ANSWER SHEET • Oregon: UPC Chapters 1-4 • Course No. 5000103V

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1.	A B C D	21.	A B C D	41.	A B C D	61.	A B C D
2.	A B C D	22.	A B C D	42.	A B C D	62.	A B C D
3.	A B C D	23.	A B C D	43.	A B C D	63.	A B C D
4.	A B C D	24.	A B C D	44.	A B C D	64.	A B C D
5.	A B C D	25.	A B C D	45.	A B C D	65.	A B C D
6.	A B C D	26.	A B C D	46.	A B C D	66.	A B C D
7.	A B C D	27.	A B C D	47.	A B C D	67.	A B C D
8.	A B C D	28.	A B C D	48.	A B C D	68.	A B C D
9.	A B C D	29.	A B C D	49.	A B C D	69.	A B C D
10.	A B C D	30.	A B C D	50.	A B C D	70.	A B C D
11.	A B C D	31.	A B C D	51.	A B C D	71.	A B C D
12.	A B C D	32.	A B C D	52.	A B C D	72.	A B C D
13.	A B C D	33.	A B C D	53.	A B C D	73.	A B C D
14.	A B C D	34.	A B C D	54.	A B C D	74.	A B C D
15.	A B C D	35.	A B C D	55.	A B C D	75.	A B C D
16.	A B C D	36.	A B C D	56.	A B C D	76.	A B C D
17.	A B C D	37.	A B C D	57.	A B C D	77.	A B C D
18.	A B C D	38.	A B C D	58.	A B C D	78.	A B C D
19.	A B C D	39.	A B C D	59.	A B C D	79.	A B C D
20.	A B C D	40.	A B C D	60.	A B C D	80.	A B C D

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DISCLAIMER NOTE: This course is APPROVED by the Oregon Building Codes Division for continuing education to renew your plumbing license and is not intended to replace or supersede any state or local adopted codes.

Oregon: UPC Chapters 1-4

101.1 Title. This document shall be known as the "Oregon Plumbing Specialty Code" may be cited as such, and will be referred to herein as "This Code".

101.2 Scope. The provisions of this code shall apply to the erection, installation, alteration, repair, relocation, replacement, addition to, or use of plumbing systems as provided in ORS 447.020 and OAR 918-008-0000.

Municipalities, as defined in ORS 455.010(5), may establish administrative procedures in accordance with ORS 455.020(4), and may amend specific sections of Chapter 1, as identified throughout this chapter. When the requirements of this chapter conflict with any administrative requirements throughout this code this chapter shall prevail.

101.3 Purpose. This code provides minimum plumbing requirements and standards for the protection of the public health, safety, and welfare.

The purpose of this code is not to create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefitted by the terms of this code.

101.4 Statutory and Administrative Rule References. This code is adopted pursuant to Oregon Revised Statute (ORS) and the administrative rules adopted thereunder (OAR). Where in any specific case this code and the statutes or rules specify different requirements, the statute or rule shall govern. Statutes related to this code include, but are not limited to, ORS Chapters 447, 455, and 693.

Statutes referenced may be obtained from the Building Codes Division, 1535 Edgewater St NW, Salem OR 97304, or P.O. Box 14470, Salem OR 97309 at a nominal cost or read online at www.oregon.gov/bcd.

101.5 Validity. Where a provision of this code, or the application thereof to a person or circumstance, is held invalid, the remainder of the code, or the application of such provision to other persons or circumstances, shall not be affected thereby.

102.1 Conflicts Between Codes. Where the requirements of this plumbing code conflict with the requirements of other codes and standards, this code shall prevail. In instances where this code, applicable standards, or the manufacturers installation instructions conflict, the most stringent provisions shall prevail. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall prevail.

102.2 Existing Installations. Plumbing systems lawfully in existence at the time of the adoption of this code shall be permitted to have their use or repair continued where the use or repair is in accordance with the original design and location and no hazard to life, health, or property has been created by such plumbing systems.

102.3 Additions, Alterations, Renovations 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 plumbing installations shall comply with the provisions for new construction.

102.7 Appendices. The provisions in the appendices shall not apply unless formally adopted as noted below.

Exam Questions:

1. **What Code is used for the installation of plumbing material and equipment in the state of Oregon?**
   A. Oregon Building Specialty Code
   B. Uniform Plumbing Code
   C. Oregon Plumbing Specialty Code
   D. Oregon Structures Specialty Code

2. **What Oregon Revised Statute (ORS) allows municipalities to establish administrative procedures to amend sections of Chapter 1?**
   A. ORS 455.020(5)
   B. ORS 455.010(4)
   C. ORS 455.020(4)
   D. ORS 455.030(5)

3. **This code provides the minimum plumbing requirements and standards for the protection of the public _____.**
   A. Gatherings
   B. Land
   C. Ordinances
   D. Health, safety, and welfare

4. **What section of this code applies to statutory and administrative rule references?**
   A. 101.5
   B. 101.3
   C. 101.4
   D. 101.2

5. **What term best describes where a provision of this code, or the application thereof to a person or circumstance, is held invalid, the remainder of the code, or the application of such provision to other persons or circumstances, shall not be affected thereby?**
   A. Proprietary
   B. Succession
   C. Validity
   D. All listed answers

6. **If there is a conflict between a general requirement and a specific requirement, what requirement wins out?**
   A. The general requirement
   B. The specific requirement
   C. The memorandum of understanding
   D. The amended section

7. **When does an existing plumbing system need to be re-done?**
   A. If it becomes a hazard to life
   B. If it becomes a hazard to health
   C. If it becomes a hazard to property
   D. All listed answers

8. **What should additions, alterations, renovations, or repairs to an existing plumbing system not cause the existing plumbing system to become?**
   A. Unsafe
   B. Insanitary
   C. Overloaded
   D. All listed answers

9. **The provisions in the appendices _____ apply unless formally adopted as noted below.**
   A. Shall not
   B. Shall
   C. Must
   D. Will

102.7.1 Appendices Adopted. The following appendices are adopted as part of the Oregon Plumbing Specialty Code.

(1) Appendix A (Recommended Rules for Sizing the Water Supply System)

(2) Appendix B (Explanatory Notes of Combination Waste and Vent Systems)

(3) Appendix C (Alternate Plumbing Systems)

(4) Appendix D (Sizing of Storm Water Drainage Systems)

(5) Appendix E (Manufacturer/Mobile Home Parks and Recreational Vehicle Parks)

(6) Appendix K (Potable Rainwater Catchment Systems)

(7) Appendix M (Peak Water Demand Calculator)

102.7.2 Appendices Not Adopted.

102.7.2.1 Appendices Available for Municipal Adoption. The following appendix is not adopted by the state of Oregon but may be adopted by local municipalities by local ordinance. Such adoptions shall comply with the requirements specified in the adopted appendix unless otherwise approved under the provisions of ORS 455.040.

(1) Appendix L (Sustainable Practices)

(2) Appendix N (Impact of Water Temperature on the Potential for Scalding and Legionella Growth)

102.7.2.2 Appendices Not Available for Municipal Adoption. The following appendices are not adopted by the state of Oregon and may not be adopted by the municipality.

(1) Appendix F (Firefighter Breathing Aire Replenishment Systems)

(2) Appendix G (Sizing of Venting Systems)

(3) Appendix H (Private Sewage Disposal Systems)

(4) Appendix I (Installation Standards)

(5) Appendix J (Combination of Indoor and Outdoor Combustion and Ventilation Opening Design)

103.2 Liability. See ORS 30.265 for regulations relating to liability.

104.1 Permits Required. It shall be unlawful for a person, firm, or corporation to make an installation, alteration, repair, replacement, or remodel a plumbing system regulated by this code except as permitted in Section 104.2 OAR Chapter 918, Division 100, and OAR 918-780-0035, or to cause the same to be done without first obtaining a separate plumbing permit for each separate building or structure.

104.5.1 Work Commencing Before Permit Issuance. Any person who commences any work on a plumbing system before obtaining the necessary permits shall be subject to an investigative fee as specified in ORS 455.058.

105.2.1.1 Water Supply System. No Water Supply System or portion thereof shall be covered or concealed until it first has been tested, inspected, and approved.

105.2.1.2 Covering or Using. No plumbing or drainage system, building sewer, or part thereof, shall be covered, concealed, or put into use until it has been tested, inspected, and accepted as prescribed in this code.

107.3 Appeal of Decision of Building Official. ORS 455.475 provides an alternative appeals process to that set forth by a municipality.

Note: Forms for filing an appeal under ORS 455.475 are available online at: www.bcd.oregon.gov.

Exam Questions:

10. What Appendix in the Oregon Plumbing Specialty Code has information regarding potable rainwater catchment systems?
A. E
B. K
C. D
D. C

11. What Appendix in the Oregon Plumbing Specialty Code has information regarding the sizing of storm water drainage systems?
A. D
B. K
C. E
D. C

12. What Appendix in the Oregon Plumbing Specialty Code has information regarding potable rainwater catchment systems?
A. D
B. K
C. C
D. E

13. What Appendix in the Oregon Plumbing Specialty Code has information regarding alternate plumbing systems?
A. D
B. K
C. C
D. E

14. How many appendices are specifically listed where they may be adopted by a municipality by local ordinance?
A. 7
B. 5
C. 6
D. 2

15. How many appendices are specifically listed where they may not be adopted by a municipality?
A. 7
B. 5
C. 6
D. 2

16. What Oregon Revised Statute (ORS) provides regulations relating to liability?
A. ORS 30.265
B. ORS 455.475
C. ORS 455.010(5)
D. ORS 455.058

17. What section lists where to look when the need for a permit may not be required?
A. 104.1
B. 102.1
C. 105.1
D. 104.2

18. What Oregon Revised Statute (ORS) has information regarding investigative fees?
A. ORS 455.010(4)
B. ORS 455.475
C. ORS 455.010(5)
D. ORS 455.058

19. No Water Supply System or portion thereof shall be _____ until it first has been tested, inspected, and approved.
A. Installed
B. Covered or concealed
C. Replaced
D. All listed answers

20. What section discusses not covering a drainage system or building sewer until it has been first tested and inspected?

A. 107.3
B. 105.2.1.2
C. 104.5.1
D. 102.7.2.2

21. What Oregon Revised Statute (ORS) provides an alternative appeals process to that set forth by a municipality?

A. ORS 455.058
B. ORS 455.475
C. ORS 455.010(5)
D. ORS 30.265

Chapter 2 Definitions:

Accessible. Where applied to a fixture, connection, appliance, or equipment, "accessible" means having access thereto, but which first may require the removal of an access panel, door, or similar obstruction.

Accessible, Readily. Having a direct access without the necessity of removing a panel, door, or similar obstruction.

Air Break. A physical separation which may be a low inlet into the indirect waste receptor from the fixture, appliance, or device indirectly connected.

Air Gap, Drainage. The unobstructed vertical distance through the free atmosphere between the lowest opening from a pipe, plumbing fixture, appliance, or appurtenance conveying waste to the flood-level rim of the receptor.

Air Gap, Water Distribution. The unobstructed vertical distance through the free atmosphere between the lowest opening from a pipe or faucet conveying potable water to the flood-level rim of a tank, vat, or fixture.

Alternate Water Source. Nonpotable source of water that includes but not limited to gray water, on-site treated nonpotable water, rainwater, and reclaimed (recycled) water.

Anchors. See Supports.

Approved. Acceptable to the Authority Having Jurisdiction.

Approved Testing Agency. An organization primarily established for purposes of testing to approved standards and approved by the Authority Having Jurisdiction.

Area Drain. A receptor designed to collect surface or storm water from an open area.

Exam Questions:

22. Where applied to a fixture, connection, appliance, or equipment, having access thereto, but which first may require the removal of an access panel, door, or similar obstruction would be defined as?

A. Accessible
B. Accessible, Readily
C. Guarded
D. Concealed

23. What best defines having direct access without the necessity of removing a panel, door, or similar obstruction?

A. Accessible
B. Accessible, Readily
C. Guarded
D. Concealed

24. This is best defined as a physical separation which may be a low inlet into the indirect waste receptor from the fixture, appliance, or device indirectly connected.

A. Air Gap
B. Gap Break
C. Air Break
D. Air Gap, Drainage

25. The unobstructed vertical distance through the free atmosphere between the lowest opening from a pipe, plumbing fixture, appliance, or appurtenance conveying waste to the flood-level rim of the receptor is defined as?

A. Air Space
B. Air Break
C. Air Gap, Drainage
D. Gap Break

26. This is the unobstructed vertical distance through the free atmosphere between the lowest opening from a pipe or faucet conveying potable water to the flood-level rim of a tank, vat, or fixture.

A. Air Gap, Drainage
B. Air Gap, Water Distribution
C. Air Break
D. Air Space

301.4.1 Coastal High Hazard Areas. Plumbing systems in buildings located in coastal high hazard areas shall be in accordance with the requirements of Section 301.4, and plumbing systems, pipes, and fixtures shall not be mounted on or penetrate through walls that are intended to breakaway under flood loads as required by the Building Code.

304.1 Connections to Plumbing System Required (General). Plumbing Fixtures, drains, appurtenances, and appliances, used to receive or discharge liquid wastes or sewage, shall be connected properly to the drainage system of the building or premises, in accordance with the requirements of this code.

306.1 Detrimental Wastes. Wastes detrimental to the public sewer system or detrimental to the functioning of the sewage treatment plant shall be treated and disposed of as found necessary and directed by the Authority Having Jurisdiction.

306.2 Safe Discharge. Sewage or other waste from a plumbing system that is capable of being deleterious to surface or subsurface waters shall not be discharged into the ground or into a waterway unless it has first been rendered safe by some acceptable form of treatment in accordance with the Authority Having Jurisdiction.

307.1 System. Except as otherwise provided in this code, no plumbing system, drainage system, building sewer, private sewage disposal system, or parts thereof shall be located in a lot other than the lot that is the site of the building, structure, or premises served by such facilities.

308.1 Improper Location (General). Piping, fixtures, or equipment shall not be so located as to interfere with the normal use thereof or with the normal operation and use of windows, doors, or other required facilities.

309.1 Workmanship (Engineering Practices). Design, construction, and workmanship shall be in accordance with accepted engineering practices and shall be of such character as to secure the results sought to be obtained by this code.

309.2 Concealing Imperfections. It is unlawful to conceal cracks, holes, or other imperfections in materials by welding, brazing, or soldering or by using therein or thereon paint, wax, tar, solvent cement, or other leak-sealing or repair agent.

309.3 Burred Ends. Burred ends of pipe and tubing shall be reamed to the full bore of the pipe or tube, and chips shall be removed.

309.5 Sound Transmission. Plumbing piping systems shall be designed and installed in conformance with sound limitations as required by the building code.

309.6 Dead Legs. Dead legs shall have a method of flushing.

310.3 Waste Connection. No waste connection shall be made to a closet bend or stub of a water closet or similar fixture.

310.6 Dissimilar Metals. Except for necessary valves, where intermembering or mixing of dissimilar metals occurs, the point of connection shall be confined to exposed or accessible locations.

310.7 Direction of flow. Valves, pipes, and fittings shall be installed in correct relationship to the direction of flow.

Exam Questions:

27. _____ waste connection(s) shall be made to a closet bend or stub of a water closet or similar fixture.

A. 3
B. 2
C. No
D. 1

28. According to the code, where must a plumbing system, drainage system, building sewer, or private sewage disposal system be located?

A. They can be located on any adjacent lot if it offers better connectivity
B. They must all be located on the lot that is the site of the building, structure, or premises they serve, except as otherwise provided
C. They should be placed on a separate utility lot designated for such systems
D. They can be installed on a neighbor's lot with written consent

29. Dead legs shall have a method of _____.

A. Monitoring
B. Access
C. Opening
D. Flushing

30. What should be done to the burred ends of pipe and tubing during installation?

A. They shall be reamed to the full bore of the pipe or tube, and chips shall be removed
B. They should be left as they are to maintain original structure
C. They must be painted over to prevent corrosion
D. They should be cut and replaced with a new fitting

31. What must happen to sewage or waste from a plumbing system before it is discharged into the ground or a waterway?

A. It must be passed through a sediment filter to remove large particles
B. It must be diluted with water to reduce its concentration
C. It can only be discharged during specific times of the year
D. It must be rendered safe by an acceptable form of treatment according to the Authority Having Jurisdiction

32. According to the code, which standard must design, construction, and workmanship adhere to?

A. Client preferences, even if they contradict industry norms
B. The cheapest and fastest methods available
C. Traditional methods, regardless of modern standards
D. Accepted engineering practices to achieve the results intended by the code

33. How should wastes that are detrimental to the public sewer system or sewage treatment plant be managed?

A. They should be treated and disposed of as found necessary and directed by the Authority Having Jurisdiction
B. They should be discharged directly into the nearest water body
C. They should be ignored if in small quantities
D. They should be mixed with household waste for disposal

34. The UPC considers concealing or hiding cracks in a plumbing system _____.

A. Acceptable
B. Normal
C. Unlawful
D. Encouraged

35. Plumbing systems in buildings located in coastal high hazard areas shall be in accordance with the requirements of Section _____.

A. 301.4
B. 310.3.1
C. 301.3.3
D. 303.3.1

36. How are valves, pipes, and fittings required to be installed?

A. In opposition to the direction of flow
B. In correct relationship to the direction of flow
C. In parallel with one another
D. Only by a qualified individual

37. Plumbing piping systems shall be designed and installed in conformance with sound limitations as required by the_____.

A. Sound and vibration standards
B. Residential Code
C. Building code
D. Plumbing Code

38. In situations where dissimilar metals are interjoined or mixed, where must the point of connection be located, excluding necessary valves?

A. Confined to exposed or accessible locations
B. Concealed within walls or ceilings
C. Submerged below ground level
D. Buried behind permanent structures

39. When installing piping or plumbing fixtures, where should they not be located to ensure full functionality of structural components?

A. In a position that prevents the normal operation and function of windows, doors, or any other part of a functioning structure
B. In areas that are easily accessible for maintenance
C. In spaces that provide adequate flow and drainage
D. In regions exposed to extreme temperatures

310.8 Screwed Fittings. Screwed fittings shall be ABS, cast-iron, copper, copper alloy, malleable iron, PVC, steel, or other approved materials. Threads shall be tapped out of solid metal or molded in solid ABS or PVC.

311.0 Independent Systems (General). The drainage system of each new building and new work installed in an existing building shall be separate and independant from that of any other building, and, where available, every building shall have an independent connection with a public or private sewer.

Exception: Where one building stands in the rear of another building on an interior lot, and no private sewer is available or can be constructed to the rear building through an adjoining court, yard, or driveway, the building drain from the front building shall be permitted to extend to the rear building.

312.1 Protection of Piping, Materials, and Structures (General). Piping passing under or through walls shall be protected from breakage. Piping passing through or under cinders or other corrosive materials shall be protected from external corrosion in an approved manner. Approved provisions shall be made for expansion of hot water piping. Voids around piping passing through concrete floors on the ground shall be sealed.

312.2 Installation. Piping in connection with a plumbing system shall be so installed that piping or connections will not be subject to undue strain or stresses, and provisions shall be made for expansion, contraction, and structural settlement. No plumbing piping shall be directly embedded in concrete or masonry. No structural member shall be seriously weakened or impaired by cutting, notching, or otherwise, as defined in the building code.

312.3 Building Sewer and Drainage Piping. No building sewer or other drainage piping or part thereof, constructed of materials other than those approved for use under or within a building, shall be installed under or within 2 feet of a building or structure, or less than 1 foot below the surface of the ground.

312.4 Corrosion, Erosion, and Mechanical Damage. Piping subject to corrosion, erosion, or mechanical damage shall be protected in an approved manner.

312.8 Waterproofing of Openings. Joints at the roof around pipes, ducts, or other appurtenances shall be made watertight by use of lead, copper, galvanized iron, or other approved flashings or flashing material. Exterior wall openings shall be made watertight. Counterflashing shall not restrict the required internal cross-sectional area of the vent.

312.9 Steel Nail Plates. Plastic and copper or copper alloy piping penetrating framing members to within 1 inch of the exposed framing shall be protected by steel nail plates not less than No. 18 guage in thickness. The steel nail plate shall extend along the framing member not less than 1 1/2 inches beyond the outside diameter of the pipe or tubing.

312.11 Structural Members. A structural member weakened or impaired by cutting, notching, or otherwise shall be reinforced, repaired, or replaced so as to be left in a safe structural condition in accordance with the requirements of the building code.

Exam Questions:

40. Materials not approved for use in buildings must be installed no less than _____ below finish grade.

A. 1′
B. 2′
C. 3′
D. 4′

41. The preferred method when connecting a building's sewer system is to have it _____ with other buildings' systems.

A. Shared
B. Common
C. Independent
D. Oversized

42. How should piping be installed in connection with a plumbing system according to the code?

A. It should be installed underground to avoid stress and strain
B. It should be installed tightly with minimal allowances for movement
C. It should be installed without undue strain or stress, allowing for expansion, contraction, and structural settlement
D. It can be installed at any angle as long as it meets the local building codes

43. What is the requirement regarding the installation of plumbing piping in relation to concrete or masonry?

A. Plumbing piping must be embedded in masonry for better durability
B. Plumbing piping can be partially embedded in concrete or masonry if adequately insulated
C. Plumbing piping should always be fully embedded in concrete for support
D. Plumbing piping shall not be directly embedded in concrete or masonry

44. When plastic and copper or copper alloy piping penetrates framing members and comes within 1 inch of the exposed framing, what is the required protection method?

A. They must be wrapped with duct tape to prevent contact with nails or screws
B. They shall be protected by steel nail plates not less than No. 18 gauge in thickness
C. They should be covered with plastic sheeting to prevent moisture exposure
D. They should be embedded in foam insulation for added protection

45. Materials not approved for use in buildings must be installed no closer than_____ of the building.

A. 4′
B. 1′
C. 3′
D. 2′

46. All penetrations of plumbing systems to the outside need to be made _____.

A. Airtight
B. UV resistant
C. Watertight
D. Carefully

47. What is required for piping that passes through or under cinders or other corrosive materials?

A. It must be insulated with non-conductive material to prevent heat loss
B. It should only be installed above ground to avoid corrosion
C. It needs to be painted to match the surrounding environment
D. It must be protected from external corrosion in an approved manner

48. What material requirements must be met for screwed fittings according to the code?

A. They should be exclusively molded in ABS plastic
B. They must only be made of cast-iron or copper for durability
C. They shall be ABS, cast-iron, copper, copper alloy, malleable iron, PVC, steel, or other approved materials
D. They can be made from any metal as long as it is lightweight

313.1 General. Piping, fixtures, appliances, and appurtenances shall be supported in accordance with this code, the manufacturers installation instructions, and in accordance with the Authority Having Jurisdiction.

313.2 Material. Hangars and anchors shall be of sufficient strength to support the weight of the pipe or tubing and its contents. Piping shall be isolated from incompatible materials.

314.3 Open Trenches. Excavations required to be made for the installation of a building drainage system or part thereof, within the walls of a building, shall be open trench work and shall be kept open until the piping has been inspected, tested, and accepted.

314.4 Excavations. Excavations shall be completely backfilled as soon after inspection as practicable. Precaution shall be taken to ensure compactness of backfill around piping without damage to such piping. Trenches shall be backfilled in thin layers to 12 inches (305 mm) above the top of the piping with clean earth, which shall not contain stones, boulders, cinderfill, frozen earth, construction debris, or other materials that will damage or break the piping or cause corrosive action. Mechanical devices such as bulldozers, graders, etc., shall be permitted to then be used to complete backfill to grade. Fill shall be properly compacted. Precautions shall be taken to ensure permanent stability for pipe laid in filled or made ground.

Underground thermoplastic pipe and fittings for sewers and other gravity flow applications shall be installed in accordance with this code and Section 314.4.1.

315.1 Unions. Approved unions shall be permitted to be used in drainage piping where accessibly located in the trap seal or between a fixture and its trap; in the vent system, except underground or in wet vents; at any point in the water supply system; and in gas piping as permitted by Section 1212.6.

315.2 Prohibited Joints and Connections. A fitting or connection that has an enlargement, chamber, or recess with a ledge, shoulder, or reduction of pipe area that offers an obstruction to flow through the drain shall be prohibited.

316.1 Increasers and Reducers (General). Where different sizes of pipes and fittings are to be connected, the proper size increasers or reducers or reducing fittings shall be used between the two sizes. Copper alloy or cast-iron body cleanouts shall not be used as a reducer or adapter from cast-iron drainage pipe to iron pipe size (IPS) pipe.

317.1 Food Handling Establishments (General). Food or drink shall not be stored, prepared, or displayed beneath soil or drain pipes unless those areas are protected against leakage or condensation from such pipes reaching the food or drink as described below. Where building design requires that soil or drain pipes be located over such areas, the installation shall be made with the least possible number of joints and shall be installed to connect to the nearest adequately sized vertical stack with the provisions as follows:

(1) Openings through floors over such areas shall be sealed watertight to the floor construction.

(2) Floor and shower drains installed above such areas shall be equipped with integral seepage pans.

(3) Soil or drain pipes shall be of an approved material as listed in Chapter 17 and Section 701.2. Materials shall comply with established standards. Cleanouts shall be extended through the floor construction above.

(4) Piping subject to operation at temperatures that will form condensation on the exterior of the pipe shall be thermally insulated.

(5) Where pipes are installed in ceilings above such areas, the ceiling shall be of the removable type, or shall be provided with access panels in order to form a ready access for inspection of piping.

Exam Questions:

49. What precautions should be taken when backfilling trenches around piping to ensure protection and stability?

A. The area around pipes should be compacted with heavy machinery to ensure no movement, without specific consideration for materials used
B. Trenches should be filled all at once with a mixture of stones and compacted earth for stabilizing the pipes quickly
C. Backfill should be completed only with recycled materials to promote environmental sustainability, regardless of potential for pipe damage
D. Trenches should be backfilled in thin layers to 12 inches above the top of the piping with clean earth, free of stones, boulders, cinderfill, frozen earth, construction debris, or other materials that could damage or corrode the piping

50. What is the requirement for excavations made within the walls of a building for installing a building drainage system?

A. They can be partially closed as long as the inspector is notified prior to inspection
B. They should be filled in immediately after the piping is installed to ensure safety
C. They must be covered with protective barriers until the installation is complete
D. They must be open trench work and remain open until the piping has been inspected, tested, and accepted

51. Where should food or drink not be stored, prepared, or displayed according to code, unless specific precautions are taken?

A. Beneath soil or drain pipes, unless those areas are protected against leakage or condensation
B. Next to refrigeration units to avoid temperature fluctuations
C. Directly under HVAC systems without protective coverings
D. Near open windows that allow direct exposure to sunlight

52. When connecting pipes and fittings of different sizes, what must be used between the two sizes to ensure proper connection?

A. Adhesive tape to create a seal between the different sizes
B. The proper size increasers or reducers or reducing fittings
C. A flexible hose to bridge the gap between sizes
D. A threaded coupling of any size

53. Brass or cast-iron body cleanouts shall not be used as a _____or adapter from cast-iron drainage pipe to iron pipe size (IPS) pipe.

A. Connector
B. Reducer
C. Union
D. All listed answers

54. A union used in gas piping needs to comply with Section _____of the UPC.

A. 1215.2
B. 1512.5
C. 1212.6
D. 1212.5

55. Which type of fitting or connection is prohibited in a drain due to obstruction of flow?

A. A fitting or connection that is straight and unobstructed
B. A fitting or connection that allows for a continuous uniform flow
C. A fitting or connection that has an enlargement, chamber, or recess with a ledge, shoulder, or reduction of pipe area
D. A fitting or connection that widens towards the outlet end

407.4 Transient Public Lavatories. Self-closing or metering faucets shall be installed on lavatories intended to serve the transient public, such as those in, but not limited to service stations, train stations, airports, restaurants, and convention halls.

403.2 Fixtures and Fixture Fittings for Persons with Disabilities. Plumbing Fixtures and fixture fittings for persons with disabilities shall comply with ICC A117.1 and the applicable standards referenced in Chapter 4.

403.3 Exposed Pipes and Surfaces. Water supply and drain pipes under accessible lavatories and sinks shall be insulated or otherwise be configured to protect against contact. Protectors, insulators, or both shall comply with A112.18.9 or ASTM C1822.

412.1.1 Nonwater Urinals. Nonwater urinals shall have a liquid barrier sealant to maintain a trap seal. Nonwater urinals shall permit the uninhibited flow of waste through the urinal to the 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 rinsing. Where nonwater urinals are installed, they shall have a water distribution line rough-in to each individual urinal location to allow for the installation of an approved backflow prevention device in the event of a retrofit.

408.7.3 Sheet Lead. Sheet lead shall weigh not less than 4 lb/ft2 (19.5 kg/m2) and shall be coated with an asphalt paint or other approved coating. The lead sheet shall be insulated from conducting substances, other than the connecting drain, by 15 pound (6.8 kg) asphalt felt or an equivalent. Sheet lead shall be joined by burning.

Exam Questions:

56. Where are self-closing or metering faucets required to be installed according to the code?

A. On lavatories that are infrequently used in rural areas
B. Exclusively in private residential bathrooms
C. Only in new construction lavatories regardless of their use
D. On lavatories intended to serve the transient public, such as those in service stations, train stations, airports, restaurants, and convention halls

57. What is required when installing nonwater urinals to allow for future retrofitting?

A. An additional waste trap to prevent odors from escaping
B. A drainage line extension to accommodate potential increases in usage
C. A water distribution line rough-in to each individual urinal location for the installation of an approved backflow prevention device
D. An electronic sensor for monitoring urinal usage

58. How should nonwater urinals be maintained according to the code?

A. Nonwater urinals should be cleaned and maintained only when they appear dirty
B. Nonwater urinals shall be cleaned and maintained in accordance with the manufacturer's instructions after installation
C. Nonwater urinals need no maintenance after installation
D. Nonwater urinals shall be cleaned and maintained once a month regardless of usage

59. What is the minimum weight and required coating for sheet lead according to the code?

A. Sheet lead shall weigh not less than 4 lb/ft^2 (19.5 kg/m^2) and shall be coated with an asphalt paint or other approved coating
B. Sheet lead shall weigh not less than 6 lb/ft^2 (29.3 kg/m^2) and does not require any coating
C. Sheet lead shall weigh not less than 2 lb/ft^2 (9.8 kg/m^2) and shall be coated with any type of paint
D. Sheet lead shall weigh not less than 8 lb/ft^2 (39 kg/m^2) and shall be coated with a water-based paint only

407.2.2 Metering Faucets. Metered faucets shall deliver a maximum of 0.25 gallons per metering cycle.

416.4 Emergency Eyewash and Shower Equipment (Location). Emergency eyewash and shower equipment shall be located on the same level as the hazard and accessible for immediate use. The path of travel shall be free of obstructions and shall be clearly identified with signage.

404.2 Overflows. Where a fixture is provided with an overflow, the waste shall be so arranged that the standing water in the fixture shall not rise in the overflow where the stopper is closed or remain in the overflow where the stopper is closed or remain in the overflow where the fixture is empty. The overflow pipe from a fixture shall be connected to the house or inlet side of the fixture trap, except that overflow on flush tanks shall be permitted to discharge into the water closets or urinals served by them, but it shall be unlawful to connect such overflows with any part of the drainage system.

418.2 Strainer. Floor drains shall be considered plumbing fixtures and each such drain shall be provided with an approved-type strainer having a waterway equivalent to the area of the tailpiece. Floor drains shall be of an approved type and shall provide a watertight joint on the floor.

402.10 Slip Joint Connections. Fixtures having concealed slip joint connections shall be provided with an access panel or utility space not less than 12 inches (305 mm) in its least dimension and so arranged without obstructions as to make such connections accessible for inspection and repair.

405.1 Prohibited Water Closets. Water closets having an invisible seal or an unventilated space or having walls which are not thoroughly washed at each discharge shall be prohibited. A water closet that might permit siphonage of the contents of the bowl back into the tank shall be prohibited.

405.2 Prohibited Urinals. Trough urinals and urinals with an invisible seal shall be prohibited.

404.1 Waste Fittings. Waste fittings shall comply with ASME A112.18.2/CSA B125.2, ASTM F409 or Table 701.2 for above ground drainage piping and fittings.

Exam Questions:

60. What must be ensured for fixtures equipped with an overflow to prevent issues when the stopper is closed?

A. The stopper must be designed to automatically open when water reaches the overflow level
B. The fixture must have an automatic draining system to handle overflow
C. The overflow must be sealed to prevent any water ingress when the stopper is closed
D. The waste system must be arranged so that standing water does not rise or remain in the overflow

61. When installing a slip joint that needs to be concealed, a _____ access panel needs to be installed for inspection and repairs.

A. 9″
B. 11″
C. 10″
D. 12″

62. Which of the following types of urinals are prohibited according to the code?

A. Trough urinals and urinals with an invisible seal
B. Wall-mounted urinals with a visible seal
C. Freestanding urinals with manual flush
D. Waterless urinals using visible seals

63. What should be done about a water closet that might allow siphonage of its contents back into the tank?

A. It should be routinely inspected
B. It shall be prohibited
C. It must be retrofitted with a filter
D. It should only be used during low-demand periods

64. True or False? Overflows on flush tanks shall be permitted to discharge into the water closets or urinals served by them.

A. True
B. False

65. According to the code, what feature must each floor drain have to be considered a plumbing fixture?

A. A removable cover for easy cleaning access
B. An approved-type strainer with a waterway equivalent to the area of the tailpiece
C. A water seal trap to prevent odors
D. A backflow preventer for flood protection

66. What is the maximum amount of water that metered faucets are allowed to deliver per metering cycle?

A. 0.25 gallons
B. 0.50 gallons
C. 0.75 gallons
D. 1.00 gallon

402.6.1 Closet Rings (Closet Flanges). Closet rings (closet flanges) for water closets or similar fixtures shall be of an approved type and shall be bronze, copper, hard lead, cast-iron, galvanized malleable iron, ABS, PVC, or other approved materials. Each such closet ring (closet flange) shall be approximately 7 inches (178 mm) in diameter and, where installed, shall, together with the soil pipe, present a 1½ inch (38 mm) wide flange or face to receive the fixture gasket or closet seal.

Caulked-on closet rings (closet flanges) shall be not less than ¼ of an inch (6.4 mm) thick and not less than 2 inches (51 mm) in overall depth.

Closet rings (closet flanges) shall be burned or soldered to lead bends or stubs, shall be caulked to cast-iron soil pipe, shall be solvent cemented to ABS and PVC, and shall be screwed or fastened in an approved manner to other materials.

Closet bends or stubs shall be cut off so as to present a smooth surface even with the top of the closet ring before rough inspection is called.

Closet rings (closet flanges) shall be adequately designed and secured to support fixtures connected thereto.

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. 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. Flush tanks and similar appurtenances shall be secured by approved non-corrosive screws or bolts.

402.7 Supply Fittings. The supply lines and fittings for every plumbing fixtures shall be so installed as to prevent backflow in accordance with Chapter 6.

405.3 Miscellaneous Fixtures. Fixed wooden, or tile wash trays for domestic use shall not be installed in a building designed or used for human habitation. No sheet metal-lined wooden bathtub shall be installed or reconnected. No dry or chemical closet (toilet) shall be installed in a building used for a human habitation, unless first approved by the Health Officer.

406.2 Special Use Sinks. Restaurant kitchen and other special use sinks shall be permitted to be made of approved type bonderized and galvanized sheet steel of not less than an No. 16 U. S. gauge (0.0635 inches) (1.6 mm). Sheet-metal plumbing fixtures shall be adequately designed, constructed, and braced in an approved manner to accomplish their intended purpose.

411.1 Application. Water closets shall comply with a ASME A112.19.2/CSA B45.1, ASME A112.1 9.3/CSA B45.4, or CSA B45.5/IAMPO Z124. Water closet bowls for public use shall be of the elongated type. In nurseries, schools, and other similar places where plumbing fixtures are provided for the use of children less than 6 years of age, water closets shall be of a size and height suitable for children's use.

411.3 Water Closet Seats. Water closet seats shall be properly sized for the water closet bowl type, and shall be of smooth, non-absorbent materials. Seats, for public use, shall be of the elongated type and either of the open front type or have an automatic seat cover dispenser. Plastic seats shall comply with a IAPMO/ANSI Z124.5.

407.3 Limitation of Hot Water Temperature for Public Lavatories. Hot water delivered from public use lavatories shall be limited to a maximum temperature of 120˚F (49˚C).

The maximum temperature shall be regulated by one of the following means:

(1) A limiting device conforming to either ASSE 1070/ASME A 112.1070/CSA B125.70, or

(2) A water heater conforming to ASSE 1084

409.6 Installation and Access. Bathtubs and whirlpool bathtubs shall be installed in accordance with the manufacturers instructions. Access openings shall be of a size and opening to permit the removal and replacement of the circulation pump. Whirlpool pump access located in the crawl space shall be located not more than twenty (20) feet (6,096 mm) from an access door, trap door, or crawl hole. The circulation pump shall be located above the crown weir of the trap. The pump and the circulation piping shall be self-draining to minimize water retention. Suction fittings on whirlpool bathtubs shall comply with ASME A112.19.7/CSA B45.10.

Exam Questions:

67. What type of water closet bowls are required for public use?
- A. Square type
- B. Round type
- C. Compact type
- D. Elongated type

68. How should wall-hung fixtures be supported to prevent strain on the connections?
- A. By using adhesive strips
- B. By attaching them directly to drywall
- C. By rigidly supporting them with metal supporting members
- D. By securing them with plastic hooks

69. The use of a dry or chemical type toilet is acceptable if approved by a _____.
- A. Plumber
- B. BCD
- C. General Contractor
- D. Health officer

70. What are the size and function of a closet ring (closet flange) in relation to the soil pipe and fixture gasket?
- A. The closet ring should be approximately 7 inches in diameter and, with the soil pipe, present a 1½ inch wide flange to receive the fixture gasket or closet seal
- B. The closet ring should be approximately 5 inches in diameter and feature a 2 inch wide flange to support the fixture base
- C. The closet ring should be approximately 8 inches in diameter and sit flush with the floor for stability
- D. The closet ring should be approximately 6 inches in diameter and extend 3 inches above the floor level

71. A whirlpool pump located in a crawl space can be located no more than _____from an access door.
- A. 20 feet
- B. 15 feet
- C. 25 feet
- D. 18 feet

72. A flush tank is required to be connected using _____ resistant bolts or screws.
- A. Torque
- B. Strip
- C. Corrosion
- D. Moisture

73. The hot water in public use lavatories is required to be set to a maximum temperature of _____˚F
- A. 120
- B. 134
- C. 160
- D. 100

74. What chapter of this code requires how fittings and supply lines are to be installed?
- A. 4
- B. 5
- C. 6
- D. 7

402.6.3 Securing Floor-Mounted, Back-Outlet Water Closet Bowls. Floor-mounted, back-outlet water closet bowls shall be set level with an angle of 90 degrees (1.57 rad) between the floor and wall at the centerline of the fixture outlet. The floor and wall shall have a flat mounting surface not less than 5 inches (127 mm) to the right and left of the fixture outlet centerline. The fixture shall be secured to the wall outlet flange or drainage connection and the floor by corrosion-resistant screws or bolts. The closet flange shall be secured to a firm base. Where floor-mounted, back-outlet water closets are used, the soli pipe shall be not less than 3 inches in diameter. Offset, eccentric, or reducing closet flanges shall not be used.

408.3 Individual Shower and Tub-Shower Combination Control Valves. Showers and tub-shower combinations shall be provided with individual control valves of the pressure balance, thermostatic, or combination pressure balance/thermostatic mixing valve type that provide scald and thermal shock

protection for the rated flow rate of the installed showerhead. These valves shall be installed at the point of use and comply with ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1.

408.3.1 Gang Showers. Where gang showers are supplied with a single temperature-controlled water supply pipe, it shall be controlled by a mixing valve that conforms to ASSE 1069.

412.2 Backflow Protection. A water supply to a urinal shall be protected by an approved-type vacuum breaker or other approved backflow prevention device in accordance with Section 603.5.

418.5 Floor Slope. Floors shall be sloped to floor drains.

408.10 Water Supply Riser. A water supply riser from the shower valve to the showerhead outlet, whether exposed or not, shall be securely attached to the structure.

Exam Questions:

75. What is the installation requirement for floor-mounted, back-outlet water closet bowls?

A. They must be positioned parallel to the wall to maximize bathroom space
B. They must be installed with a 45-degree angle to ensure proper water drainage
C. They must be elevated at least 2 inches above the floor for easy cleaning access
D. They must be set level with an angle of 90 degrees (1.57 rad) between the floor and wall at the centerline of the fixture outlet

76. What type of control valves are required for showers and tub-shower combinations to ensure scald and thermal shock protection?

A. Rotary valves that only control water pressure
B. Simple on/off valves with no temperature regulation
C. Individual control valves of the pressure balance, thermostatic, or combination pressure balance/thermostatic mixing valve type
D. Manual valves that require manual adjustment for temperature changes

77. The soil pipe for a floor mounted back outlet water closet cannot be less than _____ in diameter.

A. 1.5″
B. 2″
C. 2.5″
D. 3″

78. Which requirement must be met when a single temperature-controlled water supply pipe is used?

A. It must be controlled by a mixing valve that conforms to ASSE 1069
B. It must have a manual shut-off valve to comply with local plumbing codes
C. It must be labeled with the maximum water temperature setting for safety
D. It must be fitted with a pressure relief valve to prevent over-pressurization

79. What is required for a water supply riser from the shower valve to the showerhead outlet?

A. It needs to be hidden within the wall but not necessarily secured
B. It should be loosely hung to allow for easy adjustment
C. It must be securely attached to the structure, whether exposed or not
D. It can be left unattached if it is exposed

80. The floor and wall for a floor-mounted, back-outlet water closet bowl is required to have a flat mounting surface not less than _____to the right and left of the fixture outlet centerline.

A. 6 inches
B. 4 inches
C. 8 inches
D. 5 inches