

Significant Changes to the International Mechanical Code and the International Fuel Gas Code 2012 Edition With Louisiana Amendments

Presented by:
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Significant Changes to the International Mechanical
and Fuel Gas Codes, 2012 Edition

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Purpose

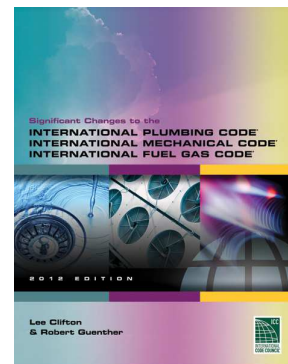
- This program is designed to provide a general overview of notable changes that occurred between the 2009 and 2012 editions of the Mechanical and Fuel Gas (PMG) Codes.
- It is intended to acquaint users of the PMG Codes with some of those provisions that have been added, modified or clarified with the previous edition.
- Only a limited number of changes will be addressed.



Significant Changes to the International Mechanical
and Fuel Gas Codes, 2012 Edition

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This seminar is based on:



Significant Changes to the International Mechanical
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About the Significant Changes

- Underlined Text has been added.
 - "Interior exit stairways and interior exit ramps shall be enclosed with fire barriers constructed in accordance with Section 706."
- Lined-out text has been deleted.
 - "Elevator lobbies shall have at least one means of egress complying with Chapter ~~10 and other provisions within this code.~~"



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2012 International Mechanical Code Significant Changes



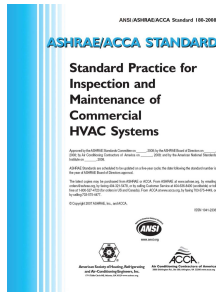
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102.3 Maintenance

- Modified:** ASHRAE/ACCA/ANSI Standard 180 is now specified for the inspection for maintenance of the HVAC system.



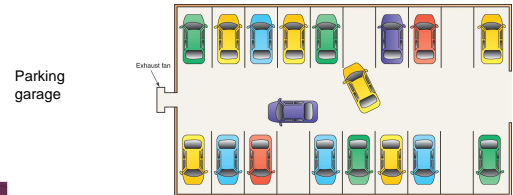
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202 Environmental Air

- Clarified:** The definition of *environmental air* has been expanded through the addition of parking garage exhaust.



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306.5 Equipment and Appliances on Roofs or Elevated Structures

- Modified:** It has been clarified that permanent access is required to equipment and appliances on a roof or elevated structure higher than 16 feet above grade, and required clearances are now provided to assure access to ladders required for access to roofs or elevated structures.



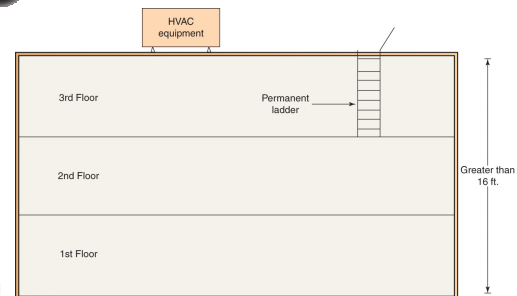
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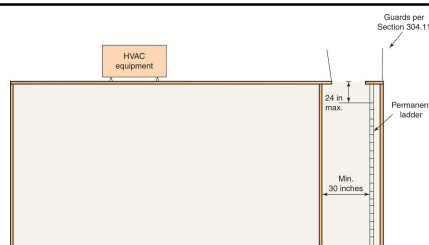
Roof access



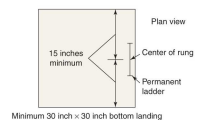
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Access ladder



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308.5 Labeled Assemblies

- Modified:** Allowable clearance reductions must now be based on listed and labeled reduced-clearance protective assemblies in accordance with UL 1618.



Listed and labeled clearance protection assembly
(Courtesy of Northwest Stoves)



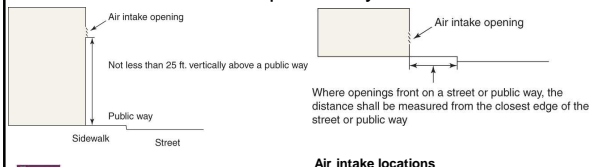
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401.4 Intake Opening Location

- Modified:** The minimum clearance between an air intake opening and any public way is now measured from the opening to the lot line, not to the centerline of the public way.



Air intake locations



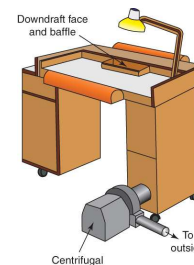
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Table 403.3 Minimum Ventilation Rates for Nail Salons

- Modified:** Nail stations in nail salons must now each be provided with a source capture system.



Nail salon station



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TABLE 403.3 Minimum Ventilation Rates

Occupancy Classification	People Outdoor Airflow Rate In Breathing Zone R_p CFM/Person Occupant Density #/1000 ft ³	Area Outdoor Airflow Rate In Breathing Zone R_a CFM/Person Rate In Breathing Zone R_p CFM/Person	Default Occupant Density #/1000 ft ³	Area Outdoor Airflow Rate In Breathing Zone R_a CFM/Person	Exhaust Airflow Rate CFM/FT ²
Beauty and nail salons ^{b,c}	20	0.12	25	0.6	
Nail Salons ^{b,d}	25	20	0.12	0.6	

e. Rates are per water closet or urinal. The higher rate shall be provided where periods of heavy use are expected to occur, such as, theaters, schools, and sports facilities. The lower rate shall be permitted where periods of heavy use are not expected. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.

f. Rates are per room unless otherwise indicated. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied normal hours of use.

h. For nail salons, the required exhaust shall include ventilation tables or other systems that capture the contaminants and odors at their source and are capable of exhausting a minimum of 50 cfm per station each nail station shall be provided with a source capture system capable of exhausting not less than 50 cfm per station.



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404.1 Enclosed Parking Garages

- Modified:** The mechanical ventilation systems required in enclosed parking garages are now permitted to be operated automatically by carbon monoxide detectors.



Carbon monoxide detector
(Courtesy of Brasch Manufacturing Co.)



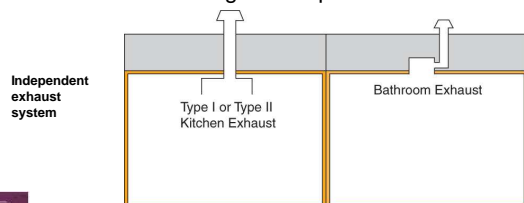
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501.2, 506.4 Independent Exhaust Systems Required

- Modified:** Those locations where an independent exhaust system is required are now established in a single code provision.



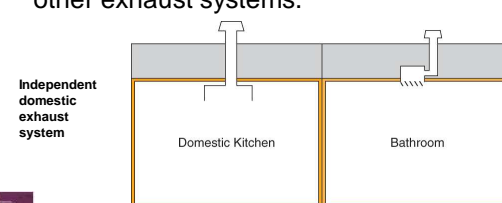
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505.1 Domestic Kitchen Exhaust Systems

- Modified:** Domestic kitchen exhaust ducts are now required to be independent of all other exhaust systems.



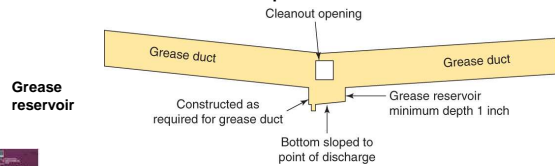
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506.3.7.1 Grease Reservoirs

- **Added:** Criteria provided for the construction of a grease reservoir in a grease duct system where the reservoir is not a manufactured product.



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506.3.8 Grease Duct Cleanouts and Other Openings

- In addition to the reformatting of previous criteria for grease duct cleanouts, gasket and sealing materials on grease duct cleanout doors must now be rated at a minimum of 1500°F.



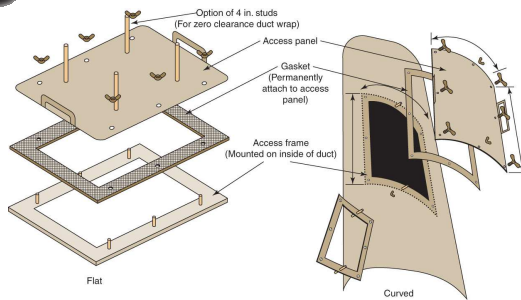
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Grease duct cleanout opening



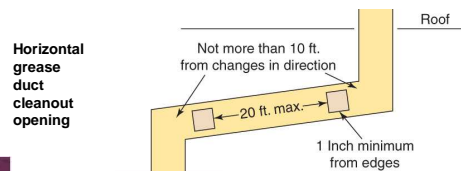
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506.3.9 Grease Duct Horizontal Cleanouts

- **Modified:** Criteria for cleanouts serving horizontal grease ducts have been rearranged for ease of use and clarification, and several technical provisions have been added or modified.



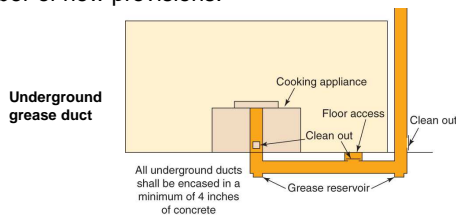
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506.3.10 Underground Grease Duct Installations

- **Addition:** Grease ducts installed in underground locations are now regulated based upon a number of new provisions.



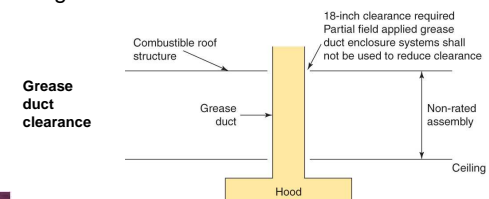
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506.3.11.2 Field-Applied Grease Duct Enclosures

- **Clarified:** Field-applied grease duct enclosure systems are now specifically prohibited from being used to reduce clearance to combustibles.



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507.2 Type I or Type II Hood Required

- Modified:** A Type I or Type II commercial kitchen hood is not required for appliances with listed integral downdraft exhaust systems.



Hibachi table with integral downdraft exhaust system
(Courtesy of Roaster Tech)



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507.2.1 Type I Hoods

- Modified:** Type I hoods no longer are required to be installed where complying electric cooking appliances are being used.

Electric oven where a hood is not required (Courtesy of TurboChef Global)



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507.2.1.1 Operation of Type I Hoods

- Modified:** A method is now required to keep the pilot burner on a gas cooking appliance from being extinguished when the kitchen exhaust fan interlock shuts off appliances.

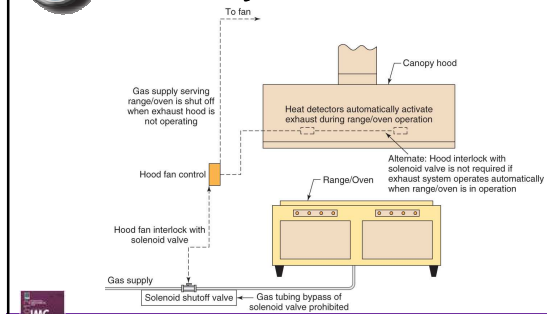


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FOR EXAMPLE Commercial cooking appliance vented by exhaust hoods



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507.2.1.2 Exhaust Flow Rate Label for Type I Hoods

- Added:** Manufacturers of listed Type I commercial cooking hoods are now required to provide information on a label attached to the hood specifying the listed minimum exhaust air flow for the hood based upon the cooking appliance duty classification.

LISTING DESCRIPTION
TESTED, LISTED, AND APPROVED TO EXHAUST A MINIMUM OF 200 CFM PER LINEAR FOOT OVER 600-DEGREE COOKING EQUIPMENT

Type I hood label



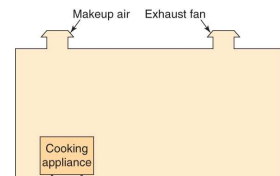
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507.2.2 Type II Hoods

- Modified:** A Type II hood is now required to be installed above all appliances that produce products of combustion but do no produce grease or smoke. An exact exhaust rate is specified for areas where a cooking appliance is being used but a Type II hood is not required.



Room = 2000 sq.ft.
Cooking appliance = 100 sq.ft.
 $2100 \times 0.70 = 1470$ CFM of exhaust required

Cooking appliance that does not require a Type II hood



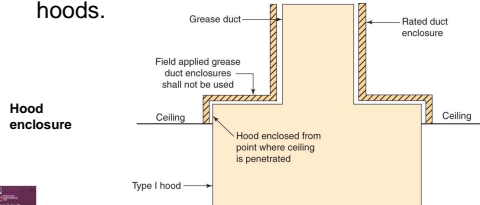
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507.10 Hoods Penetrating a Ceiling

- **Added:** Field-applied grease duct enclosure systems are now specifically prohibited from being used as enclosures over the top of Type I hoods.



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601.4 Contamination Prevention in Plenums

- **Modified:** Chimneys and vents are now permitted to pass through a plenum where in compliance with one of three new allowances.



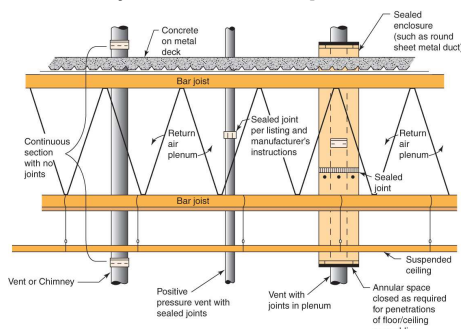
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Chimney or vent in a plenum



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602.2.1 Materials within Plenums

- **Clarified:** It has been clarified that any material or assembly that encloses a combustible material in a plenum must be noncombustible, gypsum board or listed and labeled as part of a tested assembly or system.



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Material within a plenum

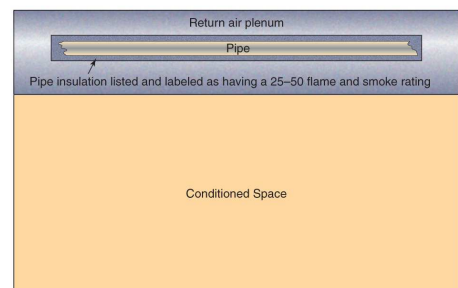
Enclosure shall be noncombustible, approved gypsum board assembly, or shall be listed and labeled for installation in a plenum



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All material within a plenum shall be noncombustible or shall be listed and labeled as having a flame spread rating of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E-84 or UL 728



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Louisiana Amendment

- 603.4 Metallic ducts. All metallic ducts shall be constructed as specified in the SMACNA HVAC Duct Construction Standards-Metal and Flexible.
- Exception:** Ducts installed within single dwelling units shall have a minimum thickness as specified in the **2006 International Mechanical Code Table 603.4.**



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Louisiana Amendment

603.4 Metallic ducts.

All metallic ducts shall be constructed as specified in the SMACNA HVAC Duct Construction Standards-Metal and Flexible.

Exception: Ducts installed within single dwelling units shall have a minimum thickness as specified in Table 603.4.

TABLE 603.4 DUCT CONSTRUCTION MINIMUM SHEET METAL THICKNESSES FOR SINGLE DWELLING UNITS

DUCT SIZE	GALVANIZED		ALUMINUM MINIMUM THICKNESS (in.)
	Minimum thickness (in.)	Equivalent galvanized gage no.	
Round ducts and enclosed rectangular ducts			
14 inches or less	0.0157	28	0.0175
16 and 18 inches	0.0167	26	0.018
20 inches and over	0.0236	24	0.023
Exposed rectangular ducts			
14 inches or less	0.0157	28	0.0175
Over 14 inches ^a	0.0167	26	0.018

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

^a For duct gages and reinforcement requirements at static pressures of 1/2-inch, 1-inch and 2-inch w.g., SMACNA HVAC Duct Construction Standards, Tables 2-1, 2-2 and 2-3, shall apply.



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Louisiana Amendment

603.4 Metallic ducts.

All metallic ducts shall be constructed as specified in the SMACNA HVAC Duct Construction Standards-Metal and Flexible.

Exception: Ducts installed within single dwelling units shall have a minimum thickness as specified in Table 603.4.

TABLE 603.4 DUCT CONSTRUCTION MINIMUM SHEET METAL THICKNESSES FOR SINGLE DWELLING UNITS

DUCT SIZE	GALVANIZED		APPROXIMATE ALUMINUM B&S GAGE
	Minimum thickness (inches)	Equivalent galvanized gage no.	
Round ducts and enclosed rectangular ducts			
14" or less	0.013	30	26
Over 14"	0.016	28	24
Exposed rectangular ducts			
14" or less	0.016	28	24
Over 14"	0.019	26	22



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603.7 Rigid Duct Penetrations

- Modified:** In relationship to the required garage/dwelling separation, only those ducts that penetrate a wall or ceiling between the dwelling and the adjacent private garage need comply with Section 603.7.

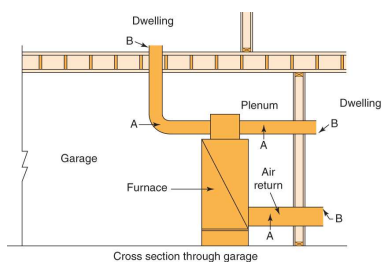


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FOR EXAMPLE Duct penetration of a garage/dwelling separation



Ducts A - 0.019 inch (No. 26 gauge) galvanized steel with no openings into garage
Ducts B - Any duct approved by the Mechanical Code



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603.9 Duct Joints, Seams, and Connections

- Clarified:** Unlisted duct tape is not longer permitted as a sealant on nonmetallic ducts.



Listed duct tape (Courtesy of Venture Tape)



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603.17, 202 Air Dispersion Systems

- **Added:** Air dispersion systems as defined in Section 202 and recognized in UL 2518 are now permitted to be installed.



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Louisiana Amendment

- 606.4.1 Supervision. The duct smoke detectors shall be connected to a fire alarm system where a fire alarm system is required by Section 907.2 of the International Fire Code **or locally adopted fire code**. The actuation of a duct smoke detector shall activate a visible and audible supervisory signal at a constantly attended location.

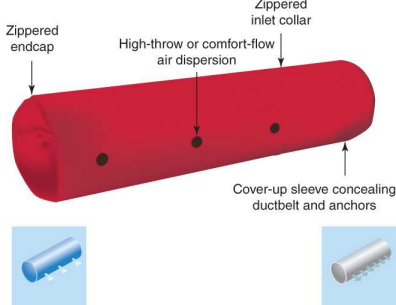


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Air dispersion duct

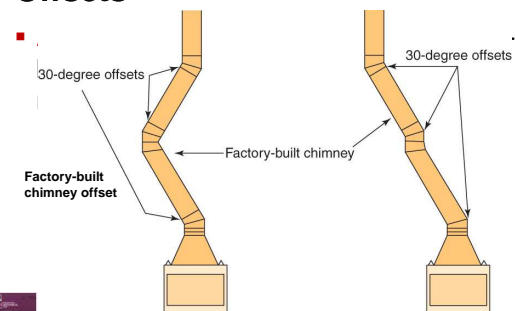


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805.3 Factory-Built Chimney Offsets



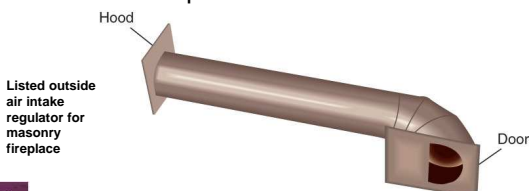
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901.4 Fireplace Accessories

- **Added:** Fireplace accessories must now comply with UL 907, which has been added to Chapter 15.



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1101.10 Locking Access Port Caps

- **Modified:** Locking caps are no longer required on refrigerant access ports if the refrigeration equipment is located in a secured location.



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FOREEXAMPLE

Air-conditioning unit in a secured location

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2012 International Fuel Gas Code Significant Changes

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202, 401.9, 401.10, 404.1 Identification, Testing and Certification

- Addition:** Each section of pipe and each fitting utilized in a gas system requires the identification of the manufacturer.

Each length of pipe and fittings shall bear the identification of the manufacturer

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308.1 Clearance to Combustible Materials

- Clarified:** It has been clarified that gypsum board is to be considered a combustible material for the purpose of required clearances, including those provisions of Section 308 addressing reductions in required clearances.

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FOREEXAMPLE

Clearance to gypsum wallboard

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404.2 CSST Piping Systems

- Addition:** CSST piping systems shall be installed in accordance with their listing and the manufacturer's installation instructions.

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FOREEXAMPLE

Sample installation instructions for CSST gas piping



Step 4 – Tighten with wrenches until nut contacts body.

IFGC

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404.18 Prohibited Devices

- **Clarification:** Excess flow valves and similar devices are now permitted to be placed in gas piping systems that have been sized to accommodate the pressure drop.



Listed excess flow valve

IFGC

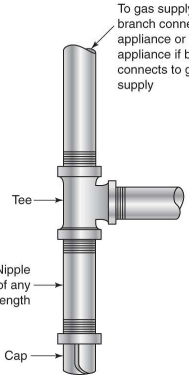
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408.4 Sediment Traps

- **Modification:** An illustration of a sediment trap is now included within the IFGC in order to clarify the intent of the provisions.



To gas supply if branch connects to appliance or to appliance if branch connects to gas supply

Tee

Nipple of any length

Cap

IFGC

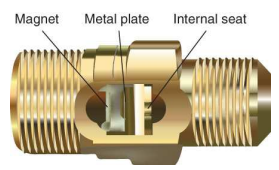
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410.4 Excess Flow Valves

- **Addition:** An excess flow valve must now be listed, sized, and installed in accordance with the manufacturer's instructions.



Magnet

Metal plate

Internal seat

Listed excessive flow valve

IFGC


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202, 410.5 Flashback Arrestor Check Valve

- **Addition:** A combination flashback arrestor and backflow check valve is now required on any fuel gas system used with oxygen in any hot work operations.



Check valve and flash arrestor

IFGC

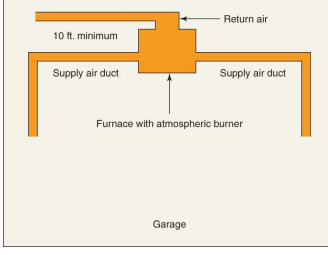
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618.4 Prohibited Sources

- **Modification:** Return air may be taken from a garage provided with a dedicated forced-air system.



10 ft. minimum

Return air

Supply air duct

Supply air duct

Furnace with atmospheric burner

Garage

Furnace serving a garage

IFGC

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Thank You!

Questions?

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