Board of Building Standards

CODE COMMITTEE MEETING
AGENDA

DATE: DECEMBER 15, 2022
TIME: 1:00 PM
LOCATION: TRAINING ROOM 3, 6606 TUSSING RD, REYNOLDSBURG, OHIO, 43068

Click here to join meeting

Call to Order

Approval of Minutes
- MIN-1 November 17, 2022 Code Committee Meeting Minutes

Petitions
- P-1 Withdrawal of Petition #22-03 OPC Section 312.2.2 - Tim Irven of Integrity Safety Solutions
- P-2 Petition #22-04 OBC Ch 11 - Kim Boulter & Jennifer Corcoran of Changing Spaces Ohio

Recommendations of the Residential Construction Advisory Committee
- R-1 Petition 22-01 - 2020 NEC RCO

Old Business
- OB-1 Commercial Energy Code Review (OBC Ch 13)
- OB-2 OBC Draft rule review (Chapters 4, 12, 29, 30, 32, 33)

New Business
- NB-1 OBC Chapter 34 vs. IEBC

Adjourn

File Attachments for Item:

MIN-1 November 17, 2022 Code Committee Meeting Minutes

OHIO BOARD OF BUILDING STANDARDS
CODE COMMITTEE MINUTES
November 17, 2022

The Code Committee met on November 17, 2022 with the following members present: Mr. Denk, Ms. Cromwell, Mr. Miller, Mr. Samuelson, Mr. Stanbery, and Mr. Tyler. Board Chairman, Tim Galvin, was also present.

The following staff members were present: Regina Hanshaw, Debbie Ohler, and Jay Richards

Guests present: Jennifer Corcoran and her son Matthew, Kim Boulter and her son Aiden, and Jen Schubert and her daughter Jada.
Guests present via Teams: Howard Blaisdell and one other unidentified attendee

CALL TO ORDER

The meeting was called to order by Mr. Denk at 1:03 P.M.

APPROVAL OF MINUTES

Mr. Stanbery made the motion to approve the minutes of the Code Committee meeting held on October 20, 2022. Mr. Miller seconded the motion. The motion passed unanimously.

PETITIONS

Petition #22-03 OPC Section 312.2.2 – Tim Irven of Integrity Safety Solutions

Staff explained the history of the Ohio plastic pipe testing requirements in Section 312 of the OPC and that the petitioner is asking for recognition of a product that is not part of the plumbing system, but instead is part of the testing equipment used by the plumbing contractors to test the system for leaks. The committee tabled the item and asked staff to communicate with the petitioner and explain that the board does not typically adopt rules for equipment used to test plumbing systems and see if the petitioner understands and is willing to consider withdrawing his petition.

Petition #22-04 OBC Ch 11 – Kim Boulter & Jennifer Corcoran of Changing Spaces Ohio

Ms. Boulter and Ms. Corcoran presented their unique challenges and experiences as parents of adult children that cannot use the toilet facilities as most of the population can. They have created a campaign to add adult changing tables in public buildings to allow children with similar needs and their families to participate in the same activities that most of us take for granted. They are asking the Board to adopt OBC Chapter 11 language that requires adult changing tables in certain new buildings. The language has already been approved for inclusion in the 2024 IBC and the next edition of the ICC A117.1 standard. The committee was generally supportive of the concept but tabled the item and asked staff to work with the petitioners to clarify some of the language.

RECOMMENDATIONS OF THE RESIDENTIAL CONSTRUCTION ADVISORY COMMITTEE

Petition #22-01 RCO Ch 44 – Tom Moore of the Ohio Electrical Coalition

Staff explained that the petition to adopt the 2020 NEC was reviewed by the RCAC last month. The RCAC recommended adopting the 2020 NEC with some amendments. Staff stated that

NEMA sent a letter to the Board requesting additional opportunity to provide comment on amendments. Mr. Stanbery made the motion to refer the petition back to the RCAC for reconsideration. Mr. Miller seconded the motion. The motion passed unanimously.

OLD BUSINESS

Commercial Energy Code Review

Staff shared the COMcheck software checklists that users need to complete and certify when performing an ASHRAE 90.1-2019 energy code analysis to get the building model to pass. Two of the four sections proposed to be deleted by the committee (Section 6.4.3.6 (Humidification and Dehumidification Control) and Section 6.5.6.1 (Exhaust Air Energy Recovery for Nontransient Dwelling Units)) would require users to certify that they complied with the section in order to get the software to produce a passing score. The COMcheck software allows the user to state that the section does not apply to the other two sections proposed to be deleted by the committee (Section 8.4.2 (Automatic Receptacle Control) and Section 8.4.3 (Electrical Energy Monitoring)). The committee did not wish to render the software useless and decided to not delete Sections 6.4.3.6 and 6.5.6.1. Staff provided commentary from the ASHRAE User's Guide and the IECC Commentary publications to help the committee members understand the intent of those sections. Mr. Denk would like input from Mr. Johnson and Mr. Yankie at the next meeting before ending discussions on the commercial energy code. No action was taken.

OBC Draft rule review (Chapters 17-28)

Staff presented additional draft rules of the OBC and explained that staff would go through each chapter in greater detail at a later date to make the committee aware of the significant changes that staff is recommending for each chapter. No action was taken.

NEW BUSINESS

Mr. Miller mentioned that renewable energy sources such as solar and wind farms are becoming more frequently installed throughout the state and the technology and developers are steps ahead of the regulations that govern. He asked if the committee would be interested in learning more. The committee members agreed that would be a good idea. Mr. Miller and staff will work to schedule a presentation for the committee in 2023.

ADJOURN

Mr. Miller made the motion to adjourn at 3:27 P.M. Mr. Stanbery seconded the motion. The motion passed unanimously.

File Attachments for Item:

P-1 Withdrawal of Petition #22-03 OPC Section 312.2.2 - Tim Irven of Integrity Safety Solutions

Ohler, Deborah

From: Integrity Plumbing Solutions <tirven.ips@gmail.com>
Sent: Monday, November 21, 2022 5:05 PM
To: Ohler, Deborah
Subject: Re: Ohio Plumbing Code (OPC) Petition #22-03
Attachments: image001.gif

Good afternoon Debbie, please go ahead and move forward with withdrawing this petition. Thank you for the phone call and all of the great knowledge in explaining this situation to me.

On Mon, Nov 21, 2022 at 4:57 PM debbie.ohler@com.ohio.gov <debbie.ohler@com.ohio.gov> wrote:

Good afternoon, again, Mr. Irven.

As discussed this afternoon during our telephone conversation, the Code Committee of the Board of Building Standards (BBS) reviewed your petition on November 17th, including the supporting documentation, and after discussion, decided to table the agenda item until staff could talk with you about some of their concerns, as follows:

1. Your device is not part of the plumbing system of a building. This is a device used by the contractor to test the plumbing system. The rules of the BBS do not and cannot prescribe the brand of contractor's testing equipment.
2. The device only includes one pressure relief valve. Normally, the code does not address this type of testing equipment. However, for safety reasons, the OPC Section 312.2.2 requires two relief valves to be used when testing and only if the manufacturer of the piping, fittings, and solvent cement allows testing with air.
3. The petition language requiring the use of an approved gauge and said gauge should be tested yearly for pressure relief is likely not going to change anything. The term "approved" is a defined term in the OPC Chapter 2 and basically means that the building official has determined that it is in compliance with the rules of the board. The yearly testing requirement of the relief valve is not enforceable by the building official for the plumbing system. Once the system is installed, tested and approved, the building department and/or health department are finished with inspections.
4. It appears that you are asking that your new patented product be specifically recognized and required to be used. Again, the rules of the BBS cannot show preference to one manufacturer's product over another.

Thank you, again, for taking the time to petition the BBS and for talking with me today. We welcome the opportunity to work with you again on any other proposed changes or improvements that you would like to see in the code.

Please respond to this email and indicate if you would be willing to consider withdrawing your petition based upon the reasons discussed.

Thank you for your consideration.

Regards,

Debbie

Ohio | Board of Building Standards

Deborah D. Ohler, P.E., Construction Codes Administrator

Ohio Board of Building Standards

PO Box 4009, 6606 Tussing Rd.

Reynoldsburg, OH 43068-9009

Office phone: 614-644-2613 Fax: 614-222-2147

dohler@com.state.oh.us

https://com.ohio.gov/divisions-and-programs/industrial-compliance/boards/board-of-building-standards

Better Codes, Better Buildings, Safer Ohio

This message and any response to it may constitute a public record and thus may be publicly available to anyone who requests it.

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Timothy Irven
Integrity Plumbing Solutions LLC
WWW.IPSPlumbingSolutions.com
(937) 245-2931

File Attachments for Item:

P-2 Petition #22-04 OBC Ch 11 - Kim Boulter & Jennifer Corcoran of Changing Spaces Ohio

APPLICATION

FOR

RULE CHANGE

Pursuant to section 3781.12 of the Revised Code and rules adopted by the Board of Building Standards, application is herewith submitted to adopt, amend, or annul a rule adopted by the Board pursuant to section 3718.10 of the Revised Code.

BOARD OF BUILDING STANDARDS

6606 Tussing Road, P.O. Box 4009
Reynoldsburg, Ohio 43068-9009
(614) 644-2613
bbs@ohio.gov
www.com.state.oh.us/dico/bbs/default.aspx

For BBS use:

Petition #: 22-04

Date Recv'd: Nov. 8, 2022

Submitter: Kim Boulter, Jennifer Corcoran (Contact Name) Changing Spaces Ohio (Organization/Company)

Address: 6441 Spinnaker Dr. (Include Room Number, Suite, etc.)

Lewis Center (City) OH (State) 43035 (Zip)

Telephone Number: (614) 600-0973 **Fax Number:**

Date: **E-mail Address:** ChangingSpacesOH@gmail.com

Code Section: Ohio Building Code, Chapter 11

General Explanation of Proposed Change (attach additional sheets if necessary):

We ask that the Board adopt new building code regarding Family/companion care restrooms based on 2021 IBC E142-21. We request that Council adopt ICC/ANSI A117.1 in OBC Section 1112 to include the technical requirements for adult changing stations found in the next edition of ICC/ANSI A117.1.

See attached.

Explanation of Cost Impact of Proposed Code Change*: Although building cost will be slightly higher due to install the adult changing table, which also requires a larger family bathroom, businesses will profit from an increased customer base. Our state will experience increased tourism and travel once people with disabilities and medical conditions can stop at rest stops to use the adult changing table.

***Attach additional cost information as necessary to justify any statement of cost increase or cost decrease.**

Information on Submittal (attach additional sheets if necessary):	
1. Sponsor:	Changing Spaces Ohio; Kim Boulter and Jennifer Corcoran, Advocates Organization sponsoring or requesting the rule change (if any)
2. Rule Title:	4101:1-11-01 Accessibility, Sections 1109 and 1112 Title of rule change
3. Purpose/ Objective:	For Ohio to adopt code regarding adult changing stations so that new buildings will install an adult changing table according to the scope and specifications of E142-21 and ICC/ANSI A117.1. This is important because, according to the ICC Adult Changing Facilities work group: "Limiting access to those who need adult changing stations decreases the community size dramatically. Nationally, the Centers for Disease Control and Prevention (CDC) reports 61 Million adults (26% of the US population) have some form of disability, with 24.1% affected in the areas of mobility, independent living, and self care. Further, each of those folks need assistance, and likely travel with additional family members. Once this population is taken out of the community, businesses are also losing a large potential of support and income. Providing our citizens more opportunities to participate in the community and patronize local establishments strengthens communities, allowing all family members to engage or travel together as one family nucleus. Currently many families have to make the choice to participate in activities outside of the home with only a portion of their family. We have also added section 613.2.4 *Directional Signage to Adult Changing Stations* to help orient occupants of any facility to the location of the adult changing station. This piece of equipment is not located in every family/assisted care restroom, so it is important to show exactly where in the facility users should go to locate it. Technical justification for the proposed rule change
4. Formatted Rule Language **(Using Strike-out for Deleted Text and Underline for Added Text)**	See the attached proposed addition to the Ohio Building Code. This petition requests to add two new sections to address adult changing stations. One is a scoping change in Chapter 11 at the end of Section 1109. Adding Section 1109.17 is adopting ICC model code language that will be included in the upcoming 2024 IBC per code change proposal E142-21 (include a copy with this petition – optional) The other is a change to the ANCI ICC A117.1 referenced standard for accessible and useable buildings and facilities. Changes to ICC A117.1 are included in Chapter 11 under Section 1112. Adding item #3 under 1112.4 Changes to ICC A117.1, chapter 6 is adopting language that will be included in the next edition of the ICC A117.1 standard. Use strike-out for deleted text and underline for added text
5. Notes:	1. To encourage uniformity among states using model codes, it is recommended that the submitter first submit any code change directly to ICC and participate in the national model code development process. 2. Please provide a copy of application and documentation. 3. Use a separate form for each code change proposal.

Proposed change #1: Add new section 1109.17 to the Ohio Building Code as follows:

1109.17 Adult Changing Stations. *Where provided, adult changing stations shall be accessible. Where required, adult changing stations shall also comply with Sections 1109.17.1 through 1109.17.4.*

1109.17.1 Where required. *At least one adult changing station shall be provided in all the following locations:*

1. *In assembly and mercantile occupancies, where family or assisted-use toilet or bathing rooms are required by with Section 1109.2.1.*

2. *In Group B occupancies providing educational facilities for students above the 12th grade, where an aggregate of twelve of more male and female water closets are required to serve the classrooms and lecture halls.*

3. *In Group E occupancies, where a room or space used for assembly purposes requires an aggregate of six or more male and female water closets for that room or space.*

4. *In highway rest stops and highway service plazas.*

1109.17.2 Room. *Adult changing stations shall be located in toilet rooms that include only one water closet and only one lavatory. Fixtures located in such rooms shall be included in determining the number of fixtures provided in an occupancy. The occupants shall have access to the required adult changing station at all times that the associated occupancy is occupied.*

Exception: *Adult changing stations shall be permitted to be located in family or assisted toilet rooms required in Section 1109.2.1.*

1109.17.3 Prohibited location. *Suggestion: The accessible route from the entrance to the building to an accessible adult changing station shall not require travel through secure doors or security checkpoints.*

1109.17.4 Travel distance. *The adult changing station shall be located on an accessible route such that a person is no more than two stories above or below the story with the adult changing station and the path of travel to such facility shall not exceed 2000 feet.*

Proposed change #2: Modify section 1112.4 of the Ohio Building Code as follows:

1112.4 Changes to ICC A117.1, Chapter 6. *Modify the following:*

1. *Change the last sentence in Section 603.3 to read: Where mirrors are located above counters that do not contain lavatories, the mirror shall be mounted with the bottom edge of the reflecting surface 35 inches (890 mm) maximum above the floor.*
   (Remainder of section and exception to remain unchanged).

2. *Change Section 604.10.2 to read:* ***Size.*** *The minimum area of an ambulatory accessible compartment shall be 60 inches (1525 mm) minimum in depth and a width of 35 inches (890 mm) minimum and 37 inches (940 mm) maximum.*
3. *Add new section 613, in its entirety, to read as follows:*

SECTION 613
ADULT CHANGING STATIONS

613.1 General. Adult changing stations shall comply with Section 613.2 through 613.4.

613.2 Installation location. Where provided, adult changing stations shall be installed in accordance with the locations specified in Section 613.2.1, 613.2.2 or 613.2.3.

613.2.1. Single user or family or assisted use toilet or bathing room. Where adult changing stations are provided in a toilet room with only one water closet and one lavatory, or in a family or assisted-use toilet or bathing room, the room shall provide all of the following components:

1. A dispenser for soap complying with Section 308.
2. A hand towel dispenser or hand dryer complying with Table 603.6.
3. A coat hook located in close proximity to the changing surface.
4. A waste receptacle.
5. Signage indicating "Adult Changing Station" provided at the entrance to the room and complying with the visual character requirements in Section 703.2.
6. Signage indicating the weight capacity and instructions for operation of the changing station within the room.

613.2.2 Multi-user toilet or bathing room. Where adult changing stations are provided in a multi-user toilet or bathing room, the adult changing station shall be located in a compartment that includes all of the following components:

1. Privacy provided by walls, curtains or partitions enclosing the compartment.
2. A turning space complying with Section 304.
3. A lavatory complying with Section 606.
4. A dispenser for soap complying with Section 308.
5. A hand towel dispenser or hand dryer complying with Table 603.6.
6. A coat hook in close proximity to the changing surface.
7. A waste receptacle.
8. Signage indicating "Adult Changing Station" provided at the entrance to the room and complying with the visual character requirements in Section 703.2.
9. Signage indicating the weight capacity and instructions for operation of the changing station within the compartment.

613.2.3 Room or space other than a toilet room or bathing room. Where adult changing stations are provided in a room or space other than a toilet or bathing room and including, but not limited to, nurses' work areas, therapist work areas, or special

education classrooms, the adult changing station shall be located in a compartment or room that includes all of the following components:

1. Privacy provided by walls, curtains or partitions.
2. A turning space complying with Section 304.
3. A lavatory complying with Section 606 or an alcohol-based hand sanitizer dispenser.
4. Where a lavatory is provided in the compartment or room, provide a dispenser for soap.
5. Where a lavatory is provided in the compartment or room, provide a hand towel dispenser or hand dryer complying with Table 603.6.
6. A waste receptacle.
7. Signage indicating the weight capacity and instructions for operation of the changing station within the room.

613.2.4 Directional Signage to Adult Changing Stations.

Location of the adult changing station is to be identified on any directional graphic of the facility.

613.3 Room clearances. An adult changing station and its supporting structure shall not obstruct required clear floor spaces and clearances at accessible elements, maneuvering clearances at doors, or the wheelchair turning spaces.

613.4 Changing surface. A changing surface shall be provided and shall comply with Section 613.4.

613.4.1 Size. The changing surface shall be 70 inches (1778mm) minimum in length and 30 inches (762mm) minimum in width.

613.4.2 Height adjustability. The changing surface height shall be adjustable at variable heights from 17 inches (432mm) minimum to 38 inches (965mm) maximum above the floor as measured to the top of the changing surface.

Exception: Where the adult changing station is not required by the administrative authority, a fixed height changing surface shall be permitted and shall be mounted with the top of the changing surface 19 inches (483mm) minimum and 23 inches (584 mm) maximum above the floor.

613.4.3 Clearances. Clearances complying with Sections 613.4.3.1 and 613.4.3.2 shall be provided adjacent to the changing surface, measured when the surface are in the operational position.

613.4.3.1 Side clearance. A 36-inch (914mm) deep minimum side clearance shall be provided along the open long side of the changing surface.

Exception: In the raised position, the side rail shall be permitted to overlap the side clearance.

613.4.3.2 End clearance. A 36-inch (914mm) wide minimum end clearance shall be provided along the depth of one end of the changing surface. The width of the end clearance shall extend the depth of the changing surface and the side clearance.

Exceptions:

1. A 24-inch (610 mm) wide minimum end clearance shall be permitted where a clear floor space complying with Section 305.3 is provided within the room beyond the clearances for the changing surface.
2. Where installed in locations specified in Section 613.2.3, end clearances complying with Section 613.4.3.2 is not required.

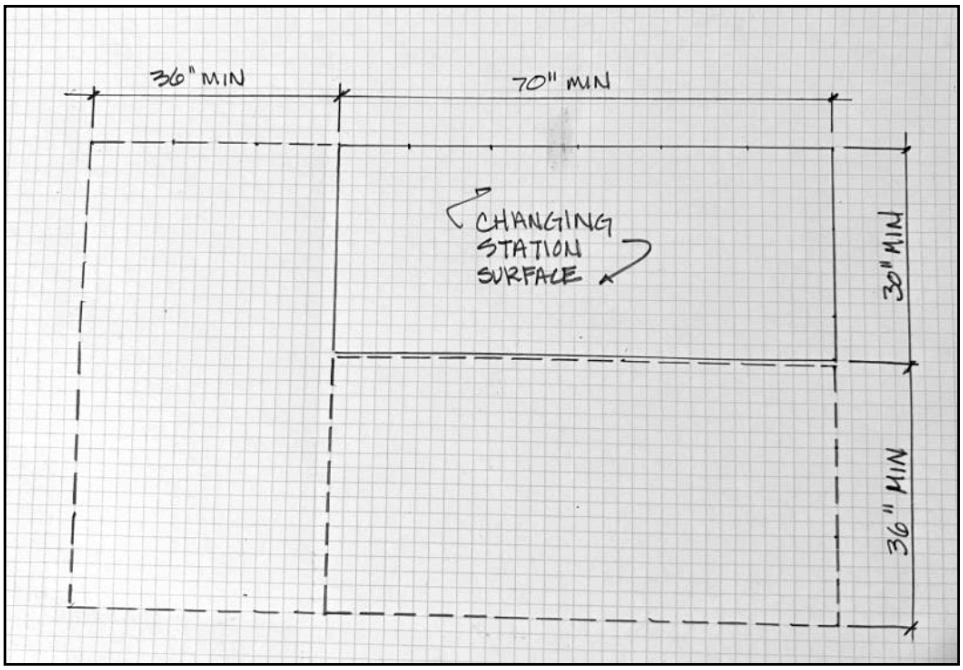

Figure 613.4.3
Changing surface and clearances

613.4.4 Side rail. Where side rails are provided at the changing surface they shall comply with Sections 613.4.4.1 and 613.4.4.2.

613.4.4.1 Size and location. Side rails shall be a minimum of 2/3 of the length of the changing surface and shall be centered +/- 3 inch (75 mm) along the long open sides of the changing surface.

613.4.4.2 Rail positioning. Side rails shall be capable of being raised and lowered. The side rail shall be fixed in place when in the raised position. The top of the side rail shall extend 5 inches (127mm) minimum above the top of the changing surface.

The Columbus Dispatch

FAMILY

Ohio disability-rights group advocates for more public adult changing tables

Danae King
The Columbus Dispatch

Published 6:00 a.m. ET Dec. 6, 2022

Kim Boulter has used bathroom floors, angled the back of her van away from onlookers in various parking lots and cleared off conference room tables in order to change her 9-year-old son.

Aiden has developmental disabilities that necessitate him needing protective undergarments that must be changed, and since he was about 3 years old, she has struggled to use weight-limited baby-changing tables typically found in public restrooms.

People with disabilities feel forgotten: 'The pandemic has not been very good to me': People with disabilities feel forgotten

"Laying someone on the dirty restroom floor to change them is very undignified, and it's very unsafe for the caregiver lifting that heavy person," Boulter said. "It's undignified to have your loved one exposed in public and not be afforded that same privacy that everyone else enjoys in the restroom."

She began to realize that it will become even more challenging as Aiden grows older and heavier and goes through puberty. So the Lewis Center mother decided to do something to change the circumstances.

In March, she teamed up with Dayton mother Jennifer Corcoran, and the two began advocating through a national campaign called Changing Spaces for more appropriate, safe and private changing tables for their children and other adults and children who need them.

"Jennifer and I are working hard to try to make our whole state more accessible and more inclusive for individuals with developmental disabilities and medical conditions that need this accommodation," Boulter said.

Changing Spaces Ohio was born through their partnership, and it joined chapters in 14 other states. Its goals include spreading awareness about the lack of appropriate changing facilities for older children and adults and advocating for height-adjustable adult-size changing tables in public restrooms.

No good options

In her advocacy, Boulter has reached out to places her family frequents — such as doctor's offices, libraries and parks — to educate people on the need for the tables.

She has found that many people don't realize adult changing tables are needed because bathroom habits aren't a frequent topic of discussion, even among those within the disability community.

Opinion: 'We see all of you.' People with disabilities not 'forgotten' through COVID-19

Because of the necessity of changing her son — and the fact that there are few places where she can do it — her family misses out on many activities, Boulter said. And, as she realized, there are other disabled people, older than Aiden, who have been living at home for years, isolated because they are unable to go out into their community.

"I wanted to go ahead and start this advocacy in the hopes that, as my son gets older, he'll have more possibilities to be included and to go to places in our city and our state and travel," she said.

'Invisible barriers'

Since Boulter began her work, more local places have added or have begun the process to add adult changing tables, she said.

The Franklin Park Conservatory has added one; Ohio State University plans to add two to its new hospital tower; and Orange Township agreed to add two to local parks, she said.

I Am Boundless: New health facilities poised for late summer opening in Worthington

Boulter, who also has reached out to cities and other municipalities about the issue, keeps an updated list of places that have the tables, as well as other resources, such as some table models for purchase, on changingspacescampaign.com/ohio.

She said she hopes more places would add them and eliminate what she calls 'invisible barriers' for people like her son to be included in typical daily activities.

Building it into the code

Installing one of the tables isn't difficult, Boulter said, though they do cost anywhere from $2,800 to $20,000, a barrier Changing Spaces Ohio is hoping to overcome by forming a nonprofit to help fund the tables.

Advocacy also is occurring to make adult changing stables standard in new buildings, Boulter said.

Ableism? Disabled parents say their differences are being used against them in Ohio family courts

Experts are working to include the requirement in the 2024 International Building Code, a model code developed every three years that is used in all 50 states, Boulter said.

Until it's standard procedure, some local organizations and businesses are being proactive.

The Franklin County Board of Developmental Disabilities learned of the need for more adult changing tables through Boulter and is in the process of installing one at its administration building, said Jed Morison, superintendent and CEO.

'You move on': As eviction drew near, mother and quadriplegic son uproot to new Bellefontaine home

"We thought, 'Let's do that, and we can serve as a model for others,'" said Morison, who noted the board has such tables at its school facility but not for public use. "We're all about community access."

'We want everybody to have access'

The Columbus Zoo and Aquarium also is focused on community access, said Karen Schenk, senior director of planning and design. In a family restroom in the zoo's Adventure Cove is a universal changing table, opened in the fall of 2020, and Schenk said she's hoping for the zoo to get more in the future because the park is so large.

The zoo began getting inquiries about adult changing rooms a few years ago, Schenk said, and set to work to figure out how to get one. It was successful due in part to the help of Ol

Brohard, a local girl advocating for the zoo to have the changing table because of her late brother's need.

Dublin woman, a self-advocate, named to county board of developmental disabilities

"You always feel badly when you discover that you're falling short on what people's needs are," Schenk said. "If we can be a place for everybody to come visit and have a good experience, that's what we want to be."

dking@dispatch.com

@DanaeKing

Places in Central Ohio with adult changing tables, according to Changing Spaces Ohio: The Columbus Zoo and AquariumDelaware County Board of Developmental DisabilitiesFranklin Park ConservatoryNationwide Children's Hospital, 7 locations across the main campus and Dublin Close to Home Ohio State University Speech Language AAC ClinicOhio State University Optometry ClinicWe Rock the Spectrum, Columbus

Proposed petition to the Ohio Building Code -

Language based on code change proposal E142-21 and ICC A117.1 with Ohio amendments.

[JR; SC: E142-21 is applicable to the 2024 IBC. Should the proposal be included in the next OBC code update, the section numbering should be coordinated with the 2021 IBC. I suggest a new Section 1110.18 for scope of required adult changing stations and Section 1113 for accessibility of all adult changing stations provided.]

Proposed change #1:

Add new section 1110.18 to the 2024 Ohio Building Code as follows:

1110.18 Adult changing stations. Where provided, adult changing stations are to be accessible in accordance with ICC A117.1 and Section 1113. Where ~~required,~~ adult changing stations are required per Section 1110.18.1, ~~to also comply with~~ compliance with Sections 1110.18.2 through 1110.18.4 is also required.

1110.18.1 Where required. At least one adult changing station is to be provided in all the following locations:

1. In assembly and mercantile occupancies, where family or assisted-use toilet or bathing rooms are required by Section 1110.2.1.
2. In Group B occupancies providing educational facilities for students above the 12th grade, where an aggregate of twelve of more male and female water closets are required to serve the classrooms and lecture halls.
3. In Group E occupancies, where a room or space used for assembly purposes requires an aggregate of six or more male and female water closets for that room or space.
4. In highway rest stops and highway service plazas.

1110.18.2 Room. Adult changing stations are to be located in toilet rooms that include only one water closet and only one lavatory. Fixtures located in such rooms are to be included in determining the number of fixtures provided in an occupancy. The occupants are to have access to the required adult changing station at all times that the associated occupancy is occupied.

Exception: Adult changing stations are permitted to be located in family or assisted toilet rooms required in Section 1110.2.1.

1110.18.3 Prohibited location. The accessible route ~~from separate-sex toilet or bathing rooms~~ to an accessible adult changing station ~~shall not require~~ is prohibited to include travel through security checkpoints.

1110.18.4 Travel distance. The adult changing stations station is to be located on an accessible route such that a person is no more than two stories above or below the story with the adult changing station and the path of travel to such facility is less than 2000 feet.

Proposed petition to the Ohio Building Code -

Based on current development of the new section 613 in the 2023 A117.1 with proposed petitioner language and proposed staff amendments

Proposed change #2:
Add new section 1113 to the 2024 Ohio Building Code as follows:

SECTION 1113
ADULT CHANGING STATIONS

1113.1 General. [Whether required or not required,] Adult changing stations are to comply with Section 1113.2 through 1113.4. [See Section 1110.18 for additional requirements applicable to required adult changing stations.]

1113.2 Installation location. Required adult changing stations are to be installed in accordance with Section 1113.2.1. ~~Where~~ Non-required adult changing stations are to be installed in accordance with ~~the locations specified in~~ Section 1113.2.1, 1113.2.2 or 1113.2.3 based on the proposed location of the adult changing station.

1113.2.1. Single user or family or assisted use toilet or bathing room. Where adult changing stations are provided in a toilet room with only one water closet and one lavatory, or in a family or assisted-use toilet or bathing room, the room is to have all of the following components:

1. A dispenser for soap complying with Section 308 of ICC A117.1.
2. A hand towel dispenser or hand dryer complying with Table 603.6 of ICC A117.1.
3. A coat hook located in close proximity to the changing surface.
4. A waste receptacle.
5. Signage indicating "Adult Changing Station" provided at the entrance to the room and complying with the visual character requirements in Section 703.2 of ICC A117.1.
6. Signage indicating the weight capacity and instructions for operation of the changing station within the room.

1113.2.2 Multi-user toilet or bathing room. Where adult changing stations are provided in a multi-user toilet or bathing room, the adult changing station is to be located in a compartment that includes all of the following components:

1. Privacy provided by walls, curtains or partitions enclosing the compartment.
2. A turning space complying with Section 304 of ICC A117.1.
3. A lavatory complying with Section 606 of ICC A117.1.

4. A dispenser for soap complying with Section 308 of ICC A117.1.
5. A hand towel dispenser or hand dryer complying with Table 603.6 of ICC A117.1.
6. A coat hook in close proximity to the changing surface.
7. A waste receptacle.
8. Signage indicating "Adult Changing Station" provided at the entrance to the room and complying with the visual character requirements in Section 703.2 of ICC A117.1.
9. Signage indicating the weight capacity and instructions for operation of the changing station within the compartment.

1113.2.3 Room or space other than a toilet room or bathing room. Where adult changing stations are provided in a room or space other than a toilet or bathing room and including, but not limited to, nurses' work areas, therapist work areas, or special education classrooms, the adult changing station is to be located in a compartment or room that includes all of the following components:

1. Privacy provided by walls, curtains or partitions.
2. A turning space complying with Section 304 of ICC A117.1.
3. A lavatory complying with Section 606 of ICC A117.1 or an alcohol-based hand sanitizer dispenser.
4. Where a lavatory is provided in the compartment or room, provide a dispenser for soap.
5. Where a lavatory is provided in the compartment or room, provide a hand towel dispenser or hand dryer complying with Table 603.6 of ICC A117.1.
6. A waste receptacle.
7. Signage indicating the weight capacity and instructions for operation of the changing station within the room.

1113.2.4 Directional signage to adult changing stations. ~~Location~~ The locations of the adult changing stations are to be identified on any directional graphic of the facility used to orient the public visitor.

1113.3 Room clearances. An adult changing station and its supporting structure ~~shall~~

~~not~~ is not permitted to obstruct the required clear floor spaces and clearances at accessible elements, maneuvering clearances at doors, or the wheelchair turning spaces.

1113.4 Changing surface. A changing surface is to be provided and is to comply with Section 1113.4.

1113.4.1 Size. The changing surface is to be 70 inches (1778mm) minimum in length and 30 inches (762mm) minimum in width.

1113.4.2 Height adjustability. The changing surface height is to be adjustable at variable heights from 17 inches (432mm) minimum to 38 inches (965mm) maximum above the floor as measured to the top of the changing surface.

Exception: Where the adult changing station is not required ~~by the administrative authority~~, a fixed height changing surface is permitted and is to be mounted with the top of the changing surface 19 inches (483mm) minimum and 23 inches (584 mm) maximum above the floor.

1113.4.3 Clearances. Clearances complying with Sections 1113.4.3.1 and 1113.4.3.2 are to be provided adjacent to the changing surface, measured when the surface is in the operational position.

1113.4.3.1 Side clearance. A side clearance measuring 36-inch (914mm) ~~deep~~ wide, minimum, ~~side clearance~~ is to be provided along ~~the open~~ the entire length of at least one long side of the changing surface.

Exception: In the raised position, the side rail is permitted to overlap the side clearance.

1113.4.3.2 End clearance. ~~A~~ An end clearance measuring 36-inch (914mm) wide, minimum, ~~end clearance~~ is to be provided along ~~the depth of one end~~ the entire length of at least one short side of the changing surface. The ~~width of the~~ end clearance is to extend the depth of the changing surface and the side clearance.

Exceptions:

1. A 24-inch (610 mm) wide minimum end clearance is permitted where a clear floor space complying with Section 305.3 of ICC A117.1 is provided within the room beyond the clearances for the changing surface.
2. Where installed in locations specified in Section 1113.2.3, end clearances complying with Section 1113.4.3.2 is not required.

~~[Add figure from ICC A117.1 here]~~

~~**Figure 613.4.3**~~

Proposed petition to the Ohio Building Code -

Based on current development of the new section 613 in the 2023 A117.1 with proposed petitioner language and proposed staff amendments

~~**Changing surface and clearances**~~

1113.4.4 Side rail. Where side rails are provided at the changing surface, they are to comply with Sections 1113.4.4.1 and 1113.4.4.2.

1113.4.4.1 Size and location. Side rails are to be a minimum of 2/3 of the length of the changing surface and are to be centered +/- 3 inch (75 mm) along the long open sides of the changing surface.

1113.4.4.2 Rail positioning. Side rails are to be capable of being raised and lowered. The side rail is to be fixed in place when in the raised position. The top of the side rail is to extend 5 inches (127mm) minimum above the top of the changing surface.

4101:1-11-01 Accessibility.

Chapter 11 of the International Building Code, 2021 edition, as adopted by reference and modified in the OBC Section 101.1, is further modified as follows:

(A) Replace section 1102.1 with the following:

1102.1 Design. Buildings and facilities shall be designed and constructed to be *accessible* in accordance with this code and ICC A117.1. Any references to ICC A117.1 throughout this code are to be applied with the following amendments:

1. Change the last sentence in Section 603.3 of ICC A117.1, to read:

   Where mirrors are located above counters that do not contain lavatories, the bottom edge of the reflecting surface of the mirror is to be 35 inches (890 mm) maximum above the floor.

(B) Add new section 1102.2 to read as follows:

1102.2 Existing buildings. Existing buildings are to comply with Section 3411. Where an existing building is required to comply with the provisions of Chapter 11, any reference to ICC A117.1 is to the edition of ICC A117.1 identified in Chapter 35 for existing buildings.

(C) Modify section 1104.4 Exception #1 as follows:

Add the phrase "per *story*" after the area limit of 3,000 square feet (278.7m^2) in exception #1.

(D) Modify section 1110.1 as follows:

Change the range of sections from "1110.2 through 1110.16" to "1110.2 through 1110.18."

(E) Add new section 1110.17 as follows:

1110.17 Mail receptacles. Where provided, mail receptacles are to be *accessible* in accordance with Sections 1110.17.1 or 1110.17.2.

1110.17.1 Dwelling units and sleeping units. Where mail receptacles are provided for *Accessible*, *Type A* or *Type B*

dwelling and *sleeping units*, *accessible* mail receptacles are to be provided in accordance with 1110.17.1.1 or 1110.17.1.2.

1110.17.1.1 Centralized mail receptacles. Where each individual mail compartment of a centralized mail receptacle is assigned to a specific *dwelling unit* or *sleeping unit*, the individual mail compartments are to comply with 1110.17.1.1.1 or 1110.17.1.1.2.

1110.17.1.1.1 Buildings without an elevator. In a structure without an elevator, all individual mail compartments assigned to *Accessible Units*, *Type A Units* and *Type B Units* in each location are to be *accessible*.

1110.17.1.1.2 Buildings with an elevator. In a structure with an elevator, fifty percent of all individual mail compartments in each location are to be *accessible*. Individual mail compartments assigned to *Accessible* and *Type A units* are to be included in the *accessible* mailboxes.

1110.17.1.1.3 Parcel lockers. All parcel lockers of centralized mail receptacles are to be *accessible*.

1110.17.1.2 Individual house-mounted and curbside mail receptacles. Where an individual house-mounted or curbside mail receptacle serves a *dwelling unit* or *sleeping unit* that is required to be an *Accessible unit*, *Type A unit* or *Type B unit*, the mail receptacle are to be *accessible*.

1110.17.2 Other occupancies. Where mail receptacles are provided in occupancies not falling within the purview of Section 1110.17.1, at least 5 percent, but not less than one, of each type in each location, are to be *accessible*.

(F) Add new section 1110.18 as follows:

1110.18 Adult changing stations. Where provided, adult changing stations are to be accessible in accordance with ICC A117.1 and Section 1113. Where adult changing stations are required per Section 1110.18.1, compliance with Sections 1110.18.2 through 1110.18.4 is also required.

1110.18.1 Where required. At least one adult changing station is to be provided in all the following locations:

1. In assembly and mercantile occupancies, where family or assisted-use toilet or bathing rooms are required by Section 1110.2.1.
2. In Group B occupancies providing educational facilities for students above the 12th grade, where an aggregate of twelve of more male and female water closets are required to serve the classrooms and lecture halls.
3. In Group E occupancies, where a room or space used for assembly purposes requires an aggregate of six or more male and female water closets for that room or space.
4. In highway rest stops and highway service plazas.

1110.18.2 Room. Adult changing stations are to be located in toilet rooms that include only one water closet and only one lavatory. Fixtures located in such rooms are to be included in determining the number of fixtures provided in an occupancy. The occupants are to have access to the required adult changing station at all times that the associated occupancy is occupied.

Exception: Adult changing stations are permitted to be located in family or assisted toilet rooms required in Section 1110.2.1.

1110.18.3 Prohibited location. The accessible route to an accessible adult changing station is prohibited to include travel through security checkpoints.

1110.18.4 Travel distance. The adult changing stations station is to be located on an accessible route such that a person is no more than two stories above or below the story with the adult changing station and the path of travel to such facility is less than 2000 feet.

(G) Replace section 1111.1 with the following:

1111.1 Scope. Recreational facilities located within a building that is within the scope of this code are to comply with this section. Provisions of the federal law, contained in Chapters 2 and 10 of the

2010 ADA Standards for Accessible Design, may apply to the design of recreational facilities that are outside the scope of this code.

(H) Modify section 1111.4.8 as follows:

(1) Add the following note with three exceptions at the end of section 1111.4.8.2 to read as follows:

Note: Coordination is to be performed for amusement rides regulated by the Ohio department of agriculture to determine whether the ride provides at least one wheelchair space, amusement ride seat designed for transfer, or transfer device.

Exceptions:

1. Amusement rides that are controlled or operated by the rider are not required to comply with this section.
2. Amusement rides designed primarily for children, where children are assisted on and off the ride by an adult, are not required to comply with this section.
3. Amusement rides that do not provide seats that are built-in or mechanically fastened are not required to comply with this section.

(2) Replace section 1111.4.8.3 with the following:

1111.4.8.3 Minimum number. Deleted.

(I) Add new section 1111.4.16 to read as follows:

1111.4.16 Golf Facilities. Buildings and amenities serving a golf course, such as parking areas, golf cart rental stations, toilet rooms, clubhouses and other structures are to be *accessible* and be located on an *accessible route.*

1111.4.16.1 Golf Courses. Golf course elements directly associated with practicing and playing the golf course such as the tee grounds, tee boxes, putting greens, golf cart paths, practice putting greens, practice teeing grounds, and teeing stations at driving ranges are not regulated by this code.

(J) Add new section 1112.1.1 to read as follows:

1112.1.1 Signs to designate accessible parking spaces and passenger loading zones. *Accessible* parking spaces, van-*accessible* spaces and passenger loading zones required by section 1106 to be reserved for individuals with disabilities, are to be provided with a sign mounted on a fixed or movable post or otherwise affixed in a vertical

position so that the sign is clearly visible to the driver of a vehicle when parked in such a location. A notice is to be affixed to this sign or posted adjacent to it that states the amount of the fine established by section 4511.99 of the Revised Code for the offense of parking a vehicle in this location if it is not legally entitled to do so.

Note: The fine established by section 4511.99 of the Revised Code is to be not less than two hundred fifty dollars nor more than five hundred dollars.

(K) Add new section 1113 to read as follows:

SECTION 1113

ADULT CHANGING STATIONS

1113.1 General. Adult changing stations are to comply with Section 1113.2 through 1113.4.

1113.2 Installation location. Required adult changing stations are to be installed in accordance with Section 1113.2.1. Non-required adult changing stations are to be installed in accordance with Section 1113.2.1, 1113.2.2 or 1113.2.3 based on the proposed location of the adult changing station.

1113.2.1. Single user or family or assisted use toilet or bathing room. Where adult changing stations are provided in a toilet room with only one water closet and one lavatory, or in a family or assisted-use toilet or bathing room, the room is to have all of the following components:

1. A dispenser for soap complying with Section 308 of ICC A117.1.
2. A hand towel dispenser or hand dryer complying with Table 603.6 of ICC A117.1.
3. A coat hook located in close proximity to the changing surface.
4. A waste receptacle.
5. Signage indicating "Adult Changing Station" provided at the entrance to the room and complying with the visual character requirements in Section 703.2 of ICC A117.1.
6. Signage indicating the weight capacity and instructions for operation of the changing station within the room.

1113.2.2 Multi-user toilet or bathing room. Where adult

changing stations are provided in a multi-user toilet or bathing room, the adult changing station is to be located in a compartment that includes all of the following components:

1. Privacy provided by walls, curtains or partitions enclosing the compartment.
2. A turning space complying with Section 304 of ICC A117.1.
3. A lavatory complying with Section 606 of ICC A117.1.
4. A dispenser for soap complying with Section 308 of ICC A117.1.
5. A hand towel dispenser or hand dryer complying with Table 603.6 of ICC A117.1.
6. A coat hook in close proximity to the changing surface.
7. A waste receptacle.
8. Signage indicating "Adult Changing Station" provided at the entrance to the room and complying with the visual character requirements in Section 703.2 of ICC A117.1.
9. Signage indicating the weight capacity and instructions for operation of the changing station within the compartment.

1113.2.3 Room or space other than a toilet room or bathing room. Where adult changing stations are provided in a room or space other than a toilet or bathing room and including, but not limited to, nurses' work areas, therapist work areas, or special education classrooms, the adult changing station is to be located in a compartment or room that includes all of the following components:

1. Privacy provided by walls, curtains or partitions.
2. A turning space complying with Section 304 of ICC A117.1.
3. A lavatory complying with Section 606 of ICC A117.1 or an alcohol-based hand sanitizer dispenser.
4. Where a lavatory is provided in the compartment or room, provide a dispenser for soap.
5. Where a lavatory is provided in the compartment or room, provide a hand towel dispenser or hand dryer complying with Table 603.6 of ICC A117.1.
6. A waste receptacle.
7. Signage indicating the weight capacity and instructions for operation of the changing station within the room.

1113.2.4 Directional signage to adult changing stations. ~~Location~~ The locations of the adult changing stations are to be identified on any directional graphic of the facility used to orient the public visitor.

1113.3 Room clearances. An adult changing station and its supporting structure is not permitted to obstruct the required clear floor spaces and clearances at accessible elements, maneuvering clearances at doors, or the wheelchair turning spaces.

1113.4 Changing surface. A changing surface is to be provided and is to comply with Section 1113.4.

1113.4.1 Size. The changing surface is to be 70 inches (1778mm) minimum in length and 30 inches (762mm) minimum in width.

1113.4.2 Height adjustability. The changing surface height is to be adjustable at variable heights from 17 inches (432mm) minimum to 38 inches (965mm) maximum above the floor as measured to the top of the changing surface.

Exception: Where the adult changing station is not required, a fixed height changing surface is permitted and is to be mounted with the top of the changing surface 19 inches (483mm) minimum and 23 inches (584 mm) maximum above the floor.

1113.4.3 Clearances. Clearances complying with Sections 1113.4.3.1 and 1113.4.3.2 are to be provided adjacent to the changing surface, measured when the surface is in the operational position.

1113.4.3.1 Side clearance. A side clearance measuring 36-inch (914mm) wide, minimum, is to be provided along the entire length of at least one long side of the changing surface.

Exception: In the raised position, the side rail is permitted to overlap the side clearance.

1113.4.3.2 End clearance. An end clearance measuring 36-inch (914mm) wide, minimum, is to be provided along the entire length of at least one short side of the changing surface. The end clearance is to extend the depth of the changing surface and the side clearance.

Exceptions:

1. A 24-inch (610 mm) wide minimum end clearance is permitted where a clear floor space complying with Section 305.3 of ICC A117.1 is provided within the room beyond the clearances for the changing surface.
2. Where installed in locations specified in Section 1113.2.3, end clearances complying with Section 1113.4.3.2 is not required.

1113.4.4 Side rail. Where side rails are provided at the changing surface, they are to comply with Sections 1113.4.4.1 and 1113.4.4.2.

1113.4.4.1 Size and location. Side rails are to be a minimum of 2/3 of the length of the changing surface and are to be centered +/- 3 inch (75 mm) along the long open sides of the changing surface.

1113.4.4.2 Rail positioning. Side rails are to be capable of being raised and lowered. The side rail is to be fixed in place when in the raised position. The top of the side rail is to extend 5 inches (127mm) minimum above the top of the changing surface.

File Attachments for Item:

R-1 Petition 22-01 - 2020 NEC RCO

March 17, 2022

Ms. Regina Hanshaw
Executive Secretary
Ohio Board of Building Standards
6606 Tussing Road
Reynoldsburg, OH 43068

Subject: Petition to Update NFPA 70

Dear Ms. Hanshaw:

Pursuant to Ohio Revised Code Section 3781.12, please find attached a petition from the Ohio Electrical Coalition requesting the Ohio Board of Building Standards update the 2017 edition of NFPA 70 to the 2020 edition of NFPA 70 for the Residential Code of Ohio.

Thank you for your time and consideration regarding this matter.

Sincerely,

Tom Moore

Ohio Electrical Coalition
Petition to update referenced standard
(NFPA 70) National Electrical Code
for the Residential Code of Ohio

Table of Contents

APPLICATION

FOR

RULE CHANGE

Pursuant to section 3781.12 of the Revised Code and rules adopted by the Board of Building Standards, application is herewith submitted to adopt, amend, or annul a rule adopted by the Board pursuant to section 3718.10 of the Revised Code.

BOARD OF BUILDING STANDARDS

6606 Tussing Road, P.O. Box 4009
Reynoldsburg, Ohio 43068-9009
(614) 644-2613
bbs@ohio.gov
www.com.state.oh.us/dico/bbs/default.aspx

For BBS use:

Petition #: _____

Date Recv'd: _____

Submitter: Thomas E Moore (Contact Name) Ohio Electrical Coalition (Organization/Company)

Address: 3462 Brunk Road
(Include Room Number, Suite, etc.)

Akron (City) Ohio (State) 44312 (Zip)

Telephone Number: 330-289-7932 **Fax Number:** _____

Date: March 17, 2022 **E-mail Address:** tmoore1767@gmail.com

Code Section: Referenced Standard NFPA 70: 4101:8-34 & 4101:8-44-01

General Explanation of Proposed Change (attach additional sheets if necessary):

Please see attachment

Explanation of Cost Impact of Proposed Code Change*: Please see attachment

***Attach additional cost information as necessary to justify any statement of cost increase or cost decrease.**

Information on Submittal (attach additional sheets if necessary):	
1. Sponsor:	Ohio Electrical Coalition Organization sponsoring or requesting the rule change (if any)
2. Rule Title:	4101:8-34 Electrical: 3401.1 Electrical and 4101:8-44-01 Referenced Standards 70-20 National Electrical Code Title of rule change
3. Purpose/ Objective:	Please see attachment Technical justification for the proposed rule change
4. Formatted Rule Language **(Using Strike-out for Deleted Text and Underline for Added Text)**	Please see attachment Use strike-out for deleted text and underline for added text
5. Notes:	1. To encourage uniformity among states using model codes, it is recommended that the submitter first submit any code change directly to ICC and participate in the national model code development process. 2. Please provide a copy of application and documentation. 3. Use a separate form for each code change proposal.

March 16, 2022

Ohio Board of Building Standards
Regina Hanshaw, Executive Secretary
6606 Tussing Road
Reynoldsburg, Ohio

Re: Petition to update referenced standard (NFPA 70) National Electrical Code 2017 edition to the 2020 edition

Rule Titles:

4101:8-34 Electrical: **3401.1 Electrical.** *The provisions of the National Electrical Code, NFPA 70, shall be incorporated herein and shall govern the installation, testing and operation of the electrical systems of one-, two- and three-family dwellings and their accessory structures.* ~~*except for the following:*~~

~~***1. Section 210.8(A)(2) shall be modified to read:*** Garages, and also accessory buildings that have a floor located at or below grade level not intended as habitable rooms and limited to storage areas, work areas, and areas of similar use *except for the receptacle located to serve a garage door opener when the device is a single receptacle and located in the ceiling.*~~

~~***2. Section 210.8(A)(5) shall be modified to read:*** Unfinished portions or areas of the basement not intended as habitable rooms.~~

~~***Exceptions:***~~

~~1. A receptacle supplying only a permanently installed fire alarm or burglar alarm system shall not be required to have ground-fault circuit-interrupter protection.~~

~~*2. A single receptacle located to serve a sump pump shall not be required to have ground-fault circuit-interrupter protection when there is a duplex receptacle with ground-fault circuit-interrupter protection within six (6) feet of the sump pump.*~~

~~***3. Section 210.8(D) shall be deleted.***~~

~~***4. Section 210.12(A) shall be modified to read:***~~

~~All 120-volt single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in dwelling unit kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sun rooms, recreational rooms, closets, hallways, laundry rooms, or similar rooms or areas shall be protected by any of the means described in 210.12(A)(1) through (6):~~

~~(l) A listed combination-type arc-fault circuit interrupter, installed to provide protection of the entire branch circuit.~~

~~(2) A listed branch/feeder-type AFCI installed at the origin of the branch-circuit in combination with a listed outlet branch-circuit type arc-fault circuit interrupter installed at the first outlet box on the branch circuit. The first outlet box in the branch circuit shall be marked to indicate that it is the first outlet of the circuit.~~

~~(3) A listed supplemental arc protection circuit breaker installed at the origin of the branch circuit in combination with a listed outlet branch-circuit type arc-fault circuit interrupter installed at the first outlet box on the branch circuit where all of the following conditions are met:~~

~~a. The branch-circuit wiring shall be continuous from the branch-circuit overcurrent device to the outlet branch-circuit arc-fault circuit interrupter.~~

~~b. The maximum length of the branch-circuit wiring from the branch-circuit overcurrent device to the first outlet shall not exceed 15.2 m (50 ft.) for a 14 AWG conductor or 21.3 m (70 ft.) for a 12 AWG conductor.~~

~~c. The first outlet box in the branch circuit shall be marked to indicate that it is the first outlet of the circuit.~~

~~(4) A listed outlet branch-circuit type arc-fault circuit interrupter installed at the first outlet on the branch circuit in combination with a listed branch-circuit overcurrent protective device where all of the following conditions are met:~~
~~a. The branch-circuit wiring shall be continuous from the branch-circuit overcurrent device to the outlet branch-circuit arc-fault circuit interrupter.~~
~~b. The maximum length of the branch-circuit wiring from the branch-circuit overcurrent device to the first outlet shall not exceed 15.2 m (50 ft.) for a 14 AWG conductor or 21.3 m (70 ft.) for a 12 AWG conductor.~~
~~c. The first outlet box in the branch circuit shall be marked to indicate that it is the first outlet of the circuit.~~
~~d. The combination of the branch-circuit overcurrent device and outlet branch-circuit AFCI shall be identified as meeting the requirements for a system combination-type AFCI and shall be listed as such.~~
~~(5) If RMC, IMC, EMT, Type MC, or steel-armored Type AC cables meeting the requirements of 250.118, metal wireways, metal auxiliary gutters, and metal outlet and junction boxes are installed for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a listed outlet branch-circuit type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.~~
~~(6) Where a listed metal or nonmetallic conduit or tubing or Type MC cable is encased in not less than 50 mm (2 in.) of concrete for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a listed outlet branch-circuit type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.~~
~~Exception No 1: Where an individual branch circuit to a fire alarm system installed in accordance with 760.41(B) or 760.121(B) is installed in RMC, IMC, EMT, or steel-sheathed cable, Type AC or Type MC, meeting the requirements of 250.118, with metal outlet and junction boxes, AFCI protection shall be permitted to be omitted.~~
~~*Exception No. 2: Branch circuits supplying receptacle outlets installed to serve only the kitchen countertop surfaces shall be permitted to be installed without arc-fault circuit interrupter protection.*~~

4101:8-44-01 Referenced standards: ~~70-17 National Electrical Code~~ 70-<u>20 National Electrical Code</u>

Submitter: Thomas E. Moore, Ohio Electrical Coalition, 3462 Brunk Rd, Akron, Ohio 44312, 330-289-7932, tmoore1767@aol.com

Sponsor: Ohio Electrical Coalition

Reason and Technical Justification for Rule Change:

Pursuant to O.R.C. 3781.12, the Ohio Electrical Coalition respectfully requests the Ohio Board of Building Standards update the 2017 edition of NFPA 70 with the 2020 edition of NFPA 70 for one-two- and three-family dwellings.

The purpose of NFPA 70 is simple and straightforward; to protect persons and property from hazards arising from the use of electricity. For over 125 years the National Electrical Code has codified requirements that establish a minimum level of safety for electrical systems installed in homes, businesses and elsewhere. As the use of electrically powered equipment has increased throughout our history, so has the need to develop requirements that allow new technologies to be safely implemented into workplaces and homes.

NFPA 70 is created through an exhaustive stakeholder consensus process that considers input from a balance of interests and reflects the collective knowledge of qualified electricians, electrical inspectors, manufacturers, testing lab personnel, and other professionals that review and act on input from the public with the singular focus of ensuring safe electrical installations.

The OBBS has taken an important step in public safety with moving forward with the adoption process for the 2020 NEC for all structures regulated by the Ohio Building, Mechanical and Plumbing Codes, which includes 4-family and larger multifamily dwellings. Ohio citizens are highly dependent on reliable and safe electrical power where they work, where they recreate and most importantly, where they live. Adoption of the 20120 NFPA 70 for the Residential Code of Ohio will ensure the same level of protection is provided, regardless of the size of the dwelling unit.

In addition to a request to update to the 2020 edition of NFPA 70, this petition is also requesting deletion of the Ohio specific amendments to NFPA 70 sections 210.8(A)(2) & (A)(5), 210.8(D) and 210.12(A). The potential for a shock hazard is not simply reduced by the fact that the receptacle is in a dedicated space. From a hazard-based safety-engineering standpoint, you would only want to defeat or eliminate a primary safety device if the hazard could be greater if the safety device was not defeated. One would have to make this case with a sump pump, garage door opener or dishwasher if the GFCI were to be eliminated from that location.

Published data from the U.S. Consumer Product Safety Commission show a decreasing trend in the number of electrocutions in the United States since the introduction of GFCI devices. The US Consumer Product Safety Commission (US CPSC) conducted a cost/benefit analysis of a proposal for additional GFCIs in new residential installations.[1] As reflected in this study, the expected benefits would be a reduction of societal costs associated with residential electrocutions, which translates to the benefit of this life-saving technology being greater than the initial upfront cost.

The original call for enhanced branch circuit and cord protection came from the CPSC based on fires attributed to electrical origin. The manufacturers, in concert with Underwriters Laboratories, worked to develop a product and a product standard to address the CPSC concern. The AFCI was the product developed as the means to mitigate the types of circuit malfunctions that circuit breakers and fuses are not designed to protect against. Modern technology has provided us with the opportunity to incorporate this next generation of circuit protection devices into homes and other occupancies. These devices advance the cause of electrical safety by providing early reaction and circuit interruption where wiring systems concealed within walls and ceilings are damaged. Requirements for AFCIs have been included in NFPA 70 since the 1999 edition. These devices also respond to damaged appliance cords, a known cause of home fires. The current amendment removes these requirements from receptacles serving kitchen countertops, which lessen the level of protection provided for the public.

The US Fire Administration published a report[2] in May 2019 that shows a decline in the number of fires attributed to electrical malfunction. Data for the 10-year period of 2008 to 2017 reflected a 14% decrease in fires, 19% decrease in deaths, 34% decrease in injuries and 35% decrease in dollar loss.

Following are some key changes that impact electrical safety:

Keeping the regulatory document current with industry trends in new technology and delivery and generation of electric power.

- 230.67. New requirement covering surge protection for dwelling units aligns with the everchanging electrical industry landscape to protect against surges that can damage sensitive electronics and systems found in most modern appliances, safety devices and equipment used in dwellings. With the expanded use of distributed energy resources, these can also contribute introduction of surges into the system.
- 230.85. New requirement for emergency disconnecting means at one- and two-family dwelling

units to ensure first responders can safely remove power from an involved structure.
- Article 242 Overvoltage Protection – new article addresses installation requirements for Surge-Protective Devices (SPD)and Surge Arrestors used to achieve this protection.
- Article 625 Electric Vehicle Power Transfer System – requirements for electric vehicles and supply equipment to encompass bidirectional current exchange.
- Updates to Articles 690 Solar Photovoltaic (PV) Systems, 706 Energy Storage Systems, Article 710 Standalone Systems and Article 712 Direct-Current Micro-grids continue to support new and expanding technologies, which has immeasurable societal benefits at both a micro- and macro-economic perspective.

Examples of new and revised requirements that may provide relief on the overall cost of the electrical system.

- 210.11(C)(3) & (4). Revision specifies which receptacle outlets are required to be on the required 20 ampere circuit for bathrooms and garages which provides more flexibility with circuiting in those areas.
- Article 220 Branch-Circuit, Feeder, and Service Load Calculations – Several revisions to this article, including the modernization of the tables currently in use for calculations, which has been extensively revised to reflect improvements in energy efficiency and may grant substantial relief for sizing of service and feeder distribution systems.
- 225.30(B). Revised to permit multiple smaller feeders, with smaller conductors and lower rated OCPD's to allow more flexibility with the design.

Protecting electrical workers while maintaining or servicing electrical or electrically powered equipment.

- 230.62(C). New requirement that provides additional shock protection with barriers to be placed in service equipment to prevent inadvertent contact.
- 230.71(B). Requirements for service disconnecting means is revised by eliminating the risk of the inability to establish an electrically safe work condition for justified energized work that must be performed within service equipment enclosures with more than one service disconnect.

Protecting people from electric shock in homes, workplaces and places of recreation.

- First introduced in the early 1970s, their continued expansion to cover areas in homes and workplaces where occupants are particularly susceptible to electric shock accidents can be directly attributed to reductions in electrocutions and electric shock accidents.
- Revision to add floating buildings to the scope of Article 555 and revised to provide greater flexibility with the application of ground-fault protection requirements.

These examples illustrate the importance of regularly updating NFPA 70 in order to recognize new methods and installation practices for safely distributing electrical power, safe interaction with electrical systems, to address safety concerns not previously covered in the referenced standard and to put new requirements in place that facilitate the safe implementation of new technology covering the generation, distribution and management of electrical power. This is the work performed during the revision process by the volunteer industry subject matter experts who serve on the NFPA technical committees. Updating to the 2020 NFPA 70 is a vitally important and proactive step for consumer protection and for the safe advancement of new electrical system technology.

The cost impact of complying with the 2020 edition of NFPA 70 will vary depending on the design approach and should be considered holistically by considering the safety benefit alongside of the cost. Additionally, there are numerous types of materials, equipment and device options in the electrical marketplace, and multiple methods for achieving code compliance. The coalition is prepared to submit a cost impact analysis if petition is approved to begin the review and rulemaking process.

Updating NFPA 70 makes sure communities continue to provide an acceptable level of public safety while supporting the latest technological advances, which is core to the mission of the OBBS.

This petition is submitted on behalf of the Ohio Electrical Coalition, which is comprised of a broad cross section of industry stakeholders committed to moving electrical safety forward in the State of Ohio through timely adoption of the 2020 edition of NFPA 70. Ohio citizens expect their electrical system will be safe from fire and shock hazards. This code update will ensure that Ohio remains at the forefront of technological developments in the electrical industry and ensure that electrical systems are safe for homeowners and citizens across Ohio, the most important stakeholder in the adoption and enforcement of construction safety codes.

The coalition members look forward to supporting the OBBS with moving forward with revising and updating Ohio electrical safety requirements that will enable us to be competitive and enhance the safety of our workforce, communities, and families.

Sincerely,

Ohio Electrical Coalition

[1]Consumer Product Safety Commission – *Economic Considerations – GFCIs*
[2]US Fire Administration – *Residential Building Electrical Malfunction Fire Trends (2008-2017)*

"Let the Code Decide"

OHIO CHAPTER
International Association of Electrical Inspectors

March 16, 2022

Ohio Board of Building Standards
6606 Tussing Rd
Reynoldsburg, OH 43068

Subject: 2020 NFPA 70, National Electrical Code (NEC) Update

The Ohio Chapter IAEI strongly encourages the Ohio Board of Building Standards to update its current NFPA 70, from the 2017 edition to the 2020 edition for Residential Code of Ohio regulated occupancies and supports the petition submitted on behalf of the Ohio Electrical Code Coalition. The OBBS has proven time and time again that they are at the forefront of public safety by adopting codes that ensure the health, safety and security of the occupants or users of buildings.

The NEC provides for the practical safeguarding of persons and property from the hazards arising from the use of electricity.

In addition to new requirements to address advancing alternative technologies and improved safety for the electrical worker, the 2020 NEC also expands important safety requirements for dwelling unit occupancies. While expansion of important safety requirements may add cost, the 2020 NEC also includes requirements that provide economic relief.

The Ohio Chapter IAEI Board of Directors respectfully requests the OBBS move forward with updating the NFPA 70, NEC, to the 2020 edition. Embracing these requirements by updating to the 2020 NEC is an important step forward with public safety.

Respectfully,

Karl J Frederick

Karl Frederick, President
On behalf of the Board Members of the Ohio Chapter IAEI

ICC CHAPTER

OHIO BUILDING OFFICIALS ASSOCIATION

PO BOX 1506, COLUMBUS OH 43216-1506
oboa.clubexpress.com

Founded 1961

March 15, 2022

CHAPTER MEMBERS

BOCONEO

COCOA

FBOA

MVBOC

NCOBOA

NWOBOA

OCPT

ODPCA

SWOBOA

SWOFSC

Ohio Board of Building Standards
PO Box 4009
Reynoldsburg OH 43068-9009

SUBJECT: Petition to Amend Residential Code of Ohio to Adopt 2020 Edition National Electrical Code

Ohio Building Officials' Association Resolution 2021-4 (attached) adopted by the general membership November 8, 2021 supports a petition for the Residential Code of Ohio to adopt the 2020 Edition National Fire Protection Association standard 70, National Electrical Code.

Sincerely,

Robert G. Eifert

Robert Eifert
President

Atch
a/s

OHIO BUILDING OFFICIALS ASSOCIATION

RESOLUTION 2021-4

of the

ANNUAL MEETING OF THE MEMBERS

concerning

A CODE CHANGE PETITION IMPLORING THE OHIO BOARD OF BUILDING STANDARDS TO ADOPT THE 2020 NFPA 70 (NATIONAL ELECTRICAL CODE) AS THE REFERENCE STANDARD FOR RESIDENTIAL CONSTRUCTION

WHEREAS the Board of Building Standards formulates and adopts rules governing the erection, construction, repair, and alteration of buildings known as the Ohio Building Code, Ohio Mechanical Code, Ohio Plumbing Code, and the Residential Code of Ohio; and

WHEREAS on September 2, 2021, the Board of Building Standards issued a notice of its intent to amend the Ohio Administrative Code to update rules for the Ohio Building, Mechanical, and Plumbing Codes to reference the the 2020 edition of NFPA 70 (National Electrical Code); and

WHEREAS the reference standard for Residential Code of Ohio would remain the 2017 edition of NFPA 70 (National Electrical Code); and

WHEREAS many electrical contractors and designers work on both Residential and Non-Residential projects requiring them to learn, maintain and work from two standards which would cause unnecessary burden as well as additional expense; and

WHEREAS Ohio Building Officials Association members who are charged with enforcement of Ohio building codes, recognize the need for consistent enforcement of a single reference standard for effective plan approval and inspection of electrical work on both Residential and Non-Residential projects.

BE IT RESOLVED that the members of this organization here assembled on Monday November 8, 2021 do hereby support a code change petition imploring the Ohio Board of Building Standards to adopt the 2020 NFPA 70 (National Electrical Code) as the reference standard for the Residential Code of Ohio.

NATIONAL FIRE PROTECTION ASSOCIATION
The leading information and knowledge resource on fire, electrical and related hazards

March 14, 2022

Ms. Regina Hanshaw
Executive Secretary
Ohio Board of Building Standards
6606 Tussing Rd
Reynoldsburg, OH 43068

Dear Ms. Hanshaw:

NFPA 70 focuses on the proper installation of electrical systems and equipment to protect people and property from hazards arising from the use of electricity. As electrical equipment has become more complex and widespread, the NFPA 70 has adapted to meet new challenges. Revised every three years to allow for new technologies and improved installation safety practices, NFPA 70 is a ready-to-use, comprehensive standard suitable for adoption.

NFPA 70 is developed and produced by the National Fire Protection Association (NFPA), an independent, not-for-profit standards developing organization and advocate of fire, building, and electrical safety. Since 1911, NFPA has been the sponsor of NFPA 70 and the requirements of this standard have continued to evolve with America's reliance on reliable and safe electrical energy. NFPA 70 is developed through an open, transparent, and balanced process accredited by the American National Standards Institute.

The NFPA 70 community has worked diligently to make sure safe installation rules are in place for the continuously changing electrical industry landscape. The 2020 edition of NFPA 70 has been issued by the NFPA Standards Council.

NFPA supports the petition filed on behalf of the Ohio Electrical Coalition, to update the 2017 edition of NFPA 70 to the 2020 edition. We encourage the Ohio Board of Building Standards to move forward by providing its citizens with the appropriate level of safety outlined in the 2010 edition of NFPA.

Sincerely,

Meredith Hawes
Regional Director, North Central Region
National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169

GCEA
Greater Cincinnati
Electrical Association

March 16, 2022

Regina Hanshaw, Executive Secretary
Board of Building Standards
6606 Tussing Rd
P. O. Box 4009
Reynoldsburg, OH 43068-9009

Re: Greater Cincinnati Electrical Association (GCEA) support for timely adoption of the entire "2020 NEC"

Dear Regina,

I am writing on behalf of the GCEA. The GCEA is an association that represents the interest of our members who are electrical industry companies in the greater Cincinnati area. Our mission is to provide "Quality electric service" to our community. We pursue this mission by providing on-going training, by stressing safety, and by providing a venue for communications across the different electrical company divisions necessary for a complete electrical community. GCEA membership includes electrical contractors, electrical material distributors, manufacturers, manufacturer reps, utilities, and electrical safety inspectors.

The GCEA's Board of Trustees would like to state it is in full support of the Ohio Code Coalition's petition in regards to the timely adoption of the "2020 National Electrical Code" (2020 NEC) for all electrical installations including 1, 2, and 3 – family dwellings.

Typically our members are working daily on multiple jobs in various stages of completion and having two versions of the NEC active at one time is awkward and causes an additional concern on each project. The GCEA strongly supports the alleviation of this burden on our industry.

Sincerely

Terrence J. Eibel

Executive Director, GCEA
P.O. Box 58183
Cincinnati, OH 45258
513-922-6501

March 16, 2022

Ohio Board of Building Standards
Regina Hanshaw, Executive Secretary
6606 Tussing Road
Reynoldsburg, OH 43068

Subject: Support for Petition to update the referenced National Electrical Code to the 2020 edition

Dear Secretary Hanshaw,

We at Underwriters Laboratories (UL) are deeply committed to advancing the safety of the citizens of the state of Ohio. UL believes NFPA 70, the National Electrical Code© (NEC©) serves as an important tool in advancing that safety. Adoption of the most current edition of the code, in this case the 2020 NEC© by the Ohio Board of Building Standards is critical to keeping pace with safety science. Pursuant to the Ohio Revised Code 3781.12, I am writing on behalf of UL to request that the State of Ohio move forward with the adoption of 2020 NFPA 70 NEC as requested in the petition filed by the Ohio Electrical Coalition.

UL is driven by our global safety Mission- promoting safe living and working environments by the application of safety science and hazard-based safety engineering. Founded in 1894, UL has earned a reputation as a global leader in product safety standards development, testing and certification, especially in the areas of fire and electrical safety, the basis of UL's founding. UL therefore works closely with the electrical installation community to coordinate product safety standardization/certification with the installation safety practice to achieve the most desirable safety outcomes.

In conclusion, UL urges the Ohio Board of Building Standards to ensure the safety of its citizens by adopting the latest electrical safety requirements as represented by the 2020 edition of the NEC©.

Should you have any questions, please contact our representative for Ohio, Tom Lichtenstein, at thomar.r.lichtenstein@ul.com or by phone at (847) 664-2160.

Sincerely,

Deborah Jennings-Conner
VP, Regulatory Services

UL LLC
12 Laboratory Drive

Underwriters Laboratories Inc.
333 Pfingsten Road, Northbrook, IL 60062-2096 USA
T: 847.272.8800 / F: 847.272.8129 / W: UL.com

PO Box 13995
Research Triangle Park, NC 27709
T: (919) 549-1603
M: (919) 308-4888
W: ul.com

cc: Tom Lichtenstein Senior Regulatory Engineer

INDEPENDENT ELECTRICAL CONTRACTORS

Independent Electrical Contractors of Greater Cincinnati
586 King's Run Dr.
Cincinnati, OH 45232
Ph 513-542-0400
www.iec-cincy.com

March 10, 2022

Regina Henshaw, Executive Secretary
Ohio Board of Building Standards
6606 Tussing Rd.
Reynoldsburg, OH 43068-9009

RE: 2020 National Electrical Code Adoption

Dear Regina,

The Independent Electrical Contractors of Greater Cincinnati request a rule change to update the 2017 edition of NFPA 70 with the 2020 edition of NFPA 70 in accordance with ORC 3781.12.

The 2020 NEC provides numerous changes that will enhance public safety and advance new methods, materials and installation practices. It also includes important changes to rules used for certain calculations which modernize and acknowledge improvements in energy efficiency which may account for and contribute savings in the overall cost of an electrical system.

Living in a strong, technology-driven consumer world that regularly sees advancements, in said technologies, warrants regular and up-to-date standards for implementation to help ensure the safety of the end-user and their property. Updating to the 2020 NEC provides a critical and necessary step towards continued consumer health preservation and evolution of safely implementing technologies in electrical systems.

The NEC is the most widely adopted consensus Code in the world. Consensus is a key word when developing the document. The NFPA provides the document rules and governing procedures that stipulate all NEC changes have had public input and public review. Technical committee membership classifications are used to maintain balanced Code Making Panels that represent their Principal interest to ensure changes are necessary and in the best interest of public safety.

I urge the state of Ohio to adopt the 2020 NEC without delay or modifications to the document.

Sincerely,

Matthew Hittinger

Matthew Hittinger
Executive Director
Independent Electrical Contractors of Greater Cincinnati

March 11, 2022

Ms. Regina Hanshaw
Executive Secretary
Ohio Board of Building Standards
6606 Tussing Road
Reynoldsburg, OH 43068

Re: Schneider Electric Supports the Ohio Electrical Coalition Petition to Adopt the 2020 Edition of the National Electrical Code for the Residential Code of Ohio.

Dear Ms. Hanshaw:

I am writing to inform you of Schneider Electric's support of the Ohio Electrical Coalition Petition to Adopt the 2020 Edition of the National Electrical Code for the Residential Code of Ohio.

As a global specialist in energy management, Schneider Electric offers integrated solutions across multiple market segments, including leadership positions in Utilities & Infrastructures, Industrial & Machine manufacturers, Non-residential buildings, Data Centers & Networks. Focused on making energy safe, reliable, efficient, productive and green, Schneider Electric 750 plus Ohio employees are located in various offices and four manufacturing facilities across the state. We support thousands of additional direct and indirect jobs in Ohio by working with over 400 vendors and suppliers located in the state.

Schneider Electric continues to advocate for timely adoption of the National Electrical Code (NEC). The NEC focuses on the proper installation of electrical systems and equipment which supports safe electrical infrastructure installations further advancing the safe use of electricity. Our products are designed and manufactured to comply with the most current edition of the NEC. Electrical infrastructure that does not utilize the most current electrical code restricts the use of the most current technology and can be less efficient and more costly for not only Schneider Electric to manufacturer, but also for the construction industry to implement.

The adoption of the 2020 NEC will permit the construction industry to take advantage of the most cost-effective infrastructure solution and utilize emerging technological advancements while enhancing safety in Residential buildings in the state.

Once again, Schneider Electric urges the OBBS to promptly initiate the review and adoption of the 2020 NEC for the Residential Code of Ohio.

Sincerely,

Don Iverson
Manager of Industry Codes & External Affairs

Schneider Electric
1601 Mercer Rd
Lexington, KY 40511
Tel. (517) 204-0559
www.us.schneider-electric.com

SIEMENS

March 15, 2022

Ms. Regina Hanshaw
Executive Secretary
Ohio Board of Building Standards
6606 TUssing Road
Reynoldsburg, OH 43068

Re: Support Adoption of 2020 Edition of the National Electrical Code

Dear Ms. Hanshaw,

I am writing in support of updating the Residential Code of Ohio from the 2017 edition of the National Electrical Code® (NEC) to the 2020 edition of the NEC. For many years, Ohio has been one of the first states to adopt the entire current electrical code on a regular revision schedule, demonstrating that the safety of its citizens and economic well-being of its industry is of upmost importance.

Siemens employs 1,959 people throughout Ohio who, along with their families, would be impacted by this update. There are 21 Siemens locations reporting $611M in sales last year. Income tax paid to the state exceeds $450k with employee wages exceeding $226M.

Updating the National Electric Code® to the current 2020 edition with no amendments would help to keep Ohio residents safe.

Thank you for your consideration on this important issue.

With kind regards,

Ashley Bryant
Senior Product Manager, Electronic Circuit Breakers
Siemens Industry, Inc.
3617 Parkway Lane
Peachtree Corners, GA 30092, USA
Tel.: +1 404 697-1587
mailto:ashley.bryant@siemens.com

March 17, 2022

Ms. Regina Hanshaw
Executive Secretary
Ohio Board of Building Standards
6606 Tussing Road
Reynoldsburg, OH 43068

Re: NEMA Supports Adoption of 2020 Edition of the National Electrical Code

Dear Ms. Hanshaw:

On behalf of the National Electrical Manufacturers Association (NEMA), I am writing to express support for the update of the Residential Code of Ohio from the 2017 edition of the National Electrical Code® (NEC) to the 2020 edition of the NEC.

As the association representing over 325 electrical and medical imaging manufacturers that make the equipment used in a variety of sectors—electric transmission and distribution, commercial and residential buildings, water treatment and delivery, transportation, industrial processes, food, healthcare, agriculture, and manufacturing—NEMA supports regulatory action and programs that efficiently provide affordable, safe, and reliable electricity to the American public. NEMA member companies have a significant presence in the state of Ohio, representing 44 companies with 142 manufacturing and engineering facilities that support the state's economy. Member companies in Ohio collectively employ over 70,077 state residents.

NEMA has long supported timely adoption of the National Electrical Code® (NEC) by state and local jurisdictions. We maintain that prompt adoption of the most current edition of the NEC is the best way to ensure a uniform and up-to-date standard of safety for all occupants in the built environment. Current codes mean safer and more economically prosperous communities.

The NEC focuses on the proper installation of electrical systems and equipment to protect people and property from hazards arising from the use of electricity in the built environment. The code also allows for the safe use of new technologies including electric vehicle charging equipment and distributed generation such as solar photovoltaic panels.

Through adoption of the 2020 NEC, businesses today will be able to take advantage of lower infrastructure start-up and operational costs through new and improved technology. For instance, modernized rules in the 2020 NEC, used for the calculations of improvements in energy efficiency, may provide relief for the overall cost of the electrical system. Additionally, requirements relating to alternative energy continue to stay relevant so as to not become a barrier to the implementation of those technologies as they evolve.

Once again, NEMA urges the Ohio Board of Building Standards to maintain this tradition of excellence by adopting the 2020 edition of the NEC. If you have any questions, please contact Tim McClintock at Tim.McClintock@nema.org or (303) 749-9782.

Sincerely,

Todd Sims
Director, Government Relations
National Electrical Manufacturers Association

Ohio Board of Building Standards

6606 Tussing Rd.

Reynoldsburg, OH 43068

Regina Hanshaw, Executive Director, esteemed members of the Board and the Residential Code Advisory Committee.

This letter is in support of the Residential Code of Ohio (RCO) referencing the 2020 NEC (NFPA70-20). Currently Ohio has modified the 2017 NEC and proposes to add two (2) additional modifications that directly affect safety and the integrity of residential safety systems that are required in 1,2 and 3 Family dwellings.

Deleting 2020 NEC Section 230.67 for surge protection puts devices containing electronic circuits at risk for failure. The list of devices includes AFCI and GFCI receptacle outlets and circuit breakers that provide integral protection of our citizens where they live. Surge protection installed at the incoming electrical service as required in 230.67 has been shown to provide protection of these devices from surges and spikes produced on the utility side, lightning strikes and many other transient events that have been shown to disable these safety devices. Additionally, the smoke detectors and carbon monoxide alarms required by RCO 314/315 are subject to the same risk for failure and mitigating any loss of the protection provided by these devices is of tantamount importance to the safety of the citizen. An added benefit is the protection of the electronic 'chip' component of the smart appliances that are found in todays homes. Many of the manufacturers recommend installing surge protection upstream of their products.

Modification of 2020 NEC 210.8(A) limiting GFCI protections to only 15 and 20 ampere receptacle outlets only, directly affect the safety of the occupants of a 1, 2 and 3 family dwelling. Providing GFCI protection for the laundry and kitchen areas is a long standing provision of the NEC in its goal of mitigating hazards and providing 'practical safeguarding of persons and property from the hazards arising from the use of electricity'. Inclusion of 250 volt receptacle outlets located within six (6) feet of a sink in these areas is a huge step in accomplishing this goal.

Having different adoptions of the same code creates confusion for the installer and enforcement community as multi-family installations under the OBC do not contain these same modifications. As an example, apartment units would be required to have safety devices not required in a single family home but they are both dwelling units. This is inconsistent and hazardous to the occupant.

Code development includes stakeholders from all facets of society and the National Electrical Code Panels are made up of individuals who represent all interests of the manufacturing, safety, electrical, and construction industries. Their collected experience and expertise are utilized in the formation and adoption of the most current codes and standards.

Updating to the 2020 NEC is a vitally important and a proactive step for economic savings, consumer protection and the safety advancements of new electric system technology. Using and referencing the most current codes and standards is necessary for a progressive state and its citizens to keep pace with changes to technology and safety enhancements.

Up-to-date safety standards promote the use of new technology, which has immeasurable societal benefits from an economic perspective. Additionally, this helps to promote and spur new business opportunities and economic growth for Ohio and its citizens.

These new requirements have been added to help communities accomplish the goal of making our buildings safer, more energy efficient, and reliable in the event of disasters or emergencies. Advancement of technology requires up to-date codes and standards for safe implementation, to ensure that the end-user can take advantage of these innovations without endangering themselves, others, or their property.

The citizens of Ohio deserve and expect the best that is offered for their homes, occupations, places we work at, worship at, play and entertain.
The intent of the National Electrical Code is the 'practical safeguarding of persons and property from the hazards arising from the use of electricity'.
All of the changes and new technology that we are witnessing require proper installation and safety requirements that are found in the most current code.
They need to be adopted and utilized for the protection of the public.
We need to do all that we can to accomplish that.

Respectfully submitted,

Michael J Farrell III

Member of IAEI, IBEW, ICC, NFPA, OBOA

Powering Business Worldwide

March 18, 2022

Ms. Regina Hanshaw
Executive Secretary
Ohio Board of Building Standards
6606 Tussing Road
Reynoldsburg, OH 43068

Re: Eaton Supports Ohio Electrical Coalition Petition to update the 2017 edition of the National Fire Protection Association (NFPA) 70 with the 2020 edition of NFPA 70.

Dear Ms. Hanshaw:

I am writing to express Eaton's support of the State of Ohio to update the 2017 edition of NFPA 70 with the 2020 edition of NFPA 70.

Eaton employs over 1,300 associates at 5 locations in the State of Ohio and spends over $350 million with Ohio-based businesses every year. Eaton's electrical business is a global leader with expertise in power distribution and circuit protection; backup power protection; control and automation; lighting and security; structural solutions and wiring devices; solutions for harsh and hazardous environments; and engineering services.

For many years, Ohio has championed the standard of excellence by being one of the first states in the nation to adopt the newest edition of the National Electrical Code® - putting the safety of its citizens and economic well-being of its industry first. Updating NFPA 70 makes sure communities continue to provide an acceptable level of public safety while supporting the latest technological advances, which is core to the Ohio Board of Building Standards (OBBS) mission.

Eaton has long supported timely and un-amended adoption of the National Electrical Code® (NEC) by state and local jurisdictions. We believe that adoption of the most current edition of the NEC® promotes a uniform and up-to-date standard of safety for all occupants in the built environment. Current codes produce safer and more economically prosperous communities.

Once again, Eaton urges the OBBS to maintain this tradition of excellence by adopting the 2020 edition of NFPA 70.

If you have any questions, please contact me at (636) 515-6083. Thank you for your time and consideration of this important matter.

Sincerely,

Kevin S. Arnold, P.E.
Manager of Codes & Standards

4101:8-34-01 *Electrical.*

[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 4101:8-44-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:8-1-01 of the Administrative Code.]

SECTION 3401
ELECTRICAL

3401.1 *Electrical.* *The provisions of the National Electrical Code, NFPA 70, shall be incorporated herein and shall govern the installation, testing and operation of the electrical systems of one-, two- and three-family dwellings and their accessory structures including the following amendments (1) through (4).*

For the purposes of this Chapter, any reference in NFPA 70 to "one- and two-family dwellings" will include "one-, two- and three-family dwellings." Where the requirement identifies a one-family dwelling or a two-family dwelling, a three-family dwelling is a "multi-family dwelling" (i.e. Section 210.52(E)(1)).

1. ***Section 210.8(A) shall be modified to read:***

   (A) **Dwelling units.** All 125-volt, *single phase, 15- and 20-ampere* receptacles installed in locations specified in 210.8(A)(1) through (A)(11) shall have ground fault circuit interrupter protection for personnel.

2. ***Section 210.8(A)(2) shall be modified to read:***

   (2) Garages, and also accessory buildings that have a floor located at or below grade level not intended as habitable rooms and limited to storage areas, work areas, and areas of similar use *except for the receptacle located to serve a garage door opener when the device is a single receptacle and located in the ceiling.*

3. ***Section 210.8(F) shall be modified to read:***

   (F) Outdoor Outlets. All outdoor outlets for dwellings, other than those covered in 210.8(A)(3), Exception to (3), that are supplied by single-phase branch circuits rated 150 volts to ground or less. 50 amperes or less, shall have a ground-fault circuit-interrupter protection for personnel.

   Exceptions:

1. Ground-fault circuit-interrupter protection shall not be required on lighting outlets other than those covered in 210.8(C).
2. *Ground-fault circuit-interrupter protection shall not be required on outlets for listed hvac equipment.*

4. ***Section 230.67 shall be deleted.***

SECTION 3402
EMERGENCY AND STANDBY POWER SYSTEMS

3402.1 ***Installation.*** *Emergency and standby power systems shall be installed in accordance with this code and NFPA 70. The performance, classification, transfer, testing, and maintenance of emergency and standby power systems shall also comply with either NFPA 110 (liquid- and gas- fueled systems) or NFPA 111 (battery and inertia systems), as applicable.*

3402.1.1 Stationary generators. *Stationary emergency and standby power generator assemblies shall be listed in accordance with UL 2200.*

3402.1.1.1 Engine-driven generators. *The installation of liquid- and gas- fueled stationary internal combustion engines and gas turbines used to drive generator assemblies shall meet the requirements of NFPA 37.*

3402.1.1.1.1 Fuel tanks connected to generator assemblies. *Fuel tanks piped to and supplying fuel for engine-driven generator assemblies may be engine-mounted, located inside of a building, outside of a building, or on a roof in accordance with NFPA 37 or NFPA 30.*

3402.1.1.1.1.1 Engine-mounted tanks. *Engine-mounted tanks located outdoors may be located in accordance with Section 4.1.4 of NFPA 37 and shall be vented in accordance with NFPA 30. Engine-mounted tanks shall be provided with adequate clearance to enable filling, maintenance, and testing, shall be safeguarded against public access, and shall be protected from impact.*

3402.1.1.1.1.2 Other fuel tanks. *Fuel tanks, other than engine- mounted tanks, piped to and supplying the generator engine shall be located, installed, and vented in accordance with the applicable sections of NFPA 37 or located, installed, and vented in accordance with NFPA 30.*

3402.1.1.1.2 Gaseous fuel supply. *Where an internal combustion engine*

supplied with gaseous fuel powers emergency or standby generators, the fuel gas storage and piping system shall comply with NFPA 37 and Chapter 24.

November 2, 2022

Ms. Regina Hanshaw
Executive Secretary
Ohio Board of Building Standards
6606 Tussing Rd
Reynoldsburg, OH 43068

Re: NEMA Supports Ohio Electrical Coalition Petition 22-01 to Adopt the 2020 Edition of NFPA 70 for One, Two, and Three Family Dwellings

Dear Ms. Hanshaw:

The National Electrical Manufacturers Association (NEMA) is the leading trade association of the electroindustry, including electrical equipment and medical imaging manufacturers. The approximately 325 member companies manufacture products used in the generation, transmission and distribution, control, and end-use of electricity. NEMA member companies have a significant presence in the state of Ohio, employing over 70,000 manufacturing and engineering jobs and contributing over $8 billion dollars to the state's economy.

NEMA writes to you today to express **support of the Ohio Electrical Coalition's petition 22-01 to update the current edition of NFPA 70 (National Electrical Code® or NEC) to the 2020 edition of NFPA 70** for one, two, and three- family dwellings. For many years, Ohio has championed the standard of excellence by adopting the most recent edition of the National Electrical Code®, making Ohio a leader in protecting the safety of its citizens.

The electroindustry has a robust history in supporting the safe installation and usage of electrical equipment and products. In particular, NEMA has strongly supported timely adoption of the most current edition of the NEC by state and local jurisdictions. The timely adoption of the most current edition of the NEC promotes a uniform and modern standard of safety for all occupants in the built environment. Current codes produce safer and more economically prosperous communities.

The NEC, developed by the National Fire Protection Association (NFPA), is the foundation of the country's electrical safety system since 1897. The NEC is created through an exhaustive stakeholder consensus process that considers input from a balance of interests and reflects the collective knowledge of qualified electricians, electrical inspectors, manufacturers, testing lab personnel, and other professionals, including representation from the National Association of Home Builders (NAHB). That stakeholder consensus process requires supermajority support for any new modifications to the Code. Updated to include technological advancements, adopting the latest version of NEC is the best way to encourage uniform implementation of installation requirements and consistency throughout the built environment.

Pursuant to Ohio Revised Code Section 3781.12, the Ohio Electrical Coalition filed a petition to update the Residential Code of Ohio with the 2020 edition of NFPA 70 with the Ohio Board of Building Standards (BBS). The BBS procedurally forwarded the petition to the Residential Construction Advisory Committee (RCAC) for recommendation. At their May 2022 meeting, the RCAC elected to delay review of the petition at until its August 24th meeting. An overview of significant updates to the 2020 edition of NFPA 70 was provided during the August RCAC meeting, and no additional actions were taken by the committee. The RCAC met next on October 19th, at which time proposed amendments were presented and voted-on by the committee. This was the first time the proposed amendments were made available to the Committee and the public.

In the past, stakeholders have had the opportunity to discuss proposed amendments with the agency in advance of those amendments being formally considered and voted-on by the RCAC. During previous adoption processes, the RCAC held multiple open meetings with coalition members and general public. This provided ample opportunity for stakeholders to provide input, to help the RCAC make informed decisions in the interest of public safety.

We appreciate some of the updates included in the RCAC's approved proposal and understand and agree with some of the compromises made by the Committee, but it's our strong view that the proposed amendments significantly compromise electrical safety protections provided to Ohioans.

The rationale supporting the inclusion of the requirements for implementation of these safety devices being considered for amendment is compelling and their inclusion minimizes tragedies, including devastating fatalities, severe injuries, and extensive property loss. Ohio has long been recognized as a leader in electrical safety through the state's adoption and enforcement of the NEC. To proceed with the proposed rules changes is a dangerous disservice to the citizens of Ohio who have an expectation that they can safely interface with the electrical systems within their homes, businesses, institutions, and recreational facilities.

Considering the substantial potential impacts to public safety in Ohio, **we request the RCAC's draft language for the 2020 NEC be excluded from the BBS November agenda to provide an opportunity for additional discussions with the Department before RCAC forwards a final recommendation to the BBS.**

Sincerely,

Spencer Pederson, VP of Public Affairs

December 12, 2022

ATTN: Ms. Regina Hanshaw
Executive Secretary
Ohio Board of Building Standards
Residential Construction Advisory Committee
6606 Tussing Rd.
Reynoldsburg, OH 43068

Re: Support for Ohio Electrical Coalition Petition to update the 2017 edition of the National Fire Protection Association (NFPA) 70 with the 2020 edition of NFPA 70

Dear Ms. Hanshaw:

The Ohio Manufacturers' Association (OMA) is the largest statewide business association comprised solely of manufacturers. With more than 1,300 members, OMA is the leading voice advocating to protect and grow Ohio manufacturing.

Safety is the number one priority for Ohio's manufacturers. Our members prioritize important safety measures every day in the operation of their facilities and it's equally important that the State of Ohio ensures and advances electrical safety protections provided to workers and residents in the built environment. The National Electrical Code (NEC), developed by the National Fire Protection Association (NFPA) is the foundation of Ohio's electrical safety system. Updating Ohio's residential code to the 2020 edition of NFPA 70 is an important, proactive step towards consumer protection and electrical safety afforded to Ohio residents by this newer edition - including important protections for fire and electrical safety.

Updates to construction and building codes advance safety and quality in the built environment and bolster industry, driving more economically prosperous communities. As electrical products and delivery technologies evolve, so do the challenges of safely integrating technology into electrical systems. The 2020 edition of NFPA 70 includes key requirements that ensure electrical installations continually meet minimum safety requirements and perform as expected, while preventing harm to life and property.

While we understand the RCAC is considering adopting amendments to the code, OMA strongly encourages the Committee to adopt the new edition as written. Ohio has long been a leader in electrical safety and we are proud of this legacy. Removing protections provided by the code would only reduce the level of electrical safety protections provided to Ohioans and hinder the uniform implementation of installation requirements across the state. By recommending adoption of the 2020 edition of NFPA 70 without amendment to the Board of Building Standards, the RCAC will strengthen the level of safety provided by fire and electrical systems in Ohio and ensure the highest standard of safety and consumer protection in the build environment across the state.

Thank you for your time and consideration of our support for the Ohio Electrical Coalition Petition to update the NFPA 70 to the 2020 edition.

Sincerely,

Lindsey Short, Director of Public Policy Services
The Ohio Manufacturers' Association

Eaton
1000 Eaton Blvd
Cleveland, OH 44122

ATTN: Ms. Regina Hanshaw, Executive Secretary
Residential Construction Advisory Committee
Ohio Board of Building Standards
6606 Tussing Road
Reynoldsburg, OH 43068

Re: Eaton Supports Ohio Electrical Coalition Petition to update the 2017 edition of the National Fire Protection Association (NFPA) 70 with the 2020 edition of NFPA 70.

Eaton has been operating in Ohio for over 100 years and currently employs over 1,300 team members at 5 locations across the state. Additionally, Eaton spent more than $400 million with Ohio suppliers last year. Our employees develop, manufacture, and sell safe and reliable electrical equipment. Our workforce provides market leading electrical solutions used in general construction, performing to the highest standards of safety and reliability. Many of these products are installed in homes, commercial buildings, industrial facilities, and utilities across Ohio.

We commend the Residential Construction Advisory Committee (RCAC) for moving forward with the adoption process for latest edition of NFPA 70. Current codes produce safer and more economically prosperous communities.

For many years, Ohio has championed the standard of excellence by being regularly adopting the newest edition of the National Electrical Code® - prioritizing the safety of its citizens and economic well-being of its industry. Updating NFPA 70 ensures communities continue to provide an acceptable level of public safety while supporting the latest technological advances, which is core to the Ohio Board of Building Standards (OBBS) mission.

Eaton has long supported timely and un-amended adoption of the National Electrical Code® (NEC) by state and local jurisdictions. We believe that adoption of the most current edition of the NEC® promotes a uniform and up-to-date standard of safety for all occupants in the built environment. We understand the RCAC is considering recommendations for amendments to certain provisions of the Code, and urge caution given any amendments will negatively impact Ohioans by reducing the level of life safety and property protections provided to residents. This is especially true when considering protections for high-amperage circuits, including 250v circuits, which pose a greater life safety risk.

Thank you for your time and consideration of this important matter.

Sincerely,
Gerry O'Connor
Codes Specialist

File Attachments for Item:

OB-1 Commercial Energy Code Review (OBC Ch 13)

4101:1-13-01 Energy efficiency.

Chapter 13 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

(A) Replace section 1301.1.1 with the following:

1301.1.1 Criteria. Buildings are to be designed and constructed in accordance with the applicable provisions of the "International Energy Conservation Code" or the requirements of "ASHRAE 90.1" listed in Chapter 35 of this code except as modified in Sections 1301.2 and 1301.3.

(B) Add new section 1301.2 that reads as follows:

1301.2 Modifications to the International Energy Conservation Code. The following changes are made to the International Energy Conservation Code:

Residential Provisions

1. Section R403.3.7 is to read: "**Building cavities (Mandatory).** Building framing cavities are not to be used as supply ducts."

Commercial Provisions

(C) Add new section 1301.3 that reads as follows:

1301.3 Modifications to ASHRAE 90.1. The following changes are made to the ASHRAE 90.1:

1. Section 8.4.2 Automatic Receptacle Control; Delete section.
2. Section 8.4.3 Electrical Energy Monitoring; Delete section.

Significant changes 2018-2021 IECC Commercial Provisions

[Sources: IECC 2021]

- Changes climate zone maps resulting in 15 Ohio counties moving from Climate Zone 5 to Climate Zone 4
- Requires an insulation certificate identifying the installed R-value of insulation when the insulation of the manufacturer is not readily observable upon inspection
- Requires that a Thermal Envelope Certificate be posted in an approved location
- Clarifies and relocates all "Mandatory" and "Prescriptive" labels to a table

Definitions

- Adds or modifies definitions of "Biogas", "Biomass", "Data Center", "Data Center Systems", "Direct Digital Control", "Enthalpy Recovery Ratio", "Embedded Fan", "Fan Array", "Fan Energy Index (FEI)", "Fan Nameplate Electrical Input Power", "Fan System Electrical Input Power", "Fault Detection and Diagnostics (FDD) System", "Information Technology Equipment (ITE)", "Internal Curtain System", "Large Diameter Ceiling Fan", "On-Site Renewable Energy", "Renewable Energy Resources", "Testing Unit Enclosure Area", "Thermal Distribution Efficiency (TDE)", "Vegetative Roof", "Visible Transmittance, Annual", and "Wall, Above-Grade"

Building Envelope

- Increased envelope stringency and clarity for conditioned greenhouses [C402.1.1.1]
- Allows certain electric equipment buildings up to 1200 ft^2 to be exempt from envelope requirements [C402.1.2]
- Recognizes and provides guidance for layered cavity insulation [C402.1.3]
- Increased stringency requirements for attic insulation, above-grade and below-grade walls, and unheated slabs [Tables C402.1.3 and C402.1.4]
- Clarifies U-factor and R-factor insulation requirements at roofs, particularly tapered above-deck insulation [C402.1.4.1 & C402.2.1]
- Adds limit of maximum of 25% glazing area for garage door [Table C402.1.4, note i]
- Increases stringency of U-values and SHGC for fenestration in CZ 4 and CZ 5 [Table C402.4]
- Clarifies skylight requirements [C402.4.2]
- Removes R-values for doors and prescribes maximum U-factors and glazing area for non-swinging doors [C402.4.5]
- Requires either air barrier inspection and commissioning or enclosure testing to verify envelope performance of buildings and provides testing methodologies [C402.5]
- Requires HVAC interlock with operable openings that are greater than 40 ft^2 and provides a few exceptions (separately zoned commercial kitchens, warehouses, and outside vestibule doors) [C402.5.11]

Mechanical

- Exempts data center systems from control and economizer requirements [C403.1]
- Requires that data center systems comply with ASHRAE 90.4 (with a few modifications) [C403.1.2]
- Requires large HVAC systems (serving $\geq$100,000 ft^2) in new buildings to provide a fault detection and diagnostics system [C403.2.3]
- Updates HVAC equipment efficiency tables (some efficiencies to go into effect on January 1, 2023) for air conditioners, heat pumps, furnaces, boilers, chillers, cooling towers, condensers, and computer room AC [Tables C403.3.2(1) - C403.3.2(16)]
- Clarifies heat pump control requirements [C403.4.1.1]

- Clarifies that automatic stop controls are also required for HVAC systems [C403.4.2.3]
- Requires two-position valve for hydronic heat pump systems to be automatic and interlocked [C403.4.3.3.3]
- Adds a Variable Refrigerant Flow (VRF) exception to economizer requirements [C403.5]
- Requires Demand Control Ventilation (DCV) whenever economizers are required [C403.7.1]
- Increases number of enclosed parking garages that will require detection and controls [C403.7.2]
- Prescribes specific enthalpy recovery ratios for dwelling unit energy recovery systems [C403.7.4.1]
- Differentiates control requirements for hotel and motels (Group R-1) based upon occupancy status of rooms and changes time-out time from 30 minutes to 20 minutes [C403.7.6]
- Requires fans and fan arrays to have a Fan Energy Index (FEI) certified IAW AMCA 208 [C403.8.3]
- Prescribes minimum efficiencies of low-capacity residential-type fans [C403.8.5]
- Recognizes Large-diameter ceiling fans [C403.9]
- Adds performance requirements for commercial refrigerators, freezers, walk-in coolers, walk-in refrigerators and refrigeration equipment [C403.11]
- Clarifies insulation requirements for underground ducts [C403.12.1]
- Prescribes control system operation for operable opening interlocks [C403.14]

Service Water Heating

- Increases minimum efficiency for large (1 M Btu/h input) individual water heating equipment to 92% [C404.2.1]

Lighting

- Clarifies what is meant by “general lighting” [C405.1]
- Requires corridor lighting to be reduced to minimum levels (no more than 50% full power) when unoccupied [C405.2.1.1 & C405.2.1.4]
- Adds a section for “warehouse storage areas” and requires occupant sensor controls [C405.2.1.2]
- Clarifies intent of light reduction control requirements [C405.2.3]
- Adds additional control requirements for the secondary side lit daylight zone [C405.2.4.2]
- Adds control requirements for parking lot luminaires [C405.2.7.3]
- Adds control requirements for parking garage lighting [C405.2.8]
- Clarifies lighting power allowance calculations, especially for projects that involve only a portion of a building and for exterior lighting [C405.3.2 & C405.5.2]]
- Interior and exterior lighting power allowance have been modified to reflect new lighting levels in the IES lighting handbook and to recognize LED technology [Tables C405.3.2(1), C405.3.2(2), and C405.4.2(2)]
- Recognizes the high energy use of plant growth lighting and requires 95% of permanent luminaires to have a minimum photon efficiency of 1.6 m mol/J [C405.4]

Power

- Limits the combined voltage drop of customer-owned service conductors, feeder conductors and branch circuits to 5% [C405.10]
- Requires automatic receptacle control of at least 50% of 125V, 15 and 20 amp receptacles in offices, conference rooms, copy/print rooms, breakrooms, classrooms, and modular workstations and 25% of branch circuit feeders for modular furniture not shown on plans [C405.11]
- Requires new buildings with $\geq$ 25,000 ft^2 to be provided with an energy monitoring system [C405.12]

Other Equipment

- Requires that escalators be designed to recover more electrical energy than is consumed when resisting overspeed in the down direction [C405.9.2.1]

Additional Efficiency Requirements [C406]

- Requires at least 10 credits by adding additional energy efficient features to the building. The credits are determined from newly added tables arranged by occupancy classification [C406.1]
- Modifies more efficient HVAC option [C406.2]
- Modifies reduced lighting power option [C406.3]
- Modifies the basic renewable energy option [C406.5]
- Adds options for energy monitoring systems, if not otherwise required [C406.10]
- Adds options for fault detection system, if not otherwise required [C406.11]
- Adds options for efficient kitchen equipment [C406.12]

Total Building Performance

- Provides a new table that outlines the code requirements that must be met when using the Total Building Performance method [Table C407.2]

Commissioning

- Allows an "approved agency" or a qualified commissioning professional to perform the commissioning activities [C408.3.1]

Existing Buildings

- Reorganizes and clarifies requirements
- Clarifies that commissioning is required for new lighting and power systems [C502.3.6]

Comparison of Key (not all) 2009-2021 IECC Residential Prescriptive Requirements in OH Climate Zones

Requirements		2009 IECC -R	2012 IECC -R	2015 IECC -R	2018 IECC -R	2021 IECC -R (CZ map changed)
Fenestration U-factor (#)	CZ 4	0.35	0.35	0.35	0.32	0.30
	CZ 5	0.35	0.32	0.32	0.30	0.30
Skylight U-factor (#)	CZ 4	0.60	0.55	0.55	0.55	0.55
	CZ 5	0.60	0.55	0.55	0.55	0.55
Fenestration SHGC (#)	CZ 4	NR	0.40	0.40	0.40	0.40
	CZ 5	NR	NR	NR	NR	0.40
Ceiling R-value (#)	CZ 4	38	49	49	49	60
	CZ 5	38	49	49	49	60
Wood Frame Wall R-value (#)	CZ 4	13	20 or 13+5	20 or 13+5	20 or 13+5	20+5 or 13+10ci or 0+15
	CZ 5	20 or 13+5	20 or 13+5	20 or 13+5	20 or 13+5	20+5 or 13+10ci or 0+15
Mass Wall R-value (#)	CZ 4	5/10	8/13	8/13	8/13	8/13
	CZ 5	13/17	13/17	13/17	13/17	13/17
Floor R-value (#)	CZ 4	19	19	19	19	19
	CZ 5	30	30	30	30	30
Basement wall R-value (#)	CZ 4	10/13	10/13	10/13	10/13	10ci or 13
	CZ 5	10/13	15/19	15/19	15/19	15ci or 19 or 13+5ci
Slab R-value & depth (#)	CZ 4	10, 2 ft	10, 2 ft	10, 2 ft	10, 2 ft	10ci, 4 ft
	CZ 5	10, 2 ft	10, 2 ft	10, 2 ft	10, 2 ft	10ci, 4 ft
Crawl space wall R-value (#)	CZ 4	10/13	10/13	10/13	10/13	10ci or 13
	CZ 5	10/13	15/19	15/19	15/19	15ci or 19 or 13+5ci
Thermal envelope testing (*)		Visual inspection or Tested to ≤ 7ACH50	Tested to ≤ 3ACH50	Tested to ≤ 3ACH50	Tested to ≤ 3ACH50	Tested to ≤ 3 ACH50
Duct testing (*)		Post-construction: Total leakage: 12 cfm/100 sq. ft. Leakage to outdoors: 8 cfm/100 sq. ft. Rough-in: Total leakage: 6 cfm/100 sq. ft.	Post construction: Total leakage: 4 cfm/100 sq. ft. Rough-in: Total leakage: 4 cfm/100 sq. ft.	Post construction: Total leakage: 4 cfm/100 sq. ft. Rough-in: Total leakage: 4 cfm/100 sq. ft.	Post construction: Total leakage: 4 cfm/100 sq. ft. Rough-in: Total leakage: 4 cfm/100 sq. ft.	Post construction: Total leakage: 4 cfm/100 sq. ft. Rough-in: Total leakage: 4 cfm/100 sq. ft. Ducts within thermal envelope: Total leakage: 8 cfm/100 sq. ft.

Log homes	-	**References ICC 400 as an added requirement**	References ICC 400 as an added requirement	References ICC 400 as an alternative method	Exempt from IECC envelope reqts if complies w ICC 400
Room required for outside combustion air duct openings serving open combustion appliances (*)	-	-	Yes	Yes	Yes
Thermal envelope sealing (*)	Yes	Yes	Yes	Yes	Yes
Eave baffle (#)	-	**Yes**	Yes	Yes	Yes
Duct insulation (#)	Supply in attic: R-8 Other ducts: R-6 Unless inside building thermal envelope	Supply in attic: R-8 Other ducts: R-6 Unless inside building thermal envelope	Supply/return in attic: R-8 (≥3”) or R-6 (<3”) Other supply/return: R-6 (≥3”) or R-4.2 (<3”) Unless inside building thermal envelope	Supply/return in attic: R-8 (≥3”) or R-6 (<3”) Other supply/return: R-6 (≥3”) or R-4.2 (<3”) Unless inside building thermal envelope	Supply/return outside conditioned space: R-8 (≥3”) or R-6 (<3”)
Ducts buried within ceiling insulation	-	-	-	Allows and adds new requirements	Allows and includes requirements
Whole house mechanical ventilation (*)	-	Yes, when tested at ≤5 ACH50	Yes, when tested at ≤5 ACH50	Yes, when tested at ≤5 ACH50	Yes
Mechanical ventilation system testing	-	-	-	-	Yes
Framing cavities permitted to be used as ducts or plenums (*)	No, for supply Yes, for return	No	No	No	No
Mechanical piping insulation (*)	R-3	R-3	R-3	R-3	R-3
Hot water pipe insulation (#)	R-2 (if circulating)	R-3 (in several situations)	R-3 (in several situations)	R-3 (in several situations)	R-3 (in several situations)
High-Efficacy Lighting Equipment (*)	50%	75%	75%	90%	All
Lighting controls	-	-	-	-	Dimmer or occupancy sensors reqd for interior (except bathrooms, hallways, safety)
Additional Energy Efficiency	-	-	-	-	Per R401.2.5, one of the optional efficiency packages in R408 is required in addition to compliance with the base requirements of the prescriptive compliance path

Simulated Performance Alternative		Includes HVAC & service water heating	Includes HVAC & service water heating	Includes HVAC & service water heating	Includes HVAC, mech ventilation, & service water heating	Requires compliance with R405 + additional energy efficiency package or proposed design annual energy cost ≤.95(standard reference design annual energy cost)
Energy Rating Index (ERI) Compliance Alternative		-	-	Added new compliance path	Requires RESNET/ICC 301 software to set the ERI score	Requires compliance with R406 + 5% less than max ERI found in Table R406.5
Maximum ERI	CZ 4	-	-	54	62	54
	CZ 5	-	-	55	61	55

- Prescriptive requirements are noted with a (#)
- Mandatory requirements are noted with a (*)

Significant changes 2018-2021 IECC Residential Provisions

[Sources: IECC 2021]

- Changes climate zone maps resulting in 15 Ohio counties moving from Climate Zone 5 to Climate Zone 4 [Table R301.1]
- Requires that the energy compliance path be identified on the construction documents and the Energy Efficiency certificate [R103.2]
- Requires an insulation certificate identifying the installed R-value of insulation when the insulation of the manufacturer is not readily observable upon inspection [R303.1.2]
- Expands the information required on the Energy Efficiency Certificate that is required to be posted in an approved location [R401.3]
- Eliminates all "Mandatory" and "Prescriptive" labels and moves all code requirements into the respective compliance path section
- Clarifies the different compliance paths and adds additional efficiency requirements that are applicable regardless of which compliance path is chosen [R401.2]

Definitions [R202]

- Adds or modifies definitions of "Access (to)", "Cavity Insulation", "Demand Recirculation Water System", "Dimmer", "Dwelling Unit Enclosure Area", "Fenestration, Skylights", "High-Efficacy Light Sources", "Occupant Sensor Control", "On-site Renewable Energy", "Ready Access (to)", "Renewable Energy Certificate (REC)", "Renewable Energy Resources", "Thermal Distribution Efficiency (TDE)"

Building Envelope [R402]

- Establishes the U-factor as the primary insulation metric. R-value is an alternative.
- Increased envelope stringency in the prescriptive U-factor and R-value tables for windows, ceilings, and slab depth [Tables R402.1.2 and R402.1.3]
- Expands and clarifies the conditions that allow for an unconditioned basement [R402.2.8]
- Clarifies and adds insulation requirements for conditioned sunrooms and heated garages [R402.2.12]
- Adds envelope air leakage testing exceptions for heated attached and detached private garages [R402.4.1.2]
- Adds an exception that allows an alternative testing metric for attached single and multi-family dwelling units and smaller homes [R402.4.1.2]
- Electrical and communication outlet boxes installed in the thermal envelope are required to meet NEMA OS4 [R402.4.6]
- Adds an exception for storm shelter fenestration [R402.5]

Systems [R403]

- Clarified insulation requirements for ducts located outside conditioned space, in conditioned space, and buried [R403.3]
- Requires duct testing for all heating and cooling systems, regardless of whether the ducts are located inside conditioned space [R403.3.5 and R403.3.6]
- Requires controls for demand recirculation water systems, when installed [R403.5.1.1.1]
- Requires balanced heat or energy recovery ventilation for CZ 7-8 [R403.6.1]
- Requires fans to be tested and listed to HVI 916 and prescribes minimum fan efficacy [R403.6.2]
- Requires testing of all mechanical ventilation systems, except kitchen range hoods ducted to the outside and having 6 inch or larger ducts and not more than one elbow [R403.6.3]

Electrical Power and Lighting Systems [R404]

- Requires that all permanently installed residential lighting be high-efficacy lighting [R404.1]
- Regulates exterior lighting of low-rise Group R occupancies [R404.1.1 and R404.3]
- Adds interior lighting controls and some exceptions for permanently installed lighting fixtures [R404.2]

Total Building Performance [R405]

- Clarifies requirements by eliminating “mandatory” and “prescriptive” terms and providing a new table that outlines the code requirements that must be met when using the Total Building Performance method [Table R405.2]
- Simplifies the compliance report and clarifies the documentation and plan review requirements [R405.3.2]

Energy Rating Index (ERI) Compliance Alternative [R406]

- Clarifies requirements by eliminating “mandatory” and “prescriptive” terms and providing a new table that outlines the code requirements that must be met when using the ERI compliance path [Table R406.2]
- Recognizes and prescribes ERI path requirements when on-site renewables are present vs. not present [R406.3]
- Requires evidence that the Renewable Energy Certificate (REC) for the on-site renewables are owned by the homeowner [R406.7.3]
- Requires that the ERI value be at least 5% less than the ERI target in Table R406.5 [R401.2.5]

Tropical Climate Region Compliance Path [R407]

- Moves requirements from Section R401.2.1 to a new section.

Additional Efficiency Requirements [R408]

- Requires adding additional energy efficient features to the building for all compliance paths. [R408.1]
- Adds enhanced envelope performance option [R408.2.1]
- Adds more efficient HVAC option [R408.2.2]
- Adds reduced energy use in service water heating option [R408.2.3]
- Adds more efficient duct thermal distribution system option [R408.2.4]
- Adds improved air sealing and efficient ventilation system option [R408.2.5]

File Attachments for Item:

OB-2 OBC Draft rule review (Chapters 4, 12, 29, 30, 32, 33)

4101:1-4-01 Special detailed requirements based on occupancy and use.

Chapter 4 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

(A) Replace section 402.3 with the following:

402.3 Lease plan. Each *owner* of a *covered mall building* or of an *open mall building* is to provide both the building and fire departments with a lease plan, to the extent known, showing the location of each occupancy and its *exits* before the certificate of occupancy has been issued. As a condition of the certificate of occupancy, such plans are to be kept current by the *owner*. Modifications or *change of occupancy* or use from that shown on the lease plan are not to be made without prior approval of the *building official*.

(B) Replace section 403.5.5 with the following:

403.5.5 Luminous egress path markings. When provided, luminous egress path markings are to be installed in accordance with Section 1025.

(C) Modify section 405.1 as follows:

The first exception should read "Deleted."

(D) Modify section 406.6.2 as follows:

The exception should read "Deleted."

(E) Replace section 406.7 with the following:

406.7 Motor fuel-dispensing facilities. *Buildings* and *canopies* housing motor fuel-dispensing operations are to comply with this code (Sections 406.2 and 406.7) and chapter 5 of the mechanical code. The installation of the fuel tanks, the *dispensing* equipment, and the operational requirements at a motor fuel-dispensing facility are to be in accordance with chapter 23 of the fire code as enforced by the fire official.

(F) Replace section 407.5 with the following:

407.5 Smoke barriers. *Smoke barriers* are to be provided to subdivide every *story* used by inpatients for treatment or sleeping, regardless of occupant load, into not fewer than two *smoke compartments. Smoke barriers* are to be provided to subdivide other *stories* containing a health care occupancy with an *occupant load* of 50 or more persons, regardless of use, into not fewer than two *smoke compartments*.

(G) Modify section 411.2 as follows:

Change the word "Exception" to "Exceptions", number the first exception as exception 1, and add a new exception 2 which reads:

2. Automatic fire sprinklers are not required where the total floor area of a temporary *special amusement area* in an *existing building* is less than 5000 square feet (93 m^2), the travel distance from any point to an *exit* is less than 50 feet (15,240 mm), and where, in the opinion of the *building official*, additional means have been provided to ensure an equivalent level of safety for all occupants during the hours that the *special amusement area* is operated and occupied. Such additional means may include, but not be limited to: fire watches; reduced *occupant loads*; additional *means of egress*; additional detection; and portable fire extinguishers.

(H) Replace section 411.5 with the following:

411.5 Puzzle room exiting. Deleted.

(I) Replace section 414.5 with the following:

414.5 Inside storage, dispensing and use. Buildings or structures used for the inside storage, *dispensing* and use of *hazardous materials* are to be provided with features as required in Sections 414.2, 414.3, 414.5.1 through 414.5.3 of this code, Section 502 of the mechanical code, and chapter 50 of the fire code. These building features are to be enforced by the *building official*. The design, installation, *dispensing*, use, and storage of *hazardous materials* within a building is regulated by the fire code as enforced by the fire official. The *owner* or owner's representative is required to notify the *building official* in accordance with Sections 106.1.1 (item #16), 106.1.2 (item #7), and 414.1.3.

Exception: The design, installation, and storage of *hazardous materials*, flammable or combustible liquids or gases and the associated piping connected to and supplying *building service equipment* or connected to and supplying emergency or standby generators that serve *building service equipment* are to be enforced by the *building official.*

(J) Replace section 414.6 with the following:

414.6 Outdoor storage, dispensing and use. The outdoor storage, *dispensing* and use of *hazardous materials,* flammable or combustible liquids or gases supplying and piped to *building service equipment* are to be enforced by the *building official*. The outdoor storage, *dispensing*, and use of all other *hazardous materials* is regulated by the fire code as enforced by the fire official.

(K) Modify section 415.6.4 to add a new exception that reads as follows:

Exception: All buildings used in the manufacturing, storage, or sale of *fireworks* are to be located in accordance with the fire code.

(L) Modify the exception to section 415.6.4.1 to read as follows:

Exception: Deleted.

(M) Replace section 415.9.1 with the following:

415.9.1 Flammable and combustible liquids. Buildings of Group H-2 and H-3 occupancies used for the storage, handling, processing and transporting of flammable and combustible liquids are to be protected in accordance with Sections 415.9.1.1 through 415.9.1.9, the mechanical code and the fire code. The storage, handling, and processing of the flammable and combustible liquids are to be in accordance with the fire code and as enforced by the fire official.

Exception: The design, installation, registration, and inspection of regulated underground storage tanks are to be in accordance with the fire code and rules adopted by the state fire marshal and as enforced by the fire official, in accordance with sections 3737.87 to 3737.89 of the Revised Code.

(N) Replace section 415.10.1 with the following:

415.10.1 Flammable and combustible liquids. Buildings of Group H-3 occupancies used for the storage, handling, processing and transporting of flammable and combustible liquids are to be protected in accordance with Section 415.9.1.

(O) Add new section 415.10.5 to read as follows:

415.10.5 Licensed fireworks facilities. In addition to other applicable provisions of this code, all buildings and structures where *fireworks* are manufactured, processed, packaged, stored, displayed, or sold are to comply with the fire code chapter 56. In the event of conflicts between this code and the fire code, the requirements of the fire code will prevail.

(P) Replace section 415.11.7 with the following:

415.11.7 Piping and tubing. Hazardous production materials piping and tubing are to comply with this section and the applicable ASME code, as determined by the *registered design professional.*

In accordance with section 4104.42 of the Revised Code, the *owner* is responsible for ensuring compliance with the ASME codes. The types and quantities of *hazardous materials* proposed to be used in the facility are to be identified on the *construction documents* to the extent necessary to enable the *building official* to determine compliance with this code and the fire code. The *building official* is not authorized to request or review design calculations, material specifications or *construction documents* for the piping system or to ascertain compliance with the applicable ASME code.

(Q) Modify section 423.4 as follows:

Change the phrase "rescue, ambulance" to "emergency medical service"

(R) Add new section 423.4.1 to read as follows:

423.4.1 Required occupant capacity. The minimum required occupant capacity of storm shelters serving 911 call stations, emergency operation centers and fire, emergency medical service, and police stations is the design occupant load of only the *sleeping rooms*, meeting rooms, and offices.

(S) Replace section 424.5 with the following and keep section 424.5.1 as published:

424.5 Area limits. Deleted.

(T) Replace section 426.1 with the following:

426.1 General. The provisions of Sections 426.1.1 through 426.1.7 applies to buildings in which materials that produce *combustible dusts* are stored or handled. Buildings that store or handle *combustible dusts* are to comply with the applicable provisions of NFPA 61, NFPA 85, NFPA 120, NFPA 484, NFPA 652, NFPA 654, NFPA 655, NFPA 664 and the fire code.

4101:1-12-01 Interior environment.

Chapter 12 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

(A) Modify section 1210.3.1 to add the following sentence after the first sentence and before the exceptions:

Compartments of multiple-user facilities designed to serve all genders are to comply with the Type A privacy rating requirements of IAPMO/ANSI/CAN Z124.10.

4101:1-29-01 Plumbing systems.

Chapter 29 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

(A) Replace section 2901.1 to read as follows:

2901.1 Scope. The provisions of this chapter and the plumbing code are to govern the design, construction, erection and installation of plumbing components, appliances, equipment and systems used in buildings and structures covered by this code. Toilet and bathing rooms are to be constructed in accordance with Section 1210. Chapter 34 and the plumbing code govern the alteration, repair, relocation, replacement and addition of plumbing components, appliances, equipment and systems.

(B) Modify section 2902.1 to add two sentences and an exception at the end of the section to read as follows:

When the actual *occupant load* will be significantly different than that determined by Section 1004, the *building official* may establish an alternative basis for determining the *occupant load*. This alternative basis shall be included in the special stipulations and conditions section of the certificate of occupancy issued for that structure pursuant to Section 111.

Exception: Facilities are not required in buildings less than 100 square feet in area if fixtures are available within 500 feet of the building.

(C) Modify the first sentence of section 2902.2 exception 6 to read as follows:

6. In other than Group E occupancies, separate facilities are not required where rooms having both water closets and lavatory fixtures are designed for use by both sexes and privacy for water closets is provided in accordance with Section 405.3.4 of the plumbing code.

(D) Modify section 2902.3 exception 1 to read as follows:

1. Parking garages.

(E) Replace section 2902.3.1 to read as follows:

2902.3.1 Access. The route to the public toilet facilities required by Section 2902.3 is not to pass through kitchens, storage rooms or closets or similar spaces

not available to the public. Access to the required facilities is to be from within the building or from the exterior of the building. The public is to have access to the required toilet facilities at all times that the building is occupied. The building owner is permitted to control access to the toilet facilities. Where such access is controlled, a sign is to be posted indicating how access is to be obtained.

(F) Replace section 2902.4.1 with the following:

2902.4.1 Directional signage. *Deleted.*

(G) Modify section 2903.1.4 to add the following sentence after the first sentence and before the exceptions:

Compartments of multiple-user facilities designed to serve all genders are to comply with the Type A privacy rating requirements of IAPMO/ANSI/CAN Z124.10.

4101:1-30-01 Elevators and conveying systems.

Chapter 30 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

(A) Replace section 3001.1 with the following:

3001.1 Scope. This chapter and Chapter 4101:5 of the Administrative Code govern the design, construction, installation, *alteration* and *repair* of elevators, escalators, vertical and inclined wheelchair lifts, dumbwaiters, moving walks, stair lifts, and belt manlifts, including the elevator hoistway enclosures and lobbies, the elevator machine rooms/control rooms/control spaces/machinery spaces, and the emergency systems that interface with them. This chapter also governs the enclosure and related building and system requirements for conveyors and conveying systems and their components, but does not regulate the design, construction, or installation of material-handling conveyors within the scope of ASME B20.1.

(B) Replace section 3001.3 with the following:

3001.3 Referenced standards. Except as otherwise provided for in this code, the design, construction, installation, *alteration*, *repair* and maintenance of elevators, escalators, vertical and inclined wheelchair lifts, dumbwaiters, moving walks, stair lifts, belt manlifts and their components are to conform to this chapter, the requirements found in Chapter 4101:5 of the Administrative Code, the applicable standard specified in Table 3001.3 and ASCE 24 for construction in flood hazard areas established in Section 1612.3.

TABLE 3001.3
ELEVATORS AND CONVEYING SYSTEMS AND COMPONENTS

TYPE	STANDARD
Belt manlifts	ASME A90.1
Elevators, escalators, dumbwaiters, moving walks	ASME A17.1/CSA B44, ASME A17.7/CSA B44.7
Platform lifts, stairway chairlifts, wheelchair lifts	ASME A18.1

(C) Replace section 3001.4 with the following:

3001.4 Accessibility. All new passenger elevators, escalators, and vertical and inclined wheelchair lifts required to be accessible or to serve as part of an accessible means of egress are to comply with Sections 1009 and 1110.8.

(D) Replace section 3004.3 with the following:

3004.3 Conveyors. Buildings containing material-handling conveyors and conveying systems are to be provided with safety features as required in Sections 3004.3.1 and 3004.3.2.

(E) Add new section 3005.4.1 that reads as follows:

3005.4.1 Openings in machine room floors. Holes in the machine room floors for the passage of ropes, cables or other moving elevator equipment are to be limited as not to provide greater than 2 inches (51 mm) of clearance on all sides.

(F) Replace section 3005.5 with the following:

3005.5 Shunt trip. Where elevator hoistways, elevator machine rooms, control rooms and control spaces containing elevator control equipment are protected with automatic sprinklers and those sprinklers could affect the safe operation of the elevator equipment, a means installed in accordance with Section 21.4 of NFPA 72 is to be provided to automatically disconnect the main line power supply to the affected elevator prior to the application of water. This means is not to be self-resetting. The activation of automatic sprinklers outside the hoistway, machine room, machinery space, control room or control space or the activation of automatic sprinklers that would not affect the safe operation of the elevator equipment ~~shall~~ are not to disconnect the main line power supply.

4101:1-32-01 Encroachments into the public right-of-way

Chapter 32 of the International Building Code, 2021 edition, as adopted by reference and modified in the OBC Section 101.1, is further modified as follows:

No changes.

4101:1-33-01 Safeguards during construction.

Chapter 33 of the International Building Code, 2021 edition, as adopted by reference and modified in the OBC Section 101.1, is further modified as follows:

(A) Replace Section 3301.2.1 to read:
3301.2.1 Structural and construction loads. Deleted.

(B) Replace Section 3302 in its entirety with the following:
SECTION 3302 CONSTRUCTION SAFEGUARDS - Delete this section and all subsections.

[Note: staff review 11/30 – delete if adopt IEBC – keep if don't]

(C) Replace Section 3303 in its entirety with the following:
SECTION 3303 DEMOLITION – Delete this section and all subsections.

[Note: staff review 11/30 – delete if adopt IEBC – move to chapter 34 if don't]

(D) Replace Section 3305 in its entirety with the following:
SECTION 3305 SANITARY - Delete this section and all subsections.

(E) Replace Section 3308 in its entirety with the following:
SECTION 3308 TEMPORARY USE OF STREETS, ALLEYS AND PUBLIC PROPERTY - Delete this section and all subsections.

(F) Replace Section 3314 in its entirety with the following:
SECTION 3314 FIRE WATCH DURING CONSTRUCTON -
Delete this section and all subsections.

File Attachments for Item:

NB-1 OBC Chapter 34 vs. IEBC

2021 International Existing Buildings Code (IEBC) Compliance Methods (July 2022)

(The IEBC is referenced from IBC Sections 101.4.7, 102.6, 116.5, 201.3, T504.4, 2701.1, 2801.1, & 3113.1.1)

2021 IEBC
(Scope: repair, alteration, change of occupancy, addition to, and relocation of existing buildings)
Section 301.1

Repairs
Section 301.2 + Sections 302-309
→ **IEBC Chapter 4** (Similar to OBC Section 3405)

Alteration / Addition / Change of Occupancy
Section 301.3 + Sections 302-309
- Prescriptive Compliance Method — Section 301.3.1 (Similar to OBC Sections 3403-3409) → **IEBC Chapter 5**
- Work Area Compliance Method — Section 301.3.2 (New to OBC) → **IEBC Chapters 6-12**
- Performance Compliance Method — Section 301.3.3 (Similar to OBC Section 3412) → **IEBC Chapter 13**

Relocated Buildings
Section 301.3 + Sections 302-309
→ **IEBC Chapter 14** (Similar to OBC Section 3410)

IEBC Chapter 5
- Additions — IEBC Section 502 (Similar to OBC Section 3403)
- Alterations — IEBC Section 503 (Similar to OBC Section 3404)
- Fire Escapes — IEBC Section 504 (Similar to OBC Section 3406)
- Windows/ Emergency Escape Openings — IEBC Section 505 (Similar to OBC Section 3407)
- Change of Occupancy — IEBC Section 506 (Similar to OBC Section 3408)
- Historic Buildings — IEBC Section 507 (Similar to OBC Section 3409)

IEBC Chapters 6-12
Classification of Work
- Alteration – Level 1 → IEBC Chapter 7
- Alteration – Level 2 → IEBC Chapter 8
- Alteration – Level 3 → IEBC Chapter 9
- Change of Occupancy → IEBC Chapter 10
- Additions → IEBC Chapter 11
- Historic Buildings → IEBC Chapter 12

IEBC Sections 302-309
Applies to all existing building work
- General — Section 302
- Storm Shelters — Section 303
- Structural Design Loads — Section 304
- In-Situ Load Tests — Section 305
- Accessibility — Section 306
- Smoke Alarms — Section 307
- Carbon Monoxide Alarms — Section 308
- Exterior Wall Coverings — Section 309

Cross reference guide - 2017 OBC Chapter 34 to 2021 IEBC

2017 OBC Ch 34 Section	Title	2021 IEBC Section	Title	Notes	Retroactive provisions?	Cost impact?
3401	General					
3401.1	Scope	101.2	Scope			
3401.1.1	Compliance	301.1	Applicability			
3401.1.1.1	Energy Code Compliance					
3401.1.2	Occupancy and Use	302.5	Occupancy and use			
3401.1.3	General requirements	302				
3401.2	Maintenance	N/A		Ohio change needed		
3401.3	Building materials and systems					
3401.3.1	Existing materials	302.3	Existing materials			
3401.3.2	New and replacement materials	302.4	New and replacement materials			
3401.3.3	Used materials and products	N/A		Ohio change needed		
3401.3.4	Renovation, repair and paint certification requirements and asbestos abatement					
3401.3.5	Fire Resistance determination for existing assemblies and materials					
3401.4	Compliance with Seismic Forces					
3401.4.1	Existing seismic force-resisting systems					
3401.4.2	Seismic evaluation and design procedures					
3401.4.3	Compliance with reduced seismic forces					
3401.5	Dangerous conditions					
3401.6	Concrete evaluation and design procedures					
3402	Definitions					
3402.1	Definitions list	Chapter 2				
3403	Additions					
3403.1	General	502.1	General			
3403.1.1	Additions to buildings of Group R and I	N/A				
3403.1.2	Additions to buildings other than R and I occupancies	N/A				
3403.2	Flood hazard areas	502.3				
3403.3	Existing structural elements carrying gravity load	502.4				
3403.3.1	Design Live Load	304.1				
3403.3.2	Snow Load	304.2				
3403.4	Existing structural elements carrying lateral load	502.5				
3403.5	Smoke alarms	307	Smoke alarms			
3403.5.1	Power source	N/A				
3403.5.2	Interconnection	N/A				
3404	Alterations					
3404.1	General	503.1				

3404.1.1	Alterations to systems, components, and materials					
3404.2	Flood hazard areas	503.2				
3404.3	Existing structural elements carrying gravity load.	503.3				
3404.3.1	Design load.	304.1				
3404.4	Existing structural elements carrying lateral load	503.4				
3404.5	Voluntary seismic improvements	503.13				
3404.6	Smoke alarms	307	Smoke alarms			
3404.6.1	Power source	N/A				
3404.6.2	Interconnection	N/A				
3405	Repairs					
3405.1	General	401	General			
3405.2.1	Evaluation	405.2.3.1				
3405.2.2	Extent of repair for compliant buildings	405.2.3.2	Extent of repair for compliant buildings			
3405.2.3	Extent of repair for noncompliant buildings	405.2.3.3	Extent of repair for noncompliant buildings			
3405.3	Substantial structural damage to gravity load-carrying components	405.2.4	Substantial structural damage to gravity load-carrying components			
3405.3.1	Lateral force-resisting elements	405.2.4.1	Lateral force-resisting elements			
3405.4	Less than substantial structural damage	405.2.1	Repairs for less than substantial structural damage			
3405.5	Flood hazard areas	401.3 & 405.2.6	Flood hazard areas			
3406	Fire Escapes					
3406.1	Where permitted	504.1	Where permitted			
		504.1.1	New buildings			
3406.1.1	Existing fire escapes	504.1.2	Existing fire escapes			
3406.1.2	New fire escapes	504.1.3	New fire escapes			
3406.1.3	Limitations	504.1.4	Limitations			
3406.2	Location	504.2	Location			
3406.3	Construction	504.3	Construction			
3406.4	Dimensions	504.4	Dimensions			
3406.5	Opening protectives	504.5	Opening protectives			
3407	Glass Replacement					
3407.1	Conformance					
3408	Change of Occupancy					
3408.1	Conformance	506.1				
3408.2	Certificate of Occupancy	506.2	Certificate of occupancy			
3408.3	Stairways	506.3	Stairways			
3408.4	Snow, wind, and seismic design	506.5	Structural			
3409	Historic Buildings					
3409.1	Historic buildings	507				
3410	Moved structures	Relocated Buildings				
3410.1	Conformance	Chapter 14 1401.2				

		1402.7				
3411	Accessibility for Existing Buildings					
3411.1	Scope	306.1	Scope			
		306.2	Design			
3411.2	Maintenance of facilities	306.3	Maintenance and repair			
		306.3.1	Prohibited reduction in accessibility			
3411.3	Extent of application	306.4	Extent of application			
3411.4	Change of occupancy	306.5	Change of occupancy			
3411.4.1	Partial change of occupancy					
3411.4.2	Complete change of occupancy					
3411.5	Additions	306.6	Additions			
3411.6	Alterations	306.7	Alterations			
3411.7	Alterations affecting an area containing a primary function	306.7.1	Alterations affecting an area containing a primary function			
3411.7.1	Disproportionate costs and alternative compliance					
3411.8	Scoping for alterations					
		306.7.2	Accessible means of egress			
		306.7.3	Alteration of Type A units			
		306.7.4	Type B units			
3411.8.1	Entrances	306.7.5	Entrances			
		306.7.6	Accessible route			
3411.8.2	Elevators	306.7.7	Elevators			
3411.8.3	Platform lifts	306.7.8	Platform lifts			
3411.8.4	Stairs and escalators in existing buildings	306.7.9	Stairways and escalators in existing buildings			
3411.8.5	Ramps					
3411.8.6	Performance areas					
		306.7.10	Determination of number of units			
3411.8.7	Accessible dwelling or sleeping units	306.7.10.1	Accessible dwelling or sleeping units			
3411.8.8	Type A dwelling or sleeping units	306.7.10.2	Type A dwelling or sleeping units			
3411.8.9	Type B dwelling or sleeping units	306.7.10.3	Type B dwelling or sleeping units			
3411.8.10	Jury boxes and witness stands					
3411.8.11	Toilet rooms	306.7.11	Toilet rooms			
3411.8.12	Dressing, fitting and locker rooms	306.7.14	Dressing, fitting and locker rooms			
3411.8.13	Fuel dispensers					
3411.8.14	Thresholds					
3411.9	Historic buildings	306.7.16	Historic structures			
3411.9.1	Site arrival points	306.7.16.1	Site arrival points			
3411.9.2	Multilevel buildings and facilities	306.7.16.2	Multiple-level buildings and facilities			
3411.9.3	Entrances	306.7.16.3	Entrances			
3411.9.4	Toilet and bathing facilities	306.7.16.4	Toilet facilities			
		306.7.16.5	Bathing facilities			
		306.7.16.6	Type A units			
		306.7.16.7	Type B units			
3412	Compliance Alternatives	CH 13	PERFORMANCE COMPLIANCE ALTERNATIVES			

3412.1	Compliance	1301.1	Compliance	We currently only allow this compliance method for buildings originally built before 1979		
3412.2	Applicability	1301.2	Applicability	2021 IEBC: Clarifies that Group U undergoing a change of occupancy can use this compliance path		
3412.2.1	Change in occupancy	1301.2.1	Change in occupancy			
3412.2.2	Partial change in occupancy	1301.2.2	Partial change in occupancy			
3412.2.3	Additions	1301.2.3	Additions			
3412.2.3.1	Additions to buildings of Groups R and I			Ohio change needed		
3412.2.3.2	Additions to buildings of other than R and I occupancies			Ohio change needed		
3412.2.4	Alterations and repairs	1301.2.4	Alterations			
		1301.2.5	Escalators			
		1301.2.6	Plumbing fixtures	2021 IEBC: Added new language		
3412.2.4.1	Flood hazard areas	1301.3.3	Compliance with flood hazard provisions			
3412.2.5	Accessibility requirements	306				
3412.3	Acceptance	1301.3	Acceptance			
3412.3.1	Hazards	1301.3.1	Hazards			
3412.4	Investigation and evaluation	1301.4	Investigation and evaluation			
3412.4.1	Structural analysis	1301.4.1	Structural analysis			
3412.4.2	Submittal	1301.4.2	Submittal			
3412.4.3	Determination of compliance	1301.4.3	Determination of compliance			
3412.5	Evaluation	1301.5	Evaluation			
3412.5.1	Fire Safety	1301.5.1	Fire Safety			
3412.5.2	Means of Egress	1301.5.2	Means of Egress			
3412.5.3	General Safety	1301.5.3	General Safety			
3412.6	Evaluation process	1301.6	Evaluation process			
3412.6.1	Building height and number of stories	1301.6.1	Building height and number of stories			
3412.6.1.1	Height formula	1301.6.1.1	Height formula			
3412.6.2	Building area	1301.6.2	Building area			
3412.6.2.1	Allowable area formula	1301.6.2.1	Allowable area formula			
		1301.6.2.2	Area formula			
3412.6.3	Compartmentation	1301.6.3	Compartmentation			
		1301.6.3.1	Categories	2021 IEBC: Added compartment separation categories		
3412.6.3.1	Wall construction	1301.6.3.2	Wall construction			
3412.6.3.2	Floor/ceiling construction	1301.6.3.3	Floor/ceiling construction			
3412.6.4	Tenant and dwelling unit separations	1301.6.4	Tenant and dwelling unit separations			
3412.6.4.1	Categories	1301.6.4.1	Categories			
3412.6.5	Corridor walls	1301.6.5	Corridor walls			
3412.6.5.1	Categories	1301.6.5.1	Categories	2021 IEBC: Category d recognizes that unrated corridors are permitted per IBC 1020		
3412.6.6	Vertical openings	1301.6.6	Vertical openings			
3412.6.6.1	Vertical opening formula	1301.6.6.1	Vertical opening formula			
3412.7	HVAC	1301.6.7	HVAC	2021 IEBC: Added systems with no ductwork to category e		
3412.7.1	Categories	1301.6.7.1	Categories			
3412.6.8	Automatic fire detection	1301.6.8	Automatic fire detection	Should be titled “automatic smoke detection”		
3412.6.8.1	Categories	1301.6.8.1	Categories			

3412.6.9	Fire alarm systems	1301.6.9	Fire alarm systems			
3412.6.9.1	Categories	1301.6.9.1	Categories			
3412.6.10	Smoke control systems	1301.6.10	Smoke control			
3412.6.10.1	Categories	1301.6.10.1	Categories			
3412.6.11	Means of egress capacity and number	1301.6.11	Means of egress capacity and number			
3412.6.11.1	Categories	1301.6.11.1	Categories			
3412.6.12	Dead ends	1301.6.12	Dead ends			
3412.6.12.1	Categories	1301.6.12.1	Categories			
3412.6.13	Maximum exit access travel distance	1301.6.13	Maximum exit access travel distance			
3412.6.14	Elevator control	1301.6.14	Elevator control			
3412.6.14.1	Categories	1301.6.14.1	Categories	References IFC for emergency recall and in-car operation of the elevator		
3412.6.15	Means of egress emergency lighting	1301.6.15	Means of egress emergency lighting			
3412.6.15.1	Categories	1301.6.15.1	Categories			
3412.6.16	Mixed occupancies	1301.6.16	Mixed occupancies			
3412.6.16.1	Categories	1301.6.16.1	Categories			
3412.6.17	Automatic sprinklers	1301.6.17	Automatic sprinklers	2021 IEBC: Clarifies that sprinkler that control (not just suppress) fire are also included in the analysis. Expands to recognize all sprinkler systems (13, 13D, and 13R)		
3412.6.17.1	Categories	1301.6.17.1	Categories	2021 IEBC: Clarified wording within category descriptions		
3412.6.18	Standpipes	1301.6.18	Standpipes			
3412.6.18.1	Categories	1301.6.18.1	Standpipe categories			
3412.6.19	Incidental uses	1301.6.19	Incidental uses			
3412.6.20	Smoke compartmentation	1301.6.20	Smoke compartmentation	2021 IEBC: Changes category b for Group I-2 from NP to -10		
3412.6.20.1	Categories	1301.6.20.1	Categories	2021 IEBC: Clarified wording within category descriptions.		
3412.6.21	Patient ability, concentration, smoke compartment location and ratio to attendant	1301.6.21	Care recipient ability, concentration, smoke compartment location and ratio to attendant	2021 IEBC: Changed “patient” to “care recipient”		
3412.6.21.1	Patient ability for self -preservation	1301.6.21.1	Care recipient ability for self-preservation	2021 IEBC: Changed “patient” to “care recipient” Corrected Table values		
3412.6.21.1.1	Categories	1301.6.21.1.1	Categories	2021 IEBC: Changed “patient” to “care recipient”		
3412.6.21.2	Patient concentration	1301.6.21.2	Care recipient concentration	2021 IEBC: Changed “patient” to “care recipient”. Corrected Table values		
3412.6.21.2.1	Categories	1301.6.21.2.1	Categories	2021 IEBC: Changed “patient” to “care recipient”		
3412.6.21.3	Attendant to patient ratio	1301.6.21.3	Attendant-to-care recipients ratio	2021 IEBC: Changed “patient” to “care recipient” Corrected Table values		
		1301.6.21.3.1	Categories	2021 IEBC: Changed “patient” to “care recipient” Corrected Table values		
3412.7	Building score	1301.7	Building score	2021 IEBC: Changed “patient” to “care recipient”		
3412.8	Safety scores	1301.8	Safety scores	Mandatory passing scores in Table 1301.8 increased significantly from current OBC		
3412.9	Evaluation of building safety	1301.9	Evaluation of building safety			
3412.9.1	Mixed occupancies	1301.9.1	Mixed occupancies	2021 IEBC: Added clarification/exception for areas of building separated IAW 508 and no alterations or change of occupancy are proposed		

Cross reference guide – 2021 IEBC to 2017 OBC Ch 34

2021 IEBC Section	Title	2017 OBC Section	Title	Notes	Retroactive provisions?	Cost impact?
Ch 1	Scope & Administration					
101.2	Scope					
Ch 2	Definitions					
Ch 3	Provisions for all Compliance Methods					
301	ADMINISTRATION					
301.1	Applicability			New language that requires compliance with 302-309	Maybe	
301.1.1	Bleachers, grandstands and folding and telescopic seating			New language in the 2021 IEBC		
301.2	Repairs	3405				
301.3	Alteration, addition or change of occupancy					
301.3.1	Prescriptive compliance method					
301.3.2	Work area compliance method					
301.3.3	Performance compliance method					
301.4	Relocated buildings					
302	GENERAL PROVISIONS		New and replacement materials			
302.1	Dangerous conditions	3401.5	Dangerous conditions			
302.2	Additional codes			Ohio change needed to prohibit retroactive enforcement	Maybe	
302.2.1	Additional codes in health care			New language in the 2021 IEBC	Maybe	
302.3	Existing materials	3401.3.1	Existing materials			
302.4	New and replacement materials	3401.3.2	New and replacement materials			
302.4.1	New structural members and connections					
302.5	Occupancy and use	3401.1.2	Occupancy and use			

303	STORM SHELTERS					
303.1	Storm shelters					
303.2	Addition to a Group E occupancy					
303.2.1	Required occupant capacity					
303.2.2	Occupancy classification					
304	STRUCTURAL DESIGN LOADS AND EVALUATION AND DESIGN PROCEDURES					
304.1	Live loads	3403.3.1 3404.3.1	Design live load			
304.2	Snow loads on adjacent buildings	3403.3.2	Snow load			
304.3	Seismic evaluation and design procedures	3401.4.2	Seismic evaluation and design procedures			
304.3.1	Compliance with full seismic forces	3401.4.1	Existing seismic force-resisting systems			
304.3.2	Compliance with reduced seismic forces	3401.4.3	Compliance with reduced seismic forces			
305	IN-SITU LOAD TESTS					
305.1	General					
306	ACCESSIBILITY FOR EXISTING BUILDINGS					
306.1	Scope	3411.1	Scope			
306.2	Design					
306.3	Maintenance and repair	3411.2	Maintenance of facilities			
306.3.1	Prohibited reduction in accessibility	3411.3	Extent of application			
306.4	Extent of application	3411.3	Extent of application			
306.5	Change of Occupancy	3411.4	Change of Occupancy			
306.6	Additions	3411.5	Additions			
306.7	Alterations	3411.6	Alterations			
306.7.1	Alterations affecting an area containing a primary function	3411.7	Alterations affecting an area containing a primary function			
306.7.2	Accessible means of egress					

306.7.3	Alteration of Type A units					
306.7.4	Type B units					
306.7.5	Entrances	3411.8.1	Entrances			
306.7.6	Accessible route					
306.7.7	Elevators	3411.8.2	Elevators			
306.7.8	Platform lifts	3411.8.3	Platform lifts			
306.7.9	Stairways and escalators in existing buildings	3411.8.4	Stairways and escalators in existing buildings			
306.7.10	Determination of number of units					
306.7.10.1	Accessible dwelling or sleeping units	3411.8.7	Accessible dwelling or sleeping units			
306.7.10.2	Type A dwelling or sleeping units	3411.8.8	Type A dwelling or sleeping units			
306.7.10.3	Type B dwelling or sleeping units	3411.8.9	Type B dwelling or sleeping units			
306.7.11	Toilet rooms	3411.8.11	Toilet rooms			
306.7.12	Bathing rooms					
306.7.13	Additional toilet and bathing facilities					
306.7.14	Dressing, fitting, and locker rooms	3411.8.12	Dressing, fitting, and locker rooms			
306.7.15	Amusement rides					
306.7.16	Historic structures	3411.9	Historic structures			
306.7.16.1	Site arrival points	3411.9.1	Site arrival points			
306.7.16.2	Multiple-level buildings and facilities	3411.9.2	Multiple-level buildings and facilities			
306.7.16.3	Entrances	3411.9.3	Entrances			
306.7.16.4	Toilet facilities	3411.9.4	Toilet and bathing facilities			
306.7.16.5	Bathing facilities	3411.9.4	Toilet and bathing facilities			
306.7.16.6	Type A units					
306.7.16.7	Type B units					
307	SMOKE ALARMS			2021 IEBC: New language		
307.1	Smoke alarms	3403.5 3404.6	Smoke alarms			
308	CARBON MONOXIDE DETECTION			2021 IEBC: New language		

308.1	Carbon monoxide detection					
309	ADDITIONS AND REPLACMENTS OF EXTERIOR WALL COVERINGS AND EXTERIOR WALL ENVELOPES			2021 IEBC: New language in response to the 2017 Grenfell tower fire in the UK		
309.1	General					
309.2	Additions and replacements					
CH 4	REPAIRS	3405	REPAIRS			
401	GENERAL					
401.1	Scope					
401.1.1	Bleachers, grandstands, and folding and telescopic seating			2021 IEBC: New language		
401.2	Compliance					
401.3	Flood hazard areas	3405.5	Flood hazard areas			
402	BUILDING ELEMENTS AND MATERIALS					
402.1	Glazing in hazardous locations	3407	GLASS REPLACEMENT			
403	FIRE PROTECTION					
403.1	General					
404	MEANS OF EGRESS					
404.1	General					
405	STRUCTURAL					
405.1	General					
405.2	Repairs to damaged buildings					
405.2.1	Repairs for less than substantial structural damage	3405.4	Less than substantial structural damage			
405.2.1.1	Snow damage	3405.3	Substantial structural damage to gravity load-carrying components			
405.2.2	Disproportionate earthquake damage					
405.2.3	Substantial structural damage to vertical elements of the lateral force-resisting system	3405.2	Substantial structural damage to vertical elements of the lateral force-resisting system			

405.2.3.1	Evaluation	3405.2.1	Evaluation			
405.2.3.2	Extent of repair for compliant buildings	3405.2.2	Extent of repair for compliant buildings			
405.2.3.3	Extent of repair for noncompliant buildings	3405.2.3	Extent of repair for noncompliant buildings			
405.2.4	Substantial structural damage to gravity load-carrying components	3405.3	Substantial structural damage to gravity load-carrying components			
405.2.4.1	Lateral force-resisting elements	3405.3.1				
405.2.5	Substantial structural damage to snow load-carrying components.	3405.3				
405.2.6	Flood hazard areas	3405.5	Flood hazard areas			
406	ELECTRICAL					
406.1	Material					
406.1.1	Receptacles					
406.1.2	Plug fuses					
406.1.3	Nongrounding-type receptacles					
406.1.4	Health care facilities			2021 IEBC: New language		
406.1.5	Grounding of appliances					
407	MECHANICAL					
407.1	General					
407.2	Mechanical draft systems for manually fired appliances and fireplaces					
408	PLUMBING					
408.1	Materials					
408.2	Water closet replacement					
408.3	Health care facilities			2021 IEBC: New language		
CH 5	PRESCRIPTIVE COMPLIANCE METHOD					
501	GENERAL					
501.1	Scope					
501.1.1	Compliance with other methods					

501.2	Fire-resistance ratings					
501.3	Health care facilities			2021 IEBC: New language		
502	ADDITIONS					
502.1	General					
502.2	Disproportionate earthquake damage					
502.3	Flood hazard areas					
502.4	Existing structural elements carrying gravity load					
502.5	Existing structural elements carrying lateral load					
502.6	Enhanced classroom acoustics			2021 IEBC: New language		
503	ALTERATIONS					
503.1	General					
503.2	Flood hazard areas					
503.3	Existing structural elements carrying gravity load					
503.4	Existing structural elements carrying lateral load			2021 IEBC: Adds a new exception for the addition of rooftop mechanical equipment meeting certain criteria		
503.5	Seismic Design Category F					
503.6	Bracing for unreinforced masonry parapets on reroofing					
503.7	Anchorage for concrete and reinforced masonry walls					
503.8	Anchorage for unreinforced masonry walls in major alterations					
503.9	Bracing for unreinforced masonry parapets in major alterations					
503.10	Anchorage of unreinforced masonry partitions in major alterations					
503.11	Substantial structural alteration					

503.12	Roof diaphragms resisting wind loads in high-wind regions			2021 IEBC: Adds a new exception for buildings complying with ASCE 7-88 or later editions		
503.13	Voluntary lateral force-resisting system alterations					
503.14	Smoke compartments			2021 IEBC: New language	Yes, if alteration occurs on a story with more than 30 care recipients	
503.15	Refuge areas			2021 IEBC: New language		
503.16	Enhanced classroom acoustics			2021 IEBC: New language	Maybe, if the work area exceeds 50% of the building area	
503.17	Locking arrangements in educational occupancies			2021 IEBC: New language		
503.18	Two-way communications systems			2021 IEBC: New language	Maybe, if the work area exceeds 50% of the building area	
504	FIRE ESCAPES					
504.1	Where permitted	3406.1	Where permitted			
504.1.1	New buildings					
504.1.2	Existing fire escapes	3406.1.1	Existing fire escapes			
504.1.3	New fire escapes	3406.1.2	New fire escapes			
504.1.4	Limitations	3406.1.3	Limitations			
504.2	Location	3406.2	Location			
504.3	Construction	3406.3	Construction			
504.4	Dimensions	3406.4	Dimensions			
504.5	Opening protectives	3406.5	Opening protectives			
505	WINDOWS AND EMERGENCY ESCAPE OPENINGS					
505.1	Replacement windows					
505.2	Window opening control devices on replacement windows					

505.3	Replacement window emergency escape and rescue openings					
505.3.1	Control devices					
505.4	Bars, grilles, covers or screens					
506	CHANGE OF OCCUPANCY					
506.1	Compliance					
506.1.1	Change in the character of use					
506.2	Certificate of occupancy	3408.2				
506.3	Stairways	3408.3				
506.4	Existing emergency escape and rescue openings					
506.5	Structural					
506.5.1	Live loads					
506.5.2	Snow and wind loads	3408.4				
506.5.3	Seismic loads (seismic force-resisting system)					
506.5.4	Access to Risk Category IV					
506.6	Enhanced classroom acoustics			2021 IEBC: New language		
507	HISTORIC BUILDINGS					
507.1	Historic buildings					
507.2	Life safety hazards					
507.3	Flood hazard areas					
507.4	Structural					
CH 6	CLASSIFICATION OF WORK					
601	GENERAL					
601.1	Scope					
601.1.1	Compliance with other alternatives					
601.2	Work area					
602	ALTERATION – LEVEL 1					
602.1	Scope					
602.2	Application					
603	ALTERATION – LEVEL 2					
603.1	Scope					

603.2	Application					
604	ALTERATION – LEVEL 3					
604.1	Scope					
604.2	Application					
605	CHANGE OF OCCUPANCY					
605.1	Scope					
605.2	Application					
606	ADDITIONS					
606.1	Scope					
606.2	Application					
607	HISTORIC BUILDINGS					
607.1	Scope					
607.2	Application					
CH 7	ALTERATIONS – LEVEL 1					
701	GENERAL					
701.1	Scope					
701.2	Conformance					
701.3	Flood hazard areas					
702	BUILDING ELEMENTS AND MATERIALS					
702.1	Interior finishes					
702.3	Interior trim					
702.4	Window opening control devices on replacement windows					
702.5	Replacement window for emergency escape and rescue openings					
702.5.1	Control devices					
702.6	Bars, grilles, covers or screens					
702.7	Materials and methods					
702.7.1	International Fuel Gas Code					
703	FIRE PROTECTION					
703.1	General					

704	MEANS OF EGRESS					
704.1	General					
704.1.1	Projections in nursing home corridors					
704.2	Casework					
704.3	Locking arrangements in educational occupancies					
705	REROOFING					
705.1	General					
705.2	Roof replacment					
705.2.1	Roof recover					
705.2.1.1	Exceptions					
705.3	Roof recovering					
705.4	Reinstallation of materials					
705.5	Flashings					
706	STRUCTURAL					
706.1	General					
706.2	Addition or replacement of roofing or replacement of equipment					
706.3	Additional requirements for reroof permits					
706.3.1	Bracing for unreinforced masonry bearing wall parapets					
706.3.2	Roof diaphragms resisting wind loads in high-wind regions					
707	ELECTRICAL					
707.1	Health care facilities					
708	ENERGY CONSERVATION					
708.1	Minimum requirements					
CH 8	ALTERATIONS – LEVEL 2					
801	GENERAL					
801.1	Scope					
801.2	Alteration Level 1 compliance					

801.3	System installations					
801.4	Compliance					
802	BUILDING ELEMENTS AND MATERIALS					
802.1	Scope					
802.2	Vertical openings					
802.2.1	Existing vertical opernings					
802.2.2	Supplemental shaft and floor opening enclosure requirements					
802.2.3	Supplemental stairway enclosure requirements					
802.3	Smoke compartments					
802.4	Interior finish					
802.4.1	Supplemental interior finish requirements					
802.5	Guards					
802.5.1	Minimum requirement					
802.5.2	Design					
802.6	Fire-resistance ratings					
803	FIRE PROTECTION					
803.1	Scope					
803.1.1	Corridor ratings					
803.2	Automatic sprinkler systems					
803.2.1	High-rise buildings					
803.2.2	Groups A, B, E, F-1, H, I-1, I-3, I-4, M, R-1, R-2, R-4, S-1 and S-2					
803.2.2.1	Mixed uses					
803.2.3	Group I-2					
803.2.4	Windowless stories					
803.2.5	Other required automatic sprinkler system					
803.2.6	Supervision					
803.3	Standpipes					

803.4	Fire alarm and detection					
803.4.1	Occupancy requirements					
803.4.1.1	Group E					
803.4.1.2	Group I-1					
803.4.1.3	Group I-2					
803.4.1.4	Group I-3					
803.4.1.5	Group R-1					
803.4.1.6	Group R-2					
803.4.2	Supplemental fire alarm system requirements					
804	MEANS OF EGRESS					
804.1	Scope					
804.2	General					
804.3	Group I-2					
804.4	Number of exits					
804.4.1	Minimum number					
804.4.1.1	Single-exit buildings					
804.4.1.2	Fire escapes required					
804.4.1.2.1	Fire escape access and details					
804.4.1.2.2	Construction					
804.4.1.2.3	Dimensions					
804.4.2	Mezzanines					
804.4.3	Main entrance – Group A					
804.5	Egress doorways					
804.5.1	Two egress doorways required					
804.5.1.1	Occupant load and travel distance					
804.5.1.2	Group I-2					
804.5.2	Door swing					
804.5.2.1	Supplemental requirements for door swing					
804.5.3	Door closing					
804.5.3.1	Supplemental requirements for door closing					

804.5.4	Panic and fire exit hardware					
804.5.4.1	Supplemental requirements for panic hardware					
804.5.5	Emergency power source in Group I-3					
804.6	Openings in corridor walls					
804.6.1	Corridor doors					
804.6.2	Transoms					
804.6.3	Other corridor openings					
804.6.3.1	Supplemental requirements for other corridor opening					
804.6.4	Supplemental requirements for corridor openings					
804.7	Dead-end corridors					
804.8	Means-of-egress lighting					
804.8.1	Artificial lighting required					
804.8.2	Supplemental requirements for means-of-egress lighting					
804.9	Exit signs					
804.9.1	Work areas					
804.9.2	Supplemental requirements for exit signs					
804.10	Handrails					
804.10.1	Minimum requirement					
804.10.2	Design					
804.11	Refuge areas					
804.12	Guards					
804.12.1	Minimum requirement					
804.12.2	Design					
805	STRUCTURAL					
805.1	General					
805.2	Existing structural elements carrying gravity loads					

805.3	Existing structural elements resisting lateral loads					
805.4	Voluntary lateral force-resisting system alterations					
806	ELECTRICAL					
806.1	New installations					
806.2	Existing installations					
806.3	Health care facilities					
806.4	Residential occupancies					
806.4.1	Enclosed areas					
806.4.2	Kitchens					
806.4.3	Laundry areas					
806.4.4	Ground fault circuit interruption					
806.4.5	Minimum lighting outlets					
806.4.6	Utility rooms and basements					
806.4.7	Clearance for equipment					
807	MECHANICAL					
807.1	Reconfigured or converted spaces					
807.2	Altered existing systems					
807.3	Local exhaust					
808	PLUMBING					
808.1	Health care facilities					
809	ENERGY CONSERVATION					
809.1	Minimum requirements					
CH 9	ALTERATIONS – LEVEL 3					
901	GENERAL					
901.1	Scope					
901.2	Compliance					
902	*SPECIAL USE AND OCCUPANCY*					
902.1	High-rise buildings					
902.1.1	Recirculating air or exhaust systems					
902.1.2	Elevators					

902.2	Boiler and furnace equipment rooms					
903	BUILDING ELEMENTS AND MATERIALS					
903.1	Existing shafts and vertical openings					
903.2	Fire partitions in Group R-3					
903.2.1	Separation required					
903.3	Interior finish					
903.4	Enhanced classroom acoustics					
904	FIRE PROTECTION					
904.1	Automatic sprinkler systems					
904.1.1	High-rise buildings					
904.1.2	Rubbish and linen chutes					
904.1.3	Upholstered furniture or mattresses					
904.1.4	Groups A, B, E, F-1, H, I-1, I-3, I-4, M, R-1, R-2, R-4, S-1 and S-2					
904.1.5	Group I-2					
904.1.6	Windowless stories					
904.1.7	Other required automatic sprinkler systems					
904.2	Fire alarm and detection systems					
904.2.1	Manual fire alarm systems					
904.2.2	Automatic fire detection					
905	MEANS OF EGRESS					
905.1	General					
905.2	Means-of-egress lighting					
905.3	Exit signs					
905.4	Two-way communication systems					
906	STRUCTURAL					
906.1	General					

906.2	Existing structural elements resisting lateral loads					
906.3	Seismic Design Category F					
906.4	Anchorage for concrete and masonry buildings					
906.5	Anchorage for unreinforced masonry walls					
906.6	Bracing for unreinforced masonry parapets					
906.7	Anchorage of unreinforced masonry partitions					
907	ENERGY CONSERVATION					
907.1	Minimum requirements					
CH 10	CHANGE OF OCCUPANCY					
1001	GENERAL					
1001.1	Scope					
1001.2	Certificate of occupancy					
1001.2.1	Change of use					
1001.2.2	Change of occupancy classification or group					
1001.2.2.1	Partial change of occupancy					
1001.3	Certificate of occupancy required					
1002	SPECIAL USE AND OCCUPANCY					
1002.1	Compliance with the building code					
1002.2	Incidental uses					
1002.3	Change of occupancy in health care					
1002.4	Storage					
1003	BUILDING ELEMENTS AND MATERIALS					
1003.1	General					
1004	FIRE PROTECTION					
1004.1	General					

1005	MEANS OF EGRESS					
1005.1	General					
1006	STRUCTURAL					
1006.1	Live loads					
1006.2	Snow and wind loads					
1006.3	Seismic loads					
1006.4	Access to Risk Category IV					
1007	ELECTRICAL					
1007.1	Special occupancies					
1007.2	Unsafe conditions					
1007.3	Service upgrade					
1007.4	Number of electrical outlets					
1008	MECHANICAL					
1008.1	Mechanical requirements					
1009	PLUMBING					
1009.1	Increased demand					
1009.2	Food-handling occupancies					
1009.3	Interceptor required					
1009.4	Chemical wastes					
1009.5	Group I-2					
1010	OTHER REQUIREMENTS					
1010.1	Light and ventilation					
1011	CHANGE OF OCCUPANCY CLASSIFICATION					
1011.1	General					
1011.2	Fire protection systems					
1011.2.1	Fire sprinkler system					
1011.2.2	Fire alarm and detection system					
1011.3	Interior finish					
1011.4	Enhanced classroom acoustics					
1011.5	Means of egress, general					
1011.5.1	Means of egress for change to a higher-hazard category					

1011.5.2	Means of egress for change of use to an equal or lower-hazard category					
1011.5.3	Egress capacity					
1011.5.4	Handrails					
1011.5.5	Guards					
1011.5.6	Existing emergency escape and rescue openings					
1011.6	Heights and areas					
1011.6.1	Height and area for change to a higher-hazard category					
1011.6.1.1	Fire wall alternative					
1011.6.2	Height and area for change to an equal or lesser-hazard category					
1011.6.3	Fire barriers					
1011.7	Exterior wall fire-resistance ratings					
1011.7.1	Exterior wall rating for change of occupancy classification to a higher-hazard category					
1011.7.2	Exterior wall rating for change of occupancy classification to an equal or lesser-hazard category					
1011.7.3	Opening protectives					
1011.8	Enclosure of vertical shafts					
1011.8.1	Minimum requirements					
1011.8.2	Stairways					
1011.8.3	Other vertical shafts					
1011.8.4	Openings					
CH 11	ADDITIONS					
1101	General					
1101.1	Scope					
1101.2	Creation or extension of nonconformity					

1101.3	Other work					
1101.4	Enhanced classroom acoustics					
1102	HEIGHTS AND AREAS					
1102.1	Height limitations					
1102.2	Area limitations					
1102.3	Fire protection systems					
1103	STRUCTURAL					
1103.1	Additional gravity loads					
1103.2	Lateral force-resisting system					
1103.3	Flood hazard areas					
1104	ENERGY CONSERVATION					
1104.1	Minimum requirements					
CH 12	HISTORIC BUILDINGS					
1201	GENERAL					
1201.1	Scope					
1201.2	Report					
1201.3	Special occupancy exceptions-museums					
1201.4	Flood hazard areas					
1201.5	Unsafe conditions					
1202	REPAIRS					
1202.1	General					
1202.2	Replacement					
1203	FIRE SAFETY					
1203.1	Scope					
1203.2	General					
1203.3	Means of egress					
1203.4	Transoms					
1203.5	Interior finishes					
1203.6	Stairway enclosure					
1203.7	One-hour fire-resistant assemblies					
1203.8	Glazing in fire-resistance-rated systems					

1203.9	Stairway railings					
1203.10	Guards					
1203.10.1	Height					
1203.10.2	Guard openings					
1203.11	Exit signs					
1203.12	Automatic fire-extinguishing systems					
1204	CHANGE OF OCCUPANCY					
1204.1	General					
1204.2	Building area					
1204.3	Location on property					
1204.4	Occupancy separation					
1204.5	Roof covering					
1204.6	Means of egress					
1204.7	Door swings					
1204.8	Transoms					
1204.9	Interior finishes					
1204.10	One-hour fire-resistant assemblies					
1204.11	Stairways and guards					
1204.12	Exit signs					
1204.13	Exit stair live load					
1204.14	Natural light					
1205	STRUCTURAL					
1205.1	General					
1205.2	Dangerous conditions					
1206	RELOACATED BUILDINGS					
1206.1	Relocated buildings					
CH 13	PERFORMANCE COMPLIANCE METHODS					
1301	GENERAL	3412	COMPLIANCE ALTERNATIVES			
1301.1	Scope	3412.1	Compliance	We currently only allow this compliance method for buildings originally built before 1979		

1301.1.1	Compliance with other methods					
1301.2	Applicability	3412.2	Applicability	2021 IEBC: Clarifies that Group U undergoing a change of occupancy can use this compliance path		
1301.2.1	Change in occupancy	3412.2.1	Change in occupancy			
1301.2.2	Partial change in occupancy	3412.2.2	Partial change in occupancy			
1301.2.3	Additions	3412.2.3	Additions			
		3412.2.3.1	Additions to buildings of Groups R and I	Ohio change needed		
		3412.2.3.2	Additions to buildings of other than R and I occupancies	Ohio change needed		
1301.2.4	Alterations	3412.2.4	Alterations and repairs			
1301.2.5	Escalators					
1301.2.6	Plumbing fixtures			2021 IEBC: Added new language		
1301.3	Acceptance	3412.3	Acceptance			
1301.3.1	Hazards	3412.3.1	Hazards			
1301.3.2	Compliance with other codes					
1301.3.3	Compliance with flood hazard provisions	3412.2.4.1	Flood hazard areas			
1301.4	Investigation and evaluation	3412.4	Investigation and evaluation			
1301.4.1	Structural analysis	3412.4.1	Structural analysis			
1301.4.2	Submittal	3412.4.2	Submittal			
1301.4.3	Determination of compliance	3412.4.3	Determination of compliance			
1301.5	Evaluation	3412.5	Evaluation			
1301.5.1	Fire Safety	3412.5.1	Fire Safety			
1301.5.2	Means of Egress	3412.5.2	Means of Egress			
1301.5.3	General Safety	3412.5.3	General Safety			
1301.6	Evaluation process	3412.6	Evaluation process			
1301.6.1	Building height and number of stories	3412.6.1	Building height and number of stories			
1301.6.1.1	Height formula	3412.6.1.1	Height formula			
1301.6.2	Building area	3412.6.2	Building area			
1301.6.2.1	Allowable area formula	3412.6.2.1	Allowable area formula			

1301.6.2.2	Area formula			2021 IEBC:		
1301.6.3	Compartmentation	3412.6.3	Compartmentation			
1301.6.3.1	Categories			2021 IEBC: Added compartment separation categories		
1301.6.3.2	Wall construction	3412.6.3.1	Wall construction			
1301.6.3.3	Floor/ceiling construction	3412.6.3.2	Floor/ceiling construction			
1301.6.4	Tenant and dwelling unit separations	3412.6.4	Tenant and dwelling unit separations	2021 IEBC:		
1301.6.4.1	Categories	3412.6.4.1	Categories			
1301.6.5	Corridor walls	3412.6.5	Corridor walls			
1301.6.5.1	Categories	3412.6.5.1	Categories	2021 IEBC: Category d recognizes that unrated corridors are permitted per IBC 1020		
1301.6.6	Vertical openings	3412.6.6	Vertical openings			
1301.6.6.1	Vertical opening formula	3412.6.6.1	Vertical opening formula			
1301.6.7	HVAC	3412.7	HVAC	2021 IEBC: Added systems with no ductwork to category e		
1301.6.7.1	Categories	3412.7.1	Categories			
1301.6.8	Automatic fire detection	3412.6.8	Automatic fire detection	Should be titled “automatic smoke detection”		
1301.6.8.1	Categories	3412.6.8.1	Categories			
1301.6.9	Fire alarm systems	3412.6.9	Fire alarm systems			
1301.6.9.1	Categories	3412.6.9.1	Categories			
1301.6.10	Smoke control	3412.6.10	Smoke control			
1301.6.10.1	Categories	3412.6.10.1	Categories			
1301.6.11	Means of egress capacity and number	3412.6.11	Means of egress capacity and number			
1301.6.11.1	Categories	3412.6.11.1	Categories			
1301.6.12	Dead ends	3412.6.12	Dead ends			
1301.6.12.1	Categories	3412.6.12.1	Categories			
1301.6.13	Maximum exit access travel distance	3412.6.13	Maximum exit access travel distance			
1301.6.14	Elevator control	3412.6.14	Elevator control			
1301.6.14.1	Categories	3412.6.14.1	Categories	References IFC for emergency recall and in-car operation of the elevator		

1301.6.15	Means of egress emergency lighting	3412.6.15	Means of egress emergency lighting			
1301.6.15.1	Categories	3412.6.15.1	Categories			
1301.6.16	Mixed occupancies	3412.6.16	Mixed occupancies			
1301.6.16.1	Categories	3412.6.16.1	Categories			
1301.6.17	Automatic sprinklers	3412.6.17	Automatic sprinklers	2021 IEBC: Clarifies that sprinklers that control (not just suppress) fire are also included in the analysis. Expands to recognize all sprinkler systems (13, 13D, and 13R)		
1301.6.17.1	Categories	3412.6.17.1	Categories	2021 IEBC: Clarified wording within category descriptions		
1301.6.18	Standpipes	3412.6.18	Standpipes			
1301.6.18.1	Standpipe categories	3412.6.18.1	Standpipe categories			
1301.6.19	Incidental uses	3412.6.19	Incidental uses			
1301.6.20	Smoke compartmentation	3412.6.20	Smoke compartmentation	2021 IEBC: Changes category b for Group I-2 from NP to -10		
1301.6.20.1	Categories	3412.6.20.1	Categories	2021 IEBC: Clarified wording within category descriptions.		
1301.6.21	Care recipient ability, concentration, smoke compartment location and ratio to attendant	3412.6.21	Care recipient ability, concentration, smoke compartment location and ratio to attendant	2021 IEBC: Changed “patient” to “care recipient”		
1301.6.21.1	Care recipient ability for self-preservation	3412.6.21.1	Care recipient ability for self-preservation	2021 IEBC: Changed “patient” to “care recipient” Corrected Table values		
1301.6.21.1.1	Categories	3412.6.21.1.1	Categories	2021 IEBC: Changed “patient” to “care recipient”		
1301.6.21.2	Care recipient concentration	3412.6.21.2	Care recipient concentration	2021 IEBC: Changed “patient” to “care recipient”. Corrected Table values		
1301.6.21.2.1	Categories	3412.6.21.2.1	Categories	2021 IEBC: Changed “patient” to “care recipient”		

1301.6.21.3	Attendant-to-care recipients ratio	3412.6.21.3	Attendant-to-care recipients ratio	2021 IEBC: Changed “patient” to “care recipient” Corrected Table values		
1301.6.21.3.1	Categories			2021 IEBC: Changed “patient” to “care recipient” Corrected Table values		
1301.7	Building score	3412.7	Building score	2021 IEBC Table: Changed “patient” to “care recipient”		
1301.8	Safety scores	3412.8	Safety scores	Mandatory passing scores in Table 1301.8 increased significantly from current OBC		
1301.9	Evaluation of building safety	3412.9	Evaluation of building safety			
1301.9.1	Mixed occupancies	3412.9.1	Mixed occupancies	2021 IEBC: Added clarification/exception for areas of building separated IAW 508 and no alterations or change of occupancy are proposed		