



Board of Building Standards

CONFERENCE MEETING AGENDA

DATE: JUNE 23, 2023
TIME: 10:00 AM
LOCATION: TRAINING RM 1, 6606 TUSSING RD, REYNOLDSBURG, OHIO 43068
[Click here to join the meeting](#)

Call to Order

Roll Call

Public Hearing - Amendments Group C (100)

[Proposed 2024 Ohio Building, Mechanical & Plumbing Code Rules | Ohio Department of Commerce](#)

To provide testimony at the public hearing, you must attend in-person. Written comments may be submitted to BBS@com.ohio.gov.

Consideration of Minutes

[MIN-1](#) May 12, 2023 Meeting Minutes

Certification Hearing

[CH-1](#) Certification Hearing

Committee Reports

[CR-1](#) Certification Committee Report
[CR-2](#) Education Committee Report
[CR-3](#) Code Committee Report
CR-4 Committee-of-the-Whole

Ratification of Board Recognized Accreditation Bodies, Conformity Assessment Bodies & Industry Trade Association Certification Programs

No items for consideration

Building Department Support & Oversight

[RE-1](#) June Building Department Update

Public Comments

Old Business

[OB-1](#) Reconsideration of Petition #23-03 - OBC Ch 19 & 35 Add ACI 440.11 for structural concrete - Kerry Sutton of American Concrete Institute

New Business

[NB-1](#) Draft Industrialized Units Rules - Action to Initiate Stakeholder Input Process

Compensate Board Members for Work Performed at their Regular Rate

Future Meeting Schedule

August 11, 2023 November 17, 2023
September 22, 2023 December 15, 2023
October 20, 2023

Motion to Adjourn

File Attachments for Item:

MIN-1 May 12, 2023 Meeting Minutes

MINUTES
BOARD OF BUILDING STANDARDS
CONFERENCE MEETING & CERTIFICATION HEARING
May 12, 2023

The Board of Building Standards Conference Meeting was called to order at 1:00 p.m., Friday, May 12, 2023 at 6606 Tussing Road, Reynoldsburg, Ohio, Chairman Timothy Galvin presiding.

Ms. Regina Hanshaw, Executive Secretary, called the roll and reported that the following Board members were present:

Greg Barney, Industrialized Units
Julienne Cromwell, Structural Engineer
Joseph F. Denk, Jr., Mechanical Engineer
Timothy P. Galvin, General Contractor, Chair
Don Leach, Attorney
Terry McCafferty, Public Member
Christopher Miller, Renewable Energy
John Pavlis, Homebuilder, Vice-Chair
Jeff Samuelson, Architect
Bailey Stanbery, Homebuilder
Jeff Tyler, Architect
Christie Ward, Mayor

The following Board members were absent:

John Johnson, Construction Materials
Greg Warner, Fire Service
Paul Yankie, Energy Conservation

A quorum of the Board was present.

The following staff members were present:

Megan Foley, Certification Program Administrator
Debbie Ohler, Construction Codes Administrator
Jay Richards, Assistant Construction Codes Administrator
Robert Johnson, Assistant Construction Codes Administrator
Mike Regan, IU Plans Examiner
Pam Butts, Office Assistant
Jacob Erwin, AAG

The following visitors were present:

Nicholas Montan, OBOA/Tusc. Cty
John Cheatham, OBOA/Safebuilt
Chris Randles, OBOA/Summit Cty
David Molnar, OBOA/Richland Cty
Don Phillips, OBOA/City of Worthington
Mary Rinella, OBOA/OCPT/Tusc. Cty
Walter Moeller

CONSIDERATION OF THE MINUTES

Mr. Denk moved and Mr. Leach seconded to approve the minutes of the March 31, 2023 meeting.

Chairman Galvin called for the ayes and nays.

Motion carried unanimously.

CERTIFICATION HEARING

Chairman Galvin opened the hearing to hear testimony on the individuals and building departments appearing on the Final Certification Hearing Agenda in the Board's Meeting Packet at the Hearing

tab. Ms. Foley informed the Board that the individuals and departments appear on the hearing agenda have been reviewed by the Certification Committee and determined to meet the requirements of certification.

COMMITTEE REPORTS

CR-1 Certification Committee Report

Mr. Leach gave the committee’s report included in the Board’s Meeting packet at Tab CR-1:

The Certification Committee met on May 12th, 2023, at 9:00 AM in the BBS Library, 6606 Tussing Road, with the following members present: Mr. Leach, Mr. McCafferty, Mr. Barney, Ms. Cromwell, Mr. Samuelson, Mr. Stanbery, Mr. Tyler, Ms. Ward, and Mr. Warner. Board Chairman Timothy Galvin was also present. The Committee makes the following recommendations, included in the May 12th, 2023 Board Packet at Tab CR-1, for the Board’s consideration.

Also present at the meeting were BBS Staff, Regina Hanshaw, Megan Foley, and Rob Johnson. Guest Andrew Kovacic attended in person with Fire Marshal Dave Telban, and guest Chris Oliver attended virtually, both to discuss their applications. David Daniel, Amit Ghosh, and Cliff Honeycutt from the City of Columbus Building and Zoning Services department were in attendance virtually to discuss the city’s proposed Alternative Trainee Program for Electrical Safety Inspectors. Duane Matlack attended the meeting to confirm Jimmy Lopez’s alternative trainee plan was approved.

Recommend the following applications be approved following a certification hearing effective immediately unless otherwise noted on the certification hearing agenda:

Cert ID	Name	Certification granted
9107	Anderson, Joshua	Electrical Safety Inspector*
1711	Austin Jr., Donald	Electrical Plans Examiner
8465	Beckham, Eric	Building Inspector Trainee Residential Building Official
	Benson, Virgle	Electrical Safety Inspector*
5432	Bittler, David	Building Inspector Trainee Residential Building Inspector
6338	Breedlove, Craig	Master Plans Examiner Plumbing Inspector Mechanical Inspector
2371	Calendine, Richard	Electrical Safety Inspector
9113	Camera, Mario	Plumbing Inspector** Plumbing Plans Examiner**
6277	Cobourn, Nicholas	Building Official
5819	Coles Jr., Robert	Building Inspector Residential Building Official
9033	Connelly, William	Residential Building Official
8769	Corbin, Patrick	Residential Building Official
9088	Cummins, Jason	Residential Building Official
8852	DeLong, William	Residential Building Inspector – Full Certification approved
6291	Diesel, John	Building Inspector Residential Building Inspector
5176	Elmi, Eric	Building Official
9011	Gookin, Chris	Building Inspector Trainee – Alternative Trainee Plan
9108	Green, Ronald	Master Plans Examiner Residential Plans Examiner
569	Gudat, Keith	Building Official
8855	Hare, Aaron	Electrical Safety Inspector

	Henley, Qwan	Mechanical Inspector
5595	Hilt, Tylon	Building Inspector Residential Building Official Residential Plans Examiner Residential Mechanical Inspector
9070	Hittle, Michael	Plumbing Inspector
4717	Hughes, Brandon	Electrical Safety Inspector Trainee Plumbing Inspector Trainee
8580	Johnson, Dusty	Residential Building Official
4472	Johnson, Robert	NonResidential Industrialized Unit Inspector
1965	Jones, Anthony	Building Inspector
5323	Kipp, Joseph	Building Official
9103	Koehler, Tim	Building Inspector Residential Building Official
9040	Kovacic, Andrew	Fire Protection Inspector
812	Kurtz, Robert	NonResidential Industrialized Unit Inspector Residential Industrialized Unit Inspector
8531	Lawrence, David	Building Inspector Trainee Residential Building Inspector Trainee
9061	Lopez, Jimmy	Electrical Safety Inspector – Alternative Trainee Plan
5837	Malinowski, Marc	Residential Building Inspector
9100	Myers, Timothy	Residential Building Inspector
	Nowlin, Joel	Building Inspector Residential Building Inspector
8980	Oliver, Chris	Building Inspector
9096	Peterson, Michael	Automated Sprinkler System Designer
9094	Quinichett, Maurice	Electrical Safety Inspector*
8918	Ransom II, Robert	Building Inspector
4769	Rapnicki, Michael	Fire Protection Plans Examiner**
9101	Richardson, Brenton	Electrical Safety Inspector*
5399	Rosser, Carlyle	Building Plans Examiner
9111	Shaw, Michael	Building Inspector Electrical Safety Inspector* Residential Building Inspector
5777	Shetler, Todd	Building Inspector Trainee** Residential Building Inspector**
9105	Taylor, Franklin	Fire Alarm System Designer
5631	Taylor, Justin	NonResidential Industrialized Unit Inspector
6320	Walter, David	Residential Building Official
8985	Wiley, Lyle	Building Inspector
9110	Wilford, Shawn	Plumbing Inspector
9095	Wilson, Brian	Residential Plans Examiner Residential Building Inspector

*Electrical Safety Inspectors must complete examinations prior to issuance of interim certification

** Denotes approval conditioned on receipt of forms or fees or other conditions.

Building Department Certifications
 Gallia County Commercial Building Department
 To be a subdepartment of Washington County
 Exceptions: Plumbing and Med Gas
 Approved including R1, R2 and R3

Seneca County Commercial Building Department
 Application to modify certification from subdepartment of Richland County to primary department.

Contract with Safebuilt for code administration services.
Exceptions: Plumbing provided by Erie County Board of Health, Med Gas

Personnel Certification Applications

Recommend the following applications be denied, additional information be requested, or other action as noted:

Barber, Micah - ESI
Certification ID: 9106
Current certifications- none
ESIAC Recommendations: Not recommended for ESI exams, would recommend Trainee
Committee recommendation: Applicant lacks 6 years journeyman-equivalent experience. Not recommended for ESI at this time, but invited to submit application for ESI Trainee without further fee.

Hooks, Jason - RPE
Certification ID:
Current certifications: none, has completed permit tech exam
Staff notes: CAD experience, degree. Recommend approval.
Committee Recommendation: Request additional information on experience, applicant is invited to attend June meeting to discuss experience and qualifications.

House, Andrew - BI
Certification ID: 8526
Current certifications- RBI Trainee (inactive)
Committee recommendation: Request additional information on certification standards in PA, invite applicant to address committee at June meeting.

Patrick, Anthony - ESI
Certification ID: 9109
Current certifications- none
ESIAC recommendations: Recommend request for additional information on contractor license.
Committee recommendation: Request additional information on electrical contractor's license, electrical experience.

Rapnicki, Michael - FPPE
Cert ID: 4769
Current Certifications: FASD, holds NICET Level 4
Committee Recommendation: Recommend approval upon receipt of original application and fees.

Benson, Virgle - ESI, BI
Certification ID:
Current Certifications: None
Committee Recommendation: Approve ESI pending receipt of application and fees, request additional information on commercial structural experience

Camera, Mario - PI, PPE
Certification ID: 9113
Current Certifications: None
Committee Recommendation: Approval contingent upon receipt of compliant application reflecting adequate experience and fees.

Cummins, Jason - BO, RBO
Certification ID: 9088
Current Certifications: RBI
Committee Recommendation: Approve RBO, request additional information on commercial GC experience

Ransom II, Robert - BI, PI
Certification ID: 8918

Current Certifications: RBI

Committee Recommendation: Approve BI, request additional information on plumbing installation experience.

Shetler, Todd - BI Trainee, RBI

Cert ID: 5777

Current Certifications: None

Committee Recommendation: Approve RBI interim, BI Trainee through June 23, 2023. Applicant and building official Roger Eastep must attend June 22 certification committee meeting to discuss.

Old Business

Shetler Todd: See above.

New Business

NB-1 City of Columbus Building and Zoning Services Electrical Safety Inspector Trainee Program

The City of Columbus has prepared an ESI Trainee program for the Board's approval. The plan proposes to accept as trainees applicants who have already been approved to take ESI exams.

Committee Recommendation: Approve, staff to work with department on modifications and improvements.

Mr. Leach moved and Mr. McCafferty seconded to approve the recommendations of the committee.

Chairman Galvin called for the ayes and nays.

Motion carried unanimously.

CR-2 Education Committee Report

Mr. McCafferty gave the committee's report included in the Board's Meeting packet at Tab CR-2:

The Education Committee met on May 12th, 2023 at 9:00 AM in the BBS Library, 6606 Tussing Road, with the following members present: Mr. McCafferty, Mr. Stanbery, Mr. Barney, Ms. Cromwell, Mr. Samuelson, Mr. Tyler, Ms. Ward, and Mr. Warner. Board Chairman Timothy Galvin was also present. The Committee makes the following recommendations, included in the March 31st, 2023 Board Packet at Tab CR-2, for the Board's consideration.

BBS Staff Megan Foley was present for the meeting.

Courses approved with modification or special circumstances, or denied, as stated.

2017 NEC Review Session 1 (IAEI SW)

All certifications (3 hours)

ESIAC Recommendations: no consensus reached

Committee Recommendation: Approved

2020 NEC Analysis of Changes Session 1 (IAEI SW)

All certifications (3 hours)

ESIAC Recommendations: No consensus reached.

Committee Recommendation: Approved

Cold-Formed Steel Framing Connection Products (ClarkDietrich for SWOBOA)

All certifications (1 hour)

Committee Recommendation: Administrative approval ratified

Life-Safety Head-of-Wall Fire-Resistance and Design Considerations (ClarkDietrich for SWOBOA)

All certifications (1 hour)

Committee Recommendation: Administrative approval ratified

Mayfield Heights Chapter One Training (Mayfield Heights)

All certifications (four one-hour sessions)

Committee Recommendation: Approved with Chapter 1 required instruction credential.

Specifying Structural and Nonstructural Steel Framing per IBC 2018 (ClarkDietrich for SWOBOA)

All certifications (1 hour)

Committee Recommendation: Administrative approval ratified

Old Business:

None this month

New Business:

None this month

Mr. McCafferty moved and Mr. Stanbery seconded to approve the recommendations of the committee.

Chairman Galvin called for the ayes and nays.

Motion carried unanimously.

CR-3 Code Committee Report

Mr. Denk gave the committee's report included in the Board's Meeting packet at Tab CR-3:

The Code Committee met on May 11, 2023 with the following members present: Ms. Cromwell, Mr. Denk, Mr. Johnson, Mr. Miller, Mr. Pavlis, Mr. Stanbery, Mr. Tyler, and Mr. Yankie. Board Chairman, Tim Galvin, was also present.

The committee report is included in the May 12, 2023 Board Meeting Packet at tab CR-3 for the Board's consideration.

Approval of Minutes

Mr. Stanbery made the motion to approve the minutes of the Code Committee meeting held on March 30, 2023. Mr. Miller seconded the motion. The motion passed unanimously.

Petitions

Petition #23-02 - OBC Section 427 (Section 429 in 2024 OBC) Privacy Pods/Booths - Charles Moore of Framery Acoustics

Ms. Hanshaw mentioned that staff is getting many questions about the use of these and similar pods. As a result, there is a need for language in the code. However, the language presented in this petition needs more work. Mr. Pavlis made the motion to continue to table this item and asked staff to contact the petitioner to see if he would be willing to withdraw his petition and submit at a later date. This would allow staff and the petitioner time to work together to craft language that addresses privacy pods and similar products. Mr. Miller seconded the motion. The motion passed unanimously.

Petition #23-03 - OBC Ch 19 & 35 Add ACI 440.11 for structural concrete - Kerry Sutton of American Concrete Institute

Mr. Will Gould, representing ACI, made a brief presentation to the committee about the ACI 440.11 standard for the use of Glass Fiber Reinforced Polymer (GFRP) for structural concrete reinforcement. Mr. Gould answered several questions of the committee. Mr. Pavlis made the motion to approve the petition. Mr. Stanbery seconded the motion. The motion passed, with Ms. Cromwell voting no.

After a break, Ms. Cromwell asked the committee to reconsider the action on this item and made a motion to allow the use of this product only for new construction and to add an exception

indicating that it is not permitted for repairs or alterations. Mr. Miller seconded the motion. The motion passed, with Mr. Pavlis voting no.

Petition #23-05 - OBC Ch 13 Add ACI/TMS 122.1 to IECC & ASHRAE 90.1 for thermal bridging
- Kerry Sutton of American Concrete Institute

After discussion, Mr. Pavlis made the motion to approve the petition, but to relocate the language as suggested by staff to clarify that the use of the standard is optional, not mandatory. Mr. Stanbery seconded the motion. The motion passed unanimously.

Recommendations of the Residential Construction Advisory Committee

Petition #23-04 - RCO 311.7.1 Two handrails - Robert Kramer

Mr. Pavlis made the motion to refer this petition back to the RCAC for reconsideration and to specifically consider addressing the possible need for an additional handrail when stairways exceed three feet in width. Mr. Johnson seconded the motion. The motion passed unanimously.

2019 RCO Proposed amendments Stakeholder Comments & 2023 NEC

Mr. Richards presented the stakeholder comments and proposed draft language from the RCAC for proposed changes to the RCO, including adoption of the 2023 NEC. Mr. Pavlis made a motion to accept the RCAC recommended draft language and to start the E-notification process with the revised language. Mr. Tyler seconded the motion. The motion passed unanimously.

Old Business

Review of E-notification comments for AG 100 (OBC, OMC, OPC)

Staff presented the spreadsheet of E-notification comments received on the 2021 I-code based Ohio draft rule packages to the committee. The committee reviewed the comments and made decisions about whether to make modifications to the rules as a result of the E-notification comments received.

Ms. Hanshaw mentioned that the next step in the rule development process is to file the rules with JCARR upon receipt of a recommendation from the Common Sense Initiative (CSI) office.

New Business

No items for consideration

Adjourn

Mr. Stanbery made the motion to adjourn at 3:12 P.M. Mr. Miller seconded the motion. The motion passed unanimously.

Mr. Denk moved and Mr. Stanbery seconded to approve the recommendations of the committee.

Chairman Galvin called for the ayes and nays.

Motion carried unanimously.

CR-4 Committee-of-the-Whole

No report.

RATIFICATION OF BOARD RECOGNIZED ACCREDITATION BODIES, CONFORMITY ASSESSMENT BODIES & INDUSTRY TRADE ASSOCIATION CERTIFICATION PROGRAMS

No items for consideration.

BUILDING DEPARTMENT SUPPORT AND OVERSIGHT

RE-1 May Building Department Update

Mr. Robert Johnson presented the May Building Department Report:

Board Staff conduct building department visits to engage building officials in discussion regarding the administration of their departments and to obtain feedback for the Board. Specifically, Board Staff inquire on the status of plan review and inspection turnaround times, protocols, policies and processes of the department, software systems used, current and projected activity, department funding and fees, relationships with fire departments, administration and elected officials, the issuance of plan approvals, adjudication orders, certificates of occupancy, and appeals.

The following Building departments were visited since the last Board update:

Ashtabula County
Canton
Lagrange Township
Lake County
North Ridgeville
South Amherst
Village of Lagrange

Staff observed that building departments have trended to implement and upgrade software/computer systems to adapt to a greater online presence and continue to increase digital plan review of electronically submitted submissions. (A Virtual Office.)

Building officials indicate that workflow is stabilizing. In some jurisdictions it is slowing in both commercial and residential sectors. Most departments are back to full time onsite inspections verses remote /virtual inspections. Inspectors are still in high demand due to continued retirements.

Recent comments include positive feed about education access, although some would like to see a higher level of education opportunities. A suggestion was made to add a “Master Series” and perhaps the addition of FEMA classes.

Recent comments from building officials include positive feedback about education access. Some of them indicated that they are interested in ‘higher level’ classes such as a “Master Series” on specific topics and or Code chapter classes that are more depth. They also suggested FEMA classes.

They also inquire the status of updated codes due to ISO reviews that are imminent. was a common question. A question was also raised regarding the possibility of Townships becoming certified to do their own plumbing inspections.

Other comments included praise for Staff response times, thorough information, and professionalism. Others expressed appreciation for the recent code academy presentation.

PUBLIC COMMENTS

Mr. Randles informed the Board of pending legislation in the proposed State budget affecting building departments. Mr. Galvin responded that the Board was aware of the proposed statutory changes.

OLD BUSINESS

OB-1 Amendments Group 100 - Proposed 2024 OBC, OMC & OPC Rules - Action to file proposed rules with JCARR upon conclusion of CSI Office review and receipt recommendations

Ms. Ohler stated that the Code Committee reviewed the stakeholder comments received as part of eNotification on the proposed 2024 code update rules and have incorporated some changes as result and now we are seeking direction to file the proposed rules with JCARR upon receipt of CSI Office recommendations.

After review of the eNotification comments relating to the proposed 2021 model-code-based OBC, OMC, and OPC rule amendments, Mr. Denk moved to direct staff to initiate the JCARR process

on the proposed amendments group 100 by filing the rules with the Joint Committee on Agency Rule Review pending the recommendation from the Common Sense Initiative Office. Mr. Pavlis seconded.

Chairman Galvin called for the ayes and nays.

Motion carried unanimously.

Chairman Galvin thanked the Code Committee and Staff for their work on the rules.

OB-2 Draft 2019 RCO Amendments including adoption of 2023 NEC with Ohio Amendments – Action to initiate eNotification & file the proposed rules with CSI Office

Mr. Richards stated the some of the initial comments of the proposed amendments to the Residential Code of Ohio which includes updating the electrical edition requested adoption of the 2023 edition. In the response the RCAC recommended adoption of the 2023 edition instead of the 2020 while retaining the previously approved Ohio modifications to the standard. The Code Committee accepted the recommendation of the RCAC, so now we are seeking direction to now file the rules with CSI Office and initiate the eNotification process.

After review of the initial stakeholder comments relating to the proposed amendments to the 2019 RCO based on petitions, Mr. Denk moved to direct staff to initiate the E-notification process on the proposed amendments group 101 by posting the draft rules and the Business Impact Analysis on the Ohio Department of Commerce website, to notify stakeholders of the posting, and to submit a Business Impact Analysis and the rules to the Common Sense Initiative Office for review and recommendation. Mr. Tyler seconded.

Chairman Galvin called for the ayes and nays.

Motion carried unanimously.

NEW BUSINESS

NB-1 Petition #23-03 - OBC Ch 19 & 35 Add ACI 440.11 for structural concrete - Kerry Sutton of American Concrete Institute

Ms. Ohler presented Petition 23-03 requesting adoption of ACI 440.11 standard for structural concrete and summarized the review of the standard by the Code Committee.

Following presentations by the petitioners and code committee discussion and review of the petition, Mr. Denk moved to approve petition #23-03 to include referenced standard ACI 440.11 for the use of glass fiber reinforced polymer (GFRP) in structural concrete with limitations which include application to new construction in seismic design category A areas only. Mr. Denk further moved to direct staff to include these changes in the rule package AG 100. Mr. Pavlis seconded.

Chairman Galvin called for the ayes and nays.

Motion carried with Ms. Cromwell voting no.

NB-2 Petition #23-05 - OBC Ch 13 Add ACI/TMS 122.1 to IECC & ASHRAE 90.1 for thermal bridging - Kerry Sutton of American Concrete Institute

Ms. Ohler presented Petition 23-05 requesting adoption of ACI/TMS 122.1 standard to energy standards IECC and ASHRAE 90.1 for thermal bridging and summarized the review of the standard by the Code Committee.

Following presentations by the petitioners and code committee discussion and review of the petition, Mr. Denk moved to approve petition #23-05 to include referenced standard ACI/TMS 122.1 which addresses thermal bridging in masonry and concrete construction with the recommended change of the proposed location of the provision within the rule. Mr. Denk further moved to direct staff to include these changes in the rule package AG 100. Mr. Pavlis seconded.

Chairman Galvin called for the ayes and nays.

Motion carried unanimously.

**COMPENSATE BOARD MEMBERS FOR WORK PERFORMED AT THEIR
REGULAR RATE**

Ms. Hanshaw reported that board members had performed committee and board work for the amount of hours, including board meetings and required training, as follows:

Mr. Barney	8	Mr. Pavlis	16
Ms. Cromwell	16	Mr. Samuelson	8
Mr. Denk	16	Mr. Stanbery	16
Mr. Galvin	30	Mr. Tyler	16
Mr. Johnson	8	Ms. Ward	8
Mr. Leach	8	Mr. Warner	0
Mr. McCafferty	8	Mr. Yankie	8
Mr. Miller	16		

Mr. McCafferty moved and Mr. Pavlis seconded to compensate board members for the work performed at their regular rate.

Chairman Galvin called for the ayes and nays.

Motion carried unanimously.

FUTURE MEETINGS

June 23, 2023	October 20, 2023
August 11, 2023	November 17, 2023
September 22, 2023	December 15, 2023

ADJOURNMENT

Mr. Miller moved and Mr. Denk seconded to adjourn. The Board adjourned at 1:30 p.m.

Timothy Galvin, Chairman
Board of Building Standards

Regina Hanshaw, Executive Secretary
Board of Building Standards

File Attachments for Item:

CH-1 Certification Hearing



JUNE 23, 2023
CERTIFICATION HEARING AGENDA

Notice is hereby given that the Board of Building Standards will convene for a certification hearing in accordance with the rules of the Board at 10:00 AM, June 23rd, 2023 at the Board of Building Standards, Training Room 1, 6606 Tussing Road, Reynoldsburg, Ohio 43068.

The purpose of the hearing is to hear testimony from anyone wishing to speak to the proposed certification of building departments, local boards of building appeals, and building department personnel.

Cert ID:	Name	Certification Approved
9107	Anderson, Joshua	Electrical Safety Inspector Trainee - Columbus
5943	Arnold, Aaron	Building Inspector
9137	Ball, Daniel	Fire Protection Inspector Trainee
9136	Battaglia, Gina Marie	Building Inspector
9135	Bernal, Anthony	Fire Protection Inspector Trainee
9138	Bratt Jr., Kenneth	Electrical Safety Inspector*
9134	Buchanczenko, Paul	Residential Building Inspector
9033	Connelly, William	Residential Building Official
6009	Corbet, Kasey	Master Plans Examiner Building Inspector
8619	Crowe, Jon	Plumbing Plans Examiner
9120	Culley II, Wilmon	Electrical Safety Inspector
5595	Hilt, Tylon	Building Official Electrical Plans Examiner
9112	Hooks, Jason	Residential Plans Examiner
8526	House, Andrew	Building Inspector Residential Building Inspector
9140	Italiano, Anthony	Electrical Safety Inspector*
8580	Johnson, Dusty	Residential Building Official
8871	Jones, Andrew	Building Inspector Residential Building Official Residential Plans Examiner Residential Building Inspector
8810	Kizer, Josh	Residential Building Official Residential Plans Examiner Residential Building Inspector
8443	Leach, Melran	Residential Building Official



BOARD OF BUILDING STANDARDS

9121	Lee, Jason	Building Official Master Plans Examiner Residential Building Official Residential Plans Examiner
	Marn, Dylan	Building Inspector Trainee** Residential Building Inspector Trainee** Alternative trainee plan approved
9125	Martin, Brandon	Electrical Safety Inspector*
9133	McGovern, Joseph	Building Plans Examiner
9123	Miller, Scott	Residential Building Official
8991	Muncy, John	Building Official
9109	Patrick, Anthony	Electrical Safety Inspector*
9096	Peterson, Michael	Automatic Sprinkler System Designer
9094	Quinichett, Maurice	Electrical Safety Inspector Trainee - Columbus
9101	Richardson, Brenton	Electrical Safety Inspector Trainee - Columbus
5777	Shetler, Todd	Building Inspector Trainee** Residential Building Inspector
9105	Taylor, Franklin	Fire Alarm System Designer
1488	Testa, Dave	Building Official Building Inspector
8905	Wakefield, Alex	Residential Building Official
6320	Walter, David	Residential Building Official
8697	Ward, Andrew	Residential Building Inspector
1614	Weneck, Dennis	Building Inspector
1624	Wettrick, Richard	Building Inspector Residential Building Official Residential Building Inspector
9019	Wheeler, Donald	Building Official Residential Building Official Residential Plans Examiner
1643	Wilson, Chris	Non-Residential Industrialized Unit Inspector Electrical Plans Examiner

*Electrical Safety Inspectors must complete examinations prior to issuance of interim certification

** Denotes approval conditioned on receipt of forms or fees or other conditions.



Building Department Certifications

Columbiana (city of) - New Commercial Department
Exceptions: Plumbing, Med Gas to be performed by Columbiana County
Department of Health

Fostoria - Modification of Certification Application
Transition to independent department in contract with Seneca County
Previously a sub-department of Wood County
Exceptions: Plumbing, Med Gas

Salem - New Commercial Department
Exceptions: Plumbing, Med Gas to be performed by Columbiana County Health
District

Upper Sandusky - Modification of Commercial Department Certification
Transition from subdepartment of Richland County to contract with Wyandot
County (Safebuilt)
Exceptions: Plumbing, Med Gas
Recommend approval upon receipt of updated application.

File Attachments for Item:

CR-1 Certification Committee Report



BOARD OF BUILDING STANDARDS

CERTIFICATION COMMITTEE MEETING REPORT

The Certification Committee met on June 22nd, 2023, at 10:00 AM in the BBS Library, 6606 Tussing Road, with the following members present: Mr. Leach, Mr. McCafferty, Mr. Barney, Mr. Samuelson, Mr. Stanbery, Mr. Tyler, and Ms. Ward. Board Chairman Timothy Galvin was also present. The Committee makes the following recommendations, included in the June 23rd, 2023 Board Packet at Tab CR-1, for the Board’s consideration.

Also present at the meeting were BBS Staff, Regina Hanshaw, Megan Foley, and Laura Borso. Guest Todd Shetler attended in person, and guests Jason Hooks, Andrew House, Alex Wakefield, Tylon Hilt, and Dylan Marn, with building official Dan Perno, attended virtually to discuss their applications. Carlyle Rosser attended to confirm application approval at prior month’s meeting, and John Muncy attended to confirm approval. Charles Huber, Kerry Sutton, Alexandra Wakefield, and committee member Greg Warner attended the meeting virtually to observe.

Recommend the following applications be approved following a certification hearing effective immediately unless otherwise noted on the certification hearing agenda:

Cert ID:	Name	Certification Approved
9107	Anderson, Joshua	Electrical Safety Inspector Trainee - Columbus
5943	Arnold, Aaron	Building Inspector
9137	Ball, Daniel	Fire Protection Inspector Trainee
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6009	Corbet, Kasey	Master Plans Examiner Building Inspector
8619	Crowe, Jon	Plumbing Plans Examiner
9120	Culley II, Wilmon	Electrical Safety Inspector
5595	Hilt, Tylon	Building Official Electrical Plans Examiner
9112	Hooks, Jason	Residential Plans Examiner
8526	House, Andrew	Building Inspector Residential Building Inspector
9140	Italiano, Anthony	Electrical Safety Inspector*
8580	Johnson, Dusty	Residential Building Official
8871	Jones, Andrew	Building Inspector Residential Building Official Residential Plans Examiner Residential Building Inspector

Timothy Galvin, Chairman

Ohio Board of Building Standards
6606 Tussing Road
Reynoldsburg, OH 43068-9009

An Equal Opportunity Employer and Service Provider

614-644-2613
Fax 614 -644-3147
TTY/TDD 800-750-0750
com.ohio.gov/dico/bbs

8810	Kizer, Josh	Residential Building Official Residential Plans Examiner Residential Building Inspector
8443	Leach, Melran	Residential Building Official
9121	Lee, Jason	Building Official Master Plans Examiner Residential Building Official Residential Plans Examiner
	Marn, Dylan	Building Inspector Trainee** Residential Building Inspector Trainee** Alternative trainee plan approved
9125	Martin, Brandon	Electrical Safety Inspector*
9133	McGovern, Joseph	Building Plans Examiner
9123	Miller, Scott	Residential Building Official
8991	Muncy, John	Building Official
9109	Patrick, Anthony	Electrical Safety Inspector*
9096	Peterson, Michael	Automatic Sprinkler System Designer
9094	Quinichett, Maurice	Electrical Safety Inspector Trainee - Columbus
9101	Richardson, Brenton	Electrical Safety Inspector Trainee - Columbus
5777	Shetler, Todd	Building Inspector Trainee** Residential Building Inspector
9105	Taylor, Franklin	Fire Alarm System Designer
1488	Testa, Dave	Building Official Building Inspector
8905	Wakefield, Alex	Residential Building Official
6320	Walter, David	Residential Building Official
8697	Ward, Andrew	Residential Building Inspector
1614	Weneck, Dennis	Building Inspector
1624	Wettrick, Richard	Building Inspector Residential Building Official Residential Building Inspector
9019	Wheeler, Donald	Building Official Residential Building Official Residential Plans Examiner
1643	Wilson, Chris	Non-Residential Industrialized Unit Inspector Electrical Plans Examiner

*Electrical Safety Inspectors must complete examinations prior to issuance of interim certification

** Denotes approval conditioned on receipt of forms or fees or other conditions.

Timothy Galvin, Chairman

Ohio Board of Building Standards
6606 Tussing Road
Reynoldsburg, OH 43068-9009

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614-644-2613
Fax 614 -644-3147
TTY/TDD 800-750-0750
com.ohio.gov/dico/bbs

Building Department Certifications

Columbiana (city of) - New Commercial Department
Exceptions: Plumbing, Med Gas to be performed by Columbiana County Department of Health
Recommend approval

Fostoria - Modification of Certification Application
Transition to independent department in contract with Seneca County
Previously a sub-department of Wood County
Exceptions: Plumbing, Med Gas
Recommend approval

Salem - New Commercial Department
Exceptions: Plumbing, Med Gas to be performed by Columbiana County Health District
Recommend approval

Upper Sandusky - Modification of Commercial Department Certification
Transition from subdepartment of Richland County to contract with Wyandot County (Safebuilt)
Exceptions: Plumbing, Med Gas
Application is placeholder (states subdepartment) for new application as contract department
Recommend approval upon receipt of updated application.

Personnel Certification Applications

Recommend the following applications be denied, additional information be requested, or other action as noted:

Wakefield, Alex - BI
Certification ID: 8905
Current certifications: ESI
Committee Recommendation: Approved for BI trainee pending receipt of forms

Ransom II, Robert - PI Additional information
Certification ID: 8918
Current Certifications: RBI
Committee Recommendation: Request additional detailed information on plumbing installation experience, invite to attend meeting August 10th to discuss.

Battaglia, Gina Marie - PI
Certification ID:
Current Certifications: None
Committee Recommendation: Request additional detailed information on plumbing installation experience

Marn, Dylan - BI and RBI Trainee, Alternative Trainee Plan
Certification ID:
Current Certifications: None
Committee Recommendation: BI and RBI Trainee and alternative trainee plan approved pending receipt of forms and fees.

Timothy Galvin, Chairman

Ohio Board of Building Standards
6606 Tussing Road
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Shetler, Todd - BI Trainee, RBI

Cert ID: 5777

Current Certifications: None

Committee Recommendation: RBI interim , BI Trainee approved under the following conditions: Trainee sponsorship forms to be submitted by July 31, 2023, expiration date December 31, 2024, applicant to make quarterly reports to Board regarding progress in completing exams for BI, first report to be submitted by September 30, 2023, applicant to attend Code Academy within one year (June 2024).

Old Business

None this month

New Business

None this month

Timothy Galvin, Chairman

Ohio Board of Building Standards
6606 Tussing Road
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File Attachments for Item:

CR-2 Education Committee Report



Board of Building Standards

EDUCATION COMMITTEE MEETING REPORT

The Education Committee met on June 22nd, 2023 at 10:00 AM in the BBS Library, 6606 Tussing Road, with the following members present: Mr. McCafferty, Mr. Stanbery, Mr. Barney, Mr. Samuelson, Mr. Tyler, and Ms. Ward. Board Chairman Timothy Galvin was also present. The Committee makes the following recommendations, included in the June 23rd, 2023 Board Packet at Tab CR-2, for the Board's consideration.

BBS Staff Megan Foley was present for the meeting, and Laura Borso attended virtually. Charles Huber and committee member Greg Warner attended virtually to observe.

Courses approved without modification:

2021 IBC Update (West Coast)
All certifications (5 hours)

Commercial Building Inspector and Plans Examiner (2021 IBC) (West Coast Code Consultants)
All certifications (19.5 hours)

Commercial Mechanical Inspector and Plans Examiner (2021 IMC)
All certifications (13 hours)

Commercial Plumbing Inspector and Plans Examiner (2021 IPC) (West Coast Code Consultants)
All certifications (11 hours)

Courses approved with modification or special circumstances, or denied, as stated.

Photovoltaic Systems: NEC Requirements and Industry Standards (Ohio Certificate Renewal)
All certifications (4 hours)
Committee Recommendation: Approved for all certifications.

Standby Generators: NEC Requirements and Generator Installation Methods (Ohio Certificate Renewal)
All certifications (4 hours)
Committee Recommendation: Approved for all certifications.

The New ACI Code 440.11 on GFRP Reinforced Concrete (American Concrete Institute)
All certifications (1 hour)
Committee Recommendation: Administrative approval ratified.

Residential Building Inspector (2021 IRC) (West Coast)
Residential certifications (11 hours)
Committee Recommendation: Approved for all certifications.

Residential Building Inspector (2021 IRC) (in Spanish) (West Coast)
Residential certifications (11 hours)
Committee Recommendation: Approved for all certifications.

Residential Electrical Inspector (2021 IRC) (West Coast)
Residential certifications (16.5 hours)
Committee Recommendation: Approved for all certifications.

Residential Mechanical Inspector (2021 IRC) (West Coast)
Residential certifications (11 hours)
Committee Recommendation: Approved for all certifications.

Residential Plans Examiner (2021 IRC) (West Coast)
Residential certifications (16 hours)
Committee Recommendation: Approved for all certifications.

Residential Plumbing Inspector (2021 IRC) (West Coast)
Residential certifications (7.5 hours)
Committee Recommendation: Approved for all certifications.

Old Business:

None this month

New Business:

None this month

File Attachments for Item:

CR-3 Code Committee Report



Board of Building Standards

CODE COMMITTEE RECOMMENDATIONS

The Code Committee met on June 13, 2023 with the following members present: Ms. Cromwell, Mr. Denk, Mr. Johnson, Mr. Miller, Mr. Pavlis, Mr. Stanbery, and Mr. Tyler. Board Chairman, Tim Galvin, was also present.

The committee report is included in the June 23, 2023 Board Meeting Packet at tab CR-3 for the Board's consideration.

June 13, 2023 Code Committee Meeting

Call to Order

The meeting was called to order by Mr. Denk at 10:06 A.M.

Approval of Minutes

Mr. Miller made the motion to approve the minutes of the Code Committee meeting held on May 11, 2023. Mr. Stanbery seconded the motion. The motion passed unanimously.

Petitions

Withdrawal of Petition #23-02 - OBC Section 429 Privacy Pods/Booths - Charles Moore of Framery Acoustics

Ms. Ohler explained that she contacted the petitioner and the petitioner agreed to withdraw the petition. Staff and the petitioner will work together in the coming months to craft language to present to the committee that addresses privacy pods and similar products. No further action was taken.

Reconsideration of Petition #23-03 - OBC Ch 19 & 35 - Add ACI 440.11 to address Glass Fiber Reinforced Polymer (GFRP) - Kerry Sutton of ACI

After the committee members discussed the pros and cons of adopting the OBC Chapters 19 and 35 rules as originally filed in the proposed 2024 OBC rule package, Ms. Cromwell made a motion to revise the OBC Chapters 19 and 35 rules to remove the language addressing GFRP and to remove the references to the ACI 440.11 and ASTM D7957 standards with the understanding that she will use the added time to contact other engineers to learn more about their experience using the product. She did not want Ohio to rush into adopting language until ongoing research on the product has been completed. Mr. Miller seconded the motion. The motion passed, with Mr. Stanbery voting no. The petitioner was encouraged to bring the petition back to the committee in early 2024.

Recommendations of the Residential Construction Advisory Committee

No items for consideration

Old Business

No items for consideration

New Business

Proposed 2024 OBC – Comments received after original filing

Staff presented comments that were received since the 2024 rule packages were originally filed on May 19th. The committee reviewed and discussed the comments submitted by Kurt Beres (OBC 1008.2.3, exit discharge illumination), Diana Anderson (OBC 102.10, fence exemption), and Dave Collins (OBC 506.2.1, missing “SM” in equation 5-1 “A_r” variable), and decided to make no modifications to the rules as a result of the comments received.

Industrialized Unit rule package review

Mr. Richards presented the outline and the proposed IU rules to the committee and explained the need for the separation of the rules from the current OBC Section 113. The next step is to post the rules and solicit stakeholder comments.

Adjourn

Mr. Miller made the motion to adjourn at 1:09 P.M. Mr. Stanbery seconded the motion. The motion passed unanimously.

File Attachments for Item:

RE-1 June Building Department Update

Building Department Support and Oversight

June 2023 Department Visit Status Report

Board Staff conduct building department visits to engage building officials in discussion regarding the administration of their departments and to obtain feedback for the Board. Specifically, Board Staff inquire on the status of plan review and inspection turnaround times, protocols, policies and processes of the department, software systems used, current and projected activity, department funding and fees, relationships with fire departments, administration and elected officials, the issuance of plan approvals, adjudication orders, certificates of occupancy, and appeals.

The following Building departments were visited since the last Board update:

Butler County
East Cleveland
Glendale
Lakewood
Springdale
Pickaway County – site visit

Staff visited building officials of the departments listed and have noted that administrative and enforcement activity has remained strong but is showing some leveling off in the residential sector. There is continued implementation and upgrading of software/computer systems by departments to remain current. Two departments indicate that though they receive paper submissions, they scan them for the plan examiners. They want to ensure that documents are allowed to be submitted in any fashion in the spirit of cooperation with designers.

Nearly every department is back to full-time in the office. Some departments provide remote options, but all onsite inspections are the norm.

Our more rural departments have expressed concern regarding agricultural exemptions and converting or building barns to be used as residential structures without prior approvals.

Comments from building officials continue to include positive feedback about virtual education access. This allows them to avoid 4-5 hours of travel time for a 1-to-3-hour training. Officials also anticipate the new Codes update in 2024.

Building officials appreciate Board staff conversations during the visits as it allows the opportunity to establish rapport with staff.

File Attachments for Item:

OB-1 Petition #23-03 - OBC Ch 19 & 35 Add ACI 440.11 for structural concrete - Kerry Sutton
of American Concrete Institute



CRITERIA FOR SUBMITTING RULE CHANGES TO THE BOARD OF BUILDING STANDARDS

The Ohio Board of Building Standards processes all petitions for changes to the rules of the Board of Building Standards (Building, Mechanical, Plumbing, Boiler, Elevator, or Residential Codes) pursuant to ORC Chapter 119.

When anyone desires to petition the Board of Building Standards to adopt, amend, or annul a provision of rules of the Board, they must complete an application and provide supporting information submitted to the Secretary of the Board of Building Standards.

The application must include the following:

- (1) The date the application is prepared;
- (2) The rule number or section that is proposed for amendment, adoption, or annulment;
- (3) The rule numbers of all other rules that will be affected by the matter proposed;
- (4) The name, address, contact information, affiliation of the applicant, and of any representative;
- (5) The provisions that are proposed for adoption, amendment, or annulment;
- (6) The reason and technical justification for the proposed change;
- (7) All text to be eliminated shall be shown deleted by means of strikethrough, e.g., ~~matter to be eliminated~~;
- (8) All proposed new text to be inserted into a rule shall be shown as underlined, e.g., proposed new matter; and
- (9) One copy of the completed application and attachments.
- (10) An estimate of the increase or decrease in cost that would occur with the adoption of the proposed code change.

When the Secretary of the Board of Building Standards receives a completed application for an adoption, amendment, or annulment of rules of the Board, the Secretary will promptly deliver or mail a copy of the application to each member of the Board.

After receiving an application for the adoption, amendment, or annulment of rules of the Board, the Board of Building Standards shall proceed under sections 3781.101 and 3781.12 of the Revised Code.

APPLICATION

FOR
RULE CHANGE



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

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.

For BBS use:	
Petition #:	# 23-03
Date Recv'd:	March 21, 2023

Submitter:	<u>Kerry Sutton, PE</u> <small>(Contact Name)</small>	<u>American Concrete Institute</u> <small>(Organization/Company)</small>
Address:	<u>38800 Country Club Drive</u> <small>(Include Room Number, Suite, etc.)</small>	
	<u>Farmington Hills</u> <small>(City)</small>	<u>Michigan</u> <small>(State)</small>
		<u>48331</u> <small>(Zip)</small>
Telephone Number:	<u>734-673-2195</u>	Fax Number: <u>248-848-3161</u>
Date:	<u>03-15-2023</u>	E-mail Address: <u>kerry.sutton@concrete.org</u>

Code Section: New Section to amend the 2021 IBC: 1901.2.1 Structural concrete with GFRP reinforcement.

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

See attached Background and rationale.

Explanation of Cost Impact of Proposed Code Change*: The proposal will not increase or decrease the cost of construction.

The proposal will not increase or decrease the cost of construction.

The proposal will not increase or decrease the cost of construction.

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

ATTACHMENT

2021 IBC Option for ACI 440.11

Chapter 19 – Concrete

Section – 1901 General

1901.2 Plain and reinforced concrete. Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and ACI 318 as amended in Section 1905 of this code. Except for the provisions of Sections 1904 and 1907, the design and construction of slabs on grade shall not be governed by this chapter unless they transmit vertical *loads* or lateral forces from other parts of the structure to the soil.

Add new text as follows:

1901.2.1 Structural concrete with GFRP reinforcement. *Cast-in-place structural concrete internally reinforced with glass fiber reinforced polymer (GFRP) reinforcement conforming to ASTM D7957 and designed in accordance with ACI CODE 440.11 shall be permitted where fire resistance ratings are not required and only for structures assigned to Seismic Design Category A.*

Add new standard(s) as follows:

ACI		American Concrete Institute 38800 Country Club Drive Farmington Hills, MI 48331
Standard reference number	Title	Referenced in code section number
<u>440.11-22</u>	<u><i>ACI CODE-440.11-22: Structural Concrete Buildings Reinforced Internally with Glass Fiber Reinforced Polymer (GFRP) Bars – Code Requirements</i></u>	<u>1901.2.1</u>

ASTM		ASTM International 100 Barr Harbor Drive, PO Box C700 West Conshohocken, PA 19428
Standard reference number	Title	Referenced in code section number
<u>D7957/D7957M-17 Reinforcement</u>	<u><i>Standard Specification for Solid Round Glass Fiber Reinforced Polymer Bars for Concrete</i></u>	<u>1901.2.1</u>

Background and rationale - This proposal adds a new referenced standard: ACI CODE 440.11-22: Structural Concrete Buildings Reinforced Internally with Glass Fiber Reinforced Polymer (GFRP) Bars – Code Requirements. The addition of this new standard allows the design and construction of cast-in-place reinforced concrete using non-metallic reinforcement bars. While the design and construct requirements contained in the standard are limited to use in structures assigned to Seismic Design Category A and structural elements not part of seismic force-resisting systems in SDC B and C, for simplicity this proposal limits the use to structures assigned to SDC A. ACI Committee 440 developed this standard to provide for public health and safety by establishing minimum requirements for strength, stability, serviceability, durability, and integrity of GFRP reinforced concrete structures.

The standard not only provides a means of establishing minimum requirements for the design and construction of GFRP reinforced concrete, but for acceptance of design and construction of GFRP reinforced concrete structures by the building officials or their designated representatives.

Due to the performance of other types of FRP reinforcement and the lack of research and testing of other types, the standard only applies to reinforced concrete structures designed and constructed with GFRP manufactured in accordance with ASTM D7957 Standard Specification for Solid Round Glass Fiber Reinforced Polymer Bars for Concrete

GFRP reinforced concrete is especially beneficial for satisfying a demand for improved resistance to corrosion in highly corrosive environments, such as reinforced concrete exposed to water and de-icing salts.

This standard establishes minimum requirements for GFRP reinforced concrete in a similar fashion as ACI CODE 318 Building Code Requirements for Structural Concrete establishes minimum requirements for structural concrete reinforced with steel reinforcement. A separate standard is needed, as GFRP reinforcement behaves differently than steel reinforcement. Results of the ICC Online Governmental Consensus Voting show approval of the inclusion of ACI CODE 440.11 in the 2024 International Building Code.

Currently GFRP is accepted for use to reinforce highway bridge decks. Acceptance is primarily in areas where deicing salts are used on the roads and cause severe corrosion to conventional steel reinforcement. This proposed change provides minimum requirements for other applications where GFRP reinforced concrete is being considered, such as parking garages, water tanks, marine structures and structures supporting MRI machines. Design reasons to use GFRP bars in structures are: resistance to corrosion in the presence of chloride ions, lack of interference with electromagnetic fields, and low thermal conductivity. The use of GFRP reinforcement is accepted by the State of Ohio Department of Transportation and its use is specified in the January 1, 2023 online version of the **ODOT Construction and Materials Specification**.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal adds alternative materials for the design and construction of reinforced structural concrete in Seismic Design Category A and does not preclude the use of conventional reinforced concrete. Thus, there is no cost impact.

S174-22

IBC: 1901.2, 1901.2.1 (New), ACI Chapter 35 (New), ASTM Chapter 35 (New)

Proposed Change as Submitted

Proponents: Stephen Szoke, representing American Concrete Institute (steve.szoke@concrete.org); Jerzy Zemajtis, representing NEx, An ACI Center of Excellence for Nonmetallic Building Materials (jerzy.zemajtis@nonmetallic.org); John Busel, representing American Composites Manufacturers Association (jbusel@acmanet.org); Scott Campbell, representing NRMCA (scampbell@nrmca.org); Doug Gremel, representing Owens Corning Infrastructure Solutions (douglas.gremel@owenscorning.com); Carl Larosche, representing ACI (clarosche@wje.com); William O'Donnell, representing DeSimone Consulting Engineers (william.odonnell@de-simone.com); Matthew D'Ambrosia, representing MJ2 Consulting (matt@mj2consulting.com); Keith Kesner, representing CVM (kkesner3006@gmail.com); antonio de luca, representing Thornton Tomasetti

2021 International Building Code

1901.2 Plain and reinforced concrete. Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and ACI 318 as amended in Section 1905 of this code. Except for the provisions of Sections 1904 and 1907, the design and construction of slabs on grade shall not be governed by this chapter unless they transmit vertical loads or lateral forces from other parts of the structure to the soil.

Add new text as follows:

1901.2.1 Structural concrete with GFRP reinforcement. Cast-in-place structural concrete internally reinforced with glass fiber reinforced polymer (GFRP) reinforcement conforming to ASTM D7957 and designed in accordance with ACI CODE 440 shall be permitted only for structures assigned to Seismic Design Category A.

Add new standard(s) as follows:

ACI

American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48331-3439

CODE 440-22

Structural Concrete Buildings Reinforced Internally with Fiber Reinforced Polymer (FRP) Bars – Code Requirements

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428

D7957/D7957M-17

Standard Specification for Solid Round Glass Fiber Reinforced Polymer Bars for Concrete Reinforcement

Reason: This proposal adds a new referenced standard: ACI CODE 440-22: Structural Concrete Buildings Reinforced Internally with Fiber Reinforced Polymer (FRP) Bars – Code Requirements.

The addition of this new standard allows the design and construction of cast-in-place reinforced concrete using non-metallic reinforcement bars. Currently the design and construct requirements contained in the standard are limited to use in Seismic Design Category A. ACI Committee 440 developed this standard to provide for public health and safety by establishing minimum requirements for strength, stability, serviceability, durability, and integrity of GFRP reinforced concrete structures.

The standard not only provides a means of establishing minimum requirements for the design and construction of GFRP reinforced concrete, but for acceptance of design and construction of GFRP reinforced concrete structures by the building officials or their designated representatives.

The standard applies to GFRP reinforced concrete structures designed and constructed under the requirements of the general building code.

GFRP reinforced concrete is especially beneficial for satisfying a demand for improved resistance to corrosion in highly corrosive environments, such as reinforced concrete exposed to salt water, salt air, or de-icing salts.

This standard establishes minimum requirements for GFRP reinforced concrete in a similar fashion as ACI 318 Building Code Requirements for Structural Concrete establishes minimum requirements for structural concrete reinforced with steel reinforcement. A separate standard is needed, as GFRP reinforcement behaves differently than steel reinforcement.

Currently GFRP is accepted for use to reinforce highway bridge decks. Acceptance is primarily in areas where deicing salts are used on the roads and cause severe corrosion to conventional steel reinforcement. This proposed change provides minimum requirements for other applications where GFRP reinforced concrete is being considered, such as marine and coastal structures, parking garages, water tanks, and structures supporting MRI machines. Design reasons to use GFRP bars in structures are: resistance to corrosion in the presence of chloride ions, lack of interference with electromagnetic fields, and low thermal conductivity.

Currently the standard prohibits the use concrete internally reinforced with GFRP for applications where fire resistance ratings are required. Chapter 6 of the International Building code cites applications for floors, roofs, walls, partitions and primary and secondary structural frames where a fire resistance ratings are not required.

The code requirements may be viewed at: <https://www.concrete.org/publications/standards/upcomingstandards.aspx>

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal adds alternative materials for the design and construction of reinforced structural concrete in Seismic Design Category A and does not preclude the use of conventional reinforced concrete. Thus there is no cost impact.

Staff Analysis: A review of the standard proposed for inclusion in the code, ACI CODE 440-22 Structural Concrete Buildings Reinforced Internally with Fiber Reinforced Polymer (FRP) Bars – Code Requirements, with regard to some of the key ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before March 16, 2022.

A review of the standard proposed for inclusion in the code, ASTM D7957/D7957M-17 Standard Specification for Solid Round Glass Fiber Reinforced Polymer Bars for Concrete Reinforcement, with regard to some of the key ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before March 16, 2022.

S174-22

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: Disapproved as the proposed new standard, ACI Code 440-22, is not complete and was submitted in draft format only. The committee commented that testimony indicated the final version of the standard, ACI Code 440-22, may have substantive changes related to fire resistance of FRP. (Vote: 14-0)

S174-22

Individual Consideration Agenda

Public Comment 1:

IBC: 1901.2.1, ACI Chapter 35

Proponents: Stephen Szoke, representing American Concrete Institute (steve.szoke@concrete.org); John Busel, representing American Composites Manufacturers Association (jbusel@acmanet.org); Doug Gremel, representing Owens Corning Infrastructure Solutions (douglas.gremel@owenscorning.com); Keith Kesner, representing CVM (kkesner3006@gmail.com); Antonio Nanni, representing University of Miami (nanni@miami.edu); William O'Donnell, representing DeSimone Consulting Engineers (william.odonnell@de-simone.com) requests As Modified by Public Comment

Modify as follows:

2021 International Building Code

1901.2.1 Structural concrete with GFRP reinforcement. Cast-in-place structural concrete internally reinforced with glass fiber reinforced polymer (GFRP) reinforcement conforming to ASTM D7957 and designed in accordance with ACI CODE 440.11 shall be permitted where fire resistance ratings are not required and only for structures assigned to Seismic Design Category A.

ACI

American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48331-3439

CODE 440.11-22

Structural Concrete Buildings Reinforced Internally with Fiber Reinforced Polymer (FRP) Bars – Code Requirements

Commenter's Reason: The committee voted for disapproval for two reasons: 1) the ACI CODE 440.11 Structural Concrete Buildings Reinforced Internally with Fiber Reinforced Polymer (FRP) Bars - Code Requirements was in public review draft and 2) there was concern about application where fire resistance ratings are required. ACI CODE 440.11-22 has been completed and the revised designation is reflected in this public comment. Further, this public comment adds clear language precluding design of structural concrete in accordance with ACI CODE 440.11 where

fire resistance ratings are required. This public comment addresses both concerns expressed by the committee. There are many applications where the use of GFRP reinforcement in concrete can enhance durability and long term life safety.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction. This proposal as modified with public comment provides an additional option for the design and construction of reinforced structural concrete.

Staff Analysis: In accordance with Section 3.6.3.1.1 of ICC Council Policy 28, the new referenced standard ACI Code 440-22, must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

Public Comment# 3212

File Attachments for Item:

NB-1 Draft Industrialized Units Rules - Action to Initiate Stakeholder Input Process

Industrialized Unit Draft Rules

4101:10-1-01 through 10-10-01

4101:10-1-01 Title and scope.

(A) **Title.** Rules 4101:10-1-01 to 10-10-01 of the Administrative Code are designated as the “Ohio Industrialized Unit Rules” for which the designation “IU Rules” may be substituted. Where applicable, the technical provisions found in rules 4101:1-2 to 4101:1-35 of the Administrative Code (the “Ohio Building Code” - Chapters 2-35), rules 4101:2-2 to 4101:2-15 of the Administrative Code (the “Ohio Mechanical Code” - Chapters 2-15), rules 4101:3-2 to 4101:3-15 of the Administrative Code (the “Ohio Plumbing Code” - Chapters 2-15) and rules 4101:8-2 to 4101:8-44 (the “Residential Code of Ohio” - Chapters 2-44) are used by this code and are hereby incorporated by reference.

(1) **Rules of construction.** The following rules of construction are to be applied to rules 4101:1-2 to 4101:1-35 of the Administrative Code, rules 4101:2-2 to 4101:2-15 of the Administrative Code, rules 4101:3-2 to 4101:3-15 of the Administrative Code and rules 4101:8-2 to 4101:8-44 of the Administrative Code:

(a) All references to the “International Building Code,” “International Mechanical Code,” “International Plumbing Code,” and “International Residential Code” mean the “Ohio Building Code,” “Ohio Mechanical Code,” “Ohio Plumbing Code,” and “Residential Code of Ohio,” respectively, unless otherwise noted.

(i) References to “this code” in rules 4101:1-1 to 4101:1-35 of the Administrative Code mean the “Ohio Building Code.” References to “building code” in divisions 4101:1, 4101:2, 4101:3 and 4101:8 of the Administrative Code mean “Ohio Building Code.”

(ii) References to “this code” in rules 4101:2-1 to 4101:2-15 of the Administrative Code mean the “Ohio Mechanical Code.” References to “mechanical code” in divisions 4101:1, 4101:2, 4101:3 and 4101:8 of the Administrative Code mean “Ohio Mechanical Code.”

(iii) References to “this code” in rules 4101:3-1 to 4101:3-15 of the Administrative Code mean the “Ohio Plumbing Code.” References to “plumbing code” in divisions 4101:1, 4101:2, 4101:3 and 4101:8 of the Administrative Code mean “Ohio Plumbing Code.”

(iv) References to “this code” in rules 4101:8-1 to 4101:8-44 of the Administrative Code mean the “Residential Code of Ohio.” References to “residential building code” in

Industrialized Unit Draft Rules

4101:10-1-01 through 10-10-01

divisions 4101:1, 4101:2, 4101:3 and 4101:8 of the Administrative Code mean “Residential Code of Ohio.”

- (b) The phrase "applicable energy conservation code referenced in Chapter 13" is substituted for "International Energy Conservation Code" in divisions 4101:1, 4101:2 and 4101:3 of the Administrative Code.
 - (c) Except as otherwise noted and in rule 4101:1-34-01 of the Administrative Code, “Chapter 34” is substituted for “International Existing Building Code.”
 - (d) The terms “approval” or “approvals” are substituted for “permit” or “permits,” respectively, when referring to documentation indicating compliance with this code.
 - (e) The phrase “manufacturer’s representative” is substituted for “owner’s authorized agent.”
 - (f) Except as otherwise noted, “board of building standards” is substituted for “fire code official.”
 - (g) The phrase “board of building standards” is substituted for “code official.”
 - (h) The provisions of this code are mandatory whether or not the term “shall” is used.
- (B) Scope.** The provisions of the “IU Rules” shall apply where an application for authorization is submitted for the construction of *industrialized units*. As provided in division (B) of section 3791.04 of the Revised Code, no plans or specifications shall be authorized or inspection given unless the *industrialized unit* represented by those plans or specifications would, if constructed or equipped according to those plans or specifications, comply with Chapters 3781. and 3791. of the Revised Code and the applicable rules adopted by the board of building standards.
- (1) Exceptions:**
- (a) A manufactured home as defined by division (C)(4) of section 3781.06 of the Revised Code or a mobile home as defined by division (O) of section 4501.01 of the Revised Code.
 - (b) Amusement rides and portable electric generators and wiring supplying carnival and amusement rides regulated by the Ohio department of agriculture pursuant to Chapter 993. of the Revised Code.
 - (c) Floating structures that have been issued a “Hull Identification Number” (HIN) and a vessel registration from the Ohio department of natural resources division of parks and watercraft.

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- (d) Portable mobile vehicles which have been issued a “Vehicle Identification Number” (VIN) by the United States department of transportation. The vehicles have wheels and license plates and are intended for transportation on the public streets and highways. Examples of the exempt vehicles include, but are not limited to, recreational vehicles, book mobiles, blood mobiles, mobile medical imaging units, mobile concession trailers, network television transmission and production trailers used at sporting events, mobile restroom facilities, mobile pet grooming units, etc.
- (e) Primitive transient lodging structures as defined in rule 4101:1-2-01 of the Administrative Code with only provisions for sleeping, with no building services equipment, piping, or electrical wiring system and not greater than 400 sq. ft. in area.
- (f) Intermodal shipping or freight containers, moving containers, storage containers, if used exclusively as a storage container and are unaltered or alterations that do not constitute closed construction.
- (g) Mobile computing units as defined in section 3781.06 of the Revised Code.
- (h) One-story, detached, accessory structures to dwellings where the accessory structure is without building services and used as tool and storage sheds, playhouses, playground structures or similar uses, provided the floor area does not exceed two hundred square feet (18.58 m²).
- (i) An *industrialized unit*, installed at the site of intended use, as a portion of an existing building having a certificate of occupancy. Per paragraph (D)(4) of rule 4101:10-3-01 of the Administrative Code, the identification of the structural entity as an *industrialized unit* ends and structure becomes an integral part of an existing building regulated as an existing building or structure.
- (j) A valid *industrialized unit* that has been constructed but not installed at the site of intended use and the board of building standards’ authorization has been invalid for a period exceeding two years, the identification of the structure as an *industrialized unit* ends and the structure is regulated as an existing structure.
- (k) Materials, devices, products, appliances, equipment or methods of construction for which the board has recognized the conformity assessment body and the accreditation agency pursuant to section 114 of rule 4101:1-1-01 of the Administrative Code and in accordance with one of the following:

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- (i) Materials, devices and products used in accordance with their listing recognized by the board of building standards per section 114.3.1.
 - (ii) Alternative materials, products, equipment and methods of construction in accordance with their evaluation service report recognized by the board of building standards per section 114.3.2.
- (l) Construction for which the provisions of section 1704 of the “Ohio Building Code” applies. Where panels or components are constructed to include elements not provided for or accounted for in section 1704, then this code shall apply.
- (m) Foam plastic insulation conforming to the provisions of section 2603 of the “Ohio Building Code” or section 316 of the “Residential Code of Ohio” as applicable.
- (2) **Intent.** The “IU Rules” apply to *industrialized units* used in the construction of *residential buildings* and *non-residential buildings*. To the extent of the construction documents submitted to the board, the *industrialized units* are to be in conformance with the applicable building code based on the occupancy type, intended use, and design criteria.
- (3) **Jurisdictional authority.** Buildings that include the installation of an *industrialized unit* are regulated under the rules of the board. The board of building standards has the authority to enforce the “IU Rules” with the *industrialized unit* manufacturer, applicant for authorization and within the manufacturing plant.
- (a) **Manufacturer submission for authorization.** Before a manufacturer constructs an *industrialized unit*, the manufacturer is to receive an *authorization* from the board of building standards in accordance with paragraph (B) of rule 4101:10-3-01 and rule 4101:10-4-01 of the Administrative Code. Before a manufacturer transports an *industrialized unit*, the unit is to have an *insignia* applied in accordance with paragraph (D) of rule 4101:10-3-01 of the Administrative Code.
- (b) **Building owner submission for approval.** Where the building owner or owner’s representative proposes to include the installation of an *industrialized unit* in the construction, addition, alteration, repair or the change of occupancy or use of a building, the owner is to identify the intent to use an *industrialized unit* on the construction documents submitted for approval to the department with the authority to enforce the rules of the board in the jurisdiction in accordance with rule 4101:1-1-01 of the Administrative Code for

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non-residential buildings or rule 4101:8-1-01 of the Administrative Code for residential buildings.

- (c) **Work without approval.** A unit, manufactured off-site, of closed construction, and arrives at the site of intended use without an *insignia* issued by the board of building standards is work constructed without approval and will be regulated at the site of intended use by the individual with the authority to enforce the rules of the board in the jurisdiction in accordance with rule 4101:1-1-01 of the Administrative Code for non-residential buildings or rule 4101:8-1-01 of the Administrative Code for residential buildings.
 - (4) **Materials, systems and methods of construction.** Materials, products, assemblies or methods of construction used in the construction of an *industrialized unit* are to be approved by the board of building standards. The provisions of section 114 of rule 4101:1-1-01 of the Administrative Code describes the approval process intended in accordance with division (C) of section 3781.10 of the Revised Code and are hereby incorporated by reference.
 - (5) **Industrialized units may exceed requirements.** An owner or a manufacturer may exceed the requirements of this code in compliance with paragraph (C)(5) of rule 4101:10-4-01 of the Administrative Code.
- (C) **Role of the Board.** Pursuant to 3781.10 of the Revised Code, the board of building standards shall adopt rules and issue authorizations for *industrialized units* that are in compliance with the requirements of these rules and the Revised Code. The board of building standards may designate a representative to administer the program, oversee plans examinations, issue authorizations and adjudication orders, render interpretations of the rules of the board as they relate to industrialized units and conduct other administrative duties necessary to enforce these rules.

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4101:10-2-01 Definitions.

- (A) **Definitions.** Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this section.
- (1) **Interchangeability.** Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.
 - (2) **Defined in other codes.** Where terms are not defined in this code and are defined in the “International Energy Conservation Code,” “International Fuel Gas Code,” fire code, building code, mechanical code, ~~or~~ plumbing code, or the “Residential Code of Ohio” such terms shall have the meanings ascribed to them as in those codes.
 - (3) **Terms not defined.** Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.
 - (4) **Defined terms.**
 - (a) **Approval.** The action by the building official of the department with jurisdiction in accordance with rule 4101:1-1-01 or 4101:8-1-01 of the Administrative Code.
 - (b) **Approved.** Determined by the authority having jurisdiction to be in compliance with the rules of the board.
 - (c) **Authorization.** The board of building standards’ action which provides a manufacturer the license to build industrialized units based on the construction documents for the industrialized unit submitted to and *approved* by the board of building standards.
 - (d) **Building.** Any structure utilized or intended for supporting or sheltering any occupancy, function, or activity. This includes, but is not limited to, structures built or used for the shelter, occupancy, enclosure or support of persons, animals, or chattels. For the purposes of the “IU Rules,” the term “building” is to be construed as followed by the words “or portion thereof.”
 - (e) **Building, existing.** A building regulated by the Ohio building code or the residential code of Ohio, as applicable, that has been erected and for which a certificate of occupancy has been issued or can be issued in accordance with section 111.4 of rule 4101:1-1-01 or 4101:8-1-01, as applicable.
 - (f) **Building, non-residential.** Any building that is not a residential building, industrialized unit, manufactured home or mobile home.
 - (g) **Building, residential.** A one-family, two-family, or three-family dwelling house, and any accessory structure incidental to that dwelling

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house. "Residential building" does not include a manufactured home as defined by division (C)(4) of section 3781.06 of the Revised Code, or a mobile home as defined by division (O) of section 4501.01 of the Revised Code.

- (h) **Closed construction.** An assembly of materials or products manufactured in such a manner that its structural, plumbing, electrical, environmental control, or fire protection elements or components are concealed and are not readily accessible for inspection at the site of its erection, without disassembly, damage, or destruction. Closed construction includes assemblies where only one of the components is not accessible for inspection.
- (i) **Equipment unit.** An enclosed, single unit assembly for the purposes of separating, from other portions of the building, mechanical or electrical systems or operations in support of building services where access into the unit is limited and controlled to authorized personnel only.
- (j) **Industrialized unit.** A prefabricated component, building unit or assembly comprised of closed construction, manufactured at a location remote from the site of intended use, with an insignia issued by the board of building standards and transported to a building site for its installation and subsequent use as part of a building structure, building services system (equipment, piping, wiring, etc.), or both. *Industrialized units* may be *modular units*, *panelized units* or equipment units and can be installed on the site of intended use as an independent unit, as part of a group of units, or incorporated with standard construction methods to form a completed structural entity.
- (k) **Insignia.** An official label provided by the board of building standards with a unique number that distinguishes each *modular unit* or *panelized unit* of an authorized *industrialized unit* from all other units manufactured.
- (l) **Inter-connection.** Point of attachment between an *industrialized unit* and any building components or systems, designed by others, and constructed at the site of intended use.
- (m) **Intra-connection.** Point of attachment between two or more modular units or panelized units required to complete the *industrialized unit* as authorized where the connection is completed at the site of intended use.
- (n) **Manufacturing plant.** The location at which the *modular units* or *panelized units* are assembled or manufactured prior to transport to the site of intended use.
- (o) **Mateline.** The plane at which *intra-connections* or *inter-connections* are made.

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- (p) **Modular unit.** A building unit or assembly that is designed and authorized as a volumetric section having occupiable space or spaces of an industrialized unit. A modular unit can be transported to the site of intended use as a whole unit or broken down.
 - (q) **Panelized unit.** A component that is a surface or edge defining component (e.g. floor, wall or roof) and the component itself does not have space that can be occupied.
 - (r) **Third-party inspection entity.** An individual certified by the board of building standards or a company with an individual(s) certified by the board of building standards or a state inspector designated by the board of building standards with the authority to inspect the scope of work. Certifications recognized by the board of building standards include a certification, issued by the board of building standards in accordance with rule 4101:10-9-01 of the Administrative Code, to inspect *industrialized units* or individual certifications, issued by the board of building standards in accordance with rule 4101:7-3-01 of the Administrative Code, to inspect the combination of building systems incorporated in the construction of the *industrialized unit*.
- (B) Variations of defined terms.** Such terms as heart modules or cores, modules, modulars, service cores, prefabs, sectional or sectionalized, panels or panelized construction, and specific terms including "prefabricated-subassembly, -building, -unit, -unit service equipment" may reference an *industrialized unit*. The units may be self-sufficient or interdependent as a unit or group of units to form a complete *industrialized unit*; and when used together or incorporated with standard construction methods, form a completed building.

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4101:10-3-01 Manufacturer's participation.

- (A) **Manufacturer's participation in the industrialized unit program.** Every manufacturer participating in Ohio's *industrialized unit* program shall comply with paragraphs (A)(1) through (A)(4) of this rule prior to making application for *authorization* of an *industrialized unit*.
- (1) **Registration information.** The manufacturer is to register with the board of building standards. For the purpose of registration, the manufacturer is to provide the following information at a minimum:
 - (a) Manufacturer's name, and
 - (b) Address of the manufacturing plant where the unit is constructed, and
 - (c) Contact name, phone number and email, and
 - (d) Identification of the *third-party inspection entity* recognized by the board of building standards that will perform in-plant inspections in accordance with paragraphs (A)(5) to (A)(7) and (C) to (C)(3) of this rule, and
 - (e) A statement of acknowledgement from the third-party inspection entity indicating that they have a contractual relationship with the manufacturer to perform the inspections. The statement shall include the name(s) and board certification(s) of the individual(s) who will be assigned to perform the inspections.
 - (2) **Manufacturing plants in Ohio.** A manufacturer with a manufacturing plant in Ohio may request the board of building standards to designate a *third-party inspection entity* of the state for the purpose of performing required third-party inspections. The board may designate either the certified personnel of the local building department certified to enforce the rules of the board for the jurisdiction in which the manufacturing plant is located or the superintendent of the division of industrial compliance. The manufacturer is responsible for payment of any fees charged by a local certified building department or the division of industrial compliance in connection with review and inspection of an *industrial unit* pursuant to rule 4101:10-8-01 of the Administrative Code.
 - (3) **Changes in registration information.** Whenever changes occur to company name, ownership, subsidiary status, address or change in the manufacturer's management personnel who are responsible for making policy concerning quality control, the manufacturer shall immediately notify the board, in writing, and the manufacturing plant(s) affected by the change will be subject to a plant evaluation inspection.
 - (4) **Accessing industrialized unit program functions.** The board of building standards utilizes an electronic portal to conduct the official business of the *industrialized unit* program. No paper submissions or payments will

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be accepted. After registration is complete, the board will provide the manufacturer with access to the board of building standards' industrialized unit portal. The manufacturer and the board of building standards will use the portal for interactions including but not limited to:

- (a) Making application for board of building standards' industrialized unit authorization including submission of construction documents and any substantive revisions or amendments.
- (b) Access to correction letter containing items of non-compliance and adjudication orders issued.
- (c) Response to correction letter including resubmission of revised construction documents or intent to appeal.
- (d) Access to authorized construction documents for download.
- (e) Payment of fees.
- (f) Request for insignia(s).
- (g) Upload of shipping log(s).

Other forms of communication are available and may be used for general information sharing.

- (5) **Manufacturing plant evaluation.** Before a manufacturer can begin construction of board authorized industrialized units, an initial manufacturing plant evaluation inspection is to be conducted by the *third-party inspection entity* identified in the manufacturer's registration with the board. An evaluation is to occur for each plant in which an *industrialized unit* with authorization from the board of building standards is being assembled and the evaluation is to assess the following:

- (a) Compliance with chapter 5 of the "1205 Standard for Off-site construction: Inspection and Regulatory Compliance, 2021 edition" as published by the International Code Council/Modular Building Institute. The manufacturer has a quality assurance and quality control program in place to maintain acceptable control of materials and processes used in the manufacture of *industrialized units* to ensure conformance with the approved construction documents.
- (b) The manufacturer's facility has necessary, adequate and appropriate spaces for production, storage, packaging, shipping, employees, etc. that are equipped (machinery, movers, platforms, cranes, tools, etc.) and supported with building services (utilities) of a reasonable manner for the manufacture of the authorized industrialized unit.
- (c) The plant evaluation inspection shall include all subassembly plants supplying the manufacturer, as the board may deem necessary.
- (d) The board of building standards may require tests as evidence of compliance. Test methods are to be as specified in the applicable building code or by other recognized test standards. In the absence of

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recognized and accepted test methods, the testing procedures used must be approved by the board of building standards. Tests shall be performed by a conformity assessment body recognized by the board in accordance with paragraph (B)(4) of rule 4101:10-1-01 and section 114 of rule 4101:1-1-01 of the Administrative Code. Reports of such tests are to be submitted to and will be retained by the board for the period required for retention of public records.

- (e) Record and maintain a list of the *industrialized unit authorizations* for which the plant evaluation is applicable.
 - (f) The *third-party inspection entity* is to provide a summary of the initial plant evaluation to the board of building standards indicating the manufacturer's compliance with paragraphs (B)(5) to (B)(5)(e) of this rule of the Administrative Code.
- (6) **Frequency of evaluation.** In addition to the initial manufacturing plant evaluation, a manufacturer is to notify the *third-party inspection entity* that a review of the manufacturing plant evaluation is needed anytime one or more of the following occurs:
- (a) The manufacturer has received a new *authorization*. The review of plant evaluation applies only to the manufacturing plant at which the unit is to be assembled.
 - (b) The *industrialized unit* is assembled at a different plant location. The review of plant evaluation applies only to the manufacturing plant at which the unit is to be assembled.
 - (c) The manufacturing plant has not produced an *industrialized unit* authorized by the board of building standards in the preceding five (5) years.
 - (d) The manufacturer has made substantive change in their compliance with chapter 5 of the "1205 Standard for Off-site construction: Inspection and Regulatory Compliance, 2021 edition" as published by the International Code Council/Modular Building Institute.
 - (e) The manufacturer has made an alteration or addition to the manufacturing plant such that the previous plant evaluation is incomplete, irrelevant or otherwise inaccurate.

A current manufacturing plant evaluation is the combination of the initial manufacturing plant evaluation and any amendments, revisions or replacement resulting from compliance with paragraphs (D)(6)(a) to (D)(6)(e) of this rule.

- (7) **Evaluation records.** The manufacturer is to maintain a current manufacturing plant evaluation for each *industrialized unit authorization*.

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- (a) Where multiple industrialized unit authorizations are assembled at the same manufacturing plant and the manufacturing plant evaluation is sufficient for all industrialized units, the manufacturer need maintain only one current manufacturing plant evaluation.
- (b) The current plant evaluation is to include a list of all the authorizations for which the plant evaluation is applicable.
- (c) The *third-party inspection entity* is to retain a historical record of the manufacturing plant evaluation for the immediate preceding five (5) years.
- (d) Manufacturing plant evaluations shall be made available to the board of building standards upon request.

(B) Authorization required. Any manufacturer who intends to manufacture, produce or assemble an *industrialized unit* must first make application for *authorization* to the board of building standards. The application for *authorization*, including revisions and renewals for existing *authorizations*, are to be submitted to the board together with required construction documents in accordance with this paragraph and the fee required in rule 4101:10-8-01 of the Administrative Code. Only the person holding an *authorization* may apply to the board for a revision or renewal of the approval.

(1) **Board's Authorization.** The board, upon determination of compliance in accordance with paragraph (D)(2) of rule 4101:10-4-01 of the Administrative Code, shall issue an *authorization* to the applicant.

- (a) Industrialized units authorized by the board may be used anywhere in Ohio subject to the conditions for their use and application as indicated in the approval.
- (b) The manufacturer may assemble, produce or manufacture duplications, including any variations identified in the approved construction documents, of the industrialized unit with a valid authorization.
- (c) The authorization does not include approval for use associated with the following activities, locations or equipment unless specifically noted in the design criteria:
 - (i) Used to accommodate the manufacture, sales or storage of fireworks, or
 - (ii) Placement in a flood hazard area, or
 - (iii) Used in a facility that requires approval from the Ohio Department of Rehabilitation and Correction, or
 - (iv) Requires approval from the elevator section, division of industrial compliance, or

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- (v) Requires approval from the boiler section, division of industrial compliance.
- (2) **Conditions of authorization.** In addition to any design criteria established by the manufacturer for an industrialized unit, the board of building standards may also establish other conditions or limitations of the board of building standards' *authorization* to coordinate with the site of intended use. Such conditions or limitations may include, but are not limited to:
 - (a) Panel, module or equipment unit;
 - (b) Enclosed or unenclosed;
 - (c) Conditioned or unconditioned;
 - (d) Accessible or non-accessible; or
 - (e) Any other unique stipulations as needed.
- (3) **Revisions to authorization.** Prior to or during fabrication but before transport, any changes to board approved construction documents affecting the conditions illustrated or described in the *authorization* are required to be submitted for review and determination of compliance with the rules of the board as either an amendment of the existing *authorization* or as an application for a new *authorization*.
- (4) **Revocation of authorization.** Upon failure of the holder of an *authorization* to comply with the conditions of the *authorization* and the "IU Rules," the board, on its own motion, shall order a hearing in accordance with section 119.03 of the Revised Code to revoke an existing *authorization*.
- (5) **Expiration of authorization.** An *authorization* is valid for up to one year after the effective date of rules of board adopting a subsequent model-code based edition of the applicable building code.
 - (a) **Exception:** An industrialized unit where manufacture started under a valid *authorization* issued by the board and was not transported to a building site of intended use but stored at a manufacturer's or dealer's facility, can be installed in Ohio as an industrialized unit for a maximum of two years after the effect on the date of the subsequent model-code based edition of the applicable building code. After this two-year time period, the unit's *insignia* has expired and is to be regulated as a moved or relocated existing structure in accordance with the applicable building code provisions.
 - (b) **Renewal of expired authorization.** The holder of an expired *authorization* may renew the *authorization* by making application for a new *authorization* and submitting construction documents which include a cover letter requesting a renewal of the expired authorization, with revisions as needed and clearly identified, that are

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in compliance with the rules of the board that are in effect on the date of the application for *industrialized unit authorization*.

- (6) **Applicable rules to be enforced.** Except as otherwise provided by these rules, the board of building standards exercises authorization authority to accept, review and approve construction documents and audit inspections, related to the manufacture of industrialized units, using the rules of the board that are in effect on the date of the application for an industrialized unit authorization.
 - (7) **Alteration of an authorized industrialized unit after transport.** The alteration of an industrialized unit at the site of intended use is permitted provided the building owner makes application to the building department with jurisdiction and receives approval for the alterations from the certified building official or other individual with the authority to enforce the rules of the board in the jurisdiction.
- (C) **Inspection required.** The manufacturer is required to notify the third-party inspection entity identified in the manufacturer's registration with the board that the unit is ready for required inspection and must provide ready access to the unit for inspection.
- (1) **Remote inspections.** Where the *third-party inspection entity* is approved by the Board to provide remote virtual inspection, the manufacturer is permitted to follow the third-party's approved process to conduct remote virtual inspections.
 - (2) **Reduced inspections.** Where in-plant inspection has demonstrated that the manufacturer's quality control program is capable of assuring that the industrialized units produced are built in accordance with the construction documents approved by the board, then at one overall inspection of "open" construction shall be performed in-plant for each unit by the *third-party inspection entity*.
 - (3) **Increased inspections.** When an inspection determines that the quality control program does not sufficiently ensure compliance with the construction documents approved by the board, the *third-party inspection entity* shall, by written notification, inform the manufacturer that the inspection frequency will be increased so that each assembly or component affected by the nonconforming item will be inspected. These inspections shall continue until an inspection determines that the manufacturer's control of the materials and processes used is sufficient to ensure that the units are constructed in accordance with the approved construction documents.

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- (D) **Insignia required.** Each *modular unit* or *panelized unit* or *equipment unit* of an authorized *industrialized unit* must have an insignia applied.
- (1) **Insignia acquisition.** An insignia shall be obtained from the board for each industrialized unit module or panel to be used within the state of Ohio.
 - (2) **Insignia placement.** The insignia shall be affixed to each unit, in the location identified in the authorized construction documents, after a determination is made by the *third-party inspection entity* that the unit is constructed in accordance with the construction documents authorized by the board.
 - (3) **Insignia signifies.** An insignia, applied to the unit, shall constitute final approval of the unit as compliant with the requirements of the applicable building code.
 - (4) **Insignia expiration.** An insignia expires at either of the following events:
 - (a) After the building owner receives a certificate of occupancy for the building in which the industrialized unit with this specific insignia is installed.
 - (b) After two years from the effective date of the subsequent model-based building code.
 - (5) **Assemblies without insignia.** Modules, panels or equipment unit constructed without an *authorization* and an *insignia* from the board of building standards are not *industrialized units*.
- (E) **Adjudication orders required.** When the board of building standards denies any authorization or takes action in response to findings of non-compliance with the rules of the board, such action shall be initiated by issuing an adjudication order, prior to seeking any remedy, civil or criminal.
- (1) **Response to orders.** The person receiving an order shall exercise their right to appeal within thirty (30) days of the issuance of the order, comply with the order, or otherwise be released from the order by the board of building standards.
 - (2) **Time limitation of application.** If construction documents have been reviewed for compliance with the rules of the board, an adjudication order has been issued to the manufacturer, and the manufacturer has neither exercised the right to appeal pursuant to paragraph (F) of this rule nor resubmitted corrected documents, the application for authorization is invalid six months from the date of the issuance of the adjudication order. Any fees accrued for plan review are the responsibility of the manufacturer and are due upon receipt of notice of expired application.

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- (F) **Appeals** Adjudication hearings shall be in accordance with sections 119.09 to 119.13 of the Revised Code. Requests for hearing shall be within thirty (30) days of the issuance date of an adjudication order. Unless otherwise provided in the order, the Ohio board of building appeals conducts adjudication hearings on orders issued pursuant to these rules.

DRAFT - Proposed IU Rules for review

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4101:10-4-01 Authorizations.

- (A) **Application for authorization.** The manufacturer or manufacturer's representative is to submit application for authorization and any submittals necessary to demonstrate compliance with the appropriate provisions of the applicable building codes in accordance with paragraphs (B) to (B)(3) of this rule. The application for *authorization* is an online, fillable form provided by the board at the electronic portal.
- (B) **Compliance standard.** Where construction documents demonstrate that the design and construction of the units are in conformance with the rules of the board including but not limited to the applicable referenced building codes based on the intended use and occupancy type in which the industrialized unit is to be incorporated.
- (1) **Industrialized unit for non-residential buildings.** Industrialized units intended for installation in non-residential buildings shall comply with the applicable provisions of the "Ohio Building Code", "Ohio Mechanical Code", "Ohio Plumbing Code" and other codes and standards referenced in those codes as listed in rule 4101:1-35-01, rule 4101:2-15-01 or rule 4101:15-01 of the Administrative Code.
 - (2) **Industrialized unit for residential buildings.** Industrialized units intended to be used exclusively for one-, two-, or three- family dwellings shall comply with the applicable provisions of the "Residential Code of Ohio for One-, Two-, and Three- Family Dwellings" and other codes and standards referenced in that code as listed in rule 4101:8-44-01 of the Administrative Code.
 - (3) **Products, materials and methods of construction used.** Any material, product, assembly or method of construction used in the construction of an industrialized unit shall be approved by the board of building standards. The provisions of paragraph (B)(4) of rule 4101:10-1-01 of the Administrative Code describe the product, material and method of construction approval process intended by the board of building standards in accordance with division (C) of section 3781.10 of the Revised Code.
- (C) **Submittals.** With the application for authorization and fee, construction documents are to be submitted to the board of building standards through the board's electronic portal under a registered manufacturer. The construction documents include design drawings and may include, but are not limited to, evaluation service reports, manufacturer's installation instructions, and test

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reports. The construction documents are to comply with this paragraph and rule 4101:10-5-01 of the Administrative Code:

(1) **Information on construction documents.** Construction documents are to be provided as electronic media documents. Construction documents are to illustrate or describe all essential elements of the structure or assembly and details of intra- and inter-connections. Construction documents are to be dimensioned, coordinated and of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the *industrialized unit* will conform to the provisions of this code. Construction documents, adequate for the scope of the project, shall include information necessary to determine compliance with the applicable referenced building code including but not limited to the building, mechanical, plumbing, fire, electrical, energy, fuel gas codes and where applicable the residential building code.

(a) **General information, design criteria and orientation.**

(i) **Design criteria.** Identify the conditions at the site of intended use that are necessary for the installation of the industrialized unit, the applicable codes, referenced standards, climatic and geographic conditions, all occupancy classification(s), type(s) of construction, the overall area of the industrialized unit, the maximum design occupant load, the structural design loads, the seismic design category and site class that control the design. Include specific conditions or design criteria that will prohibit the installation without additional alteration of the industrialized unit at the site of intended use and approval by the local building official including the following as applicable:

(a) **Unit type an integration.** Identify the type of unit proposed and the intended manner of integration at the site of intended use. Integration is one of the following:

(i) **Detached industrialized unit.** Where intended to be a stand-alone industrialized unit, identify the industrialized unit as detached and the minimum fire separation distance required.

(ii) **Attached industrialized unit.** Where intended to be an attached industrialized unit, identify the industrialized unit as attached and identify the specific conditions required of the building construction to which the industrialized unit can be attached.

(b) **Floodplain unit.** Declare the unit as not designed for installation in a flood hazard zone; or, where the unit is

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- intended for installation in a flood hazard zone, identify the flood hazard area for which the unit is designed.
- (c) **Seasonal use unit.** Where the structure is identified and designed for seasonal use (May-September), compliance with thermal envelope requirements of the energy conservation provisions are not required.
 - (d) **Hazardous materials.** Where the industrialized unit is intended to store, process or otherwise contain hazardous materials, identify the hazardous material, classification type and quantity stored, processed or otherwise used.
- (ii) **Scope of work.** Each portion of the design represented in the construction documents are to be identified in one of three categories of work:
- (a) **Category 1 Factory assembled.** Work completed at the manufacturing facility under the board's industrialized unit authorization and inspected by the *third-party inspection entity*. Unless otherwise stated as category 2 or category 3 work, the design represented in the submitted construction documents is category 1.
 - (b) **Category 2 Site assembled.** Work completed at the site of intended use regarding modules or panels assembled at the manufacturing plant under the board's industrialized unit authorization. This work is to be inspected by the building department with the authority to enforce the rules of the board in the jurisdiction in accordance with the industrialized unit authorization and section 108 of rule 4101:1-1-01 or section 108 of rule 4101:8-1-01 of the Administrative Code as applicable.
 - (c) **Category 3 Building owner provided.** Work completed at the site of intended use necessary to accept the installation of the industrialized unit. This work is under the approval and inspection of the building department with the authority to enforce the rules of the board in the jurisdiction. The manufacturer is not required to include any technical detail for category 3 scope of work.
- (iii) **Index.** A table of contents identifying the drawings, specifications and other product information included in the construction documents with a method to locate the information within the set of construction documents.
- (iv) **Orientation.** Provide appropriate code appellations of all spaces, identification of the type and location of illustrations,

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and a legend of notations/symbology used to orient the relationship between illustrations and reference related information that further illustrates or describes the industrialized unit's compliance with the "IU Rules."

- (b) **Structural integrity and load path.** Provide a complete description of the structural system, materials, components and details that complete the load path, of the industrialized unit including the resultant loads that must be resisted by on-site construction.
- (c) **Fire-safety.** As required under the applicable referenced code, provide fire safety information within the construction documents to address the following:
 - (i) **Means of egress.** All modular units are to comply with the means of egress provisions in rule 4101:1-10-01 for non-residential buildings and rule 4101:8-3-01 for residential buildings. Equipment units need not comply with the means of egress provisions; however, the documents must indicate the limited occupancy, posted signage on exterior near point(s) of access and describe the method of access control.
 - (ii) **Fire and smoke protection systems and features.**
 - (a) **Fire-resistance ratings.** The fire-resistance ratings of all structural elements as required by this code, data substantiating all required fire-resistance ratings including details showing how penetrations will be made for electrical, mechanical, plumbing, and communication conduits, pipes, and systems, and the materials and methods for maintaining the required structural integrity, fire-resistance rating, and firestopping.
 - (b) **Flame spread and smoke developed classifications.**
 - (c) **Draftstops and fireblocking.**
 - (d) **Opening protectives**
 - (e) **Fire detection, alarms, notification and suppression**
 - (iii) **Life safety features.** Where the industrialized unit consists of more than two modules in any direction, life safety features are to be specified. The documentation should identify the egress path, fire separation assemblies, smoke barriers, fire and smoke dampers, and all fire protection system devices and signage.
- (d) **Unit accessibility.** The industrialized unit construction documents are to demonstrate compliance with the accessibility requirements of rule 4101:1-11-01 of the Administrative Code.

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- (i) **Exception.** If accessibility provisions are not a requirement of the project, a statement is to be provided that declares the unit is for use where accessibility is not required.
 - (e) **Sanitary materials, components and systems.** Where an industrialized unit includes potable water or a drain waste and vent system, identify the spaces, finishes, fixtures required for sanitary safety including potable water distribution and drain, waste and vent piping.
 - (f) **Environment conditioning and ventilation.** Where an industrialized unit includes heating, cooling or ventilation systems, identify the spaces, equipment, appliances, ductwork, fuel or source of power and controls required for environmental control or human comfort.
 - (g) **Miscellaneous systems regulated under the building code.** Where other systems regulated under the rules of the board such as boilers, elevators, fuel gas or medical gas is provided, identify the portion of the system provided in the manufacturing plant assembly and indicate the owner of the building is responsible for completing any on-site inspections with applicable state and/or local agencies.
 - (h) **Energy Conservation.** Unless otherwise exempt, demonstrate energy conservation through prescriptive compliance or an energy compliance alternative recognized in the applicable referenced building code. Where energy conservation compliance is demonstrated through a method other than the prescriptive method, provide supporting documentation
 - (i) **Connections.** Construction documents are to describe all essential elements of the industrialized unit and details of intra-connections and inter-connections including but not limited to:
 - (i) Structural members to each other and to site built construction;
 - (ii) Site utilities where a direct connection is provided;
 - (iii) Building service equipment and piping;
 - (iv) Electrical wiring systems;
 - (v) Plumbing and other sanitary systems;
 - (vi) Mechanical heating, cooling and ventilation systems; and
 - (vii) any other equipment whether installed at the site or in the manufacturing facility.
- (2) **Amended construction documents.** If substantive changes to the *industrialized unit* are contemplated after first document submission, or during construction, those changes must be submitted to the board of building standards for review and *authorization* prior to those changes being executed.

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- (3) **Alternative materials and methods of construction and equipment.** For approval of a device, material or assembly that does not conform to the prescriptive requirements in the applicable referenced building code, the construction documents may demonstrate compliance as an alternative material or method of construction in accordance with section 114.3.2 of rule 4101:1-1-01 of the Administrative Code.
- (4) **Alternative engineered design.** The design, documentation, inspection, testing and approval of an alternative engineered system shall comply with paragraphs (B)(4)(a) to (B)(4)(c) of this rule.
- (a) **Design criteria.** An alternative engineered design shall conform to the intent of the provisions of this code and shall provide an equivalent level of quality, strength, effectiveness, fire resistance, durability and safety. Materials, equipment or components shall be designed and installed in accordance with the manufacturer's installation instructions.
- (b) **Submittal.** The registered design professional shall indicate on the application that the system is an alternative engineered design. The approval and permanent approval records shall indicate that an alternative engineered design was part of the approved installation. Where special conditions exist, the building official is authorized to require additional construction documents to be prepared by a registered design professional.
- (c) **Technical data.** The registered design professional shall submit sufficient technical data to substantiate the proposed alternative engineered design and to prove that the performance meets the intent of this code.
- (i) **Exception:** Approval of alternative materials, products, assemblies and methods of construction in accordance with section 114.3.2 of rule 4101:1-1-01 of the Administrative Code.
- (5) **Non-required work.** Any component, building element, equipment, system or portion thereof not required by the applicable building code shall be permitted to be installed as a partial or complete system provided that it is constructed or installed in accordance with applicable building code to the extent of the installation.
- (6) **Evidence of responsibility.** Where required construction documents, are submitted for review as required under paragraph (C) of this rule, the design documents are to bear the identification of the person primarily responsible for their preparation.
- (a) **Seal requirements.** Construction documents are to bear the seal of a registered design professional pursuant to section 3791.04 of the Revised Code.

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- (i) **Exceptions:** The seal of a registered design professional is not required on construction documents for:
 - (a) Buildings or structures classified as one-, two-, or three-family dwellings and accessory structures;
 - (b) Energy conservation design for buildings or structures classified as one-, two-, or three-family dwellings;
 - (c) Fire protection system designs submitted under the signature of an individual certified in accordance with section 107.4.4 of rule 4101:1-1-01;
 - (d) Industrialized units subject to sections 3781.06 to 3781.18 and 3791.04 of the Revised Code where the board of building standards determines that the proposed work does not involve the technical design analysis of work affecting public health or general safety in the following areas: means of egress, structural, mechanical, electrical, plumbing, or fire protection.
 - (b) **Sealed construction documents.** Construction documents which have been prepared by an Ohio registered design professional who prepared the same as conforming to the requirements of the rules of the board pertaining to design loads, stresses, strength, and stability, or other requirements involving technical analysis, need be examined only to the extent necessary to determine conformity of such construction documents with other requirements of the rules of the board.
 - (c) **Technical design analysis.** For the purpose of paragraph (C)(6) of this rule, technical design analysis is defined as the development of integrated solutions using analytical methods in accordance with established scientific and engineering principles.
- (D) Authorization process.** When construction documents have been submitted to the board of building standards for review and *authorization* as an *industrialized unit*, the board shall cause the construction documents to be examined for compliance with the rules of the board to the extent of the scope of the *industrialized unit*. The examiner shall first determine whether the construction documents being reviewed are adequate as required in paragraph (A) of this rule. If so, the examiner shall review the construction documents to determine compliance with the rules of the board.
- (1) **Limits of examination.**
 - (a) The board of building standards' review of the construction documents submitted is based on the scope of work shown or described.

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- (b) The design criteria identified in the construction documents are to be relevant to locations in Ohio and will require the site of intended use to meet the design criteria. Design criteria may exceed conditions in Ohio per section (B)(5) of rule 4101:10-3-01.
- (c) *Authorization* shall not be required for the following work; however, this work shall comply with all applicable provisions of the rules of the board:
 - (i) Building:
 - (a) One-story, detached, structures used as Group S-2 storage or Group U structure and similar uses provided no building services are installed and the floor area does not exceed one hundred twenty square feet (11.15 m²).
 - (b) Water tanks supported directly upon grade if the capacity does not exceed five thousand gallons (18,927 L) and the ratio of height to diameter or width does not exceed two to one.
 - (c) Finishes, cabinetry, decorative elements not regulated by the rules of the board.
 - (d) Above-ground storage tanks as defined in rule 4101:1-2-01 of the Administrative Code and the associated tank foundations.
 - (ii) Electrical:
 - (a) Electrical equipment used for radio and television transmissions except equipment and wiring for power supply, and the installations of towers and antennas.
 - (b) The installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.
 - (c) Electrical wiring, devices, appliances, apparatus or equipment operating at less than twenty-five volts and not capable of supplying more than fifty watts of energy, unless specifically addressed in this code.
 - (d) Process equipment and the associated wiring on the load side of the power disconnect to the equipment.
 - (iii) Gas:
 - (a) Appliances and equipment used for heating, cooling or ventilation, exclusively or in combination, and where the appliance or equipment is portable in nature.
 - (b) Process equipment, including the associated tanks, foundations, and process piping.
 - (c) For combination building services and process piping systems, the process piping located on the process

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equipment side of the control valve which separates the process from the building services piping is exempt from approval.

(iv) Mechanical:

(a) Appliances and equipment used exclusively or in combination for heating, cooling or ventilation and where the appliance or equipment is portable in nature.

(b) Process equipment including the associated tanks, foundations, and process piping. For combination building services/process or power piping systems, the power or process piping located downstream of the control valve which separates the process from the building services piping is exempt from approval.

(v) Plumbing:

(a) Process equipment including the associated tanks, foundations, and process piping.

(b) For combination building services and process piping systems, the process piping located on the process equipment side of the control valve which separates the process from the building services piping is exempt from approval.

(2) **Plan review, compliance with rules of the board.** If the construction documents are determined to comply with the rules of the board, the examiner shall communicate the findings and recommend the conditions and type of authorization to the board's designee.

(a) **Board's authorization.** The board's designee shall evaluate the examiner's recommendations; and when the construction documents have been determined to conform to the applicable provisions of the rules of the board, the board's designee shall provide any additional limitation and stamp such plans with the board's industrialized unit seal as the authorization in accordance with section (B) of rule 4101:10-3-01 of the Administrative Code.

(b) **Locked authorization.** The board shall protect the authorized construction documents and save the documents under the registered manufacturer's account in the board's industrialized unit database. The authorized construction documents are available for download through the registered manufacturer's electronic portal.

(c) **Posting.** The authorized construction documents are to be available at manufacturer's facility during the manufacturing process of the industrialized unit. The manufacturer is to provide access to and use of

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the authorized construction documents by the *third-party inspection entity* for the required inspections during manufacture.

(3) **Plan review, items of noncompliance.**

- (a) **Corrections letter.** The board's plan review is to communicate with the manufacturer regarding observations of non-compliance in writing via the electronic portal until such time as an authorization can be issued or an adjudication order is either requested by the manufacturer or deemed necessary by the board.
- (b) **Adjudications orders.** When issued, every adjudication order is to contain the following information:
- (i) Clearly identify the rules of the board violated;
 - (ii) Specifically indicate which detail, installation, site preparation, material, appliance, device, addition, alteration to structures, construction documents, assemblages or procedures are necessary to change to comply with the order;
 - (iii) Include notice of the procedure for appeal and right to a hearing if requested within thirty days of the mailing of the order. The order shall also indicate that, at the hearing, the manufacturer may be represented by counsel, present arguments or contentions orally or in writing, and present evidence and examine witnesses appearing for or against the manufacturer;
 - (iv) Specify a reasonable period of time in which to bring the item(s) on the order into compliance;
 - (v) The order shall be sent to the manufacturer and manufacturer's representatives.
- (4) **Time limitation of plan review.** The board of building standards will review submittals and issue a correction letter or an authorization in accordance these rules within thirty (30) days of the date of application.
- (5) **Order of plan review.** Construction documents submitted for authorization shall be examined for compliance with the rules of the board in the order received, except unless otherwise consented to by the manufacturers affected by deferred examination, or pursuant to an alternative schedule implemented by the board's designee providing for order of plan review based on project size or other rational basis. No alternative schedule may give preferential treatment to any one individual, organization or industry.
- (6) **Inadequate construction documents.** If construction documents are determined to be incomplete or inadequate for examination, the examiner shall report the findings to the applicant pursuant to paragraph (D)(3) of this rule. The examiner shall examine the construction documents to the extent possible and identify what information from this rule and rule 4101:10-5-

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01 of the Administrative Code is missing and needed to complete the required examination.

- (7) **Resubmitted documents.** If construction documents are resubmitted in response to an adjudication order or correction letter, the review for compliance shall be limited to determining that the item(s) of non-compliance, and any work affected, has been corrected.
 - (8) **Authorized construction document sets.** Construction documents are kept on the board's industrialized unit database and are available for download through the electronic portal by the manufacturer or with the manufacturer's permission. The board shall maintain the construction documents in accordance with its records retention schedule.
 - (9) **Abandoned applications.** Applications will be considered abandoned if the manufacturer fails to respond to a correction letter or other written communication from the board requesting information within six (6) months from the date of the letter or communication. Abandoned applications are no longer valid and any fees accrued for plan review are the responsibility of the manufacturer and are due upon receipt of notice of the abandoned application.
- (E) **Required inspections.** Unless otherwise permitted under paragraph (C)(2) of rule 4101:10-3-01 of the Administrative Code, the *authorization* shall include a list of required inspections as determined by the Board from the following list:
- (1) **Plant evaluation.** In-plant evaluation in accordance with paragraphs (A)(5) to (A)(6)(e) of rule 4101:10-3-01 of the Administrative Code that affirms the current plant evaluation is sufficient for the authorized industrialized unit and the quality control/quality assurance program is available during the manufacturing process.
 - (2) **Rough framing.** Floor, floor/ceiling, wall, roof/ceiling, diaphragms, over framing, and other structural system components as included in the industrialized unit authorization.
 - (3) **Rough building services.** HVAC, plumbing, electrical, fuel gas, fire protection, medical gas, and other building service systems components as included in the industrialized unit authorization.
 - (4) **Weather resistance.** Roof covering, siding, water resistive barrier, flashing, ice barrier, vapor retarder, exterior windows and doors, thermal envelop and other materials used to protect the structure from water, moisture, vapor intrusion and energy conservation as included in the industrialized unit authorization.
 - (a) **Exception.** Industrialized units that are intended for installation inside another structure which is to provide the required weather resistance.

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- (b) **Thermal envelope.** The thermal envelope includes but is not limited to insulation, air barrier, air leakage, duct leakage, leakage testing, and other materials as included in the industrialized unit authorization.
- (c) **Leakage in multi-module industrialized units.** For industrialized units that require assembly of multiple modules at the site of intended use, the air leakage testing and duct leakage testing, if required, is to be completed at the site of intended use.
- (5) **Insignia of a subassembly.** Where an industrialized unit is assembled utilizing industrialized unit subassemblies, the inspection agency is to verify that the subassembly is a valid industrialized unit.
- (6) **Finish.** Finish materials, doors, glazing, cabinetry, millwork, fixtures, appliances, equipment, luminaires, devices, alarms, sensors, cover plates, etc. as included in industrialized unit.
- (7) **Deferred inspections.** Inspections conducted at the site of intended use by the department with the authority to enforce the rules of the board in the jurisdiction including but not limited to intra-connections of modules or panels for structural system, building services, thermal envelope and finishes as well as inter-connections to site built construction and/or utilities as applicable.

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4101:10-5-01 Construction documents.

- (A) **Organization of construction documents.** Construction documents are to provide required information as prescribed in paragraph (C) of rule 4101:10-4-01 of the Administrative Code and this rule. Information required to determine compliance will be searched first in the document illustrations, schedules and specifications as described in paragraphs (A)(1) to (A)(14) of this rule. To assist in efficient plan review, the construction documents are to be prepared, to the greatest extent possible, in conformity with the following as applicable based on the requested authorization:
- (1) **Cover sheet.** Provide identification of manufacturer, facility of manufacture, unique model identification, evidence of responsibility for the design and, either on the cover sheet or the next sheet, the following information:
 - (a) **Design criteria.** Identify the conditions at the site of intended use that are necessary for the installation of the industrialized unit. Include specific conditions or design criteria that will prohibit the installation without additional alteration of the industrialized unit at the site of intended use and approval by the local building official including the following as applicable:
 - (i) Type of *industrialized unit* and manner of integration.
 - (ii) Floodplain unit.
 - (iii) Seasonal use unit.
 - (iv) Hazardous materials.
 - (b) **Scope of work.** Each portion of the design represented in the construction documents is to be identified in one of three categories of work:
 - (i) Category 1 Factory assembled.
 - (ii) Category 2 Site assembled.
 - (iii) Category 3 Building owner provided.
 - (c) **Index.**
 - (d) **Not required.** Specific site addresses or building owner information related to the intended initial installation is not required.
 - (2) **Floor plans.** Provide configuration layout drawings of all horizontal floor and floor-ceiling systems with all walls and partitions shown including but not limited to full height, partial height, structural and non-structural walls, major openings, and references to other details, sections, elevations, accessibility and *matelines*. Floor plans must show all relevant information such as door swings, stairs and ramps, windows, shafts, all portions of the means of egress, plumbing

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fixtures, built-in fixtures, special equipment, vertical transportation, etc., and be sufficiently dimensioned to describe all relevant space sizes. Spaces are to be identified by appropriate code appellations. The number of occupants to be accommodated in each industrialized unit and in all rooms and spaces of the industrialized unit are to be designated on construction documents;

- (3) **Roof plan.** Where exposed to weather, provide a roof plan showing roof outline, overall dimensions, slope of roof, drainage, reference to other details, roof covering materials, penetrations through roof, and roof-mounted equipment;
- (4) **Exterior elevations.** For modules with vertical surfaces exposed to weather, provide exterior elevations showing and identifying major elements, material indications, windows, doors, louvers and all other openings, grade lines, floor lines, the bottom of module, top of foundation, top of wall/module/roof bearing, top of roof, mate lines for intra- and inter-connections, references to other details and vertical dimensions to these elements.
- (5) **Module sections.** Vertical dimensions, elevations of the top of structural components and finish floor lines, materials, footings and foundations, reference to other details, ceiling lines, and major mechanical services.
- (6) **Exterior envelope.** Where exposed to weather, the exterior envelope described in sufficient detail to determine compliance with this code and the referenced standards. Details are to be provided which describe flashing, intersections with dissimilar materials, corners, end details, control joints, intersections at roof, eaves, or parapets, means of drainage, water-resistive membrane details around openings, location and type of vapor retarders, window and door “U”-values, and insulation location and “R”-values. The supporting documentation is to fully describe the exterior wall system, which was tested, where applicable, as well as the test procedure used.
- (7) **Wall Sections.** Face of wall dimensions to other components, vertical dimensions from foundations to parapet relating all elements to top of structural elements, all connection methods, wall, ceiling, floor, foundation, and roof materials and construction details.
- (8) **Interior elevations.** Vertical dimensions to critical elements, references to other details, openings in walls, wall finishes, built-in items, accessibility, and locations of switches, thermostats, and other wall-mounted equipment.
- (9) **Schedules.** Information or tables that describe the room finishes, doors, windows, and door hardware and controls. Wall and floor materials are to be described by cross hatching (with explanatory key), by notation, or by other clearly understandable method.
- (10) **Structure.** Complete structural description of the industrialized unit

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including size and location of all structural elements and a table of live, wind, snow, and seismic loads used in the design of the industrialized unit and other data as required to fully describe the structural system. The resultant loads at the points of inter-connection with on-site construction are to be provided.

- (11) **System descriptions.** Provide complete description of the building services (plumbing, mechanical, fuel gas and electrical systems,) fire protection systems and medical gas systems that are part of the industrialized unit including but not limited to:
 - (a) materials, insulation “R”-values, general routing and sizes of all piping;
 - (b) location and type of plumbing fixtures and equipment;
 - (c) plumbing schematics and isometrics;
 - (d) materials, insulation “R”-values, general routing and sizes of all ductwork, vents, and louvers;
 - (e) location and type of heating, ventilation, air conditioning, and other mechanical equipment;
 - (f) location and type of all lighting and power equipment;
 - (g) type and size of all electrical conductors.
 - (12) **Fire protection systems.** Areas of protection, fire alarm, fire suppression system occupancy hazard classification, and required water supply data.
 - (13) **Hazardous materials.** Provide information regarding operations, the types, quantities, and arrangement of flammable, combustible, or hazardous materials proposed to be produced, used, dispensed, or stored in the facility; material safety data sheets for hazardous materials produced, used, or stored in the facility, the commodity and arrangement of high piled or rack storage, control areas, etc.
 - (14) **Energy conservation.** Where energy conservation compliance is demonstrated through a method other than the prescriptive method, provide supporting documentation like energy analysis compliance software reports.
- (B) **Panelized units.** Where the *industrialized unit* is a *panelized unit*, all of the above information is required, as applicable, based on the scope of the requested *authorization* except floor plans and roofs plans. The elevations and sections required in paragraphs (A)(4) to (A)(8) of this rule are to be provided for the panel in lieu of the volume bounded by the panel. For *panelized units*, any volumes, spaces or rooms created by their use including but not limited to the means of egress, accessibility, lighting, power, hvac systems, etc. are to be approved by the building official having authority to enforce the applicable building code for the jurisdiction.

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4101:10-6-01 Transport.

- (A) **Transport to site of intended use.** Industrialized units may be shipped in structurally complete units ready for installation in the building structure or in knock-down and packaged form for assembly at the site.
- (B) **Shipping Reports required.** After an insignia has been affixed, the manufacturer shall record its use in shipping records which shall keep, at a minimum, record of:
 - (1) The shipping insignia number;
 - (2) Ohio board of building standards' industrialized unit group assigned project file number appearing on the board-authorized construction documents;
 - (3) The date the insignia was affixed to the individual unit;
 - (4) Name and address of the construction inspector and inspection agency.
 - (5) Manufacturer's unit serial number;
 - (6) Manufacturer's model number;
 - (7) Dealer name and address and;
 - (8) Site installation destination address and owner name.
- (C) **Submit record to the board.** Shipping records are to be submitted to the board of building standards through the electronic portal no later than thirty days following departure from the factory.
- (D) **Document submission to building departments.** The manufacturer shall provide the construction documents, authorized by the board, to the owner or owner's representative for purposes of design, code compliance or approval prior to placing the industrialized unit on site.
- (E) **Protect from damages.** Manufacturer is to protect the industrialized unit from damage during transport and installation. Causes of damage including but are not limited to movement (loading, unloading, transporting), weather, installation and activities of construction prior to installation into the building at the site of intended use.
- (F) **Manufacturer responsibility.** The manufacturer shall maintain responsibility over all work completed in the factory until the unit is approved for first occupancy and shall rectify any damages or deviations from the authorized construction documents. Damages or deviations can be identified either in the field or at the place of manufacture. The manufacturer shall submit to the board such periodic reports, notifications and information as required by board procedures.

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4101:10-7-01 Relocation and reauthorization.

- (A) **Existing buildings with industrialized unit.** Where a previously authorized industrialized unit is removed from the initial installation with the intent to relocate or replace the unit, one of the following conditions applies:
- (1) **Relocated building.** Where the unit is removed for the purpose of direct relocation, with or without repairs, alterations or a change of occupancy at the site of intended reuse, the owner must make application to the building department with the authority to enforce the rules of the board in the jurisdiction where the unit is to be relocated for approval of the scope of work in compliance with the applicable building code.
 - (2) **Replacement modules.** Where the unit is removed for the purpose of replacement with a new unit, both (A)(2)(a) and (A)(2)(b) of this rule apply:
 - (a) The owner must make application and get approval from the building department with the authority to enforce the rules of the board in the jurisdiction for either:
 - (i) a repair in accordance with the existing approval, in the same configuration, and not less safe, or
 - (ii) a replacement, with or without alteration, in accordance with the requirements for new construction and not less safe.
 - (b) The manufacturer must make application for authorization of either:
 - (i) An industrialized unit used as an alteration to an existing building and is constructed in accordance with the current building codes, or
 - (ii) An industrialized unit, used as a repair to an existing building and is constructed in accordance with a specifically identified, previously authorized industrialized unit.
- (B) **Reauthorization.** Where the unit is removed for the purpose of relocation and includes proposed repair, alteration or a change of occupancy to the previously authorized unit, the unit can be reauthorized by the board and receive a new insignia provided the repair, alteration or change of occupancy is:
- (1) completed by an industrialized unit manufacturer registered with the board,
 - (2) performed in accordance with construction documents authorized by the board,
 - (3) performed in an off-site location,
 - (4) the manufacturer makes application to the board and submits construction documents describing the proposed modifications, with fee, for authorization.

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4101:10-8-01 Fees.

- (A) **Fees.** All costs associated with *industrialized unit* request for authorization applications, processing, construction document review, inspections and insignias shall be in accordance with this rule.
- (1) **Exception.** Ohio career technical schools and Ohio community colleges that manufacture an industrialized unit as part of a certified curriculum using third-party inspectors designated by the board of building standards are permitted to have fees waived.
- (B) **Applications.** Each initial application or revision submittal to the board shall be accompanied by a nonrefundable fee of one hundred thirty-five dollars, designated by the board to include:
- (1) application processing fee;
 - (2) one-hour minimum plan review fee; and
 - (3) other costs, when incurred, such as mailing and check processing.
- (C) **Evaluation of construction documents.** All costs of application processing, evaluation of construction documents or other documentation submitted to the board shall be paid by the applicant. Where the review for authorization exceeds one hour, the manufacturer is charged an additional plan review fee at the rate of one hundred dollars per hour (\$100/hr) in half hour increments for the total time required to complete the review for authorization.
- (D) **Plant evaluation and inspection costs.** All costs of plant evaluations and inspections shall be paid by the manufacturer of the unit including travel, food, lodging, and administrative costs.
- (E) **Insignias.** The fee for an insignia is as follows:
- (1) An insignia applicable to a *modular unit* for use in the state of Ohio shall be fifty dollars per unit (any preassembled combination of walls to floor, ceilings, roof, and other such components).
 - (2) An insignia applicable to a *panelized unit* for use in the state of Ohio shall be one dollar for each twenty square feet of surface area of preassembled individual components (wall, floor, ceiling or roof sections, and other such components) intended to be shipped to the site and attached to other components at the site of intended use.
- (F) **Tests.** Tests required by the board to be performed to determine compliance pursuant to paragraph (A)(5)(d) of rule 4101:10-3-1 of the Administrative Code, shall be conducted at no expense to the board. Costs associated with

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any required testing or research necessary to provide evidence of compliance shall be the responsibility of the applicant.

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4101:10-9-01 Certifications.

- (A) **Third party inspector certification.** Individuals performing the required inspections of an industrialized unit at the manufacturing plant are to be certified by the board of building standards in accordance with this rule.
- (1) **General experience.** To qualify for certification, applicants must have experience directly related to buildings or structures within the scope of the "Ohio Building Code."
 - (2) **Experience for industrial unit inspector certification.** An applicant for an industrialized unit inspector certification shall meet one of the following requirements:
 - (a) At least five years of experience as a construction contractor or supervisor for non-residential buildings or structures within the scope of groups regulated by the rules of the board;
 - (b) At least five years of experience as a skilled tradesman for work subject to inspection under a model building code of a national model code organization or a code adopted for non-residential buildings or structures within the scope of groups regulated by the rules of the board;
 - (c) At least five years of experience as a skilled tradesman for work subject to inspection under a residential dwelling code, a model building code of a national model code organization or a code adopted for non-residential buildings or structures regulated by the rules of the board;
 - (d) At least five years of experience gained with an agency or jurisdiction outside the state of Ohio enforcing a model non-residential building code of a national model code organization or a code adopted for the respective buildings or structures of the types regulated by the rules of the board, including industrialized units; or
 - (e) Certification as a building inspector as specified in paragraph (E)(11) of rule 4101:7-3-01 of the Administrative Code.

In evaluating the experience requirements for this certification, the board may accept applicable experience as specified in E)(1)(a) of rule 4101:7-3-01 of the Administrative Code.
 - (2) **Duties.** A person with an industrialized unit inspector certification is permitted to inspect all work associated with any industrialized unit.
 - (a) **Exception:** Persons with certifications issued by the board of building standards under rule 4101:7-3-01 of the Administrative Code for a limited scope of inspection (e.g. building inspector, mechanical inspector, plumbing inspector, electrical safety inspector, etc.) are permitted to inspect the scope of work of an industrialized unit to the extent of their certification. Persons with

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inspection certification for residential buildings are not permitted to inspect industrialized units intended for non-residential buildings.

- (B) **Conflict of interest.** No certified person who contracts for inspection services with a manufacturer of an industrialized unit shall perform inspection services which would require that person to exercise authority or make an evaluation of any work furnished by said inspector or by a private contractor that employs said inspector on a full-time, part-time, or incidental basis. Further, such certified person shall not engage in conduct that is prohibited or considered a conflict of interest pursuant to Chapter 102. of the Revised Code.
- (C) **Personnel certification application, filing, processing and renewal.** Applicants for industrialized unit inspector certification are to comply with all the requirements of paragraph (F) of rule 4101:7-3-01 of the Administrative Code.
 - (1) **Exceptions to continuing education requirements:**
 - (a) Holders of initial industrialized unit inspector certification are not required to complete the “Ohio Building Code Academy” or “Code Administration and Skills Training.”
 - (b) To renew an industrialized unit inspector certification, applicants must complete thirty hours of continuing education. The courses must be approved by either the board of building standards or “International Code Council,” or approved for health, safety, and welfare ("HSW") credit by the "American Institute of Architects." Industrialized unit inspector certification holders are not required to complete continuing education courses dedicated to the subjects of code administration, existing buildings, or ethics as condition of renewal.

4101:10-10-01 Optional process – Third party.

- (A) **Third party approval program option.** [Placeholder - Optional process to allow a manufacturer to contract with qualified entity/approved agency to perform plan review/recommendation for authorization and inspections. To be considered as part of the Board’s review of the Certification Study prepared by the International Code Council,]