

2015 MPC, MMC and IFGC Significant Changes

Based on the 2015 Michigan Plumbing Code (MPC), the 2015 Michigan Mechanical Code (MMC) and the 2015 International Fuel Gas Code (IFGC)

Purpose

- This program is designed to provide a general overview of notable changes that occurred between the 2012 and 2015 editions of the International Plumbing, 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.



Description

- Overviews the changes from the 2012 to the 2015 International Plumbing Code[®], 2015 International Mechanical Code[®] and 2015 International Fuel Gas Code[®].



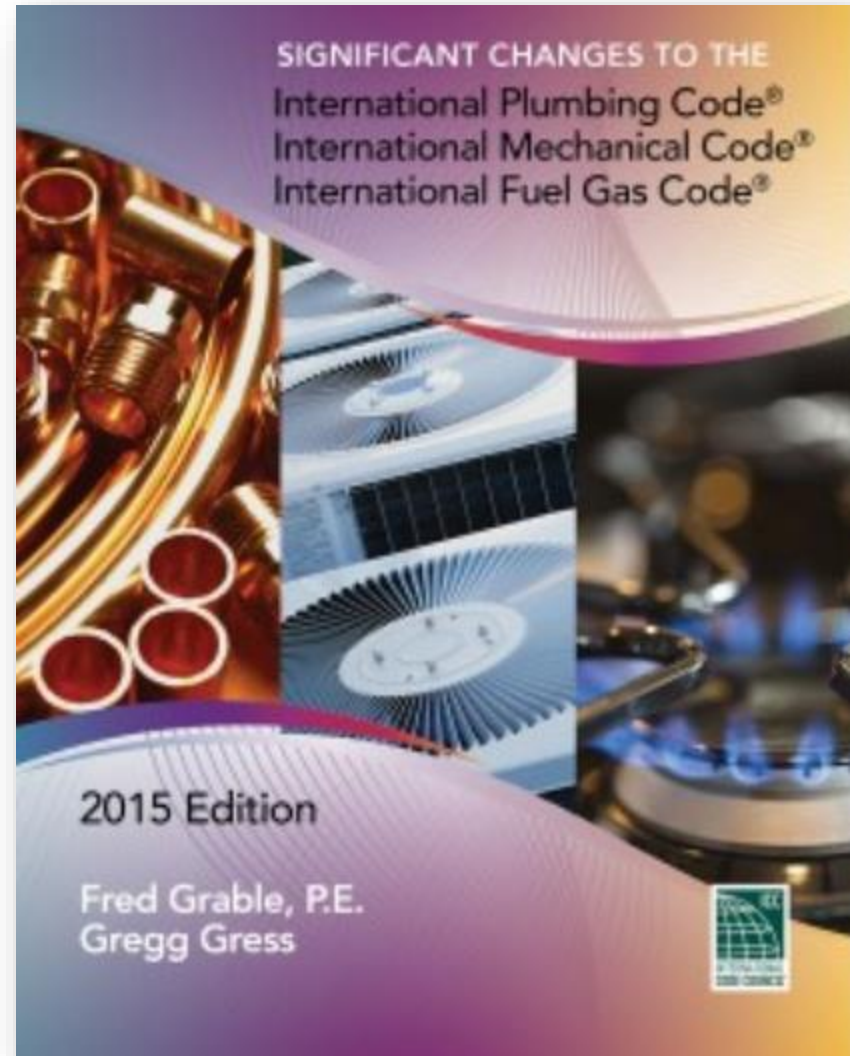
Objectives

Upon completion of this seminar, participants will be better able to:

- Identify the most significant differences between the 2012 IPC, IMC and IFGC and the 2015 IPC, IMC and IFGC.
- Explain the differences between the current and previous edition.
- Identify key changes in organization and code requirements.
- Identify the applicability of design, plan review and inspection requirements.



This seminar is based on:



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.~~”*



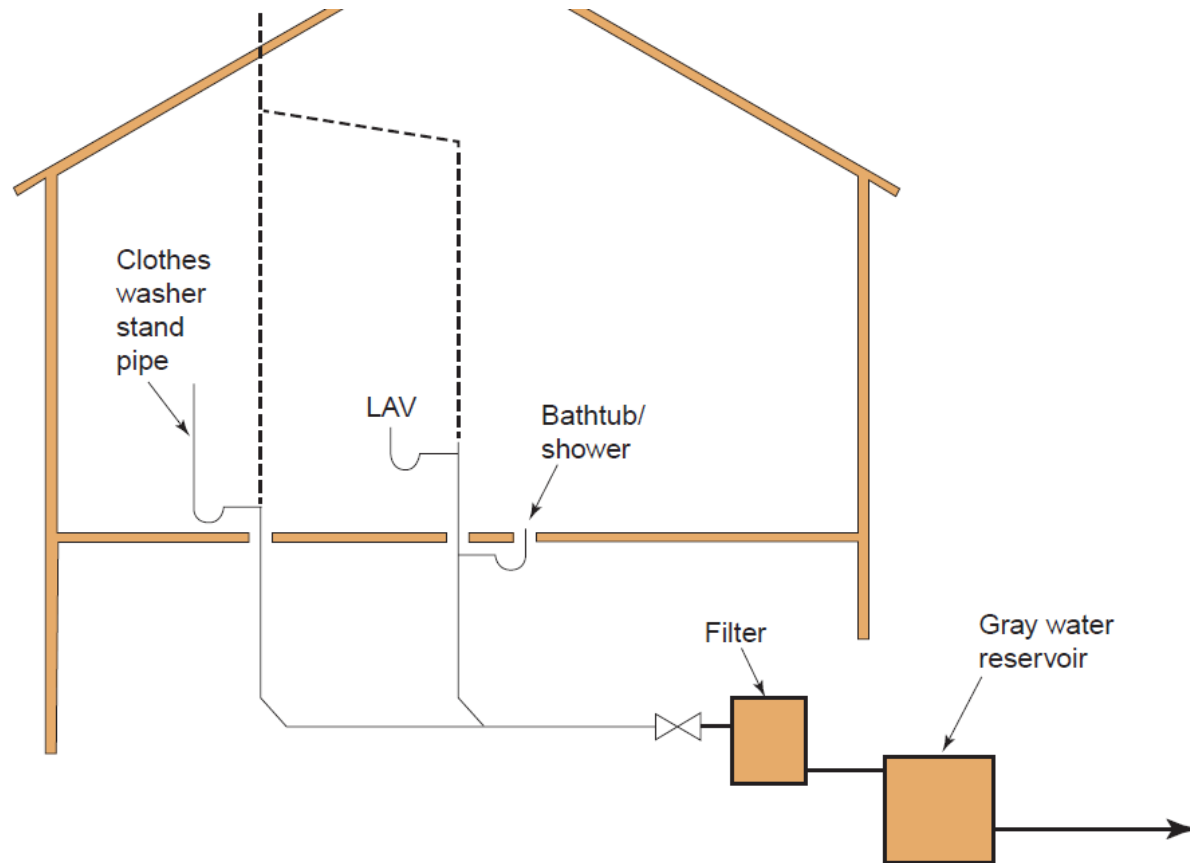


Part 1

International Plumbing Code, Chapters 1-15

202 Alternate Onsite Nonpotable Water Definition

- **CHANGE TYPE:** Addition



202 Backflow Preventer Definition

- **CHANGE TYPE:**
Modification
- This definition has been made more specific about what constitutes a backflow preventer: a backflow prevention assembly, a backflow prevention device or other means or methods.



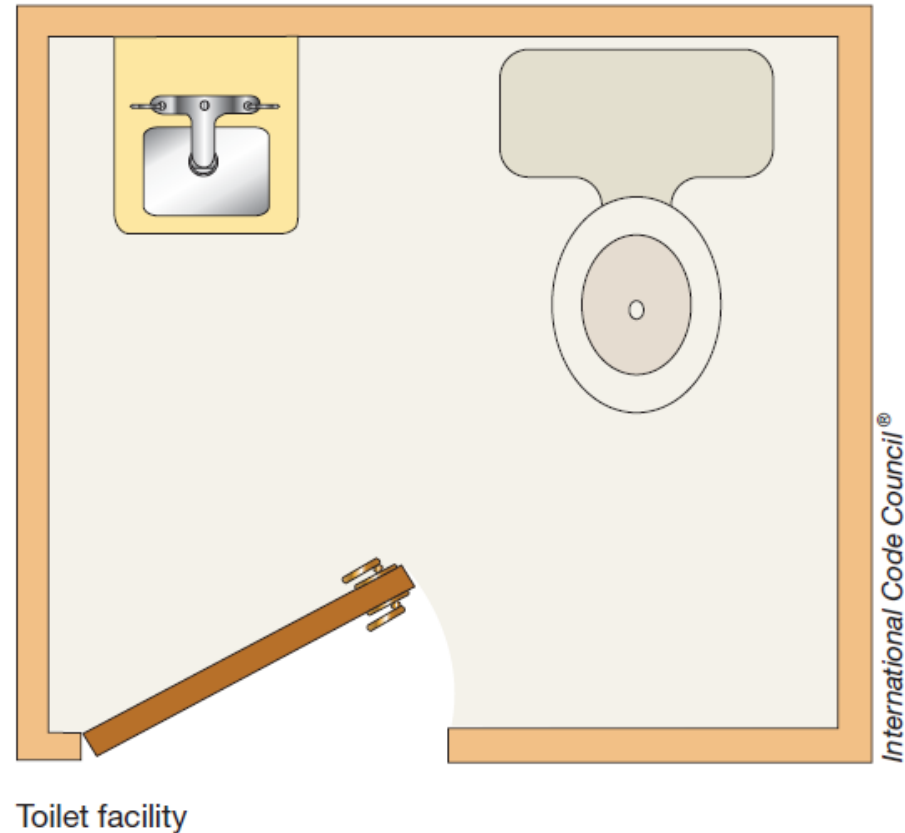
202 Mechanical Joint Definition

- The definition of a mechanical joint now includes heat-fused joints.



202 Toilet Facility Definition

- **CHANGE TYPE:**
Addition
- This definition has been added to clarify that a toilet facility is a room or space that contains not less than one water closet and one lavatory.



202 Waste Receptor Definition

- **CHANGE TYPE:**
Addition
- This definition has been added to clarify what is considered a waste receptor.



202, 410.4 Drinking Fountain, Water Cooler and Water Dispenser Definitions; Substitution for Drinking Fountains

- **CHANGE TYPE:** Modification
- These definitions for a drinking fountain, a water dispenser and a water cooler clarify Section 410 on drinking fountain requirements. The water dispenser definition expands the group of devices and apparatus that can be used as substitutions for 50 percent of the required number of drinking fountains.



202 Grease Interceptor, Definition of Fats, Oils and Greases (FOG) Disposal System

- **CHANGE TYPE:** Addition
- Another type of grease interceptor, the Fats, Oils and Greases (FOG) disposal system, has been added to support the revised text in Section 1003.3.4 covering grease interceptors.



Table 308.5 Mid-Story Pipe Guide

TABLE 308.5
HANGER SPACING

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)
Acrylonitrile butadiene styrene (ABS) pipe	4	10 ^b
Aluminum tubing	10	15
Brass pipe	10	10
Cast-iron pipe	5 ^a	15
Chlorinated polyvinyl chloride (CPVC) pipe and tubing, 1 inch and smaller	3	10 ^b
Chlorinated polyvinyl chloride (CPVC) pipe and tubing, 1 1/4 inches and larger	4	10 ^b
Copper or copper-alloy pipe	12	10
Copper or copper-alloy tubing, 1 1/4-inch diameter and smaller	6	10

Cross-linked polyethylene (PEX) pipe	2.67 (32 inches)	10 ^b
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	2.67 (32 inches)	4
Lead pipe	Continuous	4
Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe	2.67 (32 inches)	4
Polyethylene of raised temperature (PE-RT) pipe	2.67 (32 inches)	10 ^b
Polypropylene (PP) pipe or tubing 1 inch and smaller	2.67 (32 inches)	10 ^b
Polypropylene (PP) pipe or tubing, 1 1/4 inches and larger	4	10 ^b
Polyvinyl chloride (PVC) pipe	4	10 ^b
Stainless steel drainage systems	10	10 ^b
Steel pipe	12	15

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- The maximum horizontal spacing of cast-iron pipe hangers shall be increased to 10 feet where 10-foot lengths of pipe are installed.
- For sizes 2 inches and smaller, a guide shall be installed midway between required vertical supports. Such guides shall prevent pipe movement in a direction perpendicular to the axis of the pipe.



403.1 Determining Minimum Number of Plumbing Fixtures

- **CHANGE TYPE:** Modification
- The IBC occupancy classifications (A, B, M, etc.) are no longer used to determine which row in Table 403.1, Minimum Number of Required Plumbing Fixtures, to use for fixture quantities. The actual use of the building or space determines which row in the table to use.



403.3 Required Public Toilet Facilities Exception

- **CHANGE TYPE:** Modification
- Occupancies that have limited areas for public access, such as dry cleaners, take-out only restaurants and automated teller machine lobbies, do not require public toilet facilities for those limited areas (300 ft² or less).



403.4.1 Directional Signage for Location of Public Toilet Facilities

- **CHANGE TYPE:** Modification
- The provision for directional signs to public toilet facilities now requires that the signage be located at the main entrance to the building or tenant space.



406.1, 409.2 Backflow Protection for Clothes Washing and Dishwashing Machines

- **CHANGE TYPE:** Modification
- The 2012 IPC required that an air gap within the appliance or an external backflow preventer in the appliance connections be provided. This modification adds the standards designations with which air gaps must comply, so that the enforcement can be accomplished by the inspector identifying those standard numbers either on the machines or in the literature for the machines. Otherwise, verification would have to be by physical inspection of the machines, which might be impossible to perform.



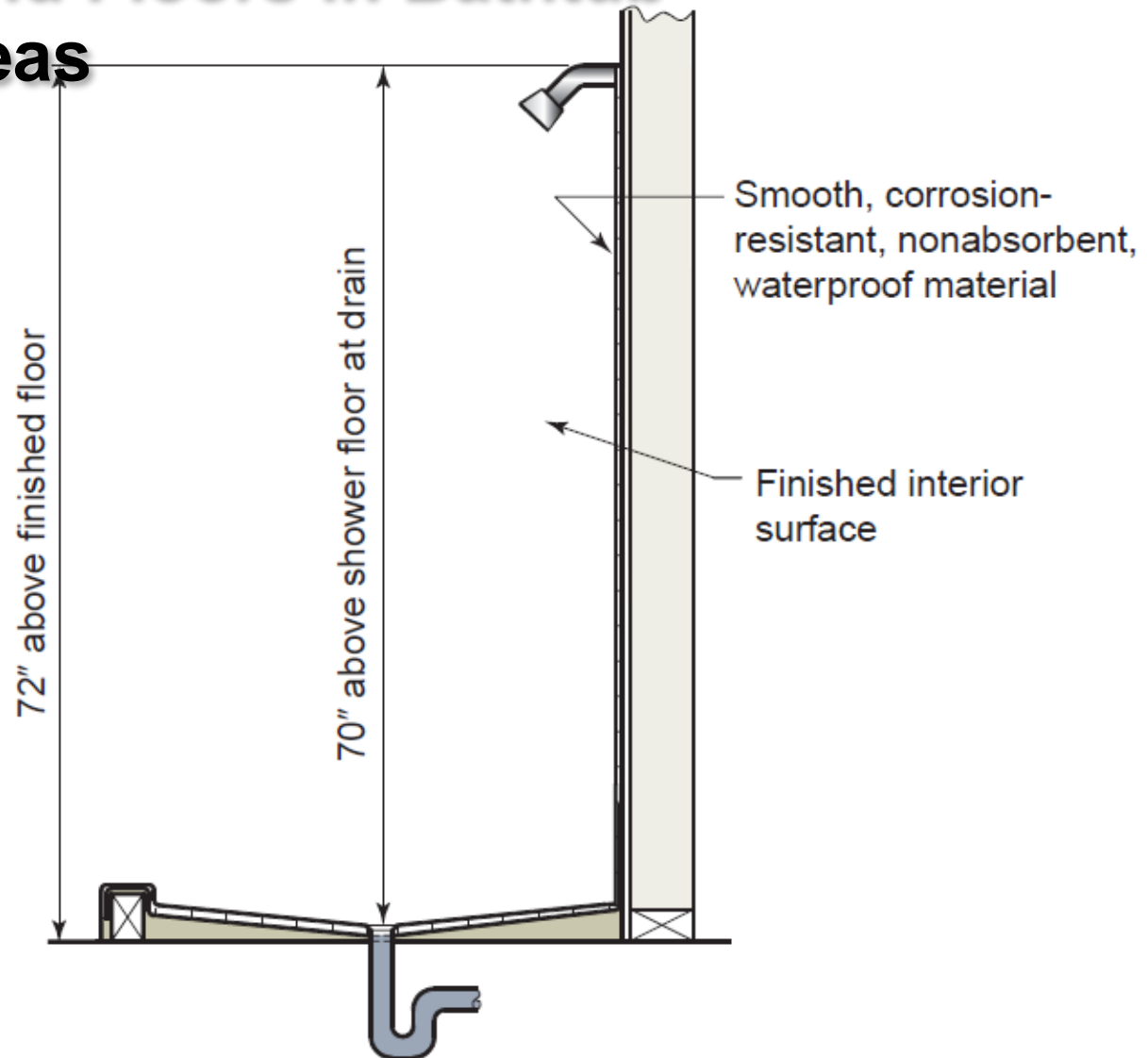
413.1 Food Waste Disposer Approval

- **CHANGE TYPE:** Modification
- Terminology for food waste grinders has been changed to a more industry-accepted term. For electrical safety, domestic food waste disposers must be listed and labeled to a standard.



417.4.1 Walls and Floors in Bathtub and Shower Areas

- **CHANGE TYPE:**
Modification
- This section has been modified to make the existing requirements more clear.



420.1 Water Closet Approval

- **CHANGE TYPE:** Modification
- Dual-flush water closets have become popular in recent years. The code now has a standard that covers those types of water closets.



421.1 Whirlpool Tub Approval

- **CHANGE TYPE:**
Modification
- A standard for electrical safety for whirlpool tubs has been added to the code.



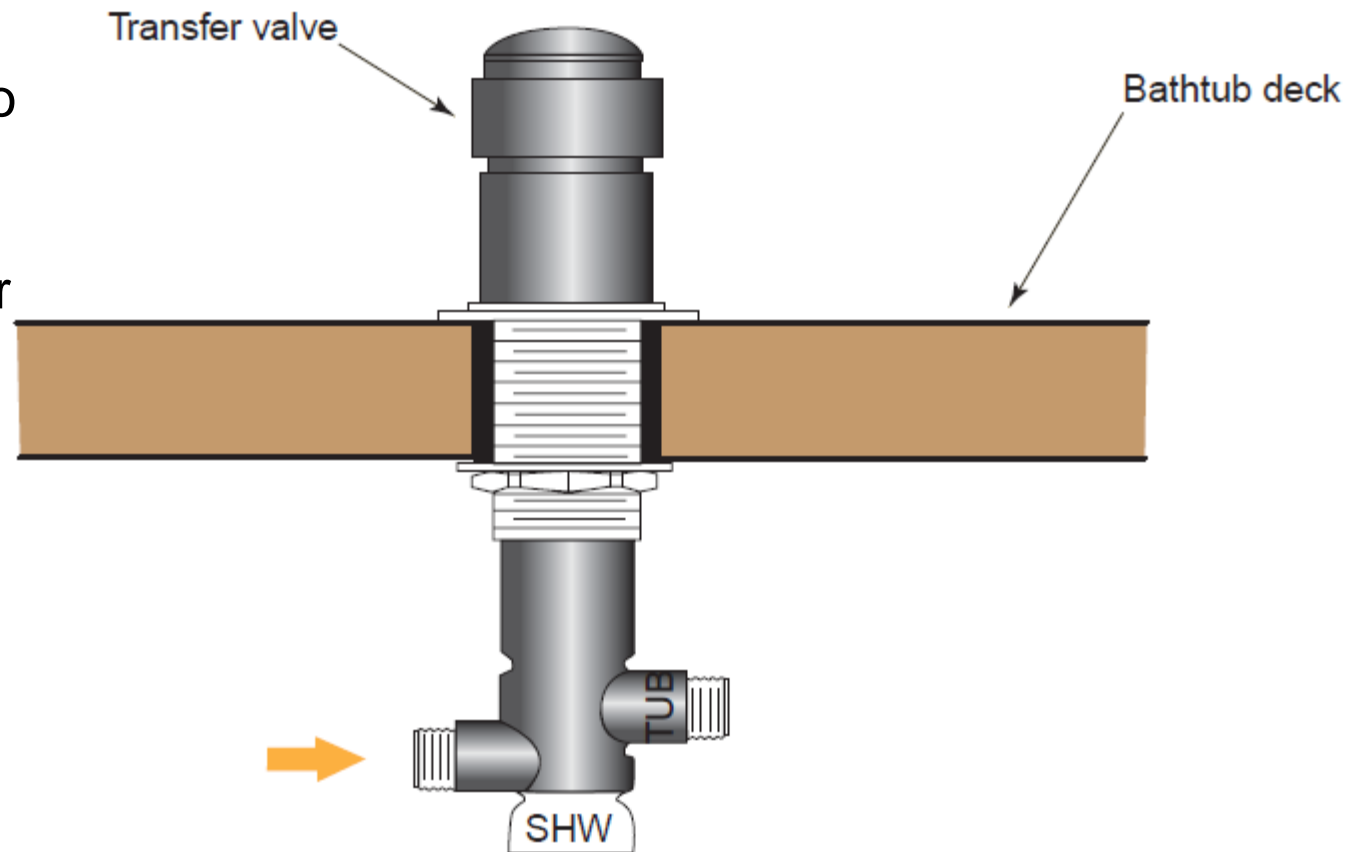
423.3 Footbaths, Pedicure Baths and Head Shampoo Sinks

- **CHANGE TYPE:** Addition
- Water-temperature-limiting devices are required for footbaths (integral or not integral to pedicure chairs) and head shampoo sinks.



424.8 Deck-Mounted Bath/ Shower Transfer Valves

- **CHANGE TYPE:**
Modification
- The standard to which deck-mounted bath/shower transfer valves must comply has changed.



501.3 Water Heater Drain Valves

- **CHANGE TYPE:** Modification
- The standard covering water heater drain valves has been discontinued by the standard promulgator. Minimum criteria for drain size and the hose connection have been added to the code for these valves.



504.6 Temperature and Pressure Relief Discharge Piping

- **CHANGE TYPE:** Modification
- The temperature and pressure relief valve discharge pipe termination must have an air gap suitable to protect the potable water supply distribution system of the building.



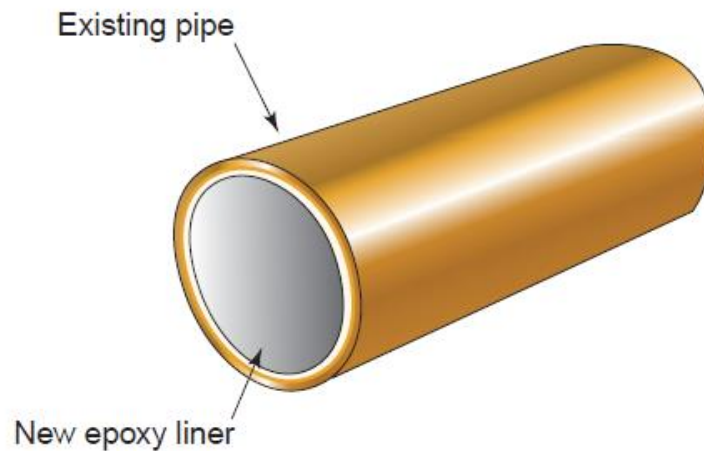
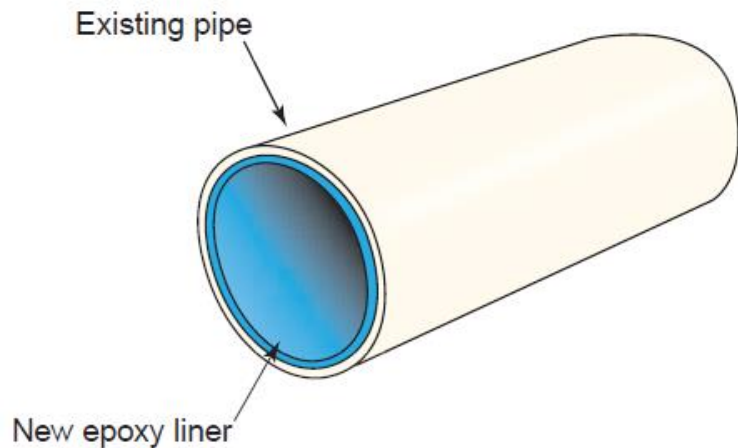
504.7.2 Water Heater Pan Drain Line

- **CHANGE TYPE:** Modification
- In a replacement water heater installation situation, there might not be a nearby drain point for a required pan for the water heater. This code modification allows a pan to not have a drain line if one is not present.



601.5 Rehabilitation of Piping Systems by Internal Lining

- **CHANGE TYPE:** Addition
- An epoxy lining system standard has been added to the code.



605.2.1 Lead Content of Components Conveying Drinking Water

- **CHANGE TYPE:** Addition
- The code now has a more stringent limitation for lead content in pipe, pipe fittings, joints, valves, faucets and fixture fittings that convey water used for drinking and cooking.



Tables 605.3 and 605.4, Section 605.16 CPVC/AL/CPVC Water Service and Water Distribution Piping

TABLE 605.3
WATER SERVICE PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D 1527; ASTM D 2282
Brass pipe	ASTM B 43
Chlorinated polyvinyl chloride (CPVC) plastic pipe	ASTM D 2846; ASTM F 441; ASTM F 442; CSA B137.6
Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC)	ASTM F 2855
Copper or copper-alloy pipe	ASTM B 42; ASTM B 302
Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 447
Cross-linked polyethylene (PEX) plastic pipe and tubing	ASTM F 876; ASTM F 877; AWWA C904; CSA B137.5
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	ASTM F 1281; ASTM F 2262; CSA B137.10
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F 1986
Ductile iron water pipe	AWWA C151/A21.51; AWWA C115/A21.15
Galvanized steel pipe	ASTM A 53
Polyethylene (PE) plastic pipe	ASTM D 2239; ASTM D 3035; AWWA C901; CSA B137.11
Polyethylene (PE) plastic tubing	ASTM D 2737; AWWA C901; CSA B137.1
Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe	ASTM F 1282; CSA B137.9
Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F 2769
Polypropylene (PP) plastic pipe or tubing	ASTM F 2389; CSA B137.11
Polyvinyl chloride (PVC) plastic pipe	ASTM D 1785; ASTM D 2241; ASTM D 2672; CSA B137.3
Stainless steel pipe (Type 304/304L)	ASTM A 312; ASTM A 778
Stainless steel pipe (Type 316/316L)	ASTM A 312; ASTM A 778



**TABLE 605.4
WATER DISTRIBUTION PIPE**

MATERIAL	STANDARD
Brass pipe	ASTM B 43
Chlorinated polyvinyl chloride (CPVC) plastic pipe and tubing	ASTM D 2846; ASTM F 441; ASTM F 442; CSA B137.6
Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC)	ASTM F 2855
Copper or copper-alloy pipe	ASTM B 42; ASTM B 302
Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 447
Cross-linked polyethylene (PEX) plastic tubing	ASTM F 876; ASTM F 877; CSA B137.5
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	ASTM F 1281; ASTM F 2262; CSA B137.10
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F 1986
Ductile iron pipe	AWWA C151/A21.51; AWWA C115/A21.15
Galvanized steel pipe	ASTM A 53
Polyethylene/aluminum/polyethylene (PE-AL-PE) composite pipe	ASTM F 1282
Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F 2769
Polypropylene (PP) plastic pipe or tubing	ASTM F 2389; CSA B137.11
Stainless steel pipe (Type 304/304L)	ASTM A 312; ASTM A 778
Stainless steel pipe (Type 316/316L)	ASTM A 312; ASTM A 778



Tables 605.3, 702.2, 702.3, 702.4, 1102.4, 1102.5 Asbestos Cement Pipe

- **CHANGE TYPE:**
Modification
- References to asbestos cement pipe and applicable referenced standards have been removed from the code.

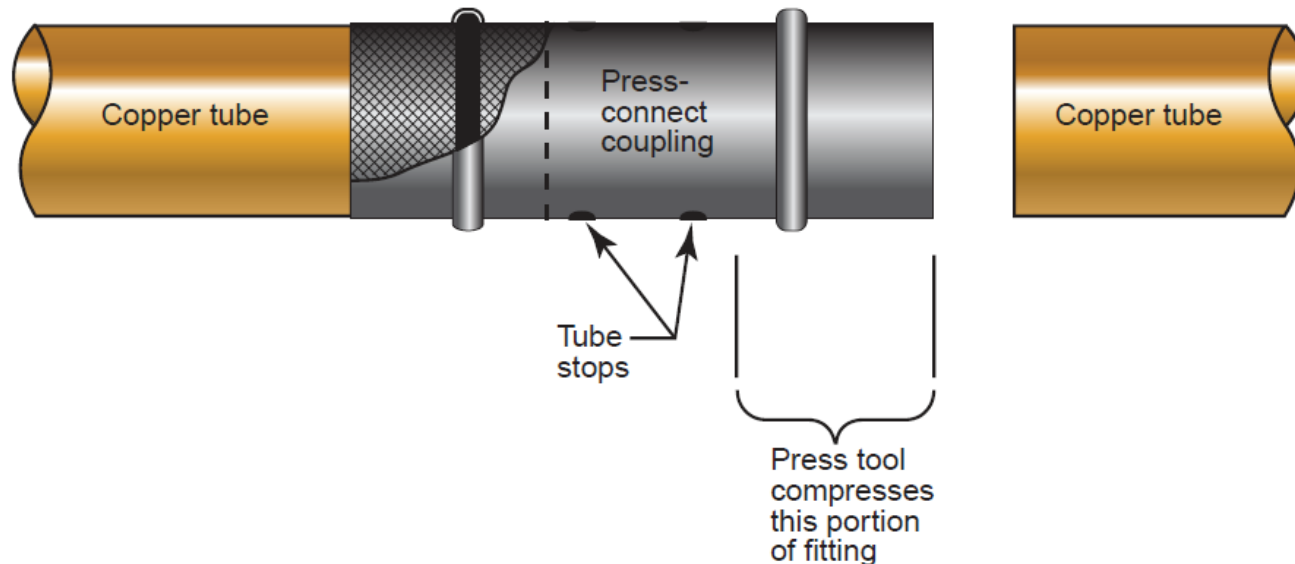


TABLE 702.2
UNDERGROUND BUILDING DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D 2661; ASTM F 1488; CSA B181.3
Cast-iron pipe	ASTM A 74; ASTM A 888; CISPI 301
Copper or copper-alloy tubing (Type K, L, M or DWV)	ASTM B 75; ASTM B 88; ASTM B 251; ASTM B 300
Polyolefin pipe	ASTM F 1412; CSA B181.3
Polvvinyl chloride (PVC)	ASTM D 2665; ASTM F 1412

Table 605.5, Sections 605.14.3, 605.14.5, 605.18.3, 605.22.2, 605.23.3 Groove and Shouldered Mechanical Joints and Press-Connect Fittings

- **CHANGE TYPE:** Modification
- Two standards for groove and shouldered mechanical joints and a press-connect fitting standard have been added to the code.



605.7, Table 605.7 Valve Compliance to Standards

- **CHANGE TYPE:** Modification
- All types of valves that supply drinking water must now comply with NSF 61. Standards for numerous types of valves have been added to the code.

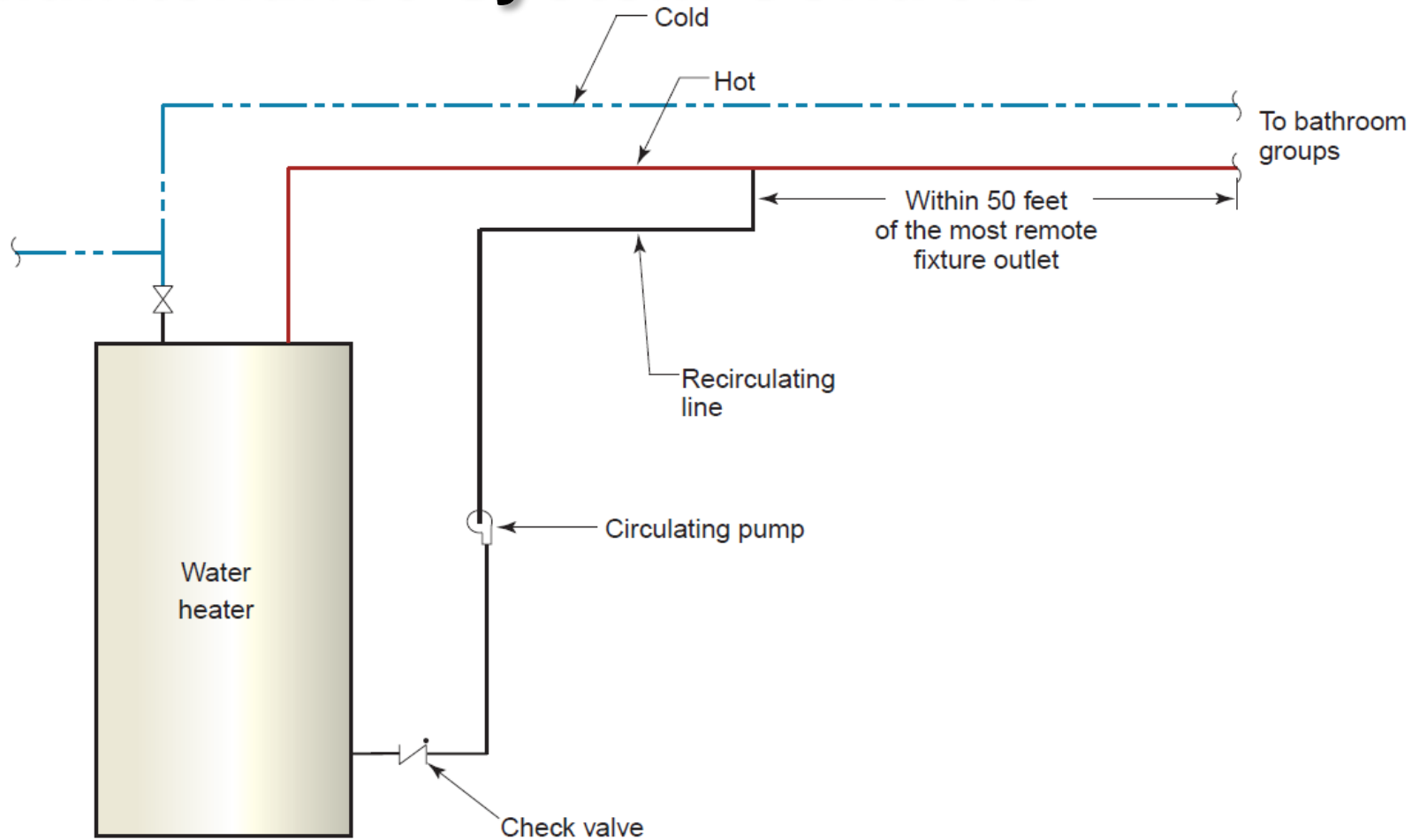


607.2.1 Hot Water Temperature Maintenance System Controls

- **CHANGE TYPE:** Modification
- Changes in the commercial portion of the *International Energy Conservation Code* (IECC) caused changes in this IECC-controlled section of the IPC. This section requires temperature maintenance systems (for maintaining hot water temperature near plumbing fixtures) to be automatically turned off when there is not a demand for hot water. The code change also makes it clear that the Section 607.2.1 and its subsection 607.2.1.1 do not apply to Group R2, R3 and R4 occupancies that are 3 stories or less in height above grade plane, because those occupancies are covered by the residential portion of the IECC.



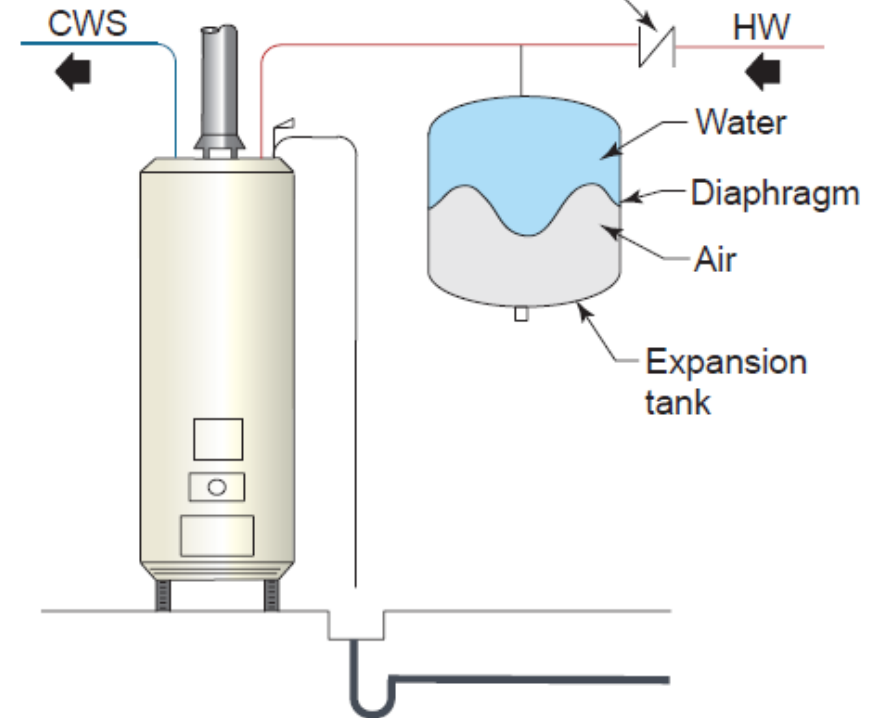
607.2.1 Hot Water Temperature Maintenance System Controls



607.3 Hot Water Thermal Expansion Pressure Control

- **CHANGE TYPE:**
Modification
- The available method to control closed-system pressure increases caused by the heating of water has been limited to the use of thermal expansion tanks only.

Where the cold water supply to a storage water heating system passes through a backflow preventer, a check valve or a required pressure reducing valve, thermal expansion control is required



608.8, 608.8.1, 608.8.2 Identification of Nonpotable Water

- **CHANGE TYPE:** Modification
- Fixtures such as water closets and urinals that utilize nonpotable water must be identified with words and a symbol indicating that nonpotable water is being used. The color purple is established for identifying distribution piping conveying nonpotable water.



702.5 Temperature Rating of Drainage Piping

- **CHANGE TYPE:** Addition
- Wastewater having a temperature greater than 140°F (60°C) does not need to be cooled before it enters the drainage system if the drainage system piping is rated for the higher temperature.



703.6 Connection to Combined Sanitary and Storm Public Sewer

- **CHANGE TYPE:** Addition
- Building sanitary sewers and building storm sewers must be independent even though connecting to a combined sanitary/storm public sewer.



705.11.2 Exception for Solvent Cementing PVC Piping 4 Inches and Smaller

- **CHANGE TYPE:** Modification
- The application of a primer to drain, waste and vent PVC pipe and fittings prior to solvent cementing is not required for 4-inch pipe size and smaller.

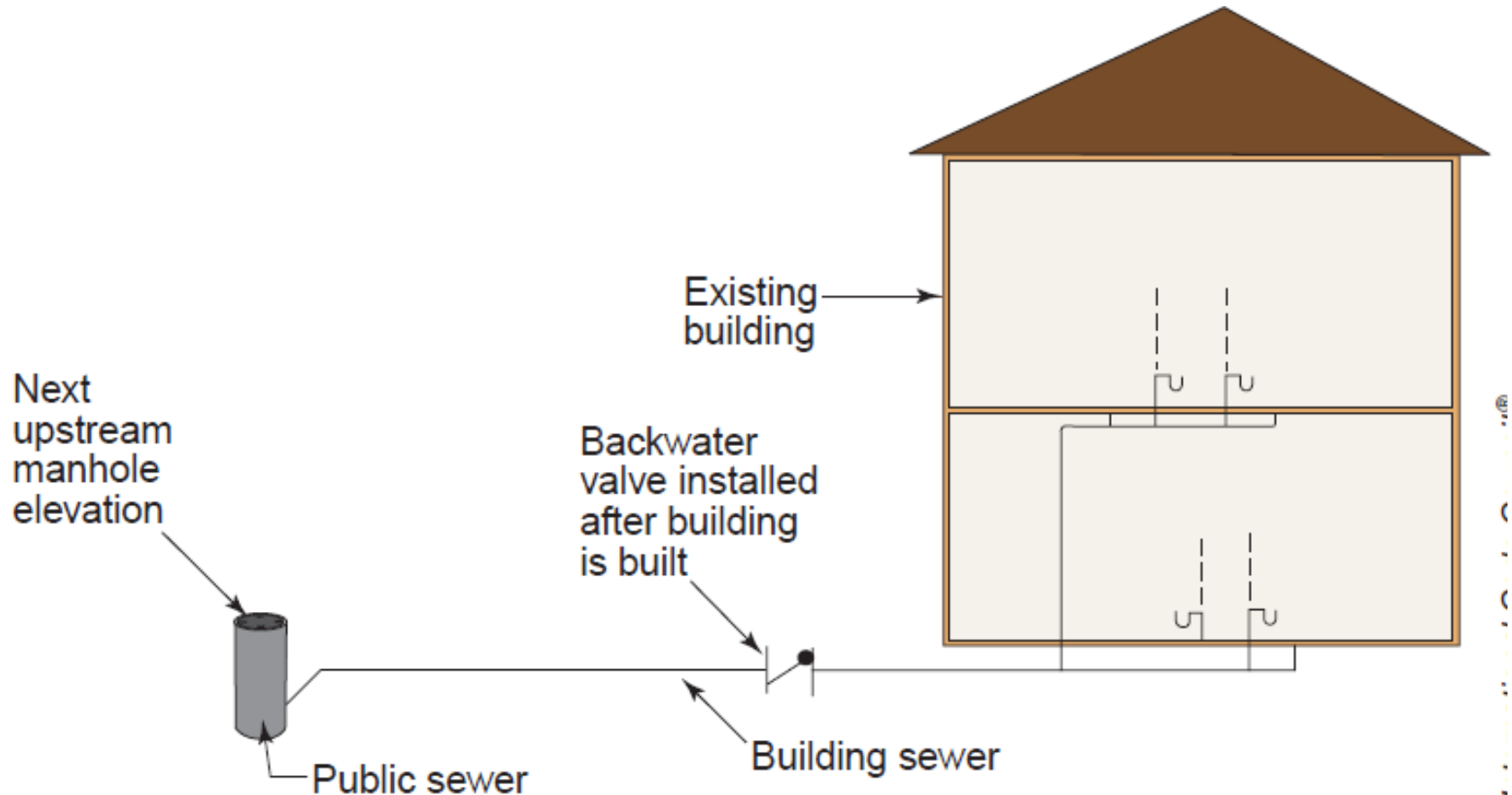


708 Cleanouts for Drainage and Waste Systems

- **CHANGE TYPE:** Modification
- The section on cleanouts has been completely reorganized and reworded for clarity. Brass cleanout plugs are permitted for metallic piping only. Where located at a finished wall, the cleanout must be within 1½ inches of the finished surface. A cleanout is no longer required at the base of each waste or soil stack.



715.1 Exception for Backwater Valve Installations



716 Vacuum Drainage Systems

- **CHANGE TYPE:** Addition
- Vacuum drainage system provisions (as opposed to gravity drainage system provisions) have been moved from the appendix to the code.



717 Replacement of Sewers by Pipe-Bursting Method

- **CHANGE TYPE:** Addition
- Replacement of building sewers by the pipe-bursting method has been used for many decades and is useful especially where excavation of the existing sewer is difficult and costly because of parking lots and other items on the ground surface that would need to be removed and replaced.



802.1, 802.1.1, 802.1.8 Food-Handling Equipment Indirect Connection

- **CHANGE TYPE:** Modification
- The section has been clarified to indicate that Section 802.1 and its subsections do not apply to fixtures and equipment in dwelling units. The section was modified to indicate the types of food-handling equipment that Sections 802.1 through 802.1.8 cover.



802.3 Waste Receptors, Hub Drains and Standpipes

- **CHANGE TYPE:** Modification
- The code has clarified that standpipes are waste receptors. Some limitations for where waste receptors could not be located have been removed. Hub drains now require a strainer.



903.1, 903.2 Vent Terminations to Outdoors

- **CHANGE TYPE:** Modification
- This change clarifies vent terminations to outdoors where roofs are used for purposes other than weather protection and where very cold weather conditions occur.



1002.1 Exception for Traps for Parking Garage Floor Drains

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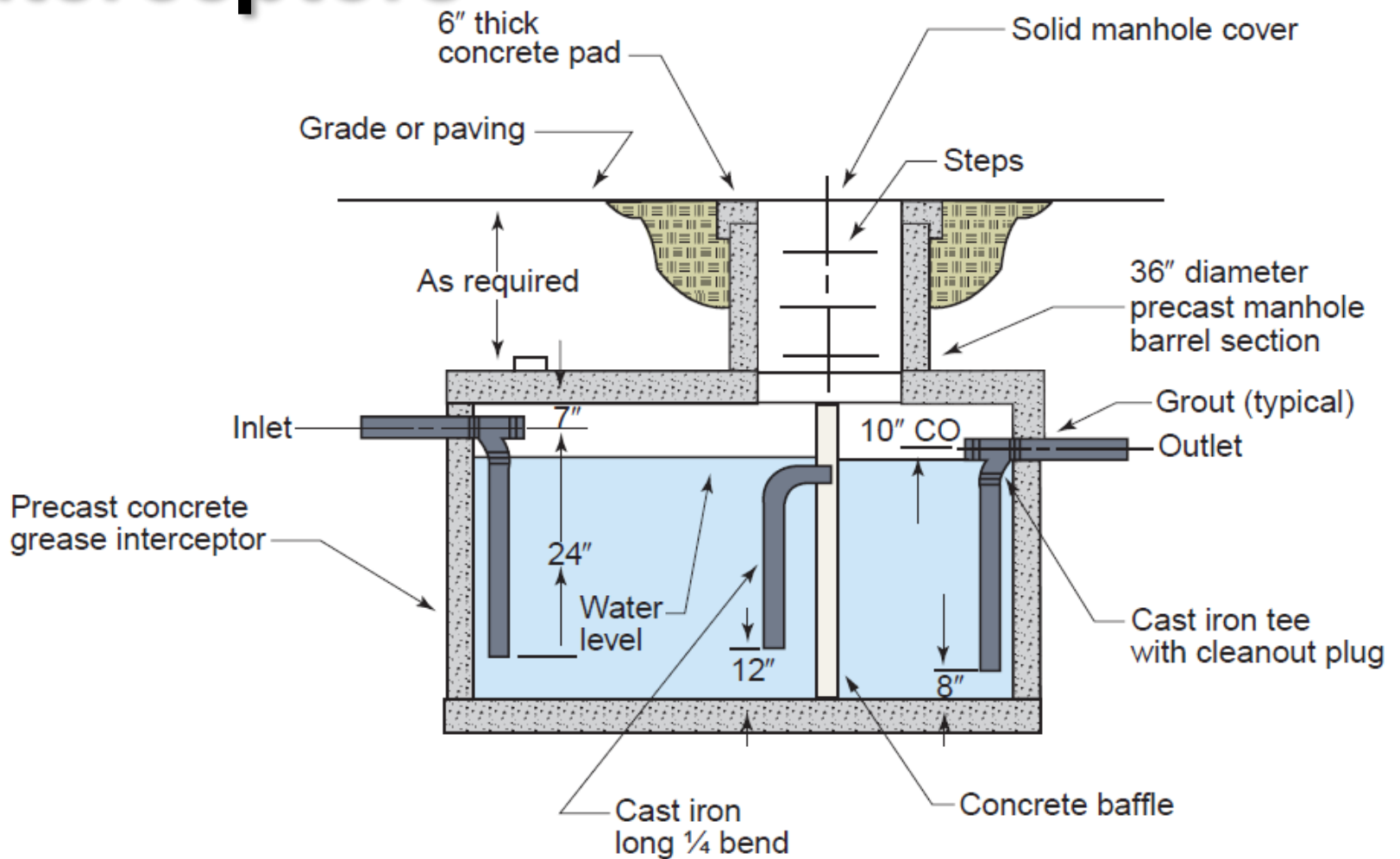


1002.4, 1002.4.1 Trap Seal Protection against Evaporation

- **CHANGE TYPE:** Modification
- Trap seal protection against evaporation can now be accomplished in a variety of ways.

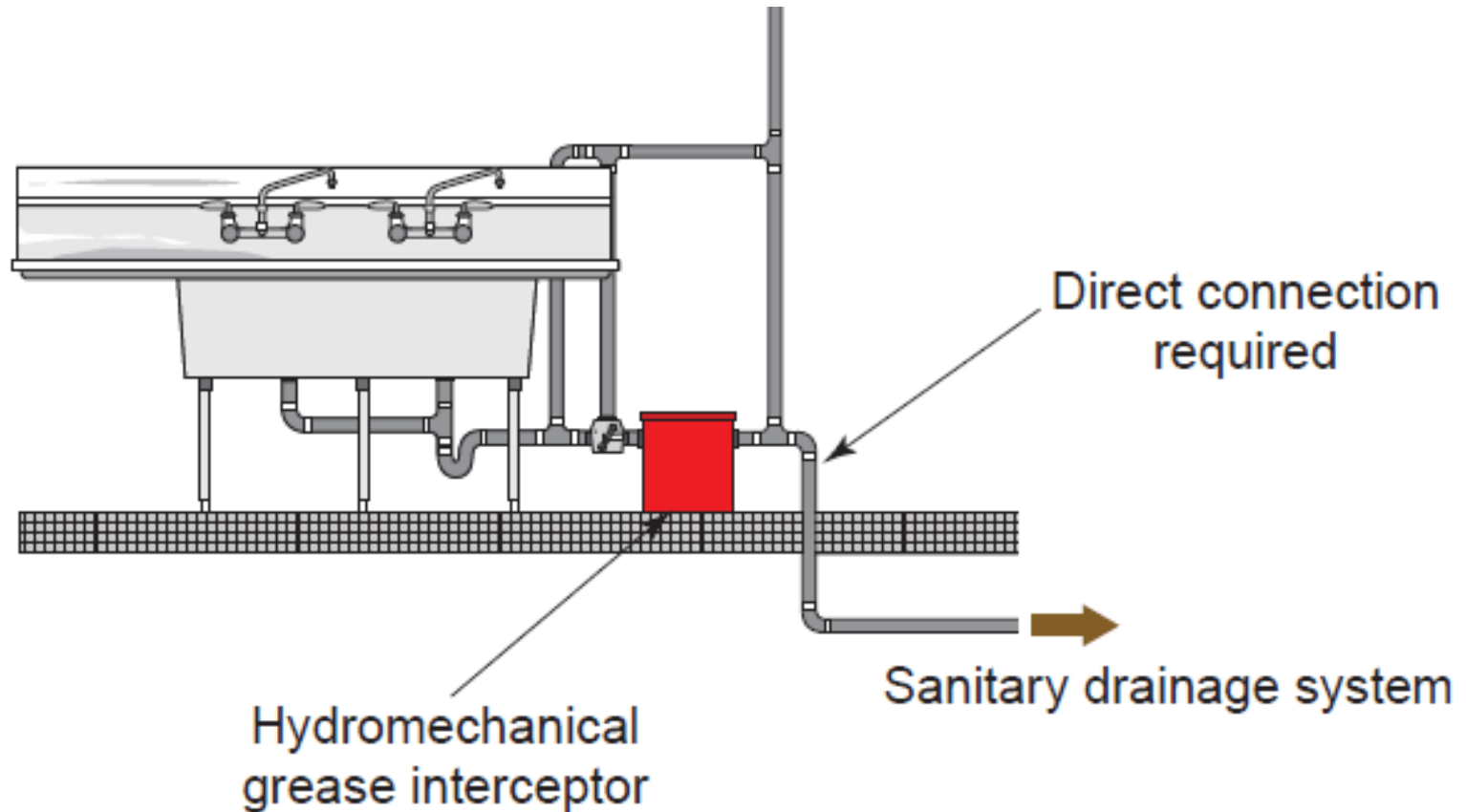


1003.3.6 Gravity Grease Interceptors



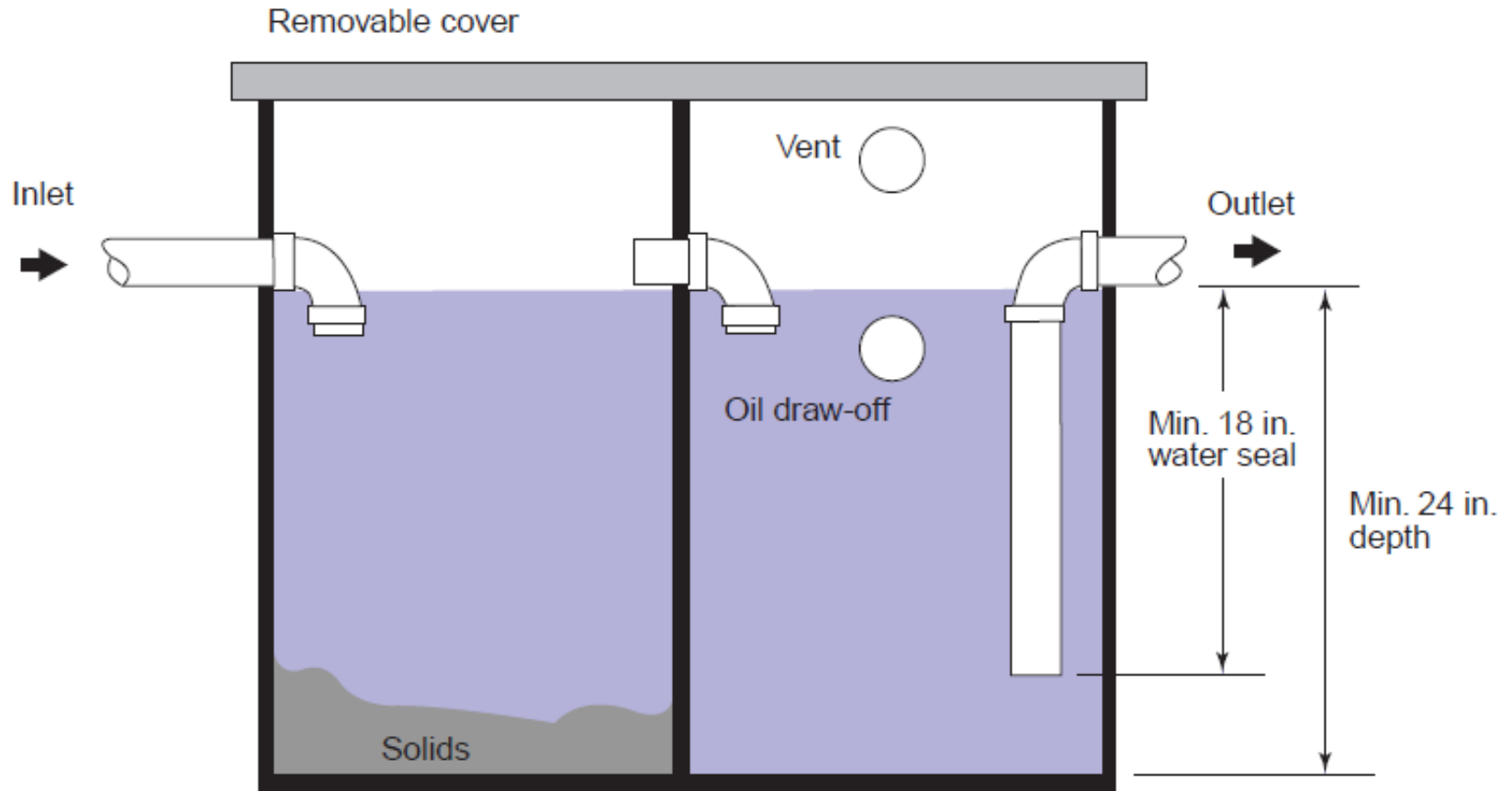
1003.3.7 Direct Connection of Grease Interceptor Discharge

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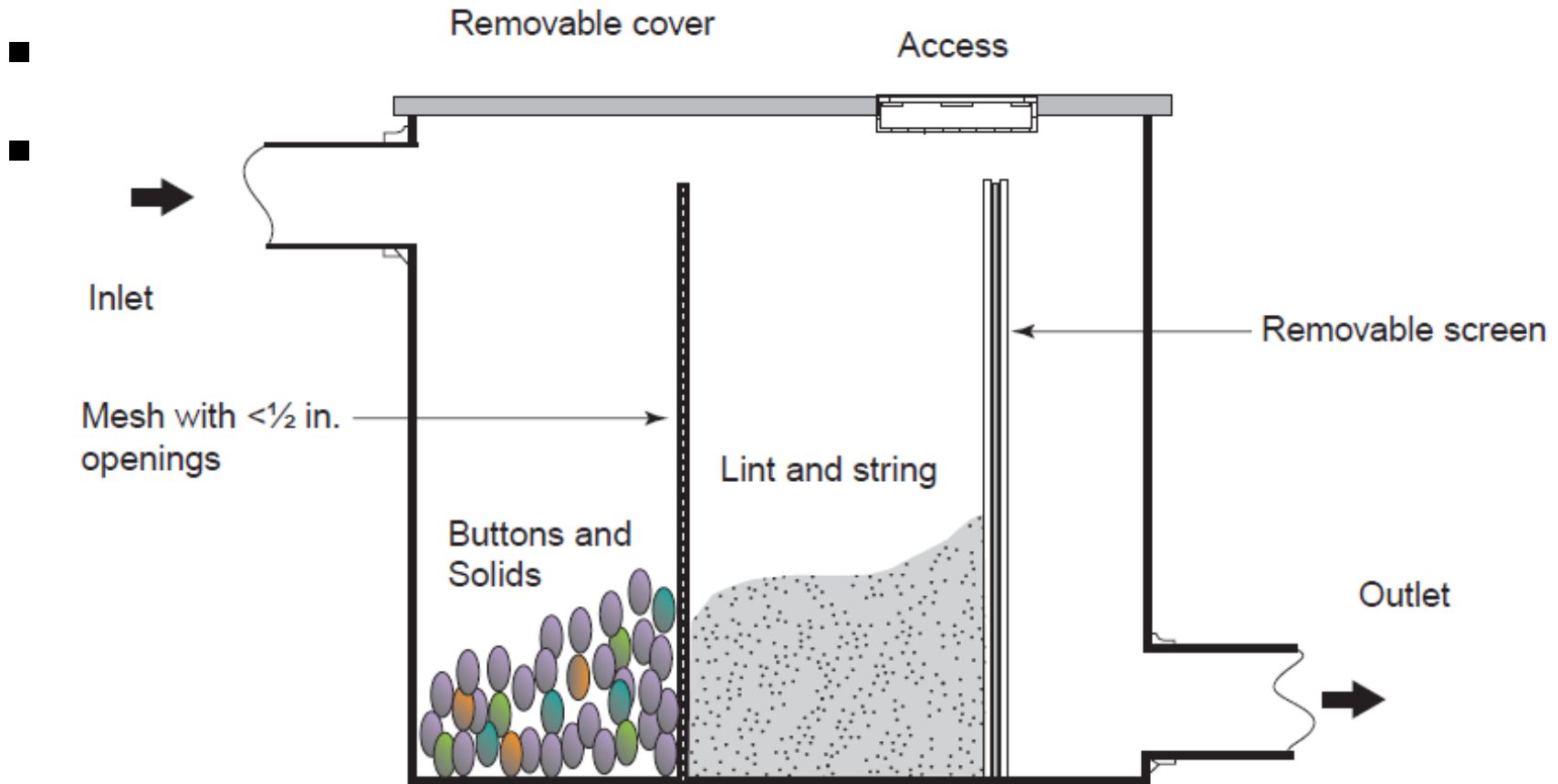


1003.4 Oil Separator Required

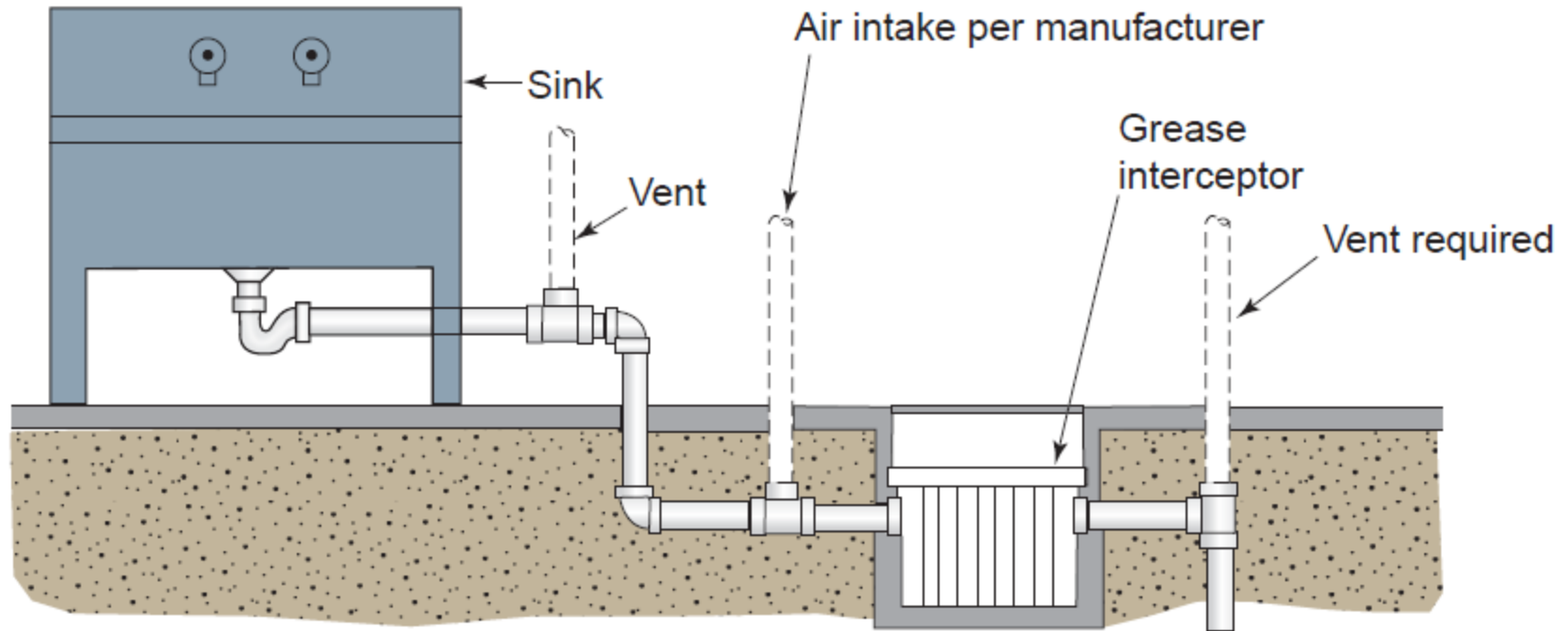
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1003.6 Clothes Washer Discharge Interceptor



1003.9 Venting of Interceptors and Separators



1105.2, 1106.2 Sizing of Roof Drains, Vertical and Horizontal Storm Drain Piping

- **CHANGE TYPE:** Modification
- Testing of many different sizes and configurations of roof drains from a variety of manufacturers indicated that the roof drain assembly is the limiting factor in the design of storm drain systems. Storm drainage piping must now be sized based on the published roof drain flow rate and anticipated ponding at the roof drain.



1106.3, 1106.6 Sizing of Gutters and Leaders

- **CHANGE TYPE:** Modification
- The 2012 Table 1106.2(2), which covered the vertical leader sizing requirements, has been replaced by the simplified Table 1106.3. The 2012 Table 1106.6, which covered horizontal gutter sizing requirements, has been replaced by the simplified Table 1106.6.
 - These sizing methods correspond with American Society of Plumbing Engineers' (ASPE) sizing tables.





Discussion Activity

- Of all the changes to the plumbing code, covered thus far, which would be most important for you in your jurisdiction.





Part 2

International Mechanical Code, Chapters 1-15

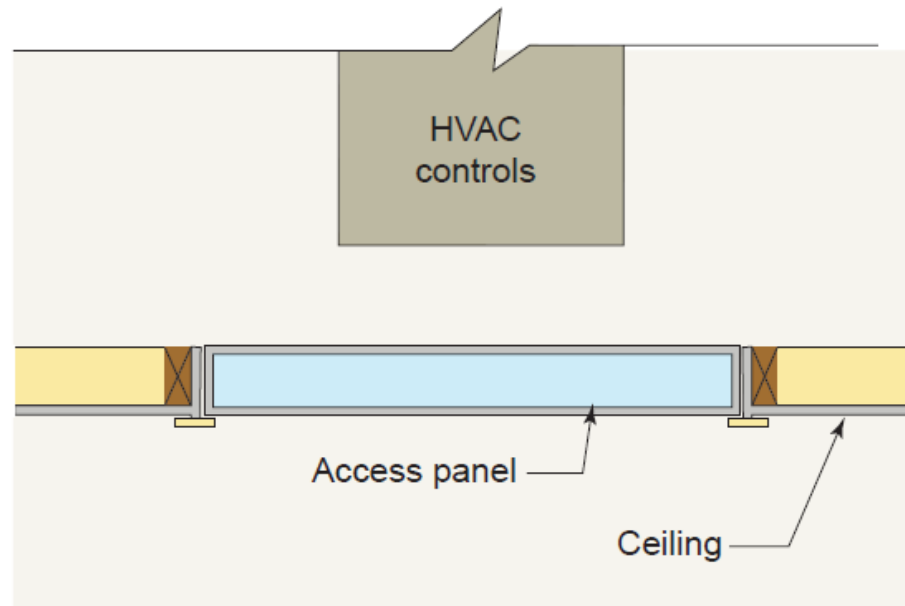
304.11 Fall-Arresting Restraint Systems

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306.1 Access

- **CHANGE TYPE:** Modification
- More than just appliances are now required to have access for inspection, service, replacement and repair.

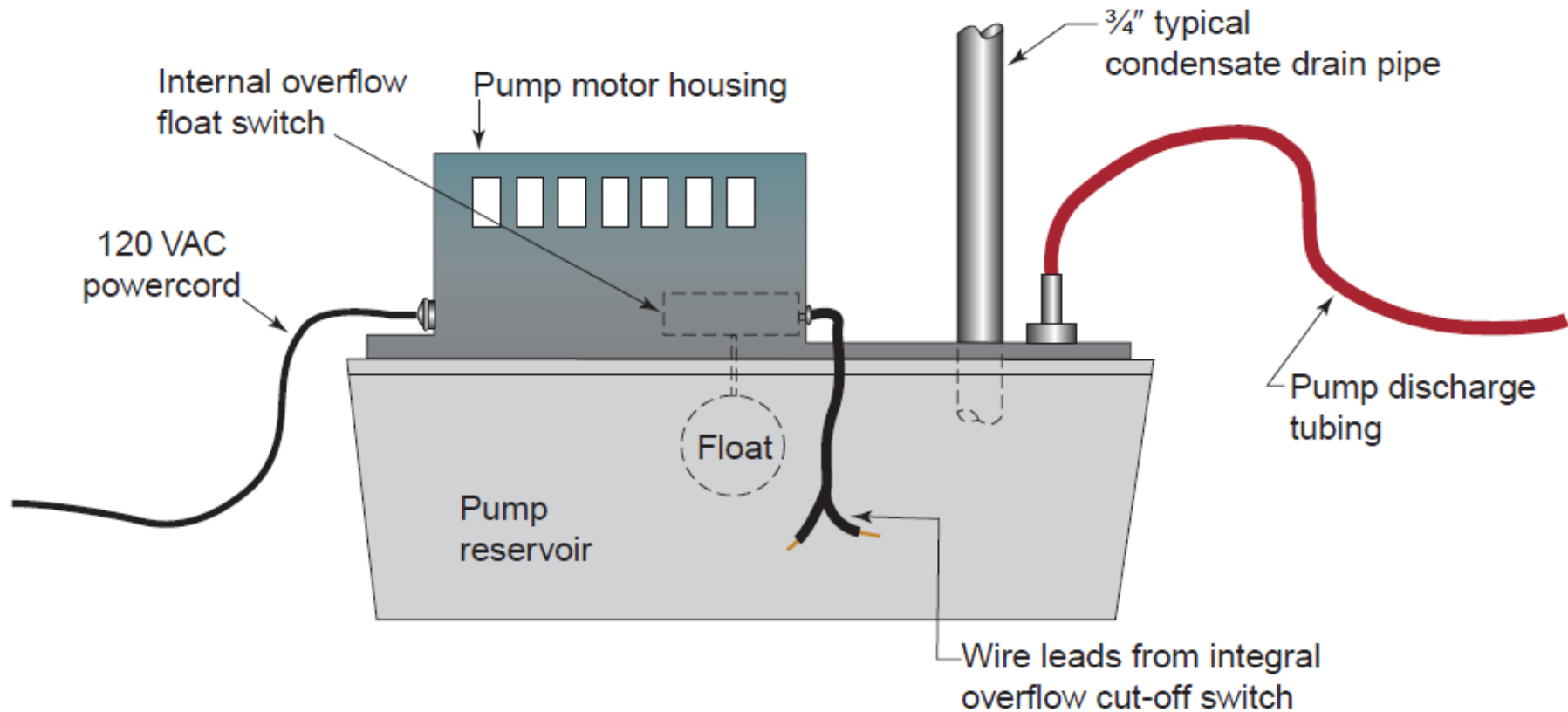


307.2.5 Condensate Drain Line Maintenance

- **CHANGE TYPE:** Addition
- The code requires that condensate drains be configured or equipped to allow maintenance of the drain without the drain pipe or tubing being cut.



307.3 Condensate Pumps in Uninhabitable Spaces



401.2, 407.1, Table 403.3.1.1 Ventilation Required

- **CHANGE TYPE:** Modification
- Occupancies including hospitals, nursing homes, detoxification facilities and ambulatory care facilities must be ventilated in accordance with a new standard, ASHRAE 170.



403.2.1, Table 403.3.1.1.1 Recirculation of Air

- CHA
- The r and g of air

TABLE 403.3.1.1.1.2
ZONE AIR DISTRIBUTION EFFECTIVENESS^{a,b,c,d}

AIR DISTRIBUTION CONFIGURATION	E_z
Ceiling or floor supply of cool air	1.0 ^c
Ceiling or floor supply of warm air and floor return	1.0
Ceiling supply of warm air and ceiling return	0.8 ^f
Floor supply of warm air and ceiling return	0.7
Makeup air drawn in on the opposite side of the room from the exhaust and/or return	0.8
Makeup air drawn in near to the exhaust and/or return location	0.5

es b
culation

For SI: 1 foot = 304.8 mm, 1 foot per minute = 0.00506 m/s,

$$^{\circ}\text{C} = [(^{\circ}\text{F}) - 32]/1.8.$$

- “Cool air” is air cooler than space temperature.
- “Warm air” is air warmer than space temperature.
- “Ceiling” includes any point above the breathing zone.
- “Floor” includes any point below the breathing zone.



403.3 Outdoor Air and Local Exhaust Airflow Rates

- **CHANGE TYPE:** Addition
- The new text introduces the basic requirements of ASHRAE 62.2 related to mechanical ventilation for Group R-2, R-3 and R-4 buildings three stories or less in height.



Table 403.3.1.1 Manicure and Pedicure Station Exhaust Rate

- **CHANGE TYPE:** Modification
- The revised note h to Table 403.3.1.1 recognizes new Section 502.20 for the design of manicure and pedicure station exhaust systems and also specifies the applicability to both. Note h addresses the relationship between the source capture system exhaust-flow rate and the exhaust-flow rate specified within the table for nail salons.



404.1 Intermittent Operation of Mechanical Ventilation Systems for Enclosed Parking Garages

- **CHANGE TYPE:** Modification
- For enclosed parking garages, the ventilation system must operate continuously or must be automatically controlled for intermittent operation utilizing both carbon monoxide and nitrogen dioxide detectors. The option to detect vehicle operation or occupant presence has been deleted.



501.3 Mechanical Exhaust System Discharge

- **CHANGE TYPE:** Modification
- The adjective “public” was added to “nuisance” to make this requirement more enforceable. The new exception correlates with Section 505.1, exception 1.



502.20 Manicure and Pedicure Station Exhaust System

- **CHANGE TYPE:** Addition
- New text specifically covers manicure and pedicure stations and states exhaust requirements in addition to those in Table 403.3.1.1. In previous editions of the code, pedicure stations were not specifically called out, as the text in Table 403.3.1.1 referred only to nail salons generically.



504.5, 504.8.4.3 Dryer Exhaust Duct Power Ventilators

- **CHANGE TYPE:** Addition
- New text recognizes the use of dryer exhaust duct power ventilators (DEDPVs) for installations that exceed the allowable exhaust duct length for clothes dryers.



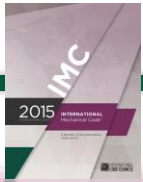
504.8.2 Dryer Exhaust Duct Installation

- **CHANGE TYPE:** Modification
- Instead of prohibiting all duct fasteners such as screws and rivets, the code now limits the penetration of fasteners where installed.



505.1, 505.4 Domestic Range Hoods

- **CHANGE TYPE:** Modification
- The scope of domestic kitchen hoods coverage has been expanded to beyond dwellings units. Domestic hoods are mandated in new Section 505.4.



505.3 Domestic Kitchen Exhaust Systems in Multistory Buildings

- **CHANGE TYPE:** Addition
- New text regulates the design and construction of exhaust shafts that serve domestic kitchen exhaust systems in multistory buildings.



506.3.7.1 Grease Duct Reservoirs

- **CHANGE TYPE:** Modification
- A grease duct reservoir must now be the full width of the duct in all cases, and the reservoir must be provided with a drain opening.



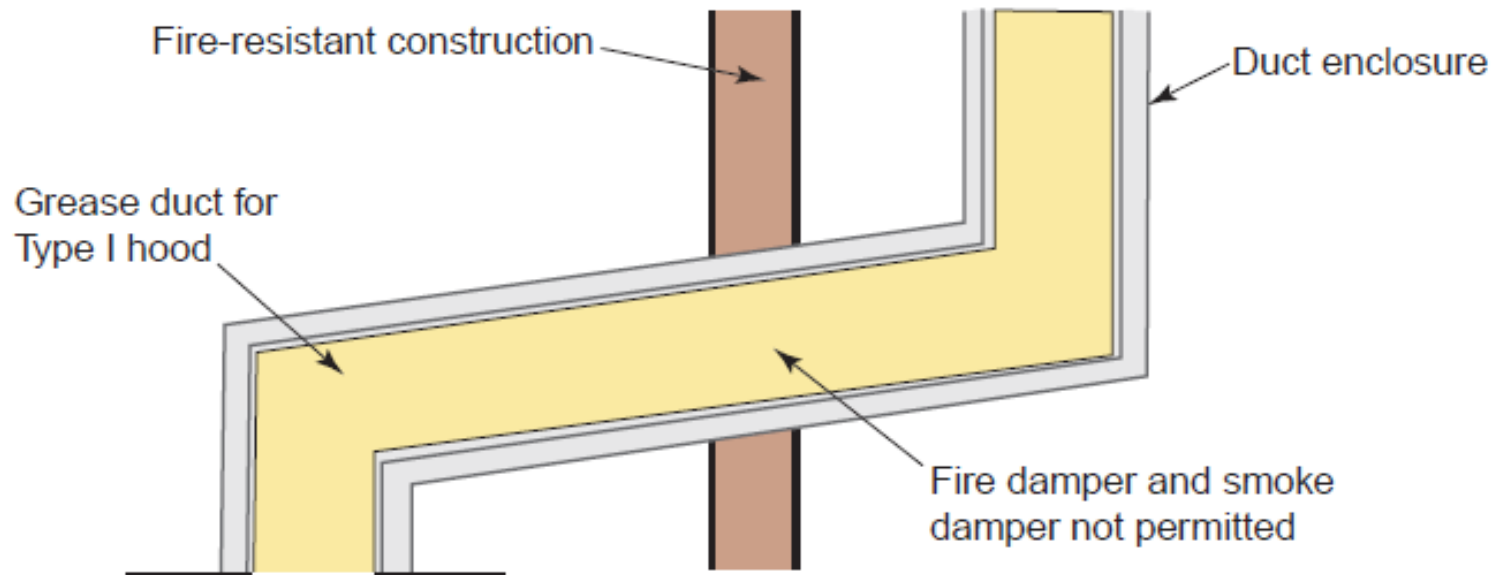
506.3.8 Grease Duct Cleanouts and Openings

- **CHANGE TYPE:** Modification
- The cleanout spacing provisions have been added to be consistent with Section 506.3.9 for horizontal ducts.



506.3.11 Grease Duct Enclosures

- **CHANGE TYPE:** Modification
- The code specifically prohibits the installation of fire and smoke dampers in grease ducts.



506.5.1.2 In-Line Fan Location in Exhaust Ducts Serving Commercial Kitchen Hoods

- **CHANGE TYPE:** Addition
- New text addresses the enclosure requirements for in-line exhaust fans located in kitchen hood exhaust ducts, in effect treating them the same as ducts.



506.5.3 Hinged Up-Blast Fans for Type I Hoods

- **CHANGE TYPE:** Modification
- The code now requires that hinged exhaust fans be provided with a means to limit the travel of the fan assembly to prevent injury to personnel and damage to the building and fan.



507.1 Type I Hood Installation

- **CHANGE TYPE:** Modification
- A requirement has been added for Type I hood installations to comply with all aspects of a Type I exhaust system, whether the Type I hood is required by the code or installed by choice.



507.1.1 Commercial Kitchen Exhaust Hood System Operation

- **CHANGE TYPE:** Modification
- The requirement for automatic activation of the exhaust system has been revised to provide the intended performance requirements and to clarify that an interlock arrangement is an alternative to automatic hood operation.



507.1.1.1 Heat Sensors for Multiple Commercial Kitchen Hoods

- **CHANGE TYPE:** Addition
- New text prohibits the use of a single sensor mounted in the common ductwork for commercial kitchen hood systems having multiple hoods manifolded together.



507.2.8 Type I Hood Grease Filters

- **CHANGE TYPE:** Modification
- The code now recognizes the use of disposable grease filters.



508.1.2 Air Balance for Commercial Kitchen Ventilation Systems

- **CHANGE TYPE:** Addition
- This new section requires that an air balance schedule be submitted with the design plans for commercial kitchen ventilation systems.



510.4, 510.5 Hazardous Exhaust Systems

- **CHANGE TYPE:** Modification
- Text in previous editions of the code that alluded to the recirculation of hazardous exhaust has been deleted. The previous exception was too broad in application, so the entire section has been formatted to clarify the scope of the exception. Previous item 7 has been revised to prescribe the method for maintaining continuous negative pressure.



510.7.1.1 Hazardous Exhaust Duct Penetrations of Shafts

- **CHANGE TYPE:** Addition
- A pointer to the *International Building Code* (IBC) provisions for hazardous exhaust duct penetrations of shafts has been added.

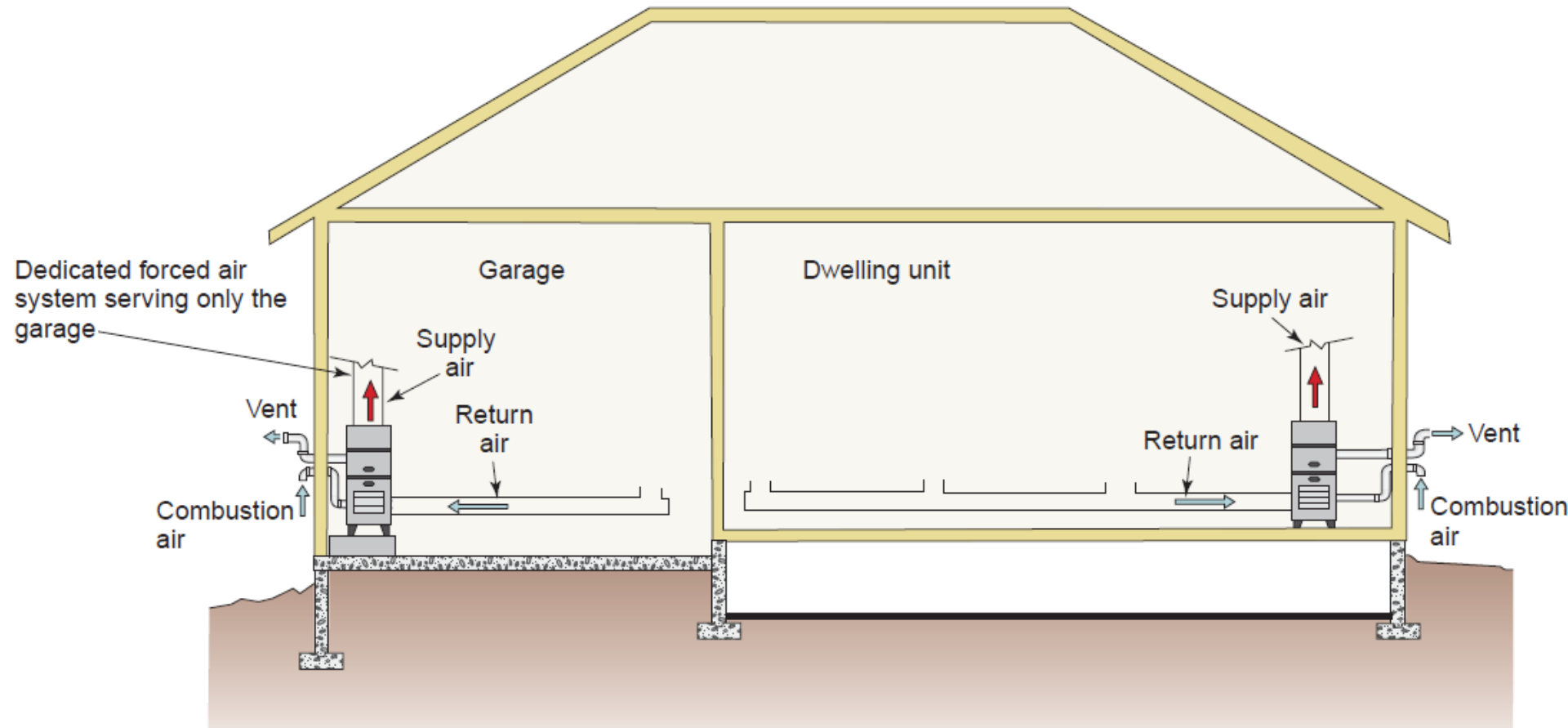


514.2 Energy Recovery Ventilation Systems

- **CHANGE TYPE:** Modification
- Energy recovery ventilation (ERV) systems of the coil-type heat exchanger (run-around coils) are no longer limited in their application.



601.5 Return Air Openings

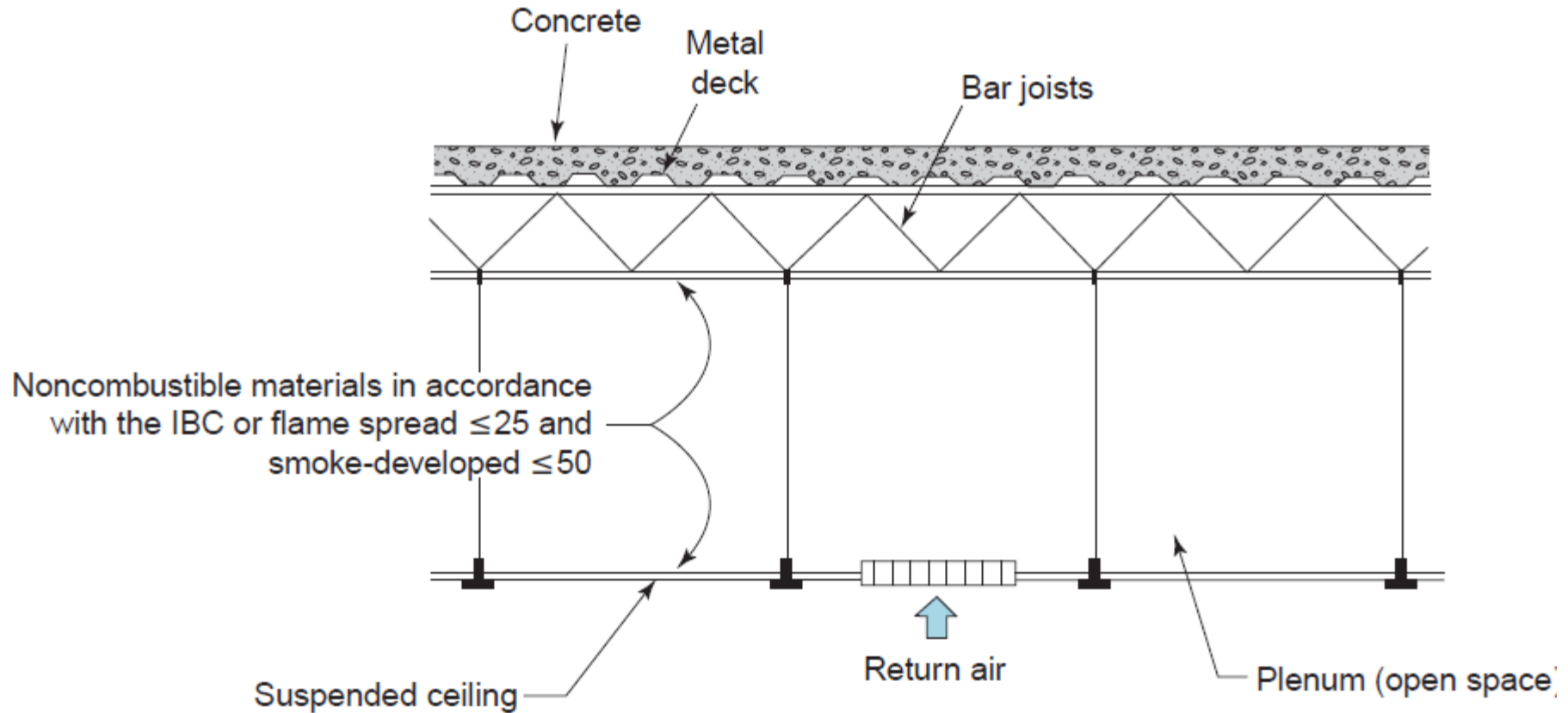


602.1 Plenums Limited to One Fire Area

- **CHANGE TYPE:** Clarification
- The revision clarifies that a plenum in a fire area cannot be connected to a plenum in an adjoining fire area by means of transfer ducts or openings, regardless of the presence of fire dampers.



602.2 Plenum Construction



602.2.1.5 Discrete Plumbing and Mechanical Products in Plenums

- **CHANGE TYPE:** Addition
- The code now addresses those products that in previous editions of the code did not fall under the category of piping, wiring, ductwork, tubing, insulation and other continuous large surface area materials installed in plenums. A definition has been added to describe what is meant by discrete products.



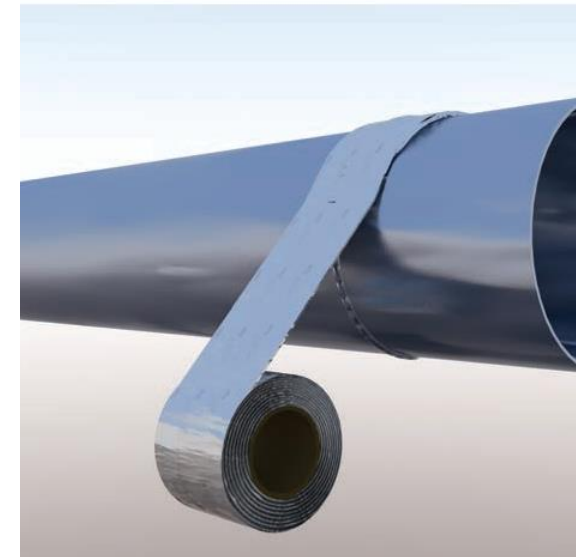
Table 603.4 Duct Construction Minimum Sheet Metal Thickness for Single Dwelling Units

- **CHANGE TYPE:** Modification
- The table for duct gages for dwelling units has been replaced with thicknesses consistent with the SMACNA sheet metal construction standard.



603.9 Duct Joints, Seams and Connections

- **CHANGE TYPE:** Modification
- Duct sealant tapes used on sheet-metal ducts must be listed to UL 181B as is required for sealing tapes and mastics for flexible ducts. Snap-lock and button-lock seams are no longer exempt from the sealing requirements.



701.2 Dampered Openings

- **CHANGE TYPE:** Addition
- Where dampers are installed on combustion air openings, the code now requires an interlock with the appliance to prevent operation of the appliance when the damper is closed. Manual dampers are prohibited on combustion air openings.



802.9 Door Clearance to Vent Terminals

- **CHANGE TYPE:** Addition
- To prevent damage to the vent, door or surrounding materials, doors are not permitted to swing within 12 inches of an appliance vent terminal.



903.4 Gasketed Fireplace Doors

- **CHANGE TYPE:** Addition
- Gasketed (sealed) doors are prohibited on factory- built fireplaces except where the fireplaces are listed for use with such doors.



1102.3 Refrigerant Access Port Protection

- **CHANGE TYPE:** Addition
- The requirement for making refrigerant access ports tamper resistant has been expanded to apply to existing systems when service to such systems involves adding or removing refrigerant.



Always include activity

- You can provide Test Your Knowledge review questions or another activity at the end of topics and the end of the training.
- This will help the learners to remember the content presented.





Discussion Activity

- Of all the changes to the mechanical code, covered thus far, which would be most important for you in your jurisdiction.

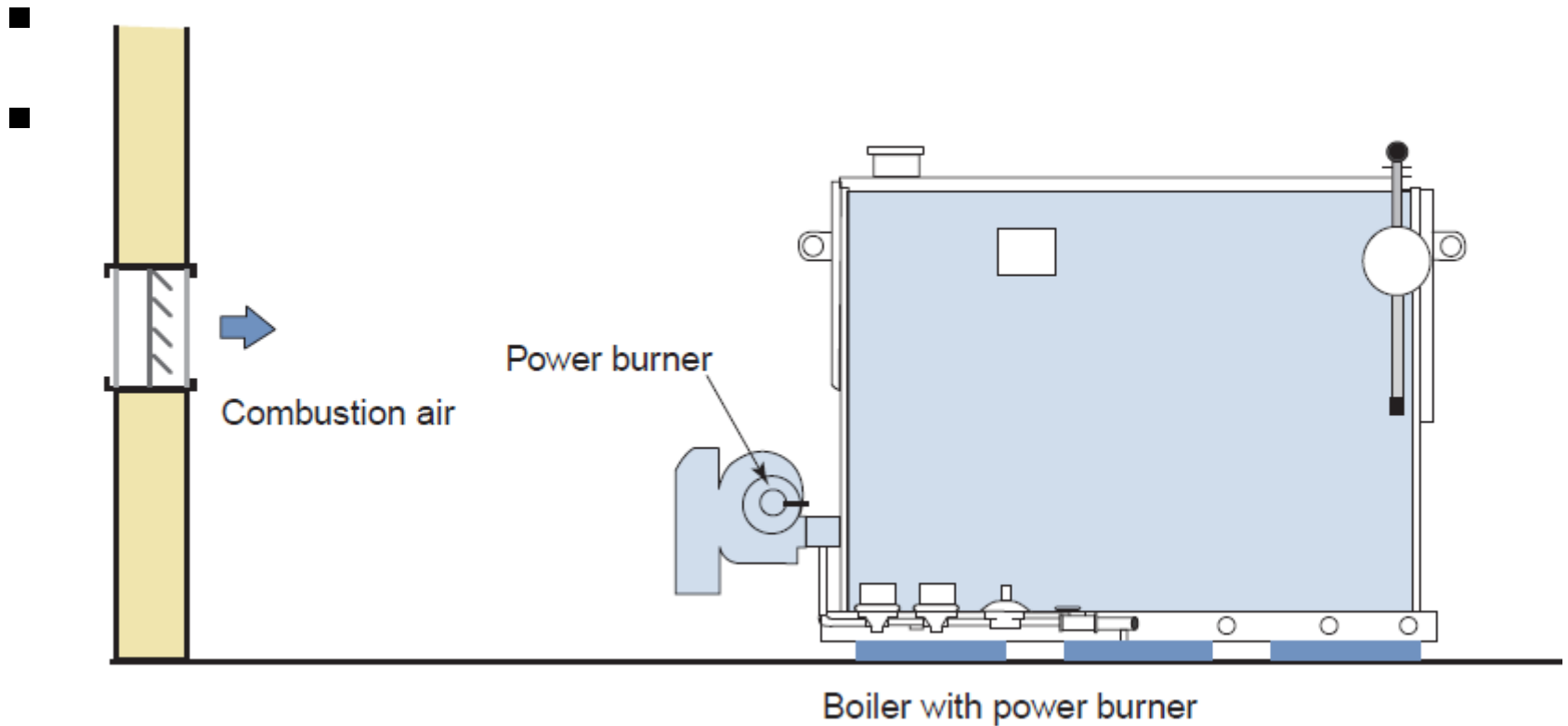




Part 3

International Fuel Gas Code, Chapters 1-8

304.1 Combustion Air for Appliances with Power Burners



307.6 Condensate Pumps

- **CHANGE TYPE:** Addition
- Condensate pumps located in uninhabitable spaces and used with condensing fuel-fired appliances and cooling equipment must be connected to the appliance or equipment served by the pump to prevent water damage in the event of pump failure.



310.1.1 Electrical Bonding of Corrugated Stainless Steel Tubing

- **CHANGE TYPE:** Addition
- Text has been added to address the allowable length of the bonding jumper wire and the methods of making the bonding connections.

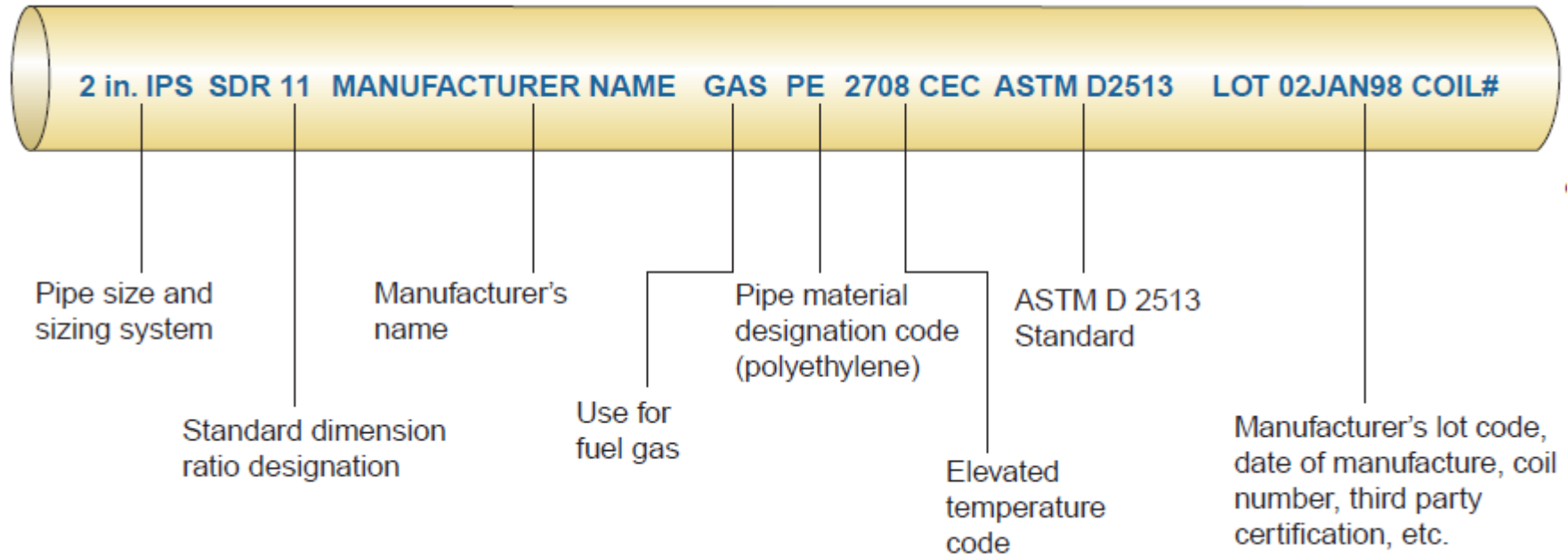


402.2 Maximum Gas Demand for Pipe Sizing

- **CHANGE TYPE:** Modification
- Table 402.2 and the reference to it have been deleted as a result of the code requiring the actual maximum input rating of the appliances to be known and used for sizing purposes.



403.6 Plastic Pipe, Tubing and Fittings



403.10.4 Drilled and Tapped Metallic Pipe Fittings

- **CHANGE TYPE:** Modification
- The code now expressly prohibits the practice of drilling and tapping pipe fittings in the field except where performed in accordance with five criteria that strictly limit such practice.



404.5 Fittings in Concealed Locations

- **CHANGE TYPE:** Clarification
- This section retains its basic intent, while being completely reorganized to clarify the correct application. Threaded elbows, tees and couplings are now specifically approved for concealed locations as the code always intended. The code now provides the applicable referenced standards for fittings that are listed for concealed locations.



404.7 Protection of Concealed Piping against Physical Damage

- **CHANGE TYPE:** Modification
- The section on protection of piping has been completely rewritten to address more than just bored holes and notches in structural members. It now addresses piping parallel to framing members and piping within framing members. The new text requires that the protection extend well beyond the edge of members that are bored or notched.

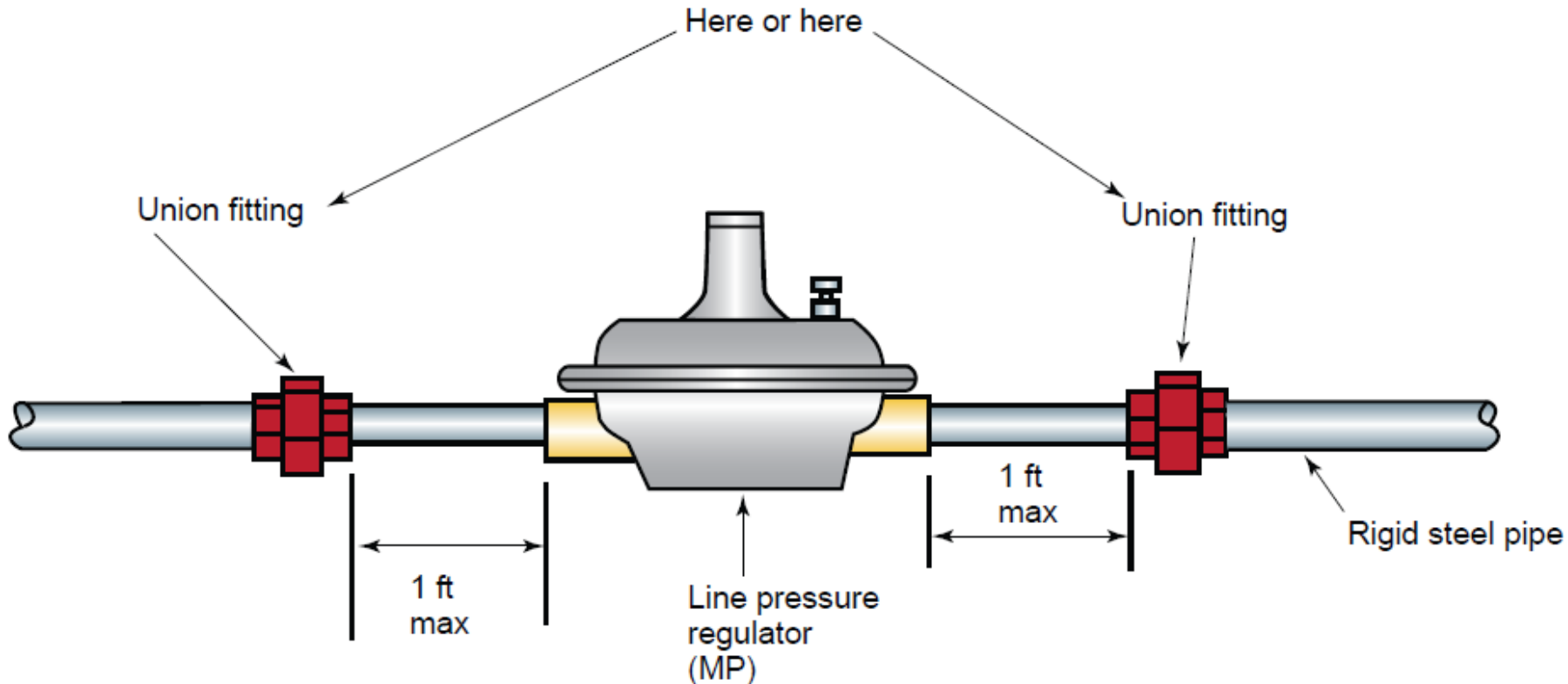


404.18 Pipe Cleaning

- **CHANGE TYPE:** Addition
- The code now specifically prohibits the practice of using fuel gas as a medium for flushing foreign matter and debris from fuel-supply piping.



410.2 Medium-Pressure Regulators



411.1 Connecting Portable Outdoor Appliances

- **CHANGE TYPE:** Modification
- Where portable gas appliances are used outdoors, such as gas grills and patio heaters, the options for connecting to the gas distribution system are practically limited to gas hoses designed for the purpose. Such hoses must comply with ANSI Z21.54.



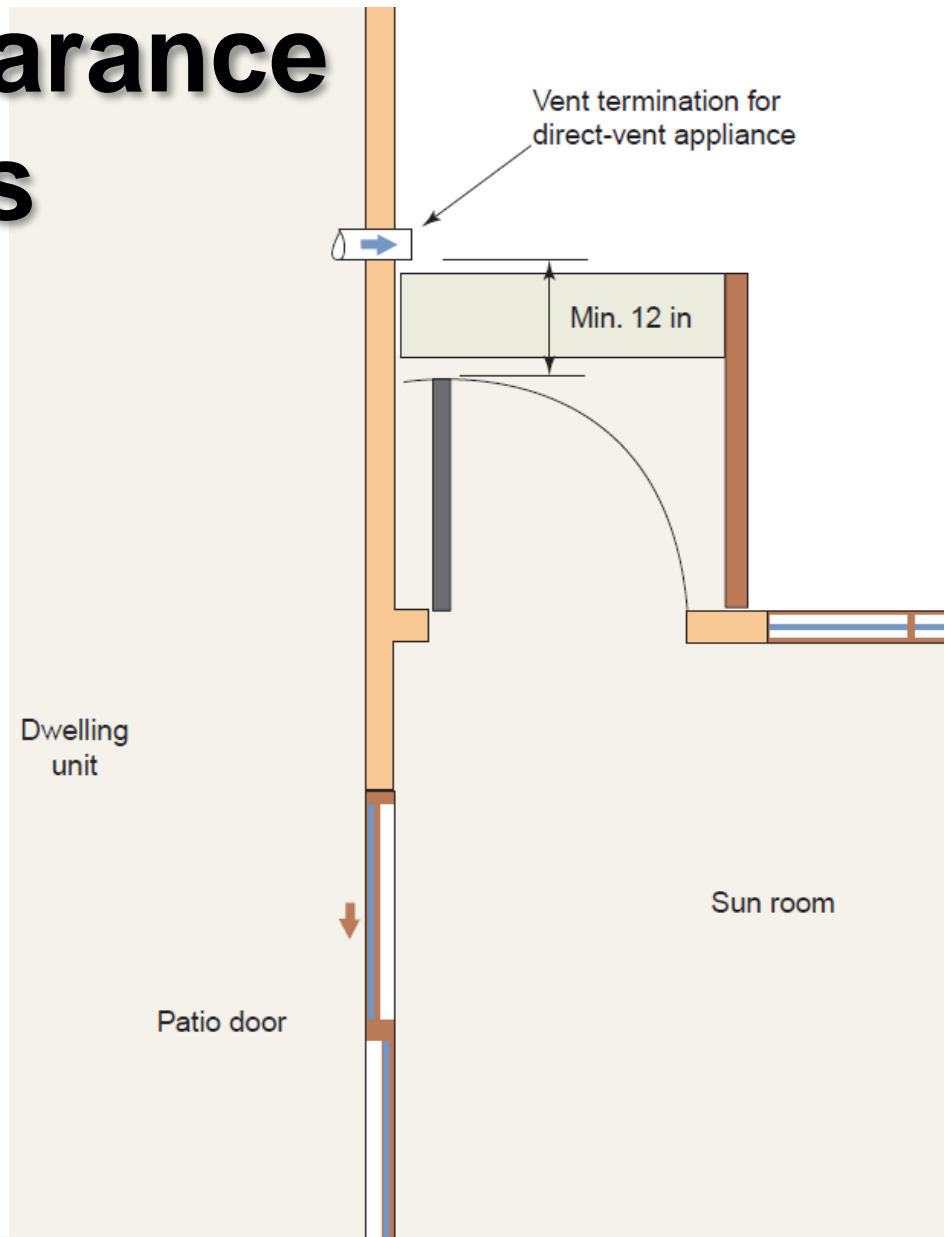
411.1.1 Connectors for Commercial Cooking Appliances

- **CHANGE TYPE:** Modification
- Specific installation requirements have been added for the safe installation of ANSI Z21.69 connectors for commercial cooking appliances. The options to connect the cooking appliance with semirigid tubing or rigid pipe have been removed.



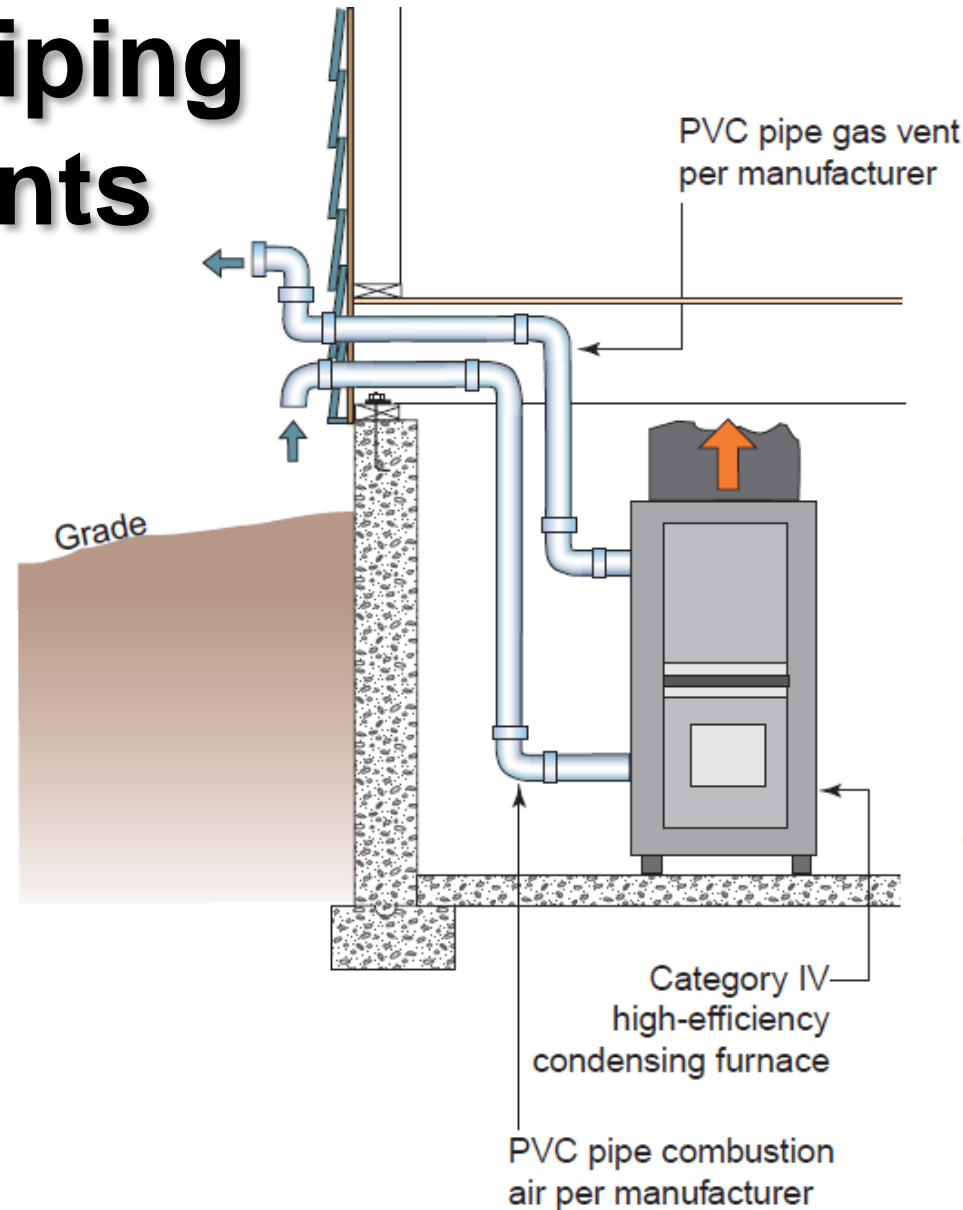
502.7.1 Door Clearance to Vent Terminals

- **CHANGE TYPE:**
Addition
- Coverage has been added to address the condition where a door could impact or come too close to an appliance vent terminal.



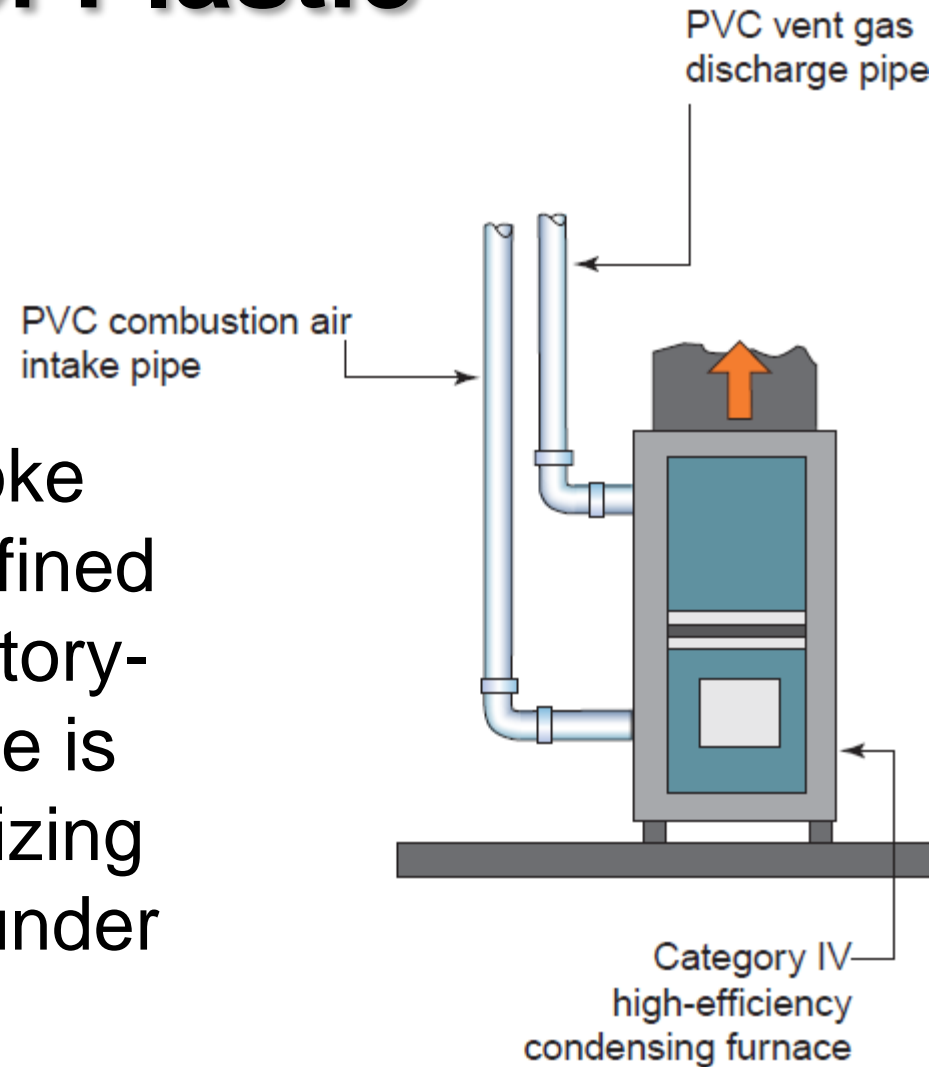
503.4.1 Plastic Piping for Appliance Vents

- **CHANGE TYPE:**
Modification
- The approval of plastic pipe for venting appliances is no longer a responsibility of the code official; instead, that responsibility rests with the appliance manufacturer and the appliance listing agency.



503.6.9.3 Sizing of Plastic Pipe Vents

- **CHANGE TYPE:**
Modification
- The code previously spoke only of vents that are defined as listed and labeled factory-made products. The code is no longer silent on the sizing of vents that do not fall under the definition of “vent.”



503.8 Venting System Termination Location

- **CHANGE TYPE:** Modification
- Text has been added to address the location of sidewall vent terminals with respect to adjoining buildings. Previous editions of the code were silent on this subject, and the appliance manufacturer's instructions are typically silent as well.



614.5 Dryer Exhaust Duct Power Ventilators

- **CHANGE TYPE:** Addition
- New text recognizes the use of dryer exhaust duct power ventilators (DEDPVs) for installations that exceed the allowable exhaust duct length for clothes dryers.



623.2 Prohibited Location of Commercial Cooking Appliances

- **CHANGE TYPE:** Modification
- The code has been clarified so that it would not inadvertently prohibit the installation of cooking appliances that are listed as both commercial and domestic appliances.



Discussion Activity

- Of all the changes to the fuel gas code, covered thus far, which would be most important for you in your jurisdiction.



Final Reflection

- This slide will help the learner to reflect on the day and what they will take back to the job and apply.

