

IFGC



2015 GROUP A PUBLIC COMMENT AGENDA

SEPTEMBER 30 – OCTOBER 5, 2015
LONG BEACH CONVENTION CENTER
LONG BEACH, CA

First Printing

Publication Date: August 2015

Copyright © 2015

by

International Code Council, Inc.

ALL RIGHTS RESERVED. This 2015 Public Comment Agenda is a copyrighted work owned by the International Code Council, Inc. Without advance written permission from the copyright owner, no part of this book may be reproduced, distributed, or transmitted in any form or by any means, including, without limitations, electronic, optical or mechanical means (by way of example and not limitation, photocopying, or recording by or in an information storage retrieval system). For information on permission to copy material exceeding fair use, please contact: Publications, 4051 West Flossmoor Road, Country Club Hills IL, 60478-5795 (Phone 888-ICC-SAFE).

Trademarks: "International Code Council," the "International Code Council" logo are trademarks of the International Code Council, Inc.

PRINTED IN THE U.S.A.

FG9-15

202

Proposed Change as Submitted

Proponent : James Ranfone, representing American Gas Association (jranfone@aga.org)

2015 International Fuel Gas Code

Revise as follows:

SECTION 202 DEFINITIONS

THERMOSTAT.

Electric switch type.

A device that senses changes in temperature and controls electrically, by means of separate components, the flow of gas to the burner(s) to maintain selected temperatures.

~~**Integral gas valve type.** An automatic device, actuated by temperature changes, designed to control the gas supply to the burner(s) in order to maintain temperatures between predetermined limits, and in which the thermal actuating element is an integral part of the device.~~

- ~~1. Graduating thermostat. A thermostat in which the motion of the valve is approximately in direct proportion to the effective motion of the thermal element induced by temperature change.~~
- ~~2. Snap-acting thermostat. A thermostat in which the thermostatic valve travels instantly from the closed to the open position, and vice versa.~~

Reason: The term integral gas valve type thermostat does not appear in the IFGC.

Cost Impact: Will not increase the cost of construction
There are no specific code requirements for this type of thermostat.

FG9-15 : 202-
THERMOSTAT-
RANFONE4947

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: Approval was based on the proponent's published reason statements.

Assembly Motion:

Disapprove

Online Vote Results:

Successful

Support: 53.15% (59) Oppose: 46.85% (52)

Assembly Action :

Disapproved

Individual Consideration Agenda

Public Comment 1:

Proponent : Assembly Action requests Disapprove.

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Disapprove was successful by a vote of 53.15% (59) to 46.85% (52) by eligible members online during the period of May 14 - May 28, 2015.

Public Comment 2:

Proponent : Brent Ursenbach, representing Utah Chapter ICC (bursenbach@slco.org) requests Disapprove.

Commenter's Reason: The reason statement for the original proposal; stating the term integral gas valve type thermostat does not appear in the IFGC is not completely accurate. Referring to ***IFGC Section 615 Sauna Heaters, 615.6 Heat and time controls. Sauna heaters shall be equipped with a thermostat which will limit room temperature to 194°F (90°C). If the thermostat is not an integral part of the sauna heater, the heat-sensing element shall be located within 6 inches (152 mm) of the ceiling. If the heat-sensing element is a capillary tube and bulb, the assembly shall be attached to the wall or other support, and shall be protected against physical damage.***

The last sentence in this section refers to a *heat sensing element that is a capillary tube and bulb*. Capillary tube and bulb thermostats/heat sensing units often are integral with the gas valve. They are not electric, rather they are an integral type gas valve.

Integral type thermostats are found in various gas appliances including decorative appliances, cooking appliances, wall furnaces, floor furnaces and sauna heaters.

An example of an integral gas valve type thermostat is a Robertshaw 4290-006 hydraulic thermostat, manufactured specifically for gas cooking appliances. The dial for temperature selection, the hydraulic sensing bulb and the gas valve are all integral, all part of a single assembly.

This definition should not be removed from the code.



FG9-15

FG10-15

202

Proposed Change as Submitted

Proponent : James Ranfone, representing American Gas Association (jranfone@aga.org)

2015 International Fuel Gas Code

Delete and substitute as follows:

SECTION 202 DEFINITIONS

UNIT HEATER.

~~**High-static pressure type.** A self-contained, automatically controlled, vented *appliance* having integral means for circulation of air against 0.2 inch (15 mm H₂O) or greater static pressure. Such *appliance* is equipped with provisions for attaching an outlet air duct and, where the *appliance* is for indoor installation remote from the space to be heated, is also equipped with provisions for attaching an inlet air duct.~~

~~**Low-static pressure type.** A self-contained, automatically controlled, vented *appliance*, intended for installation in the space to be heated without the use of ducts, having integral means for circulation of air. Such units are allowed to be equipped with louvers or face extensions made in accordance with the manufacturer's specifications.~~

A self-contained, automatically controlled, vented, fuel-gas-burning space-heating appliance, intended for installation in the space to be heated without the use of ducts, and having integral means for circulation of air.

Reason: The IFGC code requirements do not differentiate between high- and low-static unit heaters and the terms do not appear in the code. The revised simplified definition is taken from the revised definition in the 2015 *National Fuel Gas Code*, ANSI Z223.1/NFPA 54. This proposal is offered solely for the purpose of coordinating the IFGC with ANSI Z223.1 (NFGC). This text is offered "as is" for the IFGC and it is not intended that such text be modified from a technical standpoint. The subject text was revised in the 2015 NFGC (ANSI Z223.1) and this proposal will cause the IFGC text to be consistent with such revised text in ANSI Z223.1 (NFGC).

Cost Impact: Will not increase the cost of construction
The definition does not change the installation requirements for unit heaters.

FG10-15 : 202-UNIT
HEATER (New)-
RANFONE4938

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: Approval was based on the proponent's published reason statements.

**Assembly Motion:
Online Vote Results:**

**As Modified
Successful**

Support: 80.18% (89) Oppose: 19.82% (22)

Assembly Action :

Approved as Modified

Online Floor Modification:

UNIT HEATER. A self-contained, automatically controlled, vented, fuel-gas-burning space-heating appliance, intended for installation in the space to be heated ~~without the use of ducts,~~ and having integral means for circulation of air.

Individual Consideration Agenda

Public Comment 1:

Proponent : Assembly Action

requests Approve as Modified by Successful Assembly Action.

UNIT HEATER. A self-contained, automatically controlled, vented, fuel-gas-burning space-heating appliance, intended for installation in the space to be heated ~~without the use of ducts,~~ and having integral means for circulation of air.

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Approve as Modified was successful by a vote of 80.18% (89) to 19.82% (22) by eligible members online during the period of May 14 - May 28, 2015.

Public Comment 2:

Proponent : Brent Ursenbach, representing Utah Chapter ICC (bursenbach@slco.org) requests Approve as Modified by Successful Assembly Action.

UNIT HEATER. A self-contained, automatically controlled, vented, fuel-gas-burning space-heating appliance, intended for installation in the space to be heated ~~without the use of ducts,~~ and having integral means for circulation of air.

Commenter's Reason: The successful assembly action deleted the phrase ~~without the use of ducts~~ from the original proposal. The original proposal failed to recognize many unit heater manufacturers produce unit heaters designed with centrifugal high static blower, specifically to move air through duct systems. The original proposal essentially defines in code, that all unit heaters are intended for installation without the use of ducts. Code officials will through this definition, cite unit heaters with ducts, to be in violation of the code. See the following websites for unit heaters in current production, designed for use with ducts.

The Reznor Unit Heater Catalog includes Models UDBS, UDBP and B, all equipment with centrifugal (duct-able) blowers capable of handling up to .5" w.c. of external static pressure on smaller models and up .75" w.c. external static pressure on larger models. http://www.rezspec.com/files/C-UH_vH11.pdf

The Modine Unit Heater Catalog includes Models HDB, BDP, BTS and BTC, all with centrifugal blowers designed for use with ducts.

http://www.modine.com/publications/lits_earch.php?srchcrit=75-136

Sterling TC and SC series unit heaters:

http://www.sterlinghvac.com/products/indoor/blower-unit-heaters.asp#.VanFm_IVhBc

FG10-15

FG11-15

303.3

Proposed Change as Submitted

Proponent : Timothy Manz, representing Association of Minnesota Building Officials (tmanz@ci.blaine.mn.us)

2015 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. All *combustion air* shall be taken directly from the outdoors in accordance with Section 304.6.
6. A gas clothes dryer is installed in a bathroom or toilet room and a permanent opening having an area of not less than 100 square inches is provided that allows the toilet room or bathroom to communicate with a common hallway or common space.

Reason: In older homes the electrical service is not large enough for an electric dryer, so installing a gas dryer is the only option. In many homes it is desirable to have the gas dryer in an over-sized bathroom or toilet room on an upper floor. This provision provides a safe installation by requiring a minimum 100 square inch opening to a common space that ensures adequate natural ventilation is provided.

Cost Impact: Will not increase the cost of construction
This provision will not increase the cost of construction since it provides flexibility in the dryer installation.

Public Hearing Results

Committee Action:

Approved as Modified

Modification:

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. All *combustion air* shall be taken directly from the outdoors in accordance with Section 304.6.
6. A gas clothes dryer is installed in a residential bathroom or toilet room ~~and~~ having a permanent opening ~~having with~~ an area of not less than 100 square inches ~~is~~

~~provided that allows the toilet room or bathroom to communicate~~ communicates with a common hallway space outside of a sleeping room, bathroom, toilet room, or common space storage closet.

Committee Reason: Approval was based on the proponent's published reason statement. The modification replaced the undefined terms common hallway and common space with references to the spaces outside of the room containing the dryer.

Assembly Motion:

Disapprove

Online Vote Results:

Successful

Support: 70.09% (75) Oppose: 29.91% (32)

Assembly Action :

Disapproved

Individual Consideration Agenda

Public Comment 1:

Proponent : Bruce Swiecicki, representing Self (bswiczicki@npga.org) requests Approve as Modified by Committee.

Commenter's Reason: The fact is that gas clothes dryers are being installed and used in residential bathrooms. This is necessary because of the shift to scaled down living spaces being utilized today. It is necessary for the code to address these installations so they can be made in a safe manner.

Public Comment 2:

Proponent : Steven Rosenstock, Edison Electric Institute, representing Edison Electric Institute (srosenstock@eei.org) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Fuel Gas Code

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. All *combustion air* shall be taken directly from the outdoors in accordance with Section 304.6.
 6. A gas 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 that communicates with aspace outside of a sleeping room, bathroom, toilet room, or storage closet.

Commenter's Reason: This addition will clarify the code, and avoid confusion if a different type of dryer (such as an electric dryer) is installed.

Public Comment 3:

Proponent : Assembly Action requests Disapprove.

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Disapprove was successful by a vote of 70.09% (75) to 29.91% (32) by eligible members online during the period of May 14 - May 28, 2015.

FG11-15

FG12-15

303.3.1 (New)

Proposed Change as Submitted

Proponent: John Williams, CBO, Chair, representing Adhoc Health Care Committee (AHC@iccsafe.org)

2015 International Fuel Gas Code

Add new text as follows:

303.3.1 Fireplaces and decorative appliances in Group I-2

Condition 2 occupancies. Gas fireplace appliances and decorative gas appliances shall be prohibited in Group I-2, condition 2 occupancies except in public lobby and waiting areas that are not within smoke compartments containing patient sleeping areas. Such fireplace appliances and decorative appliances shall be installed in accordance with all of the following:

1. The appliances shall be vented to the outdoors.
2. The appliances be of the direct-vent type.
3. The appliances shall automatically shut off upon activation of the fire alarm system serving the occupancy.
4. The appliance controls shall be located where they can be accessed only by facility staff.
5. A carbon monoxide detector with a local alarm shall be provided and installed in accordance with Section 915 of the *International Fire Code*.

Reason: The AHC committee is recommending limitations for the use of fuel gas-fired fireplaces and decorative equipment and the restriction of solid-fuel burning fireplaces and appliances in the Group I-2, Condition 2 occupancy. Please note: these are not new requirements for the Group I-2 Occupancy facilities but are needed in the I-Codes for coordination of the long-standing provision of the construction and operational requirements for healthcare facilities.

It is standard practice and operational procedure to control the ignition sources in healthcare occupancies that can contain combustible, flammable (and sometimes even explosive) material. Fire risks need to be limited to the maximum extent feasible and specific requirements for these facilities are not currently or are not completely addressed in the I-Codes.

The language proposed in the IFGC prescribes limitations and conditions to provide the necessary safety and limitations of hazards from within the healthcare environments to the fire and ignition sources inherent to all gas-fired fireplaces and appliances. Combustion air has been restricted from being drawn from healthcare environments extending beyond the last decade and is not a new requirement.

The physical separation of the combustion chambers of gas-fired fireplaces and equipment is required to separate and provide a barrier between the ignition sources and the environmental air within healthcare occupancies. All combustion air is required to be taken directly from the exterior of the building in accordance with an existing exception that is provided for in IFGC Section 303.3.

The placement of solid fuel burning fireplaces and appliances, both decorative and heating, creates conditions where open flames that are not otherwise able to be controlled or extinguished like the similar gas-fed and fired appliances. This is why the Adhoc Healthcare Committee is proposing their restriction instead of

a limitation with operational and special control equipment.

The code sections that address the installation limitations of fuel gas-fired fireplaces and appliances will also provide alternative means for compliance for existing facilities. Given the hazards present with these appliances in the Group I-2, Condition 2 Occupancies, the proposed IFC requirements will be 'retro-active' requirements for healthcare occupancies (Group I-2);

The proposals to the IFC that are being put forth by the Adhoc Healthcare Committee have been drafted to clarify, restrict and limit the ignition source hazards in healthcare occupancies and also will reference similar requirements being proposed in the IBC, IMC AND IFGC. For instance, solid fuel heating appliances are limited by other requirements of the IMC which is why heating appliances are not needed to be referenced in this section of the IFGC.

There was a concern mentioned during testimony at the code hearings for the 2012 I-codes that the AHC code change proposals placing restrictions on solid fuel burning fireplaces and appliances and fuel gas-fired fireplaces and appliances might be misinterpreted to prohibit mechanical heating equipment elsewhere regulated in the IMC.

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website. <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

Cost Impact: Will not increase the cost of construction
Wood burning fireplaces are not permitted by the federal CMS regulations, therefore, there is no change in cost of construction.

FG12-15 : 303.3.1
(New)-WILLIAMS4239

Public Hearing Results

Committee Action:

Approved as Modified

Modification:

303.3.1 Fireplaces and decorative appliances in Group I-2 Condition 2 occupancies. Gas fireplace appliances and decorative gas appliances shall be prohibited in Group I-2, condition 2 occupancies except where such appliances are direct-vent appliances installed in public lobby and waiting areas that are not within smoke compartments containing patient sleeping areas. ~~Such fireplace appliances and decorative appliances shall be installed in accordance with all of the following:~~

- ~~1. The appliances shall be vented to the outdoors.~~
- ~~2. The appliances be of the direct vent type.~~
- ~~3. The appliances shall automatically shut off upon activation~~

- of the fire alarm system serving the occupancy.
4. ~~The appliance controls shall be located where they can be accessed only by facility staff.~~
 5. ~~A carbon monoxide detector with a local alarm shall be provided and installed in accordance with Section 915 of the International Fire Code.~~

Committee Reason: Approval was based on the proponent's published reason statements. The modification deletes the list of 5 requirements, some of which are already addressed by the codes. Items 1 and 2 in the list are appropriately combined and located in the main paragraph. Item 4 would be difficult to enforce.

Assembly Action :

None

Individual Consideration Agenda

Public Comment 1:

Proponent : John Williams, CBO, representing Adhoc Healthcare Committee (AHC@iccsafe.org) requests Approve as Modified by this Public Comment.

Further Modify as Follows:

2015 International Fuel Gas Code

303.3.1 Fireplaces and decorative appliances in Group I-2 Condition 2 occupancies. Gas fireplace appliances and decorative gas appliances shall be prohibited in Group I-2, condition 2 occupancies except where such appliances are *direct-vent appliances* installed in public lobby and waiting areas that are not within smoke compartments containing patient sleeping areas. The appliance controls shall be located where they can be accessed only by facility staff. Such fireplaces shall comply with Sections 501.2 and 604.1 and Section 915 of the International Fire Code.

Commenter's Reason: The committee was concerned that the other criteria are already addressed elsewhere, which is generally the case. However due to the unique application to Group I-2 Condition 2 occupancies the sections addressing these criteria need to be referenced. The one criteria that is not addressed is the access only by facility staff, which is a key requirement to meet current federal regulations. This type of access can be in a separate room, located at a nurses station or similar staff area, or a key switch at the unit where the staff is the only group carrying the key. The language selected for this public comment would cover any of those solutions.

The ICC Ad Hoc Committee on Healthcare (AHC) has just completed its 4th year. The AHC was established by the ICC Board to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Information on the AHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the AHC effort can be downloaded from the AHC website at: [Adhoc Healthcare](http://www.adhochealthcare.org).

FG13-15

303.7

Proposed Change as Submitted

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

2015 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 and shall be installed not less than 6 inches above the pit or excavation floor. The sides of the pit or excavation shall be held back a minimum of 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 a minimum of 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 not less than 30 inches (762 mm) horizontally from the appliance. The *appliance* shall be protected from flooding in an *approved* manner.

Reason: This section lacks some detail in floor and control side language. This modification completes this section and has all the information necessary for a code compliant installatoin.

Cost Impact: Will not increase the cost of construction
There will be no additional cost as this is only a correlation between codes to make them consistent with each other.

FG13-15 : 303.7-
MCMANN3367

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The proposed requirement will increase the cost of construction by enlarging the pit on the control side of the appliance. There is no substantiation for the elevation height above the pit floor.

Assembly Motion:

As Modified

Online Vote Results:

Successful

Support: 60.91% (67) Oppose: 39.09% (43)

Assembly Action :

Approved as Modified

Online Floor Modification:

303.7 Pit locations. Appliances installed in pits or excavations shall not come in direct contact with the surrounding soil and shall be installed not less than ~~6~~3 inches

above the pit or excavation floor. The sides of the pit or excavation shall be held back a minimum of 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 a minimum of 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 not less than 30 inches (762 mm) horizontally from the appliance. The appliance shall be protected from flooding in an approved manner.

Individual Consideration Agenda

Public Comment 1:

Proponent : Assembly Action

requests Approve as Modified by Successful Assembly Action.

303.7 Pit locations. Appliances installed in pits or excavations shall not come in direct contact with the surrounding soil and shall be installed not less than ~~6~~3 inches above the pit or excavation floor. The sides of the pit or excavation shall be held back a minimum of 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 a minimum of 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 not less than 30 inches (762 mm) horizontally from the appliance. The appliance shall be protected from flooding in an approved manner.

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Approve as Modified was successful by a vote of 60.91% (67) to 39.09% (43) by eligible members online during the period of May 14 - May 28, 2015.

Public Comment 2:

Proponent : Bruce Swiecicki, representing National Propane Gas Association (bswiczicki@npga.org) requests Disapprove.

Commenter's Reason: The submitter does not indicate that there are problems in the field, only that the section "lacks detail." This is hardly a good reason to impose a non-justified 30-inch spacing requirement to access controls on the appliance. This is not a safety issue.

FG14-15

304.13(IFGS) (New)

Proposed Change as Submitted

Proponent : James Ranfone, American Gas Association, representing American Gas Association (jranfone@aga.org)

2015 International Fuel Gas Code

Add new text as follows:

304.13(IFGS) Existing appliances. Where an existing appliance is located within the conditioned space of an existing building envelope and where a building envelope component, other than roofing material, is replaced or altered, the appliance installation shall be inspected to verify compliance with the provisions of Section 304 and Chapter 5. Where an appliance installation does not comply with Section 304 and Chapter 5, it shall be altered as necessary to be in compliance with such.

Reason: AGA is proposing an extract of section 9.1.24 from ANSI Z223.1, National Fuel Gas Code.

The code requirement would address renovations to existing buildings that could impact the supply of combustion air and the performance of venting systems. AGA is aware of weatherization programs that fail to consider the importance of ensuring that existing gas appliance installations continue to meet the IFGC combustion air and venting requirements when efforts to reduce air infiltration are undertaken. This proposal is offered solely for the purpose of coordinating the IFGC with ANSI Z223.1 (NFGC). This text is offered "as is" for the IFGC and it is not intended that such text be modified from a technical standpoint. The subject text was revised in the 2015 NFGC (ANSI Z223.1) and this proposal will cause the IFGC text to be consistent with such revised text in ANSI Z223.1 (NFGC).

Cost Impact: Will increase the cost of construction

The cost to inspect appliances will be added to projects that alter exterior building components. There may be additional costs to bring the appliance installation up to compliance with the IFGC. These are necessary costs to ensure the life-safety of the building occupants.

FG14-15 : 304.13 (IFGS)
(New)-RANFONE4964

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: Approval was based on the proponent's published reason statements.

Assembly Motion:

Disapprove

Online Vote Results:

Successful

Support: 71.05% (81) Oppose: 28.95% (33)

Assembly Action :

Disapproved

Individual Consideration Agenda

Public Comment 1:

**Proponent : Assembly Action
requests Disapprove.**

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Disapprove was successful by a vote of 71.05% (81) to 28.95% (33) by eligible members online during the period of May 14 - May 28, 2015.

FG14-15

FG20-15

401.10

Proposed Change as Submitted

Proponent : Bruce Swiecicki, representing National Propane Gas Association (bswiewicki@npga.org)

2015 International Fuel Gas Code

Delete and substitute as follows:

401.10 Third-party testing and certification. Piping materials standards. ~~Piping, tubing and fittings shall comply with the applicable referenced standards, specifications and performance criteria of this code and shall be identified in accordance with Section 401.9. Piping, tubing and fittings shall either be tested by an approved third party testing agency or certified by an approved thirdparty certification agency.~~
Piping, tubing and fittings shall be manufactured to the applicable referenced standards, specifications and performance criteria listed in Section 403 of this code and shall be identified in accordance with Section 401.9.

Reason: This requirement in the International Fuel Gas Code has far ranging impact that wasn't anticipated at the code development hearings. In many cases, there are no certification or testing requirements to use for flare nuts, tees, pipe nipples, etc. The current requirement in section 401.10 is extremely onerous to the fuel gas industry with very little, if any, benefit to society. Piping, tubing and fittings are fabricated to various materials standards, such as those published by the American Society for Testing and Materials (ASTM) and the American Society of Mechanical Engineers (ASME). The material standards are shown in Section 403 of the IFGC. Third party testing or certification is a needless and unjustified expense to the industry. There has been no data presented to indicate that piping and fittings have been failing in the field.

Cost Impact: Will not increase the cost of construction
This proposal will markedly decrease the cost of construction without affecting the safety of the piping installation. The reason is that manufacturers will not be required to pay for a needless exercise of obtaining a third party certification to verify that their manufactured products comply with the appropriate material standards.

FG20-15 : 401.10-
SWIEWICKI5663

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: Approval is based the proponent's published reason statements.

Assembly Motion:

Disapprove

Online Vote Results:

Failed

Support: 49.53% (53) Oppose: 50.47% (54)

Individual Consideration Agenda

Public Comment 1:

**Proponent : Curtis Dady, representing Viega, LLC
(curtis.dady@viega.us) requests Disapprove.**

Commenter's Reason: The purpose of a 3rd party listing/certification is to confirm that a product has been independently evaluated other than by the manufacturer. Fuel gases are inherently dangerous and 3rd party certification requirements are a reasonable precaution to hold manufacturers to a minimum level of accountability, especially in the case of new and/or imported products. Viega strongly urges reconsideration of the previous approval.

FG20-15

FG22-15

404.6

Proposed Change as Submitted

Proponent : James Ranfone, American Gas Association, representing American Gas Association (jranfone@aga.org)

2015 International Fuel Gas Code

Revise as follows:

404.6 ~~Underground penetrations prohibited.~~ Piping through foundation wall. Gas

Underground piping shall not penetrate building installed through the outer foundation walls at any point below grade. Gas piping shall enter and exit or basement wall of a building at , shall be encased in a point above grade and the annular protective sleeve or protected by an approved device or method. The space between the pipe gas piping and the sleeve and between the sleeve and the wall shall be sealed to prevent entry of gas and water.

Reason: A change adopted into the 2015 edition prohibits gas piping from penetrating a foundation or basement wall below grade. This change was adopted without 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 State, Georgia, has amended the IFGC to delete the prohibition and allow below grade penetration similar to the proposed text. GA test 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 in a protective pipe sleeve. The annular space between the gas piping and the sleeve shall be sealed."

Cost Impact: Will not increase the cost of construction
The reinstated installation practice will decrease installation costs.

FG22-15 : 404.6-
RANFONE4976

Public Hearing Results

Committee Action:

Approved as Submitted

Committee Reason: Approval was based on the proponent's published reason statements.

Assembly Motion:

Disapprove

Online Vote Results:

Successful

Support: 61.61% (69) Oppose: 38.39% (43)

Assembly Action :

Disapproved

Individual Consideration Agenda

Public Comment 1:

**Proponent : Assembly Action
requests Disapprove.**

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Disapprove was successful by a vote of 61.61% (69) to 38.39% (43) by eligible members online during the period of May 14 - May 28, 2015.

FG22-15

FG27-15

408.4

Proposed Change as Submitted

Proponent : Janine Snyder, representing Plumbing, Mechanical, and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org)

2015 International Fuel Gas Code

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. The sediment trap shall be ~~either a tee fitting having a capped nipple of any length installed vertically in the bottommost opening of the run 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.

Reason: The option for an "other device approved as an effective sediment trap" has been misinterpreted to allow configurations of tees that allow debris to pass over a nipple and cap installed in the branch opening of a tee. The current option was meant to address factory-built sediment trap devices, but they are not known to exist. This proposal clarifies the intent by referring to the run of tee which is consistent with the current FIGURE 408.4 of the code. The intent is not to allow the nipple cap to be connected to the branch opening of a tee because debris can simply jump over the branch opening.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes and the code content in terms of scope and application of referenced standards. The PMGCAC has held one open meeting and multiple conference calls which included members of the PMGCAC. Interested parties also participated in all conference calls to discuss and debate the proposed changes.

Cost Impact: Will not increase the cost of construction

This proposal will not increase the cost of construction because no additional labor, materials, equipment, appliances or devices are mandated beyond what is currently required by the code nor are the code requirements made more stringent.

FG27-15 : 408.4-
SNYDER3279

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The code official could always approve an alternative sediment trap device with or without the deleted text..

Assembly Motion:

As Submitted

Online Vote Results:

Successful

Support: 61.17% (63) Oppose: 38.83% (40)

Assembly Action :

Approved as Submitted

Individual Consideration Agenda

Public Comment 1:

**Proponent : Assembly Action
requests Approve as Submitted.**

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Approve as Submitted was successful by a vote of 61.17% (63) to 38.83% (40) by eligible members online during the period of May 14 - May 28, 2015.

FG27-15

FG30-15

409.5.3

Proposed Change as Submitted

Proponent : Janine Snyder, representing Plumbing, Mechanical, and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org)

2015 International Fuel Gas Code

Revise as follows:

409.5.3 Located at manifold. Where the *appliance* shutoff valve is installed at a manifold, such shutoff valve shall be located within 50 feet (15 240 mm) of the *appliance served*, shall be located on the same floor level as the *appliance served* and shall be readily accessible and permanently identified. The *pipng* from the manifold to within 6 feet (1829 mm) of the *appliance* shall be designed, sized and installed in accordance with Sections 401 through 408.

Reason: Section 409.5.3 allows the appliance shutoff valve to be located up to 50 feet from the appliance served. The code does not specify how the 50 foot limit is to be measured, therefore, it could be a straight line passing through walls and floors. This allowance could mean that a furnace in an attic could have its shutoff valve on a manifold that is located in the basement in a one, two or even 3 story building. Not only is this terribly inconvenient for the service personnel, but it could also be hazardous. In such cases, the service personnel would likely have to install a second shutoff valve at the appliance to save the hassle of running back and forth between the basement and the attic. There is no justification for allowing the only service shutoff valve to be so remote. The required shutoff valve is recognized as being there for servicing the appliance, however, it is not useful for servicing an appliance if it is located where it is impractical to access.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes and the code content in terms of scope and application of referenced standards. The PMGCAC has held one open meeting and multiple conference calls which included members of the PMGCAC. Interested parties also participated in all conference calls to discuss and debate the proposed changes.

Cost Impact: Will not increase the cost of construction

This proposal will not increase the cost of construction because no additional labor, materials, equipment, appliances or devices are mandated beyond what is currently required by the code nor are the code requirements made more stringent.

FG30-15 : 409.5.3-
SNYDER3281

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: There is no history of a problem or evidence of a hazard with the current code allowance. The code already allows a redundant shutoff valve to be installed at the appliance location.

**Assembly Motion:
Online Vote Results:**

**As Submitted
Successful**

Support: 54.72% (58) Oppose: 45.28% (48)

Assembly Action :

Approved as Submitted

Individual Consideration Agenda

Public Comment 1:

**Proponent : Assembly Action
requests Approve as Submitted.**

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Approve as Submitted was successful by a vote of 54.72% (58) to 45.28% (48) by eligible members online during the period of May 14 - May 28, 2015.

Public Comment 2:

Proponent : Bruce Swiecicki, representing National Propane Gas Association (bswicicki@npga.org) requests Disapprove.

Commenter's Reason: The proponent's reason is mostly concerned with doing away with an inconvenience for the service personnel. But there is nothing in the code that would prevent the installer from putting an appliance shutoff valve at each appliance.

So looking at the safety aspect, where is the problem? It actually would be safer to permit the shutoff valve at the manifold in a basement (which is commonly done) because the gas to the appliance can be shut off without having to move the appliance, which is commonly needed with cook-stoves and clothes dryers that are installed in tight spaces. This avoids the hazards associated with moving an appliance to access the shutoff valve behind it in order to repair a leaking appliance connector.

The proponent's claim that the cost of construction would not be increased is blatantly incorrect. The cost of construction would definitely increase due to the additional piping and shutoff valves required.

In summary, the configuration of a manifolded CSST system is commonly used in basements of houses and other buildings. It has worked well and without a true safety reason to prohibit this type of installation, this code change should be disapproved.

Here is a picture of a typical CSST manifold. Note the red shutoff valve that can serve all the branches. This does not preclude the installation of separate shutoff valves at each appliance where deemed necessary.



FG30-15

FG34-15

411.1, 411.4 (New)

Proposed Change as Submitted

Proponent : James Ranfone, American Gas Association, representing American Gas Association (jranfone@aga.org)

2015 International Fuel Gas Code

Revise as follows:

411.1 Connecting appliances. Except as required by Section 411.1.1, *appliances* shall be connected to the *pipng* system by one of the following:

1. Rigid metallic pipe and fittings.
2. Corrugated stainless steel tubing (CSST) where installed in accordance with the manufacturer's instructions.
3. Semirigid metallic tubing and metallic fittings. Lengths shall not exceed 6 feet (1829 mm) and shall be located entirely in the same room as the *appliance*. Semirigid metallic tubing shall not enter a motor-operated *appliance* through an unprotected knockout opening.
4. *Listed and labeled appliance* connectors in compliance with ANSI Z21.24 and installed in accordance with the manufacturer's instructions and located entirely in the same room as the *appliance*.
5. *Listed and labeled* quick-disconnect devices used in conjunction with *listed and labeled appliance* connectors.
6. *Listed and labeled* convenience outlets used in conjunction with *listed and labeled appliance* connectors.
7. *Listed and labeled outdoor appliance* connectors in compliance with ANSI Z21.75/CSA 6.27 and installed in accordance with the manufacturer's instructions.
8. *Listed outdoor gas hose* connectors in compliance with ANSI Z21.54 used to connect portable outdoor appliances. The gas hose connection shall be made only in the outdoor area where the appliance is used, and shall be to the gas *pipng* supply at an appliance shutoff valve, a listed quick-disconnect device or listed gas convenience outlet.
9. Gas hose connectors for use in laboratories and educational facilities in accordance with Section 411.4

Add new text as follows:

411.4 Injection Bunsen-type burners Injection Bunsen-type burners used in laboratories and educational facilities shall be connected to the gas supply system by either a listed or unlisted hose.

Reason: The IFGC is currently silent on the use of unlisted connectors for injection burners commonly referred to as Bunsen burners. Unlisted hoses are the only readily available product for such installations and their use is common place. The new code requirement will allow the use of unlisted hoses approved by the AHJ. The revision is based on similar code requirement adopted into the 2015 National Fuel Gas Code, ANSI Z223.1/NFPA 54.

Cost Impact: Will not increase the cost of construction
Recongionizes a product that is already used.

FG34-15 : 411.1-
RANFONE5075

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: Approval was based on the proponent's published reason statement. Code officials have been requiring listed gas connectors instead of the historically used surgical tubing.

Assembly Motion: **Disapprove**
Online Vote Results: **Successful**

Support: 66.04% (70) Oppose: 33.96% (36)

Assembly Action : **Disapproved**

Individual Consideration Agenda

Public Comment 1:

Proponent : Assembly Action
requests Disapprove.

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Disapprove was successful by a vote of 66.04% (70) to 33.96% (36) by eligible members online during the period of May 14 - May 28, 2015.

FG34-15

FG35-15

411.2

Proposed Change as Submitted

Proponent : Janine Snyder, representing Plumbing, Mechanical, and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org)

2015 International Fuel Gas Code

Revise as follows:

411.2 Manufactured home connections. The connection between the gas distribution piping system for a manufactured home and the gas service shall be located outside of the footprint of the home. Manufactured homes shall be connected to the distribution *piping* system by one of the following materials:

1. Metallic pipe in accordance with Section 403.4.
2. Metallic tubing in accordance with Section 403.5.
3. *Listed and labeled* connectors in compliance with ANSI Z21.75/CSA 6.27 and installed in accordance with the manufacturer's instructions.

Reason: Current Section 404.6 expresses the concern for gas piping entering a building at some point below grade. Likewise there is a concern for gas service piping running underground to a point underneath a manufactured home. Such homes will have skirting that creates what is, in effect, a crawl space. Any gas leakage from an underground lateral and riser pipe will collect under the home. If there is no underground riser and connection is made directly to a meter setting, the meter and service regulator should not be under the home. Also, having the gas service riser outside of the footprint of the home will help protect it from damage when a home is moved in or out.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes and the code content in terms of scope and application of referenced standards. The PMGCAC has held one open meeting and multiple conference calls which included members of the PMGCAC. Interested parties also participated in all conference calls to discuss and debate the proposed changes.

Cost Impact: Will not increase the cost of construction

This proposal will not increase the cost of construction because no additional labor, materials, equipment, appliances or devices are mandated beyond what is currently required by the code nor are the code requirements made more stringent.

FG35-15 : 411.2-
SNYDER3282

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: There is no evidence of a problem with such connections under a manufactured home. Gas piping and connectors are allowed in crawl spaces. The term "gas service" could be confused with the utility service which is not

within the scope of the code.

Assembly Motion:

As Submitted

Online Vote Results:

Failed

Support: 40.57% (43) Oppose: 59.43% (63)

Assembly Action :

None

Individual Consideration Agenda

Public Comment 1:

Proponent : Janine Snyder, representing Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Fuel Gas Code

411.2 Manufactured home connections. ~~The connection between the Underground gas distribution piping system for a manufactured home and the gas service supply risers shall not be located outside of the footprint of the under a manufactured home.~~ Manufactured homes shall be connected to the distribution *piping* system by one of the following materials:

1. Metallic pipe in accordance with Section 403.4.
2. Metallic tubing in accordance with Section 403.5.
3. *Listed and labeled* connectors in compliance with ANSI Z21.75/CSA 6.27 and installed in accordance with the manufacturer's instructions.

Commenter's Reason: The committee thought that the words "gas service" could be confused with the utility owned equipment, so the text was revised to refer to underground gas supply risers, which are downstream of the meter setting. The purpose of the proposal is to prevent underground laterals and risers from being under a trailer where they are subject to damage while moving the trailer and where the piping could leak under the trailer. Current Section 404.6 prohibits piping from entering a building below grade and this proposal is a logical extension of that prohibition.

FG35-15

FG38-15

618.4

Proposed Change as Submitted

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

2015 International Fuel Gas Code

Revise as follows:

618.4 Prohibited sources. Outdoor or return air for forced air heating and cooling systems shall not be taken from the following locations:

1. Closer than 10 feet (3048 mm) from an *appliance* vent outlet, a vent opening from a plumbing drainage system or the discharge outlet of an exhaust fan, unless the outlet is 3 feet (914 mm) above the outside air inlet.
2. Where there is the presence of objectionable odors, fumes or flammable vapors; or where located less than 10 feet (3048 mm) above the surface of any abutting public way or driveway; or where located at grade level by a sidewalk, street, alley or driveway.
3. A hazardous or insanitary location or a refrigeration machinery room as defined in the *International Mechanical Code*.
4. A room or space, the volume of which is less than 25 percent of the entire volume served by such system. Where connected by a permanent opening having an area sized in accordance with Section 618.2, adjoining rooms or spaces shall be considered as a single room or space for the purpose of determining the volume of such rooms or spaces.

Exception: The minimum volume requirement shall not apply where the amount of return air taken from a room or space is less than or equal to the amount of supply air delivered to such room or space.

5. A room or space containing an *appliance* where such a room or space serves as the sole source of return air.

Exception: This shall not apply where:

1. The *appliance* is a direct-vent *appliance* or an *appliance* not requiring a vent in accordance with Section 501.8.
2. The room or space complies with the following requirements:
 - 2.1. The return air shall be taken from a room or space having a volume exceeding 1 cubic foot for each 10 Btu/h (9.6L/W) of combined input rating of all fuel-burning appliances therein.
 - 2.2. The volume of supply air discharged back into the same space shall be

approximately equal to the volume of return air taken from the space.

- 2.3. Return-air inlets shall not be located within 10 feet (3048 mm) of a draft hood in the same room or space or the combustion chamber of any atmospheric burner *appliance* in the same room or space.
3. Rooms or spaces containing solid fuel-burning appliances, provided that return-air inlets are located not less than 10 feet (3048 mm) from the firebox of such appliances.
6. A closet, bathroom, toilet room, kitchen, garage, boiler room, furnace room or unconditioned attic.
Exceptions:
 1. Where return air intakes are located not less than 10 feet (3048 mm) from cooking appliances and serve only the kitchen area, taking return air from a kitchen area shall not be prohibited.
 2. Dedicated forced air systems serving only a garage shall not be prohibited from obtaining return air from the garage.
7. A crawl space by means of direct connection to the return side of a forced-air system. Transfer openings in the crawl space enclosure shall not be prohibited.
8. Indoor swimming pool enclosures and associated deck areas except where such spaces are dehumidified.

Reason: It's not desirable to pull return air from swimming pool areas due to the negative effects it would have on the system from humidity to chemical odors associated with such places. A dedicated system would be required, a combination of supply and exhaust or the air should be dehumidified. This scenario is consistent with the same dwelling unit built under the IMC.

Cost Impact: Will not increase the cost of construction
No cost impact provided dehumidification is not required.

FG38-15 : 618.4-
MCMANN3560

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: The proposed text would not allow a dedicated HVAC system for the pool area. No technical justification was offered for the prohibition. There is no evidence that humidity negatively affects appliances.

Assembly Motion:

**As Modified
Successful**

Online Vote Results:

Support: 60.19% (65) Oppose: 39.81% (43)

Assembly Action :

Approved as Modified

Online Floor Modification:

Outdoor or return air for forced air heating and cooling

systems shall not be taken from the following locations:

1. Closer than 10 feet (3048 mm) from an *appliance* vent outlet, a vent opening from a plumbing drainage system or the discharge outlet of an exhaust fan, unless the outlet is 3 feet (914 mm) above the outside air inlet.
2. Where there is the presence of objectionable odors, fumes or flammable vapors; or where located less than 10 feet (3048 mm) above the surface of any abutting public way or driveway; or where located at grade level by a sidewalk, street, alley or driveway.
3. A hazardous or insanitary location or a refrigeration machinery room as defined in the *International Mechanical Code*.
4. A room or space, the volume of which is less than 25 percent of the entire volume served by such system. Where connected by a permanent opening having an area sized in accordance with Section 618.2, adjoining rooms or spaces shall be considered as a single room or space for the purpose of determining the volume of such rooms or spaces.

Exception: The minimum volume requirement shall not apply where the amount of return air taken from a room or space is less than or equal to the amount of supply air delivered to such room or space.

5. A room or space containing an *appliance* where such a room or space serves as the sole source of return air.

Exception: This shall not apply where:

1. The *appliance* is a direct-vent *appliance* or an *appliance* not requiring a vent in accordance with Section 501.8.
2. The room or space complies with the following requirements:
 1. The return air shall be taken from a room or space having a volume exceeding 1 cubic foot for each 10 Btu/h (9.6L/W) of combined input rating of all fuel-burning appliances therein.
 2. The volume of supply air discharged back into the same space shall be approximately equal to the volume of return air taken from the space.
 3. Return-air inlets shall not be located within

- 10 feet (3048 mm) of a draft hood in the same room or space or the combustion chamber of any atmospheric burner *appliance* in the same room or space.
3. Rooms or spaces containing solid fuel-burning appliances, provided that return-air inlets are located not less than 10 feet (3048 mm) from the firebox of such appliances.
6. A closet, bathroom, toilet room, kitchen, garage, boiler room, furnace room or unconditioned attic.

Exceptions:

1. Where return air intakes are located not less than 10 feet (3048 mm) from cooking appliances and serve only the kitchen area, taking return air from a kitchen area shall not be prohibited.
 2. Dedicated forced air systems serving only a garage shall not be prohibited from obtaining return air from the garage.
7. A crawl space by means of direct connection to the return side of a forced-air system. Transfer openings in the crawl space enclosure shall not be prohibited.
8. Indoor swimming pool enclosures and associated deck areas except where the air from such spaces are/is dehumidified in accordance with Section 403.2.1 Item # 2 of the International Mechanical Code.

Individual Consideration Agenda

Public Comment 1:

**Proponent : Assembly Action
requests Approve as Modified by Successful Assembly Action.**

Outdoor or return air for forcedair heating and cooling systems shall not be taken from the following locations:

1. Closer than 10 feet (3048 mm) from an *appliance* vent outlet, a vent opening from a plumbing drainage system or the discharge outlet of an exhaust fan, unless the outlet is 3 feet (914 mm) above the outside air inlet.
2. Where there is the presence of objectionable odors, fumes or flammable vapors; or where located less than 10 feet (3048 mm) above the surface of any abutting public way or driveway; or where located at grade level by a sidewalk, street, alley or driveway.
3. A hazardous or insanitary location or a refrigeration machinery room as

defined in the *International Mechanical Code*.

4. A room or space, the volume of which is less than 25 percent of the entire volume served by such system. Where connected by a permanent opening having an area sized in accordance with Section 618.2, adjoining rooms or spaces shall be considered as a single room or space for the purpose of determining the volume of such rooms or spaces.

Exception: The minimum volume requirement shall not apply where the amount of return air taken from a room or space is less than or equal to the amount of supply air delivered to such room or space.

5. A room or space containing an *appliance* where such a room or space serves as the sole source of return air.

Exception: This shall not apply where:

1. The *appliance* is a direct-vent *appliance* or an *appliance* not requiring a vent in accordance with Section 501.8.
 2. The room or space complies with the following requirements:
 1. The return air shall be taken from a room or space having a volume exceeding 1 cubic foot for each 10 Btu/h (9.6L/W) of combined input rating of all fuel-burning appliances therein.
 2. The volume of supply air discharged back into the same space shall be approximately equal to the volume of return air taken from the space.
 3. Return-air inlets shall not be located within 10 feet (3048 mm) of a draft hood in the same room or space or the combustion chamber of any atmospheric burner *appliance* in the same room or space.
 3. Rooms or spaces containing solid fuel-burning appliances, provided that return-air inlets are located not less than 10 feet (3048 mm) from the firebox of such appliances.
6. A closet, bathroom, toilet room, kitchen, garage, boiler room, furnace room or unconditioned attic.

Exceptions:

1. Where return air intakes are located not less than 10 feet (3048 mm) from cooking appliances and serve only the kitchen area, taking return air from a kitchen area shall not be prohibited.
 2. Dedicated forced air systems serving only a garage shall not be prohibited from obtaining return air from the garage.
7. A crawl space by means of direct connection to the return side of a forced-air system. Transfer openings in the crawl space enclosure shall not be prohibited.
 8. Indoor swimming pool enclosures and associated deck areas except where the air from such spaces are dehumidified in accordance with Section 403.2.1 Item # 2 of the International Mechanical Code.

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Approve as Modified was successful by a vote of 60.19% (65) to 39.81% (43) by eligible members online during the period of May 14 - May 28, 2015.

Public Comment 2:

Proponent : Brent Ursenbach, representing Utah Chapter ICC

(bursenbach@slco.org) requests Approve as Modified by this Public Comment.

Replace Proposal as Follows:

2015 International Fuel Gas Code

618.4 Prohibited sources. Outdoor or return air for forced air heating and cooling systems shall not be taken from the following locations:

1. Closer than 10 feet (3048 mm) from an *appliance* vent outlet, a vent opening from a plumbing drainage system or the discharge outlet of an exhaust fan, unless the outlet is 3 feet (914 mm) above the outside air inlet.
2. Where there is the presence of objectionable odors, fumes or flammable vapors; or where located less than 10 feet (3048 mm) above the surface of any abutting public way or driveway; or where located at grade level by a sidewalk, street, alley or driveway.
3. A hazardous or insanitary location or a refrigeration machinery room as defined in the *International Mechanical Code*.
4. A room or space, the volume of which is less than 25 percent of the entire volume served by such system. Where connected by a permanent opening having an area sized in accordance with Section 618.2, adjoining rooms or spaces shall be considered as a single room or space for the purpose of determining the volume of such rooms or spaces.

Exception: The minimum volume requirement shall not apply where the amount of return air taken from a room or space is less than or equal to the amount of supply air delivered to such room or space.

5. A room or space containing an *appliance* where such a room or space serves as the sole source of return air.

Exception: This shall not apply where:

1. The *appliance* is a direct-vent *appliance* or an *appliance* not requiring a vent in accordance with Section 501.8.
2. The room or space complies with the following requirements:
 - 2.1. The return air shall be taken from a room or space having a volume exceeding 1 cubic foot for each 10 Btu/h (9.6L/W) of combined input rating of all fuel-burning appliances therein.
 - 2.2. The volume of supply air discharged back into the same space shall be approximately equal to the volume of return air taken from the space.
 - 2.3. Return-air inlets shall not be located within 10 feet (3048 mm) of a draft hood in the same room or space or the combustion chamber of any atmospheric burner *appliance* in the same room or space.

3. Rooms or spaces containing solid fuel-burning appliances, provided that return-air inlets are located not less than 10 feet (3048 mm) from the firebox of such appliances.
6. A closet, bathroom, toilet room, kitchen, garage, boiler room, furnace room or unconditioned attic.

Exceptions:

1. Where return air intakes are located not less than 10 feet (3048 mm) from cooking appliances and serve only the kitchen area, taking return air from a kitchen area shall not be prohibited.
2. Dedicated forced air systems serving only a garage shall not be prohibited from obtaining return air from the garage.
7. A crawl space by means of direct connection to the return side of a forced-air system. Transfer openings in the crawl space enclosure shall not be prohibited.
8. Indoor swimming pool enclosures and associated deck areas.

Exceptions:

1. Where the air from such spaces is dehumidified in accordance with Section 403.2.1 Item #2 of the International Mechanical Code.
2. Dedicated HVAC systems that serve only such spaces.

Commenter's Reason: The original proposal was modified at the Hearings, but disapproved by the committee; however, an Assembly Motion for As Modified was successful. This public comment includes the successful Assembly Motion relocating it into a new Exception 1. This Public Comment adds an additional Exception 2, allowing return air to be drawn from a pool enclosure if a dedicated system, similar to the exception for a garage in item 6 of this code section.

FG38-15

FG39-15

621.4

Proposed Change as Submitted

Proponent : Craig Conner, representing self
(craig.conner@mac.com)

2015 International Fuel Gas Code

Revise as follows:

621.4 Prohibited locations. Unvented room heaters shall not be installed within occupancies in Groups A, E and I. Unvented room heaters shall not be installed within new dwelling units. The location of unvented room heaters shall comply with Section 303.3.

Reason: Unvented heaters in the newer, more airtight homes present a serious health issue. The solution is simple. Use a vented heater.

New homes are much tighter due to the increased stringency in energy codes. Between the 2009 IECC and the 2015 IECC the required air tightness roughly doubled. As homes get rapidly tighter, air quality concerns grow.

Which codes and standards already prohibit unvented room heaters? The IFGC prohibits unvented heaters in occupancy groups A, E and I in Section 621.4. Minnesota and California prohibit them. Wisconsin prohibits them in houses built after 1980. Houston Texas, New York City, and many other cities prohibit unvented heaters. The ASHRAE ventilation standard excludes unvented heaters from its scope, presumably because the ASHRAE ventilation standards are not sufficient for unvented heaters (Section 3.2 , ASHRAE 62.2-2013). Furthermore, many large builders will not install unvented heaters, in part out of concern for liability.

In the last code cycle the IFGC committee disapproved a proposal similar to this. The ICC Report of the Hearing gave three reasons. Each reason is quoted below and responded to:

Committee- "The proposal would prohibit unvented heaters in older homes that have greater air infiltration."

Response- This proposal only applies to new dwelling units, units required to be much more airtight by the new energy code.

Committee- "The nitrogen dioxide levels discussed are more stringent than recommended by the CPSC."

Response- This reason statement notes both the Consumer Products Safety Commission (CPSC) nitrogen dioxide limits and the more recent US EPA National Ambient Air Quality Standards¹ limit. Both standards were exceeded in the measurements cited in the paragraph below.

Committee- "No substantiation was given to demonstrate that the current restrictions for these appliances are inadequate. "

Response- The next two paragraphs cite a study of unvented heaters in actual use.

A study by the Building Research Council (BRC study) at the University of Illinois measured the air quality in 30 homes with unvented heaters². In the short monitoring period (3 to 4 days) several combustion products exceeded health limits in some of the houses. Of greatest concern is the nitrogen dioxide level inside the home. About 40% of the homes exceeded the Consumer Product Safety Council's nitrogen dioxide limit of 0.300 ppm. About 80% of the homes exceeded the US EPA National Ambient Air Quality Standards of 0.100 ppm. The BRC study concluded excessive nitrogen dioxide was inherently associated with unvented heaters: "Levels of NO₂ that exceeded health-based guidelines occurred regardless of usage patterns, so should be considered inherent in the fireplace performance".

Unvented heaters operate like humidifiers, but without humidity controls. Combustion of methane, the main component of natural gas, produces one part carbon dioxide

and two parts water. Depending on the heater size and use duration the water produced could be a fraction of a cup (small heater, limited use) to more than a gallon (large heater, 4+ hours). The BRC study shows that some use unvented heaters for 4 hours or more.

ASHRAE's position paper on unvented heaters drew these conclusions from the BRC study: "This study found that 20% of homes exceeded the EPA and WHO threshold for an 8-hour average CO level of 9 ppm, primarily when they were used for continuous, extended periods of time. This usage pattern is contrary to industry recommendations, which state that unvented heaters should be used as supplemental heaters, not primary heaters or for excessive periods of time." As the ASHRAE position paper noted, the BRC study calls into question industry assumptions of only 2-hour usage periods in their safety studies. "Of the 30 homes, one used the fireplace as the sole source of heat for the home." And "... five were used continuously at least once for longer than 4 hours." The BRC study found longer period of use were associated with pollutant levels that exceeded health standards. Industry safety analysis usage assumptions need to be revised to include longer periods of use.

Yes, the unvented heaters have an "oxygen depletion sensor" (ODS). It is perhaps stating the obvious, but an oxygen sensor monitors oxygen, but not nitrogen dioxide or carbon monoxide. This sensor does not protect against other pollutants, such as the nitrogen dioxide and carbon monoxide levels the BRC study measured as exceeding the CSPC and EPA standards¹ in real homes.

In conclusion, the Consumer Product Safety Commission³ suggests removing air quality issues at the source: "Usually the most effective way to improve indoor air quality is to eliminate individual sources of pollution or to reduce their emissions." The CPSC recommends unvented heater users reduce the exposure to unvented heater combustion products in homes with unvented heaters- "While a space heater is in use, open a door from the room where the heater is located to the rest of the house and open a window slightly." This would seem antithetical to good energy efficiency practice. Building codes cannot and should not require doors or windows to be open to let in extra air to address health concerns.

Using a vented heater in a new, airtight home is a simple solution.

References:

1. US. EPA National Ambient Air Quality Standards (NAAQS) <http://www.epa.gov/air/criteria.html>
2. "Measured concentrations of combustion gases from the use of unvented gas fireplaces". Francisco, P. W., Gordon, J. R. and Rose, B. (2010), Indoor Air, volume 20: pages 370-378.
3. "The Inside Story: A Guide to Indoor Air Quality" <http://www.cpsc.gov/en/safety-education/safety-guides/home/the-inside-story-a-guide-to-indoor-air-quality/>

Bibliography: "Measured concentrations of combustion gases from the use of unvented gas fireplaces". P. W. Francisco, J. R. Gordon, B. Rose. 2010. Indoor Air journal. Volume 20. Pages 370-379.

Cost Impact: Will increase the cost of construction

Vented heaters require a vent and are more limited in the practical locations where they can be placed. Vented heaters cost more to purchase.

Using these devices as heaters, as is sometimes [recommended by the "vent-free" industry](#), is not an acceptable trade of health/safety for \$\$ savings.

Public Hearing Results

Committee Action:

Disapproved

Committee Reason: No technical justification was offered. The Z21/83 standards have no issues with these appliances. The added moisture is beneficial humidification.

Assembly Action :

None

Individual Consideration Agenda

Public Comment 1:

Proponent : Craig Conner, representing self (craig.conner@mac.com) requests Approve as Submitted.

Commenter's Reason: Unvented heaters exhaust all combustion products, including pollutants, into the indoor air. These pollutants, such as nitrogen dioxide that is the focus of this reason statement, can accumulate to unsafe levels. These levels can exceed the EPA's air quality standards.

EPA identifies nitrogen dioxide as one of "six principal pollutants". (1) The levels of nitrogen dioxide allowed in unvented heater exhaust by the unvented heater "safety standard" greatly exceed EPA's air quality standard (details below). The pollutant levels allowed in heater exhaust can rapidly raise the pollutant levels in minimum sized rooms to well above the EPA air quality standards. The IMC, IFGC and IRC require most heating devices to be vented to the outside. Likewise, the unvented heater problem is not hard to fix. Just use the vented version of these heaters in new dwellings.

In this code cycle, there was a proposal to add unvented alcohol-burning devices to the IMC (M106-15). The unvented alcohol burning device safety standard has the same nitrogen dioxide limit for its flue gases. (2) The IMC committee disapproved M106-15, stating "*The allowable NOx emissions are above the EPA limits for such.*" (3) So the IMC committee rejected a "safety standard" for exhaust combustion products that exceeded the EPA air quality standard. Consistency is needed here for indoor air quality and enforcement.

How much does the unvented heater "safety standard" allow exhaust to exceed the Environmental Protection Agency's (EPA's) National Ambient Air Quality Standards? (4) A lot. The gas unvented heater safety standard is ANSI Z21-11.2. It limits nitrogen dioxide in unvented heater flue gases to 20,000 ppb (parts per billion). (5) EPA's "primary" air quality standard for nitrogen dioxide is 100 ppb. (6) Therefore, the exhaust flue gas pollutants, which vent directly into the room air, can be 200 TIMES that of EPA's air quality standard.

One measure of chemical toxicity is the IDLH level (Immediately Dangerous to Life and Health). The National Institute for Occupational Safety and Health's value for IDLH for nitrogen dioxide is the same level the "safety standard" allows unvented heaters to exhaust. (7) Unvented heaters rely on diluting their exhaust pollutants in indoor air, the same air the occupants breath. Using indoor air to dilute pollutant levels is a very poor way to manage pollutants.

How does the flue gas exhaust volume from one hour of unvented heater use

compare to the volume of the code-required minimum-size room? The IFGC and IRC specify a minimum of 1 cf of room for each 20 btu/hr of unvented heater. (8) This means bigger rooms for bigger heaters, and conversely smaller rooms for smaller heaters. But the flue gas volume from one hour of use is about 16.5% of the minimum room volume. (9) If these gases from one hour of use stayed in the room, would they exceed the EPA air quality standard? Yes, and would be more than 33 TIMES the EPA air quality standard in that one hour. (10)

Opponents of this change might counter with "Wouldn't some nitrogen dioxide leave the room or be dissipated?". Yes, some nitrogen dioxide reacts with surfaces of the room, moves into other rooms or is indirectly exhausted outside after being vented into the indoor air. Some lump these nitrogen dioxide reductions together into a "decay rate". The decay rate might cut the nitrogen dioxide by half, which still puts the code-minimum room above the EPA's air quality standard. (11) In the second hour of unvented heater use the room starts with the nitrogen dioxide from the previous hour (a level already above the EPA standard). And it just keeps getting worse because pollutant levels build.

What are the health effects of increased nitrogen dioxide? According to the American Lung Association (12): inflamed airways, cough and wheezing, reduced lung function, increased asthma attacks, more emergency room and hospital admissions, increased respiratory infection, such as influenza. The ALA notes unvented heaters as one source for nitrogen dioxide.

Some homes have nitrogen dioxide from other sources. Homes with gas stoves or ovens usually start with low, but safe, levels of nitrogen dioxide. Homes near busy roads, freeways or airports tend to start with higher levels. Large urban areas tend to be worse; for example Chicago, Detroit, Atlanta, Los Angeles, and the northeast corridor are worse. (12) Unvented heaters in those homes with other sources of nitrogen dioxide will more quickly exceed safe levels of nitrogen dioxide.

Proponents of this change may ask if the unvented heater safety device, the Oxygen Depletion Sensor (ODS), would also protect against high levels of nitrogen dioxide. The answer is no. As the name suggests, the ODS responds to oxygen levels, not nitrogen dioxide levels. The nitrogen dioxide limit is exceeded long before the ODS stops the heater for a low oxygen level.

Why focus on new dwelling units? People spend a great deal of time in their homes, and new homes are the tightest.

Unvented heaters pollute the living space. The code should require vented heaters in the living space.

Notes:

(1) From the EPA web site:

"The Clean Air Act ... requires EPA to set National Ambient Air Quality Standards ... for pollutants considered harmful to public health and the environment." "EPA has set National Ambient Air Quality Standards for six principal pollutants..." <http://www.epa.gov/air/criteria.html>

(2) Section 13.10 of UL 1370 limits nitrogen dioxide in the exhaust (called "air free sample") to the same limits as the gas unvented heaters, "0.002 %" or 20000 ppb.

(3) 2015 Report of the Committee Action Hearings on M106-15, page 160
<http://www.iccsafe.org/wp-content/uploads/2015-ReportCAHResults.pdf>

(4) National Ambient Air Quality Standards <http://www.epa.gov/air/criteria.html>

(5) IFGC requires ANSI Z21-11.2, titled *Gas-fired Room Heaters-Volume II-Unvented*

Room Heaters, for unvented heaters. ANSI Z21-11.2-2013 Section 5.4.4 gives "0.002%" as the limit for nitrogen dioxide in unvented heater flue gases (exhaust). In ppb, the units of the EPA air quality standard, this is 20000 ppb.

(6) From the EPA website:

The 100 ppb is a "primary standard" intended to "provide public health protection, including protecting the health of 'sensitive' populations such as asthmatics, children, and the elderly". <http://www.epa.gov/air/criteria.html>

The unvented heater manufacturers would prefer to use an older standard for air quality from EPA's Consumer Product Safety Commission (CPSC), which set at 300 ppb limit; however the unvented heater flue gas exhaust "safety standard" greatly exceeds even the older CPSC standard.

(7) National Institute for Occupational Safety and Health guide to chemical hazards for nitrogen dioxide. <http://www.cdc.gov/niosh/npg/npgd0454.html>

(8) The IFGC/IRC minimum size room is in IFGC Sections 621.5 and 501.8; also in IRC Section G2425.8.

(9) The calculation of exhaust volume compared to room volume:

Natural gas has 1028 btu/cf. <http://www.eia.gov/tools/faqs/faq.cfm?id=45&t=8>

Each cf of natural gas vents 8.5 cf of air http://www.engineeringtoolbox.com/fuels-air-flue-gas-d_170.html (Air is only 21% oxygen, other gases are not part of combustion, but are vented also.)

20 Btu / cf of room volume is the code minimum room

$20 \text{ Btu} / (1028 \text{ Btu/cf}) * 8.5 = 0.165$ or 16.5%

or 16.5% of room volume is exhausted per hour of heater use.

(10) Exhaust is 200 times EPA air quality standard. It fills 16.5% of the volume.

$200 * 0.165 = 33$ times EPA air quality standard for exhaust mixed into room.

(11) It's complicated. Decay rates vary a lot. I assumed about 1 as an "industry friendly" decay rate. The industry has used similar values, for example values from 0.78 to 1.33 (in Table 2) in *The Impact of Unvented Gas Heating Appliances on Indoor Nitrogen Dioxide Levels in 'Tight' Homes*

http://www.ahrinet.org/App_Content/ahri/files/Product%20Section/Vent-Free%20NO2%20Modeling%20Study%20Final%20Summary%20March%202021%202013.pdf

Pollution is worse in rooms that are not directly supplied with air or vented to the outside.

(12) From the American Lung Association:

<http://www.lung.org/healthy-air/outdoor/resources/nitrogen-dioxide.html>

Public Comment 2:

Proponent : Don Denton, Consulting Engineer to the Vent-Free Gas Products Alliance, representing Consulting Engineer to the Vent-Free Gas Products Alliance (ventfree@comcast.net) requests Disapprove.

Commenter's Reason: I agree with the Committee's unanimous disapproval of FG 39.

The proponent alleges that there are increased indoor air quality concerns when unvented gas heaters are installed in unusually tight homes.

Energy efficient homes built more tightly require less heat. Vent-free heaters operate for shorter time periods and have less impact on indoor air quality. This fact has been documented in many research projects over the past 20 years, including those performed by Gas Research Institute (GRI), American Gas Association

Research, Risksciences, Toxcel, and Wilson Environmental.

Moreover, unvented gas heating products meet nationally recognized indoor air quality guidelines for all types of house construction--energy efficient or not--throughout every heating region in the United States. ASHRAE has studied unvented gas fireplaces for 15 years, and it has not proposed any special ventilation requirements, including homes with tight construction.

The CPSC has recognized this industry for its remarkable safety record. CSA, the ANSI Secretariat, has opined that "vent-free (unvented) gas heaters are arguably the safest gas products on the market." All products are certified by an independent certification agency to a national product standard, ANSI Z21.11.2, for safety, performance, and construction. About 23 million units have been used in the last 34 years with a proven safety record.

Similar proposals have been rejected through many code revision cycles, and usually by a unanimous decision. No code permitting unvented gas heaters has ever reversed its decision in the almost twenty years of the ICC's existence.

Consumers should be able to continue using unvented gas heaters as a matter of choice--just as they have done for decades.

Bibliography: The Effect of Properly Sized and Operated Vent-Free Gas Products on Indoor Air Quality (IAQ); American Gas Association Research; Douglas DeWerth, Robert A. Borgeson, and Dr. Michael A. Aronov; 1995
Development of Sizing Guidelines for Vent-Free Supplemental Heating Products; Gas Research Institute; 1996

Assessment of the Potential Impacts of Vent-Free Gas Products on Indoor Relative Humidity; Risksciences; Gary K. Whitmyre and Dr. Muhilan Pandian; 2002

The Impact of Unvented Gas Heating Appliances on Indoor Nitrogen Dioxide Levels in "Tight" Homes; Gary K. Whitmyre; 2009

Vent-Free Hearth Products Evaluation; Wilson Environmental Associates; A. L. Wilson; 1999

FG39-15