



Board of Building Standards

CODE COMMITTEE MEETING AGENDA

DATE: NOVEMBER 17, 2022
TIME: 1:00 PM
LOCATION: TRAINING ROOM 3, 6606 TUSSING RD, REYNOLDSBURG, OHIO, 43068
[CLICK HERE TO JOIN THE MEETING](#)

Call to Order

Approval of Minutes

[MIN-1](#) October 20, 2022 Code Committee Meeting Minutes

Petitions

[P-1](#) Petition #22-03 OPC Section 312.2.2 - Tim Irvan of Integrity Safety Solutions
[P-2](#) Petition #22-04 OBC Ch 11 - Kim Boulter & Jennifer Corcoran of Changing Spaces Ohio

Recommendations of the Residential Construction Advisory Committee

[R-1](#) Petition #22-01 RCO Ch 44 - Tom Moore of the Ohio Electrical Coalition

Old Business

[OB-1](#) Commercial Energy Code Review
[OB-2](#) OBC draft rule review (Chapters 17-28)

New Business

Adjourn

File Attachments for Item:

MIN-1 October 20, 2022 Code Committee Meeting Minutes

**OHIO BOARD OF BUILDING STANDARDS
CODE COMMITTEE MINUTES
October 20, 2022**

The Code Committee met on October 20, 2022 with the following members present: Mr. Denk, Ms. Cromwell, Mr. Johnson, Mr. Miller, Mr. Pavlis, Mr. Stanbery, Mr. Tyler, and Mr. Yankie. Board Chairman, Tim Galvin, was also present.

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

Guests present: Dave Collins, John Johnson III

Guests present via Teams: Jeff Mang

CALL TO ORDER

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

APPROVAL OF MINUTES

Mr. Miller made the motion to approve the minutes of the Code Committee meeting held on September 22, 2022. Mr. Johnson seconded the motion. The motion passed unanimously.

PETITIONS

No items for consideration

RECOMMENDATIONS OF THE RESIDENTIAL CONSTRUCTION ADVISORY COMMITTEE

No items for consideration

OLD BUSINESS

Zero Lot Line Townhouse Buildings

As a follow up from the last meeting, staff presented the revised draft of proposed changes to the OBC Sections 106.2.1, 310.5.5, and 1301.1.1 to address zero lot line townhouse-type buildings. Mr. Pavlis made the motion to approve the revised draft language as presented by staff. Mr. Johnson seconded the motion. The motion passed unanimously.

Commercial Energy Code Review

The committee continued discussions about the ASHRAE 90.1-2019. Mr. Denk shared his concerns with the language in ASHRAE 90.1-2019 Sections 6.4.3.6 (Humidification and Dehumidification Control) and 6.5.6.1 (Exhaust Air Energy Recovery for Nontransient Dwelling Units). The committee asked staff to research whether deleting these requirements would affect the COMcheck software report results. Mr. Yankie shared that ERV systems allow for easier balancing of HVAC systems and help to resolve condensation and mold issues that seem to be increasingly common. The committee discussed the option of allowing certain occupancies constructed of metal buildings to use earlier editions of the standard, but agreed that would likely complicate demonstrating compliance with the code when using COMcheck. No action was taken.

OBC Draft rule review (Chapters 10-12 and 14-16)

Staff presented additional draft rules of the OBC and explained that staff would go through each

chapter in greater detail at a later date to make the committee aware of the significant changes that staff is recommending for each chapter. No action was taken.

NEW BUSINESS

No items for consideration

ADJOURN

Mr. Miller made the motion to adjourn at 3:41 P.M. Mr. Stanbery seconded the motion. The motion passed unanimously.

File Attachments for Item:

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

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 #:	22-03
Date Recv'd:	Oct. 31, 2022

Submitter: Tim Irven (Contact Name) Integrity Safety Solutions LLC (Organization/Company)

Address: 3577 Little York Rd (Include Room Number, Suite, etc.)
Dayton (City) OH (State) 45414 (Zip)

Telephone Number: 937-245-2931 Fax Number: _____

Date: 10-25-22 E-mail Address: TIRVEN_IPS@gmail.com

Code Section: Tests and Inspections

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

I have recieved A Patent on A new safety/efficient Gauge/Testing device, for the D.W.V. systems. The Gauge has A Pressure Relief Valve to prevent over pressurization. This has caused Injury & Death in the Past. Please Read At Attached #2 PAGES. This Gauge CAN do negative & possitive Testing. Were Registered in Roughly 9 Counties Surrounding the Dayton areat. Some Counties want Possitive Air and Some negative. I believe if this gauge was in the code book it would create more efficient Testing and A SAfer inviroment for Inspectors, Plumbers, Home owners, supervisors ect. ect. I would like to know ~~Can~~ if its possible to have this in the code book to utilize Safety Gauges per the code?

Pic # 3-B is one of the Safety Gauges were been using in the Field for years in multiple Counties. Maybe just A recommendation in the code book to ues the Safety Gauges?

Explanation of Cost Impact of Proposed Code Change*: The Gauge is in the works of Being mass produced. Cost Per Gauge should come in Around 80-150 Per Gauge

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

Information on Submittal (attach additional sheets if necessary):	
1. Sponsor:	<p>Integrity Plumbing Solutions LLC Integrity Safety Solutions LLC.</p> <p style="text-align: center;">Organization sponsoring or requesting the rule change (if any)</p>
2. Rule Title:	<p style="text-align: center;">Title of rule change</p>
3. Purpose/ Objective:	<p>To Provide A Safer environment. and Along with more efficient testing in our state.</p> <p>See attached - <u>Examiners Amendment</u></p> <p>See attached #2 Paper's</p> <p>See attached <u>Invention Record Purpose of invention</u></p> <p>See attached <u>Background of the invention.</u></p> <p style="text-align: center;">Technical justification for the proposed rule change</p>
4. Formatted Rule Language (Using Strike-out for Deleted Text and Underline for Added Text)	<p>Section 312.2.2 Drainage Vent Rough in Air Test.</p> <p><u>Addition- These tests should be done with an Approved gauge and said gauge should be tested yearly for Pressure Relief.</u></p> <p>I don't wish to Remove any verbage from this Section only add.</p> <p>Is it Possible to Require/Implement the use of this safety gauge code into into the code book. Similar to how the building Dept Requires Kuhlman Digital Gauge's that are Calibrated yearly?</p> <p style="text-align: center;">Use strike-out for deleted text and underline for added text</p>
5. Notes:	<ol style="list-style-type: none"> 1. To encourage uniformity among states using model codes, it is recommended that the submitter first submit any code change directly to ICC and participate in the national model code development process. 2. Please provide a copy of application and documentation. 3. Use a separate form for each code change proposal.

Included and Labeled #2

I have been personally building these gauges for four years throughout my career with the different designs and functions, slowly improving along the way. After having the new negative testing codes brought forth by the State of Ohio Health Dept, I started reinventing the gauge again. Realizing that negative pressure alone was actually holding fittings together and falsely making them appear as if they were holding solid and tight, I knew something different had to be done. I also didn't want to risk a coworker accidentally leaving an air compressor on, over pressurizing the system, and creating a hazardous situation. That's when I started to put the current gauge together that we use now. DRAWING # 3 -B

Before this invention, we were using only positive air pressure with no safety features. Now with the safety feature of the pressure relief valve (included and labeled #4) added, if during an inspection, someone has left the air compressor on, the safety feature would open at a desired pressure and prevent over pressurization and potentially fatal operations.

As I stated before, negative air pressure will not work alone. It gives the inspectors false readings that the plumbing fittings are glued up and sealed tight. This brings up health concerns as sewer gases can be leaking at these joints.

With this new gauge, a plumber can safely pump positive psi into his system to ensure that everything is holding tight and still use the same gauge to then bring negative pressure in during and for the inspection.

I see this gauge as being not only extremely functional for the plumber, but also providing needed safety to complete their job with accuracy.

The dual function of the positive psi and negative psi gauge enhanced with the safety features is a great benefit of this design.

There's no doubt in my mind that these gauges are much more efficient and much more safe. It has the potential to save a lot of time, effort and potentially lives.

#2
Continued

Roughly 2 to 3 years ago, in the Carolinas, a plumber was doing a new construction job and had an air compressor hooked up to a spring gauge on the drain waste and vent system for the plumbing. The plumber forgot that the air compressor was on and walked off looking for leaks in the system. During this time, the air compressor was filling the system with 100+ pounds due to the fact that the regulator on the air compressor was set at roughly 150 lbs. At a certain point, the PVC piping could not take the pressure and exploded, resulting in a death on the site. Due to this fact, many states started changing from positive pressure to negative pressure on the drain waste and vent system throughout new construction residential and commercial applications.

Plumbers started scrambling to figure out ways to bring the system down with a negative pressure. One of the first inventions was an airhead hand pump, bought online, that can pump both positive and negative air by hand, along with a jury-rigged connection to the gauge itself. This application takes a lot of manual labor and time. Almost all plumbers are still using this method.

When we first started to do negative pressure, we found a flaw in the system. The vacuum pressure was holding fittings together that were not properly sealed and it would not show the leak on the gauge. Because of this, we started doing positive pressure for self testing and negative pressure for inspections. This increases the risk of leaving an air compressor hooked up to the gauge and creating an unsafe environment similar to the fatality that occurred in the Carolinas.

These are the events that happened that gave me the idea to invent a gauge. Building gauges for plumbing inspections is a time consuming, expensive job and requires some skilled knowledge as well. There have been many times where I personally would have rather purchased a safe gauge that was ready to go than spend the hour or so to put it together.

I am a master plumber and owner of Integrity Plumbing Solutions. My uncle, Carroll Sundheimer, has been working in the HVAC business his entire life. During a discussion, we started to come up with the initial drawing of an invention. The design we came up with would prevent plumbers from over pressurizing their systems, creating better safety for them and the inspectors. This gauge can go positive and negative on the same gauge. One port has an air chuck for an air compressor with a valve, a 10 psi relief valve and / or 10 psi max regulator to prevent the system from going above 10 pounds when putting positive air on it. The other port has a vacuum pump adapter with the valve where a vacuum pump can easily be hooked up. A 5 pound negative vacuum can be set within roughly 5 minutes on a three bath two-story home. The previous method took about 10 to 15 minutes and was manual. The vacuum pump is 110 V and they're working on cordless ones. I believe that this gauge has the potential to be in state plumbing code books and required for safety reasons.

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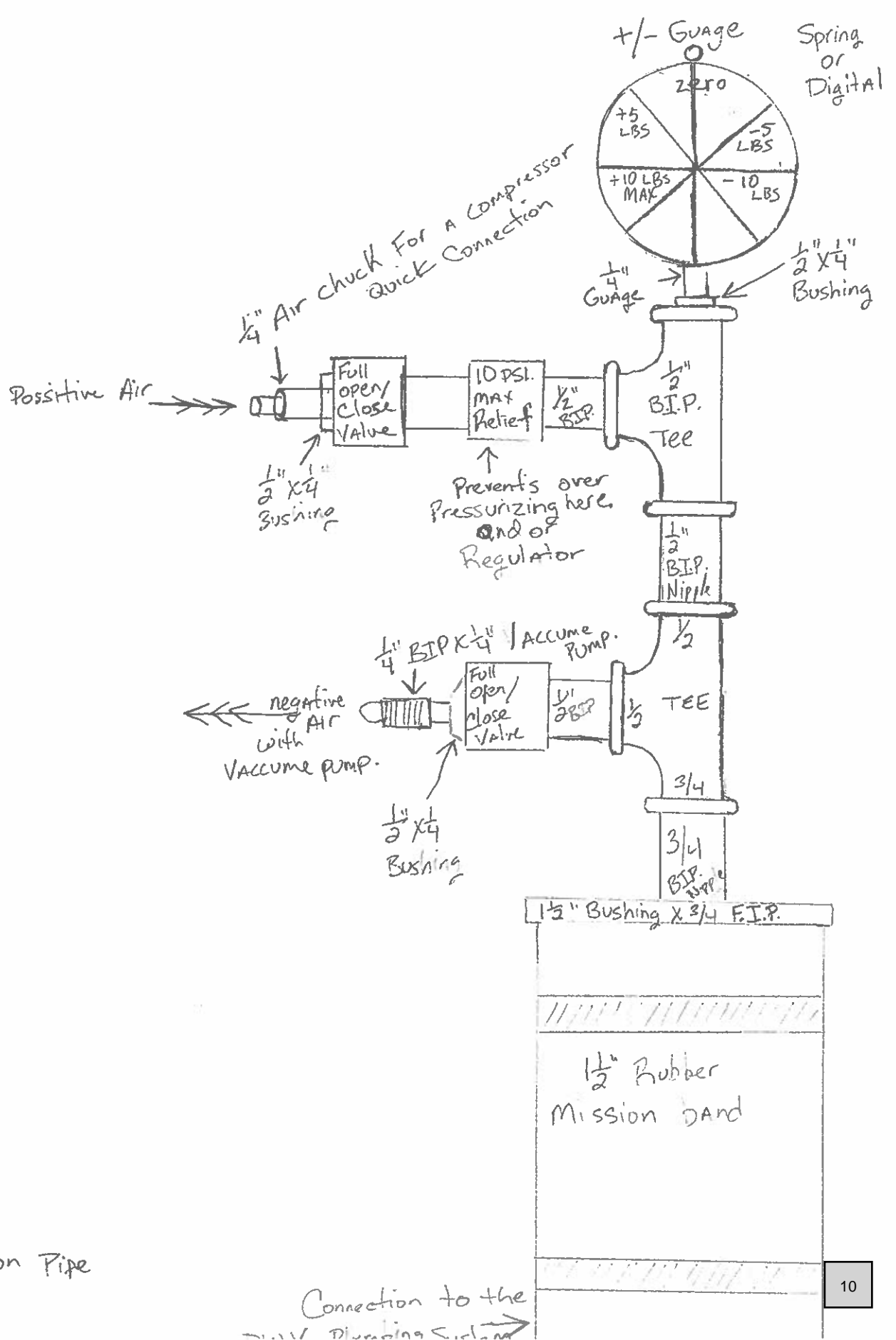
Timothy Irven

Integrity Plumbing Solutions LLC

WWW.IPSPlumbingSolutions.com

Positive/Negative Plumbing inspection gauge's
 etc could be injection molded to eliminate so many connections

#3-B



B.I.P. = BLACK Iron Pipe

Connection to the
 main Plumbing System →

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The examiner's amendment corrects editorial/grammatical errors in the Abstract, Specification, and Claims, as follows:

ABSTRACT

The abstract has been amended to:

--A device and method of pressure testing a conduit structure to determine if there is a leak in a conduit layout, which includes employing a pressure testing device having a first part having a coupling end for sealably connecting to a first conduit portion, a second part communicably connecting to the first part and having a valve connection adapted to receive one of a positive pressure source and a negative pressure source, and a pressure meter operably connected to the pressure testing device, wherein the valve is open to receive one of the positive pressure source and the negative pressure source, the pressure meter displays one of a positive pressure and a negative pressure, opening the valve to receive one of the positive pressure source and negative pressure source, and reading the pressure on the pressure meter to determine if the pressure is being maintained.--

IN THE SPECIFICATION

The paragraph from line 6 to line 18 on page 2 has been amended to:

--Accordingly, one aspect of the instant invention is directed to a pressure testing device for testing a seal in a connected conduit layout having a first conduit portion of the conduit layout open for connection and a remainder of the conduit layout closed. The pressure testing device includes a first part having a coupling end for sealably connecting to the first conduit portion, a second part communicably connecting to said first part and having a first valve with a connection adapted to receive a negative pressure source, a third part communicably connecting to the second part having a second valve with a

connection different than the first valve connection and adapted to receive a positive pressure source and a fourth part having a pressure meter operably connected to the fourth part, wherein the first valve and the second valve are independently actuatable such that the pressure meter reads a positive pressure when the second valve is open and the first valve is closed, so as to receive pressurized fluid from the positive pressure source, and reads a negative pressure when the first valve is open and the second valve is closed, so as to receive a vacuum from the negative pressure source.--

The paragraph from line 11 on page 3 to line 10 on page 4 has been amended to:

--Another aspect of the invention is to provide a method of pressure testing a conduit structure to determine if there is a leak in the structure. The method includes employing a pressure testing device for testing a seal in a connected conduit layout which has a first conduit portion thereof open for connection and a remainder of the conduit layout closed. The method includes employing the device having a first part having a coupling end for sealably connecting to the first conduit portion, a second part communicably connecting to the first part and having a first valve with a connection adapted to receive a negative pressure source, a third part communicably connecting to the second portion and having a second valve with a connection different than part first valve connection and adapted to receive a positive pressure source and a fourth part having a pressure meter operably connected to the pressure testing device, wherein the first valve and said second valve are independently actuatable such that the pressure meter reads a positive pressure when the second valve is open and the first valve is closed, so as to receive the positive pressure source, and reads a negative pressure when the first valve is open and the second valve is closed, so as to receive the negative pressure source. The method includes a step of opening the first valve and closing the second valve and placing the conduit layout under a predetermined negative pressure through the first valve connection and reading the pressure meter to determine if the conduit layout is maintaining the predetermined negative pressure. The method includes another step of opening the second valve and closing the first valve and placing the conduit layout under a predetermined

positive pressure through the second valve connection and reading the pressure meter to determine if the conduit layout is maintaining the predetermined positive pressure.--

The paragraph from line 18 on page 4 to line 13 on page 5 has been amended to:

--The pressure testing device of the instant invention is generally designated by the numeral 10. One aspect of the instant invention is directed to the pressure testing device 10 for testing a seal in a connected conduit layout 12. The conduit layout 12 has a first conduit portion 14 open for connection and a remainder 16 of the conduit layout closed. The pressure testing device 10 includes a first part 18 for sealably connecting to the first conduit portion 14. A second part 20 communicably connects to the first part 18 and has a first valve 22 with a connection 23 adapted to receive a negative pressure source 24 (vacuum). A third part 26 communicably connects to the second part 18 and has a second valve 30 with a connection 31 different than the first valve connection 23 and adapted to receive a positive pressure source 32. The connections 23 and 31 can be ~~[[oof]]~~ of a threaded or quick connect design. A fourth part 34 has a pressure meter 36 operably connects thereto, wherein the first valve 22 and the second valve 30 are independently actuatable such that the pressure meter 36 reads a positive pressure when the second valve 30 is open and the first valve 22 is closed, so as to receive pressurized fluid from the positive pressure source ~~[[24]]~~ 32, and reads a negative pressure when the first valve 22 is open and the second valve 30 is closed, so as to receive a vacuum from the negative pressure source ~~[[32]]~~ 24. A pressure relief valve 38 is also operably connected to the device 10, here shown communicably connected to the second part 20 to ~~[[relief]]~~ relieve the positive pressure if it exceeds a predetermined amount in the ~~[[closed]]~~ conduit layout 12.--

The paragraph from line 8 to line 21 on page 6 has been amended to:

--An aspect of the invention is to provide a method of pressure testing a conduit structure to determine if there is a leak in the structure. In a broader sense, a method of pressure testing a conduit structure to determine if there is a leak in the conduit layout 12 having a first conduit portion 14 thereof

open for connection and a remainder of the conduit layout closed, includes employing a pressure testing device. The pressure testing device has a first part having a coupling end for sealably connecting to the first conduit portion, a second part communicably connecting to the first part and having a valve connection adapted to receive one of a positive pressure source and a negative pressure source, and a pressure meter operably connected to the pressure testing device, wherein the valve is open to receive one of the positive pressure source and the negative pressure source, the pressure meter displays one of a positive pressure and a negative pressure, opening the valve to receive one of the positive pressure source and positive pressure source, and reading the pressure on said pressure meter to determine if the pressure is being maintained.--

The paragraph from line 22 on page 6 to line 23 on page 7 has been amended to:

--In a preferred embodiment, the method includes employing a pressure testing device for testing a seal in a connected conduit layout having a first conduit portion of the conduit layout open for connection and a remainder of the conduit layout closed, which includes employing a first part having a coupling end for sealably connecting to the first conduit portion, a second part communicably connecting to the first part and having a first valve connection ~~having a first valve connection~~ adapted to receive a negative pressure source, a third part communicably connecting to the second portion and having a second valve connection ~~having a second valve connection~~ different than part first valve connection and adapted to receive a positive pressure source, and a fourth part having a pressure meter operably connected to the pressure testing device, wherein the first valve and ~~[[said]]~~ the second valve are independently actuatable such that the pressure meter reads a negative pressure when the second valve is closed and the first valve is open to receive a vacuum and reads a positive pressure when the first valve is closed and the second valve is open to ~~[[a]]~~ the positive pressure source. The method further includes opening the first valve and closing the second valve and placing the conduit layout under a predetermined negative pressure through the first valve connection and reading the pressure meter to determine if the conduit layout is maintaining the predetermined negative pressure. The method of further includes the

step of opening the second valve and closing the first valve and placing the conduit layout under a predetermined positive pressure through the second valve connection and reading the pressure meter to determine if the conduit layout is maintaining the predetermined positive pressure. It is contemplated that the pressure sources 24 and 32 can be switched and thus operation of the valves affects the pressure meter 36 as a function of this and the opening/closing of the valves 22 and 30.--

IN THE CLAIMS

Claims 1-4 have been amended to:

--1. A pressure testing device for testing a seal in a connected conduit layout [[having a]] having a first conduit portion of the conduit layout open for connection and a remainder of [[the conduit]] the conduit layout closed, [[which]] the device includes:

a first part having a coupling end for sealably connecting to the first conduit portion;

a second part communicably connecting to said first part and having a first valve connection adapted to receive a first pressure source;

a third part communicably connecting to said second part and having a second valve connection different than said first valve connection and adapted to receive a second pressure source different from said first pressure source; and

a fourth part having a pressure meter operably connected to said pressure testing device, wherein said first valve connection and said second valve connection are independently actuatable such that said pressure meter reads a first pressure when said second [[valves]] valve connection is closed and said first valve connection is open to receive said first pressure source and reads a second pressure when said first valve connection is closed and said second valve connection is open to receive said second pressure source.--

2. A method of pressure testing a conduit structure to determine if there is a leak ~~[[inconduit]]~~ in a conduit layout having a first conduit portion of the conduit layout open for connection and a remainder of the conduit layout closed, ~~[[which]]~~ the method includes;

employing a first part having a coupling end for sealably connecting to the first conduit portion;
a second part communicably connecting to said first part and having a first valve connection adapted to receive a first pressure source;

a third part communicably connecting to said second ~~[[portion]]~~ part and said ~~[[first]]~~ third part having a second valve connection ~~having a second valve connection~~ different than ~~[[part]]~~ the first valve connection and adapted to receive a second pressure source different from said first pressure source; and

a fourth part having a pressure meter operably connected to said pressure testing device, wherein said first valve connection and said second valve connection are independently actuatable such that said pressure meter reads a first pressure when said second valve connection is closed and said first valve connection is open to receive ~~[[the]]~~ said first pressure source and reads a second pressure when said first valve connection is closed and said second valve connection is open to receive ~~[[the]]~~ said second pressure source.--

--3. The method of claim 2, wherein said first pressure source is one of a positive and a negative pressure and which further includes opening said first valve connection and closing said second valve connection and placing the conduit layout under a predetermined ~~[[positive]]~~ pressure through said first valve connection and reading said pressure meter to determine if the conduit layout is maintaining the predetermined pressure.--

--4. The method of claim 2, wherein said second pressure source is one of a positive pressure and a negative pressure and further includes the step of opening said second valve connection and closing said first valve connection and placing the conduit layout under a predetermined pressure through said

second valve connection, and reading said pressure meter to determine if the conduit layout is maintaining the predetermined positive pressure.--

Reasons for Allowance

Claims 1-4 are allowed. The following is an examiner's statement of reasons for allowance:

With respect to independent claim 1, prior art of record doesn't teach, suggest or render obvious the total combination of the recited features, including the following allowable subject matter: "*... a third part (26) communicably connecting to said second part (20) and having a second valve connection (30-31) different than said first valve connection (22-23) and adapted to receive a second pressure source (32) different from said first pressure source (24)... wherein said first valve connection (22-23) and said second valve connection (30-31) are independently actuatable such that said pressure meter (36) reads a first pressure when said second valve connection (30-31) is closed and said first valve connection (22-23) is open to receive said first pressure source (24) and reads a second pressure when said first valve connection (22-23) is closed and said second valve connection (30-31) is open to receive said second pressure source (32).*"

With respect to independent claim 2, prior art of record doesn't teach, suggest or render obvious the total combination of the recited features, including the following allowable subject matter (which essentially equivalent to the allowable subject matter for claim 1): "*... a third part (26) communicably connecting to said second part (20) and said third part (26) having a second valve connection (30-31) different than the first valve connection (22-23) and adapted to receive a second pressure source (32) different from said first pressure source (24)... wherein said first valve connection (22-23) and said second valve connection (30-31) are independently actuatable such that said pressure meter (36) reads a first pressure when said second valve connection (30-31) is closed and said first valve connection (22-23) is open to receive said first pressure source (24) and reads a second pressure when said first valve*

connection (22-23) is closed and said second valve connection (30-31) is open to receive said second pressure source (32)."

(Claims 3-4 are dependent on claim 2.)

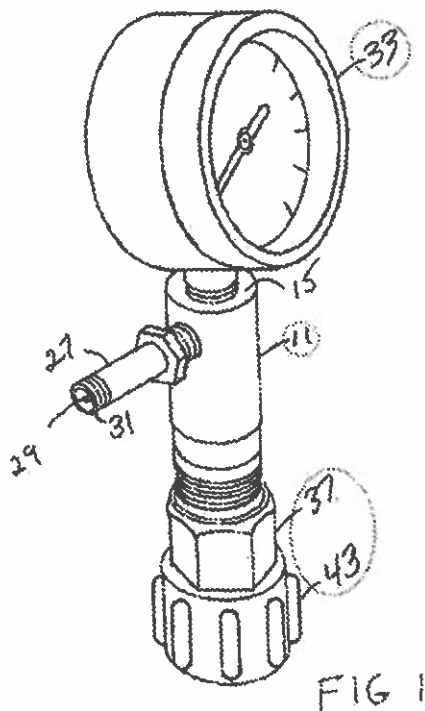
Any comment considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record below but not relied upon is considered most pertinent to applicant's disclosure.

US 2004/0118186 A1 to Shultis discloses a pressure testing device/method comprising essentially all the features recited in independent claims 1 and 2, except for the allowable subject matter.

As shown in fig. 1 (reproduced below), Shultis discloses the pressure testing device/method comprising equivalents of the recited first part (37, 43), second part (11), and forth part (15, 33), but fails to disclose any equivalent of the recited third part, let alone the allowable subject matter.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen (Wyn) Q. Ha whose telephone number is (571)272-2863. The examiner can normally be reached Monday - Friday 8 am - 4:30 pm (Eastern Time).

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nguyen Q. Ha/
Primary Examiner, Art Unit 2853
September 27, 2022

Notice of Allowability

Application No.
17/239,763

Applicant(s)
Iven et al.

Examiner
Nguyen (Wyn) Q Ha

Art Unit
2853

AIA (FITF) Status
Yes

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address-

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1. This communication is responsive to 4/26/2021.
 A declaration(s)/affidavit(s) under 37 CFR 1.130(b) was/were filed on _____.
- 2. An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 3. The allowed claim(s) is/are 1-4. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
- 4. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) All b) Some* c) None of the:
 - 1. Certified copies of the priority documents have been received.
 - 2. Certified copies of the priority documents have been received in Application No. _____.
 - 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has **THREE MONTHS FROM THE "MAILING DATE"** of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in **ABANDONMENT** of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

- 5. **CORRECTED DRAWINGS** (as "replacement sheets") must be submitted.
 including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
- 6. **DEPOSIT OF and/or INFORMATION** about the deposit of **BIOLOGICAL MATERIAL** must be submitted. Note the attached Examiner's comment regarding **REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL**.

Attachment(s)

- 1. Notice of References Cited (PTO-892)
- 2. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
- 3. Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
- 4. Interview Summary (PTO-413), Paper No./Mail Date _____.
- 5. Examiner's Amendment/Comment
- 6. Examiner's Statement of Reasons for Allowance
- 7. Other _____.

/Nguyen Q. Ha/
Primary Examiner, Art Unit 2853

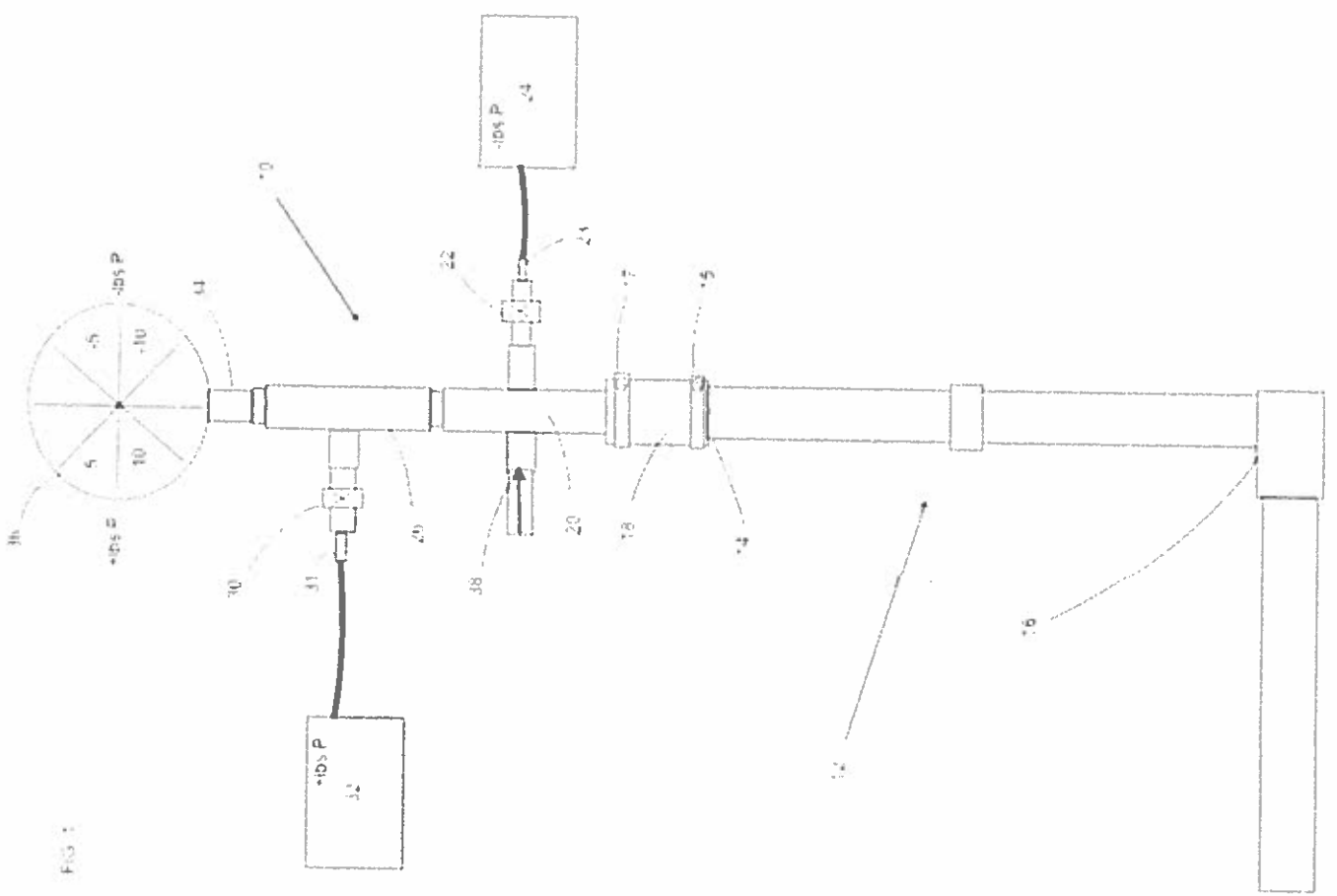


FIG. 1

ENTITY

Individual

INVENTION RECORD

1. General Subject of the Invention
Testing Gauges for Plumbing Systems, for Safety
2. Identify your facility project number for the invention:
3. Has anyone other than the submitters of this document contributed to the invention?
Yes

If so, please identify each person:
Carroll Sundheimer

4. Date conceived (When was the invention first thought of)?
2/21/2020
5. Date the invention was first disclosed and to whom?
2/21/2020 Carroll Sundheimer
6. Date of the first sketch or drawing of the invention (include copy).
2/21/2020 included and labeled #1
7. Date of the first written description of the invention (include copy).
2/21/2020 included and labeled #2
8. Date first prototype was made:
2/28/20
9. Has a prototype been lab tested?
No, not lab tested. Has been field tested.

If so, please state test date

Test location

PURPOSE OF INVENTION

The #1 purpose of this invention is safety. With the pressure relief valve and/or pressure regulator, we can prevent dangerous over pressurization thus avoiding injury / death. The invention makes it safer, easier and more efficient for the plumbers and inspectors.

MOST RELEVANT PRIOR ART KNOWN TO SUBMITTER(S)

State the closest products, literature, and/or patents (either entity or competitor) known to you.

None Known

ADVANTAGES OVER PRIOR ART

State how the invention improves over previously known devices or methods

N/A None to compare to.

NOVELTY

State what features of the invention you consider to be new. This can be an overall combination and/or one or more elements.

1. The safety device i.e., pressure regulator and/or pressure relief valve.
2. The dual function of positive psi and negative psi of the gauge.
3. Having the gauge fully assembled and ready for inspections.

SUBMITTERS

If more than one person is submitting this record and/or if additional people have contributed to the invention, describe the concepts or features contributed by each person.

DRAWINGS OF INVENTION

List below all the graphic illustrations (i.e., drawings, photos, etc), reports and/or notebooks relating to the invention, giving identifying marking and location of each

Included and Labeled #3

DETAILING DESCRIPTION OF INVENTION

Describe below the invention and its operation. Where appropriate, attach and refer to pertinent sketches, drawings, graphs etc., with the aid of reference characters. Where the invention involves composition or processes, give ranges of constituents, ratios of reactants, temperatures, pressures, times or any other pertinent process valuables. Where the invention involves computers or software, provide formulas and circuitry outline.

Included and Labeled #2

By Whom

Results

10. Has a prototype been field tested?

Yes

If so, please state date test began

3/18/2020 This was the first time gauge was used for inspections

Test completed

3/18/2020

Test Location

Montgomery County, Ohio

By Whom

Montgomery County Health Dept.

Results

Pass

11. Has the invention been disclosed in any manner whatsoever, outside the entity?

Yes, entity has been using gauges for almost a year.

If so, please state date.

3/18/2020

To Whom?

Approximately 20 employees

Consequences?

12. Has the invention been offered for sale?

No

Sold?

No

Utilized in commercial operations?

Yes

If so, please state when, where, to whom and results:

6/16/2020, @ Parkview Apartments (new construction), to Montgomery County Health Dept for plumbing inspections, inspections passed

13. If the invention is not yet in production, estimate the date of first regular commercial production:

Small local production is current. Estimated date of commercial production is 1 year after the patent is approved.

This one is the design we currently use & is in play.

#3-B



PRESSURE TESTING DEVICE AND METHOD OF TESTING USING SAME

BACKGROUND OF THE INVENTION

FIELD OF INVENTION

This invention relates to the field of pressure testing devices and method of testing pressure in plumbing. More particularly, the invention pertains to pipe line pressure testing for the plumbing and gas fields.

PRIOR ART

In the field of pressure testing pipelines, the current field requirements mandate the plumber or gasman to use test devices on the job in order to test whether the lines are sufficiently leak-proof up to a predetermined pressure. Some create devices using various fittings and nipples, depending on the layout the plumber or gasman is working on in order to provide a suitable device to pressure test the line. Such attachments can typically be connected, e.g., screwed on, to a male pipe thread, e.g., ½" to 2" pipe diameter. Historically, the test used a positive pressure test on the lines, but more recently there has been a trend to use a negative pressure test due to potential harm to the user. While certain equipment in the field exists, there remains a need for a quick and simple device and method to handle varying types of tests in the field. This instant invention addresses these needs and will allow the plumber or gasman to save a considerable amount of time and money.

BRIEF SUMMARY OF THE INVENTION

It is an object of the invention is to provide an improved device for pressure testing conduit and pipelines.

It is another object to improve the method of testing pressure in conduit and pipelines.

Accordingly, one aspect of the instant invention is directed to a pressure testing device for testing a seal in a connected conduit layout having a first conduit portion of the conduit layout open for connection and a remainder of the conduit layout closed. The pressure testing device includes a first part having a coupling end for sealably connecting to the first conduit portion, a second part communicably connecting to said first part having a first valve with a connection adapted to receive a negative pressure source, a third part communicably connecting to the second part having a second valve with a connection different than the first valve connection adapted to receive a positive source and a fourth part having a pressure meter operably connected to the fourth part, wherein the first valve and the second valve are independently actuatable such that the pressure meter reads positive pressure when the second valve is open and the first valve is closed to receive pressurized fluid and reads negative pressure when the first valve is open and the second valve is closed to a vacuum source.

An aspect of the invention is to provide a method of pressure testing a conduit structure to determine if there is a leak in the structure. In a broader sense, a method of pressure testing a conduit structure to determine if there is a leak in conduit layout is provided. The conduit structure has a first conduit portion of the conduit layout open for connection and a remainder of the conduit layout closed, and the method includes

employing a pressure testing device. The pressure testing device has a first part having a coupling end for sealably connecting to the first conduit portion, a second part communicably connecting to the first part having a valve with a connection adapted to receive one of a positive pressure source a negative pressure source, and a pressure meter operably connected to the pressure testing device, wherein the valve is open to receive one of the positive pressure source and the negative pressure source, the pressure meter displays one of a positive pressure and a negative pressure. The method further includes opening the valve to receive one of the positive pressure source and negative pressure source, and reading the pressure on the pressure meter to determine if pressure is being maintained.

Another aspect of the invention is to provide a method of pressure testing a conduit structure to determine if there is a leak in the structure. The method includes employing a pressure testing device for testing a seal in a connected conduit layout which has a first conduit portion thereof open for connection and a remainder of the conduit layout closed. The method includes employing the device having a first part having a coupling end for sealably connecting to the first conduit portion, a second part communicably connecting to the first part having a first valve with a connection adapted to receive a negative pressure source, a third part communicably connecting to the second portion having a second valve with a connection different than part first valve connection adapted to receive a positive pressure source and a fourth part having a pressure meter operably connected to the pressure testing device, wherein the first valve and said second valve are independently actuatable such that the pressure meter reads positive pressure when the second valve is open and the first valve is closed to

receive the positive pressure source and reads negative pressure when the first valve is open and the second valve is closed to the negative pressure source. The method includes a step of opening the first valve and closing the second valve and placing the conduit layout under a predetermined negative pressure through the first valve connection and reading the pressure meter to determine if the conduit layout is maintaining the predetermined negative pressure. The method includes another step of opening the second valve and closing the first valve and placing the conduit layout under a predetermined positive pressure through the second valve connection and reading the pressure meter to determine if the conduit layout is maintaining the predetermined positive pressure.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

FIG. 1 is a schematize drawing of the pressure testing device of the invention.

DETAILED DESCRIPTION OF THE INVENTION

The pressure testing device of the instant invention is generally designated by the numeral 10. One aspect of the instant invention is directed to the pressure testing device 10 for testing a seal in a connected conduit layout 12. The conduit layout 12 has a first conduit portion 14 open for connection and a remainder 16 of the conduit layout closed. The pressure testing device 10 includes a first part 18 for sealably connecting to the first conduit portion 14. A second part 20 communicably connects to the first part

18 and has a first valve 22 with a connection 23 adapted to receive a negative pressure source 24 (vacuum). A third part 26 communicably connects to the second part 18 has a second valve 30 with a connection 31 different than the first valve connection 23 adapted to receive a positive pressure source 32. The connections 23 and 31 can be of a threaded or quick connect design. A fourth part 34 has a pressure meter 36 operably connects thereto, wherein the first valve 22 and the second valve 30 are independently actuatable such that the pressure meter 36 reads positive pressure when the second valve 30 is open and the first valve 22 is closed to receive pressurized fluid from the positive pressure source 24 and reads negative pressure when the first valve 22 is open and the second valve 30 is closed to a vacuum from the negative pressure source 32. A pressure relief valve 38 is also operably connected to the device 10, here shown communicably connected to part 20 to relief positive pressure if it exceeds a predetermined amount in the closed conduit layout 12.

The pressure testing device 10 can be used for testing plumbing and gas line installations and repairs. For example, the pressure testing device 10 can test the pressure of waste lines, water lines, gas lines, and vent lines. The pressure testing device 10 can be used for new and repair work in residential, commercial, and industrial areas.

The pressure testing device 10 can perform tests ranging from ounces to pounds and on lines that range from ½" to 2". The pressure testing device 10 (See FIG. 1) can be made of various materials or like materials and include separate or unitary structure in the case of molding one or more parts. Here, the exemplary pressure testing device 10 depicts a first part 18 of a rubber tube which can be expended about the first conduit

portion 14 and includes adjustable tightening bands 15, 17 to seal about conduit portion 14 and second part 20, respectively. The second part 20 and third part 26 can be made of metal and/or plastic materials and here are seen as T-or cross shaped members. Fourth part 34 can likewise be made of metal and/or plastic parts and those conventional for making a pressure meter as is known in the art. The pressure testing device 10 can be made of a connection size as is desired to include $\frac{1}{2}$ " , $\frac{3}{4}$ " , 1"1 $\frac{1}{4}$ " , 1 $\frac{1}{2}$ " , and 2" .

An aspect of the invention is to provide a method of pressure testing a conduit structure to determine if there is a leak in the structure. In a broader sense, a method of pressure testing a conduit structure to determine if there is a leak in the conduit layout 12 having a first conduit portion 14 thereof open for connection and a remainder of the conduit layout closed, includes employing a pressure testing device. The pressure testing device has a first part having a coupling end for sealably connecting to the first conduit portion, a second part communicably connecting to the first part having a valve connection adapted to receive one of a positive pressure source and a negative pressure source, and a pressure meter operably connected to the pressure testing device, wherein the valve is open to receive one of the positive pressure source and the negative pressure source, the pressure meter displays one of a positive pressure and a negative pressure, opening the valve to receive one of the positive pressure source and positive pressure source, and reading the pressure on said pressure meter to determine if pressure is being maintained.

In a preferred embodiment, the method includes employing a pressure testing device for testing a seal in a connected conduit layout having a first conduit portion of

the conduit layout open for connection and a remainder of the conduit layout closed, which includes employing a first part having a coupling end for sealably connecting to the first conduit portion, a second part communicably connecting to the first part having a first valve connection having a first valve connection adapted to receive a negative pressure source, a third part communicably connecting to the second portion having a second valve connection having a second valve connection different than part first valve connection adapted to receive a positive pressure source and a fourth part having a pressure meter operably connected to the pressure testing device, wherein the first valve and said second valve are independently actuatable such that the pressure meter reads negative pressure when the second valve is closed and the first valve is open to receive a vacuum and reads positive pressure when the first valve is closed and the second valve is open to a positive pressure source. The method further includes opening the first valve and closing the second valve and placing the conduit layout under a predetermined negative pressure through the first valve connection and reading the pressure meter to determine if the conduit layout is maintaining the predetermined negative pressure. The method of further includes the step of opening the second valve and closing the first valve and placing the conduit layout under a predetermined positive pressure through the second valve connection reading the pressure meter to determine if the conduit layout is maintaining the predetermined positive pressure. It is contemplated that the pressure sources 24 and 32 can be switched and thus operation of the valves affects the pressure meter 36 as a function of this and opening valves 22 and 30.

Currently, plumbers or gas workers have to use an assortment of fittings and nipples in different sizes to match up with the male thread size requirements for that particular job. The invention is all that is needed for testing pressure and checking for leaks on the job. The above described invention is intended to be exemplary of the preferred embodiments but not limiting. Accordingly, the appended claims should be afforded the modifications, derivations and improvements readily apparent to those skilled in the art.

What is claimed is:

1. A pressure testing device for testing a seal in a connected conduit layout having a first conduit portion of the conduit layout open for connection and a remainder of the conduit layout closed, which includes:

a first part having a coupling end for sealably connecting to the first conduit portion;

a second part communicably connecting to said first part having a first valve connection adapted to receive a first pressure source;

a third part communicably connecting to said second part having a second valve connection different than said first valve connection adapted to receive a second pressure source different from said first pressure source; and

a fourth part having a pressure meter operably connected to said pressure testing device, wherein said first valve and said second valve are independently actuatable such that said pressure meter reads a first pressure when said second valve is closed and said first valve is open to receive said first pressure source and reads a second pressure when said first valve is closed and said second valve is open to said second pressure source.

2. A method of pressure testing a conduit structure to determine if there is a leak in conduit layout having a first conduit portion of the conduit layout open for connection and a remainder of the conduit layout closed, which includes;

employing a first part having a coupling end for sealably connecting to the first conduit portion;

a second part communicably connecting to said first part having a first valve connection adapted to receive a negative pressure source;

a third part communicably connecting to said second portion having a second valve connection having a second valve connection different than part first valve connection adapted to receive a positive pressure source; and

a fourth part having a pressure meter operably connected to said pressure testing device, wherein said first valve and said second valve are independently actuatable such that said pressure meter reads negative pressure when said second valve is closed and said first valve is open to receive the negative pressure source and reads positive pressure when said first valve is closed and said second valve is open to the positive pressure source.

3. The method of claim 2 which further includes opening said first valve and closing said second valve and placing the conduit layout under a predetermined positive pressure through said first valve connection and reading said pressure meter to determine if the conduit layout is maintaining the predetermined negative pressure.

4. The method of claim 2 further includes the step of opening said second valve and closing said first valve and placing the conduit layout under a predetermined pressure through said second valve connection reading said pressure meter to determine if the conduit layout is maintaining the predetermined positive pressure.

5. A method of pressure testing a conduit structure to determine if there is a leak in conduit layout having a first conduit portion of the conduit layout open for connection and a remainder of the conduit layout closed, which includes;

employing a pressure testing device having:

a first part having a coupling end for sealably connecting to the first conduit portion;

a second part communicably connecting to said first part having a valve connection adapted to receive one of a positive pressure source a negative pressure source; and

a pressure meter operably connected to said pressure testing device, wherein said valve is open to receive one of the positive pressure source and the negative pressure source, said pressure meter displays one of a positive pressure and a negative pressure;

opening said valve to receive one of the positive pressure source and negative pressure source; and

reading the pressure on said pressure meter to determine if pressure is being maintained.

6. A method of pressure testing a conduit structure to determine if there is a leak in conduit layout having a first conduit portion of the conduit layout open for connection and a remainder of the conduit layout closed, which includes;

employing a first part having a coupling end for sealably connecting to the first conduit portion;

a second part communicably connecting to said first part having a first valve connection adapted to receive a positive pressure source;

a third part communicably connecting to said second portion having a second valve connection having a second valve connection different than part first valve connection adapted to receive a negative pressure source; and

a fourth part having a pressure meter operably connected to said pressure testing device, wherein said first valve and said second valve are independently actuatable such that said pressure meter reads positive pressure when said second valve is closed and said first valve is open to receive the positive pressure source and reads negative pressure when said first valve is closed and said second valve is open to the negative pressure source.

7. The method of claim 6, which further includes opening said first valve and closing said second valve and placing the conduit layout under a predetermined positive pressure through said first valve connection and reading said pressure meter to determine if the conduit layout is maintaining the predetermined positive pressure.

8. The method of claim 6, further includes the step of opening said second valve and closing said first valve and placing the conduit layout under a predetermined negative pressure through said second valve connection reading said pressure meter to determine if the conduit layout is maintaining the predetermined negative pressure.

9. The pressure testing device of claim 1, wherein said first pressure source is a positive pressure source and said second pressure source is a negative pressure source.

10. The pressure testing device of claim 1, wherein said first pressure source is a negative pressure source and said second pressure source is a positive pressure source.

Abstract

A device and method of pressure testing a conduit structure to determine if there is a leak in conduit layout, which includes employing a pressure testing device having a first part having a coupling end for sealably connecting to a first conduit portion, a second part communicably connecting to the first part having a valve connection adapted to receive one of a positive pressure source a negative pressure source, and a pressure meter operably connected to the pressure testing device, wherein the valve is open to receive one of the positive pressure source and the negative pressure source, the pressure meter displays one of a positive pressure and a negative pressure, opening the valve to receive one of the positive pressure source and negative pressure source, and reading the pressure on the pressure meter to determine if pressure is being maintained.



BUILDING SERVICES PIPING TESTING REQUIREMENTS (Nov 2017)

This summary was created by the Ohio Board of Building Standards (BBS) staff as a reference tool for code users. The content of this document is not adopted material and, therefore, is not enforceable.

TYPE OF PIPING SYSTEM	TEST or PROCEDURE REQUIRED	TEST PRESSURE or METHOD	TEST DURATION	LEAKAGE PERMITTED or RESULT	CODE SECTION REFERENCE
Drainage and vent rough-in	Water test	10-foot head of water	15 minutes	None	OPC 312.2.1
	Air test (only if allowed by manufacturer)	5 psi or sufficient to balance a 10-inch column of mercury Must use 2 pressure relief valves (each rated at 7.5 psig)	15 minutes	None	OPC 312.2.2
	Alternative test (only if allowed by manufacturer)	As prescribed by manufacturer	As prescribed by manufacturer	As prescribed by manufacturer	OPC 312.2.3
Drainage and vent final (after fixtures are connected)	Visual/operational test	N/A	N/A	None	OPC 312.4.1
	Final test	1 inch water column (manometer or water can)	15 minutes	None	OPC 312.4.2
	Alternative test (only if allowed by manufacturer)	1 inch water column	As prescribed by manufacturer	None	OPC 312.4.3
	Shower Liner	Plug shower drain. Fill floor receptor to 2 inch depth	15 minutes	None	OPC 312.9
Plumbing fixture water supply	Working pressure test	Working pressure	15 minutes	None	OPC 312.5.1
	Air test (only if allowed by manufacturer)	50 psi	15 minutes	None	OPC 312.5.2
	Disinfection	Flush with potable water until clear, fill with water/chlorine solution, stand for designated time, flush with potable water	Standing time is 3 hours or 24 hours (depending upon water/chlorine solution concentration)	N/A	OPC 610.1
Storm drainage	Water test	10-foot head of water	15 minutes	None	OPC 312.8 & 312.2.1
	Air test (only if allowed by manufacturer)	5 psi or sufficient to balance a 10-inch column of mercury Must use 2 pressure relief valves (each rated at 7.5 psig)	15 minutes	None	OPC 312.8 & 312.2.2
	Alternative test (only if allowed by manufacturer)	As prescribed by manufacturer	As prescribed by manufacturer	As prescribed by manufacturer	OPC 312.8 & 312.2.3
Fire protection water supply (underground)	Water flow tests	Record static pressure on hydrant A, then open hydrant B and use pitot tube to measure flow pressure from hydrant B, measure residual pressure at hydrant A while flowing hydrant B	Until pressure stabilizes	Record residual pressure	OBC 901.5, 2016 NFPA 13: A.24.2.2
	Flushing	Flow need to achieve 10 fl/sec	Until clear	N/A	OBC 901.5, 2016 NFPA 13: 10.10.2.1
	Hydrostatic test (water)	200 psi or 50 psi above working pressure (whichever is larger)	2 hours (+ or - 5 psi)	See 2016 NFPA 13: Table 10.10.2.2.6	OBC 901.5, 2016 NFPA 13: 10.10.2.2.1 & 10.10.2.2.6

Fire protection water supply (aboveground)	Hydrostatic test (water)	200 psi or 50 psi above working pressure in excess of 150 psi (whichever is larger)	2 hours	None	OBC 901.5, 2016 NFPA 13: 25.2.1
	Wet pipe system operating test	Open inspector's test connection	5 minutes	Alarm received	OBC 901.5, 2016 NFPA 13: 25.2.3.1
	Main drain test	Record static pressure, then open main drain valve	Until pressure stabilizes	Record residual pressures	OBC 901.5, 2016 NFPA 13: 25.2.3.4.1
	Dry pipe system pneumatic (air) test	40 psi	24 hours	1.5 psi	OBC 901.5, 2016 NFPA 13: 25.2.2.1
	Dry pipe system operating test	Open inspector's test connection	TBD	Record elapsed time & pressure for the valve to trip and time for water to reach test outlet; ensure alarm received	OBC 901.5, 2016 NFPA 13: 25.2.3.2.2 & 7.2.3.6
Refrigerant piping (field constructed)	Field test of high-pressure and low-pressure sides using an inert test gas such as nitrogen or carbon dioxide (air is permitted only for R-717 ammonia ...never use oxygen)	Not less than the lower of the design pressures on the compressor/ condensing unit or the setting of the relief device(s)	N/A	None	OMC 1108.1 & 1108.2
Hydronic piping (hot water heating, chilled water cooling, dual temperature water, condenser and cooling tower water, steam and steam condensate, and solar heating)	Hydrostatic test (water)	1.5 times the maximum system design pressure but not less than 100 psi	15 minutes	None	OMC 1208.1
Ground source heat pump loops	Hydrostatic test (water)	100 psi	15 minutes	None	OMC 1210.10
Fuel oil	Air or inert gas	5-10 psi	10 minutes	None	OMC 1309, 2016 NFPA 31: 8.11.3
	or Vacuum test for supply lines	20 inches of mercury	30 minutes	None	OMC 1309, 2016 NFPA 31: 8.11.4
Fuel gas	Pressure test using air, nitrogen, carbon dioxide or an inert test gas ...never oxygen	1.5 times the maximum working pressure but not less than 3 psig. (Where the test pressure >125 psig, the test pressure shall not exceed a value that produces a hoop stress in the piping >50% of the min. yield strength of the pipe)	30 minutes for each 500 cubic feet of pipe or fraction thereof, but not more than 24 hours. If system has a volume < 10 cubic feet or a single family dwelling, 10 minutes.	None	OMC 301.6, 2015 IFGC 406.2 & 406.4
	or Leakage test with fuel gas in piping	Design pressure	N/A	None	OMC 301.6, 2015 IFGC 406.6

List of abbreviations used in this table:

IFGC-International Fuel Gas Code
NFPA-National Fire Protection Association

OBC- Ohio Building Code
OMC-Ohio Mechanical Code
OPC-Ohio Plumbing Code

File Attachments for Item:

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

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 #:	22-04
Date Recv'd:	Nov. 8, 2022

Submitter:	<u>Kim Boulter, Jennifer Corcoran</u> <small>(Contact Name)</small>	<u>Changing Spaces Ohio</u> <small>(Organization/Company)</small>
Address:	<u>6441 Spinnaker Dr.</u> <small>(Include Room Number, Suite, etc.)</small>	
	<u>Lewis Center</u> <small>(City)</small>	<u>OH</u> <small>(State)</small>
		<u>43035</u> <small>(Zip)</small>
Telephone Number:	<u>(614) 600-0973</u>	Fax Number: _____
Date: _____	E-mail Address: <u>ChangingSpacesOH@gmail.com</u>	

Code Section: Ohio Building Code, Chapter 11

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

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

See attached.

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

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

Information on Submittal (attach additional sheets if necessary):	
1. Sponsor:	Changing Spaces Ohio; Kim Boulter and Jennifer Corcoran, Advocates Organization sponsoring or requesting the rule change (if any)
2. Rule Title:	4101:1-11-01 Accessibility, Sections 1109 and 1112 Title of rule change
3. Purpose/ Objective:	<p>For Ohio to adopt code regarding adult changing stations so that new buildings will install an adult changing table according to the scope and specifications of E142-21 and ICC/ANSI A117.1. This is important because, according to the ICC Adult Changing Facilities work group:</p> <p>“Limiting access to those who need adult changing stations decreases the community size dramatically. Nationally, the Centers for Disease Control and Prevention (CDC) reports 61 Million adults (26% of the US population) have some form of disability, with 24.1% affected in the areas of mobility, independent living, and self care. Further, each of those folks need assistance, and likely travel with additional family members. Once this population is taken out of the community, businesses are also losing a large potential of support and income. Providing our citizens more opportunities to participate in the community and patronize local establishments strengthens communities, allowing all family members to engage or travel together as one family nucleus. Currently many families have to make the choice to participate in activities outside of the home with only a portion of their family.</p> <p>We have also added section 613.2.4 <i>Directional Signage to Adult Changing Stations</i> to help orient occupants of any facility to the location of the adult changing station. This piece of equipment is not located in every family/assisted care restroom, so it is important to show exactly where in the facility users should go to locate it.</p> <p style="text-align: center;">Technical justification for the proposed rule change</p>
4. Formatted Rule Language (Using Strike-out for Deleted Text and Underline for Added Text)	<p>See the attached proposed addition to the Ohio Building Code.</p> <p>This petition requests to add two new sections to address adult changing stations. One is a scoping change in Chapter 11 at the end of Section 1109. Adding Section 1109.17 is adopting ICC model code language that will be included in the upcoming 2024 IBC per code change proposal E142-21 (include a copy with this petition – optional)</p> <p>The other is a change to the ANCI ICC A117.1 referenced standard for accessible and useable buildings and facilities. Changes to ICC A117.1 are included in Chapter 11 under Section 1112. Adding item #3 under 1112.4 Changes to ICC A117.1, chapter 6 is adopting language that will be included in the next edition of the ICC A117.1 standard.</p> <p style="text-align: center;">Use strike-out for deleted text and underline for added text</p>
5. Notes:	<ol style="list-style-type: none"> 1. To encourage uniformity among states using model codes, it is recommended that the submitter first submit any code change directly to ICC and participate in the national model code development process. 2. Please provide a copy of application and documentation. 3. Use a separate form for each code change proposal.

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

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

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

- 1. In assembly and mercantile occupancies, where family or assisted-use toilet or bathing rooms are required by with Section 1109.2.1.*
- 2. In Group B occupancies providing educational facilities for students above the 12th grade, where an aggregate of twelve or more male and female water closets are required to serve the classrooms and lecture halls.*
- 3. In Group E occupancies, where a room or space used for assembly purposes requires an aggregate of six or more male and female water closets for that room or space.*
- 4. In highway rest stops and highway service plazas.*

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

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

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

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

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

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

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

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

SECTION 613

ADULT CHANGING STATIONS

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

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

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

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

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

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

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

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

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

613.2.4 Directional Signage to Adult Changing Stations.

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

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

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

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

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

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

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

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

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

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

Exceptions:

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

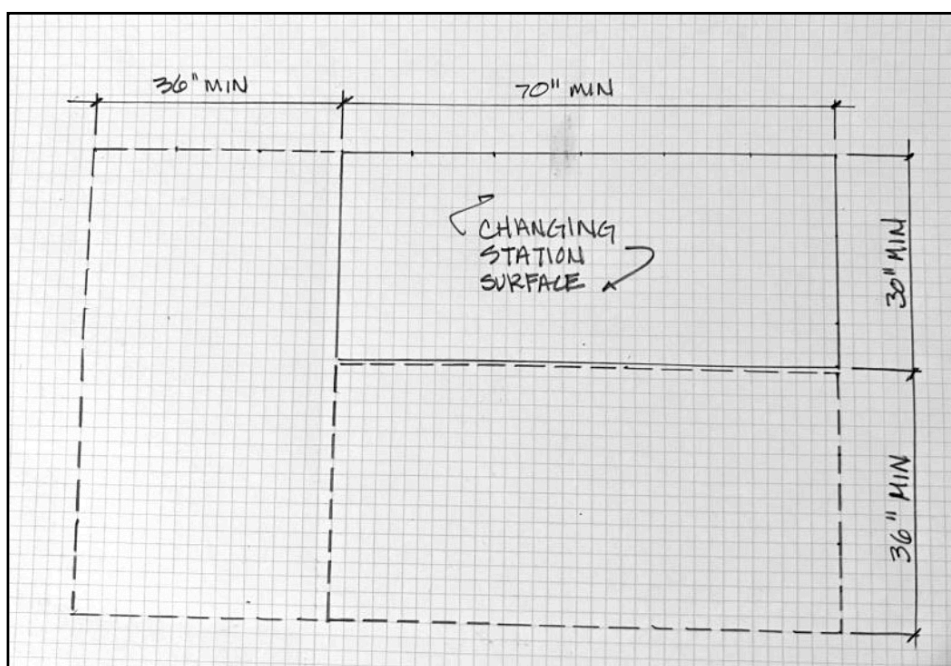


Figure 613.4.3
Changing surface and clearances

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

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

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

File Attachments for Item:

R-1 Petition #22-01 RCO Ch 44 - Tom Moore of the Ohio Electrical Coalition

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 #:	22-01
Date Recv'd:	3-18-22

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

Address: 3462 Brunk Road
(Include Room Number, Suite, etc.)
Akron Ohio 44312
(City) (State) (Zip)

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

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

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

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

Please see attachment

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

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

Information on Submittal (attach additional sheets if necessary):	
1. Sponsor:	<p style="text-align: center;">Ohio Electrical Coalition</p> <p style="text-align: center;"><small>Organization sponsoring or requesting the rule change (if any)</small></p>
2. Rule Title:	<p>4101:8-34 Electrical: 3401.1 Electrical and 4101:8-44-01 Referenced Standards 70-20 National Electrical Code <small>Title of rule change</small></p>
3. Purpose/ Objective:	<p>Please see attachment</p> <p style="text-align: center;"><small>Technical justification for the proposed rule change</small></p>
4. Formatted Rule Language (Using Strike-out for Deleted Text and Underline for Added Text)	<p>Please see attachment</p> <p style="text-align: center;"><small>Use strike-out for deleted text and underline for added text</small></p>
5. Notes:	<ol style="list-style-type: none"> 1. To encourage uniformity among states using model codes, it is recommended that the submitter first submit any code change directly to ICC and participate in the national model code development process. 2. Please provide a copy of application and documentation. 3. Use a separate form for each code change proposal.

March 16, 2022

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

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

Rule Titles:

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

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

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

Exceptions:

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

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

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

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

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

~~(1) A listed combination-type arc-fault circuit interrupter, installed to provide protection of the entire branch circuit.~~

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

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

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

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

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

(4) A listed outlet branch-circuit type arc-fault circuit interrupter installed at the first outlet on the branch circuit in combination with a listed branch-circuit overcurrent protective device where all of the following conditions are met:

- a. The branch-circuit wiring shall be continuous from the branch-circuit overcurrent device to the outlet branch-circuit arc-fault circuit interrupter.
- b. The maximum length of the branch-circuit wiring from the branch-circuit overcurrent device to the first outlet shall not exceed 15.2 m (50 ft.) for a 14 AWG conductor or 21.3 m (70 ft.) for a 12 AWG conductor.
- c. The first outlet box in the branch circuit shall be marked to indicate that it is the first outlet of the circuit.
- d. The combination of the branch-circuit overcurrent device and outlet branch-circuit AFCI shall be identified as meeting the requirements for a system combination type AFCI and shall be listed as such.

(5) If RMC, IMC, EMT, Type MC, or steel-armored Type AC cables meeting the requirements of 250.118, metal wireways, metal auxiliary gutters, and metal outlet and junction boxes are installed for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a listed outlet branch-circuit type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.

(6) Where a listed metal or nonmetallic conduit or tubing or Type MC cable is encased in not less than 50 mm (2 in.) of concrete for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a listed outlet branch-circuit type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit. Exception No. 1: Where an individual branch circuit to a fire alarm system installed in accordance with 760.41(B) or 760.121(B) is installed in RMC, IMC, EMT, or steel-sheathed cable, Type AC or Type MC, meeting the requirements of 250.118, with metal outlet and junction boxes, AFCI protection shall be permitted to be omitted.

Exception No. 2: Branch circuits supplying receptacle outlets installed to serve only the kitchen countertop surfaces shall be permitted to be installed without arc-fault circuit interrupter protection.

4101:8-44-01 Referenced standards: ~~70-17 National Electrical Code~~ 70-20 National Electrical Code

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

Sponsor: Ohio Electrical Coalition

Reason and Technical Justification for Rule Change:

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

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

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

The OBBS has taken an important step in public safety with moving forward with the adoption process for the 2020 NEC for all structures regulated by the Ohio Building, Mechanical and Plumbing Codes, which includes 4-family and larger multifamily dwellings. Ohio citizens are highly dependent on reliable and safe electrical power where they work, where they recreate and most importantly, where they live. Adoption of the 2012 NFPA 70 for the Residential Code of Ohio will ensure the same level of protection is provided, regardless of the size of the dwelling unit.

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

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

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

The US Fire Administration published a report² in May 2019 that shows a decline in the number of fires attributed to electrical malfunction. Data for the 10-year period of 2008 to 2017 reflected a 14% decrease in fires, 19% decrease in deaths, 34% decrease in injuries and 35% decrease in dollar loss.

Following are some key changes that impact electrical safety:

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

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

units to ensure first responders can safely remove power from an involved structure.

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

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

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

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

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

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

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

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

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

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

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

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

Sincerely,

Ohio Electrical Coalition

[¹Consumer Product Safety Commission – Economic Considerations – GFCIs](#)

[²US Fire Administration – Residential Building Electrical Malfunction Fire Trends \(2008-2017\)](#)

4101:8-34-01 Electrical.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:8-44-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:8-1-01 of the Administrative Code.]

SECTION 3401
ELECTRICAL

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

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

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

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

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

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

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

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

Exceptions:

1. Ground-fault circuit-interrupter protection shall not be required on lighting outlets other than those covered in 210.8(C).
 2. Ground-fault circuit-interrupter protection shall not be required on outlets for listed hvac equipment.
4. Section 230.67 shall be deleted.

SECTION 3402

EMERGENCY AND STANDBY POWER SYSTEMS

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

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

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

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

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

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

3402.1.1.1.2 Gaseous fuel supply. Where an internal combustion engine

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



November 2, 2022

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

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

Dear Ms. Hanshaw:

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

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

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

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

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

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

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

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

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Spencer Pederson". The signature is fluid and cursive, with a large initial "S" and "P".

Spencer Pederson, VP of Public Affairs

File Attachments for Item:

OB-1 Commercial Energy Code Review

(b) State or local codes that are based on the current version of the national model codes with amendments that increase energy savings. Within this category, further delineations may be made based on the number and complexity of amendments. Energy saving amendments that have the potential to be incorporated into other state or national codes will generally take priority.

(c) Current versions of state or local codes not based on or fundamentally diverging from the model codes with energy savings equal to or greater than the current national model code.

Note that category (a) will be created automatically by DOE each time a new national model code is published. Creation of versions under categories (b) and (c) will only be considered when requested by states.

For (b) and (c), funds may be prioritized for states that have historically used fewer program resources. Also, maximum funding limits may be established for individual state requests based on the total budget available and the number of requests received. Amounts above the maximum would need to be paid for with state-provided funding.

DOE will not provide a custom version of REScheck or COMcheck for State or local codes that provide less energy savings than the current versions of the national model codes.

2. Duration of Support for REScheck and COMcheck Versions

DOE will maintain on its Web site REScheck and COMcheck versions based on the current model code and the two previous versions of the model code. Versions older than these will be removed from the Web site and DOE will inform the users prior to the removal. Upon request, any older versions that are removed may be made available to states or other code organizations that wish to maintain them on non-DOE Web sites.

If you have any questions please contact the DOE Building Energy Codes Program as identified above, or visit <http://www.energycodes.gov/resource-center/help-desk>.

Issued in Washington, DC on March 11, 2014.

Jeremiah Williams,
Acting, Program Manager, Building Codes,
Building Technologies Office.
[FR Doc. 2014-05952 Filed 3-17-14; 8:45 am]
BILLING CODE 6450-01-P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Sunshine Act Meeting Notice

The following notice of meeting is published pursuant to section 3(a) of the

government in the Sunshine Act (Pub. L. 94-409), 5 U.S.C. 552b:

AGENCY HOLDING MEETING: Federal Energy Regulatory Commission.

DATE AND TIME: March 20, 2014, 10:00 a.m.

PLACE: Room 2C, 888 First Street NE., Washington, DC 20426.

STATUS: Open.

MATTERS TO BE CONSIDERED: Agenda.

* NOTE—Items listed on the agenda may be deleted without further notice.

CONTACT PERSON FOR MORE INFORMATION: Kimberly D. Bose, Secretary, Telephone (202) 502-8400.

For a recorded message listing items struck from or added to the meeting, call (202) 502-8627.

This is a list of matters to be considered by the Commission. It does not include a listing of all documents relevant to the items on the agenda. All public documents, however, may be viewed on line at the Commission's Web site at <http://www.ferc.gov> using the eLibrary link, or may be examined in the Commission's Public Reference Room.

1003RD—Meeting

Regular Meeting

March 20, 2014

10:00 a.m.

Item No	Docket No.	Company
Administrative		
A-1	AD02-1-000	Agency Business Matters.
A-2	AD02-7-000	Customer Matters, Reliability, Security and Market Operations.
A-3	AD06-3-000	Market Update.
Electric		
E-1	ER13-103-001	California Independent System Operator Corporation.
	ER13-103-003	
	ER12-2709-001	Pacific Gas and Electric Company.
	ER13-87-001	San Diego Gas & Electric Company.
E-2	OMITTED	
E-3	OMITTED	
E-4	RM13-16-000	Generator Verification Reliability Standards.
E-5	RM13-5-001	Version 5 Critical Infrastructure Protection Reliability Standards.
E-6	RM13-19-000	Generator Relay Loadability and Revised.
	RM14-3-000	Transmission Relay Loadability Reliability Standards.
E-7	RD14-2-000	North American Electric Reliability Corporation.
E-8	ER14-385-000	New York Independent System Operator, Inc.
E-9	ER14-375-000	ISO New England Inc. and New England Power Pool Participants Committee.
E-10	ER13-2063-001	California Independent System Operator Corporation.
	ER14-1004-000	
E-11	QF12-135-000	Iowa Hydro, LLC.
E-12	EL13-60-001	Otter Creek Solar LLC.
	QF13-402-002	
E-13	EL13-73-000	Hydrodynamics Inc., Montana Marginal Energy, Inc., WINData, LLC.
	QF85-212-001	Hydrodynamics, Inc.
	QF08-556-001	
	QF08-557-001	
	QF08-558-001	
	QF08-559-001	
	QF08-598-001	

New Project

ENVELOPE

INT. LIGHTING

EXT. LIGHTING

MECHANICAL

REQUIREMENTS

Reports

Select the category of interest then select a requirement from the list to view and modify in the details section below.

Project

Envelope

Interior Lighting

Exterior Lighting

Mechanical

REQUIREMENTS

Plan Review

1 [4.2.2, 8.4.1.1, 8.4.1.2, 8.7] Plans, specifications, and/or calculations provide all information

Controls

1 [8.4.2] At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an

2 [8.4.3] New buildings have electrical energy use measurement devices installed. Where tenant

DETAILS

Project

[8.4.2] At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.

Compliance Choices

Requirement will be met.

EXCEPTIONS

Receptacles intended for 24 hour operation of equipment.

Spaces where safety or security concerns prohibit automatic shutoff.

Space type is not private office, open office, or computer classroom.

Requirement does not apply.

Plans reference page/section:

CHECK COMPLIANCE

« To display compliance results, click the Check Compliance button.

New Project

ENVELOPE

INT. LIGHTING

EXT. LIGHTING

MECHANICAL

REQUIREMENTS

Reports



Select the category of interest then select a requirement from the list to view and modify in the details section below.

Project

Envelope

Interior Lighting

Exterior Lighting

Mechanical

REQUIREMENTS

Plan Review

- 1 [4.2.2, 8.4.1.1, 8.4.1.2, 8.7] Plans, specifications, and/or calculations provide all information

Controls

- 1 [8.4.2] At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an
- 2 [8.4.3] New buildings have electrical energy use measurement devices installed. Where tenant

DETAILS

Project

- [8.4.3] New buildings have electrical energy use measurement devices installed. Where tenant spaces exist, each tenant is monitored separately. In buildings with a digital control system the energy use is transmitted to to control system and displayed graphically.

Compliance Choices

- Requirement will be met.

EXCEPTIONS

- Buildings < 25,000 ft2.
- Individual tenant spaces less than 10,000 ft2.
- Dwelling units.
- Residential buildings with < 10,000 ft2 of common area.
- Critical and Equipment branches of NEC Article 517.
- Requirement does not apply.

Plans reference page/section:

 **CHECK COMPLIANCE**

« To display compliance results, click the Check Compliance button.

ENVELOPE
INT. LIGHTING
EXT. LIGHTING
MECHANICAL
Reports

Select the category of interest then select a requirement from the list to view and modify in the details section below.

All Mechanical

- ### REQUIREMENTS
- 22 make up air >=50% of exhaust air volume.
 - 23 [6.5.3.8] Occupied standby controls for zones serving rooms that are required to have
 - 24 [6.5.7.2.4] Approved field test used to evaluate design air flow rates and
 - 25 [6.5.8.1] Unenclosed spaces that are heated use only radiant heat.
 - 26 [6.4.3.9] Heating for vestibules and air curtains with integral heating include
 - 27 [6.4.3.1.2] Thermostatic controls have a 5 °F deadband.
 - 28 [6.4.3.2] Temperature controls have setpoint overlap restrictions.
 - 29 [6.4.3.3.1] HVAC systems equipped with at least one automatic shutdown control.
 - 30 [6.4.3.3.2] Setback controls allow automatic restart and temporary operation as
 - 31 [6.4.3.6] When humidification and dehumidification are provided to a zone,
- Controls
- 1 [6.5.10] Doors separating conditioned space from the outdoors have controls that
 - 2 [10.4.3] Elevators are designed with the proper lighting, ventilation power, and
- Other Equipment
- 1 [10.4.1] Electric motors meet requirements where applicable.
- Post Construction
- 1 [6.7.2.1] Furnished HVAC as-built drawings submitted within 90 days of system
 - 2 [6.7.2.2] Furnished O&M manuals for HVAC systems within 90 days of system
 - 3 [6.7.2.3] An air and/or hydronic system balancing report is provided for HVAC

DETAILS

Mechanical

- [6.4.3.6] When humidification and dehumidification are provided to a zone, simultaneous operation is prohibited. Humidity control prohibits the use of fossil fuel or electricity to produce RH > 30% in the warmest zone humidified and RH < 60% in the coldest zone dehumidified.

Compliance Choices

- Requirement will be met.

EXCEPTIONS

- Zones served by desiccant systems.
- Systems in zones requiring specific humidity levels as approval by AHJ.

Plans reference page/section:



Envelope Fails	-2%	Interior Lighting Passes	+90%
Exterior Lighting Passes	+88%		

ENVELOPE
INT. LIGHTING
EXT. LIGHTING
MECHANICAL
Reports

Select the category of interest then select a requirement from the list to view and modify in the details section below.

All Mechanical

REQUIREMENTS

- spaces other than Nontransient dwelling
 - 22 [6.5.7.2.1] Kitchen hoods >5,000 cfm have make up air >=50% of exhaust air volume.
 - 23 [6.5.3.8] Occupied standby controls for zones serving rooms that are required to have
 - 24 [6.5.7.2.4] Approved field test used to evaluate design air flow rates and
 - 25 [6.5.8.1] Unenclosed spaces that are heated use only radiant heat.
 - 26 [6.4.3.9] Heating for vestibules and air curtains with integral heating include
 - 27 [6.4.3.1.2] Thermostatic controls have a 5 °F deadband.
 - 28 [6.4.3.2] Temperature controls have setpoint overlap restrictions.
 - 29 [6.4.3.3.1] HVAC systems equipped with at least one automatic shutdown control.
 - 30 [6.4.3.3.2] Setback controls allow automatic restart and temporary operation as
 - 31 [6.4.3.6] When humidification and dehumidification are provided to a zone,
- Controls
- 1 [6.5.10] Doors separating conditioned space from the outdoors have controls that
 - 2 [10.4.3] Elevators are designed with the proper lighting, ventilation power, and
- Other Equipment
- 1 [10.4.1] Electric motors meet requirements where applicable.
- Post Construction
- 1 [6.7.2.1] Furnished HVAC as-built drawings submitted within 90 days of system
 - 2 [6.7.2.2] Furnished O&M manuals for HVAC systems within 90 days of system

DETAILS

Mechanical

- [6.5.6.1.1] Exhaust Air Energy Recovery for Nontransient Dwelling Units

Compliance Choices

- Requirement will be met.

EXCEPTIONS

- Units in Climate Zone 3.
- Units <500 sq ft conditioned floor area in Climate Zones 1,2,3,4C and 5C.
- Enthaply recovery requirements at heating design condition in Climates Zones 1 & 2.
- Enthaply recovery requirements at cooling design condition in Climates Zones 4-8.

Plans reference page/section:



Envelope Fails -2%

Interior Lighting Passes +90%

Exterior Lighting Passes +88%

File Attachments for Item:

OB-2 OBC draft rule review (Chapters 17-28)

4101:1-17-01 Special Inspections and Tests.

Chapter 17 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

(A) Replace Sections 1703.1 through 1703.6.2 with the following:

Refer to section 114.3 Building official approval process.

(B) Replace Section 1704.2 with the following:

1704.2 Special inspections and tests. Where application is made to the building official for construction as specified in Section 105, the owner or the owner's representative, other than the contractor, is to employ one or more *special inspectors* to provide special inspections and tests during construction on the types of work specified in Section 1705 and identify the approved agencies to the building official. These special inspections and tests are in addition to the inspections by the building official that are identified in Section 108.

Exceptions:

1. Special inspections and tests are not required for construction of a minor nature or work utilizing basic design principles and materials.
2. Unless otherwise required by the building official, special inspections and tests are not required for Group U occupancies that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.
3. Special inspections and tests are not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section 2211.1.2 or the conventional light-frame construction provisions of Section 2308.
4. Deleted.

(C) Replace Section 1704.2.1 with the following:

1704.2.1 Special inspector qualifications. Prior to the start of the construction, the *special inspectors* are to provide written documentation to the building official demonstrating the competence and relevant experience or training of the special inspectors who will perform the special inspections and tests during construction. Experience or training is considered to be relevant where the documented experience or training is related in

complexity to the same type of special inspection or testing activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code.

The registered design professionals involved in the design of the project are permitted to act as *special inspectors* and their personnel are permitted to act as special inspectors for the work designed by them, provided they qualify as special inspectors.

(D) Replace Section 1704.2.4 with the following:

1704.2.4 Report requirement. *Special inspectors* are to keep records of special inspections and tests. The *special inspectors* are to submit reports of special inspections and tests to the building official and to the registered design professional in responsible charge. Reports are to indicate that work inspected or tested was or was not completed in conformance to approved construction documents. Discrepancies are to be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies are to be brought to the attention of the building official and to the registered design professional in responsible charge prior to the completion of that phase of the work. A final report documenting required special inspections and tests, and correction of any discrepancies noted in the inspections or tests, is to be submitted at a point in time agreed upon prior to the start of work by the owner or the owner's representative to the building official prior to the issuance of the certificate of occupancy.

(E) Replace Section 1704.2.5.1 with the following:

1704.2.5.1 Fabricator approval. Special inspections during fabrication are not required where the work is done on the premises of a fabricator approved to perform such work without special inspection. Approval is to be based on review of the fabricator's written fabrication procedures and quality control manuals that provide a basis for control of materials and workmanship, with periodic auditing of fabrication and quality control practices by a board recognized industry trade association certification program or a board recognized fabricator inspection agency. Such fabricator inspection agency is to be recognized by the board in accordance with rule 4101:7-6-01 of the Administrative Code. At completion of fabrication, the approved fabricator is to submit a certificate of compliance to the owner or the owner's authorized agent for submittal to the building

official as specified in Section 1704.5 stating that the work was performed in accordance with the approved construction documents.
Special inspections required by this code are not required for work done on the premises of a fabricator authorized by the board as an industrialized unit manufacturer pursuant to Section 113.

(F) Replace Section 1704.3 with the following:

1704.3 Statement of special inspections. Where special inspections or tests are required by Section 1705, the applicant is to prepare a statement of special inspections in accordance with Section 1704.3.1 for submittal by the applicant in accordance with Section 1704.2.3.

Exception: The statement of special inspections is permitted to be prepared by a qualified person approved by the building official for construction not designed by a registered design professional if the qualified person provides written documentation to the building official demonstrating his or her competence and relevant experience or training.

(G) Modify Section 1704.6.1, condition #5 to read as follows:

5. Deleted.

(H) Modify Section 1705.6 to add a new exception that reads as follows:

2. A geotechnical investigation is not required where satisfactory data from adjacent areas is available that demonstrates an investigation is not necessary for any of the conditions in Sections 1803.5.1 through 1803.5.6 and Section 1803.5.10.

4101:1-18-01 Soils and Foundations.

Chapter 18 of the International Building Code, 2021 edition, as adopted by reference and modified in the OBC Section 101.1, is further modified as follows:

(A) Replace section 1803.1 with the following:

1803.1 General. Geotechnical investigations are to be conducted in accordance with Section 1803.2 and reported in accordance with Section 1803.6. Where geotechnical investigations involve in-situ testing, laboratory testing or engineering calculations, such investigations are to be conducted by a *registered design professional*.

(B) Replace exception to section 1803.2 with the following:

Exception: A geotechnical investigation is not required where satisfactory data from adjacent areas is available that demonstrates an investigation is not necessary for any of the conditions in Sections 1803.5.1 through 1803.5.6 and Sections 1803.5.10 and 1803.5.11.

(C) Replace last sentence in section 1803.5.7 with the following:

Such support is to be provided by underpinning, bracing, excavation retention systems, or by other means determined by the *registered design professional*.

(D) Replace section 1803.5.10 with the following:

1803.5.10 Alternate setback and clearance. Where setbacks or clearances other than those required in Section 1808.7 are desired, a geotechnical investigation is to be performed by a *registered design professional* to demonstrate that the intent of Section 1808.7 would be satisfied. Such an investigation is to include consideration of material, height of slope, slope gradient, load intensity and erosion characteristics of slope material.

A copy of the report of the geotechnical investigation is to be submitted to the *building official*.

(E) Replace section 1807.3.2 with the following:

1807.3.2 Design criteria. The depth to resist lateral *loads* is to be determined using the design criteria established in Sections 1807.3.2.1 through 1807.3.2.3, or by other methods specified by the *registered design professional*.

(F) Replace exception to section 1808.3.2 with the following:

Exception: Minor grading for landscaping purposes is to be permitted where done with walk-behind equipment, where the grade is not increased more than 1 foot (305 mm) from original design grade.

(G) Replace section 1808.7.5 with the following:

1808.7.5 Alternate setback and clearance. Alternate setbacks and clearances are permitted, subject to the review of the *building official*. The *building official* may require a geotechnical investigation as set forth in Section 1803.5.10.

(H) Replace section 1808.8.3 with the following:

1808.8.3 Placement of concrete. Concrete is to be placed in such a manner as to ensure the exclusion of any foreign matter and to secure a full-size foundation. Concrete is not to be placed through water unless a tremie or other method specified by the *registered design professional* is used. Where placed under or in the presence of water, the concrete is to be deposited by approved means to ensure minimum segregation of the mix and negligible turbulence of the water. Where depositing concrete from the top of a *deep foundation* element, the concrete is to be chuted directly into smooth-sided pipes or tubes or placed in a rapid and continuous operation through a funnel hopper centered at the top of the element.

(I) Replace section 1808.8.5 with the following:

1808.8.5 Forming of concrete. Concrete foundations are permitted to be cast against the earth where soil conditions do not require formwork. Where formwork is used, the formwork is to be in accordance with Section 26.11 of ACI 318.

(J) Replace first paragraph of section 1810.2.2 with the following:

1810.2.2 Stability. *Deep foundation* elements are to be braced to provide lateral stability in all directions. Three or more elements connected by a rigid cap are to be considered braced, provided that the elements are located in radial directions from the centroid of the group not less than 60 degrees (1 rad) apart. A two-element group in a rigid cap is to be considered braced along the axis connecting the two elements. Methods used to brace *deep foundation* elements are to be as specified by the *registered design professional*.

(K) Replace section 1810.3.2.5 with the following:

1810.3.2.5 Protection of materials. Where boring records or site conditions indicate possible deleterious action on the materials used in deep

foundation elements because of soil constituents, changing water levels or other factors, the elements are to be adequately protected by materials, methods or processes as specified by the *registered design professional*. Protective materials are to be applied to the elements so as not to be rendered ineffective by installation. The effectiveness of such protective measures for the particular purpose are to have been thoroughly established by satisfactory service records or other evidence.

(L) **Replace section 1810.3.3.1.2 with the following:**

1810.3.3.1.2 Load tests. Where design compressive *loads* are greater than those determined using the allowable stresses specified in Section 1810.3.2.6, where the design *load* for any deep foundation element is in doubt, or where cast-in-place deep foundation elements have an enlarged base formed either by compacting concrete or by driving a precast base, control test elements are to be tested in accordance with ASTM D1143 or ASTM D4945. One element or more are to be load tested in each area of uniform subsoil conditions. Where required by the *registered design professional*, additional elements are to be load tested where necessary to establish the safe design capacity. The resulting allowable *loads* are not to be more than one-half of the ultimate axial load capacity of the test element as assessed by one of the published methods listed in Section 1810.3.3.1.3 with consideration for the test type, duration and subsoil. The ultimate axial load capacity is to be determined by a *registered design professional* with consideration given to tolerable total and differential settlements at design *load* in accordance with Section 1810.2.3. In subsequent installation of the balance of deep foundation elements, all elements are to be deemed to have a supporting capacity equal to that of the control element where such elements are of the same type, size and relative length as the test element; are installed using the same or comparable methods and equipment as the test element; are installed in similar subsoil conditions as the test element; and, for driven elements, where the rate of penetration (for example, net displacement per blow) of such elements is equal to or less than that of the test element driven with the same hammer through a comparable driving distance.

(M) **Replace section 1810.3.3.1.4 with the following:**

1810.3.3.1.4 Allowable shaft resistance. The assumed shaft resistance developed by any uncased cast-in-place *deep foundation* element is to not exceed one-sixth of the bearing value of the soil material at minimum depth as set forth in Table 1806.2, up to 500 psf (24 kPa), unless a greater value is allowed by the *registered design professional* on the basis of a

geotechnical investigation as specified in Section 1803 or a greater value is substantiated by a load test in accordance with Section 1810.3.3.1.2. Shaft resistance and end-bearing resistance are not to be assumed to act simultaneously unless determined by a geotechnical investigation in accordance with Section 1803.

(N) Replace exception #3 to section 1810.3.9.3 with the following:

3. For Group R-3 and U occupancies not exceeding two stories of *light-frame construction*, reinforcement is permitted to be placed after concreting, while the concrete is still in a semifluid state, and the concrete cover requirement is permitted to be reduced to 2 inches (51 mm), provided that the construction method can be demonstrated to the satisfaction of the *registered design professional*.

(O) Replace exception to section 1810.3.13 with the following:

Exception: In Group R-3 and U occupancies of *light-frame construction*, *deep foundation* elements supporting foundation walls, isolated interior posts detailed so the element is not subject to lateral *loads* or exterior decks and patios are not subject to interconnection where the *registered design professional* demonstrates that the soils are of adequate stiffness.

(P) Replace section 1810.4.1.3 with the following:

1810.4.1.3 Driving near uncased concrete. Deep foundation elements are not to be driven within six element diameters center to center in granular soils or within one-half the element length in cohesive soils of an uncased element filled with concrete less than 48 hours old unless otherwise specified by the *registered design professional*. If driving near uncased concrete elements causes the concrete surface in any completed element to rise or drop significantly or bleed additional water, the completed element is to be replaced.

(Q) Replace section 1810.4.1.4 with the following:

1810.4.1.4 Driving near cased concrete. *Deep foundation* elements are not to be driven within four and one-half average diameters of a cased element filled with concrete less than 24 hours old unless otherwise specified by the *registered design professional*. Concrete is not to be placed in casings within heave range of driving.

(R) Replace section 1810.4.8 with the following:

1810.4.8 Hollow-stem augered, cast-in-place elements. Where concrete or grout is placed by pumping through a hollow-stem auger, the auger is to

be permitted to rotate in a clockwise direction during withdrawal. As the auger is withdrawn at a steady rate or in increments not to exceed 1 foot (305 mm), concreting or grouting pumping pressures are to be measured and maintained high enough to offset hydrostatic and lateral earth pressures at all times. Concrete or grout volumes are to be measured to ensure that the volume of concrete or grout placed in each element is equal to or greater than the theoretical volume of the hole created by the auger. Where the installation process of any element is interrupted or a loss of concreting or grouting pressure occurs, the element is to be redrilled to 5 feet (1524 mm) below the elevation of the tip of the auger when the installation was interrupted or concrete or grout pressure was lost and reformed. Augered cast-in-place elements are not to be installed within six diameters center to center of an element filled with concrete or grout less than 12 hours old, unless otherwise specified by the *registered design professional*. If the concrete or grout level in any completed element drops due to installation of an adjacent element, the element is to be replaced.

DRAFT

4101:1-19-01 Concrete.

Chapter 19 of the International Building Code, 2021 edition, as adopted by reference and modified in the OBC Section 101.1, is further modified as follows:

No changes.

DRAFT

4101:1-20-01 Aluminum.

Chapter 20 of the International Building Code, 2021 edition, as adopted by reference and modified in the OBC Section 101.1, is further modified as follows:

No changes.

DRAFT

4101:1-21-01 Masonry.

Chapter 21 of the International Building Code, 2021 edition, as adopted by reference and modified in the OBC Section 101.1, is further modified as follows:

No changes.

DRAFT

4101:1-22-01 Steel.

Chapter 22 of the International Building Code, 2021 edition, as adopted by reference and modified in the OBC Section 101.1, is further modified as follows:

(A) **Replace section 2204.1 with the following:**

2204.1 Welding. The details of design for welding are to be in accordance with the specifications listed in Sections 2205, 2206, 2207, 2208, 2210 and 2211. For special inspection of welding, see Section 1705.2.

DRAFT

4101:1-23-01 Wood.

Chapter 23 of the International Building Code, 2021 edition, as adopted by reference and modified in the OBC Section 101.1, is further modified as follows:

- (A) **Replace section 2303.4.1.4.1 with the following:**
2303.4.1.4.1 Truss design drawings. *Each individual truss design drawing is to bear the seal and signature of a registered design professional.*
- Exceptions:**
1. Deleted.
 2. Deleted.
- (B) **Delete last sentence of section 2308.1.**

DRAFT

4101:1-24-01 Glass and glazing.

Chapter 24 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

No Changes.

Draft

4101:1-25-01 Gypsum board, gypsum panel products, and plaster.

Chapter 25 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

No Changes

Draft

4101:1-26-01 Plastic.

Chapter 26 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

No Changes

Draft

4101:1-27-01 Electrical.

Chapter 27 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

(A) Add new Section 2702.1.1 and associated subsections to read as follows:

2702.1.1.1 Engine-driven generators. The installation of liquid- and gas-fueled stationary internal combustion engines and gas turbines used to drive generator assemblies are to meet the requirements of NFPA 37.

2702.1.1.1.1 Fuel tanks connected to generator assemblies. *Fuel tanks* piped to and supplying fuel for engine-driven generator assemblies may be engine-mounted, located inside of a *building*, outside of a *building*, or on a roof in accordance with NFPA 37 or NFPA 30 and as modified by Section 1308 of the mechanical code for fuel oil and diesel oil tank installations.

2702.1.1.1.1.1 Engine-mounted tanks. *Engine-mounted tanks* located outdoors may be located in accordance with Section 4.1.4 of NFPA 37 and are to be vented in accordance with NFPA 30. *Engine-mounted tanks* are to be provided with adequate clearance to enable filling, maintenance, and testing, are to be safeguarded against public access, and are to be protected from impact.

2702.1.1.1.1.2 Other fuel tanks. *Fuel tanks*, other than *engine-mounted tanks*, piped to and supplying the generator engine are to be located, installed, and vented in accordance with the applicable sections of NFPA 37 or located, installed, and vented in accordance with NFPA 30.

2702.1.1.1.2 Gaseous fuel supply. Where an internal combustion engine supplied with gaseous fuel powers emergency or standby generators, the fuel gas storage and piping system is to comply with NFPA 37 and the “International Fuel Gas Code”.

(B) Replace Section 2702.1.2 to read as follows:

2702.1.3 Installation. *Emergency power systems* and *standby power systems* are to be installed in accordance with this code and NFPA 70. The performance, classification, transfer, testing, and maintenance of emergency and standby power systems are required to comply with either NFPA 110 (liquid- and gas-fueled systems) or NFPA 111 (battery and inertia systems), as applicable.

(C) Replace Section 2702.2.10 to read as follows:

2702.2.10 Hazardous materials. Emergency or standby power is to be provided in occupancies with hazardous materials in accordance with Section 414.5.2.

Draft

4101:1-28-01 Mechanical systems.

Chapter 28 of the International Building Code, 2021 edition, as adopted by reference and modified in OBC Section 101.1, is further modified as follows:

No Changes

Draft