IFGC

2021 GROUP A PROPOSED CHANGES TO THE I-CODES

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Virtual Committee Action Hearings

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2021 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL FUEL GAS CODE

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TENTATIVE ORDER OF DISCUSSION
2021 PROPOSED CHANGES TO THE INTERNATIONAL FUEL GAS CODE

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some FG code change proposals may not be included on this list, as they are being heard by another committee.

FG1-21
    G1-21 Part III
FG2-21
    P6-21 Part IV
FG3-21
FG4-21
FG5-21
FG6-21
FG7-21 Part I
FG8-21

FG1-21

IFGC: 301.12

Proponents: Julie Furr, Rimkus Consulting Group, Inc., representing Federal Emergency Management Agency/Applied Technology Council - Seismic Code Support Committee, representing Federal Emergency Management Agency/Applied Technology Council - Seismic Code Support Committee (jfurr@rimkus.com); Kelly Cobeen, Wiss Janney Elstner Associates, Inc., representing Federal Emergency Management Agency/Applied Technology Council - Seismic Code Support Committee (kcobeen@wje.com); Michael Mahoney, Federal Emergency Management Agency, representing Federal Emergency Management Agency (mike.mahoney@fema.dhs.gov)

2021 International Fuel Gas Code

Revise as follows:

301.12 Seismic resistance. Where earthquake loads are applicable in accordance with the *International Building Code* ~~, the~~ supports, anchorage, and bracing shall be designed and installed for the seismic forces in accordance with Chapter 16 of the *International Building Code*. ~~that code.~~

Reason Statement: Summary
This proposal aligns the IFGC with current language in the IPC and IMC and identifies where seismic loads are actually defined. This proposal preserves the ability of one- and two-family dwellings to comply solely with the IRC and does not impose any new requirements for an engineered solution for nonstructural components.

2021 IFGC

This proposal aligns the IFGC with current language in the IPC (Section 308.2) and IMC (Section 301.18) and clarifies which IBC chapter defines seismic load requirements for commercial applications. Proper specification of seismic design loads is consistent with the intent to "prevent failures of nonstructural components or systems, where such failures would endanger life", as stated in the 2020 NEHRP Recommended Provisions Section 1.1.2.

The pointer to IBC Chapter 16 is necessary to ensure users know where to find appropriate seismic criteria. Titled “Structural Design”, IBC Chapter 16 is easily overlooked by anyone working with "nonstructural" elements and/or unfamiliar with seismic criteria. IBC Section 1613.1 references ASCE 7, Chapter 13 for specific detailing criteria and formulas utilized to calculate seismic design loads, thus eliminating any ambiguity on seismic requirements for nonstructural components.

Absent this modification, getting to the applicable seismic criteria requires in-depth knowledge of IBC Chapter 16 and its contents. Although the IFGC points back to the IBC for information not explicitly provided, IBC Chapter 28 “Mechanical Systems” points directly back to the IFGC, with no mention of other IBC sections. This becomes a circular reference between the IFGC and IBC without clear direction on seismic design requirements.

2021 IRC

The text in Chapter 24 of the IRC is pulled directly from the IFGC by ICC staff, with appropriate modifications to section references and the removal of commercial-only applications. As such, unlike most I-Code chapters, IRC Chapter 24 cannot be edited by direct proposals.

The IFGC proposal will continue to allow one- and two-family dwellings to comply with the IRC seismic provisions and is not intended to override applicable IRC fuel gas support seismic requirements.

The exception to IFGC Section 101.2 states that one- and two-family dwellings "shall comply with this code [IFGC] or the *International Residential Code*." As such, one- and two-family dwellings are only required to globally comply with either the IFGC or IRC, not both. This provision will remain unchanged by this proposal.

We anticipate the resulting IRC language would read as follows:

- **2021 IRC G2404.8 (301.12) Seismic resistance.** “Where earthquake loads are applicable in accordance with this code, ~~the~~ supports, anchorage, and bracing shall be designed and installed for seismic forces in accordance with this code.”

Bibliography: NEHRP Recommended Seismic Provisions for New Buildings and Other Structures, 2020 Edition (FEMA P-2082-1)

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposed wording clarifies the intent of the code, provides specific guidance on where to find seismic design criteria, and does not impose additional requirements that are not already required by applicable design standards.

FG2-21

IFGC: 404.6

Proponents: Ted Williams, American Gas Association, representing American Gas Association (twilliams@aga.org)

2021 International Fuel Gas Code

Delete and substitute as follows:

~~**404.6 Underground penetrations prohibited.** Gas *piping* shall not penetrate building foundation walls at any point below grade. Gas *piping* shall enter and exit a building at a point above grade and the annular space between the pipe and the wall shall be sealed.~~

404.6 Piping through foundation wall. Underground piping where installed below grade through the foundation or basement wall of a building shall be encased in a protective pipe sleeve. The annular space between the gas piping and the sleeve shall be sealed.

Reason Statement: The current text for Section 404.6, adopted into the 2015 edition, prohibits gas piping from penetrating a foundation or basement wall below grade. This text, a change from previous editions of the IFGC, was adopted without substantial or data-based evidence that such penetrations have resulted in a safety concern. Below grade penetrations have a long been permitted and have proven to be a safe installation method. The revised language would reinstate this allowance. At least one U. S. state, Georgia, has amended the IFGC to delete the prohibition and allow below grade penetration as previously permitted and as proposed in this revised text. The State of Georgia code text is as follows: "404.6 Piping through foundation wall. Underground piping where installed below grade through the foundation or basement wall of a building, shall be encased is a protective pipe sleeve. The annular space between the gas piping and the sleeve shall be sealed." Additionally, allowing below grade penetrations removes a potential safety hazard introduced by requiring exposed pipe work exterior to the building when it would otherwise not be required and where it might be ruptured upon contact.

Cost Impact: The code change proposal will decrease the cost of construction
The return to allowing below grade foundation penetrations will reduce costs by avoiding more expensive piping runs from below grade outside of the foundation to above grade wall penetrations, and return of piping to below grade elevation within the building to serve appliances and equipment. Below grade installation of appliances and equipment is a predominant installation location for buildings with basements.

FG3-21

IFGC: 407.2

Proponents: William Chapin, representing Professional Code Consulting, LLC (bill@profcc.us)

2021 International Fuel Gas Code

Revise as follows:

407.2 Design and installation. *Piping* shall be supported with ~~metal~~ pipe hooks, ~~metal~~ pipe straps, ~~metal~~ bands, ~~metal~~ brackets, ~~metal~~ hangers or building structural components, suitable for the size of *piping*, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration. *Piping* shall be anchored to prevent undue strains on connected *appliances* and shall not be supported by other *piping*. Pipe hangers and supports shall conform to the requirements of MSS SP-58 and shall be spaced in accordance with Section 415. Supports, hangers and anchors shall be installed so as not to interfere with the free expansion and contraction of the *piping* between anchors. The components of the supporting *equipment* shall be designed and installed so that they will not be disengaged by movement of the supported *piping*.

Reason Statement: This section explicitly requires all components used be of adequate strength, etc. With the plethora of materials invented over the past 100 years, there is no reason for the code to restrict some components to metal. Metal can be abrasive to piping materials and may cause damage over time with the free expansion and contraction of piping.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Choice of materials for hanging and space will not have a significant impact on the cost of construction.

FG4-21

IFGC: SECTION 202, VENT LIMITING DEVICE. (New), 408.4, 410.1, 409.4, 410.2

Proponents: Jonathan Sargeant, representing Omegaflex (jonathan.sargeant@omegaflex.com)

2021 International Fuel Gas Code

Revise as follows:

REGULATOR. A device for controlling and maintaining a uniform supply pressure~~, either pounds-to-inches water column (MP regulator) or inches-to-inches water column (*appliance* regulator)~~.

Delete without substitution:

~~**REGULATOR, MEDIUM-PRESSURE (MP Regulator).** A line pressure regulator that reduces gas pressure from the range of greater than 0.5 psig (3.4 kPa) and less than or equal to 5 psig (34.5 kPa) to a lower pressure.~~ ~~REGULATOR, MEDIUM-PRESSURE (MP Regulator). A line pressure regulator that reduces gas pressure from the range of greater than 0.5 psig (3.4 kPa) and less than or equal to 5 psig (34.5 kPa) to a lower pressure.~~

Add new definition as follows:

VENT LIMITING DEVICE. A device, installed in the vent port of a pressure regulator, designed to limit the amount of gas escapement in the event of a diaphragm failure within the regulator.

Revise as follows:

408.4 Sediment trap. Where a sediment trap is not incorporated as part of the *appliance*, a sediment trap shall be installed downstream of the *appliance* shutoff valve as close to the inlet of the *appliance* as practical. A sediment trap shall also be installed upstream of the line pressure regulator and downstream of the shutoff valve serving the regulator. The sediment trap shall be either a tee fitting having a capped nipple of any length installed vertically in the bottommost opening of the tee as illustrated in Figure 408.4 or other device *approved* as an effective sediment trap. Illuminating appliances, ranges, clothes dryers, decorative vented appliances for installation in vented *fireplaces*, gas fireplaces and outdoor grills need not be so equipped.

410.1 Pressure regulators. A line pressure regulator shall be installed where the *appliance* is designed to operate at a lower pressure than the supply pressure. Line gas pressure regulators shall be *listed* as complying with ANSI Z21.80/CSA 6.22. *Access* shall be provided to pressure regulators. Pressure regulators shall be protected from physical damage. Regulators installed on the exterior of the building shall be *approved* for outdoor installation.

1. The line pressure regulator shall maintain a reduced outlet pressure under lock-up (no-flow) conditions.
2. The capacity of the line pressure regulator, determined by published ratings of its manufacturer, shall be adequate to supply the appliances served.

409.4 ~~MP~~ Line pressure regulator valves. A *listed* shutoff valve shall be installed immediately ahead of each ~~MP~~ line pressure regulator.

410.2 ~~MP regulators~~ Regulator Installation. ~~MP~~ Line pressure regulators shall comply with the following:

1. The~~ MP~~ line pressure regulator shall be listed ~~*approved*~~and shall be suitable for the inlet and outlet gas pressures for the application.
2. ~~The MP regulator shall maintain a reduced outlet pressure under lock-up (no-flow) conditions.~~
3. ~~The capacity of the MP regulator, determined by published ratings of its manufacturer, shall be adequate to supply the *appliances* served.~~
42. The~~ MP~~ line pressure regulator shall be provided with *access.* ~~W~~here located indoors, the regulator shall be vented to the outdoors or shall be equipped with a vent ~~leak~~ limiting device, in either case complying with Section 410.3.
3. Means shall be provided both upstream and downstream of the line pressure regulator for the connection of a pressure measuring device.
5. ~~A tee fitting with one opening capped or plugged shall be installed between the MP regulator and its upstream shutoff valve. Such tee fitting shall be positioned to allow connection of a pressure-measuring instrument and to serve as a sediment trap.~~
6. ~~A tee fitting with one opening capped or plugged shall be installed not less than 10 pipe diameters downstream of the MP regulator outlet. Such tee fitting shall be positioned to allow connection of a pressure-measuring instrument. The tee fitting is not required where the MP regulator serves an *appliance* that has a pressure test port on the gas control inlet side and the *appliance* is located in the same room as the MP regulator.~~
7.4. ~~Where connected to rigid *piping*, a~~ A union shall be installed within 1 foot (304 mm) of either side of the ~~MP~~ line pressure regulator.

Reason Statement: 408.4 is changed to add the requirement, now in 410.2 (5), for a sediment trap upstream of the line pressure regulator.

The term “MP regulator” is deleted and replaced with “line pressure regulator.” As used in the IFGC line pressure regulator and a MP regulator are the same thing.

1. 402.7 limits pressure in most buildings to 5 psig. Higher pressure is allowed where pipe is installed in a chase, welded, or in industrial occupancies
2. Line pressure regulators can be rated for up to 10 psig, but 402.7 limits the inlet pressure to 5 psig in most installations.
3. There is no standard for MP regulators. It is believed that line pressure regulators listed to ANSI Z21.80 are being used.

Existing paragraphs 2 and 3 are moved to 410.1 for clarity and 410.2 is reworked to include only regulator installation requirements.

Existing paragraph 7 (now 4) is revised to require a union on all piping not just on rigid piping.

Existing paragraphs 5 and 6 are replaced by paragraph 3 to be less prescriptive while still meeting the intent of the code to enable the measurement of pressure on both sides of the regulator.

Deleted Regulator, Medium Pressure definition - the term is deleted from Section 410.2.

Revised Regulator definition - The definition is revised for consistency with the revised text which eliminates the use of MP. Inlet and outlet pressures of regulators, where needed, should be in the code and not in a definition.

Added Vent Limiting Device definition - To define a term added to section 410.2 that is consistent with the listing standard Z21.80.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
While the requirement for a union on non-rigid piping systems would slightly increase the installed cost of those piping systems the proponent believes that the less proscriptive requirements for provision of pressure measuring ports will more than offset this increase.

FG4-21

FG5-21

IFGC: SECTION 202

Proponents: Jonathan Sargeant, representing Omegaflex (jonathan.sargeant@omegaflex.com)

2021 International Fuel Gas Code

Revise as follows:

REGULATOR. A device for controlling and maintaining a uniform supply pressure~~, either pounds-to-inches water column (MP regulator) or inches-to-inches water column (*appliance* regulator)~~.

Reason Statement: The definition is revised for consistency with the revised text which eliminates the use of MP. Inlet and outlet pressures of regulators, where needed, should be in the code and not in a definition.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The change to the definition will have no impact on the cost of construction because it does not change technical requirements..

FG6-21

IFGC: 202 (New)

Proponents: Jonathan Sargeant, representing Omegaflex (jonathan.sargeant@omegaflex.com)

2021 International Fuel Gas Code

Add new definition as follows:

VENT LIMITING DEVICE. A device, installed in the vent port of a pressure regulator, designed to limit the amount of gas escapement in the event of a diaphragm failure within the regulator.

Reason Statement: To define a term added to section 410.2 that is consistent with the listing standard Z21.80.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal to add a definition will have no impact on the cost of construction because it does not change technical requirements.

FG7-21 Part I

IFGC: 606.1, UL Chapter 08 (New)

Proponents: Jonathan Roberts, representing UL LLC (jonathan.roberts@ul.com)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IFGC COMMITTEE. PART II WILL BE HEARD BY THE IMC COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2021 International Fuel Gas Code

Revise as follows:

606.1 General. Factory built cremation furnaces and commercial direct-fed incinerators shall be listed and labeled in accordance with UL 2790. Factory-built incinerators for domestic applications shall be listed and labeled in accordance with UL 791. Incinerators and ~~crematories~~ cremation furnaces shall be installed in accordance with the manufacturer's instructions.

Add new standard(s) as follows:

UL

UL LLC
333 Pfingsten Road
Northbrook IL 60062

UL 791-2006: Residential Incinerators – with revisions through November, 2014

UL 2790-2010: Commercial Incinerators - with revisions through June, 2019

Staff Analysis: A review of the standards proposed for inclusion in the code, UL 791-2006: Residential Incinerators – with revisions through November, 2014 and UL 2790-2010: Commercial Incinerators - with revisions through June, 2019, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before March 20, 2021.

FG7-21 Part II

IMC: 907.1, UL Chapter 15 (New)

Proponents: Jonathan Roberts, representing UL LLC (jonathan.roberts@ul.com)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IFGC COMMITTEE. PART II WILL BE HEARD BY THE IMC COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2021 International Mechanical Code

Revise as follows:

907.1 General. Factory built cremation furnaces and commercial direct-fed incinerators shall be listed and labeled in accordance with UL 2790. Factory-built incinerators for domestic applications shall be listed and labeled in accordance with UL 791. Incinerators and ~~crematories~~ cremation furnaces shall be ~~listed and labeled in accordance with UL 791 and shall be~~ installed in accordance with the manufacturer's instructions.

Add new standard(s) as follows:

UL

UL LLC
333 Pfingsten Road
Northbrook IL 60062-2096

2790-2010: Commercial Incinerators - with revisions through June, 2019

Staff Analysis: A review of the standards proposed for inclusion in the code, UL 791-2006: Residential Incinerators – with revisions through November, 2014 and UL 2790-2010: Commercial Incinerators - with revisions through June, 2019, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before March 20, 2021.

Reason Statement: The types of equipment covered by this section are incinerators and cremation furnaces. Cremation furnaces are used in crematories. These types of equipment are factory-built and can be installed as a packaged unit or assembled in the field from factory built subassemblies.
This proposal identifies the correct standards used for listing these types of equipment.

UL 2790 covers factory-built cremation furnaces and commercial direct-fed incinerators, including those of the gas and electric ignition types, designed primarily for use in a crematory.

UL 791 covers direct-fed incinerators, including those of the gas and electric ignition types, designed primarily for use in one-and two-family dwellings for the burning of ordinary combustible waste materials and garbage incidental to domestic occupancy and having a firebox or charging compartment of not over 5 cubic feet capacity. Incinerators of this type may also be employed in other occupancies including commercial establishments and institutions where the refuse is of a character for which the incinerator is designed and is not excessive in amount.

Currently there are seven manufacturers with listed incinerators and cremation furnaces.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Since these standards are currently in use in the industry the cost will not increase.

FG8-21

IFGC: SECTION D103

Proponents: Pennie L Feehan, representing Copper Development Association (penniefeehan@me.com)

2021 International Fuel Gas Code

Revise as follows:

SECTION D103 GAS PIPING AND CONNECTIONS INSPECTIONS.

1. *Leak Checks*. Conduct a test for gas leakage using either a non-corrosive leak detection solution or a CGD confirmed with a leak detection solution.

   The preferred method for leak checking is by use of gas leak detection solution applied to all joints. This method provides a reliable visual indication of significant leaks.

   The use of a CGD in its audio sensing mode can quickly locate suspect leaks but can be overly sensitive indicating insignificant and false leaks. All suspect leaks found through the use of a CGD should be confirmed using a leak detection solution.

   Where gas leakage is confirmed, the owner should be notified that repairs must be made. The inspection should include the following components:

   a. All gas *piping* fittings located within the *appliance* space.

   b. *Appliance* connector fittings.

   c. *Appliance* gas valve/regulator housing and connections.

2. *Appliance Connector*. Verify that the *appliance* connection type is compliant with Section 411 of the International Fuel Gas Code. Inspect flexible *appliance* connections to determine if they are free of cracks, corrosion and signs of damage. Verify that there are no uncoated ~~brass~~ copper alloy connectors. Where connectors are determined to be unsafe or where an uncoated ~~brass~~ copper alloy connector is found, the appliance shutoff valve should be placed in the off position and the owner notified that the connector must be replaced.
3. *Piping Support*. Inspect *piping* to determine that it is adequately supported, that there is no undue stress on the *piping*, and if there are any improperly capped pipe openings.
4. *Bonding*. Verify that the electrical bonding of gas *piping* is compliant with Section 310 of the International Fuel Gas Code.

Reason Statement: This proposal changes brass to the proper term copper alloy.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Terminology change and will not increase the cost of construction.