



# **2015 IRC Significant Changes For Mechanical and Fuel Gas with LSUCCC Amendments**

Based on the International Residential  
Code® (IRC®)

# Description

- This seminar reviews and analyzes selected significant changes from the 2012 IRC to the 2015 IRC for Mechanical and Fuel Gas.
- It assists code users in identifying the specific code changes that have occurred, and more importantly, understanding the reason behind the change.
- It focuses on those code changes selected due to their frequency of application, special significance or change in application.





Chapter 1

# Scope and Administration

# R104.11 Alternative Materials, Design, and Methods of Construction and Equipment

## Change Type: Addition

- When proposed alternatives are not approved, the reason for the disapproval must be stated in writing by the building official.





The background is a solid blue color with a subtle pattern of thin, white, wavy lines that sweep across the frame. In the upper half, there is a cluster of overlapping squares in various shades of blue, white, and light gray, creating a three-dimensional effect.

Part 5

# Mechanical

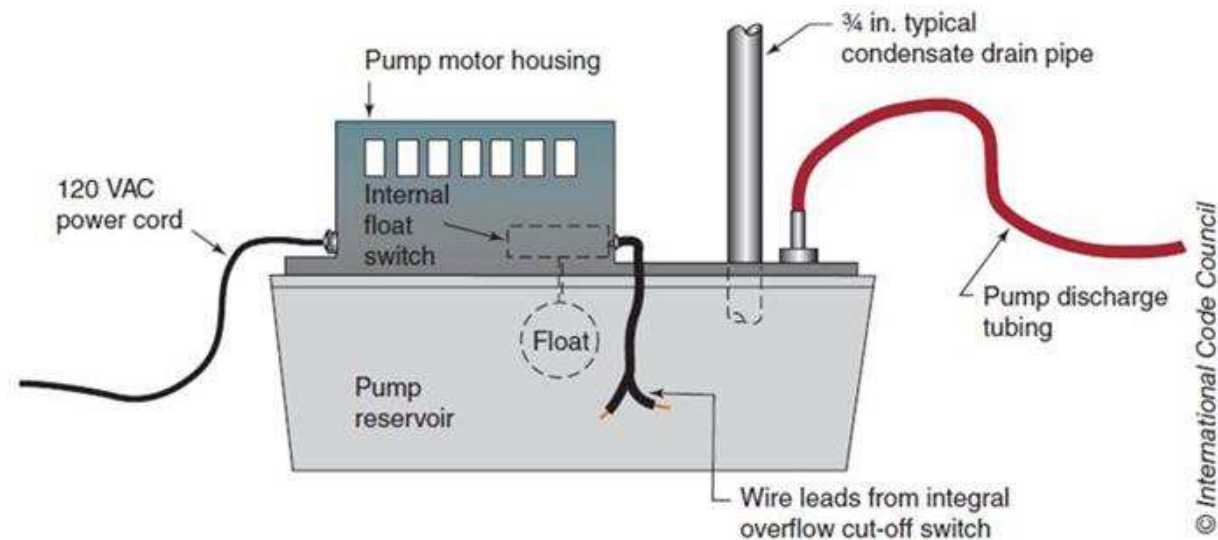
# M1307.3.1 Protection from Impact **LSUCCC Amendment**

- **M1307.3.1 Protection from impact.** *Appliances* shall not be installed in a location subject to ~~vehicle~~ **car or truck** damage except where protected by *approved* barriers.

# M1411.4 Condensate Pumps

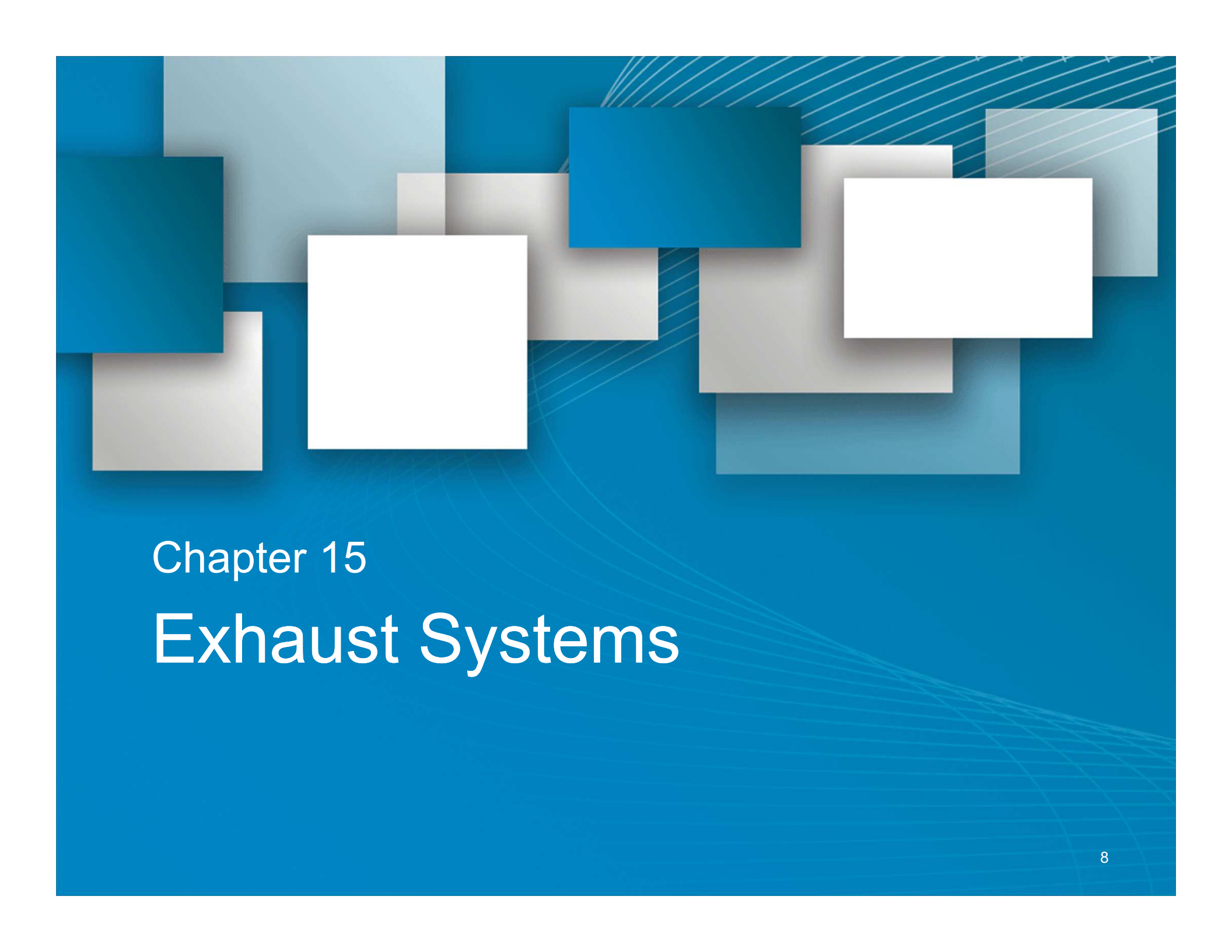
## Change Type: Addition

- Condensate pumps located in uninhabitable spaces must be connected to the appliance to shut down the equipment in the event of pump failure.



Condensate pumps located in attics and crawl spaces must be connected to the appliance such that when the pump fails the appliance shuts off.





## Chapter 15

# Exhaust Systems



# M1502.4.4, M1502.4.5 Dryer Exhaust Duct Power Ventilators

**Change Type:** Addition

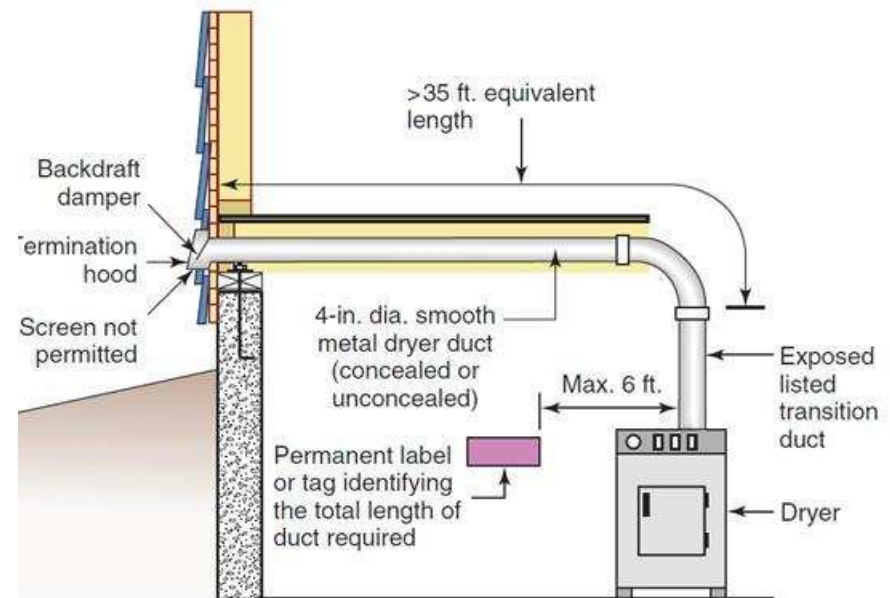
- The code now recognizes the use of dryer exhaust duct power ventilators (DEDPVs) to increase the allowable exhaust duct length for clothes dryers.



# M1502.4.6 Dryer Duct Length Identification

## Change Type: Modification

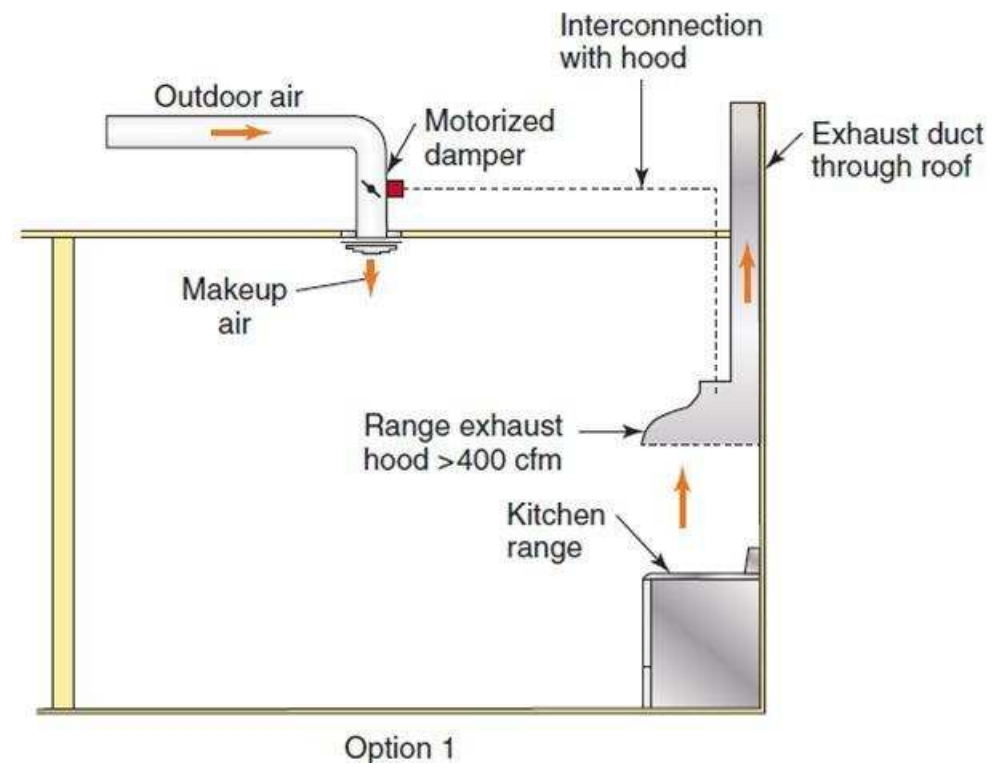
- A permanent label identifying the concealed length of the dryer exhaust duct is no longer required where the equivalent duct length does not exceed 35 feet.
- For the dryer exhaust duct exceeding 35 feet, a label or tag is required whether the duct is concealed or not.



# M1503.4 Makeup Air for Range Hoods

## Change Type: Modification

- Automatic operation of a mechanical damper is no longer required for kitchen exhaust systems exceeding a rating of 400 cubic feet per minute.
- Transfer openings are permitted to obtain makeup air from rooms other than the kitchen.



# M1506.2 Exhaust Duct Length

## Change Type: Addition

- Maximum exhaust duct lengths are based on duct diameter, type of duct and the exhaust fan airflow rating.

**TABLE M1506.2** Duct Length

Duct Type	Flex Duct								Smooth-Wall Duct							
Fan airflow rating (CFM @ 0.25 inch wc <sup>a</sup> )	50	80	100	125	150	200	250	300	50	80	100	125	150	200	250	300
Diameter <sup>b</sup> (inches)	Maximum length <sup>c, d, e</sup> (feet)															
3	X	X	X	X	X	X	X	X	5	X	X	X	X	X	X	X
4	56	4	X	X	X	X	X	X	114	31	10	X	X	X	X	X
5	NL	81	42	16	2	X	X	X	NL	152	91	51	28	4	X	X
6	NL	NL	158	91	55	18	1	X	NL	NL	NL	168	112	53	25	9
7	NL	NL	NL	NL	161	78	40	19	NL	NL	NL	NL	NL	148	88	54
8 and above	NL	NL	NL	NL	NL	189	111	69	NL	NL	NL	NL	NL	NL	198	133

a. Fan airflow rating shall be in accordance with ANSI/AMCA 210-ANSI/ASHRAE 51.

b. For non-circular ducts, calculate the diameter as four times the cross-sectional area divided by the perimeter.

c. This table assumes that elbows are not used. Fifteen feet (5 m) of allowable duct length shall be deducted for each elbow installed in the duct run.

d. NL = no limit on duct length of this size.

e. X = not allowed. Any length of duct of this size with assumed turns and fittings will exceed the rated pressure drop.



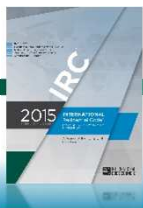
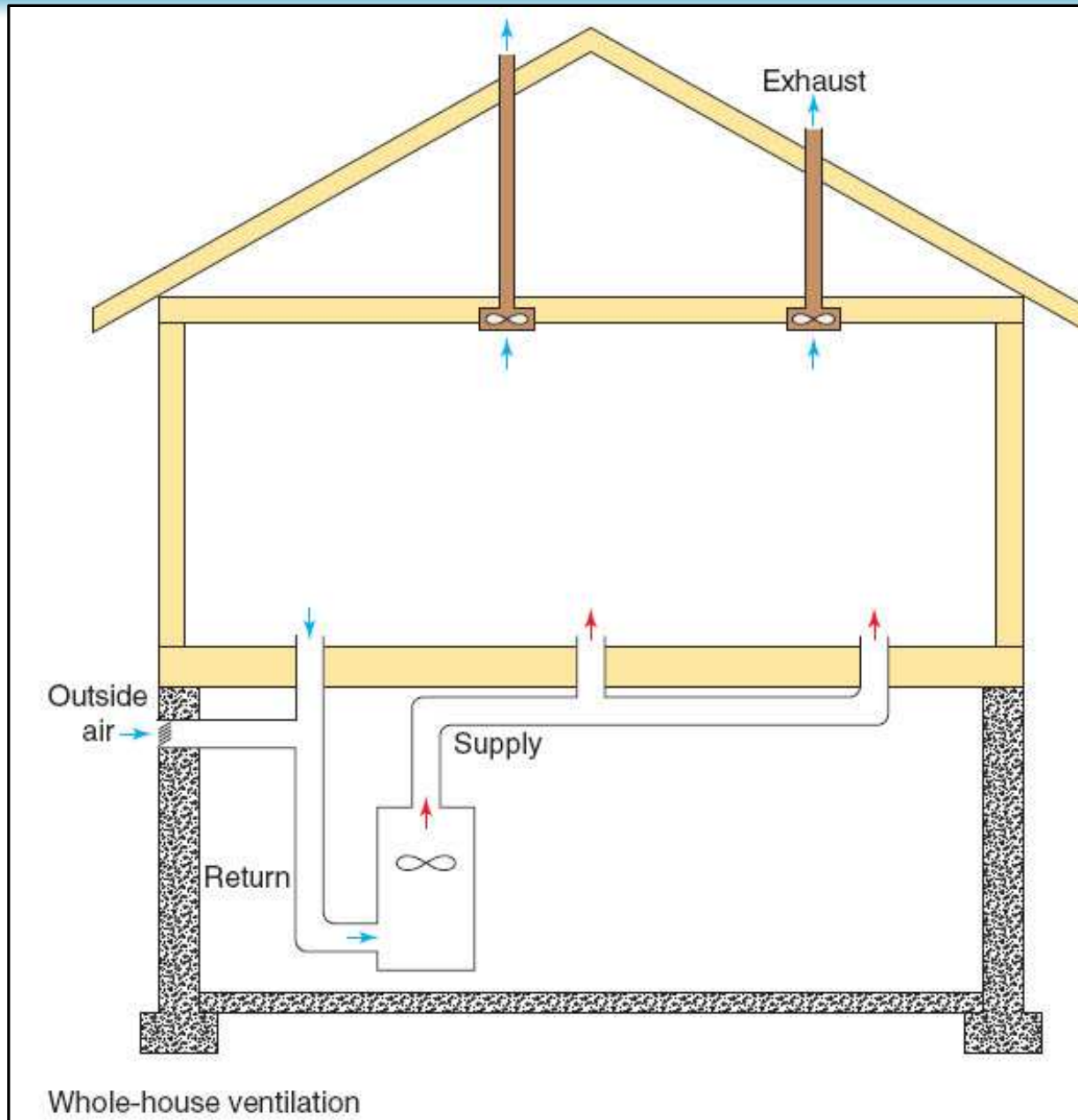
# R303.4 Mechanical Ventilation

- LSUCCC Amendment

- R303.4 Mechanical ventilation. **When a blower door test is performed, ~~Where and~~ the air infiltration rate of a dwelling unit is less than 3 air changes per hour when tested ~~with a blower door at a pressure of 0.2 inch w.e (50 Pa)~~ in accordance with the 2009 IRC Section ~~N1102.4.1.2~~ N1102.4.2.1, the dwelling unit shall be provided with whole-house mechanical ventilation in accordance with Section M1507.3.**







# M1507 Mechanical Ventilation

- **LSUCCC Amendment**
  - M1507.3.1 System Design
  - The whole-house ventilation system shall consist of ~~one or more supply or exhaust fans~~, a combination of supply and exhaust fans, and associated ducts and controls. Local exhaust and supply fans are permitted to serve as such a system. Outdoor air ducts connected to the return side of an air handler shall be considered to provide supply ventilation.



# M1507 Mechanical Ventilation

- **LSUCCC Amendment**
  - M1507.3.2 System Controls The whole-house mechanical ventilation system shall be provided with controls that enable manual override **and a method of air-flow adjustment.**



# M1507 Mechanical Ventilation

- **LSUCCC Amendment**
  - M1507.3.3 Mechanical ventilation rate The whole-house mechanical ventilation system shall **be able to** provide outdoor air at a continuous rate **of at least** that determined in accordance with Table M1507.3.3(1).

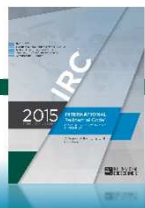


# M1507 Mechanical Ventilation

**TABLE M1507.3.3(1)**  
**CONTINUOUS WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM AIRFLOW RATE REQUIREMENTS**

DWELLING UNIT FLOOR AREA (square feet)	NUMBER OF BEDROOMS				
	0 – 1	2 – 3	4 – 5	6 – 7	> 7
	Airflow in CFM				
< 1,500	30	45	60	75	90
1,501 – 3,000	45	60	75	90	105
3,001 – 4,500	60	75	90	105	120
4,501 – 6,000	75	90	105	120	135
6,001 – 7,500	90	105	120	135	150
> 7,500	105	120	135	150	165

For SI: 1 square foot = 0.0929 m<sup>2</sup>, 1 cubic foot per minute = 0.0004719 m<sup>3</sup>/s.





# M1507 Mechanical Ventilation

- **LSUCCC Amendment**
  - Table M1507.4 Minimum required local exhaust....
    - Kitchen: 100 cfm intermittent or 25 cfm continuous, **a balanced ventilation system is required for continuous exhaust**
    - Bathrooms: ...exhaust capacity of 50 cfm intermittent or 20 cfm continuous, **a balanced ventilation system is required for continuous exhaust**





## Chapter 16

# Duct Systems

# M1601.1.1, Table M1601.1.1, M1601.2 Above-Ground Duct Systems

## Change Type: Modification

- Duct system requirements reference applicable standards.
- The table for material thickness of metal ducts is updated to be consistent with the SMACNA sheet metal construction standard.

**TABLE M1601.1(2) M1601.1.1** Duct Construction Minimum Sheet Metal Thickness for Single Dwelling Units<sup>a</sup> Gages of Metal Ducts and Plenums Used For Heating or Cooling

STATIC PRESSURE				
ROUND DUCT DIAMETER (inches)	<u>½-inch water gage</u> Thickness (inches)		<u>1-inch water gage</u> Thickness (inches)	
	Galvanized	Aluminum	Galvanized	Aluminum
≤12	0.013	0.018	0.013	0.018
12 to 14	0.013	0.018	0.016	0.023
15 to 17	0.016	0.023	0.019	0.027
18	0.016	0.023	0.024	0.034
19 to 20	0.019	0.027	0.024	0.034
STATIC PRESSURE				
RECTANGULAR DUCT DIMENSION (inches)	<u>½-inch water gage</u> Thickness (inches)		<u>1-inch water gage</u> Thickness (inches)	
	Galvanized	Aluminum	Galvanized	Aluminum
≤8	0.013	0.018	0.013	0.018
9 to 10	0.013	0.018	0.016	0.023
11 to 12	0.016	0.023	0.019	0.027
13 to 16	0.019	0.027	0.019	0.027
17 to 18	0.019	0.027	0.024	0.034
19 to 20	0.024	0.034	0.024	0.034

For SI: 1 inch = 25.4 mm, 1-inch water gage = 249 Pa.

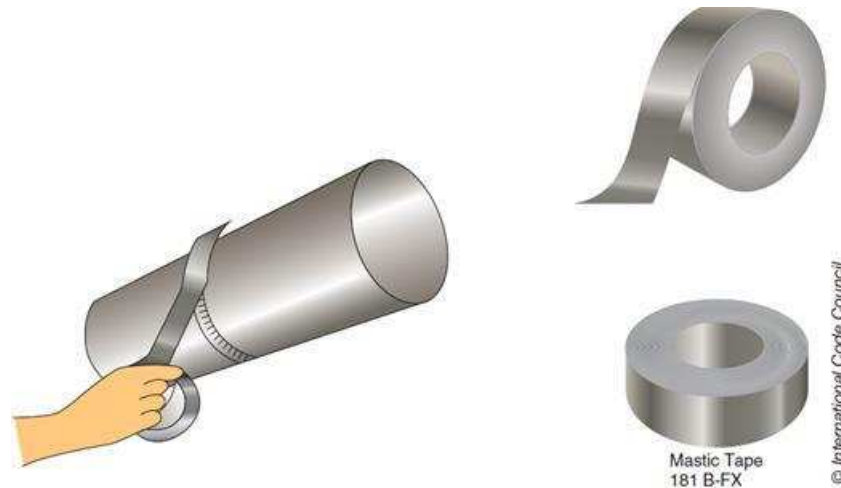
a. Ductwork that exceeds 20 inches by dimension or exceeds a pressure of 1-inch water gage (250 Pa) shall be constructed in accordance with SMACNA HVAC Duct Construction Standards Metal and Flexible.



# M1601.4 Duct Installation

## Change Type: Modification

- Tapes and mastics used to seal sheet metal ducts must be listed to UL 181 B similar to sealing of flexible ducts.
- Snap-lock and button-lock seams are no longer exempt from the sealing requirements.

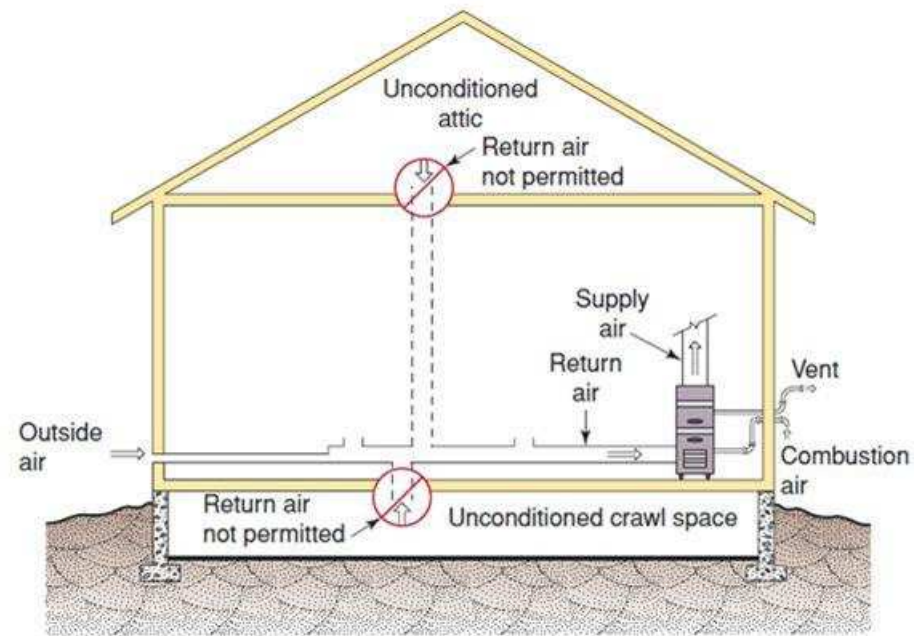


Tapes and mastics used to seal sheet metal ducts must be listed to UL 181 B.

# M1602 Return Air

## Change Type: Modification

- Provisions for return air have been simplified and clarified.
- The intent to keep contaminants out of the airstream of the heating, ventilation and air-conditioning (HVAC) system is unchanged.







Part 6

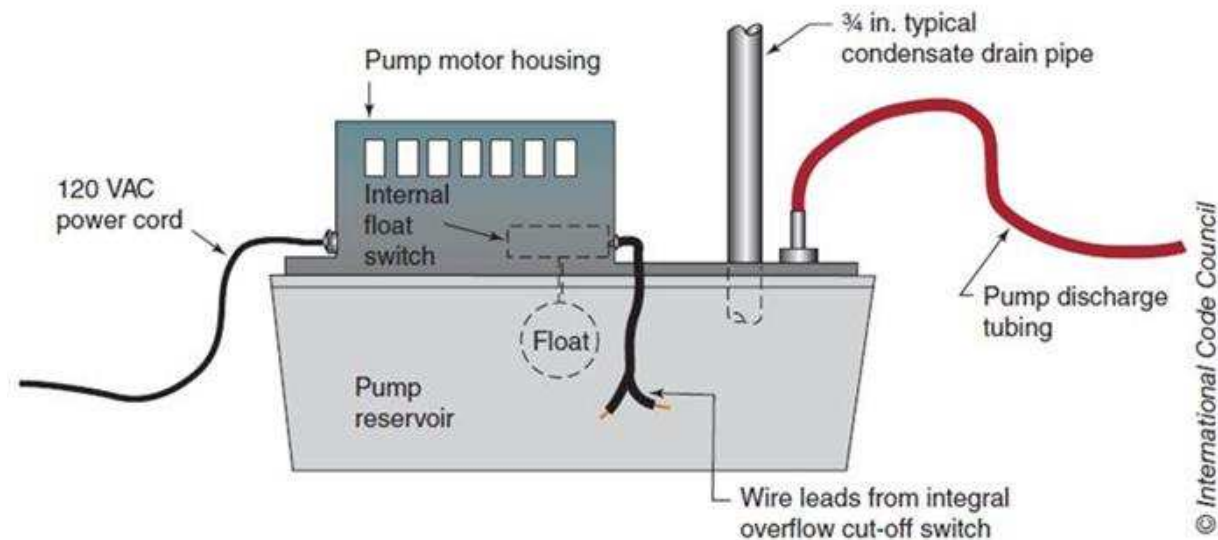
Chapter 24

# Fuel Gas

# G2404.11 Condensate Pumps

## Change Type: Addition

- Condensate pumps located in uninhabitable spaces must be connected to the appliance to shut down the equipment in the event of pump failure.



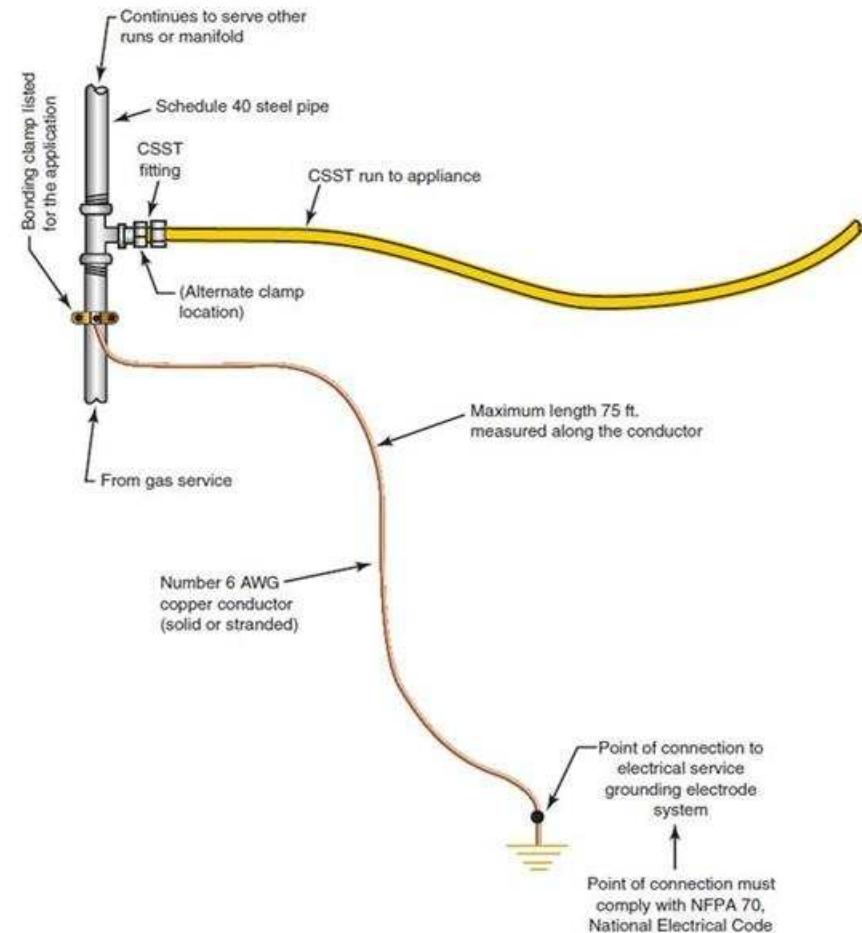
Condensate pumps located in attics and crawl spaces must be connected to the appliance such that when the pump fails the appliance shuts off.



# G2411.1.1.3 Electrical Bonding of Corrugated Stainless Steel Tubing

## Change Type: Modification

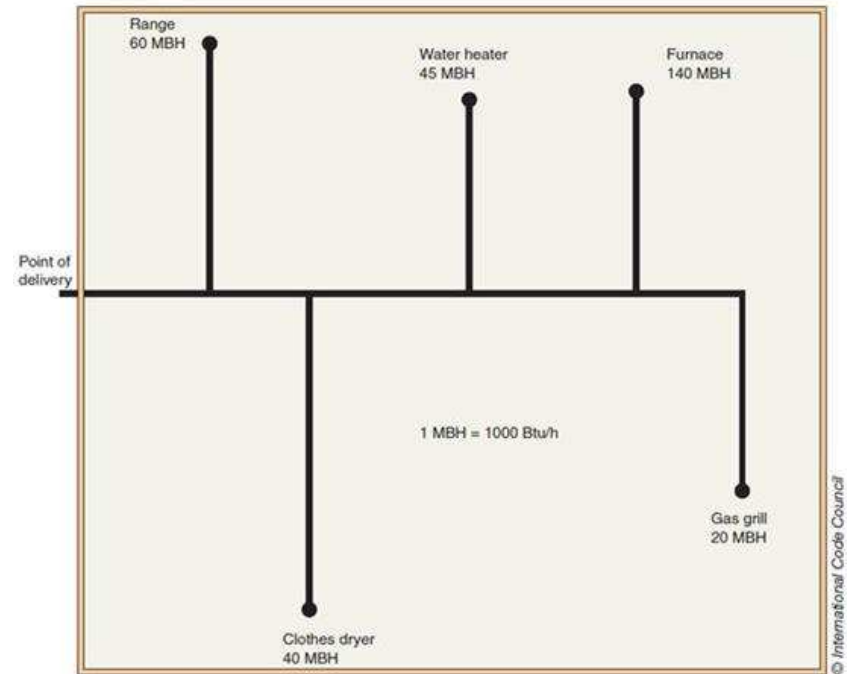
- The maximum allowable length of the bonding jumper for corrugated stainless steel tubing (CSST) is 75 feet.



# G2413.2 Maximum Gas Demand

## Change Type: Modification

- Table G2413.2 was deleted to clarify that the code requires the actual maximum input rating of the appliances to be known and used for gas pipe sizing purposes.



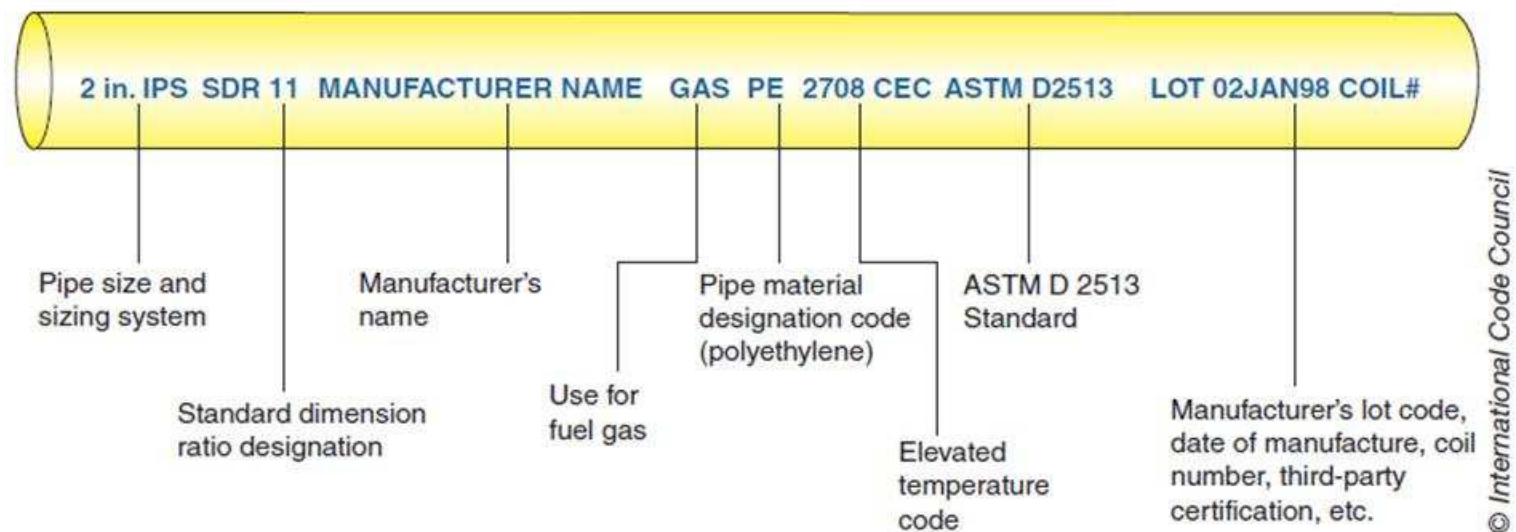
Gas piping size is based on the actual maximum input rating of the appliances



# G2414.6 Plastic Pipe, Tubing and Fittings

## Change Type: Modification

- PVC and CPVC pipe are expressly prohibited materials for supplying fuel gas.



Approved polyethylene gas piping with markings in accordance with the code and ASTM D 2513





# G2415.5 Fittings in Concealed Locations

## Change Type: Clarification

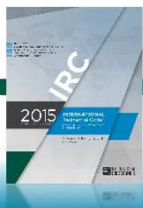
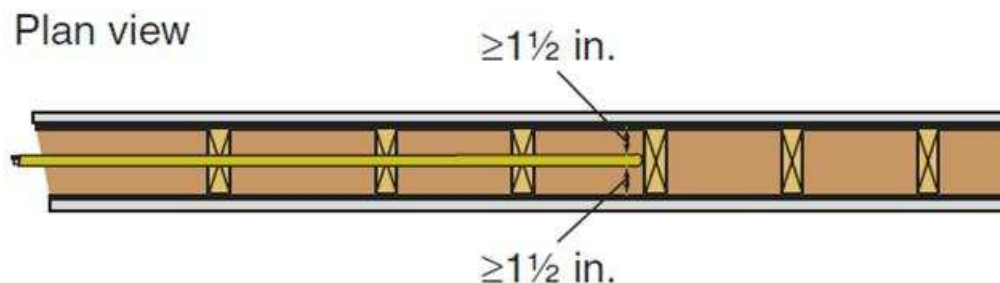
- Reorganized section.
- Threaded elbows, tees and couplings are now specifically approved for concealed locations as the code always intended.
  1. Threaded elbows, tees and tapered couplings
  2. Brazed fittings
  3. Welded fittings
  4. Fittings listed to ANSI LC-1/CSA 6.26 or ANSI LC-4.



# G2415.7 Protection of Concealed Piping Against Physical Damage

## Change Type: Modification

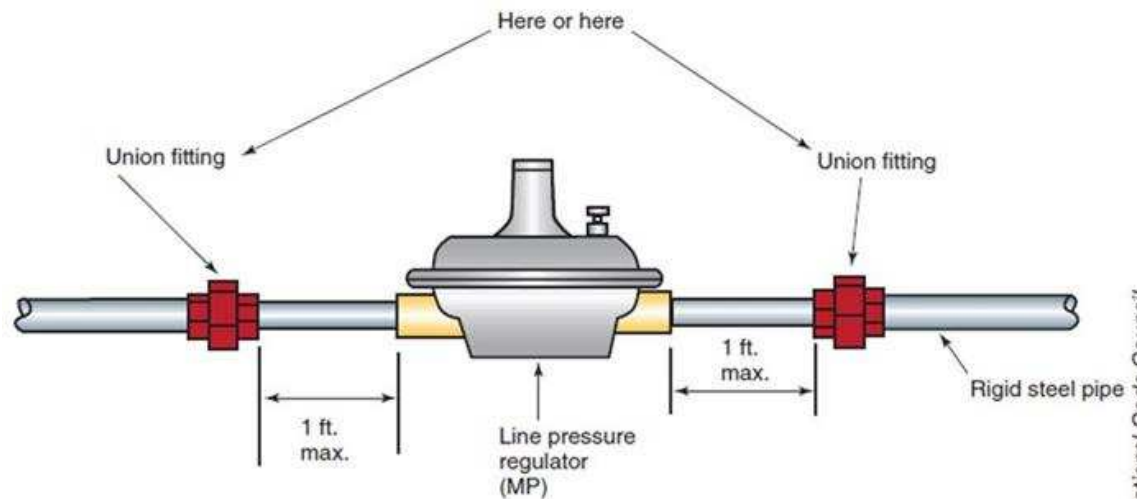
- Protection of piping now addresses piping parallel to framing members and piping within framing members.
- The new text requires that protection extend well beyond the edge of members that are bored or notched.



# G2421.2 Medium-Pressure Regulators

## Change Type: Modification

- Medium-Pressure (MP) line regulators installed in rigid piping must have a union installed to allow removal of the regulator.



(Only one union is required and it may be placed either upstream or downstream of the regulator.)

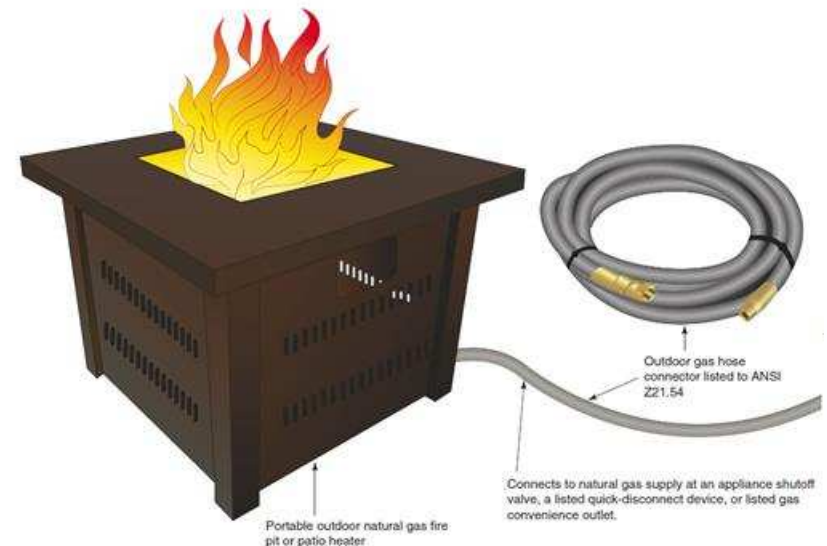
Union required for Medium-Pressure (MP) regulator connected to rigid piping

© International Code Council

# G2422.1 Connecting Portable and Movable Appliances

## Change Type: Modification

- Portable gas appliances used outdoors require gas hoses designed for the purpose.
- Such hoses must comply with ANSI Z21.54.



# G2426.7.1 Door Clearance to Vent Terminals

**Change Type:** Addition

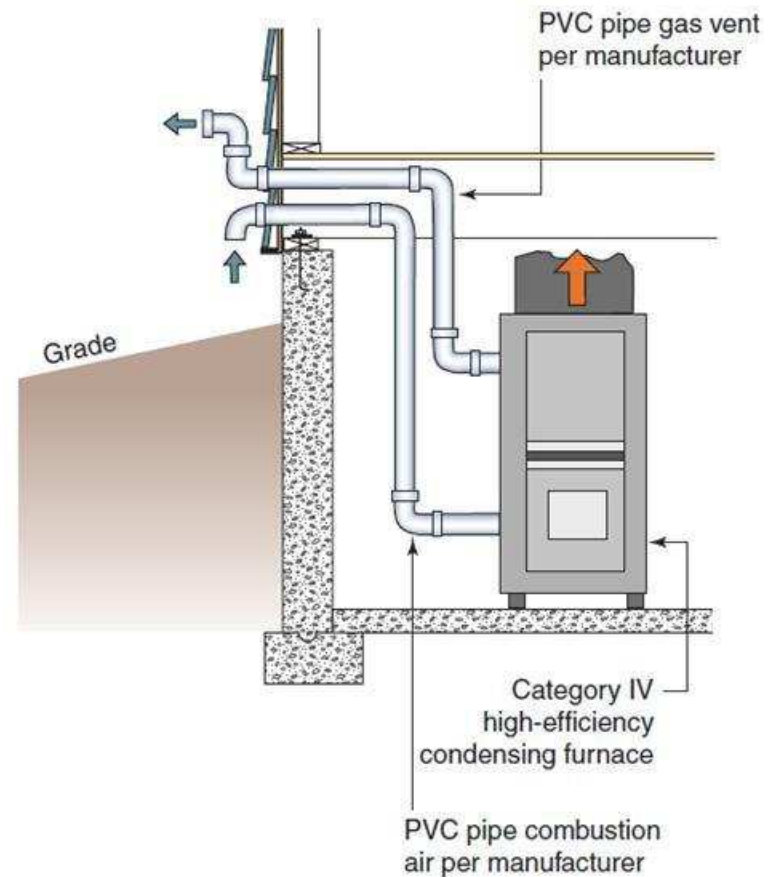
- An appliance vent terminal is not permitted in a location within 12 inches of the arc of a swinging door.



# G2427.4.1, G2427.6.8.3 Plastic Piping for Appliance Vents

## Change Type: Modification

- Plastic pipe for venting appliances must be:
  - Listed for the specific appliance
  - Appliance manufacturer identifies the type of piping and size allowed

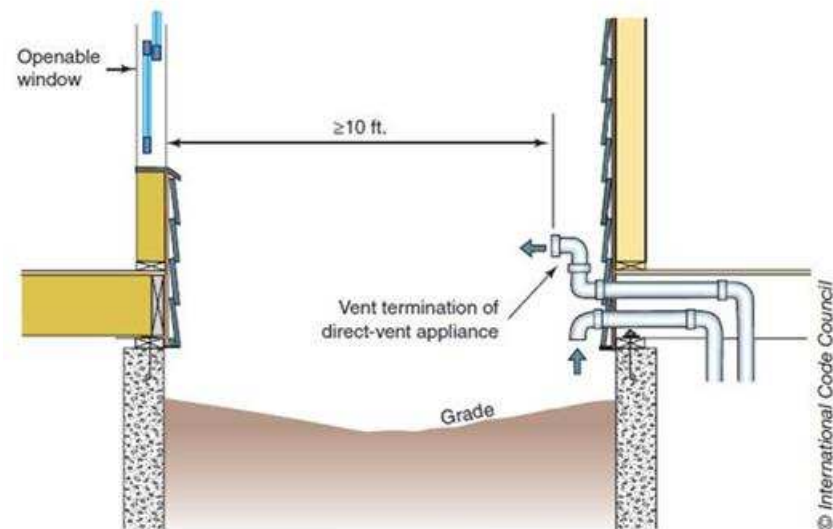




# G2427.8 Venting System Termination Location

## Change Type: Modification

- Sidewall vent terminal location with respect to adjoining buildings is limited.
- A 10-foot separation is required when a vent discharges in the direction of an opening in an adjacent building.



A minimum 10-foot horizontal separation is required between a vent terminal and an opening of an adjacent building.



# G2439.4, G2439.7 Clothes Dryer Exhaust Ducts

## Change Type: Modification

- New text recognizes the use of dryer exhaust duct power ventilators (DEDPVs) to increase the allowable exhaust duct length for clothes dryers.
- For dryer exhaust duct exceeding 35 feet, a label or tag is required whether the duct is concealed or not.
- Instead of prohibiting all duct fasteners such as screws and rivets, the code now limits the penetration of fasteners, where installed.



# G2447.2 Prohibited Location of Commercial Cooking Appliances

## Change Type: Modification

- Cooking appliances that are listed as both commercial and domestic appliances may be installed in residential construction.





Part 7

# Plumbing

# P2702.1, P2706.1 Waste Receptors

## Change Type: Modification

- Waste receptors are now permitted in bathrooms & closets and now are clearly not permitted in plenums.

**WASTE RECEPTOR.** A floor sink, standpipe, hub drain or a floor drain that receives the discharge of one or more indirect waste pipes.



*International Code Council is a Registered Provider with The American Institute of Architects Continuing Education Systems. Credit earned on completion of this program will be reported to CES Records for AIA members. Certificates of Completion for non-AIA members are available on request.*

This program is registered with the AIA/CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product. Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.





# Copyright Materials

This presentation is protected by US and International Copyright laws. Reproduction, distribution, display and use of the presentation without written permission of the speaker is prohibited.

© International Code Council 2014

# Thank you for participating

To schedule a seminar, contact:

The ICC Training & Education Department  
1-888-ICC-SAFE (422-7233) Ext. 33818

or

E-mail: [icctraining@iccsafe.org](mailto:icctraining@iccsafe.org)

