall be provided by a fire barrier complying with Section 707 or a horizontal assembly complying with Section 712, or both. The minimum fire-resistance rating of the separation shall be 2 hours. Opening protectives in horizontal exits shall also comply with Section 715. Duct and air transfer openings in a fire wall or fire barrier that serves as a horizontal exit shall also comply with Section 716. The horizontal exit separation shall extend vertically through all levels of the building unless floor assemblies have a fire-resistance rating of not less than 2

hours with no unprotected openings.

Exception: A fire-resistance rating is not required at horizontal exits between a building area and an above-grade pedestrian walkway constructed in accordance with Section 3104, provided that the distance between connected buildings is more than 20 feet (6096 mm).

Horizontal exits constructed as fire barriers shall be continuous from exterior wall to exterior wall so as to divide completely the floor served by the horizontal exit.

1025.3 Opening protectives. Fire doors in horizontal exits shall be self-closing or automatic-closing when activated by a smoke detector in accordance with Section 715.4.8.3. Doors, where located in a cross-corridor condition, shall be automatic-closing by activation of a smoke detector installed in accordance with Section 715.4.8.3.

1025.4 Capacity of refuge area. The refuge area of a horizontal exit shall be a space occupied by the same tenant or a public area and each such refuge area shall be adequate to accommodate the original occupant load of the refuge area plus the occupant load anticipated from the adjoining compartment. The anticipated occupant load from the adjoining compartment shall be based on the capacity of the horizontal exit doors entering the refuge area. The capacity of the refuge area shall be computed based on a net floor area allowance of 3 square feet (0.2787 m^2) for each occupant to be accommodated therein.

Exception: The net floor area allowable per occupant shall be as follows for the indicated occupancies:

1. Six square feet (0.6 m^2) per occupant for occupancies in Group I-3.
2. Fifteen square feet (1.4 m^2) per occupant for ambulatory occupancies in Group I-2.
3. Thirty square feet (2.8 m^2) per occupant for nonambulatory occupancies in Group I-2.

The refuge area into which a horizontal exit leads shall be provided with exits adequate to meet the occupant requirements of this chapter, but not including the added occupant load imposed by persons entering it through horizontal exits from other areas. At least one refuge area exit shall lead directly to the exterior or to an exit enclosure.

Exception: The adjoining compartment shall not be required to have a stairway or door leading directly outside, provided the refuge area into which a horizontal exit leads has stairways or doors leading directly outside and are so arranged that egress shall not require the occupants to return through the compartment from which egress originates.

SECTION 1026
EXTERIOR EXIT RAMPS AND STAIRWAYS

1026.1 Exterior exit ramps and stairways. Exterior exit ramps and stairways serving as an element of a required means of egress shall comply with this section.

Exception: Exterior exit ramps and stairways for outdoor stadiums complying with Section 1022.1, Exception 2.

1026.2 Use in a means of egress. Exterior exit stairways shall not be used as an element of a required means of egress for *Groups* I-2, *I-4 and child care facilities in E* occupancies. For occupancies in other than Group I-2, *I-4 and child care facilities in E occupancies,* exterior exit ramps and stairways shall be permitted as an element of a required means of egress for buildings not exceeding six stories above grade plane or having occupied floors more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

1026.3 Open side. Exterior exit ramps and stairways serving as an element of a required means of egress shall be open on at least one side. An open side shall have a minimum of 35 square feet (3.3 m^2) of aggregate open area adjacent to each floor level and the level of each intermediate landing. The required open area shall be located not less than 42 inches (1067 mm) above the adjacent floor or landing level.

1026.4 Side yards. The open areas adjoining exterior exit ramps or stairways shall be either yards, courts or public ways; the remaining sides are permitted to be enclosed by the exterior walls of the building.

1026.5 Location. Exterior exit ramps and stairways shall be located in accordance with Section 1027.3.

1026.6 Exterior ramps and stairway protection. Exterior exit ramps and stairways shall be separated from the interior of the building as required in Section 1022.1. Openings shall be limited to those necessary for egress from normally occupied spaces.

Exceptions:

1. Separation from the interior of the building is not required for occupancies, other than those in Group R-1 or R-2, in buildings that are no more than two stories above grade plane where a level of exit discharge serving such occupancies is the first story above grade plane.
2. Separation from the interior of the building is not required where the

exterior ramp or stairway is served by an exterior ramp or balcony that connects two remote exterior stairways or other approved exits, with a perimeter that is not less than 50 percent open. To be considered open, the opening shall be a minimum of 50 percent of the height of the enclosing wall, with the top of the openings no less than 7 feet (2134 mm) above the top of the balcony.

3. Separation from the interior of the building is not required for an exterior ramp or stairway located in a building or structure that is permitted to have unenclosed interior stairways in accordance with Section 1022.1.
4. Separation from the interior of the building is not required for exterior ramps or stairways connected to open-ended corridors, provided that Items 4.1 through 4.4 are met:

   4.1. The building, including corridors and ramps and stairs, shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

   4.2. The open-ended corridors comply with Section 1018.

   4.3. The open-ended corridors are connected on each end to an exterior exit ramp or stairway complying with Section 1026.

   4.4. At any location in an open-ended corridor where a change of direction exceeding 45 degrees (0.79 rad) occurs, a clear opening of not less than 35 square feet (3.3 m^2) or an exterior ramp or stairway shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

SECTION 1027
EXIT DISCHARGE

1027.1 General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide direct access to grade. The exit discharge shall not reenter a building. The combined use of Exceptions 1 and 2 below shall not exceed 50 percent of the number and capacity of the required exits.

Exceptions:

1. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through areas on the level of discharge provided all of the following are met:

1.1. Such exit enclosures egress to a free and unobstructed path of travel to an exterior exit door and such exit is readily visible and identifiable from the point of termination of the exit enclosure.

1.2. The entire area of the level of exit discharge is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure.

1.3. The egress path from the exit enclosure on the level of exit discharge is protected throughout by an approved automatic sprinkler system. All portions of the level of exit discharge with access to the egress path shall either be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of exits.

2. A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through a vestibule provided all of the following are met:

2.1. The entire area of the vestibule is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure.

2.2. The depth from the exterior of the building is not greater than 10 feet (3048 mm) and the length is not greater than 30 feet (9144 mm).

2.3. The area is separated from the remainder of the level of exit discharge by construction providing protection at least the equivalent of approved wired glass in steel frames.

2.4. The area is used only for means of egress and exits directly to the outside.

3. Stairways in open parking garages complying with Section 1022.1, Exception 4, are permitted to egress through the open parking garage at their levels of exit discharge.

4. Horizontal exits complying with Section 1025 shall not be required to discharge directly to the exterior of the building.

1027.2 Exit discharge capacity. The capacity of the exit discharge shall be not less than the required discharge capacity of the exits being served.

1027.3 Exit discharge location. Exterior balconies, stairways and ramps shall be located at least 10 feet (3048 mm) from adjacent lot lines and from other buildings on the same lot unless the adjacent building exterior walls and openings

are protected in accordance with Section 705 based on fire separation distance.

1027.4 Exit discharge components. Exit discharge components shall be sufficiently open to the exterior so as to minimize the accumulation of smoke and toxic gases.

1027.5 Egress courts. Egress courts serving as a portion of the exit discharge in the means of egress system shall comply with the requirements of Section 1027.

1027.5.1 Width. The width of egress courts shall be determined as specified in Section 1005.1, but such width shall not be less than 44 inches (1118 mm), except as specified herein. Egress courts serving Group R-3 and U occupancies shall not be less than 36 inches (914 mm) in width. The required width of egress courts shall be unobstructed to a height of 7 feet (2134 mm).

Exception: Doors complying with Section 1005.2.

Where an egress court exceeds the minimum required width and the width of such egress court is then reduced along the path of exit travel, the reduction in width shall be gradual. The transition in width shall be affected by a guard not less than 36 inches (914 mm) in height and shall not create an angle of more than 30 degrees (0.52 rad) with respect to the axis of the egress court along the path of egress travel. In no case shall the width of the egress court be less than the required minimum.

1027.5.2 Construction and openings. Where an egress court serving a building or portion thereof is less than 10 feet (3048 mm) in width, the egress court walls shall have not less than 1-hour fire-resistance-rated construction for a distance of 10 feet (3048 mm) above the floor of the court. Openings within such walls shall be protected by opening protectives having a fire protection rating of not less than ¾ hour.

Exceptions:

1. Egress courts serving an occupant load of less than 10.
2. Egress courts serving Group R-3.

1027.6 Access to a public way. The exit discharge shall provide a direct and unobstructed access to a public way.

Exception: Where access to a public way cannot be provided, a safe dispersal area shall be provided where all of the following are met:

1. The area shall be of a size to accommodate at least 5 square feet (0.46 m^2) for each person.
2. The area shall be located on the same lot at least 50 feet (15 240 mm) away from the building requiring egress.

3. The area shall be permanently maintained and identified as a safe dispersal area.
4. The area shall be provided with a safe and unobstructed path of travel from the building.

SECTION 1028
ASSEMBLY

1028.1 General. Occupancies in Group A and assembly occupancies accessory to Group E which contain seats, tables, displays, equipment or other material shall comply with this section.

1028.1.1 Bleachers. Bleachers, grandstands and folding and telescopic seating, that are not building elements, shall comply *with Chapters 1-4 of* ICC 300.

1028.2 Assembly main exit. Group A occupancies and assembly occupancies accessory to Group E occupancies that have an occupant load of greater than 300 shall be provided with a main exit. The main exit shall be of sufficient width to accommodate not less than one-half of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. Where the building is classified as a Group A occupancy, the main exit shall front on at least one street or an unoccupied space of not less than 10 feet (3048 mm) in width that adjoins a street or public way.

Exception: In assembly occupancies where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width.

1028.3 Assembly other exits. In addition to having access to a main exit, each level in Group A occupancies or assembly occupancies accessory to Group E occupancies having an occupant load greater than 300, shall be provided with additional means of egress that shall provide an egress capacity for at least one-half of the total occupant load served by that level and comply with Section 1015.2.

Exception: In assembly occupancies where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building, provided that the total width of egress is not less than 100 percent of the required width.

1028.4 Foyers and lobbies. In Group A-1 occupancies, where persons are admitted to the building at times when seats are not available, such persons shall be allowed to wait in a lobby or similar space, provided such lobby or similar space shall not encroach upon the required clear width of the means of egress. Such foyer, if not directly connected to a public street by all the main entrances or

exits, shall have a straight and unobstructed corridor or path of travel to every such main entrance or exit.

1028.5 Interior balcony and gallery means of egress. For balconies, galleries or press boxes having a seating capacity of 50 or more located in Group A occupancies, at least two means of egress shall be provided, with one from each side of every balcony, gallery or press box and at least one leading directly to an exit.

1028.5.1 Enclosure of openings. Interior stairways and other vertical openings shall be enclosed in an exit enclosure as provided in Section 1022.1, except that stairways are permitted to be open between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities. At least one accessible means of egress is required from a balcony, gallery or press box level containing accessible seating locations in accordance with Section 1007.3 or 1007.4.

1028.6 Width of means of egress for assembly. The clear width of aisles and other means of egress shall comply with Section 1028.6.1 where smoke-protected seating is not provided and with Section 1028.6.2 or 1028.6.3 where smoke-protected seating is provided. The clear width shall be measured to walls, edges of seating and tread edges except for permitted projections.

1028.6.1 Without smoke protection. The clear width of the means of egress shall provide sufficient capacity in accordance with all of the following, as applicable:

1. At least 0.3 inch (7.6 mm) of width for each occupant served shall be provided on stairs having riser heights 7 inches (178 mm) or less and tread depths 11 inches (279 mm) or greater, measured horizontally between tread nosings.
2. At least 0.005 inch (0.127 mm) of additional stair width for each occupant shall be provided for each 0.10 inch (2.5 mm) of riser height above 7 inches (178 mm).
3. Where egress requires stair descent, at least 0.075 inch (1.9 mm) of additional width for each occupant shall be provided on those portions of stair width having no handrail within a horizontal distance of 30 inches (762 mm).
4. Ramped means of egress, where slopes are steeper than one unit vertical in 12 units horizontal (8-percent slope), shall have at least 0.22 inch (5.6 mm) of clear width for each occupant served. Level or ramped means of egress, where slopes are not steeper than one unit vertical in 12 units horizontal (8-percent slope), shall have at least 0.20 inch (5.1 mm) of clear width for each occupant served.

1028.6.2 Smoke-protected seating. The clear width of the means of egress for smoke-protected assembly seating shall not be less than the occupant load served by the egress element multiplied by the appropriate factor in Table 1028.6.2. The total number of seats specified shall be those within the space exposed to the same smoke-protected environment. Interpolation is permitted between the specific values shown. A life safety evaluation, complying with NFPA 101, shall be done for a facility utilizing the reduced width requirements of Table 1028.6.2 for smoke-protected assembly seating.

Exception: For an outdoor smoke-protected assembly with an occupant load not greater than 18,000, the clear width shall be determined using the factors in Section 1028.6.3.

1028.6.2.1 Smoke control. Means of egress serving a smoke-protected assembly seating area shall be provided with a smoke control system complying with Section 909 or natural ventilation designed to maintain the smoke level at least 6 feet (1829 mm) above the floor of the means of egress.

1028.6.2.2 Roof height. A smoke-protected assembly seating area with a roof shall have the lowest portion of the roof deck not less than 15 feet (4572 mm) above the highest aisle or aisle accessway.

Exception: A roof canopy in an outdoor stadium shall be permitted to be less than 15 feet (4572 mm) above the highest aisle or aisle accessway provided that there are no objects less than 80 inches (2032 mm) above the highest aisle or aisle accessway.

1028.6.2.3 Automatic sprinklers. Enclosed areas with walls and ceilings in buildings or structures containing smoke-protected assembly seating shall be protected with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

Exceptions:

1. The floor area used for contests, performances or entertainment provided the roof construction is more than 50 feet (15 240 mm) above the floor level and the use is restricted to low fire hazard uses.
2. Press boxes and storage facilities less than 1,000 square feet (93 m^2) in area.
3. Outdoor seating facilities where seating and the means of egress in the seating area are essentially open to the outside.

1028.6.3 Width of means of egress for outdoor smoke-protected assembly.

The clear width in inches (mm) of aisles and other means of egress shall be not less than the total occupant load served by the egress element multiplied by 0.08 (2.0 mm) where egress is by aisles and stairs and multiplied by 0.06 (1.52 mm) where egress is by ramps, corridors, tunnels or vomitories.

Exception: The clear width in inches (mm) of aisles and other means of egress shall be permitted to comply with Section 1028.6.2 for the number of seats in the outdoor smoke-protected assembly where Section 1028.6.2 permits less width.

1028.7 Travel distance. Exits and aisles shall be so located that the travel distance to an exit door shall not be greater than 200 feet (60 960 mm) measured along the line of travel in nonsprinklered buildings. Travel distance shall not be more than 250 feet (76 200 mm) in sprinklered buildings. Where aisles are provided for seating, the distance shall be measured along the aisles and aisle accessway without travel over or on the seats.

Exceptions:

1. Smoke-protected assembly seating: The travel distance from each seat to the nearest entrance to a vomitory or concourse shall not exceed 200 feet (60 960 mm). The travel distance from the entrance to the vomitory or concourse to a stair, ramp or walk on the exterior of the building shall not exceed 200 feet (60 960 mm).
2. Open-air seating: The travel distance from each seat to the building exterior shall not exceed 400 feet (122 m). The travel distance shall not be limited in facilities of Type I or II construction.

1028.8 Common path of egress travel. The common path of egress travel shall not exceed 30 feet (9144 mm) from any seat to a point where an occupant has a choice of two paths of egress travel to two exits.

Exceptions:

1. For areas serving less than 50 occupants, the common path of egress travel shall not exceed 75 feet (22 860 mm).
2. For smoke-protected assembly seating, the common path of egress travel shall not exceed 50 feet (15 240 mm).

TABLE 1028.6.2
WIDTH OF AISLES FOR SMOKE-PROTECTED ASSEMBLY

TOTAL NUMBER OF SEATS IN THE SMOKE-PROTECTED ASSEMBLY OCCUPANCY	INCHES OF CLEAR WIDTH PER SEAT SERVED			
	Stairs and aisle steps with handrails within 30 inches	Stairs and aisle steps without handrails within 30 inches	Passageways, doorways and ramps not steeper than 1 in 10 in slope	Ramps steeper than 1 in 10 in slope
Equal to or less than 5,000	0.200	0.250	0.150	0.165
10,000	0.130	0.163	0.100	0.110
15,000	0.096	0.120	0.070	0.077
20,000	0.076	0.095	0.056	0.062
Equal to or greater than 25,000	0.060	0.075	0.044	0.048

For SI: 1 inch = 25.4 mm.

1028.8.1 Path through adjacent row. Where one of the two paths of travel is across the aisle through a row of seats to another aisle, there shall be not more than 24 seats between the two aisles, and the minimum clear width between rows for the row between the two aisles shall be 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row between aisles.

Exception: For smoke-protected assembly seating there shall not be more than 40 seats between the two aisles and the minimum clear width shall be 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat.

1028.9 Assembly aisles are required. Every occupied portion of any occupancy in Group A or assembly occupancies accessory to Group E that contains seats, tables, displays, similar fixtures or equipment shall be provided with aisles leading to exits or exit access doorways in accordance with this section. Aisle accessways for tables and seating shall comply with Section 1017.4.

1028.9.1 Minimum aisle width. The minimum clear width for aisles shall be as shown:

1. Forty-eight inches (1219 mm) for aisle stairs having seating on each side.
   Exception: Thirty-six inches (914 mm) where the aisle serves less than 50 seats.
2. Thirty-six inches (914 mm) for aisle stairs having seating on only one side.
3. Twenty-three inches (584 mm) between an aisle stair handrail or guard and seating where the aisle is subdivided by a handrail.

4. Forty-two inches (1067 mm) for level or ramped aisles having seating on both sides.

   Exceptions:

   1. Thirty-six inches (914 mm) where the aisle serves less that 50 seats.
   2. Thirty inches (762 mm) where the aisle does not serve more than 14 seats.
5. Thirty-six inches (914 mm) for level or ramped aisles having seating on only one side.

   Exceptions:

   1. Thirty inches (762 mm) where the aisle does not serve more than 14 seats.
   2. Twenty-three inches (584 mm) between an aisle stair handrail and seating where an aisle does not serve more than five rows on one side.

1028.9.2 Aisle width. The aisle width shall provide sufficient egress capacity for the number of persons accommodated by the catchment area served by the aisle. The catchment area served by an aisle is that portion of the total space that is served by that section of the aisle. In establishing catchment areas, the assumption shall be made that there is a balanced use of all means of egress, with the number of persons in proportion to egress capacity.

1028.9.3 Converging aisles. Where aisles converge to form a single path of egress travel, the required egress capacity of that path shall not be less than the combined required capacity of the converging aisles.

1028.9.4 Uniform width. Those portions of aisles, where egress is possible in either of two directions, shall be uniform in required width.

1028.9.5 Assembly aisle termination. Each end of an aisle shall terminate at cross aisle, foyer, doorway, vomitory or concourse having access to an exit.

Exceptions:

1. Dead-end aisles shall not be greater than 20 feet (6096 mm) in length.
2. Dead-end aisles longer than 20 feet (6096 mm) are permitted where seats beyond the 20-foot (6096 mm) dead-end aisle are no more than 24 seats from another aisle, measured along a row of seats having a minimum clear width of 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row.
3. For smoke-protected assembly seating,the dead-end aisle length of vertical aisles shall not exceed a distance of 21 rows.

4. For smoke-protected assembly seating, a longer dead-end aisle is permitted where seats beyond the 21-row dead-end aisle are not more than 40 seats from another aisle, measured along a row of seats having an aisle accessway with a minimum clear width of 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat above seven in the row.

1028.9.6 Assembly aisle obstructions. There shall be no obstructions in the required width of aisles except for handrails as provided in Section 1028.13.

1028.10 Clear width of aisle accessways serving seating. Where seating rows have 14 or fewer seats, the minimum clear aisle accessway width shall not be less than 12 inches (305 mm) measured as the clear horizontal distance from the back of the row ahead and the nearest projection of the row behind. Where chairs have automatic or self-rising seats, the measurement shall be made with seats in the raised position. Where any chair in the row does not have an automatic or self-rising seat, the measurements shall be made with the seat in the down position. For seats with folding tablet arms, row spacing shall be determined with the tablet arm in the used position.

Exception: For seats with folding tablet arms, row spacing is permitted to be determined with the tablet arm in the stored position where the tablet arm when raised manually to vertical position in one motion automatically returns to the stored position by force of gravity.

1028.10.1 Dual access. For rows of seating served by aisles or doorways at both ends, there shall not be more than 100 seats per row. The minimum clear width of 12 inches (305 mm) between rows shall be increased by 0.3 inch (7.6 mm) for every additional seat beyond 14 seats, but the minimum clear width is not required to exceed 22 inches (559 mm).

Exception: For smoke-protected assembly seating, the row length limits for a 12-inch-wide (305 mm) aisle accessway, beyond which the aisle accessway minimum clear width shall be increased, are in Table 1028.10.1.

TABLE 1028.10.1
SMOKE-PROTECTED
ASSEMBLY AISLE ACCESSWAYS

TOTAL NUMBER OF SEATS IN THE SMOKE-PROTECTED ASSEMBLY OCCUPANCY	MAXIMUM NUMBER OF SEATS PER ROW PERMITTED TO HAVE A MINIMUM 12-INCH CLEAR WIDTH AISLE ACCESSWAY	
	Aisle or doorway at both ends of row	Aisle or doorway at one end of row only
Less than 4,000	14	7

4,000	15	7
7,000	16	8
10,000	17	8
13,000	18	9
16,000	19	9
19,000	20	10
22,000 and greater	21	11

For SI: 1 inch = 25.4 mm.

1028.10.2 Single access. For rows of seating served by an aisle or doorway at only one end of the row, the minimum clear width of 12 inches (305 mm) between rows shall be increased by 0.6 inch (15.2 mm) for every additional seat beyond seven seats, but the minimum clear width is not required to exceed 22 inches (559 mm).

Exception: For smoke-protected assembly seating, the row length limits for a 12-inch-wide (305 mm) aisle accessway, beyond which the aisle accessway minimum clear width shall be increased, are in Table 1028.10.1.

1028.11 Assembly aisle walking surfaces. Aisles with a slope not exceeding one unit vertical in eight units horizontal (12.5-percent slope) shall consist of a ramp having a slip-resistant walking surface. Aisles with a slope exceeding one unit vertical in eight units horizontal (12.5-percent slope) shall consist of a series of risers and treads that extends across the full width of aisles and complies with Sections 1028.11.1 through 1028.11.3.

1028.11.1 Treads. Tread depths shall be a minimum of 11 inches (279 mm) and shall have dimensional uniformity.

Exception: The tolerance between adjacent treads shall not exceed 0.188 inch (4.8 mm).

1028.11.2 Risers. Where the gradient of aisle stairs is to be the same as the gradient of adjoining seating areas, the riser height shall not be less than 4 inches (102 mm) nor more than 8 inches (203 mm) and shall be uniform within each flight.

Exceptions:

1. Riser height nonuniformity shall be limited to the extent necessitated by changes in the gradient of the adjoining seating area to maintain adequate sightlines. Where nonuniformities exceed 0.188 inch (4.8 mm) between adjacent risers, the exact location of such nonuniformities shall be indicated with a distinctive marking stripe on each tread at the nosing or leading edge adjacent to the nonuniform risers. Such stripe shall be a

minimum of 1 inch (25 mm), and a maximum of 2 inches (51 mm), wide. The edge marking stripe shall be distinctively different from the contrasting marking stripe.

2. Riser heights not exceeding 9 inches (229 mm) shall be permitted where they are necessitated by the slope of the adjacent seating areas to maintain sightlines.

1028.11.3 Tread contrasting marking stripe. A contrasting marking stripe shall be provided on each tread at the nosing or leading edge such that the location of each tread is readily apparent when viewed in descent. Such stripe shall be a minimum of 1 inch (25 mm), and a maximum of 2 inches (51 mm), wide.

Exception: The contrasting marking stripe is permitted to be omitted where tread surfaces are such that the location of each tread is readily apparent when viewed in descent.

1028.12 Seat stability. In places of assembly, the seats shall be securely fastened to the floor.

Exceptions:

1 In places of assembly or portions thereof without ramped or tiered floors for seating and with 200 or fewer seats, the seats shall not be required to be fastened to the floor.

2 In places of assembly or portions thereof with seating at tables and without ramped or tiered floors for seating, the seats shall not be required to be fastened to the floor.

3 In places of assembly or portions thereof without ramped or tiered floors for seating and with greater than 200 seats, the seats shall be fastened together in groups of not less than three or the seats shall be securely fastened to the floor.

4 In places of assembly where flexibility of the seating arrangement is an integral part of the design and function of the space and seating is on tiered levels, a maximum of 200 seats shall not be required to be fastened to the floor. Plans showing seating, tiers and aisles shall be submitted for approval.

5 Groups of seats within a place of assembly separated from other seating by railings, guards, partial height walls or similar barriers with level floors and having no more than 14 seats per group shall not be required to be fastened to the floor.

6 Seats intended for musicians or other performers and separated by railings, guards, partial height walls or similar barriers shall not be required to be fastened to the floor.

1028.13 Handrails. Ramped aisles having a slope exceeding one unit vertical in 15 units horizontal (6.7-percent slope) and aisle stairs shall be provided with handrails located either at the side or within the aisle width.

Exceptions:

1. Handrails are not required for ramped aisles having a gradient no greater than one unit vertical in eight units horizontal (12.5-percent slope) and seating on both sides.
2. Handrails are not required if, at the side of the aisle, there is a guard that complies with the graspability requirements of handrails.
3. Handrail extensions are not required at the top and bottom of aisle stairs and aisle ramp runs to permit crossovers within the aisles.

1028.13.1 Discontinuous handrails. Where there is seating on both sides of the aisle, the handrails shall be discontinuous with gaps or breaks at intervals not exceeding five rows to facilitate access to seating and to permit crossing from one side of the aisle to the other. These gaps or breaks shall have a clear width of at least 22 inches (559 mm) and not greater than 36 inches (914 mm), measured horizontally, and the handrail shall have rounded terminations or bends.

1028.13.2 Intermediate handrails. Where handrails are provided in the middle of aisle stairs, there shall be an additional intermediate handrail located approximately 12 inches (305 mm) below the main handrail.

1028.14 Assembly guards. Assembly guards shall comply with Sections 1028.14.1 through 1028.14.3.

1028.14.1 Cross aisles. Cross aisles located more than 30 inches (762 mm) above the floor or grade below shall have guards in accordance with Section 1013.

Where an elevation change of 30 inches (762 mm) or less occurs between a cross aisle and the adjacent floor or grade below, guards not less than 26 inches (660 mm) above the aisle floor shall be provided.

Exception: Where the backs of seats on the front of the cross aisle project 24 inches (610 mm) or more above the adjacent floor of the aisle,a guard need not be provided.

1028.14.2 Sightline-constrained guard heights. Unless subject to the requirements of Section 1028.14.3, a fascia or railing system in accordance with the guard requirements of Section 1013 and having a minimum height of 26 inches (660 mm) shall be provided where the floor or footboard elevation is

more than 30 inches (762 mm) above the floor or grade below and the fascia or railing would otherwise interfere with the sightlines of immediately adjacent seating. At bleachers, a guard must be provided where required by ICC 300.

1028.14.3 Guards at the end of aisles. A fascia or railing system complying with the guard requirements of Section 1013 shall be provided for the full width of the aisle where the foot of the aisle is more than 30 inches (762 mm) above the floor or grade below. The fascia or railing shall be a minimum of 36 inches (914 mm) high and shall provide a minimum 42 inches (1067 mm) measured diagonally between the top of the rail and the nosing of the nearest tread.

1028.15 Bench seating. Where bench seating is used, the number of persons shall be based on one person for each 18 inches (457 mm) of length of the bench.

SECTION 1029
EMERGENCY ESCAPE AND RESCUE

1029.1 General. In addition to the means of egress required by this chapter, provisions shall be made for emergency escape and rescue in Group R and I-1 occupancies. Basements and sleeping rooms below the fourth story above grade plane shall have at least one exterior emergency escape and rescue opening in accordance with this section. Where basements contain one or more sleeping rooms, emergency escape and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Such openings shall open directly into a public way or to a yard or court that opens to a public way.

Exceptions:

1. In other than Group R-3 occupancies, buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
2. In other than Group R-3 occupancies, sleeping rooms provided with a door to a fire-resistance-rated corridor having access to two remote exits in opposite directions.
3. The emergency escape and rescue opening is permitted to open onto a balcony within an atrium in accordance with the requirements of Section 404, provided the balcony provides access to an exit and the dwelling unit or sleeping unit has a means of egress that is not open to the atrium.
4. Basements with a ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue windows.
5. High-rise buildings in accordance with Section 403.

6. Emergency escape and rescue openings are not required from basements or sleeping rooms that have an exit door or exit access door that opens directly into a public way or to a yard, court or exterior exit balcony that opens to a public way.
7. Basements without habitable spaces and having no more than 200 square feet (18.6 m^2) in floor area shall not be required to have emergency escape windows.

1029.2 Minimum size. Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet
(0.53 m^2).

Exception: The minimum net clear opening for emergency escape and rescue grade-floor openings shall be 5 square feet (0.46 m^2).

1029.2.1 Minimum dimensions. The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

1029.3 Maximum height from floor. Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) measured from the floor.

1029.4 Operational constraints. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys or tools. Bars, grilles, grates or similar devices are permitted to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with Section 1029.2 and such devices shall be releasable or removable from the inside without the use of a key, tool or force greater than that which is required for normal operation of the escape and rescue opening. Where such bars, grilles, grates or similar devices are installed in existing buildings, smoke alarms shall be installed in accordance with Section 907.2.11 regardless of the valuation of the alteration.

1029.5 Window wells. An emergency escape and rescue opening with a finished sill height below the adjacent ground level shall be provided with a window well in accordance with Sections 1029.5.1 and 1029.5.2.

1029.5.1 Minimum size. The minimum horizontal area of the window well shall be 9 square feet (0.84 m^2), with a minimum dimension of 36 inches (914 mm). The area of the window well shall allow the emergency escape and rescue opening to be fully opened.

1029.5.2 Ladders or steps. Window wells with a vertical depth of more than 44 inches (1118 mm) shall be equipped with an approved permanently affixed ladder

or steps. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center (o.c.) vertically for the full height of the window well. The ladder or steps shall not encroach into the required dimensions of the window well by more than 6 inches (152 mm). The ladder or steps shall not be obstructed by the emergency escape and rescue opening. Ladders or steps required by this section are exempt from the stairway requirements of Section 1009.

From: sales@betschmansecurityinc.com
To: Hanshaw, Regina
Subject: Re: November 16 Stakeholder Meeting Summary
Date: Tuesday, December 01, 2015 11:49:31 PM

Ohio Board of Building Standards December 1, 2015
Reading the revised code 3781.106 "ingress and egress through a door in a school building**, for a finite period of time,** in an emergency situation, and during active shooter drills."
Notice that it is not written as **for a finite period of time in an emergency or during active shooter drills. This is a big difference!**
This language gives the interpretation that the barricader bar system(s) are to be used as a transitional tool until architectural deficiencies are corrected and this should be part of the process of amending the Certificate of Occupancy. The School system would: 1.) identify the deficiency (s) 2.) the intended steps needed to correct the deficiency(s) 3.) anticipated costs also expressed as the percentage of total budget for the school 4.) anticipated time line. The deficiencies are to move the school entity from being in a "reactive" mode to being a "pro-active" mode. Use the term **"for a finite period of time"** as an active shield and hammer. If the legislature decides that the Revised Code was in error then by all means let them correct it as they see fit but until then you have the tool to make the barricade systems short lived.
Pro-active mode.

- Classroom doors shut and locked during every instructional period
- Cameras in halls and classrooms if needed
- Emergency call systems in class rooms if desired
- School security/resource officer onsite
- Mental health services available
- Fleeing if possible

Reactive mode

- Closing doors if a notice is generated or if shooter is observed
- Deploying a barricade system if possible
- Constructing physical barriers in the room or fleeing if possible

Please consider this during your review/deliberations this week.
Ronald Betschman CML,CFDI
Betschman Security Inc.
2 Horseshoe Drive
Monroeville, OH 44847
sales@betschmansecuritrytinc.com

On Fri 11/27/15 5:04 PM , "Regina.Hanshaw@com.state.oh.us" Regina.Hanshaw@com.state.oh.us sent:

> Per your request, attached is a summary of the Board of Building Standards November 16 Stakeholder Meeting.
> Thanks,
> Regina Hanshaw
> OBBS
> **********
>
> The information transmitted is intended solely for the individual or entity to which it is addressed and may

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Exhibit D

Ohio Board of Building Standards

Classroom Barricade Forum Report

July 24, 2015

6606 Tussing Road, P.O. Box 4009, Reynoldsburg, Ohio, 43068-9009
(614) 644-2613 Fax (614) 644-3147
800-750-0750 (TTY/TDD)
dic.bbs@com.state.oh.us
http://www.com.ohio.gov/dico/BBS.aspx

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Ohio Board of Building Standards

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John Johnson	Construction Materials
Donald B. Leach, Jr.	Attorney
Shayne O Manning, P.E., S.E., LEED AP	Structural Engineer
Donald R. McIlroy	Mayor
Terrence McCafferty	Public Member
Christopher L. Miller	Renewable Energy
John Pavlis	Residential Contractor
Jeffrey Samuelson, AIA, NCARB	Architect
Douglas C. Scholz	Industrialized Units
Carl C. Schultz, PE, CxA, CEM	Energy Conservation
A. Bailey Stanbery	Residential Contractor

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Executive Summary

In response to former Director of Commerce Andre Porter's request, the Ohio Board of Building Standards (Board) conducted an examination of Ohio's current building and fire codes and considered whether they needed to be changed to address emerging threats to public safety, including the possibility of an active shooter in schools.

The Board is a fifteen-member body composed of one attorney, two architects, two engineers (mechanical and structural), a fire service representative, a public member, a construction materials specialist, a general contractor, two energy experts (conservation and renewable), two residential contractors, an industrialized unit manufacturer, and a mayor of a municipality enforcing the building code. The Board is charged by the legislature with promulgating Ohio's construction codes to provide standards and requirements for construction materials, to make residential and non-residential buildings safe and sanitary, and to do so in terms of performance objectives that establish minimum requirements for the health, safety, and welfare of building occupants without preferential treatment for types of materials, products, or methods of construction.

The Board held two hearings to receive documentation and heard testimony from state education and public safety agency representatives, industry experts, building code officials, fire service, the public, and product manufacturers and had barricade device representatives describe or demonstrate their secondary locking/barricade devices. Hearings were held on April 17, 2015 and June 5, 2015.

Of particular interest was testimony from former Chardon City Schools Superintendent Joseph Bergant. Mr. Bergant presented a first-hand account of Chardon's experience, lessons learned, and recommendations from the 2012 shooting at Chardon High School. The Board also received timely and valuable information when it obtained a copy of the final report of the Sandy Hook Advisory Commission, commissioned to investigate the 2012 Newtown, Connecticut shooting. The report included a review of policies and practices in place at the time and recommendations to reduce the probability of another such tragedy.

After examination of current Ohio codes and standards, review of Board and staff research, and in consideration of the testimony presented at the hearings, the Board makes the following determination: We do not recommend any change to the current building and fire codes at this time.

History and Background

The Ohio Board of Building Standards (Board), created by Revised Code § 3781.07, is comprised of fifteen members appointed by the Governor and confirmed by the Senate. The Board is charged with the duty to formulate and adopt rules of the Ohio Administrative Code (OAC) governing the erection, construction, repair, alteration, and maintenance of all buildings or classes of buildings specified in Revised Code § 3781.06 known as the Ohio Building Code, Ohio Mechanical Code, Ohio Plumbing Code, and the Residential Code of Ohio. The Board certifies county, township and municipal building departments and their personnel to enforce these codes. The Board is also responsible for formulation of rules governing the construction and approval of industrialized units; the installation of equipment; the installation, repair, and operation of boilers and unfired pressure vessels; and the rules governing the design, construction, repair, alteration and maintenance of elevators. Revised Code § 3781.11 requires that the rules of the Board shall:

- For nonresidential buildings, *provide uniform minimum standards and requirements*, and for residential buildings, provide standards and requirements that are uniform throughout the state, *for construction and construction materials, including construction of industrialized units, to make residential and nonresidential buildings safe and sanitary* as defined in section 3781.06 of the Revised Code;
- Formulate such standards and requirements, *so far as may be practicable, in terms of performance objectives, so as to make adequate performance for the use intended the test of acceptability;*
- Permit, to the fullest extent feasible, the use of materials and technical methods, devices, and improvements, including the use of industrialized units which tend to reduce the cost of construction and erection *without affecting minimum requirements for the health, safety, and security of the occupants or users of buildings* or industrialized units and *without preferential treatment* of types or classes of materials or products or methods of construction;
- Encourage, so far as may be practicable, *the standardization of construction practices, methods, equipment, material, and techniques, including methods employed to produce industrialized units* [emphasis added].

Further, RC § 3781.10(C) specifies that only after thorough review and testing, the Board shall determine by rule that any particular fixture, device, material, process of manufacture, manufactured unit or component, or method of manufacture, system, or method of construction complies with the performance standards adopted by the Board pursuant to RC § 3781.11.

The Board lacks the resources to properly review and test materials and devices for performance. However, it has adopted rules related to product testing, review and recognition in OAC 4101:1-1-01. These provisions set forth the process for product testing, review and recognition and are consistent with national product testing and accreditation programs[1]. They ensure consistent and objective evaluation of products to be used in building construction and ensure they are safe for their intended purpose and have

[1] See Appendix A. OBC Figure 114.2 Organization of Board Recognized Bodies and Certification Programs.

predictable performance. A product that is evaluated through the process can be used for its intended purpose anywhere in Ohio.

In early 2013, both the Ohio State Fire Marshal (SFM) and the Board were contacted by a classroom barricade manufacturer and school district interested in installing secondary locking/barricade devices in K-12 classrooms in the event of an active shooter. The device had not been tested or evaluated in accordance with OAC 4101:1-1-01 and, more importantly, its intended use would result in restricting egress. Recognizing that K-12 schools were looking for options to keep students safe, the Board and SFM issued a joint advisory statement on egress in educational occupancies to fire code officials, building code officials and school system superintendents on February 20, 2013[2]. The advisory statement was intended to guide school districts and code officials as they explored options to enhance their school safety plans.

Generally, the building code does not prohibit any specific device, product or method of construction. It does, however, set forth performance standards that any device, product or method of construction must meet to be used in any regulated building. Door operation requirements in Ohio Building Code (OBC) § 1008.1.9 (OAC 4101:1-10-01) maintains three principles of performance: (1) egress doors should be readily openable from the egress side without the use of key or special knowledge; (2) door handles, pulls, latches, locks and other operating devices on doors shall not require tight grasping, tight pinching or twisting of the wrist to operate; and (3) the unlatching of any door shall not require more than one operation. These functions are critical to ensure that occupants of any building can evacuate quickly and safely in the event of a fire or other emergency. These performance criteria are central to the Board's evaluation on this topic.

On December 17, 2014, the Licking County Building Code Department issued an Adjudication Order to Southwest Licking Schools (SWLS) as a result of the school submitting an application for certificate of plan approval requesting use of a secondary locking/barricade device on classroom doors within its district. The Order denied the use of the device, stating:

> Door operations for egress doors shall comply with the Ohio Building Code section 1008. Egress doors shall be readily openable from the egress side without the use of key or special knowledge or effort. The ---- device you have proposed is not in compliance with the code. (Ref. OBC Section 1008.1.9).

In January 2015, SWLS filed an appeal of that Order to the Ohio Board of Building Appeals (OBBA), requesting the use of a secondary locking/barricade device in active threat situations on classroom doors. On February 23, 2015, OBBA conducted a hearing on that Order; and after hearing testimony from the building department, school and parents, OBBA upheld the Order issued by the building department

[2] See Appendix B.

denying the use of the secondary locking/barricade device on classroom doors[3]. Unfortunately, SWLS, through its parent organization had already purchased the secondary locking/barricade devices which had been determined by the OBBA to be non-compliant with OBC § 1008. As the SWLS matter was being heard, the Board also became aware of other secondary locking/barricade devices being considered by school districts or already deployed in schools that also may not comply with the OBC.

With this increasing interest by school administrations and parent groups to utilize secondary locking/barricade devices, former Director of Commerce Andre Porter asked Board Chair Gerald Holland to study the building code issues that have been raised by the use of classroom barricade devices in schools in an active shooter situation[4]. In response to Director Porter's request, Chairman Holland convened a forum on classroom barricade devices to hear testimony from school, building, fire and public safety professionals, as well as the public[5]. The forum consisted of two days of testimony, April 17, 2015 and June 5, 2015. Afterwards, the Board assigned the matter to the Board's Code Committee to prepare the Board's recommendation and report. The Board's Code Committee is comprised of members of the Board appointed by the Chair. It provides general oversight of the Board's rule promulgation and code development activities. The Committee also reviews proposed rule changes and petitions for code changes and makes recommendations to the Board for action. The Code Committee met on June 18, 2015 and July 7, 2015 to discuss the code language, research and testimony presented. The findings and determinations included in this report are the recommendation of the Code Committee as approved by the Board at its July 24, 2015 meeting.

[3] See Appendix C.
[4] See Appendix D.
[5] See Appendix E.

Discussion

Evolution of Safety Issues & Code Requirements

Ohio has been a leader in the development of codes and standards that have provided a solid basis for the construction of safe and sanitary buildings and structures. Regrettably, these improvements have occasionally come from real-life tragedies, which can, and historically have, become the impetus to analyze and amend the construction codes we use today to provide a safe built environment for our citizens.

The Collinwood, Ohio school fire on March 4, 1908, was one of several high-fatality fires (175 lives lost) in the first half the Twentieth Century that gradually changed public sentiment and led to demands that these types of disasters be prevented. That fire was reported internationally and produced in the public a desire for improvements in school building safety systems.

In 1911, three years after the Collinwood fire, the Ohio legislature adopted the *Ohio State Building Code* which included provisions specific to School Buildings. These requirements specified types of construction; provisions based upon building heights; requirements for means of egress; and requirements for stairway enclosures with self-closing fire doors, exit doors and windows, fire extinguishers, fire hoses, and fire alarms. These provisions in the Ohio code were broadly applied not only to public, parochial, and private schools, but to colleges, academies, seminaries, libraries, museums, and art galleries as well. The 1911 *Ohio State Building Code*, Section 25 of Title 3, provided that:

> Doors from halls to rooms and cloak rooms shall have no locks upon same, but shall be equipped with knob latches only. If locks are desired, the same style locks as above specified for entrance doors shall be used and the same shall so be placed on the door (so) that they can be locked on the hall side, and can always be opened on the room or cloak room sides, whether locked or not.
>
> One of each pair of outside or inside double doors shall have a double extension panic bolt on same, bolt to have knob, lever, push bar, push plate, push handle, or device whereby the simple act of turning a knob, or lever, or pushing against the same will release the top and bottom bolts at the same time and allow the doors to open.
>
> Independent top and bottom bolts shall not be used.

Similar provisions continued to be included in Ohio's construction codes from 1957 through 1979 after which Ohio began using nationally developed model construction codes as the basis of the State's building codes. These model codes contained similar requirements for doors in the egress path, thus assuring that occupants would not be impeded in their exiting to safety. Currently, Ohio's building and fire codes are based on the International Building Code (IBC) and International Fire Code (IFC) developed and published by the International Code Council (ICC).

The National Fire Protection Association's (NFPA) *Life Safety Code* (NFPA 101) was first published in 1912 and was entitled *Exit Drills in Factories, Schools, Department Stores and Theaters*. The 1958 edition included Section 22 for Educational Occupancies. It addressed exiting, travel distances, fire escape stairs, stairways, panic door hardware, smoke barriers, and fire resistive enclosures of central heating equipment, as well as provisions for lighting, signage, alarms, and drills. It, too, contained language similar to Ohio's that outlined door requirements. Section 3204 required:

> All doors on exits, or providing require means of egress to exits, shall be so arranged as to be readily opened from the side from which egress is to be made, at all times when the building, structure or area served is occupied. Locks, if provided, shall not require any key to operate from the inside, except as otherwise permitted by Section 23 for mental and penal institutions[6].

These changes have led to adjustments and modifications to code requirements that regulate construction in the United States. Encouragingly, as a result of this work, NFPA reported in 2008:

> [T]here has not been another school fire in the United States in which 10 or more people have died. Between 1994 and 1998, grades K through 12 averaged one civilian death per year, which has been a typical annual death toll for schools since at least 1980. Moreover, these fatalities do not appear to be innocent children, but juvenile fire-setters caught in the fires they set or adults such as janitors. It is a bittersweet legacy that, after 100 years, we have indeed made progress in improving school fire safety, and the innocent victims of Collinwood, Ohio, did not die in vain[7].

Current Technical Code Provisions

The ICC was the outgrowth of an effort to combine the publication of multiple codes at the end of the Twentieth Century. At that time there were three model codes that were regionally developed and published, but largely contained identical provisions for regulations of construction for the health and safety of the public. The three model codes were organized and adopted in the Northeastern and Midwestern, Southern, and Western parts of the US. Efforts to consolidate the organizations and the code development process came to focus on the development of the first IBC in 2000. Ohio first adopted the IBC in 2003.

All model codes have always included the use of significant standards that represent the best means and methods of application and manufacturing of systems, materials and designs. The NFPA is internationally recognized for its efforts to standardize such parts of the construction industry as the electrical, fire protection and life safety systems and means of egress for use in buildings. Other organizations provide standards for the uniform application of regulations for evaluation of materials and systems. The IBC together with several important NFPA and other industry standards included therein achieves an appropriate level of safety and health. The Board has relied upon many of the ICC

[6] *Building Exits Code*, NFPA 101 § 3204 (NFPA 1958).
[7] Grant, Casey C., *The Lake View School Fire*, NFPA Journal. September/October 2008.

and NFPA codes and standards in the development of the most appropriate level of regulation of buildings for use in the State of Ohio.

In evaluating the basic factors of risk associated with the variety of building configurations the building and fire codes determine how the varied egress components assure their proper functioning in the egress system. Current building and fire code provisions prescribe three fundamental characteristics for all egress doors, including those in educational occupancies.

First, these egress doors must be *readily openable from the egress side without the use of a key or special knowledge or effort*. While security is important -- the code already attempts to balance security and safe egress -- the life safety of occupants is essential. Special knowledge or effort would dictate the need for unusual and unexpected physical ability to unlock the egress door or make it fully available for egress and would thus increase the time necessary to exit. Fine motor skills are severely compromised in a time of emergency. Using devices that require specialized skill or knowledge will interfere with occupant egress, or possibly even prevent it altogether. Therefore, in order to ensure safety for all building occupants, egress requirements must protect and accommodate the widest number of individuals, not only under normal circumstances and at optimal performance levels, but also in times of increased stress where everyone's ability to perform normal, simple door operations becomes compromised. Understanding potential conditions in emergency situations, the 1958 edition of NFPA required that, "Latches or other releasing devices to open exit doors, or doors in the path of travel to reach exits, shall be of simple types, the method of operation of which is obvious, even in darkness"[8].

Next, egress doors must *not require that the doors and their operating components require tight grasping, tight pinching or twisting of the wrist to operate*. People with disabilities are often unable to grasp objects with their hands or are unable to reach above or below the normal reach range specified in the building code and federal law (34" to 48" above the floor). Lever-operated mechanisms, push-type mechanisms and U-shaped door pulls accommodate the greatest range of users. This fundamental requirement minimizes the risk for the greatest number of occupants.

Lastly, the *unlatching of any door or leaf must not require more than one operation*. Requiring more than one motion – or adding multiple devices that must be engaged or disengaged to accomplish egress – compromises the safety of building occupants. There are several code-compliant options that meet this fundamental code requirement. More than one operation could be a safety hazard in an emergency situation, especially when the stress of such situations affects the abilities of individual users to quickly identify and operate such devices under emergency conditions. These essential requirements are reflected in the Ohio Building Code §§ 1008.1.9, 1008.1.9.1, and 1008.1.9.5, respectively.

[8] *Building Exits Code*, NFPA 101 § 3205 (NFPA 1958).

Importance of Standards, Testing, Listing, and Labeling

The building code is a compilation of criteria with which materials, equipment, devices, and systems must comply to be suitable for a particular use and application in a building. Virtually every component used in building construction today has been tested, is listed, or is labeled evidencing its compliance with consensus standards. Through the Board's certification the certified building departments evaluate the materials, equipment, devices and systems submitted to them for approval as code compliant and, when compliance is determined, approves them for use in a building. The materials, equipment, devices, and systems must be constructed and installed in compliance with all conditions and limitations considered as a basis for that approval. Building department inspectors audit the construction process to assure that the building is constructed as approved. For example, manufacturer's instructions and recommendations are to be followed if the approval of the material was based, even in part, on those instructions and recommendations. The approval and inspection authority given to the building department is a significant responsibility and is a key to code compliance.

The building code is not intended to inhibit innovative ideas or technological advances. A comprehensive regulatory document, such as a building code, cannot envision and then address all future innovations in the industry. As a result, the building code must contain performance-based criteria and provide a basis for the approval of increasing number of newly developed, innovative materials, systems, and methods of construction. The building code even provides a process for the use of products, devices, and systems for which no code text or referenced standard yet exists. The fact that a material, product, or method of construction is not addressed in the code is not an indication that such material, product, or method is prohibited.

Those products, devices, and systems that *are prescribed* in the building code are those for which there are requirements developed and placed in the codes and based on industry consensus standards. The type of information required includes test data in accordance with referenced standards, evidence of compliance with the referenced standard specifications, and design calculations. These products, when they show evidence that they were tested, listed, or labeled in compliance with the criteria prescribed in the codes, are deemed to comply with the building code and are approvable. Test reports for products prescribed in the code must be submitted to a certified building department as required OBC § 114.3.1.

Overview of the April 17 & June 5 Testimony

An integral part of the Board's work on this issue involved testimony presented at the Board's April 17, 2015 and June 5, 2015 meetings[9], including a presentation from former Chardon City Schools Superintendent Joseph Bergant. In his presentation on June 5, Mr. Bergant gave the Board a first-hand account of Chardon's experience and lessons learned from the February 27, 2012 shooting at Chardon High School. He emphasized proper planning; building relationships and trust levels in the community especially with police, fire and EMS; the "if you see it, say it" approach to reporting suspicious behavior; and keeping doors locked. In response to Board members' questions about locks, Mr. Bergant stated that before the February 27, 2012 shooting, Chardon High School's doors were lockable but only from the outside with a key. The doors were able to be unlocked from the inside just by turning the knob. He stated that he wished they would have changed the lock sets earlier to ones that would be locked all the time while still opening easily from the inside. He stated that is the cheapest and most effective option, because schools are open 24/7 and anyone can bring something into a school at any time.

On April 17, Director of the Department of Public Safety John Born led off the presentations from public safety professionals and presented background information on the State's efforts primarily in prevention and preparation. With the exception of Ohio Fraternal Order of Police (FOP), testimony from law enforcement strongly supported code changes that would allow the use of secondary locking/barricade devices. Sheriff Randy Thorp stated that law enforcement fear that primary locking devices can be easily defeated. Additionally, Deputy Gus Moore stated the Alert Lockdown Inform County Evacuate (ALICE) teaches barricading with normal items: furniture, belts, anything that keeps someone from entering a classroom. Both Chief Bruce Gower and Chief Andrew Powers discussed the cost of code-compliant options. Chief Powers from the Ohio University Police stated that his campus has very few doors that can be locked and the cost of retrofitting would be significant. Chief Powers also asked the Board to ensure they consider colleges and universities because most of the discussion had centered on K-12.

However, Retired Officer Mike Weinman stated that FOP has not made a decision on secondary locking/barricade devices. He raised concerns regarding whether a secondary locking/barricade device was accessible to students and the lack of uniformity between communities if the decision to use a specific secondary locking/barricade devices was purely a local decision.

At the April 17 meeting, Rick Amweg, Executive Director for Center of P-20 Safety & Security, cautioned the Board, before it adopted any changes to the building or fire codes to conduct a full

[9] See Appendix F & Appendix G for detailed summaries of testimony presented.

evaluation of current code compliant methods. Additionally, Mr. Amweg stated that he also participated in the Ohio Attorney General's School Safety Task Force and helped draft the recommendations[10]. He told the Board that nowhere in any of the recommendations used by the P-20 Center do they recommend using any device that is contrary to the current state building or fire codes. Mr. Amweg stated that several reports and recommendations, including the Sandy Hook Advisory Commission Report[11], recommend that classroom doors be lockable from the inside but none recommend devices that would result in violation of national or local building and fire codes. Mr. Amweg's testimony also emphasized that the Sandy Hook Advisory Commission Report points out that there has never been an event where a shooter breached a locked classroom door.

Building code officials spoke at both the April 17 and June 5 meetings opposing changes to the code that would allow secondary locking/barricade devices. However, there appeared to be some division amongst fire service on the issue of secondary locking/barricading devices. Chief Deputy State Fire Marshal Jeff Leaming stated that the SFM does not recommend any change to the building or fire code to recognize secondary locking/barricade devices. Chief William Shaw stated that secondary locking/barricade devices inhibit rapid ingress/egress and is a solution for one type of incident instead of an all-hazards approach. He also shared the concerns presented by FOP that if the decision was to give local authorities the ability to decide whether secondary locking/barricade devices were used, mutual aid forces in neighboring communities responding to an emergency would not always have the needed information regarding such devices. Assistant Chief McDermitt stated that their organization has conducted extensive research and concluded that no change to the building or fire codes is necessary:

> There are multitude of existing products that meet the current code requirements that are "labeled" and "listed" for this purpose and have been tested for functionality. We also advocate retro-fitting of classroom doors with large windows, to doors that have a smaller, internally wired guarded window and if possible, a hardened door for a total protection package. We also advocate a statewide educational campaign to explain current code requirements[12].

Alternatively, Assistant Chief John Desmarteau presented the Board with Northeast Ohio Fire Prevention Association's (NEOFPA) White Paper on Temporary Lockdown Procedures[13]. In the white paper, NEOFPA states:

> Non-conventional arrangements that are not in compliance with the code but do permit a door normally used for egress to be secured temporarily from within a space by trained occupants only during a true lockdown emergency or training event, are recognized by NEOFPA provided that the devices and/or processes employed meet the following criteria:

[10] See Appendix H.
[11] See Appendix I
[12] See Appendix G.
[13] See Appendix H.

1. The lockdown process does not require the physical alteration of the door and jamb assembly, or the installation of any hardware that would be of a permanent nature.
2. The lockdown process must comply with the requirements of chapter 10 of the fire and building codes when not in use.
3. The requirements for lockdown drills as specified within chapter 4 of the OFC shall be adhered to.
4. The fire code official (AHJ) must approve the devices and/or processes. The fire code official shall also document that occupants who will be utilizing these approved devices and/or processes have received the appropriate training in their operation.

Assistant Chief John Desmarteau stated that ideally NEOFPA would prefer only code compliant hardware installed in schools. However, he stated that many schools cannot afford them, and NEOFPA would rather know what alternative devices are being used in those schools.

Northeast Ohio Fire Prevention Association's white paper position was supported by Chief Robert Searles from the City of Mentor. Chief Searles stated that he also participated in the Attorney General's School Safety Task Force[14] and he emphasized the need for a layered response system. As part of Mentor's layered response system, Chief Searles stated that they use a single-action door barricade device that does not take special knowledge or ability. Teachers have been taught how to deploy it and firefighters have been taught how to defeat it. But Chief Mike Carroll from Lyndhurst stated that South Euclid-Lyndhurst is not allowing secondary locking/barricade devices in their schools and presented testimony opposing code changes that would permit them. Fire Prevention Officer Kate Earley recommended code changes for new school construction requiring locks on doors and a small window in the door on the hinge side.

On June 5, Ms. Erin West a parent of a child attending a school in SWLS presented recommendations to the Board from a parent's perspective. Ms. West is a member of Southwest Licking Parents and Community Standing with Administrators and Teacher (SWAT), the parent organization that raised the money to purchase the secondary locking/barricade devices that were determined to be non-compliant. Ms. West presented code changes, "Cody's Code Changes," named for her son. Ms. West described her changes as an "all hazards" approach, not just the hazards of the past. The proposal would allow for secondary locking/barricade devices only in Level 3 Lockdown Situation under specific conditions -- including an emergency response plan developed with local police and fire, and regular training -- and only devices that would not require an alteration to the door. The proposed code changes would only apply to existing schools, and new schools must have code compliant locks. Ms. West explained that she wished her school could purchase code-compliant retrofit locks, but they cannot afford them.

[14] See Appendix H.

Additional public testimony came from local architect Joann Gretter, who provided testimony opposing the use of secondary locking/barricade devices in classrooms. Also, Mark Berger, an inventor, provided general information on building safety/security methods and recommended that the Board should not base its decision on a body of product that exists, but rather what it thinks is best for the students. Al Ramirez from Underwriters Laboratories (UL) described the scope of UL's product testing and standards development process. Mr. Ramirez stated that when they test doors, they are typically tested as a system, and ensure components of the door do not impede the door's function and purpose.

Representatives from various door hardware and secondary locking/barricade device manufacturers addressed the Board at its June 5 meeting. These representatives explained their products, demonstrated how they worked, and described their benefits. One manufacturer representative of door hardware raised accessibility concerns of secondary locking/barricade devices.

Finally, many individuals who testified addressed the cost of both code-compliant options and secondary locking/barricade devices[15].

[15] See Appendix F & Appendix G.

Analysis

Risk Management

Building codes are sets of regulations governing the design, construction, alteration, and maintenance of buildings and structures. They specify the uniform minimum requirements to adequately safeguard the health, safety, and welfare of building occupants. There is no more important factor in reducing a community's risk in the built environment than the adoption and enforcement of up-to-date building codes. Evaluating older buildings and retrofitting existing structural and non-structural components are also critical steps. To survive and remain resilient, communities should also strengthen their core infrastructure and critical facilities so that they together will protect occupants and be able to continue to provide essential services.

The design and construction of secure and safe buildings (those with a minimal danger or risk of harm) is understandably a primary goal for owners, architects, engineers, project managers, construction managers, developers, facilities managers, code officials, fire officials, building inspectors, city/county/state officials, emergency managers, law enforcement agencies, lenders, insurers, product manufacturers, the public, and other stakeholders. Making this goal a reality is often a challenge due to funding limitations; resistance from the occupants due to impacts on operations, productivity, and accessibility; and the impacts on the building due to perimeter security, hardening, and standoff requirements. Understanding the impact that site security has on the overall security of the building is important as well. However, a balance between the security and safety goals and the other design objectives and needs of the facility and its users can be attained.

Designing buildings for security and safety requires a proactive approach that anticipates and then protects the building occupants, resources, structure, and continuity of operations from multiple hazards. The building code by its very structure is the basic programming tool used by design professionals to understand the risks inherent in a project and is a primary solution to providing a built environment that addresses the risks. Based on a code analysis, building owners and their designers can address risks depending on the security requirements, acceptable levels of risk, cost-effectiveness of the measures proposed, life cycle costs, and the impact these measures have on the design, construction, and use of a building. If a nationally developed set of construction requirements is used, then regardless where the analysis and design are done or by whom, the fundamental process of identifying what can happen at a given location, how it can affect the built environment, and what the potential losses could be remain essentially the same from state to state.

There are times when it appears that addressing all the various threats will pose conflicts in arriving at an acceptable design and construction solution. Examples include access control measures

that prevent intrusion but may also restrict emergency egress, or environmental limits for light pollution reduction juxtaposed to the need for security lighting objectives. Conversely, design and security features can complement each other, such as the design of site architectural elements or landscaping materials that double as vehicle barriers.

Most security and safety measures involve a balance of operational, technical, and physical safety features. For example, to protect a given facility from unwanted intruders, a primarily operational approach might stress the utilization of guards around the clock; a primarily technical approach might stress video surveillance; while a primarily physical approach might stress locked doorways and access control. In practice, a combination of approaches is usually employed and the building code is developed with this all-risk principle in mind.

Vulnerable Populations

Simply stated, the model code development process used in the United States has, as one goal, the development -- in partnership with state and local governments, industry professionals, universities, laboratories, architects and engineers, manufacturers, the public, and many others -- of a family of national consensus model codes that are comprehensive, risk-based, and all-hazard in approach. This allows for a balance of code provisions that address the various risks to which occupants of buildings and structures may be exposed. These risk factors begin with classifying and evaluating common characteristics in buildings or structures that can present risks. The code's risk-based requirements are not only grounded upon what a building is made of, how big it will be, and how it will be used, but also provide guidance to designers by considering other risk factors that may be present simultaneously in a building, such as at-risk-population-based factors that bring with them other code limits and requirements.

Code requirements vary depending on whether occupants might be incapacitated or impaired in any way (sleeping, sedated, intoxicated); whether occupants are familiar with their surroundings (home or office versus hotel, theater, or stadium); occupants' capabilities of responding in an emergency (the very young, very old, or the physically impaired); the numbers of people in a space or building (office, conference room, auditorium, stadium); the likelihood of panic in an emergency (home, office, theater); the likelihood of being exposed to potential hazards (different in a factory, storage building, garage, or classroom); occupants' travel times to safety (single story residence, apartment building, high-rise office building, mall, stadium); or special loads or conditions (factory, prison, storm shelter, etc.).

Another consideration that has been greatly researched, documented, and subsequently implemented by the codes (falling under an occupant capability risk factor category) would be the code requirements to assure that the disabled have access to jobs and services. Accessibility requirements,

mandated under federal and state law, require features to be built into a building that assure that the largest numbers of people can access and use the buildings and structures we all use in our daily lives. This same access must also include egress during emergencies. The U.S. Census Bureau reports that one in five Americans has a disability[16]. Given this sizeable population, the codes address the needs of this population.

Granted these varied risk considerations, the codes set out to classify buildings by what they are built of (construction type classifications). This allows for a consideration of how that building would perform in a fire or disaster and require the designer to adjust the built-in safety features that would be needed. Once the construction type is determined, the limits on how large and how tall it should be (allowable building height and area limits) are established. History, fire tests, listing, and labeling of all building components help balance these risks. Given certain risks, to protect occupants, building systems must be incorporated into a building to essentially "stand watch" for occupants' safety. This need results in the incorporation of such components as fire protection systems with sensors that "smell" and "watch" for fire or the products of combustion; egress systems and their proper configuration to allow sufficient time to exit; occupant notification systems to sound recorded or real-time messages instructing occupants in an emergency. Passive components as well as active features are used in buildings to address risk. These passive systems are such things as provisions for fire resistance/fire separation requirements for walls, floors, and ceilings, and adequate structural, plumbing, mechanical, and electrical systems.

Whether young or old, disabled or not, buildings or structures built to current code requirements address, in an all-hazard risk-based way, the needs of building occupants under a variety of situations and conditions that balance these often diverse expectations. Building methods, components, or systems that ignore this process can cause the building itself to become a hazard to its occupants.

Sandy Hook Advisory Commission Report

Several individuals who testified at the April 17, 2015 and June 5, 2015 meetings referenced the Sandy Hook Advisory Commission (Commission). The Commission was established by Connecticut Governor Dannel P. Malloy shortly after the attack on Sandy Hook Elementary School on December 14, 2012. Over a two-year period the Commission "reviewed laws, policies, and practices in place on December 14, 2012 in order to make recommendations intended to reduce the probability of another

[16] United States Census Bureau. *Nearly 1 in 5 People have a disability in the U.S., Census Bureau Reports, Report Released to Coincide with 22nd Anniversary of the ADA,* July 25, 2012.
http://www.census.gov/newsroom/releases/archives/miscellaneous/cb12-134.html

tragedy on the scale of what occurred at Sandy Hook Elementary School."[17] The Commission presented its Final Report (Final Report) to Connecticut Governor Malloy on March 6, 2015, the same day the Board established its forum on classroom barricades. The Commission's work focused on three areas:

> Safe School Design and Operation
> Law Enforcement, Public Safety, and Emergency Response
> Mental Health/Mental Wellness

For the purposes of this Report, the Board focused on the information and recommendations included in the Commission's Final Report related to Safe School Design and Operation (SSDO).

In developing its SSDO recommendations, the Commission used an all-hazards risk management approach[18]. The Final Report explains that the Commission reviewed the Columbine and Virginia Tech reports, but determined that these reports did not provide usable recommendations for SSDO. The Commission concluded that, "while developing strategies specifically intended to address active shooter events is very important, a more holistic approach to SSDO is necessary and appropriate"[19]. The Commission had previously issued an interim report dated March 18, 2013, which is referenced many times throughout the Final Report. Its interim report included a recommendation for the development of SSDO standards, resulting in the formation of the School Security Infrastructure Council (SSIC) in Connecticut. The SSIC issued the Report of the School Safety Infrastructure Council[20]. Additionally, the Commission's interim report included twenty-two recommendations addressing safe school design and human resource emergency preparedness[21]. The Commission notes that almost all of the recommendations were subsequently adopted in the Report of the School Safety Infrastructure Council. The Final Report then proceeds to set forth twelve additional recommendations related to SSDO. Most pertinent to the Board's charge – and most salient – is the Commission's Recommendation No. 1:

> The SSIC Report includes a standard requiring classroom and other safe-haven areas to have doors that can be locked from the inside. The Commission cannot emphasize enough the importance of this recommendation. *The testimony and other evidence presented to the Commission reveals that there has never been an event in which an active shooter breached a locked classroom door*. Accordingly, the Commission reiterates its recommendation that all classrooms in K-12 schools should be equipped with locked doors that can be locked from the inside by the classroom teacher *or substitute* [emphasis in the original].

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[17] *Final Report of the Sandy Hook Advisory Commission Presented to Governor Dannel P. Malloy State of Connecticut*, at xi (Conn. Mar. 6, 2015).
[18] *Id* at 20.
[19] *Id* at 21.
[20] See Appendix J. Report of the School Safety Infrastructure Council, Revised and Updated to June 27, 2014.
[21] *Final Report of the Sandy Hook Advisory Commission Presented to Governor Dannel P. Malloy State of Connecticut*, at 32 (Conn. Mar. 6, 2015).

Later, the Commission identifies Key Safe School Infrastructure Standards. The Commission notes that while standards established by the SSIC were incorporated into the Final Reports Appendix, it felt it important to specifically provide a subset of the SSIC's report's salient recommendations[22]. The criteria the Commission used to identify the subset were:

(1) Relative ease of feasibility to implement the recommendation.
(2) Opportunity for the recommendation to provide significant safety and security value.
(3) Ability to implement the recommendation at a reasonable cost for the extent of protective design value obtained[23].

The subset addresses: School Site Perimeter Standards; Parking Areas and Vehicular and Pedestrian Routes; Recreational Areas – Playgrounds, Athletic Areas, Multipurpose Fields, Communication Systems, School Buildings Exterior – Points of Entry/Egress and Accessibility; School Building Interior; Roofs; and Critical Assets/Utilities. While this subset includes important information to be considered for school building design and operation, for the purposes of this Report the Board focused on the information presented by, and recommendations of, the Commission for Classroom Security as part of the School Building Interior. These include[24]:

6.11 All classrooms shall be equipped with a communications system to alert administrators in case of emergency. Such communication systems may consist of a push-to-talk button system, an identifiable telephone system, or other means.
6.12 *Door hardware, handles, locks and thresholds shall be ANSI/BHMA Grade 1*[25].
6.13 *All classroom doors shall be lockable from the inside without requiring lock activation from the hallway, and door locks shall be tamper resistant*[26].
6.15 *Classroom door locks shall be easy to lock and allow for quick release in the event of an emergency*[27].
6.16 *Classroom doors with interior locks shall have the capability of being unlocked/released from the interior with one motion*[28].
6.17 *All door locking systems must comply with life safety and State of Connecticut building and fire codes to allow emergency evacuation*[29].
6.xx Provide doors between adjacent classrooms to provide means of moving classroom occupants from one classroom to the next as a means to relocate students and teachers from an impending hallway threat. Provide such doors with suitable locking hardware to preclude unauthorized tailgating[30].
6.xx Provide closers on these doors so that they automatically return to a closed, latched, and locked position to preclude unauthorized entry[31].

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[22] *Id* at 45.
[23] *Id*.
[24] *Final Report of the Sandy Hook Advisory Commission Presented to Governor Dannel P. Malloy State of Connecticut*, at 56 – 57 (Conn. Mar. 6, 2015).
[25] This standard is already incorporated in the OBC.
[26] This option is currently available for all new construction but is not mandatory.
[27] This is consistent with the current provisions of the OBC.
[28] This is consistent with the current provisions of the OBC.
[29] Like Ohio, Connecticut's building and fire codes are also based on the International Building Code and International Fire published by the International Code Council.
[30] This option is currently available for all new construction but is not mandatory.
[31] This option is currently available for all new construction but is not mandatory.

6.20 If classroom doors are equipped with a sidelight, the glazing should be penetration/forced entry resistant to the project forced entry standard[32].

6.21 If interior windows are installed to provide lines of sight into/out of classrooms or other populated areas, certain factors should be taken into consideration related to the size, placement and material used for those windows, including

6.21.1 Minimizing the size of windows or the installation of multiple interspersed smaller windows with barriers in a larger window area to deter intruder accessibility.

6.21.2 Placing windows at a sufficient distance from the interior locking mechanism to prevent or make difficult the opening of a door or lock from outside.

6.21.3 Concealing or obstructing window views to prevent an assailant's ability to ascertain the status or presence of persons inside of a classroom during lockdown.

6.21.4 Hardening window frames and glazing to the project forced entry standards to lessen window vulnerability [emphasis added][33].

[32] This option is currently available for all new construction but is not mandatory.

[33] This option is currently available for all new construction but is not mandatory.

Conclusion

To date, there have been no secondary locking/barricade devices that have been viewed or presented that comply with the current requirements of the Ohio building and fire codes or have had any consensus standard developed to assure their consistent manufacture, establish their usable life, or provide consistent rating for strength or durability. These single-hazard devices require specialized knowledge or skill in the steps needed to use them. They all require fine motor skills to install and to remove, thus requiring many additional operations to block a door and then many steps to return the device-blocked egress door to service for egress.

Many of these unlisted, unlabeled, and untested devices are intended to be attached to the code compliant door hardware and depend upon the integrity of the existing door hardware itself in order to function as advertised. Likewise, most are required to operate under the skill of a particular individual and do not have failsafe mechanisms in place in the event of the incapacitation or unavailability of the 'knowledgeable' or 'skilled' person. Most require tight grasping, pinching, or twisting of the wrist to operate and most are required to be placed outside the reach ranges (32" to 48" above the floor) prescribed in the building and fire codes to meet federal accessibility mandates of the Americans with Disabilities Act. This fact alone essentially prevents their use by some occupants (young, old, short) and many with disabilities and places them outside federal and state acceptable limits that make operable parts of these critical egress door building components accessible.

The Board heard testimony on the cost of code-compliant locks vs secondary locking/barricade devices. The law enforcement, fire service and parent organization representatives that support code changes to allow the use of secondary locking/barricade devices also agreed that code-compliant options are preferable but the cost of retrofitting doors is prohibitive. Based on the testimony presented the average cost of a compliant lock set was said to be approximately $300. The cost of installation would be approximately between $25 and $50. Therefore, the cost to retrofit classroom doors with a code-compliant lock set could be between $325 to $350 per door. Whereas, the cost of many of the secondary locking/barricade devices presented to the Board was under $100. The Board recognizes the cost difference between code-compliant options and secondary locking/barricade devices. But in this case, the cost of code-compliant lock sets is far eclipsed by their short and long term benefits.

Testimony was also presented that when such a secondary locking/barricade device is used in an emergency, the space becomes an "area of detention or restraint[34]." It is true that protect-in-place strategies are already incorporated into the building and fire codes for occupancies where egress is unwanted, dangerous, or impossible. These occupancies include hospitals where patients are too sick or

[34] See Appendix E.

incapacitated to move, jails in which the dangers of evacuation must be controlled, or in occupancies in which individuals are physically ambulatory but are mentally impaired to the point that there must be direct supervision to egress safely, such as an Alzheimer unit in a care facility. However, wherever a protect-in-place strategy is anticipated to be used, the building has many additional built-in "risk-management" features to address these increases in risk for occupants in such occupancies. Locking occupants inside a Group E Occupancy classroom with the use of secondary locking or door blocking devices would not provide the built-in safety features that would be required for a code compliant protect-in-place occupancy. Spaces originally designed as classrooms that become areas of "detention or restraint" (Institutional Occupancies) without including the built-in features that address the increased risk of locking occupants in a space results in a much lowered level of safety for any students so restricted.

Likewise, ingress or access by emergency responders for treatment or search-and-rescue appear to be crucially impeded especially in the deployment of secondary door locking or barricade devices that are inherently designed to be un-openable from the exterior of the barricaded room. Many devices have no provisions for them to be deactivated from the outside by first responders or have some non-standard proprietary tools that first responders must carry and use in order for the devices to be overcome. Additionally, most of the devices are neither visible nor identifiable from the exterior of the barricaded or blocked door. This condition would be especially difficult for mutual aid first responders who may not be familiar with the use of a particular device or a device different from that used in their home community.

It is also important to realize that most secondary locking/barricade devices require that the existing door or door frame be altered or have devices, brackets, stops, or guides installed on them. The action of drilling or mounting unlisted and unlabeled hardware on a rated door assembly can alter or affect the fire rating of the assembly.

Consistent with testimony presented, RC § 3313.536 requires that all public and private schools prepare and submit a school safety plan and building floor plan to the Ohio Attorney General's Office. The schools are required to keep the plans updated at least every three years. The plans are available to emergency responders. The Attorney General's School Safety Task Force recognizes that in order to minimize risks to school safety, relationships among law enforcement, fire, emergency services, school officials, staff, teachers, parents, mental health, social service, clergy, hospitals, and other health professionals need to be continually developed and, among these professionals, ongoing regular communications, planning, training, reviewing, and revising school safety plans is of utmost importance.

The current Ohio Fire Code §§ 402 and 404, based upon the 2009 International Fire Code, already defines the term "Lockdown;" outlines the contents of a lockdown plan (which includes an

approved means of two-way communication between a central location and each secured area), requires lockdown training for employees; and requires dedicated lockdown drills, separated from fire, tornado, and other drills.

The 2012 national model codes first incorporated code language which required an emergency voice/alarm communication system in all new schools or schools where the fire alarm system is being replaced. This requirement was added to enhance communication between school administrators, teachers and students during a lockdown incident. In keeping with the national recommendations for school safety, the Board approved this language and is currently in the process of adopting this code language into the OBC § 907.2.3.

The Sandy Hook Advisory Commission Final Report recommended, and strongly emphasized, that classroom and other safe-haven areas have doors that can be locked from the inside, and then highlighted standards for classroom security. Door hardware, handles, locks and thresholds shall be listed (ANSI/BHMA Grade 1); lockable from inside; easy to lock and quickly releaseable in the event of an emergency; capable of being unlocked from the inside with one motion; and compliant with life safety, building and fire codes. Consistent with these recommendations, there is a code change proposal[35] currently moving through the ICC code development process which would require all classroom doors in educational occupancies to be lockable from within the classroom without opening the classroom door and to be unlockable and openable from both the ingress and egress sides. This would allow immediate egress from inside the classroom and, with appropriate credential (key, keycard, or a combination), access from the outside to the classroom for first-responders. The Board considers this approach to be a viable all-hazard code-complying solution to the security question.

Based on the foregoing, the Board does not recommend any change to the current building and fire codes at this time.

[35] See Appendix K.

Acknowledgements

The Board would like to thank all those who participated in this study by providing testimony, research, and information to the Board. Also, the Sandy Hook Advisory Commission Final Report was an invaluable resource in the development of this Report and contains important information to be considered for school building design and operation. It is recommended reading for anyone involved in school building design. The Board extends its heartfelt appreciation to Joseph Bergant for taking time to discuss the 2012 events in Chardon High School with the Board at its June 5, 2015 meeting and his continued work to improve school safety. Finally, to the citizens of the State of Ohio in their various capacities as parents, public officials, safety personnel and building and fire officials who came forward and for the technical information provided by industry representatives and designers and manufacturers who testified, the Board expresses its gratitude and appreciation for the sincere effort to assist it in making this decision.

Appendix

A. OBC Figure 114.2 Organization of Board Recognized Bodies and Certification Programs

B. February 20, 2013 Division of State Fire Marshal and Board of Building Standards Advisory Statement – Egress in Educational Occupancies

C. OBBA Case # 15-0013 File

D. Classroom Barricade Correspondence

E. Classroom Barricade Forum Schedule

F. April 17, 2015 Classroom Barricade Forum Testimony

G. June 5, 2015 Classroom Barricade Forum Testimony

H. June 2013 Ohio Attorney General School Safety Task Force Recommendations and Resources

I. Sandy Hook Advisory Commission Final Report March 6, 2015

J. June 27, 2014 State of Connecticut Report of the School Safety Infrastructure Council

K. Code and Standards Information