2021 OREGON PLUMBING SPECIALTY CODE (OPSC)

Summary of changes

The following is a list of significant changes adopted in the 2021 Oregon Plumbing Specialty Code (OPSC) from the 2017 OPSC. These changes consist of new and existing Oregon amendments, and new model code provisions approved by the State Plumbing Board.

No.	Section	Heading and type of change	Summary
Chapter 3			
1	**UPC 309.6** **OPSC 309.5**	**Dead Legs.** (Adopted new model code)	New model code requires dead legs to have a method of flushing. This new model code change does not define how long a line is to be considered a dead leg, any waterline that is connected to the distribution system that is not serving a fixture, appliance, or appurtenance, will be considered a dead leg and require a method of flushing.
2	**312.6**	**Freezing Protection.** (Retained existing amendment)	Oregon deletes ", in attics or crawl spaces," This Oregon amendment has been retained from last cycle. Freeze protection may still be required for water piping in these locations if not installed within the insolation. Retaining "in attics or crawl spaces" would cause some confusion on requiring the drainage to be protected from freezing.
Chapter 4			
3	**401.3**	**Water-conserving plumbing fixtures and fittings and Table 401.3** (Adopted new amendment)	These new amendments add requirements for water conserving plumbing fixtures and fittings for the Executive Order. This new code amendment became effective Oct. 1, 2020, this interim effective date was to meet executive order 17-02 and a new foot note was added during the code change cycle for kitchen sinks. These new water conserving rates came out of appendix L, sustainable practices. These new requirements are only for new structures. *These amendments rescinded the 2017 OPSC amendments (exceptions) to Sections 408.2 and 411.2.
4	**407.3**	**Limitation of Hot Water Temperature for Public Lavatories.** (Adopted new model code)	Model code added that water heaters complying with ASSE 1084 can be a means for compliance with the requirements to limit the maximum temperature of water to 120°F. Also see Sections 409.4 for bathtubs and whirlpool bathtubs and 410.3 for bidets. This is a new model code change, this allows a water heater meeting ASSE 1084 to be used as a limiting device, versus the point of use 1070. This is an option to the ASSE 1070. This new allowance also is effective for sections 408.3, 409.4, and 410.3
7	**408.5**	**Finished Curb or Threshold.** (Adopted and modified new model code and retained existing amendments)	Model code added language: *"Where there is a shower without a threshold, the floor space within the same room shall be considered a wet location and shall comply with the requirements of the building, residential, and electrical codes"* The committee modified this section to replace " wet location" with "wet room" and retained the Oregon amendment that eliminated the rest of the paragraph that points to other codes. Committee retained the definition of wet room, which is an Oregon amendment. This definition also points to a barrier free shower.

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8	**408.6**	**Shower Compartments.** (Rescinded existing amendment)	The Oregon amendments adding an exception for wet rooms with specific requirements is rescinded. This section is no longer necessary with the additional language in 408.5 that allows a barrier free shower.
9	**412.1.2**	**Nonwater Urinals with Drain Cleansing Action.** (Adopted new model code)	Model code added a section that addresses nonwater urinals that have a drain cleansing action, this added feature to the urinal may require a water connection, and also meet ASME A112.19.19.
Chapter 5			
11	**507.6**	**Electric Water Heaters.** [*2017 OPSC 507.6.3*] (Rescinded existing amendment)	The Oregon amendments in 17 ORSC Section 507.6.3, allowing electric water heaters to be placed on the garage floor is rescinded. Electric water heaters can still be put directly on the garage floor, the language in the 2021 OPSC is specific to gas water heaters for clearance in a garage.
Chapter 6			
12	**601.2**	**Water Supply and Flushing.** (Rescinded existing amendment)	The Oregon amendment deleting the exception for listed fixtures that do not require water for their operation and are not connected to the water supply is rescinded. Model code has added two new exceptions to this section that address the listing for nonwater fixtures and the amendment is no longer needed.
13	**603.3.10**	**Dual Check Backflow Preventer.** (Adopted new model code)	Mode code added language defining dual check backflow preventer as that which consists of two independently acting check valves, force loaded to a normally closed position. This new language in 603.3.10 is not new to Oregon, Oregon has a current amendment that allows a dual check on yard hydrants in section 603.5.17 that allows a device meeting ASSE 1024. This new section just defines the device.
14	**603.3.11**	**Laboratory Faucet Backflow Preventers.** (Adopted new model code)	Model code added language in the body of code for the application of ASSE 1035, which is referenced in Chapter 17. This is not a new standard, it's currently in chapter 17 and references Section 301. This section is new in the code body.
15	**603.5.21**	**Chemical Dispensers.** (Adopted new model code)	Model code added a new section for the requirement of an ASSE 1055 device on a chemical dispensing unit, these are units that are usually installed on sink faucets. This new section is not a new requirement just a clear cite and write path now.
16	**604.10.1**	**Tracer Wire.** (Adopted new model code)	Model code increased the required tracer wire size to be not less than 14 AWG. In the 2017 OPSC, tracer wire was required to be minimum 18 gage, this has changed to 14 AWG gage for longer life span. The wire still has to be direct burial.

No.	Section	Heading and type of change	Summary
17	**T. 604.1**	**Materials for bldg. supply and water distribution piping and fittings.** (Adopted new model code)	Model code added ASTM F1986, which is the standard for multilayer pipe type 2 and compression fittings for hot and cold drinking-water-systems, with a maximum pressure rating of 145 psi at 180F. This standard was in Chapter 17 of the 2017 OPSC; model code moved it to Table 604.1 for user convenience. This is a multilayer polyethylene and PEX pipe, rated at 145 PSI and 180 degrees. This piping requires specific listed fitting to the same standard and are compression fittings. There are a few other standards that have been added to the table. SS fittings, ASTM F3226, PVC, AWWA C907, PE-RT has several new standards for fittings, CPVC, has added ASSE 1061 most of these standards are not new to our Chapter 17 but have been move to the table for user convenience, for example the ASSE 1061 is for push-fit fittings (like SharkBite).
18	**605.12**	**PVC Plastic Pipe and Joints exposed to direct sunlight.** (Adopted new model code)	Model Code moved these requirements from Chapter 3 [2017 OPSC 312.13-312.14]. The exception for PVC water piping that is protected by water based synthetic latex paints is now in Section 605.12. This change from Chapter 3 to Chapter 6, makes this requirement more specific to UV exposed water pipe. the code requires all water piping to be protected from freezing and to be located minimum 12” below frost depth outside the building, this code requirement will seldom be required based on standard installation requirements, because all exterior water pipe cannot be exposed.
19	**606.9**	**Leak Detection Devices.** (Adopted new model code)	Model code added a section requiring water supply and distributions that have leak detection devices to comply with IAPMO IGC 115 or IAPMO IGC 349. These devises are inline devises that sense a water leak by flow volume and trigger a shut off of the water supply. The standards are also new to Chapter 17.
20	**608.2**	**Excessive Water Pressure.** (Adopted new model code)	Model code added language in the body of code for the application of ASSE 1003, which is referenced in Chapter 17. The existing Oregon amendments deleting the requirement that pressure regulators equal to or exceeding 1½ inches to have a strainer are retained. The existing Oregon amendment changing the requirement for a properly sized and sloped boresighted drain to daylight to requiring "adequate means to provide drainage” is retained, as it gives more flexibility for drainage from a pit.
21	**608.3**	**Expansion Tanks, and Combination Temperature and Pressure-Relief Valves.** (Rescinded existing amendment)	The existing Oregon amendment prohibiting the installation of a valve between the expansion tank and the system is rescinded. This amendment was in conflict with the boiler rules. Also, there was confusion on the term between the tank and the system, somewhere interpreting this to also mean the tank could not be downstream of the water heater shut off valve.

No.	Section	Heading and type of change	Summary
22	**608.5**	**Discharge Piping / Drains** (Adopted model code and new amendment) (Rescinded existing amendments)	The existing Oregon amendment deleting the section for discharge piping and adding a section for drains is rescinded. One of the goals of this code cycle was to retain as much model code language as possible. This allows industry to use IAPMO's Illustrated Training Manual and other recourses available from IAPMO to correctly interpret and understand intent. This is one section where we rescinded the Oregon amendments and went back to model code language. A new Oregon amendment was added to retain the garage floor as an acceptable point of disposal for the T&P. By accepting model code changes, this no longer allows a water heater pan as a point of disposal, and also allows for other materials for approval in the discharge piping.
23	**609.4**	**Testing.** (Adopted new model code) (Rescinded existing amendment)	Model code reworded the requirements for testing and added an exception for PEX, PP or PE-RT tube to be tested with air when permitted by the manufacturer's instructions. As the manufacturing industry continues to be innovative and different product materials continue to find their way into our piping systems, testing has always' s been a requirement, but with new products, what testing methodologies are acceptable. The general term of "prohibiting plastic pipe" from air testing is no longer applicable, there are other plastic product that can be tested with air. Oregon has rescinded this old language and accepted the expanded model code language allowing certain plastic product to be tested with air. The Oregon amendment removing the provision that prohibits plastic pipe from being tested with air is rescinded.
24	**609.11**	**Water Hammer.** (Rescinded existing amendment) (Retained existing amendment)	The Oregon amendment adding the term "flushometer," which required hammer arrestors to be installed whenever a flushometer was installed is rescinded. Most flushometer manufactures are designing and manufacturing soft closing flushometers, especially with the lower flow requirements. if the manufactures installation instruction requires a device or the engineered system requires a device then it shall be installed. The Oregon amendment adding an exception for one-and two-family dwellings and townhouses is retained. These structures do not require hammer arrestors to be installed on quick-acting valves.
25	**610.9**	**Size of Branches.** (Adopted new model code)	Model code reworded the language in this section to, hopefully, simplify the sizing calculations. This change does not change pipe sizing from the old language. Old language "no branch piping is required to be larger in size than that required by Table 610.4 for the building supply" New language, "No branch piping shall exceed the total demand in fixture units for the system computed from Table 610.4" you will still supply the water heater demand. The illustrated training manual gives some examples.

No.	Section	Heading and type of change	Summary
26	**611.0**	**Drinking water treatment units.** (Adopted new model code)	Model code added Table 611.1 specifying the compliance standards for the different applications. Model code also added language for the application of IAPMO IGC 322 and IAPMO Z601. This is not a new section, there are several new references to new treatment units and a New table 611.1 has been added for convenience. As we move into more sustainable systems, reuse, rain water, the requirements for purification and filtration systems are becoming more common, and specific for intended use.
Chapter 7			
27	**T. 702.1**	**Table: Drainage Fixture Unit Valves.** (Adopted new model code) (Adopted new amendment)	Mode code added "nonwater urinals with drain cleaning action;" these are urinals that require a small water connection for the cleaning action, the discharge will be at least once a day and a maximum volume of 0.13 gal. These may require an external backflow. Model code also added a footnote 9 to the single shower head. Footnote 9 is new and allows on a retro-fit tub to shower, the trap and trap arm to be 1½. And not be upsized to 2 inches. A new footnote 10 was adopted: *[10]* A 2 inch (50 mm) trap serving a laundry tub shall be permitted to also receive, through a wye connection, the waste from a clothes washer set adjacent thereto.
28	**T.703.2**	**Table: Max. Unit Loading & Maximum Length of Drainage / Vent Piping.** (Retained **part** of the existing amendments) (Adopted new model code)	The Oregon amendment allowing two drainage fixture units for the horizontal 1½ inch horizontal drainage pipe is retained. Oregon rescinded the footnote 5 from the 3-inch horizontal pipe. This was rescinded due to the allowance of 5 water closets on a horizontal line adopted Oct. 1, 2020. Also adopted Oct. 1, 2020 in footnote 4, the change from allowing 3 to 5 water closets on a 3-inch line. A new foot note was created by model code to allow up to 8 public lavatories on a 1½ horizontal line. With this new foot note there were some questions on how to size the line to meet the maximum of 2 fixture units on a 1½ line, there is a new interp. 20-01 posted to the web for clarification. Model code added footnote 7 allowing 8 lavatories to be installed on a 1½ inch vertical branch or horizontal sanitary branch sloped at ¼ inch per foot.
29	**704.2**	**Single Vertical Drainage Pipe.** (Rescinded existing amendment)	The Oregon amendment allowing a double sanitary tee sized per 706.2 to be used for back-to-back or side-by-side fixture trap arm connections is rescinded. Model code language allowing only a fixture fitting is adopted.

No.	Section	Heading and type of change	Summary
30	**707.4**	**Location.** (Adopted new model code as modified and SCI 05-00 is rescinded)	Last code cycle IAPMO added the term "regardless of location" for urinals in 707.4, requiring clean outs on all urinals. This cycle model code has added in (3) kitchen sinks, with this addition in (3) kitchen sinks are no longer an exception for the omission of cleanouts on upper floors. A cleanout will be required on both the urinal and kitchen sinks regardless of location in a building. Part of every code cycle the committee looks at interpretations, and statewide alternate methods to see if they need updating or could be entered into the body of the code, this new amendment is interp. 05-00 for two-way cleanouts. Model code already has in (4) the provisions for a two-way cleanout and Oregon has additional language in the interp., this language from the interp. Has been added to (4) and the interp. Has been rescinded. A cleanout extension, where installed, shall not exceed 3 feet (914 mm) and shall have no offset or change in direction.
31	**707.9**	**Clearance.** (Adopted new model code) (Rescinded existing amendment)	Model code revised the clearance requirements for cleanouts in 2 in. or less piping to 18 inches x 18 inches and for cleanouts in greater than 2-inch piping to 24-inch x 24-inch. So they added to the existing clearances additional side and height dimensions, now the 18 inches and 24 inches become a square box of clearance in front and around the cleanout. Oregon had an amendment that allowed the cleanout to be within 20 feet of the crawl access, when measured along the developed length of the underfloor pathway. Model code has 5 feet max away from the crawl access, the Oregon amendment was rescinded and model code language was retained, the max distance a cleanout can be from a crawl is 5 feet now. The Oregon amendment increasing the distance from access that an underfloor cleanout can be located from not more than 5 feet to not more than 20 feet, and provides the method of measurement is rescinded.
32	**708.1**	**Grade of Horizontal Drainage Piping. General.** (Rescinded existing amendment)	The Oregon amendment allowing 3-inch horizontal drain pipe to be sloped/graded at an $^{1}/_{8}$ inch per foot, model code has only allowed 4 inch and larger to be ran at an $^{1}/_{8}$ inch is rescinded. Model code language is adopted and no longer can 3-inch pipe be ran at $^{1}/_{8}$-inch grade. This change was necessary for the function of 3-inch drainage receiving up to 5 water closets.
33	**715.3**	**Existing sewers.** (Adopted new model code)	Model code added more standards for trenchless sewers. There are some new standards inserted into this section. These are all still CIPP systems and shall be installed per the installation instructions and the standard they are listed to. **ASTM F2599**, is for sectional repairs of piping 4 in. to 60 in. **ASTM F2561**, this standard covers using a one piece main and lateral rehabilitation for laterals 3 in. to 12 in. and connections to mains 6 in. to 24 in. **ASTM F3240**, this standard covers the connection to the lateral to the main in F2561 using a seamless molded hydrophilic gasket. All these new standards are only approved outside the building in the sewer piping.
34	**718.4**	**Tracer Wire.** (Retained existing amendment as modified)	The Oregon amendment adding a section for locating piping in the future is retained with a modification. Tracer wire has also increase on waste piping outside the building, 14 gage is now the standard.

No.	Section	Heading and type of change	Summary
35	**719.6**	**Manholes.** (Adopted new amendment)	Committee discussed industry standards when installing manholes. The purpose of the connection joint for a manhole is to allow the manhole and piping to flex, this can be accomplished by different styles of connections and shouldn't be limited to just one type of connection. The committee recommended to remove the term "compression" and leave the term flexible, this will allow other types of methodologies for this flexible joint.
Chapter 8			
36	**804.1**	**Standpipe Receptors.** (Retained existing amendments as modified)	The existing Oregon amendment to delete "cupboard" is retained. The committee recommended removing the Oregon amendment that limited the cabinet opening to a minimum 20 x 20 and adding a new amendment allowing cabinets that are accessible for inspection and cleaning. The thought was, if the cabinet has enough room to install the receptor, it will have ample room for inspection and cleaning. Health Department rules will still apply in food establishments for placement of receptors.
Chapter 9			
37	**906.1**	**Roof termination.** (Disapproved new model code)	Model code moved the allowance for ABS and PVC piping to be exposed to sunlight if protected by water based synthetic latex paints from Section 312 to Section 906.1 under roof vent terminations. The 2017 OPSC has, in Section 312, all ABS/PVC piping must be protected from UV degradation. This requirement in Chapter 3 made this applicable to all exposure of piping, including, vent terminations. The 2021 UPC deleted those provisions from Section 312 for UV protection and inserted them into Section 906.1, to protect vent terminations. Oregon came out with an interpretation for the 2017 OPSC allowing vent pipes within 12 inches of exposure to not require protection. The new model code language is disapproved and the Interpretation is rescinded. Vent pipes do not need protection from UV in the 2021 OPSC.
38	**910.2**	**Approval.** (Retained existing amendment)	The Oregon amendment deleting the requirement for a plumbing plan review on these types of systems is retained.
39	**910.7**	**Fixtures.** (Rescinded existing amendment)	The Oregon amendment removing the reference to Appendix B for explanatory notes on design and sizing allowances for combination waste and vent systems is rescinded. By rescinding the amendment, this allows the user to reference Appendix B for design criteria. This change allows the differences in sizing allowances between Table 703.2 and the Appendix.

No.	Section	Heading and type of change	Summary
40	**911**	**Circuit Venting.** (Adopted new model code)	Model code reorganized entire section, but not much of the design criteria has changed. There are more references to other applicable code section for clarification. The term “fixture drain” changed to “trap arm” when referencing the 8 allowed fixture connections, this helps clarify, these are the fixture trap arm connections using the system as a vent. A couple of new sections give explanatory language for parallel and continuous systems, these were allowed in the 2017 OPSC, the language was more general. The big change is Section 911.1. The 2017 OPSC language allowed 8 fixtures to be circuit vented, these fixtures were not defined. The 2021 OPSC limits the type of fixtures allowed to be circuit vented, these are only water closets, showers, bathtubs, or floor drains.
Chapter 10			
41	**1007.7**	**Barrier type floor drain trap seal protection.** (Retained existing amendment)	The Oregon amendment adding a section requiring barrier type floor drain trap seal protection devices be in accordance with ASSE 1072, be installed per the manufacturer’s instructions, and cannot be used in lieu of Section 1007.1 requirements is retained. This addition comes from an earlier board approval of ASSE 1072 allowing trap seal protection, this allowance does not negate the trap primer requirement. the adopted interim code, will now be in the body of the code.
42	**1014.3.2.1**	**Toilets and Urinals.** (Retained existing amendment)	The Oregon amendment that adds "bathroom fixtures” to those that shall not drain through the interceptor. No changes, retention of existing Oregon amendment.
43	**1014.3.7**	**Abandoned gravity grease interceptors.** (Retained existing amendment)	The Oregon amendment that specifies the requirements for abandoned gravity grease interceptors is retained. No changes, retention of existing Oregon amendment
Chapter 11			
44	**1101.4**	**Building storm sewers.** (Rescinded existing amendment and adopted a new amendment)	The Oregon amendments adding installation, location, fitting, clean out, joint and connection, and subsidiary material requirements for building storm sewers is rescinded. Several sections have been reconfigured in 1101.4 to clarify, materials, fittings, and location. There is no longer a 2-foot demarcation between approved materials, all the building. materials approved outside the building can be ran up to the building. Medium turn 90 and sanitary tee branch fittings are approved inside and outside the structure in the storm drainage, and storm sewer.
45	**1101.11.5**	**Protection of Piping; Structural Integrity.** (Retained and modified existing amendment)	The Oregon amendment adding specific requirements where drainage piping to or from a catch basin is subject to heavy vehicular traffic or other excessive loads is retained and modified. Section 1101.11.5 is the only place that has language referencing flow through catch basins, the deletion of “to” a catch basin, eliminates the reference to piping running *to* and from a catch basin. This clarifies that flow through catch basins are not allowed by code. If approved, would have to be an engineered design.

No.	Section	Heading and type of change	Summary
46	**1106**	**Engineered Storm Drainage System.** (Adopted new model code)	Model code added provisions for the design and sizing of engineered storm drainage systems, referencing Section 301.5 for alternative engineered design, siphonic roof drainage systems compliance with ASPE 45 and siphonic roof drains in compliance with ASME A112.6.9. This section is new, and is specific to engineered roof drainage systems. There is also specific language for siphonic roof drainage systems and references ASPE 45 for design.
Chapter 13			
47	**13**	Medical Gas. (Adopted new model code and retaining the existing Oregon amendments as modified by the necessary additions from NFPA 99)	Model code reorganized a lot of language in this chapter in 2018 and then reorganized it again in 2021. The substantive change in chapter 13 is the reference now to NFPA 99 2018 edition. CMT is approved for medical gas piping, this is an Oregon amendment. There is a new section on dental offices, this new section splits dental offices into 3 categories, no changes on installation methodologies.
Chapter 16			
48	**1601.2**	**System Design.** (Disapproved new model code) (Retained existing amendment and modified)	Model code added a licensed plumbing contractor to those permitted to design rainwater catchment systems. The Oregon amendment changing “licensed to perform plumbing” to “registered design professional” is retained and modified by also deleting “licensed plumbing contractor.” Registered design professional is defined in chapter two, is defined to cover both registered professionals and licensed professionals, there is no need for the added “licensed plumbing contractor” language.

APPENDICES

There are three categories for the appendices.

1. Adopted Printed in the codebook and amended accordingly.
2. Not adopted, but informational or available for local adoption Remains printed in the codebook for convenience.
3. Not adopted and not available for local adoption Language is deleted from the codebook.

The committee recommends the following:

Adopted as part of the Plumbing Code

- A Recommended Rules for Sizing the Water Supply System.
- C Alternate Plumbing Systems.
- D Sizing Storm Water Drainage Systems.
- E Manufactured/Mobile Home Parks and Recreational Vehicle Parks.
- K Potable Rainwater Catchment Systems.
- B Explanatory Notes of Combination Waste and Vent Systems.
- M Peak Water Demand Calculator.

Not adopted, but informational or available for local adoption

- I Installation Standards. (Informational)
- L Sustainable Practices. (Available for local adoption)
- N Impact of Water Temperature on the Potential for Scalding and Legionella Growth. (Available for local adoption)

Not adopted and not available for local adoption

- F Firefighter Breathing Air Replenishment Systems.
- G Sizing of Venting Systems.
- H Private Sewage Disposal Systems.
- J Combination of Indoor and Outdoor Combustion and Ventilation Opening Design.

STATEWIDE ALTERNATE METHODS			
63	**506.4**	**08-05 Single-wall heat exchangers use in domestic solar hot water systems**	Rescind SAM
64		**08-02/08-04 On-site grey water reuse systems**	Retain SAM
65		**07-01 Air admittance valves for venting a plumbing fixture**	Retain Interp
STATEWIDE CODE INTERPRETATIONS			
66	**908.2**	**19-02 Horizontal wet venting**	Retain Interp
67	**710.4**	**18-02 Pressure piping for discharge lines**	Retain Interp
68	**312.13**	**18-01 UV protection for ABS and PVC**	Rescind Interp
69	**507.1**	**15-02 Water heater seismic strapping**	Retain Interp
70	**610.7**	**14-02 Water pipe sizing Wells and pressure reducing valves**	Retain Interp

71	**707.4 E.4**	**05-00 Two-way cleanout fittings**	Rescind Interp
72	**301.1.41**	**02-00 Replacement of an existing water heater**	Retain Interp
73	**Ch. 6**	**01-01 Fire sprinkler systems in one- and two-family dwellings**	Retain Interp