IFGC

2024 GROUP A PROPOSED CHANGES TO THE I-CODES

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2024 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL FUEL GAS CODE

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TENTATIVE ORDER OF DISCUSSION
2024 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.

FG1-24
FG2-24
FG3-24
FG4-24
FG5-24
FG6-24
FG7-24
FG8-24
FG10-24
FG11-24 Part I
    ADM1-24

FG1-24

IFGC: 303.3

Proponents: Guy McMann, Jefferson County Colorado, Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

2024 International Fuel Gas Code

Revise as follows:

303.3 Prohibited locations.

Appliances shall not be located in ~~sleeping rooms~~, bedrooms, bathrooms, toilet rooms, storage closets or surgical rooms, or in a space that opens only into such rooms or spaces, except where the installation complies with one of the following:

1. The *appliance* is a direct-vent *appliance* installed in accordance with the conditions of the listing and the manufacturer's instructions.
2. Vented room heaters, wall furnaces, vented decorative *appliances*, vented gas fireplaces, vented gas *fireplace* heaters and decorative *appliances* for installation in vented solid fuel-burning fireplaces are installed in rooms that meet the required volume criteria of Section 304.5.
3. A single wall-mounted unvented room heater is installed in a bathroom and such unvented room heater is equipped as specified in Section 621.6 and has an input rating not greater than 6,000 Btu/h (1.76 kW). The bathroom shall meet the required volume criteria of Section 304.5.
4. A single wall-mounted unvented room heater is installed in a bedroom and such unvented room heater is equipped as specified in Section 621.6 and has an input rating not greater than 10,000 Btu/h (2.93 kW). The bedroom shall meet the required volume criteria of Section 304.5.
5. The *appliance* is installed in a room or space that opens only into a bedroom or bathroom, and such room or space is used for no other purpose and is provided with a solid weather-stripped door equipped with an *approved* self-closing device. *Combustion air* shall be taken directly from the outdoors in accordance with Section 304.6.
6. A clothes dryer is installed in a residential bathroom or toilet room having a permanent opening with an area of not less than 100 square inches (0.06 m^2) that communicates with a space outside of a bedroom, bathroom, toilet room or storage closet.

Reason: 1. Replacing the words sleeping room with bedroom in the first paragraph of the code will align it with the exceptions. Nowhere in the exceptions is sleeping room used.

2. The question is, what is the difference between a sleeping room and a bedroom? The Miriam Webster dictionary defines a bedroom as: a room furnished with a bed and intended primarily for sleeping. There is no definition in Miriam Webster for sleeping room. A definition of sleeping area can be found in the Collins dictionary where a sleeping area is defined as: an area in a room or house where people can sleep but there is no definition of sleeping room. Law Insider has multiple citations for sleeping room from many different municipalities across the country. Most of the citations have differing opinions of what a sleeping room is or is not. In Chapter 2 of the IFGC, IMC, IBC or IRC sleeping room is not defined so anyone using the International Codes is left to figure out on their own what the term sleeping room encompasses. In summation, the words sleeping room are too vague for proper interpretation of what the code is trying to describe.

3. Sleeping room is a holdover from the 2003 IFGC Section 303.3 Prohibited locations code. There is no definition for sleeping room in Chapter 2 of the 2003 IFGC.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

There is no cost as this is editorial in nature.

FG2-24

IFGC: 303.3

Proponents: Guy McMann, Jefferson County Colorado, Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

2024 International Fuel Gas Code

Revise as follows:

303.3 Prohibited locations.

Appliances shall not be located in sleeping rooms, bathrooms, toilet rooms, storage closets or surgical rooms, or in a space that opens only into such rooms or spaces, except where the installation complies with one of the following:

1. The *appliance* is a direct-vent *appliance* installed in accordance with the conditions of the listing and the manufacturer's instructions.
2. Vented room heaters, wall furnaces, vented decorative *appliances*, vented gas fireplaces, vented gas *fireplace* heaters and decorative *appliances* for installation in vented solid fuel-burning fireplaces are installed in rooms that meet the required volume criteria of Section 304.5.
3. A single wall-mounted unvented room heater is installed in a bathroom and such unvented room heater is equipped as specified in Section 621.6 and has an input rating not greater than 6,000 Btu/h (1.76 kW). The bathroom shall meet the required volume criteria of Section 304.5.
4. A single wall-mounted unvented room heater is installed in a bedroom and such unvented room heater is equipped as specified in Section 621.6 and has an input rating not greater than 10,000 Btu/h (2.93 kW). The bedroom shall meet the required volume criteria of Section 304.5.
5. The *appliance* is installed in a room or space that opens only into a bedroom or bathroom, and such room or space is used for no other purpose and is provided with a solid weather-stripped door equipped with an *approved* self-closing device. *Combustion air* shall be taken directly from the outdoors in accordance with Section 304.6, or obtained from any adjacent space or spaces outside of a bedroom, bathroom, toilet room, storage closet or surgical room. Sizing for indoor combustion air volume shall be in accordance with Section 304.5. Sizing and location of the openings used to connect the indoor spaces shall be in accordance with Section 304.5.3.
6. A clothes dryer is installed in a residential bathroom or toilet room having a permanent opening with an area of not less than 100 square inches (0.06 m^2) that communicates with a space outside of a sleeping room, bathroom, toilet room or storage closet.

Reason: As written, when appliances are located in a room or space that opens only in a bedroom or bathroom there is only one option for obtaining combustion air for the appliances located in the space, bring it into the room or space from the outside. There are situations where this is not a feasible or a cost effective solution. For example, the room may not be located near an outside wall making it difficult to get the combustion air duct/ducts into the room or space. The total BTU load in the room may require very large combustion air duct/ducts to be installed. Bringing outside combustion air into a room located within the building envelope does not consider all the insulation requirements of IECC R402.4.4 (Rooms containing fuel-burning appliances).

benefits

1. Having this second option for obtaining combustion air for appliances located in a room or space accessed through a bedroom will allow the homeowner or contractor to safely provide combustion air to the appliance using IFGC 304.5 (Indoor combustion air) and 304.5.3 (Indoor opening size and location).

2. Combustion air requirements for the appliances can be met even if the room or space is not located on an outside wall.

3. Using indoor combustion air is more energy efficient than bringing in cold or hot outside combustion air into the room or space located within the building envelope.

4. Combustion air ducts can be, and sometimes are, plugged by the homeowner to prevent cold air from entering into the mechanical room during the winter months. High/low grilles are rarely intentionally blocked off.

5. Installing grilles is more cost effective than installing combustion air duct/ducts especially when the prohibited location is not adjacent to an outside wall.

Cost Impact: Decrease

Estimated Immediate Cost Impact:

There will be no added cost to industry. There could be savings to the industry. Grilles are relatively inexpensive to purchase especially when compared to the price of sheet metal and fabrication of ducts. Cutting holes in an interior wall and installing grilles is less labor intensive than cutting a hole/holes in an outside wall and installing combustion air duct/ducts.

Estimated Immediate Cost Impact Justification (methodology and variables):

The savings could range from $0 to $500 based on not having to spend labor dollars drilling holes and by not having to insulate the room to meet Energy code requirements.

FG2-24

FG3-24

IFGC: 303.7

Proponents: Guy McMann, Jefferson County Colorado, CAPMO (gmcmann@jeffco.us)

2024 International Fuel Gas Code

Revise as follows:

303.7 Pit locations. *Appliances* installed in pits or excavations shall not come in direct contact with the surrounding soil. The sides of the pit or excavation shall be held back not less than 12 inches (305 mm) from the *appliance*. Where the depth exceeds 12 inches (305 mm) below adjoining grade, the walls of the pit or excavation shall be lined with concrete or masonry, such concrete or masonry shall extend not less than 4 inches (102 mm) above adjoining grade and shall have sufficient lateral load-bearing capacity to resist collapse. Excavation on the control side of the appliance shall extend horizontally not less than 30 inches (762 mm). The *appliance* shall be protected from flooding in an *approved* manner.

Reason: This text is extracted from IRC Section1305.1.3.2 and makes the IFGC consistent with the IRC.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

It is important to the installer to have this information in order to make adjustments if necessary to the install thus saving time at a later date.

FG4-24

IFGC: SECTION 202, SECTION 315 (New), 315.1 (New), 315.1.2 (New)

Proponents: Marcelo Hirschler, GBH International, GBH International (mmh@gbhint.com)

2024 International Fuel Gas Code

Delete without substitution:

~~**[M] NONCOMBUSTIBLE MATERIALS.** Materials that, where tested in accordance with ASTM E136, have not fewer than three of four specimens tested meeting all of the following criteria:~~

~~1. The recorded temperature of the surface and interior thermocouples shall not at any time during the test rise more than 54ºF (30ºC) above the furnace temperature at the beginning of the test.~~

~~2. There shall not be flaming from the specimen after the first 30 seconds.~~

~~3. If the weight loss of the specimen during testing exceeds 50 percent, the recorded temperature of the surface and interior thermocouples shall not at any time during the test rise above the furnace air temperature at the beginning of the test, and there shall not be flaming of the specimen.~~

Add new text as follows:

SECTION 315
NONCOMBUSTIBLE MATERIALS

315.1 Testing. Noncombustible materials shall be those materials that comply with Section 703.3.1 of the International Building Code.

315.1.2 Inherently noncombustible materials. Inherently noncombustible materials, such as concrete and steel, shall not be required to be tested to be acceptable as noncombustible materials.

Reason: The so-called definition contained in the 2024 IFGC is said to be under the jurisdiction of the IMC (in accordance with the [M] in front of it). In fact it is not identical to the definition in the IMC, which reads: "Noncombustible material: a material that passes ASTM E136." Furthermore, the present definition in the IFGC is no longer consistent with the language contained in ASTM E136 and also addresses only one of the two options included in ASTM E136 for a material to be considered noncombustible. Finally, the "definition" in the IFGC is actually a "requirement" since it requires materials to meet certain criteria to be classified as a noncombustible material. ICC definitions should not contain requirements.

In the area of material regulation, materials that pass ASTM E136 have long been considered to be those that are noncombustible materials, and that concept is consistent with the flawed "definition" in the IFGC.

This proposal recommends including a correct requirement for what materials shall be considered noncombustible materials and it is to comply with the IBC section 703.3.1. A second proposed section states that a requirement for what is a noncombustible material does not mean that clearly noncombustible materials, such as steel, concrete, or masonry, need to be tested, for example to ASTM E136.

Note that ASTM E136 is one of the very few ASTM fire test standards that has acceptance criteria. The acceptance criteria are different from the theoretical definition of a noncombustible material.

If no requirement exists for what is a noncombustible material, experience indicates that some material manufacturers have claimed that their material is noncombustible when it simply exhibits improved fire performance. When searching the internet, multiple web sites offer materials or products that are alleged to be noncombustible when that claim is incorrect. There is often confusion in the public mind between how to consider a material that performs better than typical combustible materials, but is not enough for the material to be considered noncombustible.

This proposal recommends including a correct requirement for what materials shall be considered noncombustible materials and that is that they need to comply with the IBC section 703.3.1. A second section states that a requirement for what is a noncombustible material

does not mean that clearly noncombustible materials, such as steel, concrete, or masonry, need to be tested, for example to ASTM E136.

Equivalent proposals are being submitted to the IFC (by FCAC), the IPC, and the IMC, all of which use noncombustible materials.

Another proposal revises the definitions of "combustible material" in the IMC and IFGC to clarify that the whether a material is or is not noncombustible is the result of a classification. The IBC does not "define" a noncombustible material but contains requirements for such materials.

The language in section 703.3.1 of the IBC reads as follows:*703.3.1 Noncombustible materials. Materials required to be noncombustible shall be tested in accordance with ASTM E136. Alternately, materials required to be noncombustible shall be tested in accordance with ASTM E2652 using the acceptance criteria prescribed by ASTM E136.*

Exception: Materials having a structural base of noncombustible material as determined in accordance with ASTM E136, or with ASTM E2652 using the acceptance criteria prescribed by ASTM E136, with a surfacing of not more than 0.125 inch (3.18 mm) in thickness having a flame spread index not greater than 50 when tested in accordance with ASTM E84 or UL 723 shall be acceptable as noncombustible.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This proposal simply moves a requirement (that is not consistent with the present edition of ASTM E136) into a place where the requirement can be enforced.

FG4-24

FG5-24

IFGC: 404.11.2

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

2024 International Fuel Gas Code

Revise as follows:

404.11.2 Protection methods.

Underground *piping* shall comply with one or more of the following:

1. The *piping* shall be made of corrosion-resistant material that is suitable for the environment in which it will be installed.
2. Pipe shall have a factory-applied, electrically-insulating coating. Fittings and joints between sections of coated pipe shall be coated in accordance with the coating manufacturer's instructions.
3. The *piping* shall have a cathodic protection system installed and the system shall be monitored and maintained in accordance with an *approved* program.
4. The piping shall employ an encasement system listed for underground installation.

Reason: The proposal adds listed encasement systems currently permitted in 404.14 for installation underground beneath buildings. Listed encasement systems have a long history of successful use below grade both within and outside of the building footprint.

Cost Impact: Decrease

Estimated Immediate Cost Impact:

The material cost for a 20 foot run of 1" piping installed below grade:

Polyethylene with tracer wire and two risers: $217.44

Listed encasement system with two end fittings: $178.84

Savings for listed encasement system: $38.60

Estimated Immediate Cost Impact Justification (methodology and variables):

The proposal permits a manufactured listed encasement system for gas lines below grade outside the building. The most common, and least expensive, material used for this application is polyethylene. Polyethylene on a per foot material is less expensive than a listed encasement system but polyethylene requires a tracer wire and risers where they penetrate grade which is not required for a metallic listed encasement system. Because of the additional requirements, a metallic listed encasement system is often less expensive for shorter piping runs. This estimate assumes a twenty foot run of 1" piping. For longer runs, polyethylene, with the added requirements, would be less expensive to install and the proposal leaves that option intact for the contractor should he choose that alternative.

Estimated Life Cycle Cost Impact:

The proposal has no additional impact on the life cycle of the project.

Estimated Life Cycle Cost Impact Justification (methodology and variables):

The only protection method that would have life cycle costs would be cathodic protection. However, the anode replacement schedule is highly variable (dependent on the corrosiveness of the environment). The length of the replacement schedule coupled with the minimal cost of replacement anodes would make the life cycle cost of the activity trivial.

FG6-24

IFGC: 407.2

Proponents: Andrew Bevis, Chair, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2024 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, 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: The standards ANSI Z223 and NFPA 54 require metal support hardware. This proposal reverses the action of FG3-21 and aligns with IFGC with those standards.

This proposal is submitted by the ICC Plumbing Mechanical Gas Code Action Committee (PMGCAC)

PMGCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2023 PMGCAC has held 26 virtual meetings open to any interested party. In addition, there were several virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the PMGCAC website at PMGCAC.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

Support hardware for any gas piping project is a minimal cost as compared to the entire job. The difference between lowest cost support hardware and metal hardware is insignificant in the big picture.

FG7-24

IFGC: 410.2

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

2024 International Fuel Gas Code

Revise as follows:

410.2 MP regulators.

MP *pressure regulators* shall comply with the following:

1. The MP regulator shall be *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.
4. The MP *pressure regulator* shall be provided with *access.* Where located indoors, the regulator shall be vented to the outdoors or shall be equipped with a leak-limiting device, in either case complying with Section 410.3.
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.~~ Means shall be provided downstream of, and in the same room as, the MP regulator for the connection of a pressure measuring instrument. Such means shall be a dedicated test port on a regulator, appliance gas control, or manifold, a plugged tee fitting or a plugged manifold port.
7. Where connected to rigid *piping*, a union shall be installed within 1 foot (304 mm) of either side of the MP regulator.

Reason: This proposal expands the list of acceptable pressure test ports beyond a simple tee fitting by recognizing that regulator, appliance gas control, and pre-fabricated manifold manufacturers often provide integral test ports in their devices that meet the intent of the code. The proposal eliminates the requirement that the test port be 10 pipe diameters downstream of the MP regulator because this requirement is overly restrictive and provides no real world advantage. Bench testing reveals that, at maximum flow, the pressure differential between the regulator test port and a test port located 10 pipe diameters downstream of the regulator is within 1/4 inch water column of each other. This proposal eliminates unnecessary fittings, joints, and potential leak paths in the gas piping system and, in so doing, reduces installation cost while also increasing safety.

Cost Impact: Decrease

Estimated Immediate Cost Impact:

This proposal reduces costs by eliminating the requirement that the plumber install additional fittings to fabricate a test port downstream of the regulator. The eliminated test port assembly is estimated to save roughly $49.46 - $50.77 for a typical installation.

Estimated Immediate Cost Impact Justification (methodology and variables):

Estimated savings reflects the cost of a Tee fitting, pipe nipple and end cap needed to fabricate a test port in from malleable iron but does not reflect the cost of pipe dope or thread tape. A labor rate of $100 per hour was used and assembly time was estimated at 20 minutes. The cost for fabricating the test port out of 1/2" malleable iron is estimated to be $49.46 and the cost of fabricating it out of 3/4 malleable iron is estimated to be $50.77. Variables include fluctuations in material costs and differential labor rates.

Estimated Life Cycle Cost Impact:

There would be no life cycle cost impact.

Estimated Life Cycle Cost Impact Justification (methodology and variables):

N/A

FG8-24

IFGC: 502.1

2024 International Fuel Gas Code

Revise as follows:

502.1 General.
Vents, except as provided in Section 503.7, shall be *listed* and *labeled*. Type B and BW vents shall be tested in accordance with UL 441. Type L vents shall be tested in accordance with UL 641. Vents for Category II ~~and~~,III, and IV *appliances* shall be tested in accordance with UL 1738. ~~Plastic vents for Category IV *appliances* shall not be required to be *listed* and *labeled* where such vents are as specified by the *appliance* manufacturer and are installed in accordance with the *appliance* manufacturer's instructions~~.

Reason: The current venting standard, UL 1738, should be designated as the exclusive standard for listing and labeling combustion gas venting products within the International Fuel Gas Code (IFGC). The current language allows appliance manufacturers to determine what materials can be used for the venting of their appliances, as long as said materials are listed to a testing standard. This has led to the common practice of using PVCs listed to ASTM D1785. The problem associated with this is that this standard is a plumbing standard without provisions for the application of flue gas venting. The first page of ASTM D1785 states:

"NOTE 2: This standard specifies dimensional, performance and test requirements for plumbing and fluid handling applications only. It does not include provisions for the use of these products for venting of combustion gases. UL 1738 is a standard that does include specific testing and marking requirements for flue gas venting products, including PVC."

The current code is both allowing the application of a plumbing standard to the venting of combustion gases and also allowing the application of a standard to be used for a purpose which it explicitly states it is not to be used for. ASTM even goes as far as citing the correct standard (UL 1738) to use in these applications. CPVC, which is also commonly used in these applications, suffers from the same issue with its plumbing standard, ASTM F441. The misapplication of materials and testing standards poses a significant safety hazard, necessitating urgent attention and rectification within the code.

Additionally, the ASTM plumbing standards do not test several critical conditions that venting materials experience, such as elevated and low-temperatures, UV exposure, and elbow load. These conditions, commonplace in vent systems, demand a standard that comprehensively evaluates them.

UL 1738 also incorporates provisions to ensure uniformity in material throughout the entire venting system, emphasizing the need for consistency in properties like expansion/contraction rates. Such considerations as these are unique to flue gas venting systems, further emphasizing the importance of specifying a universal venting standard for these applications.

Numerous countries and municipalities have already established a single standard to which venting products must adhere, such as Canada requiring the ULC S636 standard nationwide in 2007, and NYC recently accepting UL 1738 listing for the venting of Category IV appliances.

The IFGC commentary even supports a robust stance, clarifying that un-listed plastic pipes like PVC, ABS, and CPVC are not included in the definition of "vent" and should not be used for the venting of appliances; see below excerpt from section 503.4.1 of the 2018 IFGC Code Commentary:

"… The definition of 'Vent' does not include plastic pipe, such as PVC, ABS, and CPVC, because such pipes are not currently listed as factory-built venting systems… The PVC, ABS, and CPVC pipe manufacturers do not recommend that their pipes be used for appliance venting because such products are not currently listed for such applications. There are polypropylene and possibly other types of plastic venting systems on the market that are listed to UL 1738 as appliance venting systems, and they would fall under the definition of 'Vent'."

Considering all these factors, it is evident that UL 1738 should be mandated as the required testing standard for any material used in the venting of combustion gases. This is paramount for enhancing installation safety and mitigating the potential risks associated with improper installations that can ultimately jeopardize lives.

Bibliography: 1. ASTM D1785-21a, Scope Section, NOTE 2.
2. 2018 IFGC Code Commentary, Section 503.4.1.
3. Canadian adds 2007 Supplement to Natural Gas & Propane Installation Code (CSA B149-1S1-07), requiring all plastic vent piping to

be certified to ULC S636. https://www.achrnews.com/articles/topic/2670-canada?page=32

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

UL systems are already installed on a daily occurrence, these edits clarify the listing standards that flue gas venting fall under.

FG8-24

FG9-24

IFGC: [M] 614.9.6

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

THIS PROPOSAL WILL BE HEARD BY THE MECHANICAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

2024 International Fuel Gas Code

Revise as follows:

[M] 614.9.6 Exhaust duct required. Where space for a gas-fired clothes dryer is provided, an exhaust duct system shall be installed. Where the clothes dryer is not installed at the time of occupancy, the exhaust duct shall be capped at the location of the future dryer.

~~**Exception:** Where a *listed* condensing clothes dryer is installed prior to occupancy of the structure.~~

Reason: Clarifies that these provisions in the IFGC and Fuel Gas Chapter 24 of the IRC only apply to cases where provisions for a gas clothes dryer have been provided. These provisions would be identified by the presence of a gas outlet in the laundry area. Because condensing-type and heat pump clothes dryers (which do not require exhaust ducts) would not coincide with provisions for a gas outlet in new construction, then the exception is not needed.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

These comments are editorial clarifications for code usability and do not change the substantive requirements.

FG10-24

IFGC: 704.1.2.4

Proponents: Christopher Adam Smith, Viega, LLC, Codes and Standards Manager for Viega, LLC

2024 International Fuel Gas Code

Revise as follows:

704.1.2.4 Joints.
Joints in *piping* and tubing in hydrogen service shall be *listed* as complying with ASME B31.3 to include the use of welded, brazed, flared, socket, press-connect, and slip and compression fittings. Gaskets and sealants used in hydrogen service shall be *listed* as complying with ASME B31.12. Threaded and flanged connections shall not be used in areas other than hydrogen cutoff rooms and outdoors.

Reason: When approved by the manufacturer and meeting all of the required standards, press-connect technology is an acceptable joining method for hydrogen piping that provides a joint that is equal to or better than traditional pipe joining methods. The addition of this joining method to the list of approved joints will allow for more options available to the installer.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

The addition of joint type does not increase the cost of construction. The additional joint type allows for a wider selection of materials but does not make their use mandatory. By including this additional joint type in the code, the options for installers will increase while the cost of construction should stay the same or even decrease.

FG10-24

FG11-24 Part I

IFGC: SECTION 202, SECTION 202 (New), 301.3.1 (New), 301.3.2 (New), 301.5, 634.1, 701.1, 705.5.4

Proponents: Andrew Bevis, Chair, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE FUEL GAS CODE COMMITTEE. PART II WILL BE HEARD BY THE IFC CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2024 International Fuel Gas Code

Revise as follows:

FUEL GAS. A natural gas, manufactured gas, liquefied petroleum gas or mixtures of these gases including up to 5-percent hydrogen gas by volume.

Add new definition as follows:

HYDROGEN ADMIXTURE.
Fuel gas to which hydrogen is blended or mixed by the fuel supplier or at the point of delivery greater than 5% and less than 95%.

Add new text as follows:

301.3.1 Appliances and equipment listed and labeled for use with hydrogen admixture. Appliances and equipment operating on hydrogen admixtures shall be listed and labeled for operation on the hydrogen admixture limits defined under Section 101.2.1.1.

301.3.2 Piping systems listed and labeled for use with hydrogen admixture. Piping systems and fuel gas system components shall be listed and labeled for the applicable hydrogen admixture limits.

Revise as follows:

301.5 Label information. A permanent factory-applied nameplate(s) shall be affixed to *appliances* on which shall appear in legible lettering, the manufacturer's name or trademark, the model number, serial number and, for *listed appliances*, the seal or mark of the testing agency. A label shall include the hourly rating in British thermal units per hour (Btu/h) (W); the type of fuel gas *approved* for use with the *appliance*; and the minimum *clearance* requirements.

634.1 Installation.
The installation of gaseous hydrogen systems shall be in accordance with ~~the applicable requirements~~ Chapter 7 of this code, the *International Fire Code* ~~and~~ the *International Building Code* and NFPA 2.

701.1 Scope.
The installation of *gaseous hydrogen systems* shall comply with this chapter, ~~and~~ Chapters 53 and 58 of the International Fire Code and NFPA 2. Compressed gases shall also comply with Chapter 50 of the International Fire Code for general requirements.

705.5.4 Placing equipment in operation.
After the *piping* has been placed in operation, all *equipment* shall be purged in accordance with ~~Section 707.2~~ NFPA 2 and then placed in operation, as necessary.

Reason: FUEL GAS

Natural gas utilities are implementing projects to blend gaseous hydrogen into natural gas to reduce their systems and consumers' "carbon footprints." Hydrogen admixtures have raised questions of compatibility of these blends with existing appliances, equipment, and piping systems and components.

Following the submission of a request for interpretation, CSA Group standards Technical Committees were provided access to a range of test data from a variety of sources, and upon careful review and analysis, agree that natural gas containing up to and including 5% of

Hydrogen is covered by testing with Test Gas A. The Request for Interpretation (RFI), and the position of the Technical Committees, have been published here:https://www.csagroup.org/documents/Formal_Interpretations.pdf

As a result, PMG CAC sees no reason to add specifications for such blends in ANSI accredited standards. However, code officials using the ICC Codes would be aided in understanding through the definition of 'fuel gas' that such blends are covered through the revised definition.

HYDROGEN ADMIXTURE

The proposed definition is to address Hydrogen Admixtures in the IFGC. Currently provisions do not exist to address Hydrogen Admixtures and their ranges when introduced to natural gas. Chapter 7 of the IFGC regulates Gaseous Hydrogen Systems which are defined as being 95% or higher GH2. This definition will help address ranges of hydrogen admixtures from 6%-94%.

Section 301.3.1

This is one of several proposals that address the potential for hydrogen admixtures. This specific proposal is designed to clarify that Appliances which operate on hydrogen admixtures are treated the same way all other fuel burning appliances are considered. They need to be listed and labeled for the specific fuel mixture that is supplied. This section is applicable to the IRC Chapter 24 as well as the IFGC.

Section 301.3.2

This is one of several proposals that address the potential for hydrogen admixtures. This specific proposal is designed to clarify that all piping and components which are intended to carry hydrogen admixtures are treated the same way all other piping and system components are considered. They need to be listed and labeled for the specific fuel mixture that is being transported. This section is applicable to the IRC Chapter 24 as well as the IFGC.

Section 301.5This proposal updates the current word fuel to fuel gas to ensure correlation to the revised definition for fuel gas that includes up to 5% hydrogen admixture by volume. All other fuels in accordance with Section 301.1.1 shall be regulated by the International Mechanical Code.

Section [A]101.2.1 scopes gaseous hydrogen systems directly to Chapter 7 which is complete for the for the piping system. A direct link to NFPA 2 has been provided for additional provisions that standard provides for.

Section 701.1

Once the user gets to the IFC references they find pointers to NFPA 2. This provides for a direct linkage which is important for those jurisdictions that do not use the IFC for construction purposes.Section 705.5.4

The IFC relies on NFPA 2 for this requirement and this change provides for consistency, Section 707.2 is proposed to be modified to point to NFPA 2.

This proposal is submitted by the ICC Plumbing Mechanical Gas Code Action Committee (PMGCAC)

PMGCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2023 PMGCAC has held 26 virtual meetings open to any interested party. In addition, there were several virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the PMGCAC website at PMGCAC.

Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This proposal is a clarification of different fuel types to address the trend towards blended fuels.

FG11-24 Part I

FG11-24 Part II

IFGC: [F] 633.1, [F] 703.4, [F] 706.1, [F] 707.1, [F] 707.2, [F] 708.1

Proponents: Andrew Bevis, Chair, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2024 International Fuel Gas Code

Revise as follows:

[F] 633.1 General. Stationary fuel-cell power systems having a power output not exceeding 10 MW shall be ~~tested~~ listed in accordance with ANSI/CSA FC 1 and shall be installed in accordance with the manufacturer's instructions, NFPA 853, the *International Building Code* and the *International Fire Code* . Hydrogen fuel cell power systems shall also comply with Chapter 7 of this code and NFPA 2.

[F] 703.4 Venting.
Relief device vents shall be terminated in an *approved* location in accordance with ~~Section 2309 of the International Fire Code~~ NFPA 2.

[F] 706.1 General.
The location and installation of *gaseous hydrogen systems* shall be in accordance with Sections 706.2 and 706.3.

~~Exception:~~ ~~Stationary fuel-cell power plants in accordance with Section 633.~~

[F] 707.1 Maintenance.
Gaseous hydrogen systems and detection devices shall be maintained in accordance with the *International Fire Code*, ~~and~~ the manufacturer's installation instructions and NFPA 2.

[F] 707.2 Purging.
Purging of *gaseous hydrogen systems*, other than *piping* systems purged in accordance with Section 705.5, shall be in accordance ~~with Sections 2309.6 and 2309.6.1 of the International Fire Code or in accordance~~ with the system manufacturer's instructions and NFPA 2.

[F] 708.1 General.
The design of liquefied hydrogen systems shall comply with Chapters 55 and 58 of the International Fire Code and NFPA 2.

Reason: .

Section [F] 633.1

The word "tested" has been changed to "listed", FC1 is a listing standard. A general reference to NFPA 2 has been added for linkage without having to traverse through the IFC.

Section [F] 703.4

The IFC does not contain the vent termination requirements, that is contained in NFPA 2. Plus, the IFC section pointed to only applies to motor vehicle fueling and repair activities.

Section [F] 706.1

The exception should be deleted, gaseous hydrogen piping systems associated with fuel cell power plants need to be installed in accordance with Chapter 7.

Section [F] 706.2

The IFC has requirements and should be linked here, the "or "should be a "and".

Section [F] 706.3

Section 2309.3.1.1 is the incorrect reference; it only applies to motor fueling. The correct references are Chapters 55 and 58 of the IFC

along with NFPA 2.

Section [F] 707.1

NFPA 2 is an important reference, particularly where the IFC is not utilized.

Section [F] 707.2

The IFC relies on NFPA 2 for purging and the IFC sections referenced are limited to motor vehicle fueling.

Section [F]708.1Chapter 58 of the IFC should have been included as the flammable gas chapter. The bulk of the requirements for these systems are found in NFPA 2.

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Cost Impact: The change proposal is editorial in nature or a clarification and has no cost impact on the cost of construction

Justification for no cost impact:

This proposal is a clarification of different fuel types to address the trend towards blended fuels.

FG11-24 Part II