

Washington State Amendments	UPC- 2015	Significant Changes To UPC-2018
102.1 Conflict Between Codes. Delete paragraph.		
	404.7 102.3 Maintenance. The plumbing and drainage system of a premises under the Authority Having Jurisdiction shall be maintained in a sanitary and safe operating condition by the owner or owner's agent. Devices or safeguards required by this code shall be maintained in accordance with the code edition under which installed.	
	The owner or the owner's designated agent shall be responsible for maintenance of the plumbing system. To determine compliance with this subsection, the Authority Having Jurisdiction shall be permitted to cause a plumbing system to be reinspected.	
	404.9 102.4 Additions, Alterations, or Repairs. Additions, alterations, renovations, or repairs shall conform to that required for a new system without requiring the existing plumbing system to be in accordance with the requirements of this code. Additions, alterations, renovations, or repairs shall not cause an existing system to become unsafe, insanitary, or overloaded.	
	Additions, alterations, renovations, or repairs to existing replacement of plumbing systems shall comply with the provisions for new construction, unless such deviations are found to be necessary and are first approved by the Authority Having Jurisdiction, systems except as otherwise provided in Section 404.14.	
	404.14.5 102.7 Moved Buildings Structures. Revised and renumbered.	
103.3.1 Certification. State rules and regulations concerning certification shall apply.		
	104.3.1 Construction Documents. New section.	
	104.4.1 Approved Plans or Construction Documents. New section.	
	104.4.4 Extensions. New section.	
	105.2.2 New Plumbing Work 105.2 Required Inspections.	
	Add- The Authority Having Jurisdiction shall make the following inspections and other such inspections as necessary. The permittee of the permittee's authorized agent shall be responsible for the scheduling of such inspections as follows:	
	(1) Underground inspection shall be made after trenches or ditches are excavated and bedded, pipe installed, and before backfill is put in place.	
	(2) Rough-in inspection shall be made prior to installation of wall or ceiling membranes.	
	(3) Final inspection shall be made upon completion of the installation.	
	105.4 Connection to Service Utility. New section.	
	203.0 Accepted Engineering Practice. New definition.	
	203.0 Anesthetizing Location. New definition.	
	203.0 Appliance. New definition.	
	203.0 Appliance, Low-Heat. New definition.	
	203.0 Appliance, Medium-Heat. New definition.	
	204.0 Bottle Filling Station. New definition.	
205.0 Certified Backflow Assembly Tester - A person certified by the Washington state department of health under chapter 246-292 WAC to inspect (for correct installation and approval status) and test (for proper operation), maintain and repair (in compliance with chapter 18.106 RCW) backflow prevention assemblies, devices and air gaps.	205.0 Category 1. New definition.	
	205.0 Category 2. New definition.	
	205.0 Category 3. New definition.	
	205.0 Category 3 Medical Vacuum System. New definition.	
	205.0 Chimney, High-Heat Appliance-Type. New definition.	
	205.0 Chimney, Low-Heat Appliance-Type. New definition.	
	205.0 Chimney, Medium-Heat Appliance-Type. New definition.	
	205.0 Chimney, Residential Appliance-Type. New definition.	
	205.0 Condensate. New definition.	
	205.0 Construction Documents. New definition.	
	205.0 Copper Alloy. New definition.	
	205.0 Critical Care Area. New definition.	
	206.0 Drinking Fountain. New definition.	
	206.0 Dry Vent. New definition.	
	207.0 Exam Room. New definition.	
	207.0 Expansion Joint. New definition.	
	208.0 Fixture Fitting. New definition.	
210.0 Hot Water - Water at a temperature exceeding or equal to 100°F.		

<p>211.0 Insanitary - A condition that is contrary to sanitary principles or is injurious to health. Conditions to which "insanitary" shall apply include the following:</p> <p>(1) A trap that does not maintain a proper trap seal.</p> <p>(2) An opening in a drainage system, except where lawful, that is not provided with an approved liquid-sealed trap.</p> <p>(3) A plumbing fixture or other waste discharging receptor or device that is not supplied with water sufficient to flush and maintain the fixture or receptor in a clean condition, except as otherwise provided in this code.</p> <p>(4) A defective fixture, trap, pipe, or fitting.</p> <p>(5) A trap, except where in this code exempted, directly connected to a drainage system, the seal of which is not protected against siphonage and backpressure by a vent pipe.</p> <p>(6) A connection, cross-connection, construction, or condition, temporary or permanent, that would permit or make possible by any means whatsoever for an unapproved foreign matter to enter a water distribution system used for domestic purposes.</p> <p>(7) The foregoing enumeration of conditions to which the term "insanitary" shall apply, shall not preclude the application of that term to conditions that are, in fact, insanitary.</p>		
	<p>212.0 Joint, Compression. <i>New definition.</i></p>	
	<p>212.0 Joint, Flanged. <i>New definition.</i></p>	
	<p>212.0 Joint, Flared. <i>New definition.</i></p>	
	<p>212.0 Joint, Mechanical. <i>New definition.</i></p>	
	<p>214.0 Levels of Sedation. <i>New definition.</i></p>	
	<p>215.0 Medical Air. <i>Revised.</i></p>	
	<p>215.0 Medical Gas. <i>Revised.</i></p>	
	<p>215.0 Medical Gas System. <i>Revised.</i></p>	
	<p>215.0 Medical Support Gas. <i>New definition.</i></p>	
	<p>215.0 Medical-Surgical Vacuum. <i>New definition.</i></p>	
	<p>215.0 Medical-Surgical Vacuum System. <i>New definition.</i></p>	
<p>218.0 Plumbing System - Includes all potable water, building supply and distribution pipes, all reclaimed or other alternate source water systems, all rainwater systems, all plumbing fixtures and traps, all drainage and vent pipe(s), and all building drains including their respective joints and connection, devices, receptors, and appurtenances within the property lines of the premises and shall include potable water piping, potable water treating or using equipment, medical gas and medical vacuum systems, and water heaters: Provided, That no certification shall be required for the installation of a plumbing system within the property lines and outside a building.</p>	<p>218.0 Patient Care Room. <i>New definition.</i></p>	<p>218.0 Patient Care Space. <i>Revised.</i></p>
	<p>218.0 Patient Medical Gas. <i>New definition.</i></p>	
	<p>218.0 Proportioning System for Medical Air USP. <i>New definition.</i></p>	
	<p>220.0 Registered Design Professional. <i>New definition.</i></p>	
	<p>221.0 Scavenging. <i>New section.</i></p>	
	<p>221.0 Sterilizer. <i>New definition.</i></p>	
	<p>224.0 Valve, Pressure-Relief. <i>New definition.</i></p>	
	<p>224.0 Vent Offset. <i>New definition.</i></p>	
	<p>225.0 Wet Procedure Locations. <i>New definition.</i></p>	
<p>225.0 Water/Wastewater Utility - A public or private entity, including a water purveyor as defined in chapter 246-290 WAC, which may treat, deliver, or do both functions to reclaimed (recycled) water, potable water, or both to wholesale or retail customers.</p>		
	<p>301.0 MATERIALS- STANDARDS AND ALTERNATES GENERAL</p>	
	<p>301.1 Applicability. <i>New section.</i></p>	
	<p>301.1.4 301.2.1 Marking. <i>Add-</i></p>	
	<p>Exception: Marking shall not be required on nipples created from cutting and threading of approved pipe.</p>	<p>301.2.1 Marking. Each length of pipe and each pipe fitting, trap, fixture, material, and device used in a plumbing system shall have cast, stamped, or indelibly marked on it any markings required by the applicable referenced standards and listing agency, and the manufacturer's mark or name, which shall readily identify the manufacturer to the end user of the product. Where required by the approved standard that applies, the product shall be marked with the weight and quality of the product. Materials and devices used or entering into the construction of plumbing and drainage systems, or parts hereof, shall be marked and identified in a manner satisfactory to the Authority Having Jurisdiction. Such markings shall be done by the manufacturer. Field markings shall not be acceptable. Exception: Marking shall not be required on nipples created from cutting and threading of approved pipe.</p>
<p>301.2.2 Standards. Standards listed or referred to in this chapter or other chapters cover materials which will conform to the requirements of this code, when used in accordance with the limitations imposed in this or other chapters thereof and their listing. Where a standard covers materials of various grades, weights, quality, or configurations, the portion of the listed standard that is applicable shall be used. Design and materials for special conditions or materials not provided for herein shall be permitted to be used by special permission of the authority having jurisdiction after the authority having jurisdiction has been satisfied as to their adequacy in accordance with Section 301.2.</p>		
	<p>301.2.3 Plastic Pipe, Plastic Pipe Fittings, and Components. <i>New section.</i></p>	
	<p>301.2.4 Cast-Iron Soil Pipe and Fittings. <i>New section.</i></p>	

<p>301.3 Alternative Materials and Methods of Construction Equivalency. Nothing in this code is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this code. Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency. The authority having jurisdiction shall have the authority to approve or disapprove the system, method, or device for the intended purpose. Where the alternate material, design or method of construction is not approved, the code official shall respond in writing, stating the reasons why the alternative was not approved. However, the exercise of this discretionary approval by the authority having jurisdiction shall have no effect beyond the jurisdictional boundaries of said authority having jurisdiction. An alternate material or method of construction so approved shall not be considered as in accordance with the requirements, intent or both of this code for a purpose other than that granted by the authority having jurisdiction where the submitted data does not prove equivalency.</p>		
<p>310.4 Use of Vent and Waste Pipes. Except as hereinafter provided in Sections 908.0 through 911.0 and Appendix C, no vent pipe shall be used as a soil or waste pipe, nor shall any soil or waste pipe be used as a vent.</p>	<p>301.4.1 Costal High Hazard Zones. New section.</p>	
	<p>312.6 Freezing Protection. No water, soil, or waste pipe shall be installed or permitted outside of a building, <u>in attics or crawl spaces</u>, or in an exterior wall unless, where necessary, adequate provision is made to protect such pipe from freezing.</p>	
<p>312.6 Freezing Protection. No water, soil, or waste pipe shall be installed or permitted outside of a building, in attics or crawl spaces, or in an exterior wall unless, where necessary, adequate provision is made to protect such pipe from freezing. All hot and cold water pipes installed outside the conditioned space shall be insulated to a minimum R-3.</p>		
<p>312.7 Fire-Resistant Construction. All pipe penetrating floor/ceiling assemblies and fire-resistance rated walls or partitions shall be protected in accordance with the requirements of the building code.</p>	<p>312.13 Exposed ABS Piping. New section.</p>	
	<p>312.14 Exposed PVC Piping. New section.</p>	
	<p>314.1 Trenches. Trenches deeper than the footing of a building or structure and paralleling the same shall not be less than 45 degrees (0.79 rad) <u>from the bottom exterior edge of the footing therefrom</u>, or as approved in accordance with Section 304.0 301.2 of this code.</p>	
	<p>314.4 Excavations. Add- <u>Underground thermoplastic pipe and fittings shall be installed in accordance with this code and Section 314.4.1.</u></p>	
	<p>314.4.1 Installation of Thermoplastic Pipe and Fittings. New section.</p>	
	<p>316.1 General. Exchange copper alloy for brass.</p>	
	<p>320.0 Rehabilitation of Piping Systems. New section.</p>	
	<p>401.1 Applicability. New section.</p>	
		<p>402.4 Wall-Hung Fixtures. Wall-hung fixtures shall be rigidly supported by metal supporting members so that no strain is transmitted to the connections. <u>Floor-affixed supports for off-the-floor plumbing fixtures for public use shall comply with ASME A112.6.1M. Framing-affixed supports for off-the-floor water closets with concealed tanks shall comply with ASME A112.6.2.</u> Flush tanks and similar appurtenances shall be secured by approved non-corrosive screws or bolts.</p>
<p>402.5 Setting. Fixtures shall be set level and in proper alignment with reference to adjacent walls. No water closet or bidet shall be set closer than fifteen (15) inches (381 mm) from its center to any side wall or obstruction nor closer than thirty (30) inches (762 mm) center to center to any similar fixture. The clear space in front of any water closet or bidet shall be not less than twenty-four (24) inches (610 mm). No urinal shall be set closer than twelve (12) inches (305 mm) from its center to any side wall or partition nor closer than twenty-four (24) inches (610 mm) center to center. EXCEPTIONS: 1. The clear space in front of a water closet, lavatory or bidet in dwelling units and sleeping units shall be not less than 21 inches (533 mm). 2. The installation of paper dispensers or accessibility grab bars shall not be considered obstructions</p>		
	<p>403.0 Water-Conserving Fixtures and Fittings Accessible Plumbing Fixtures. New section.</p>	
	<p>403.1 General. New section.</p>	
	<p>403.2 Fixtures and Fixture Fittings for Persons with Disabilities.</p>	
	<p>403.3 Exposed Pipes and Surfaces. <u>New section.</u></p>	<p>403.3 Exposed Pipes and Surfaces. Add- ASTM C1822.</p>
		<p>404.0 Waste Fittings and Overflows</p>
		<p>404.1 Waste Fittings. <u>New section.</u></p>
<p>405.4 Application. No individual, public or private corporation, firm, political subdivision, government agency, or other legal entity, may, for purposes of use in the state of Washington, distribute, sell, offer for sale, import, install, or approve for installation any plumbing fixtures or fittings unless the fixtures or fittings meet the standards as provided for in this chapter.</p>		<p>404.1 404.2 General Overflows. Renumbered.</p>
	<p>407.1 Application. New section.</p>	

<p>407.2 Water Consumption. The maximum water use allowed in gallons per minute (gpm) or liters per minute (lpm) for any of the following faucets and replacement aerators is the following: Lavatory faucets 2.5 gpm/9.5 lpm Kitchen faucets 2.5 gpm/9.5 lpm Replacement aerators 2.5 gpm/9.5 lpm Public lavatory faucets other than metering 0.5 gpm/1.9 lpm</p>	<p>407.2 Water Consumption. <u>New section.</u></p>	
	<p>407.2.1 Maximum Flow Rate. <u>New section.</u></p>	
<p>407.4 Metering Valves. Lavatory faucets located in restrooms intended for use by the general public shall be equipped with a metering valve designed to close by spring or water pressure when left unattended (self-closing). EXCEPTIONS: 1. Where designed and installed for use by persons with a disability. 2. Where installed in day care centers, for use primarily by children under 6 years of age</p>	<p>407.2.2 Metering Faucets. <u>New section.</u> 407.4 Transient Public Lavatories. <u>New section.</u></p>	
	<p>407.5 Waste Outlet. <u>New section.</u> 407.6 Overflow. <u>New section.</u></p>	<p>407.6 Overflow. Where overflows are provided, they shall be installed in accordance with Section 404.4 404.2.</p>
	<p>408.1. Application. <u>Revised.</u></p>	
<p>408.2 Water Consumption. Showerheads shall have a maximum flow rate of not more than 2.5 gpm at 80 psi (9.5 L/m at 552 kPa), in accordance with ASME A112.18.1/CSA B125.1. EXCEPTION: Emergency use showers shall be exempt from the maximum water usage rates.</p> <p>408.4 Waste Outlet. Showers shall have a waste outlet and fixture tailpiece not less than two (2) inches (50 mm) in diameter. Fixture tailpieces shall be constructed from the materials specified in Section 701.1 for drainage piping. Strainers serving shower drains shall have a waterway at least equivalent to the area of the tailpiece. EXCEPTION: In a residential dwelling unit where a 2 inch waste is not readily available and approval of the AHJ has been granted, the waste outlet, fixture tailpiece, trap and trap arm may be 1-1/2 inch when an existing tub is being replaced by a shower sized per Section 408.6(2). This exception only applies where one shower head rated at 2.5 gpm is installed</p>		
<p>408.5 Finished Curb or Threshold. Add- Thresholds shall be of sufficient width to accommodate a minimum 22 inch (559 mm) door. Shower doors shall open so as to maintain not less than a 22 inch (559 mm) unobstructed opening for egress. <u>The immediate adjoining space to showers without thresholds shall be considered a wet location and shall comply with the requirements of the building, residential, and electrical codes.</u></p>		
<p>408.6 Shower Compartments. Shower compartments, regardless of shape, shall have a minimum finished interior of nine hundred (900) square inches (0.58 m²) and shall also be capable of encompassing a thirty (30) inch (762 mm) circle. The minimum required area and dimensions shall be measured at a height equal to the top of the threshold and at a point tangent to its centerline. The area and dimensions shall be maintained to a point of not less than seventy (70) inches (1,778 mm) above the shower drain outlet with no protrusions other than the fixture valve or valves, shower head, soap dishes, shelves, and safety grab bars or rails. Fold-down seats in accessible shower stalls shall be permitted to protrude into the thirty (30) inch (762 mm) circle. EXCEPTIONS: 1. Showers that are designed to comply with ICC/ANSI A117.1. 2. The minimum required area and dimension shall not apply for a shower receptor having overall dimensions of not less than thirty (30) inches (762 mm) in width and sixty (60) inches (1,524 mm) in length.</p>		
	<p>408.7.1 PVC Sheets. <u>New section.</u></p>	
	<p>408.7.2 Chlorinated Polyethylene (CPE) Sheets. <u>New section.</u></p>	
	<p>408.7.3 Sheet Lead. <u>New section.</u></p>	
	<p>408.7.4 Sheet Copper. <u>New section.</u></p>	
	<p>409.1. Application. <u>Revised.</u></p>	
		<p>409.3 Overflow. Where overflows are provided, they shall be installed in accordance with Section 404.4-404.2.</p>
	<p>409.6.1 Flexible PVC Hoses and Tubes. <u>New section.</u></p>	
	<p>410.0 Bidets. <u>Revised.</u></p>	
	<p>411.1 Application. <u>New section.</u></p>	
<p>411.2 Water Consumption. Water closets shall have a maximum consumption not to exceed 1.6 gallons (6.0 L) of water per flush in accordance with ASME A112.19.2/CSA B45.1. No water closet that operates on a continuous flow or continuous flush basis shall be permitted. EXCEPTIONS: 1. Water closets located in day care centers, intended for use by young children may have a maximum water use of 3.5 gallons per flush or 13.25 liters per flush. 2. Water closets with bed pan washers may have a maximum water use of 3.5 gallons per flush or 13.25 liters per flush. 3. Blow out bowls, as defined in ANSI/ASME A112.19.2M, Section 5.1.2.3 may have a maximum water use of 3.5 gallons per flush or 13.25 liters per flush.</p>	<p>411.2 Water Consumption. <u>New section.</u></p>	
	<p>411.2.1 Dual Flush Closets. <u>New section.</u></p>	
	<p>411.2.2 Fisurometer Valve Activated Water Closets. <u>New section.</u></p>	
	<p>411.3 Water Closet Seats. <u>New section.</u></p>	
	<p>412.1 Application. <u>New section.</u></p>	

<p>412.1 Application. Urinals shall comply with ASME A112.19.2/CSA B45.1, ASME A112.19.19, or CSA B45.5/IAPMO Z124. Urinals shall have an average water consumption not to exceed 1 gallon (3.8 L) of water per flush. No urinal that operates on a continuous flow or continuous flush basis shall be permitted.</p>	<p>403.3.4 412.1 Nonwater urinals. Nonwater urinals shall be listed and comply with the applicable standards referenced in Table 1401.1. Nonwater urinals shall have a barrier liquid sealant to maintain a trip seal. Nonwater urinals shall permit the uninhibited flow of water through the urinal to a sanitary drainage system. Nonwater urinals shall be cleaned and maintained in accordance with the manufacturer's instructions after installation. Where nonwater urinals are installed, not less than 1 water supply fixture unit (WSFU) shall be installed upstream on the same drain line to facilitate drain line flow and rising. Where nonwater urinals are installed they shall have a water distribution line rough-in to the urinal location to allow for the installation of an approved backflow prevention device in the event of a retrofit.</p>	
	<p>413.1 Flushometer Valves. Add- <u>Flushometer valves and tanks shall comply with ASSE 1037 or CSA B125.3 and shall be installed in accordance with Section 603.5.1.</u></p>	
	<p>413.3 Flush Tanks. <u>New section.</u></p>	
	<p>413.1 Backflow Prevention. Add- ASSE 1004.</p>	
	<p>414.1 Application. Revised.</p>	
<p>414.3 Drainage Connection. Domestic dishwashing machines shall discharge indirectly through an air gap fitting in accordance with Section 807.4 into a waste receptor, a wye branch fitting on the tailpiece of a kitchen sink, or dishwasher connection of a food waste disposer. Commercial dishwashing machines shall discharge indirectly through an air gap.</p>		
<p>415.2 Drinking Fountain Alternatives. This section is not adopted. See Building Code chapter 29.</p>	<p>415.2 Where-Required Drinking Fountain Alternatives. Where food is consumed indoors, water stations shall be permitted to be substituted for drinking fountains. <u>Bottle filling stations shall be permitted to be substituted for drinking fountains up to 50 percent of the requirements for drinking fountains.</u> Drinking fountains shall not be required for an occupant load of 30 or less.</p>	
<p>418.3 Location of Floor Drains. Floor drains shall be installed in the following areas: 1. Toilet rooms containing two (2) or more water closets or a combination of one (1) water closet and one (1) urinal, except in a dwelling unit. The floor shall slope toward the floor drains. 2. <u>Laundry rooms in commercial buildings and common laundry facilities in multifamily dwelling buildings.</u></p>	<p>418.1 Application. Revised. 418.3 Location of Floor Drains. Add- <u>(4) Boiler rooms.</u></p>	
	<p>419.1 Application. Revised.</p>	
<p>422.0 Minimum Number of Required Fixtures. For minimum number of plumbing fixtures required, see Building Code chapter 29 and Table 2902.1. Sections 422.1 through 422.5 and Table 422.1 are not adopted.</p>	<p>421.0 Floor Sinks. <u>New section and subsections.</u></p>	
	<p>422.2.1 Family or Assisted-Use Toilet Facilities. <u>New section.</u></p>	
<p>501.1 Applicability. The regulations of this chapter shall govern the construction, location, and installation of fuel burning and other types of water heaters heating potable water. The minimum capacity for water heaters shall be in accordance with the first hour rating listed in Table 501.1. See the Mechanical Code for combustion air and installation of all vents and their connectors. No water heater shall be hereinafter installed that does not comply with the manufacturer's installation instructions and the type and model of each size thereof approved by the authority having jurisdiction. A list of accepted water heater appliance standards is referenced in Table 501(2). Listed appliances shall be installed in accordance with the manufacturer's installation instructions. Unlisted water heaters shall be permitted in accordance with Section 504.3.2. Click For Chart and Notes</p>	<p>501.1 Applicability. The regulations of this chapter shall govern the construction, location and installation for fuel-burning and other water heaters heating potable water, together with chimneys, vents, and their connections. The minimum capacity for storage water heaters shall be in accordance with the first hour rating listed in Table 501.1. Design, construction and workmanship shall be in accordance with accepted engineering practices, manufacturer's instructions, and applicable standards and shall be of such character as to secure the results sought to be obtained by this code. No water heater shall be hereinafter installed that does not comply with the type and model of each size thereof approved by the Authority Having Jurisdiction. A list of accepted gas appliance standards are referenced in Table 1401.1. Listed appliances shall be installed in accordance with the manufacturer's installation instructions. Unlisted water heaters shall be permitted in accordance with Section 504.3.2.</p>	
<p>504.1 Location. Water heater installation in bedrooms and bathrooms shall comply with one of the following: (1) Fuel-burning water heaters may be installed in a closet located in the bedroom or bathroom provided the closet is equipped with a listed, gasketed door assembly and a listed self-closing device. The self-closing door assembly shall meet the requirements of Section 505.1.1. The door assembly shall be installed with a threshold and bottom door seal and shall meet the requirements of Section 505.1.2. All combustion air for such installations shall be obtained from the outdoors in accordance with the International Mechanical Code. The closet shall be for the exclusive use of the water heater. (2) Water heater shall be of the direct vent type.</p>	<p>504.3 Clearance. <u>The clearance requirements for water heaters shall comply with Section 504.3.1 or Section 504.3.2.</u></p>	
	<p>505.1 Water Heaters. Water heaters deriving heat from fuels or types of energy other than gas shall be constructed and installed in accordance with approved standards <u>referenced in Table 501.1(2), Section 505.3, or Section 505.4.</u></p>	
<p>505.2 Safety Devices. All storage-type water heaters deriving heat from fuels or types of energy other than gas, shall be provided with, in addition to the primary temperature controls, an over-temperature safety protection device constructed, listed, and installed in accordance with nationally recognized applicable standards for such devices and a combination temperature and pressure relief valve.</p>		
	<p>505.4 Indirect-Fired Water Heaters. Replace reference to Table 1401.1 with reference to Table 501.1(2).</p>	

	<p>TABLE 501.1(2) WATER HEATERS. New Table.</p> <p>505.4.1 Single-Wall Heat Exchanger. An indirect-fired water heater that incorporate a single-wall heat exchanger shall meet the following requirements: (1) Connected to a low-pressure hot water boiler limited to a maximum of 30 pounds-force per square inch gauge (psig) (207 kPa) by an approved safety or relief valve.</p> <p>(2) (1) Heat transfer medium is either potable water or contains fluids recognized as safe by the Food and Drug Administration (FDA) as food grade.</p> <p>having a toxicity rating of Class of 1.</p> <p>(3) (2) Bear a label with the word "Caution," followed by the following statements:</p> <p>(a) The heat-transfer medium shall be water or other nontoxic fluid recognized as safe by the FDA having the toxic rating or Class of 1 as listed in Clinical Toxicology or Commercial Products, 5th edition.</p> <p>(b) The maximum operating pressure of the heat exchanger shall not exceed the maximum operating pressure of the potable water supply pressure of the heat-transfer medium shall be limited to a maximum of 30 psig (207 kPa) by an approved safety or relief valve.</p> <p>(3) The word "Caution" and the statements in letters shall have an uppercase height of not less than .120 or an inch (3.048 mm), the vertical spacing between lines of type shall be not less than 0.046 of an inch (1.168 mm). Lowercase letters shall be compatible with the uppercase letter size specifications.</p>	
<p>506.0 Combustion Air. For issues relating to combustion air, see the Mechanical Code. Sections 506.1 through 506.9 are not adopted. Sections 507.6 through 507.9 are not adopted.</p>		
	<p>506.9 Combustion Air Ducts. Revise--</p> <p>(8) The remaining space surrounding a chimney liner, gas vent, special gas vent, or plastic piping installed within a masonry chimney flue, metal or factory-built chimney, shall not be used to supply combustion air unless it is listed and shown in the manufacturer's installation instructions. Exception. Direct-vent appliances designed for installation in a solid-fuel-burning fireplace where installed in accordance with the manufacturer's installation instructions. [NFPA 54: 9.3.8.7]</p>	
<p>507.2 Seismic Provisions. Water heaters shall be anchored or strapped to resist horizontal displacement due to earthquake motion. Strappings shall be at points within the upper one-third and lower one-third of its vertical dimensions. At the lower point, a distance of not less than four (4) inches (102 mm) shall be maintained from the controls to the strapping.</p>		
	<p>507.4 Drainage Pan. Where a water heater is located in an attic, in or on an attic-ceiling assembly, floor-ceiling assembly, or floor-subfloor assembly where damage results from a leaking water heater, a watertight pan of corrosion-resistant materials shall be installed beneath the water heater with not less than ¼ of an inch (20 mm) diameter drain to an approved location. Such pan shall be not less than 1 ½ inches (38 mm) in depth.</p>	
<p>507.13 Installation in Garages. Appliances in garages and in adjacent spaces that open to the garage and are not part of the living space of a dwelling unit shall be installed so that burners, burner-ignition devices and ignition sources are located not less than eighteen (18) inches above the floor unless listed as flammable vapor ignition resistant.</p>		
	<p>507.14 Installation in Commercial Garages. Appliances installed in commercial garage shall comply with Section 507.14.1 and Section 507.14.2.</p>	
<p>507.16 Venting of Flue Gases - Delete entire section. Sections 507.18 through 507.22 are not adopted.</p>		
<p>509.0 Venting of Equipment. Delete entire section.</p>		
	<p>509.1 Listing. New section.</p>	
	<p>509.3 Design and Construction. A venting system shall be designed and constructed so as to develop a positive flow to convey flue, vent, or both gases and vent gases to the outdoors. [NFPA 54:12.1]</p>	
		<p>509.3.6 Above-ceiling or Nonducted Air Handling System. New section.</p>
		<p>509.4.1 Plastic Piping. Plastic piping used for venting appliances listed for use with such venting materials shall be approved. Where plastic piping is used to vent an appliance, the appliance shall be listed for use with such venting materials and the appliance manufacturer's installation instruction shall identify the specific plastic piping material. [NFPA 54:12.5.2]</p>
	<p>509.5 Masonry, Metal, and Factory-Built Chimneys. Chimneys shall be installed in accordance with Section 509.5.1 through Section 509.3.</p>	
	<p>509.5.1 Decorative Shrouds. New section.</p>	
	<p>509.5.1.2 Listing Requirements. New section.</p>	
	<p>509.6 Gas Vents. A gas vent passing through a roof shall extend through the entire roof flashing, roof-jack, or roof thimble and be terminated with a listed termination cap. Gas vents shall be installed in accordance with the manufacturer's installation instructions. [NFPA 54:12.7.3-2 54:12.7.1(1)]</p>	
	<p>509.6.2.7 Insulation Shielded. New section.</p>	
	<p>509.6.4.2 Multistory Venting System. New section.</p>	
	<p>509.8.5 Vent Terminals.</p> <p>Exception. This shall not apply to vent terminals that are 2 feet (610 mm) or more above or 25 feet (7620 mm) or more below operable openings.</p>	
	<p>[NFPA 54:12.9.6]</p>	

	509.10.1.2 Residential-Type Appliances. Revise- (1) Vent connectors for listed appliances having draft hoods, appliances having draft hoods, and equipped with listed conversion burners, <u>and Category 1 appliances</u> that are not installed in attics, crawl spaces, or other unconditioned areas shall be one of the following:	
	509.10.7 Length of Vent Connector. <u>The length of the vent connector shall comply with Section</u>	
	<u>509.10.7.1 or Section 509.10.7.2.</u>	
	509.13.1 Listing. <u>New section.</u>	
510.0 Sizing of Category I Venting Systems. Delete entire section.		
511.0 Direct Vent Equipment. Delete entire section.		
601.1 Applicability. This chapter shall govern the materials, design and installation of <i>water supply systems</i> , including backflow prevention devices, assemblies and methods used for backflow prevention.	601.1 Applicability. New section.	
603.1 General. Cross-connection control shall be provided in accordance with the provisions of this chapter. Devices or assemblies for protection of the public water system must be models approved by the department of health under WAC 246-290-490. The authority having jurisdiction shall coordinate with the local water purveyor where applicable in all matters concerning cross-connection control within the property lines of the premises. No person shall install any water operated equipment or mechanism, or use any water treating chemical or substance, if it is found that such equipment, mechanism, chemical or substance may cause pollution or contamination of the domestic water supply. Such equipment or mechanism may be permitted only when equipped with an approved backflow prevention device or assembly.		
603.2 Approval of Devices or Assemblies. Before any device or assembly is installed for the prevention of backflow, it shall have first been approved by the authority having jurisdiction. Devices or assemblies shall be tested for conformity with recognized standards or other standards acceptable to the authority having jurisdiction. Backflow prevention devices and assemblies shall comply with Table 603.2, except for specific applications and provisions as stated in Section 603.5.1 through 603.5.21. All devices or assemblies installed in a potable water supply system for protection against backflow shall be maintained in good working condition by the person or persons having control of such devices or assemblies. Such devices or assemblies shall be tested in accordance with Section 603.4.2 and WAC 246-290-490. If found to be defective or inoperative, the device or assembly shall be replaced or repaired. No device or assembly shall be removed from use or relocated or other device or assembly substituted, without the approval of the authority having jurisdiction.	603.3 Backflow Prevention Devices, Assemblies, and Methods. <u>Backflow prevention devices, assemblies, and methods shall comply with Section 603.3.1 through Section 603.3.9.</u>	
Table 603.2 See Website Amendment	TABLE 603.2 BACKFLOW PREVENTION DEVICES, ASSEMBLIES, AND METHODS.	
603.4.2 Testing. For devices and assemblies other than those regulated by the Washington department of health in conjunction with the local water purveyor for the protection of public water systems, the authority having jurisdiction shall ensure that the premise owner or responsible person shall have the backflow prevention assembly tested by a Washington state department of health certified backflow assembly tester: (1) At the time of installation, repair or relocation; and (2) At least on an annual schedule thereafter, unless more frequent testing is required by the authority having jurisdiction.		
603.4.9 Prohibited Location. Backflow prevention devices with atmospheric vents or ports shall not be installed in pits, underground or in submerged locations. Backflow preventers shall not be located in any area containing fumes or aerosols that are toxic, poisonous, infectious, or corrosive.		
603.5.6 Protection from Lawn Sprinklers and Irrigation Systems. Potable water supplies to systems having no pumps or connections for pumping equipment, and no chemical injection or provisions for chemical injection, shall be protected from backflow by one of the following: (1) Atmospheric vacuum breaker (AVB). (2) Pressure vacuum breaker backflow prevention assembly (PVB). (3) Spill-resistant pressure vacuum breaker (SVB). (4) Reduced pressure principle backflow prevention assembly (RP). (5) A double check valve backflow prevention assembly (DC) may be allowed when approved by the water purveyor and the authority having jurisdiction.		
603.5.10 Steam or Hot Water Boilers. Potable water connections to steam or hot water boilers shall be protected by an air gap or a reduced pressure principle backflow preventer.		
603.5.12 Beverage Dispensers. Potable water supply to carbonators shall be protected by a listed reduced pressure principle backflow preventer as approved by the authority having jurisdiction for the specific use. The backflow preventer shall be located in accordance with Section 603.4.3. The piping downstream of the backflow preventer shall not be of copper, copper alloy, or other material that is affected by carbon dioxide.		
603.5.14 Protection from Fire Systems. Except as provided under Sections 603.5.14.1 and 603.5.14.2, potable water supplies to fire protection systems that are normally under pressure, including but not limited to standpipes and automatic sprinkler systems, except in one or two family or townhouse residential flow-through or combination sprinkler systems piped in materials approved for potable water distribution systems, shall be protected from back-pressure and back-siphonage by one of the following testable assemblies: 1. Double check valve backflow prevention assembly (DC). 2. Double check detector fire protection backflow prevention assembly. 3. Reduced pressure principle backflow prevention assembly (RP). 4. Reduced pressure detector fire protection backflow prevention assembly. Potable water supplies to fire protection systems that are not normally under pressure shall be protected from backflow and shall meet the requirements of the appropriate standard(s) referenced in Table 1401.1.		

	604.1 Pipe, Tube, and Fittings. Pipe, tube, fittings, solvent cements, thread sealants, solders, and flux, used in potable water systems intended to supply drinking water shall be in accordance with the requirements of NSF 61. <u>Where fittings and valves are made from copper alloys containing more than 15 percent zinc by weight, and are used in plastic piping systems, they shall be resistant to dezincification and stress corrosion cracking in accordance with NSF 14.</u>	
	Materials used in the water supply system, except valves and similar devices, shall be of a like material. Except where otherwise approved by the Authority Having Jurisdiction.	
	Materials for building water piping and building supply piping shall comply with the applicable standards referenced in Table 604.1.	
	604.2 Lead Content. New section.	
	604.2.1 Lead Content of Water Supply Pipe and Fittings. New section.	
		603.4.3 Access and Clearance. Access and clearance shall be provided for the required testing, maintenance, and repair. Access and clearance shall be in accordance with the manufacturer's instructions, and not less than 12 inches (305 mm) between the lowest portion of the assembly and grade, floor, or platform. <u>Installations elevated that exceed 5 feet (1524 mm) above the floor or grade shall be provided with a platform capable of supporting a tester or maintenance person.</u>
	604.4 604.5 Flexible Copper Connectors. Listed Flexible water connectors shall be installed in readily accessible locations, and where under continuous pressure shall be in accordance with ASME A112.18.6/CSA B125.6 <u>unless otherwise listed.</u>	
	604.10 Plastic Materials. Renumbered.	
	604.10.1 Tracer Wire. New section.	
	TABLE 604.1 MATERIALS FOR BUILDING SUPPLY AND WATER DISTRIBUTION PIPING AND FITTING. Revise.	
		604.10.1 Tracer Wire. Plastic materials for building supply piping outside underground shall have a blue insulated copper trace wire <u>an electrically continuous corrosion-resistant blue insulated copper tracer wire,</u> or other approved conductor installed adjacent to the piping. Access shall be provided to the tracer wire, or the tracer wire shall terminate aboveground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG, and the insulation type shall be suitable for direct burial.
	604.13 Water Heater Connectors. Flexible metallic water connectors <u>(copper or stainless steel), or reinforced, braided stainless steel, or polymer braided with EPDM core connectors that connect a water heater water heater connectors connecting water heating to the piping system shall be in accordance with ASME A112.18.6/CSA B125.6</u> the applicable standards referenced in Table 1401.1. Copper, copper alloy, or stainless steel flexible connectors shall not exceed 24 inches (610 mm). PEX, PEX-AL-PEX, PE-AL-PE, or PE-RT tubing shall not be installed within the first 18 inches (457 mm) of piping connected to a water heater.	
604.14 Plastic Pipe Termination. Plastic water service piping may terminate within a building, provided the connection to the potable water distribution system shall be made as near as is practical to the point of entry and shall be accessible. Barbed insert fittings with hose clamps are prohibited as a transition fitting within the building.		
	605.3 CPVC/AL/CPVC Plastic Pipe and Joints. New section.	
	605.3.1 Solvent Cement Joints. New section.	
	606.7.4.4 607.6.1.1 Butt-Fusion Joints. Butt-fusion joints shall be <u>installed in accordance with ASTM F2620 and shall be made by heating the squared ends of two pipes, pipe and fitting, or two fittings by holding ends against a heated element. The heated element shall be removed where the proper melt is obtained and joined ends shall be placed together with applied force.</u>	
	606.7.4.2 605.6.1.2 Electro-Fusion Joints. Electrofusion joints shall be <u>heated internally, by a conductor at the interface of the joint. Align and restrain fitting to pipe to prevent movement and apply electric current to the fitting. Turn off the current when the proper time has elapsed to heat the joint. The joint shall fuse together and remain undisturbed until cool. made by embedding the resistance wire in the fitting and supplying with a heat source. Pipe shall be clamped in place and power applied through a controlled processor. The material surrounding the wire shall be melted along with the pipe and shall provide the pressure required for fusion.</u>	
	606.7.4.3 605.6.1.3 Socket-Fusion Joints. Socketfusion joints shall be installed in <u>accordance with ASTM F2620 and be made by simultaneously heating the outside surface of a pipe end and the inside of a fitting socket. Where proper melt is obtained, the pipe and fitting shall be joined by inserting one into the other with applied force. The joint shall fuse together and remain undisturbed until cool.</u>	
	606.1 General. -Revised.	
606.5 Control Valve. A control valve shall be installed immediately ahead of each water-supplied appliance and immediately ahead of each slip joint or appliance supply. Parallel water distribution systems shall provide a control valve either immediately ahead of each fixture being supplied or installed at the manifold, and shall be identified with the fixture being supplied. Where parallel water distribution system manifolds are located in attics, crawl spaces, or other locations not accessible, a separate shutoff valve shall be required immediately ahead of each individual fixture or appliance served.	606.5 Control Valve. Add- <u>Where parallel water distribution system manifolds are located in attics, crawl spaces, or other locations not readily accessible, a separate shut off valve shall be required immediately ahead of each individual fixture or appliance served.</u>	
	607.1 General. Revised.	
	607.3 Venting. New section.	
	607.4 Overflow. New section.	
	607.5 Valves. New section.	

<p>608.3 Expansion Tanks, and Combination Temperature and Pressure-Relief Valves. A water system provided with a check valve, backflow preventer, or other normally closed device that prevents dissipation of building pressure back into the water main, independent of the type of water used, shall be provided with an approved, listed, and adequately sized expansion tank or other approved device having a similar function to control thermal expansion. Such expansion tank or other approved device shall be installed on the building side of the check valve, backflow preventer, or other device and shall be sized and installed in accordance with the manufacturer's installation instructions.</p> <p>EXCEPTION: Instantaneous hot water systems installed in accordance with the manufacturer's installation instructions.</p>		
<p>608.3.1 A water system containing storage water heating equipment shall be provided with an approved, listed, adequately sized combination temperature and pressure-relief valve, except for listed nonstorage instantaneous heater having an inside diameter of not more than three (3) inches (80 mm). Each such approved combination temperature and pressure-relief valve shall be installed on the water-heating device in an approved location based on its listing requirements and the manufacturer's installation instructions. Each such combination temperature and pressure-relief valve shall be provided with a drain in accordance with Section 608.5.</p>		
<p>608.5 Discharge Piping. The discharge piping serving a temperature relief valve, pressure relief valve or combination of both shall have no valves, obstructions or means of isolation and be provided with the following: (1) Equal to the size of the valve outlet and shall discharge full size to the flood level of the area receiving the discharge and pointing down.</p> <p>(2) Materials shall be rated at not less than the operating temperature of the system and approved for such use.</p> <p>(3) Discharge pipe shall discharge independently by gravity through an air gap into the drainage system or outside of the building with the end of the pipe not exceeding 2 feet (610 mm) and not less than 6 inches (152 mm) above the ground pointing downwards.</p> <p>(4) Discharge in such a manner that does not cause personal injury or structural damage.</p> <p>(5) No part of such discharge pipe shall be trapped or subject to freezing.</p> <p>(6) The terminal end of the pipe shall not be threaded.</p> <p>(7) Discharge from a relief valve into a water heater pan shall be prohibited.</p> <p>EXCEPTION: Where no drainage was provided, replacement water heating equipment shall only be required to provide a drain pointing downward from the relief valve to extend between two (2) feet (610 mm) and six (6) inches (152 mm) from the floor. No additional floor drain need be provided.</p>	<p>608.5 Discharge Piping. <u>New section.</u></p>	
		<p>609.4 Testing.</p>
		<p>Exception: PEX, PP or PE-RT tube shall be permitted to be tested with air where permitted by the manufacturer's instructions.</p>
<p>609.9 Disinfection of Potable Water System. New or repaired <i>potable water</i> systems shall be disinfected prior to use where required by the <i>authority having jurisdiction</i>. The method to be followed shall be that prescribed by the health authority or, in case no method is prescribed by it, the following: (1) The pipe system shall be flushed with clean, potable water until potable water appears at the points of outlet. (2) The system or parts thereof shall be filled with a water-chlorine solution containing not less than 50 parts per million of chlorine, and the system or part thereof shall be valved-off and allowed to stand for twenty-four hours; or, the system or part thereof shall be filled with a water-chlorine solution containing not less than 200 parts per million of chlorine and allowed to stand for three hours. (3) Following the allowed standing time, the system shall be flushed with clean, potable water until the chlorine residual in the water coming from the system does not exceed the chlorine residual in the flushing water. (4) The procedure shall be repeated when a standard bacteriological test for drinking water, performed by a laboratory certified for drinking water in Washington state, shows unsatisfactory results indicating that contamination persists in the system.</p>		
<p>609.11 Insulation of Potable Water Piping. Domestic water piping within commercial buildings shall be insulated in accordance with Section C403.2.8 and Table C403.2.8 or Section C404.6 of the Washington State Energy Code, as applicable.</p>	<p>609.11 Pipe Insulation. <u>New section.</u></p>	
	<p>609.11.1 Insulation Requirements. <u>New section.</u></p>	
	<p>609.11.2 Pipe Insulation Wall Thickness. <u>New section.</u></p>	
<p>610.4 Sizing Water Supply and Distribution Systems. Systems within the range of Table 610.4 may be sized from that table or by the method set forth in Section 610.5.</p>		
<p>611.1 Application. Drinking water treatment units shall comply with NSF 42 or NSF 53. Water softeners shall comply with NSF 44. Ultraviolet water treatment systems shall comply with NSF 55. Reverse osmosis drinking water treatment systems shall comply with NSF 58. Drinking water distillation systems shall comply with NSF 62.</p> <p>The owner of a building that serves potable water to twenty-five or more people at least sixty or more days per year and that installs drinking water treatment units including, but not limited to, the treatment units in Section 611.1, may be regulated (as a Group A public water system) by the Washington state department of health under chapter 246-290 WAC. See Washington state department of health publication 331-488 for guidance.</p>		
<p>612.1 General. Where residential fire sprinkler systems are installed, they shall be installed in accordance with the International Building Code or International Residential Code. Sections 612.2 through 612.7.2 are not adopted.</p>	<p>612.1 Where Required. <u>New section.</u></p>	
	<p>TABLE 611.4 SIZING OR RESIDENTIAL WATER SOFTENERS. <u>New Table.</u></p>	
	<p>612.2 Types of Systems. <u>New section.</u></p>	
	<p>612.3 Sprinklers. <u>New section and subsections.</u></p>	
	<p>TABLE 612.3.3.1 LOCATIONS WHERE</p>	
	<p>INTERMEDIATE TEMPERATURE SPRINKLERS ARE REQUIRED. <u>New Table.</u></p>	

	706.14 705.9 Joints Between Various Materials. Add- Mechanical couplings used to join different materials shall be in accordance with ASTM C1173 for belowground use, ASTM C160 for aboveground use, or ASTM C1461 for aboveground and belowground use.	
707.4 Location. Each horizontal drainage pipe shall be provided with a cleanout at its upper terminal, and each run of piping, that is more than 100 feet (30,480 mm) in total developed length, shall be provided with a cleanout for each 100 feet (30,480 mm), or fraction thereof, in length of such piping. An additional cleanout shall be provided in a drainage line for each aggregate horizontal change of direction exceeding 135 degrees (2.36 rad). EXCEPTIONS: 1. Cleanouts shall be permitted to be omitted on a horizontal drain line less than 5 feet (1,524 mm) in length unless such line is serving sinks or urinals. 2. Cleanouts shall be permitted to be omitted on a horizontal drainage pipe installed on a slope of 72 degrees (1.26 rad) or less from the vertical angle (one-fifth bend). 3. Except for the building drain, its horizontal branches, and urinals, a cleanout shall not be required on a pipe or piping that is above the floor level of the lowest floor of the building. 4. An approved type of two-way cleanout fitting, installed inside the building wall near the connection between the building drain and the building sewer or installed outside of a building at the lower end of a building drain and extended to grade, shall be permitted to be substituted for an upper terminal cleanout.	707.4 Location. Add- A cleanout shall be installed above the fixture connection fitting, serving each urinal, regardless of the location of the urinal in the building.	
707.9 Clearance. Each cleanout in piping 2 inches (50 mm) or less in size shall be so installed that there is a clearance of not less than 12 inches (457 mm) in front of the cleanout. Cleanouts in piping exceeding 2 inches (50 mm) shall have a clearance of not less than 18 inches (610 mm) in front of the cleanout. Cleanouts in under-floor piping shall be extended to or above the finished floor or shall be extended outside the building where there is less than 18 inches (457 mm) vertical overall, allowing for obstructions such as ducts, beams, and piping, and 30 inches of (762 mm) horizontal clearance from the means of access to such cleanout. No under-floor cleanout shall be located exceeding 20 feet (1,524 mm) from an access door, trap door, or crawl hole. CHAPTER 7, PART II—BUILDING SEWERS Part II Building Sewers. Delete all of Part II (Sections 713 through 723, and Tables 717.1 and 721.1).		
	710.13 Macerating Toilet Systems and Pumped Waste Systems. Fixtures shall be permitted to discharge to macerating toilet system or pumped waste system shall be permitted. Listed macerating toilet systems shall be permitted as an alternate to a sewage pump system where approved by the	
	Authority Having Jurisdiction. Such systems shall comply with ASME A112.3.4/CSA B45.9 and shall be installed in accordance with the manufacturer's installation instructions.	
	CHAPTER 8 INDIRECT WASTES	CHAPTER 8 INDIRECT WASTES
	801.1 Applicability. New section.	
	803.1 Materials. New section.	
	803.2 Copper and Copper Alloys. New section.	
	811.2 Waste and Vent Pipes. Add- PP pipe and fittings shall comply with ASTM F1673 or CSA.	
	B181.3. Chemical-resistant glass pipe and fittings shall comply with ASTM C1053. High-silicon iron pipe and fittings shall comply with ASTM A861.	
	814.1.1 Condensate Pumps. New section.	
	814.2 Condensate Control. New section.	
	814.2.1 Protection of Appurtenances. New section.	
	814.3.1 Cleanouts. New section.	
	814.4 Appliance Condensate Drains. New section.	
	814.5 Point of Discharge. New section.	
	814.6 Condensate Waste From Air-Conditioning Coils. New section.	
	814.7 Plastic Fittings. New section.	
903.1 Applicable Standards. Vent pipe and fittings shall comply with the applicable standards referenced in Table 701.1, except that: 1. No galvanized steel or 304 stainless steel pipe shall be installed underground and shall be not less than 6 inches (152 mm) above ground. 2. ABS and PVC DWV piping installations shall be installed in accordance with applicable standards in Table 1401.1. Except for individual single family dwelling units, materials exposed within ducts or plenums shall have a maximum flame-spread index of 25 and a maximum smoke developed index of 50, when tested in accordance with ASTM E-84 and UL 723.		903.1 Applicable Standards. Revise- (2) ABS and PVC DWV piping installations shall be in accordance with Chapter 14 "Firestop Protection." Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a flame-spread index of not more than 25 and a smoke-developed index of not more than 50 where tested in accordance with ASTM E84 or UL 723. These tests shall comply with all requirements of the standards to include the sample size, both for width and length. Plastic pipe shall not be tested filled with water.
	908.2.3 Trap Arm. New section.	

908.2.4 Water Closet. This section is not adopted.	908.2.4 Water Closet. New section.	
	908.2.5 Additional Fixtures. New section.	
	CHAPTER 10 TRAPS AND INTERCEPTS	
	1001.1 Applicability. New section.	
	1013.1.3 Food Waste Disposal Units and Dishwashers. Add-	
	Exception: Food waste disposers shall be permitted to discharge to grease interceptors that are designed to receive the discharge of food waste.	
1101.4 Material Uses. Pipe, tube, and fittings conveying rainwater shall be of such materials and design as to perform their intended function to the satisfaction of the authority having jurisdiction. Conductors within a vent or shaft shall be of cast iron, galvanized steel, wrought iron, copper, copper alloy, lead, Schedule 40 ABS DWV, Schedule 40 PVC DWV, stainless steel 304 or 316L (stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than six (6) inches (152 mm) aboveground), or other approved materials, and changes in direction shall conform to the requirements of Section 706.0. ABS and PVC DWV piping installations shall be installed in accordance with IS 5 and IS 9. Except for individual single-family dwelling units, materials exposed within ducts or plenums shall have a maximum flame-spread index of 25 and a maximum smoke-developed index of 50, when tested in accordance with ASTM E-84 and UL 723.	1101.1 Applicability. New section.	1101.4 Material Uses. Add- These tests shall comply with all requirements of the standards to include the sample size, both for width and length. Plastic pipe shall not be tested filled with water.
	1101.4.1 Copper and Copper Alloys. New section.	
	4402.4 1101.4.2 Conductors. Renumbered; Add- Conductors installed aboveground level shall be of seamless copper water tube, Type K, L, or M; Schedule 40 copper pipe or Schedule 40 copper alloy pipe, Type DWV copper drainage tube; service weight cast-iron soil pipe or hub-less cast-iron soil pipe, standard weight galvanized steel pipe; stainless steel 304 or 316L [stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches (152 mm) aboveground]; or Schedule 40 ABS or Schedule 40 PVC plastic pipe.	
1101.13 Cleanouts. Cleanouts for building storm drains shall comply with the requirements of this section.		
1101.13.1 Locations. Rain leaders and conductors connected to a building storm sewer shall have a cleanout installed at the base of the outside leader or outside conductor before it connects to the horizontal drain. Cleanouts shall be placed inside the building near the connection between the building drain and the building sewer or installed outside the building at the lower end of the building drain and extended to grade.		
1101.13.2 Cleaning. Each cleanout shall be installed so that it opens to allow cleaning in the direction of flow of the soil or waste or at right angles thereto, and except in the case of wye branch and end-of-line cleanouts, shall be installed vertically above the flow line of the pipe.		
1101.13.3 Access. Cleanouts installed under concrete or asphalt paving shall be made accessible by yard boxes, or extending flush with paving with approved materials and be adequately protected.		
1101.13.4 Manholes. Approved manholes may be installed in lieu of cleanouts when first approved by the authority having jurisdiction. The maximum distance between manholes shall not exceed three hundred (300) feet (91.4 m). The inlet and outlet connections shall be made by the use of a flexible compression joint no closer than twelve (12) inches (305 mm) to, and not farther than three (3) feet (914 mm) from the manhole. No flexible compression joints shall be embedded in the manhole base.		
	4404.4 1101.14 Rainwater Sumps. Add- Pumps rated at 600 V or less shall comply with UL778 and shall be installed in accordance with the manufacturer's installation instructions.	
	4405.0 1102.0 Roof Drains.	
	1102.1 Applications. New section.	
	1102.2 Dome Strainers Required. New section.	
1105.0 Controlled-Flow Roof Drainage. This section is not adopted.		
	1301.1 Where Required Applicability. New section.	1106.0 Engineered Storm Drainage System. New section and subsections.
1303.8 Water Mains for Hospitals. Hospitals shall be provided with not less than two approved potable water mains that are installed in such a manner as to prevent the interruption of water service.		
	4309.6 1301.2 Where Not Applicable.	
	Renumbered.	
	Revise- (2) Gas central supply and Bulk supply systems, except as addressed in this chapter. Add- (8) Breathing air replenishment (BAR) stations. (9) Portable compressed gas systems. (10) Medical support gas systems. (11) Gas-powered device supply systems. (12) Scavenging systems.	
		1302.1 Building System Risk Categories.
		1302.1.1 Risk Assessment. New section.
		1302.1.2 Document Risk Assessment. New section.

	<p>4309-7 1301.6 Existing Systems. The altered, renovated, or modernized portion of an existing system or individual component shall be required to meet the installation and equipment requirements stated in this chapter. Where the alteration, renovation, or modernization adversely impacts existing performance requirements of a system or component, additional upgrading shall be required. An existing system that is not in strict compliance with the provisions of this code shall be permitted to be continued in use as long as the Authority Having Jurisdiction has determined that the use does not constitute a distinct hazard to life. [NFPA 99:5.1.1.4]</p>	
	<p>1302.0 Design Requirements. New section.</p>	
	<p>1302.1 Building System Categories New section.</p>	
	<p>1302.2 Patient Care Rooms. New section.</p>	
	<p>1302.3 Anesthetizing Locations. New section.</p>	
	<p>1302.4 Wet Procedure Locations. New section.</p>	
	<p>1303.0 Protrusions from Walls Health Care Facilities.</p>	
	<p>1303.4 Sterilizers and Bedpan Steamers. New section.</p>	
	<p>1303.7 Clinical Sinks. New section.</p>	
	<p>1303.7.1 Drainage Connection. New section.</p>	
	<p>1303.8 Water Supply for Hospitals. New section.</p>	
	<p>4440-4 1304.3 Supply Source. Medical gas and medical vacuum systems shall be supplied from a central supply source consisting of not less than two units- primary and secondary, consisting of one of the following: (1) Two cylinders banks with not less than two cylinders in each bank. (2) Not less than two air compressors. (3) Not less than two vacuum pumps. (4) A proportioning system for medical air USP. Exception: A single Category 3 medical gas source system shall not supply more than two adjoining single treatment facilities. [NFPA 99:5.3.1.1.4] e.g., a manifold consisting of two banks with not less than two cylinders in each bank; not less than two air compressors, or nor less than two vacuum pumps. However, two supply pipelines are not required.</p>	
<p>1305.3 Minimum Station Outlets/Inlets. Station outlets and inlets for medical gas and medical vacuum systems for facilities licensed or certified by Washington state department of health (DOH) or Washington state department of social and health services (DSHS) shall be provided as listed in chapters 246-320 and 246-330 WAC as required by the applicable licensing rules as applied by DOH construction review services. All other medical gas and medical vacuum systems shall be provided as listed in Table 1305.3.</p>		
	<p>1306.0 Qualifications of Installers. New section.</p>	
	<p>1306.1 General. New section.</p>	
	<p>4346-2 1308.2 Cleaning. Add- Where tube ends, fittings, or other components become contaminated before installation they shall be recleaned in accordance with Section 1311.0.</p>	
	<p>1308.5 Tubes for Medical Gas Systems. Sections combined and revised.</p>	
	<p>1308.5 Tubes for Medical Vacuum Systems. New section.</p>	
	<p>1309.1 General. New section.</p>	
	<p>1309.2 Changes in Direction. New section.</p>	
	<p>1309.2.1 Medical Vacuum Systems. New section.</p>	
	<p>4348-2 1309.3 Brazed Joints. Brazed joints shall be made using a brazing alloy that exhibits a melting temperature in excess of 1000°F (538°C) to retain the integrity of the piping system in the event of a fire exposure. [NFPA 99:5.1.10.5.1.1 99:5.1.10.4.1.3, 5.3.6.4.2] Fittings for tubes, turns, offsets, and other changes in direction shall be made with wrought-copper capillary fittings in accordance with ASME B16.22 or brazed fittings in accordance with ASME B16.50. [NFPA 99:5.1.10.4.1.1, 5.3.6.2.3] Cast-copper alloy fittings shall not be permitted. [NFPA 99:5.1.10.4.1.2, 5.3.6.2.4] Brazed tube joints shall be the socket type [NFPA 99:5.1.10.5.1.2] Filler metals shall bond with and be metallurgically compatible with the base metals being joined. (NFPA 99:5.1.10.1.3) Filler metals shall comply with AWS A5.8. [NFPA 99:5.1.10.5.1.3] Copper-to-copper joints shall be brazed using a copper-phosphate or copper-phosphorus-silver brazing filler metal (BCuP series) without flux. [NFPA 99:5.1.10.5.4.1] Flux shall only be used where brazing dissimilar metals, such as copper and bronze or brass, using a silver (BAg series) brazing filler material. [NFPA 99:5.1.10.5.4.1] Joints to be brazed in place shall be accessible for necessary preparation, assembly, heating, filler application, cooling, cleaning, and inspection. [NFPA 99:5.1.10.5.1.7].</p>	
	<p>1309.3.1 Tube Joints. New section.</p>	
	<p>1309.3.2 Filler Metals. New section.</p>	
	<p>1309.3.3 Copper-to-copper Joints. New section.</p>	
	<p>1309.3.4 Accessible. New section.</p>	
	<p>1309.3.1 Tube Joints. New section.</p>	
	<p>4348-3 1309.3.5 Tube Ends. Tube cutters shall be cut square using a sharp tubing cutter to avoid deforming the tube. [NFPA 99:5.1.10.5.2.1, 5.3.6.5.1]</p>	
	<p>1309.3.5.1 Cutting Wheel. The cutting wheels on tubing cutters shall be free from grease, oil, or other lubricant not approved for oxygen service. [NFPA 99:5.1.10.4.42.2, 5.3.6.3.2]</p>	

	1309.3.5.2 Cut Ends. The cut ends of the tube shall be rolled smooth or deburred with a sharp clean deburring tool, taking care to prevent chips from entering the tube. [NFPA 99:5.1.10.4.2.3, 5.3.6.5.3]	
	4348.4 1309.3.6 Cleaning Procedures. Revised.	
	1309.3.6.1 Exterior Surfaces. New section.	
	1309.3.6.2 Interior Surfaces. New section.	
	1309.3.6.3 Abrasive Pads. New section.	
	1309.3.6.4 Prohibited. New section.	
	1309.3.6.5 Wiped. New section.	
	1309.3.6.6 Examination. New section.	
	1309.3.6.7 On-Site Recleaning. New section.	
	1309.3.6.8 Contamination. New section.	
	1309.3.6.9 Timeframe for Brazing. New section.	
	4348.5 1309.3.7 Flux. Renamed, renumbered, and revised.	
	1309.3.7.1 Surface Cleaning. New section.	
	1309.3.7.2 Flux. New section.	
	1309.3.7.3 Short Sections of Copper. New section.	
	1309.3.7.4 Flux-Coated Brazing Rods. New section.	
	4348.7 1309.3.8 Nitrogen Purge	
	1309.3.8.1 Source. New section.	
	1309.3.8.2 Flow Rate Control. New section.	
	1309.3.8.3 Oxygen Analyzer. New section.	
	1309.3.8.4 During Installation. New section.	
	1309.3.8.5 Discharge Opening. New section.	
	1309.3.8.6 Temperature of Joint. New section.	
	1309.3.8.7 Opening to be Sealed. New section.	
	1309.3.8.8 Final Brazed Connection. New section.	
	1309.3.8.9 Final Tie-In Test. New section.	
	1309.3.8.10 Autogenous Orbital Welding Process. New section.	
	1309.3.9 Assembling and Heating Brazed Joints. Renumbered and revised.	
	1309.3.9.1 Heating of Joints. New section.	
	4348.8 1309.3.10 Prohibited Joints Inspection of Brazed Joints. Renumbered, renamed, and revised.	
	1309.3.10.1 Where Flux is Used. New section.	
	1309.3.10.2 Visually Inspected. New section.	
	1309.3.10.3 Prohibited Brazed Joints. New section.	
	1309.3.10.4 Defective Brazed Joints. New section.	
	4348.6 1309.4 Special Fittings. Renumbered and revised.	
	1309.4.1 Memory Metal Fittings. New section.	
	1309.4.2 Axially Swaged Fittings. New section.	
	1309.4.3 Threaded Fittings. New section.	
	1309.4.4 Dielectric Fittings. New section.	
	1309.4.4.5 Other Types of Fittings. New section.	
	1309.5 Welded Joints. New section.	
	1309.5.1 Qualifications. New section.	
	1309.5.2 Welder Qualification Procedure. New section.	
	1309.5.2.1 Purging of Joints. New section.	
	1309.5.2.2 Test Coupons. New section.	
	1309.5.3 Welding for Stainless Tube. New section.	
	4348.7 1309.6 Prohibited Joints. Revise- (3) The use of pipe-crimping tools to permanently stop the flow of medical gas and medical vacuum piping. [NFPA 99:5.1.10.8 5.1.10.10(3)] Add- (4) Removable and nonremovable push-fit fittings that employ a quick assembly push fit connector. [NFPA 99:5.1.10.10(4)] (5) Push-lock for Category 3 medical gas systems. [NFPA 99:5.3.6.2.6(2)]	
	4347.0 1310.0 Installation of Piping. Renumbered.	
	1310.1 General. New Section.	
	4343.0 1310.2 Required Pipe Sizing. New section.	
	4343.4 1310.2.1 Maximum Demand. Revised.	
	4343.2 1310.2.2 Sizing Procedures. Revised.	
	Table 4343.4 1310.2.1(1) SYSTEM SIZING-FLOW	
	REQUIREMENTS FOR STATION OUTLETS AND INLETS. Renumbered.	
	Table 1310.2.2(1) MAXIMUM PERMITTED	
	PRESSURE LOSS IN MEDICAL GAS AND	
	MEDICAL VACUUM SYSTEMS. New Table.	
	1310.3.2 Underground Piping. New section.	
	4347.2 1310.4 Location. Revised.	
	1310.4.1 Prohibited Locations. New section.	
	1310.4.2 Approved Locations. New section.	
	4347.7 1310.5 Pipe Support. Revised.	
	1310.5.1 Hangers and Supports. New section.	
	1310.5.2 Copper Tube. New section.	
	1310.5.3 Damo Locations. New section.	
	1310.5.4 Maximum Spacing. New section.	
	4347.8 1310.5.5 Seismic Provisions. Renumbered.	
	TABLE 1310.5.4(2) MAXIMUM PERMITTED	

	PRESSURE LOSS IN MEDICAL GAS AND MEDICAL VACUUM SYSTEMS. New Table.	
	1310.6 Backfilling and Trenching. New section.	
	1310.6.1 Conduit, Cover, or Enclosure. New section.	
	1310.6.2 Excessive Stress. New section.	
	1310.6.3 Minimum Backfill. New section.	
	1310.6.4 Trenches. New section.	
	1310.6.5 Composition of Backfill. New section.	
	1310.6.6 Marker. New section.	
	1310.6.7 Warning. New section.	
	1310.6.8 Wall Sleeve. New section.	
	4347.6 1310.7 Connectors. Hose and flexible connectors, both metallic and nonmetallic, shall not be longer than necessary and shall not penetrate or be concealed in walls, floors, ceilings, or partitions. Flexible connectors, metallic or nonmetallic, shall have a minimum burst or pressure, with a gauge pressure of 4000 psi (6895 kPa): [NFPA 99:5.1.10.10.7-99:5.1.10.11.6.1, 5.3.6.16.1] Hose and flexible connectors for Category 3 medical gas shall be gas specific and not be permitted to conduct any other gas, gas mixture, or liquid. [NFPA 99:5.3.6.16.1] Exception: Flexible connectors, used in Category 3 systems, of other than all metal construction that connect manifolds to the gas distribution system shall be not more than 5 feet (1524 mm) in length. [NFPA 99:5.3.6.2.1.9]	
	1310.7.1 Flexible Connectors. New section.	
	1310.7.2 Metallic Flexible Connectors. New section.	
	4347.9 1310.8 Testing Prohibited System Interconnections. Renumbered and renamed.	
	1310.8.1 Flexible Connectors. New section.	
	4347.6 1310.9 Positive-Pressure Medical Gas Piping Distribution Systems Change in System Use. Renumbered and renamed.	
	1310.9.1 Medical Vacuum System. New section.	
	TABLE 1310.2.1(2) PRESSURE LOSS FOR MEDICAL AIR. New Table.	
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	1310.10 Breaching. New section.	
	1310.10.1 Labeling and Identification. New section.	
	1310.11.2 Location of Pipe Labeling. New section.	
	4348.4 1311.1 Cleaning Procedures. Renumbered, renamed, and revised.	
	4345.8 1312.0 Shutoff Valves. Renumbered.	
	1312.1 General. Add- Exception: Shutoff valves for medical vacuum service shall be permitted to be ball or butterfly type. [NFPA 99:5.1.4.3.2]	
		1312.1 General. New or replacement valves shall be permitted to be of any type as long as they meet the following conditions: Revise- (3) They are constructed of materials approved suitable for the service. Add- (6) They permit in-line serviceability. (7) They are cleaned for oxygen service by the manufacturer if used for any positive pressure service. [NFPA 99:5.1.4.1.6]
	1312.1.3 Emergency Shutoff Valves. New Section.	
	1312.1.3.1 Remote Activated. New Section.	
	1312.1.4 Labeled. New Section.	
	4349.6 1312.4 Riser Valves. Renumbered and revised.	
	1312.4.1 Location. New section.	
	4349.9 1312.5 Service Valves. Renumbered and revised	
	1312.5.1 Branch Piping. Add- Service valves shall be placed in the branch piping prior to a zone valve box assembly on that branch. [NFPA 99:5.1.4.7.2]	
	1312.5.2 Location. New section.	
	4349.7 1312.6 Zone Valves. Add- (3) The zone valve shall not be located in the same room with the station outlets or inlets that it controls. [NFPA 99:5.1.4.8]	
	4349.7.2 1312.6.2 Arrangement. Zone valves shall be so arranged that shutting off the supply of medical gas or vacuum to one zone will not affect the supply of medical gas or vacuum to another zone, room, location, or the rest of the system. [NFPA 99:5.1.4.8.2-99:5.1.4.8.2, 5.1.4.8.7.2]	
	1312.6.3 Indicators. New section.	
	1312.6.4 Location. New section.	
	1312.9.1 Nonstandard Operating Pressures. New section.	
	1312.9.2 Labeling. New section.	
		1312.9.3 Main Line Valves. Main line valves shall be labeled in substance as follows:

		MAIN LINE VALVE FOR THE (GAS/VACUUM NAME)
	1313.0 Central Supply Systems. Section and subsections completely revised.	
	1314.2.1 Required Components. New section.	
	1314.1.2.1 Category 1 and 2 Systems. New section.	
	1314.1.2.2 Category 3 Systems. New section.	
	4324.3 1314.1.3 Air Sources. Renumbered and revised.	
	1314.1.3.1 Category 1 and 2 Systems. New section.	
	1314.1.3.2 Category 3 Systems. New section.	
	4324.4 1314.1.4 Air Intakes. Renumbered and revised.	
	1314.1.4.1 Location. New section.	
	1314.1.4.2 Separate Compressors. New section.	
	1314.1.4.3 Screening. New section.	
	4326.3 1315.5 Vacuum Source Exhaust. Renumbered, renamed, and revised.	
	1315.5.1 Location. New section.	
	1315.5.2 Screening. New section.	
		1315.2.1 Category 2 Medical-Surgical Vacuum. Category 2 systems shall comply with Section 1315.0, except as follows: (1) Medical-surgical vacuum systems shall be permitted to be simplex. (2) The facility shall develop their emergency plan to deal with the loss of medical-surgical vacuum. [NFPA 99.5.2.3.6]
		1315.2.2 Category 3 Medical-Surgical Vacuum. Category 3 medical-surgical vacuum systems if used, shall comply with Section 1315.2. [NFPA 99.5.3.3.9]
	1315.5.3 Dips and Loops. New section.	
	4320.2.3 1316.2.2 Design. Pressure-relief valves shall be of brass, bronze or stainless steel or bronze and specifically designed for the gas service involved. [NFPA 99.5.3.6.21.6]	
	4324.4 1317.1 General. Station outlets and inlets shall be installed in strict accordance with the manufacturer's installation instructions. Each station outlet and inlet for medical gases and medical vacuum shall be gas-specific. [NFPA 99.5.1.5.1, 5.3.6.17.1]	
	1317.2 Required Valves. New section.	
	1317.2.1 Secondary Valves. New section.	
	4323.4 1318.1 General Category 1 and 2 Systems. Revise- (5) Visual and audible indication that the wiring communication to an alarm initiating device is disconnected. (9) Power for master, and area alarms, sensors and switches from the life safety branch of the emergency electrical system as described in NFPA 99 Chapter 4, Electrical System. (a) Conduit. (b) Free air. (11) Wiring from switches or sensors that is supervised or protected as required by Section 517.30(C)(3) of NFPA 70 for emergency system circuits. Where used for communications, wiring from switches or sensors that is supervised or protected as required by NFPA 70 for life safety and critical branch circuits in which protection is one of the following types: (c) Wire. (d) Cable tray. (e) Raceways. Add- (15) Alarm switches, sensors, or both installed so as to be removable. [NFPA 99.5.1.9.1]	
	1318.2 Category 3 Systems. New section.	
	4326.2.4 1319.2 Breached Systems. Renumbered and revised	
	1319.4 Initial Piping Blow Down. New section.	
	4326.7 1319.5 Initial Pressure Test- Piped Gas-Systems- Medical Gas and Medical Vacuum Systems. Renumbered and revised	
	1319.5.1 Shutoff Valve. New section.	
	1319.5.2 Required Test Pressure. New section.	
	1319.5.3 Leaks. New section.	
	1319.6.1 Atmospheric Pressure. New section	
	1319.6.3 System to be Charged. New section.	
	1319.6.4 Check Outlets and Inlets. New section.	
	1319.6.5 Repeat Tests. New section.	
	1319.6.6 Identification of Systems. New section.	
	4326.9 1319.7 Standing Pressure Test- Medical Gas Piping Systems Piped Gas-Systems. Renumbered, renamed, and revised.	
	1319.7.1 Time Frame for Testing. New section.	
	1319.7.2 Source Valve. New section.	
		1319.7.2.1 Category 3 Gas Powered Device Distribution Piping. The source valve shall be closed unless the source gas is being used for the test. [NFPA 99.5.3.12.2.9(2)].
	1319.7.3 Length of Testing. New section.	
		1319.7.3.1 Category 3 Gas Powered Device Distribution Piping. The piping systems shall be subjected to a 24hour standing pressure testing using oil-free, dry nitrogen NF or the system gas. [NFPA 99.5.3.12.2.9(3)].
	1319.7.4 Test Pressure. New section.	
	1319.7.5 Conclusion of Testing. New section.	

		1319.7.5.1 Category 3 Gas Powered Device Distribution Piping. At the conclusion of the tests, there shall be no change in the test pressure greater than a gauge pressure of 5 psi (35 kPa). [NFPA 99:5.1.12.2.6.4, 5.3.12.2.9(5)]
	1319.7.6 Leaks. New section.	
	1319.7.7 Proof of Testing. New section.	
	4326-44-1319.8 Standing Pressure Test- Piped Medical Vacuum Piping Systems. Renumbered, renamed, and revised.	
	1319.8.1 Time Frame for Testing. New section.	
	1319.8.2 Length of Testing. New section.	
	1319.8.3 Test Pressure. New section.	
	1319.8.4 Disconnection of Testing Source. New section.	
	1319.8.5 Conclusion of Testing. New section.	
	1319.8.6 Leaks. New section.	
	1319.8.7 Proof of Testing. New section.	
	1319.9 Purge tests. New section.	
	1319.9.1 Procedure. New section.	
	1319.9.2 Location. New section.	
	1319.10 Operational Test. New section.	
	1319.10.1 Test Gas. New section.	
	1319.10.2 Medical Gas Outlets. New section.	
	1319.10.3 Medical-Surgical Vacuum Inlets. New section.	
	1319.10.4 Oxygen and Medical Air Outlets. New section.	
	1319.11 Medical Gas Concentration Test. New section.	
	TABLE 1319.11 GAS CONCENTRATIONS. New Table.	
1501.1.1 Allowable use of Alternative Water. Where approved or required by the authority having jurisdiction, alternate water sources (reclaimed (recycled) water, gray water and on-site treated nonpotable water) shall be permitted to be used in lieu of potable water for the applications identified in this chapter. Reclaimed (recycled) water shall not be used to flush toilets or for other indoor use in any residential property or dwelling unit where residents have access to plumbing systems for repairs or modifications.		
1501.2 System Design. Alternate water source systems shall be designed in accordance with this chapter by a registered design professional or person who demonstrates competency to design the alternate water source system as required by the authority having jurisdiction. Components, piping, and fittings used in an alternate water source system shall be listed.		
1501.7 Minimum Water Quality Requirements. The minimum water quality for alternate water source systems shall meet the applicable water quality requirements for the intended application as determined by the authority having jurisdiction. In the absence of water quality requirements, the EPA/625/R-04/108 contains recommended water reuse guidelines to assist regulatory agencies develop, revise, or expand alternate water source water quality standards. The treatment for gray water used to flush toilets or urinals shall be oxidized, coagulated, filtered and disinfected, and be consistent at all times with Washington Class A reclaimed water or better and be approved by the authority having jurisdiction.		
	1501.10 Commercial, Industrial, and Institutional Restrooms Signs. New section.	
	1501.10.1 Equipment Room Signs. New section.	
	1501.11 Inspection and Testing. New section.	
	1501.11.1 Supply System Inspection and Testing. New section.	
	1501.11.2.1 Visual System Inspection. New section.	
	1501.11.2.2 Cross-Connection Test. New section.	
1501.11.2.3 Discovery of Cross-Connection. In the event that a cross-connection is discovered, the following procedure, in the presence of the AHJ, shall be activated immediately: (1) Reclaimed (recycled) water piping to the building shall be shutdown at the meter, and the reclaimed (recycled) water riser shall be drained. (2) Potable water piping to the building shall be shutdown at the meter. (3) The cross-connection shall be uncovered and disconnected. (4) The building shall be retested following procedures listed in Sections 1501.11.2.1 and 1501.11.2.2. (5) The potable water system shall be chlorinated with 50 parts-per-million (ppm) chlorine for twenty-four hours. (6) The potable water system shall be flushed after twenty-four hours, and a standard bacteriological test for drinking water shall be performed by a laboratory certified for drinking water in Washington state. Where test results are satisfactory to the authority having jurisdiction, health authority having jurisdiction, and the water purveyor, the potable water system shall be permitted to be recharged. See also chapter 246-290 WAC.	1501.11.2.3 Discovery of Cross-Connection. New section.	
	1501.11.2.4 Annual Inspection. New section.	
	1501.12 Separation Requirements. New section.	
	1501.13 Abandonment. New section.	
1501.13.1 General. An abandoned system or part thereof covered under the scope of this chapter shall be disconnected from remaining systems, drained, plugged, and capped in an approved manner. Components of the abandoned system including, but not limited to, pipe, tubing, fittings, and valves shall not be used for potable water systems.	1501.13.1 General. New section.	
	1501.13.2 Underground Tank. New section.	
	1501.14 Sizing. New section.	
1502.0 Gray Water Systems. is not adopted. Gray water shall not be used for irrigation except as permitted by the department of health rules.		

<p>1503.4 Connection to Potable or Reclaimed (Recycled) Water Systems. Reclaimed (recycled) water systems shall have no connection to a potable water supply or alternate water source system. Potable water is permitted to be used as makeup water for a reclaimed (recycled) water storage tank provided the water supply inlet is protected by an approved air gap in accordance with this code.</p>		
<p>1504.1 General. The provisions of this section shall apply to the installation, construction, alteration, and repair of on-site treated nonpotable water systems intended to supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, and other uses approved by the authority having jurisdiction.</p>		
<p>1504.7 On-Site Treated Nonpotable Water Devices and Systems. Devices or equipment used to treat nonpotable water for on-site use in order to maintain the minimum water quality requirements determined by the authority having jurisdiction shall be listed or labeled (third-party certified) by a listing agency (accredited conformity assessment body) or approved for the intended application. Devices or equipment used to treat gray water or sewage for use in water closet and urinal flushing, surface irrigation, and similar applications shall oxidize, coagulate, filter and disinfect the gray water or sewage, and be consistent at all times with Washington Class A reclaimed water or better and be approved by the authority having jurisdiction.</p>		
	<p>1601.1 Allowable Use of Alternative Water. New section.</p>	
	<p>1601.2 System Design. New section.</p>	
	<p>1601.3 Permit. New section.</p>	
	<p>1601.4 Component Identification. New section.</p>	
	<p>1601.5 Maintenance and Inspection. New section.</p>	
	<p>1601.5.1 Frequency. New section.</p>	
	<p>1601.5.2 Maintenance Log. New section.</p>	
	<p>1601.5.3 Maintenance Responsibility. New section.</p>	
	<p>TABLE 1601.5 MINIMUM ALTRNATE WATER</p>	
	<p>SOURCE TESTING, INSPECTION AND</p>	
	<p>MAINTENANCE FREQUENCY. New Table.</p>	
	<p>1601.6 Operation and Maintenance Manual. New section.</p>	
	<p>1601.7 Minimum Water Quality Requirements. New section.</p>	
	<p>1601.8 Material Compatibility. New section.</p>	
	<p>1601.9 System Controls. New section.</p>	
	<p>1601.10 Separation Requirements. New section.</p>	
	<p>1601.11 Abandonment. New section.</p>	
<p>1601.11.1 General. An abandoned system or part thereof covered under the scope of this chapter shall be disconnected from remaining systems, drained, plugged and capped in an approved manner. Components of the abandoned system including, but not limited to, pipe, tubing, fittings and valves shall not be used for potable water systems.</p>	<p>1601.11.1 General. New section.</p>	
	<p>1601.11.2 Underground Tests. New section.</p>	
	<p>1601.12 Sizing. New section.</p>	
	<p>1702.9.3-1602.3.1 Collection-Other Surfaces. Revised.</p>	
<p>1702.9.4 1602.9.4 Minimum Water Quality. The minimum water quality for harvested rainwater shall meet the applicable water quality requirements for the intended applications as determined by the Authority Having Jurisdiction. In absence of water quality requirements determined by the Authority Having Jurisdiction, the minimum treatment and water quality shall be in accordance with Table 1602.9.4. No treatment is required for rainwater used for subsurface or non-sprinklered surface irrigation where the maximum storage volume is less than 360 gallons (1363 L).</p>		
	<p>TABLE 1062.9.4 MINIMUM WATER QUALITY. New Table.</p>	
	<p>1702.9.5.6(A) 1602.9.5.6 Animals and Insects. Rainwater tank openings shall be protected to prevent the entrance of insects, birds, or rodents into the tank.</p>	
	<p>Rainwater tank openings exceeding 12 inches (305 mm) in diameter shall be secured to prevent tampering and unattended entry by either a lockable device or other approved method.</p>	
	<p>1602.9.5.6 Storage Tank Venting. New section.</p>	
<p>1702.11.1-1602.11.1 Supply System Inspection and Testing. Add- Storage tanks shall be filled with water to the overflow opening for a period of 24 hours, and during inspection, or by other means as approved by the Authority Having Jurisdiction. Seams and joints shall be exposed during inspection and checked for water-tightness.</p>		

<p>1602.11.2.3 Discovery of Cross-Connection. In the event that a cross-connection is discovered, the following procedure, in the presence of the AHJ, shall be activated immediately:</p> <p>(1) Rainwater catchment water piping to the building shall be shutdown at the meter, and the rainwater water riser shall be drained.</p> <p>(2) Potable water piping to the building shall be shutdown at the meter.</p> <p>(3) The cross-connection shall be uncovered and disconnected.</p> <p>(4) The building shall be retested following procedures listed in Sections 1603.11.2.1 and 1603.11.2.2.</p> <p>(5) The potable water system shall be chlorinated with 50 parts-per-million (ppm) chlorine for twenty-four hours.</p> <p>(6) The potable water system shall be flushed after twenty-four hours, and a standard bacteriological test for drinking water shall be performed by a laboratory certified for drinking water in Washington state. Where test results are satisfactory to the authority having jurisdiction, health authority having jurisdiction, and the water purveyor, the potable water system shall be permitted to be recharged. See also chapter 246-290 WAC.</p>		
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	APPENDIX H PRIVATE SEWAGE DISPOSAL SYSTEMS	
	H101.1 <u>Applicability.</u> <i>New section.</i>	
	H3.1 General. Revise (5) Leaching chambers that comply with IAPMO P3 63 and bundled expanded polystyrene synthetic aggregate units that comply with IAPMO IGC 276 shall be sized using on the bottom absorption area (nominal unit width) in square feet. The the required area shall be calculated using Table H2-4(2) H 201.1(3) with a 0.70 multiplier.	
	APPENDIX I INSTALLATION STANDARD FOR EPX TUBING SYSTEMS FOR HOT- AND COLDWATER DISTRIBUTION. <i>New appendix.</i>	
	APPENDIX J COMBINATION OF INDOOR AND OUTDOOR COMBUSTION AND VENTILATION OPENING DESIGN	
	J 101.1 <u>Applicability.</u> <i>New section.</i>	
	APPENDIX K POTABLE RAINWATER CATCHMENT SYSTEMS	
	TABLE K 104.2(1) <u>MINIMUM WATER QUALITY.</u> <i>New Table.</i>	
	TABLE K 104.2(2) <u>MINIMUM SYSTEM</u>	
	<u>MAINTENANCE REQUIREMENTS.</u> <i>New Table.</i>	
	K 104.4.7 <u>Storage Tank Venting.</u> <i>New section.</i>	
	K 106.1 <u>General.</u> <i>New section.</i>	
	APPENDIX L SUSTAINABLE PRACTICES	
	L 201.0 Definitions. Add- <u>Catch Can Test.</u> <i>New definition.</i>	
	<u>Combination Ovens.</u> <i>New definition.</i>	
	<u>Evapotranspiration (ET).</u> <i>New definition.</i>	
	<u>Food Steamers (Steam Cookers).</u> <i>New definition.</i>	
	<u>Hydrozone.</u> <i>New definition.</i>	
	<u>Irrigation Emission Device.</u> <i>New definition.</i>	
	<u>Irrigation Zone.</u> <i>New definition.</i>	
	<u>Lavatory.</u> <i>New definition.</i>	
	<u>Low Application Rate Irrigator.</u> <i>New definition.</i>	
	<u>Low Flow Emitter.</u> <i>New definition.</i>	
	<u>Low Precipitation Rate Sprinkler Heads.</u> <i>New definition.</i>	
	<u>Precipitation Rate.</u> <i>New definition.</i>	
	<u>Recirculation System.</u> <i>New definition.</i>	
	<u>Soil Absorption Rate.</u> <i>New definition.</i>	
	<u>Sprinkler Head.</u> <i>New definition.</i>	
	<u>Storage Tank.</u> <i>New definition.</i>	
	<u>Stormwater.</u> <i>New definition.</i>	
	<u>Stormwater Catchment System.</u> <i>New definition.</i>	
	TABLE L 402.1 <u>MAXIMUM FIXTURE AND</u>	

	<u>FIXTURE FITTINGS FLOW RATE. New Table.</u>	
	<u>L 402.4 Residential Kitchen Faucets. New section.</u>	
	<u>L 402.6.2 Bath and Shower Diverters. New section.</u>	
	<u>L 402.6.3 Shower Valves. New section.</u>	
	<u>L 402.7 Commercial Pre-Rinse Spray Valves. New section.</u>	
	<u>L 402.8 Emergency Safety Showers and Eye Wash Stations. New section.</u>	
	<u>L 402.9 Drinking Fountains. New section.</u>	
	<u>L 403.0 Appliances. New section and subsections.</u>	
	<u>L 404.0 Occupancy Specific Water Efficiency Requirements. New section and subsections.</u>	
	<u>L 405.0 Leak Detection and Control. New section and subsections.</u>	
		<u>L 407.2 Approval. New section.</u>
		<u>L 408.1.1 Condensate Drainage Recovery. New section.</u>
	<u>L 406.4 409.1 General.</u> Sump pumps powered by potable or reclaimed (recycled) water pressure shall be used as an emergency backup pump. The waterpowered pump shall be equipped with a battery powered alarm having a minimum rating of 85 dba at 10 feet (3048 mm). Water-powered pumps shall have a water efficiency factor of pumping at least 1.4 gallons (5.3 L) of water to a height of 10 feet (3048 mm) for every gallon of water used to operate the pump, measured at a water pressure of 60 psi (414 kPa). Pumps shall be clearly labeled as to the gallons of water pumped per gallon of potable water consumed and not permitted. Water-powered stormwater sump pumps shall be equipped with a reduced pressure principle backflow prevention assembly.	
	<u>L 410.0 Water Softeners and Treatment Devices. New section and subsections.</u>	
	<u>L 411.0 Landscape Irrigation Systems. New section and subsections.</u>	
	<u>L 412.0 Trap Seal Protection. New section and subsections.</u>	
	<u>L 413.0 Vehicle Wash Facilities. New section and subsections.</u>	
		<u>L 413.2 Self-Service. New section.</u>
		<u>L 413.3 Reverse Osmosis. New section.</u>
		<u>L 413.4 Towel Ringers. New section.</u>
		<u>L 603.3.3 503.3.3 Insulation.</u> Add- (3) The first 8 feet (2438 mm) of branch piping connecting to recirculated, heat-traced, or impedance heated piping. (4) The inlet piping between the storage tank and a heat trap in a nonrecirculating storage system. (5) Piping that is externally heated (such as heat trace or impedance heating). [ASHRAE 90.1:7.4.3]
		<u>TABLE L 503.3.2 PERFORMANCE REQUIREMENTS FOR WATER-HEATING EQUIPMENT MINIMUM EFFICIENCY REQUIREMENTS.</u> Table revised.
	<u>L 504.2 Minimum Water Quality.</u> Upon initial startup, the quality of the water for the intended application shall be verified at the point(s) of use as determined by the Authority Having Jurisdiction. In absence of water quality requirements determined by the Authority Having Jurisdiction, the minimum water quality shall be in accordance with Table L 504.2(1). Normal system maintenance will require system testing every 3 months. Systems shall comply with Table L 504.2(2). The minimum water quality for harvested rainwater shall comply with the applicable water quality requirements for the intended applications as determined by the public health Authority Having Jurisdiction, Health Department, or other department having jurisdiction.	
		<u>L 503.4.2.1 Buildings with High-Capacity Service Water Heating Systems.</u> Revise- (3) Individual gas water heaters with input capacity, not more than 4-000-000 100 000 Btu/h (29.3 kW). [ASHRAE 90.1:7.5.3]
	<u>TABLE L 504.2(1) MINIMUM WATER QUALITY. New Table.</u>	
	<u>TABLE L 504.2(2) MINIMUM SYSTEM MAINTENANCE REQUIREMENTS. New Table.</u>	
	<u>L 504.4.7 Storage Tank Venting. New section and subsections.</u>	
	<u>L 506.1 General. New section.</u>	
	<u>L 601.2 Insulation. New section.</u>	
	<u>L 601.3 Recirculation Systems. New section and subsections.</u>	
	<u>L 601.4 Recirculation Pump Controls. New section.</u>	
	<u>L 601.5 Temperature Maintenance Controls. New section.</u>	
	<u>L 601.6 System Balancing. New section.</u>	
	<u>L 601.7 Flow Balancing Valves. New section.</u>	
	<u>L 601.8 Air Elimination. New section.</u>	
	<u>L 601.9 Gravity or Thermosyphon Systems. New section.</u>	
	<u>L 602.7.1 Maximum Volume of Hot Water Without Recirculation or Heat Trace. New section.</u>	
	<u>L 602.7.2 Maximum Volume of Hot Water with Recirculation of Heat Trace. New section.</u>	
	<u>L 602.7.3 Hot Water System Submeters. New section.</u>	
	<u>L 603.3 Mandatory Provisions. New section.</u>	

	TABLE L 603.4.2 603.3.2 PERFORMANCE	
	REQUIREMENTS FOR WATER HEATING EQUIPMENT. Revised Table.	
	TABLE L 603.3.3 MINIMUM PIPE INSULATION	
	THICKNESS FOR HEATING AND HOT WATER	
	SYSTEMS (STEAM, STEAM CONDENSATE, HOT WATER HEATING, AND DOMESTIC	
	WATER SYSTEMS. New Table.	
	L 603.4.2.1 Buildings with High-Capacity Service Water Heating Systems. New	
	section.	
	L 606.0 Drain Water Heat Exchangers. New section.	