

CHAPTER 8

INDIRECT/SPECIAL WASTE

SECTION 801 GENERAL

801.1 Scope. This chapter shall govern matters concerning indirect waste piping and special wastes. This chapter shall further control matters concerning food-handling establishments, sterilizers, clear-water wastes, swimming pools, methods of providing air breaks or air gaps, and neutralizing devices for corrosive wastes.

801.2 Protection. All devices, appurtenances, appliances and apparatus intended to serve some special function, such as sterilization, distillation, processing, cooling, or storage of ice or foods, and that discharge to the drainage system, shall be provided with protection against backflow, flooding, fouling, contamination and stoppage of the drain.

SECTION 802 INDIRECT WASTES

802.1 Where required. Food-handling equipment and clear-water waste shall discharge through an indirect waste pipe as specified in Sections 802.1.1 through 802.1.7. All fixtures, devices and equipment *used for health care purposes* shall discharge to the drainage system through an indirect waste pipe by means of an air gap in accordance with this chapter and Section 713.3. Fixtures not required by this section to be indirectly connected shall be directly connected to the plumbing system in accordance with Chapter 7.

802.1.1 Food handling. Equipment and fixtures utilized for the storage, preparation and handling of food shall discharge through an indirect waste pipe by means of an air gap.

➔ **802.1.2 Floor drains in food storage areas.** Floor drains located within walk-in refrigerators or freezers in food service and food establishments shall be indirectly connected to the sanitary drainage system by means of an air gap. Where a floor drain is located within an area subject to freezing, the waste line serving the floor drain shall not be trapped and shall indirectly discharge into a waste receptor located outside of the area subject to freezing.

Exception: Where protected against backflow by a backwater valve, such floor drains shall be indirectly connected to the sanitary drainage system by means of an air break or an air gap.

802.1.3 Potable clear-water waste. Where devices and equipment, such as sterilizers and relief valves, discharge potable water to the building drainage system, the discharge shall be through an indirect waste pipe by means of an air gap.

802.1.4 Swimming pools. Where wastewater from swimming pools and backwash from filters discharge to the building drainage system, the discharge shall be through an indirect waste pipe by means of an air gap. *Water from pool*

deck drains shall discharge through an indirect waste pipe by means of an air gap or air break.

802.1.5 Nonpotable clear-water waste. Where devices and equipment such as process tanks, filters, drips and boilers discharge nonpotable water to the building drainage system, the discharge shall be through an indirect waste pipe by means of an air break or an air gap.

802.1.6 Domestic dishwashing machines. Domestic dishwashing machines shall discharge indirectly through an air gap or air break into a standpipe or waste receptor in accordance with Section 802.2, or discharge into a wye-branch fitting on the tailpiece of the kitchen sink or the dishwasher connection of a food waste grinder. The waste line of a domestic dishwashing machine discharging into a kitchen sink tailpiece or food waste grinder shall connect to a deck-mounted air gap or the waste line shall rise and be securely fastened to the underside of the sink rim or counter.

802.1.7 Commercial dishwashing machines. The discharge from a commercial dishwashing machine shall be through an air gap or air break into a standpipe or waste receptor in accordance with Section 802.2.

802.1.8 Fountains and drains. *Wastes from dental or cuspidor fountains, water coolers, bar sinks, soda fountains, floor drains or shower drains may be indirectly connected by means of an air break to the sanitary drainage system.*

802.2 Installation. All indirect waste piping shall discharge through an air gap or air break into a waste receptor or standpipe. Waste receptors and standpipes shall be trapped and vented and shall connect to the building drainage system. All indirect waste piping that exceeds 2 feet (610 mm) in developed length measured horizontally, or 4 feet (1219 mm) in total developed length, shall be trapped.

802.2.1 Air gap. The air gap between the indirect waste pipe and the flood level rim of the waste receptor shall be a minimum of twice the effective opening of the indirect waste pipe.

802.2.2 Air break. An air break shall be provided between the indirect waste pipe and the trap seal of the waste receptor or standpipe.

802.3 Waste receptors. Every waste receptor shall be of an approved type. A removable strainer or basket shall cover the waste outlet of waste receptors. Waste receptors shall be installed in ventilated spaces. Waste receptors shall not be installed in bathrooms or toilet rooms or in any inaccessible or unventilated space such as a closet or storeroom. Ready access shall be provided to waste receptors.

802.3.1 Size of receptors. A waste receptor shall be sized for the maximum discharge of all indirect waste pipes served by the receptor. Receptors shall be installed to prevent splashing or flooding.

802.3.2 Open hub waste receptors. Waste receptors shall be permitted in the form of a hub or pipe extending not less than 1 inch (25.4 mm) above a water-impervious floor and are not required to have a strainer.

802.4 Standpipes. Standpipes shall be individually trapped. Standpipes shall extend a minimum of 18 inches (457 mm) and a maximum of 42 inches (1066 mm) above the trap weir. Access shall be provided to all standpipes and drains for rodding.

SECTION 803 SPECIAL WASTES

803.1 Wastewater temperature. Steam pipes shall not connect to any part of a drainage or plumbing system and water above 140°F (60°C) shall not be discharged into any part of a drainage system. Such pipes shall discharge into an indirect waste receptor connected to the drainage system.

803.2 Neutralizing device required for corrosive wastes. Corrosive liquids, spent acids or other harmful chemicals that destroy or injure a drain, sewer, soil or waste pipe, or create noxious or toxic fumes or interfere with sewage treatment processes shall not be discharged into the plumbing system without being thoroughly diluted, neutralized or treated by passing through an approved dilution or neutralizing device. Such devices shall be automatically provided with a sufficient supply of diluting water or neutralizing medium so as to make the contents noninjurious before discharge into the drainage system. The nature of the corrosive or harmful waste and the method of its treatment or dilution shall be approved prior to installation.

803.3 System design. A chemical drainage and vent system shall be designed and installed in accordance with this code. Chemical drainage and vent systems shall be completely separated from the sanitary systems. Chemical waste shall not discharge to a sanitary drainage system until such waste has been treated in accordance with Section 803.2.

SECTION 804 MATERIALS, JOINTS AND CONNECTIONS

804.1 General. The materials and methods utilized for the construction and installation of indirect waste pipes and systems shall comply with the applicable provisions of Chapter 7.

1106.4 Vertical walls. In sizing roof drains and storm drainage piping, one-half of the area of any vertical wall that diverts rainwater to the roof shall be added to the projected roof area for inclusion in calculating the required size of vertical conductors, leaders and horizontal storm drainage piping.

1106.5 Parapet wall scupper location. Parapet wall roof drainage scupper and overflow scupper location shall comply with the requirements of the *building code*.

1106.6 Size of roof gutters. The size of semicircular gutters shall be based on the maximum projected roof area in accordance with Table 1106.6.

SECTION 1107 SECONDARY (EMERGENCY) ROOF DRAINS

1107.1 Secondary drainage required. Secondary (emergency) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason.

1107.2 Separate systems required. Secondary roof drain systems shall have the end point of discharge separate from the primary system. Discharge shall be above grade, in a location which would normally be observed by the building occupants or maintenance personnel.

TABLE 1106.6
SIZE OF SEMICIRCULAR ROOF GUTTERS

DIAMETER OF GUTTERS (inches)	HORIZONTALLY PROJECTED ROOF AREA (square feet)					
	Rainfall rate (inches per hour)					
	1	2	3	4	5	6
$\frac{1}{16}$ unit vertical in 12 units horizontal (0.5-percent slope)						
3	680	340	226	170	136	113
4	1,440	720	480	360	288	240
5	2,500	1,250	834	625	500	416
6	3,840	1,920	1,280	960	768	640
7	5,520	2,760	1,840	1,380	1,100	918
8	7,960	3,980	2,655	1,990	1,590	1,325
10	14,400	7,200	4,800	3,600	2,880	2,400
$\frac{1}{8}$ unit vertical 12 units horizontal (1-percent slope)						
3	960	480	320	240	192	160
4	2,040	1,020	681	510	408	340
5	3,520	1,760	1,172	880	704	587
6	5,440	2,720	1,815	1,360	1,085	905
7	7,800	3,900	2,600	1,950	1,560	1,300
8	11,200	5,600	3,740	2,800	2,240	1,870
10	20,400	10,200	6,800	5,100	4,080	3,400
$\frac{1}{4}$ unit vertical in 12 units horizontal (2-percent slope)						
3	1,360	680	454	340	272	226
4	2,880	1,440	960	720	576	480
5	5,000	2,500	1,668	1,250	1,000	834
6	7,680	3,840	2,560	1,920	1,536	1,280
7	11,040	5,520	3,860	2,760	2,205	1,840
8	15,920	7,960	5,310	3,980	3,180	2,655
10	28,800	14,400	9,600	7,200	5,750	4,800
$\frac{1}{2}$ unit vertical in 12 units horizontal (4-percent slope)						
3	1,920	960	640	480	384	320
4	4,080	2,040	1,360	1,020	816	680
5	7,080	3,540	2,360	1,770	1,415	1,180
6	11,080	5,540	3,695	2,770	2,220	1,850
7	15,600	7,800	5,200	3,900	3,120	2,600
8	22,400	11,200	7,460	5,600	4,480	3,730
10	40,000	20,000	13,330	10,000	8,000	6,660

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m².

STORM DRAINAGE

1107.3 Sizing of secondary drains. Secondary (emergency) roof drain systems shall be sized in accordance with Section 1106 based on the rainfall rate for which the primary system is sized in Tables 1106.2, 1106.3 and 1106.6. Scuppers shall be sized to prevent the depth of ponding water from exceeding that for which the roof was designed as determined by Section 1101.7. Scuppers shall not have an opening dimension of less than 4 inches (102 mm). The flow through the primary system shall not be considered when sizing the secondary roof drain system.

SECTION 1108 COMBINED SANITARY AND STORM SYSTEM

1108.1 Size of combined drains and sewers. *Deleted.*

SECTION 1109 VALUES FOR CONTINUOUS FLOW

1109.1 Equivalent roof area. Where there is a continuous or semicontinuous discharge into the building storm drain or building storm sewer, such as from a pump, ejector, air conditioning plant or similar device, each gallon per minute (L/m) of such discharge shall be computed as being equivalent to 96 square feet (9 m²) of roof area, based on a rainfall rate of 1 inch (25.4 mm) per hour.

SECTION 1110 CONTROLLED FLOW ROOF DRAIN SYSTEMS

1110.1 General. The roof of a structure shall be designed for the storage of water where the storm drainage system is engineered for controlled flow. The controlled flow roof drain system shall be an engineered system in accordance with this section and the design, submittal, approval, inspection and testing requirements of *Sections 106.6, 106.7 and 312*. The controlled flow system shall be designed based on the required rainfall rate in accordance with Section 1106.1.

1110.2 Control devices. The control devices shall be installed so that the rate of discharge of water per minute shall not exceed the values for continuous flow as indicated in Section 1109.1.

1110.3 Installation. Runoff control shall be by control devices. Control devices shall be protected by strainers.

1110.4 Minimum number of roof drains. Not less than two roof drains shall be installed in roof areas 10,000 square feet (929 m²) or less and not less than four roof drains shall be installed in roofs over 10,000 square feet (929 m²) in area.

SECTION 1111 SUBSOIL DRAINS

1111.1 Subsoil drains. Subsoil drains shall be open-jointed, horizontally split or perforated pipe conforming to one of the standards listed in Table 1102.5. Such drains shall not be less than 4 inches (102 mm) in diameter. Where the building is subject to backwater, the subsoil drain shall be protected by an accessibly located backwater valve. Subsoil drains shall

discharge to a trapped area drain, sump, dry well or approved location above ground. The subsoil sump shall not be required to have either a gas-tight cover or a vent. The sump and pumping system shall comply with Section 1113.1.

SECTION 1112 BUILDING SUBDRAINS

1112.1 Building subdrains. Building subdrains located below the public sewer level shall discharge into a sump or receiving tank, the contents of which shall be automatically lifted and discharged into the drainage system as required for building sumps. The sump and pumping equipment shall comply with Section 1113.1.

SECTION 1113 SUMPS AND PUMPING SYSTEMS

1113.1 Pumping system. The sump pump, pit and discharge piping shall conform to Sections 1113.1.1 through 1113.1.4.

1113.1.1 Pump capacity and head. The sump pump shall be of a capacity and head appropriate to anticipated use requirements.

1113.1.2 Sump pit. The sump pit shall not be less than 18 inches (457 mm) in diameter and 24 inches (610 mm) deep, unless otherwise approved. The pit shall be accessible and located such that all drainage flows into the pit by gravity. The sump pit shall be constructed of tile, steel, plastic, cast-iron, concrete or other approved material, with a removable cover adequate to support anticipated loads in the area of use. The pit floor shall be solid and provide permanent support for the pump.

1113.1.3 Electrical. *Deleted.*

1113.1.4 Piping. Discharge piping shall meet the requirements of Section 1102.2, 1102.3 or 1102.4 and shall include a *full open* valve and a full flow check valve. Pipe and fittings shall be the same size as, or larger than, pump discharge tapping.

CHAPTER 13

REFERENCED STANDARDS

1301 Referenced codes.

When indicated in the OBC, the following codes refer to provisions in the listed chapters of the Administrative Code:

Title	Referenced in code chapter numbers
Ohio Building Code	OAC chapters 4101:1-1 to 4101:1-35
Ohio Mechanical Code	OAC chapter 4101:2-1 to 4101:2-15
Ohio Boiler And Unfired Pressure Vessels Rules	OAC chapters 4101:4-1 to 4101:4-17
Ohio Elevator Code	OAC chapters 4101:5-1 to 4101:5-3

1302 Referenced standards.

This chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title, and the section or sections of this document that reference the standard. The application of the referenced standards shall be as specified in *Chapter 4101:1-1 of the Administrative Code*.

ANSI		American National Standards Institute 25 West 43rd Street, Fourth Floor New York, NY 10036
Standard Reference Number	Title	Referenced in code section number
Z21.22—99	Relief Valves for Hot Water Supply Systems.	504.2, 504.5
Z124.1—95	Plastic Bathtub Units.	407.1
Z124.2—95	Plastic Shower Receptors and Shower Stalls	417.1
Z124.3—95	Plastic Lavatories	416.1, 416.2
Z124.4—96	Plastic Water Closet Bowls and Tanks	420.1
Z124.6—97	Plastic Sinks	415.1, 418.1

ARI		Air-Conditioning & Refrigeration Institute 4100 North Fairfax Drive, Suite 200 Arlington, VA 22203
Standard reference number	Title	Referenced in code section number
1010—02	Self-Contained, Mechanically-Refrigerated, Drinking-Water Coolers.	410.1

ASME		American Society of Mechanical Engineers Three Park Avenue New York, NY 10016-5990
Standard Reference Number	Title	Referenced in code section number
A112.1.2—1991(R2002)	Air Gaps in Plumbing Systems	Table 608.1
A112.1.3—2000	Air Gap Fittings for Use with Plumbing Fixtures, Appliances and Appurtenances.	608.13.1, Table 608.1
A112.3.1—1993	Standard and Installation Procedures for Stainless Steel Drainage Systems or Sanitary, Storm and Chemical Applications, Above and Below Ground.	412.1, Table 702.1, Table 702.2, Table 702.3, Table 702.4, 708.2, Table 1102.4, Table 1102.5, 1102.6, Table 1102.7
A112.3.4—2000	Macerating Toilet Systems and Related Components	712.4.1
A112.4.1—1993(R2002)	Water Heater Relief Valve Drain Tubes.	504.6.2

REFERENCED STANDARDS

ASME—continued

A112.4.3—1999	Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System	405.4
A112.6.1M—1997(R2002)	Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use	405.4.3
A112.6.2—2001	Framing-Affixed Supports for Off-the-Floor Water Closets with Concealed Tanks	405.4.3
A112.6.3—2001	Floor and Trench Drains	412.1
A112.6.7—2001	Enameled and Epoxy-coated Cast-iron and PVC plastic Sanitary Floor Sinks	427.1
A112.14.1—2003	Backwater Valves	715.2
A112.14.3—2001	Grease Interceptors	1003.3.4
A112.14.4—2001	Grease Removal Devices	1003.3.4
A112.18.1—2003	Plumbing Fixture Fittings	424.1
A112.18.3M—2002	Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings	424.5
A112.18.6—2003	Flexible Water Connectors	605.6
A112.18.7—1999	Deck mounted Bath/Shower Transfer Valves with Integral Backflow Protection	424.6
A112.19.1M—1994(R1999)	Enameled Cast Iron Plumbing Fixtures	407.1, 410.1, 415.1, 416.1, 418.1
A112.19.2M—1998	Vitreous China Plumbing Fixtures	401.2, 405.9, 408.1, 410.1, 416.1, 418.1, 419.1, 420.1
A112.19.3M—1987(R1996)	Stainless Steel Plumbing Fixtures (Designed for Residential Use)	405.9, 415.1, 416.1, 418.1
A112.19.4M—1994(R1999)	Porcelain Enameled Formed Steel Plumbing Fixtures	407.1, 416.1, 418.1
A112.19.5—1999	Trim for Water-Closet Bowls, Tanks, and Urinals	425.4
A112.19.6—1995	Hydraulic Performance Requirements for Water Closets and Urinals	419.1, 420.1
A112.19.7M—1995	Whirlpool Bathtub Appliances	421.1
A112.19.8M—1987(R1996)	Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances	421.4
A112.19.9M—1991(2002)	Non-Vitreous Ceramic Plumbing Fixtures	407.1, 408.1, 410.1, 415.1, 416.1, 417.1, 418.1, 420.1
A112.19.12—2000	Wall Mounted and Pedestal Mounted, Adjustable and Pivoting Lavatory and Sink Carrier Systems	416.4, 418.3
A112.19.13—(2002)	Electrohydraulic Water Closets	420.1
A112.19.15—2001	Bathtub/Whirlpool Bathtubs with Pressure Sealed Doors	407.4, 421.5
A112.21.2M—1983	Roof Drains	1102.6
A112.36.2M—1991(2002)	Cleanouts	708.2
B1.20.1—1983(2001)	Pipe Threads, General Purpose (inch)	605.10.3, 605.12.3, 605.14.4, 605.16.3, 605.18.1, 705, 705.2.3, 705.4.3
B16.3—1998	Malleable Iron Threaded Fittings	Table 605.5, Table 702.4, Table 1102.7
B16.4—1998	Gray Iron Threaded Fittings	Table 605.5, Table 702.4, Table 1102.7
B16.9—2003	Factory-Made Wrought Steel Buttwelding Fittings	Table 605.5, Table 702.4, Table 1102.7
B16.11—2001	Forged Fittings, Socket-Welding and Threaded	Table 605.5, Table 702.4, Table 1102.7
B16.12—1998	Cast-Iron Threaded Drainage Fittings	Table 605.5, Table 702.4, Table 1102.7
B16.15—1985(R1994)	Cast Bronze Threaded Fittings	Table 605.5, Table 702.4, Table 1102.7
B16.18—2001	Cast Copper Alloy Solder Joint Pressure Fittings	Table 605.5, Table 702.4, Table 1102.7
B16.22—2001	Wrought Copper and Copper Alloy Solder Joint Pressure Fittings	Table 605.5, Table 702.4, Table 1102.7
B16.23—2002	Cast Copper Alloy Solder Joint Drainage Fittings DWV	Table 605.5, Table 702.4, Table 1102.7
B16.26—1988	Cast Copper Alloy Fittings for Flared Copper Tubes	Table 605.5, Table 702.4, Table 1102.7
B16.28—1994	Wrought Steel Buttwelding Short Radius Elbows and Returns	Table 605.5, Table 702.4, Table 1102.7
B16.29—2001	Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings—DWV	Table 605.5, Table 702.4, Table 1102.7

ASSE

American Society of Sanitary Engineering
901 Canterbury Road, Suite A
Westlake, OH 44145

Standard Reference Number	Title	Referenced in code section number
1001—02	Performance Requirements for Atmospheric Type Vacuum Breakers	425.2, Table 608.1, 608.13.6
1002—99	Performance Requirements for Antisiphon Fill Valves (Ballcocks) for Gravity Water Closet Flush Tanks	425.3.1, Table 608.1
1003—01	Performance Requirements for Water Pressure Reducing Valves	604.8
1004—90	Performance Requirements for Backflow Prevention Requirements for Commercial Dishwashing Machines	409.1
1005—99	Performance Requirements for Water Heater Drain Valves	501.3
1006—86	Performance Requirements for Residential Use Dishwashers	409.1
1007—92	Performance Requirements for Home Laundry Equipment	406.1, 406.2
1008—86	Performance Requirements for Household Food Waste Disposer Units	413.1
1009—90	Performance Requirements for Commercial Food Waste Grinder Units	413.1
1010—04	Performance Requirements for Water Hammer Arresters	604.9
1011—04	Performance Requirements for Hose Connection Vacuum Breakers	Table 608.1, 608.13.6

ASTM—continued

D 2666—96a	Specification for Polybutylene (PB) Plastic Tubing	Table 605.3
D 2672—96a(2003)	Specification for Joints for IPS PVC Pipe Using Solvent Cement	Table 605.3
D 2729—03	Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	Table 1102.5
D 2737—03	Specification for Polyethylene (PE) Plastic Tubing	Table 605.3
D 2751—96a	Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings	Table 702.3, Table 1102.4
D 2846/D 2846M—99	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot and Cold Water Distribution Systems	Table 605.3, Table 605.4, 605.16.2
D 2855—96(2002)	Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings	605.21.2, 705.8.2, 705.14.2
D 2949—01a	Specification for 3.25-In Outside Diameter Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	Table 702.1, Table 702.2, Table 702.3
D 3034—00	Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	Table 702.3, Table 702.4, Table 1102.4
D 3139—98	Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals	605.10.1, 605.21.1
D 3212—96a(2003)	Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals	705.2.1, 705.7.1, 705.8.1, 705.14.1
D 3309—96a(2002)	Specification for Polybutylene (PB) Plastic Hot and Cold Water Distribution Systems	Table 605.3, Table 605.4, 605.19.2, 605.19.3
D 3311—02	Specification for Drain, Waste and Vent (DWV) Plastic Fittings Patterns	Table 702.4
D 4068—01	Specification for Chlorinated Polyethylene (CPE) Sheeting for Concealed Water-Containment Membrane	417.5.2.2
D 4551—96(2001)	Specification for Poly (Vinyl Chloride) (PVC) Plastic Flexible Concealed Water-Containment Membrane	417.5.2.1
F 405—97	Specification for Corrugated Polyethylene (PE) Tubing and Fittings	Table 1102.5
F 409—02	Specification for Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings	424.1.2, Table 1102.7
F 437—99	Specification for Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	Table 605.5, Table 1102.7
F 438—04	Specification for Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40	Table 605.5, Table 1102.7
F 439—02 ^{E1}	Specification for Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	Table 605.5, Table 1102.7
F 441/F 441M—02	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80	Table 605.3, Table 605.4, Table 605.5
F 442/F 442M—99	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)	Table 605.3, Table 605.4, Table 605.5
F 477—02 ^{E1}	Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe	605.22, 705.16
F 493—04	Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings	605.16.2
F 628—01	Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core	Table 702.1, Table 702.2, Table 702.3, Table 702.4, 705.2.2, 705.7.2, Table 1102.4
F 656—02	Specification for Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings	605.21.2, 705.8.2, 705.14.2
F 714—03	Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter	Table 702.3
F 876—04	Specification for Cross-linked Polyethylene (PEX) Tubing	Table 605.3
F 877—02a	Specification for Cross-linked Polyethylene (PEX) Plastic Hot and Cold Water Distribution Systems	Table 605.3, Table 605.4
F 891—00 ^{E1}	Specification for Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core	Table 702.1, Table 702.2, Table 702.3, Table 702.4, Table 1102.4, Table 1102.5
F 1281—03	Specification for Cross-Linked Polyethylene/Aluminum/Cross-Linked Polyethylene (PEX-AL-PEX) Pressure Pipe	Table 605.3, Table 605.4
F 1282—03	Specification for Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure Pipe	Table 605.3, Table 605.4
F 1488—03	Specification for Coextruded Composite Pipe	Table 702.1, Table 702.2, Table 702.3
F 1807—04	Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing	Table 605.5, 605.17.2
F 1866—98	Specification for Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings	Table 702.4
F 1960—04	Specification for Cold Expansion Fittings with PEX Reinforcing Rings for use with Cross-linked Polyethylene (PEX) Tubing	Table 605.5
F 1974—04	Specification for Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene Composite Pressure Pipe	Table 605.5
F 2080—04	Specifications for Cold-Expansion Fittings with Metal Compression-Sleeves for Cross-linked Polyethylene (PEX) Pipe	Table 605.5

REFERENCED STANDARDS

AWS

American Welding Society
550 N.W. LeJeune Road
Miami, FL 33126

Standard Reference Number	Title	Referenced in code section number
A5.8—04	Specifications for Filler Metals for Brazing and Braze Welding	605.12.1, 605.14.1, 605.15.1, 705.4.1, 705.9.1, 705.10.1

AWWA

American Water Works Association
6666 West Quincy Avenue
Denver, CO 80235

Standard Reference Number	Title	Referenced in code section number
C104/A21.4-03	Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.	.605.3, 605.5
C110/A21.10-03	Standard for Ductile-Iron and Gray-Iron Fittings, 3 Inches through 48 Inches (76 mm through 1219 mm), for Water	Table 605.5, Table 702.4, Table 1102.7
C111/A21.11-00	Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings	.605.13
C115/A21.15-99	Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges	Table 605.3
C151/A21.51-02	Standard for Ductile-Iron Pipe, Centrifugally Cast for Water.	Table 605.3
C153/A21.53-00	Standard for Ductile-Iron Compact Fittings for Water Service	Table 605.5
C510—97	Double Check Valve Backflow Prevention Assembly	Table 608.1, 608.13.7
C511—97	Reduced-Pressure Principle Backflow Prevention Assembly.	Table 608.1, 608.13.2, 608.16.2
C651—99	Disinfecting Water Mains	.610.1
C652—02	Disinfection of Water-Storage Facilities	.610.1

CISPI

Cast Iron Soil Pipe Institute
5959 Shallowford Road, Suite 419
Chattanooga, TN 37421

Standard Reference Number	Title	Referenced in code section number
301—04	Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications.	Table 702.1, Table 702.2, Table 702.3, Table 702.4, Table 1102.4, Table 1102.5, Table 1102.7
310—04	Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications.	.705.5.3

CSA

Canadian Standards Association
178 Rexdale Blvd.
Rexdale (Toronto), Ontario, Canada M9W 1R3

Standard Reference Number	Title	Referenced in code section number
B45.1—02	Ceramic Plumbing Fixtures.	.408.1, 416.1, 418.1, 419.1, 420.1
B45.2—02	Enameled Cast-Iron Plumbing Fixtures.	.407.1, 415.1, 416.1, 418.1
B45.3—02	Porcelain Enameled Steel Plumbing Fixtures.	.407.1, 416.1, 418.1
B45.4—02	Stainless-Steel Plumbing Fixtures	.415.1, 416.1, 418.1, 420.1
B45.5—02	Plastic Plumbing Fixtures	.407.1, 416.2, 417.1, 419.1, 420.1, 421.1
B45.9—02	Macerating Systems and Related Components	.712.4.1
B45.10—01	Hydromassage Bathtubs	.421.1
B64.7—01	Vacuum Breakers, Laboratory Faucet Type (LFVB)	Table 608.1, 608.13.6
B79—94(2000)	Floor, Area and Shower Drains, and Cleanouts for Residential Construction	.412.1
B125—01	Plumbing Fittings	.424.1, 424.3, 424.4, 425.3.1, 425.4, Table 608.1
B137.1—02	Polyethylene Pipe, Tubing and Fittings for Cold Water Pressure Services	Table 605.3
B137.2—02	PVC Injection-Moulded Gasketed Fittings for Pressure Applications	Table 605.5, Table 1102.7
B137.3—02	Rigid Poly (Vinyl Chloride) (PVC) Pipe for Pressure Applications.	Table 605.3, 605.21.2, 705.8.2, 705.14.2

CSA—continued

B137.5—02	Cross-Linked Polyethylene (PEX) Tubing Systems for Pressure Applications.	Table 605.3, Table 605.4
B137.6—02	CPVC Pipe, Tubing and Fittings for Hot and Cold Water Distribution Systems.	Table 605.3, Table 605.4
B181.1—02	ABS Drain, Waste, and Vent Pipe and Pipe Fittings.	Table 702.1, Table 702.2, Table 702.4, 705.2.2, 705.7.2, 715.2
B181.2—02	PVC Drain, Waste, and Vent Pipe and Pipe Fittings.	Table 702.1, Table 702.2, 705.8.2, 705.14.2, 715.2
B182.1—02	Plastic Drain and Sewer Pipe and Pipe Fittings.	705.8.2, 705.14.2
B182.2—02	PVC Sewer Pipe and Fittings (PSM Type)	Table 702.3, Table 1102.4, Table 1102.5
CAN3-B137.8M—02	Polybutylene (PB) Piping for Pressure Applications.	Table 605.3, Table 605.4, 605.19.2, 605.19.3
CAN/CSA-A257.1M—03	Circular Concrete Culvert, Storm Drain, Sewer Pipe and Fittings.	Table 702.3, Table 1102.4
CAN/CSA-A257.2M—03	Reinforced Circular Concrete Culvert, Storm Drain, Sewer Pipe and Fittings	Table 702.3, Table 1102.4
CAN/CSA-A257.3M—03	Joints for Circular Concrete Sewer and Culvert Pipe, Manhole Sections, and Fittings Using Rubber Gaskets	705.6, 705.16
CAN/CSA-B64.1.1—01	Vacuum Breakers, Atmospheric Type (AVB)	425.2, Table 608.1, 608.13.6
CAN/CSA-B64.2—01	Vacuum Breakers, Hose Connection Type (HCVB)	Table 608.1, 608.13.6
CAN/CSA-B64.2.2—01	Vacuum Breakers, Hose Connection Type (HCVB) with Automatic Draining Feature.	Table 608.1, 608.13.6
CAN/CSA-B64.3—01	Backflow Preventers, Dual Check Valve Type with Atmospheric Port (DCAP).	Table 608.1, 608.13.3, 608.16.2
CAN/CSA-B64.4—01	Backflow Preventers, Reduced Pressure Principle Type (RP)	Table 608.1, 608.13.2, 608.16.2
CAN/CSA-B64.10—01	Manual for the Selection, Installation, Maintenance and Field Testing of Backflow Prevention Devices	312.9.2
CAN/CSA-B137.9—02	Polyethylene/Aluminum/Polyethylene Composite Pressure Pipe Systems	Table 605.3
CAN/CSA-B137.10M—02	Cross-linked Polyethylene/Aluminum/Polyethylene Composite Pressure Pipe Systems	Table 605.3, Table 605.4
CAN/CSA-B181.3—02	Polyolefin Laboratory Drainage Systems.	Table 702.1, Table 702.2
CAN/CSA-B182.4—02	Profile PVC Sewer Pipe and Fittings.	Table 702.3, Table 1102.4, Table 1102.5
CAN/CSA-B602—05	Mechanical Couplings for Drain, Waste, and Vent Pipe and Sewer Pipe	705.2.1, 705.5.3, 705.6, 705.7.1, 705.14.1, 705.15, 705.16

FS

Federal Specification*
1941 Jefferson Davis Highway, Suite 104
Arlington, VA 22202

Standard Reference Number	Title	Referenced in code section number
TT-P-1536A(1975)	Federal Specification for Plumbing Fixture Setting Compound.	405.4

* Standards are available from the Supt. of Documents, U.S. Government Printing Office, Washington, DC 20402-9325.

ICC

International Code Council
5203 Leesburg Pike, Suite 600
Falls Church, VA 22041

Standard Reference Number	Title	Referenced in code section number
IECC—03	International Energy Conservation Code®	313.1, 607.2, 607.2.1
IFGC—03	International Fuel Gas Code®.	101.2, 201.3, 502.1

ISEA

Industry Safety Equipment Association
1901 N. Moore Street, Suite 808
Arlington, VA 22209

Standard Reference Number	Title	Referenced in code section number
Z358.1—98	Emergency eyewash and shower equipment.	411.1

REFERENCED STANDARDS

NFPA

National Fire Protection Association
Batterymarch Park
Quincy, MA 02269

Standard Reference Number	Title	Referenced in code section number
50—01	Bulk Oxygen Systems at Consumer Sites.	1203.1
51—02	Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes	1203.1
70—05	National Electrical Code	502.1, 504.3, 1113.1.3
99C—05	Gas and Vacuum Systems	1202.1

NSF

National Sanitation Foundation
789 Dixboro Road
Ann Arbor, MI 48105

Standard Reference Number	Title	Referenced in code section number
3—2003	Commercial Spray-Type <i>Warewashing Equipment</i>	409.1
18—1996a	Manual Food and Beverage Dispensing Equipment.	426.1
14—2003	Plastic Piping System Components and Related Materials	303.3, 611.3
42—2002e	Drinking Water Treatment Units—Aesthetic Effects	611.1, 611.3
44—2002e	Residential Cation Exchange Water Softeners.	611.1, 611.3
53—2002e	Drinking Water Treatment Units—Health Effects	611.1, 611.3
58—2003e	Reverse Osmosis Drinking Water Treatment Systems	611.2
61—2002e	Drinking Water System Components—Health Effects.	424.1, 605.3, 605.4, 605.5, 611.3
62—2004	Drinking Water Distillation Systems	611.1

PDI

Plumbing and Drainage Institute
45 Bristol Drive, Suite 101
South Easton, MA 02375

Standard Reference Number	Title	Referenced in code section number
G101(1998)	Testing and Rating Procedure for Grease Interceptors with Appendix of Sizing and Installation Data.	1003.3.4