

# Errata for 2021 Uniform Plumbing Code Illustrated Training Manual – 1st Printing

The following are changes that we found after the first printing of the *2021 Uniform Plumbing Code Illustrated Training Manual*. These changes may apply to your code book. Thank you.

## CHAPTER 2

**Definitions (Editorial).** Change "Also, known as..." so that it reads "Also known as..." The comma needs to be removed in these uses of the word "also" for the following definitions:

**Clinical Sink.** Also known as a bedpan washer.

**Combination Temperature and Pressure-Relief Valve.** Also known as a T&P Valve.

**Contamination.** Also defined as High Hazard.

**Gray Water.** Also known as grey water, graywater, and greywater.

**Pollution.** Also defined as "Low Hazard."

**Rainwater Catchment System.** Also known as a rainwater harvesting system.

**Rainwater Storage Tank.** Also known as a cistern or rain barrel.

**Roof Washer.** Also known as a first flush device.

Change "Vent, Gases" to read "Vent, Gas"

**Venting System.** A continuous open passageway from the flue collar or draft hood of an appliance to the outdoors for the purpose of removing flue or vent gases. [NFPA 54:3.3.95.7]

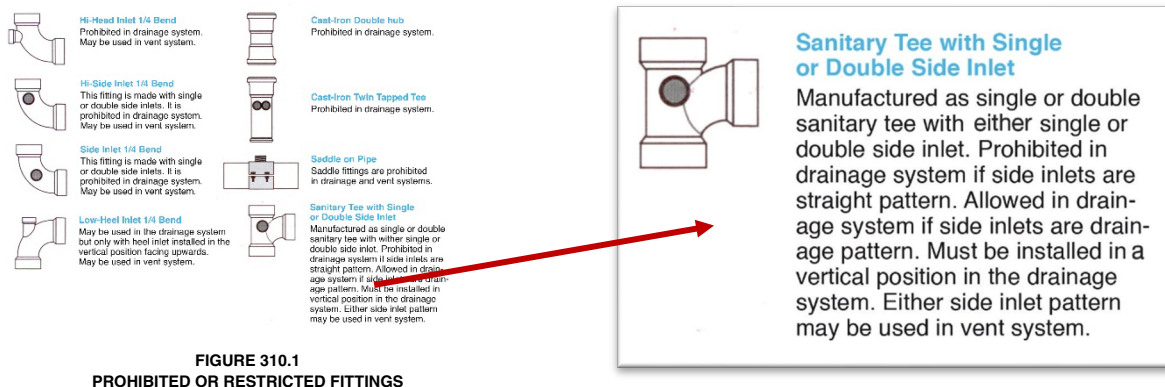
**Vent, Gases Gas**

A listed factory-made vent pipe and vent fittings for conveying flue gases to the outdoors.

## CHAPTER 3

**Figure 310.1 Prohibited or Restricted Fittings** – The commentary in the figure for "Sanitary Tee with Single or Double Side Inlet" should be corrected as follows:

Manufactured as single or double sanitary tee with ~~w~~**either** single or double inlet. Prohibited in drainage system if side inlets are straight pattern. Allowed in drainage system if side inlets are drainage pattern. Must be installed in a vertical position in the drainage system. Either side inlet patterns may be used in vent system.



**Section 315.1** – Revise the reference section, from "Section 1212.5.1" to "Section 1212.6."

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

**Section 318.5** – Add the missing text that was omitted from the sentence in Section 318.5.

**318.5 Pressure Range.** Test gauges shall have a pressure range not exceeding twice the test pressure applied.  
 Commentary The purpose of the gauge is not only to measure the pressure but to visually witness if the piping held its test or leaked out. Using too large a gauge will make this impossible (see **Figure 318.5**).

**CHAPTER 4**

**TABLE 422.1  
 MINIMUM PLUMBING FACILITIES<sup>1</sup>**

Each building shall be provided with sanitary facilities, including provisions for persons with disabilities as prescribed by the Department Having Jurisdiction. Table 422.1 applies to new buildings, additions to a building, and changes of occupancy or type in an existing building resulting in increased occupant load.

A-2 Assembly occupancy restaurants, pubs, lounges, nightclubs and banquet halls	Male 1: 1-50 2: 51-150 3: 151-300 4: 301-400	Female 1: 1-25 2: 26-50 3: 51-100 4: 101-200 6: 201-300 8: 301-400	Male 1: 1-200 2: 201-300 3: 301-400 4: 401-600	Male 1: 1-150 2: 151-200 3: 201-400	Female 1: 1-150 2: 151-200 4: 201-400	—	1: 1-250 2: 251-500 3: 501-750	1 service sink or laundry tray
	Over 400, add 1 fixture for each additional 250 males and 1 fixture for each 125 females.		Over 600, add 1 fixture for each additional 300 males.	Over 400, add 1 fixture for each additional 250 males and 1 fixture for each additional 200 females		—	Over 750, add 1 fixture for each additional 500 persons.	

(portion of table not shown remains unchanged)

**CHAPTER 6**

**Table 603.2** — Change the text in Table 603.2 to read as follows:

“Upright position. Have outlet open to atmosphere. Minimum of 6 inches or listed distance above all downstream piping and flood-level rim of receptor.<sup>4,5</sup>”

**TABLE 603.2  
 BACKFLOW PREVENTION DEVICES, ASSEMBLIES, AND METHODS**

DEVICE, ASSEMBLY, OR METHOD <sup>1</sup>	APPLICABLE STANDARDS	DEGREE OF HAZARD				INSTALLATION <sup>2,3</sup>
		POLLUTION (LOW HAZARD)		CONTAMINATION (HIGH HAZARD)		
		BACK-SIPHONAGE	BACK-PRESSURE	BACK-SIPHONAGE	BACK-PRESSURE	
Atmospheric vacuum breaker (consists of a body, checking member and atmospheric port)	ASSE 1001 or CSA B64.1.1	X	—	X	—	Upright position. <b>No valve downstream. Have outlet open to atmosphere.</b> Minimum of 6 inches or listed distance above all downstream piping and flood-level rim of receptor. <sup>4,5</sup>

(portions of table not shown remain unchanged)

## Section 603.3.2

**Section 603.3.2** – Revise the text in the 5<sup>th</sup> bullet to read as follows:

~~Valves are not permitted downstream of an AVB. The AVB shall have its outlet open to atmosphere. As long as~~ components such as check valves, gate valves, solenoid valves or pressure-regulating devices are located in a branch tee that does not block the outlet of the AVB to atmosphere such components are permitted downstream the AVB. ~~can trap or suspend pressure in the AVB, thereby allowing continuous pressure.~~

**Section 603.5.12** – Edit the section text by inserting a comma after "beverage dispensers" and before "carbonated beverage dispensers" in the first sentence.

**603.5.12 Beverage Dispensers.** Potable water supply to beverage dispensers, carbonated beverage dispensers, or coffee machines shall be protected by an air gap or a vented backflow preventer that complies with ASSE 1022. For carbonated beverage dispensers, piping material installed downstream of the backflow preventer shall not be affected by carbon dioxide gas.

## CHAPTER 12

**Section 1208.10.6** – Since they are consecutive numbers and not a number range, replace the dash with a comma and a space in the NFPA reference.

**1208.10.6 Discharge of Vents.** The discharge stacks, vents, or outlet parts of all pressure relieving and pressure limiting devices shall be located so that gas is safely discharged to the outdoors. Discharge stacks or vents shall be designed to prevent the entry of water, insects, or other foreign material that could cause blockage. The discharge stack or vent line shall be at least the same size as the outlet of the pressure relieving device. [NFPA 54: 5.9.8.10–5.9.8.2]

**Section 1208.6.7.3** – Correct the spelling of the word “liquefied” as follows:

**1208.6.7.3 Undiluted ~~Liquified~~ Liquefied Petroleum Gas Piping.** The use of plastic pipe, tubing, and fittings in undiluted LP-Gas piping systems shall be in accordance with NFPA 58. [NFPA 54:5.6.4.3(3)]

## CHAPTER 13

**Table 1314.5 and Table 1324.5.11** – Add the word "TABLE" in the NFPA extracts under the table titles for Tables 1314.5 and 1324.5.11.

**TABLE 1314.5  
POSITIVE PRESSURE GASES  
[NFPA 99: TABLE 5.1.4.1.6(a)]**

**TABLE 1324.5.11  
GAS CONCENTRATIONS  
[NFPA 99: TABLE 5.1.12.4.11]**

## APPENDIX L

**Section L 402.2.2** – Change the ASME Standard from A112.112.19.2/CSA B45 to A112.19.2/CSA B45 by removing the duplicate “112.” as noted below.

**L 402.2.2 Flushometer-Valve Activated Water Closets.** Flushometer-valve activated water closets shall have a maximum flush volume of not more than 1.28 gallons (4.8 Lpf) of water per flush in accordance with ASME A112.~~112.~~19.2/CSA B45.1 and shall be listed to the EPA WaterSense Specification for Flushometer-Valve Water Closets.

**Table L 503.3.3** – Revise the existing table title to include the notes “1, 2, 3, 4, 5”.

**TABLE L 503.3.3**  
**MINIMUM PIPING INSULATION THICKNESS FOR HEATING AND HOT-WATER SYSTEMS (STEAM, STEAM CONDENSATE, HOT-WATER HEATING, AND DOMESTIC WATER SYSTEMS)**<sup>1,2,3,4,5</sup>  
**[ASHRAE 90.1: TABLE 6.8.3-1]**

(portions of the table not shown remain unchanged)

**Section L 503.4.1(1)** – Revise the temperature interval conversion in the second paragraph, from “90°F (32°C) above ambient” to “90°F (50°C) above ambient.”

**L 503.4.1 Space Heating and Water Heating.** The use of a gas-fired or oil-fired space heating boiler system, otherwise in accordance with Section L 503.0, to provide the total space heating and service water heating for a building is allowed where one of the following conditions is met:

- (1) The single space-heating boiler, or the component of a modular or multiple boiler system that is heating the service water, has a standby loss in Btu/h (kW) not exceeding  $(13.3 \times pmd + 400)/n$ , where (*pmd*) is the probable maximum demand in gallons per hour, determined in accordance with the procedures described in generally accepted engineering standards and handbooks, and (*n*) is the fraction of the year where the outdoor daily mean temperature exceeds 64.9°F (18.28°C).

The standby loss is to be determined for a test period of 24 hours duration while maintaining a boiler water temperature of not less than 90°F (~~32°C~~ **50°C**) above ambient, with an ambient temperature between 60°F (16°C) and 90°F (32°C). For a boiler with a modulating burner, this test shall be conducted at the lowest input.

(portions of the text not shown remain unchanged)

**Section L 503.4.5** – The two exceptions should not be indented as they are exceptions for both section bullets (1) and (2), not just bullet (2).

**L 503.4.5 Capacity.** The required heat recovery system shall have the capacity to provide the smaller of:

- (1) Sixty percent of the peak heat-rejection load at design conditions.
- (2) Preheat of the peak service hot-water draw to 85°F (29°C).

**Exceptions:**

- (1) Facilities that employ condenser heat recovery for space heating with a heat recovery design exceeding 30 percent of the peak water-cooled condenser load at design conditions.
- (2) Facilities that provide 60 percent of their service water heating from site-solar or site-recovered energy or other sources.  
[ASHRAE 90.1:6.5.6.2.2]

## APPENDIX M

**Example 2: Indoor and Outdoor Water Use** – In Example 2 Solution Step 1 text, add an open parenthesis prior to 0.662 L/s).

**Solution: Step 1 of 2 – Find Demand Load for the Building Supply.**

The WDC has been developed exclusively for peak indoor water use which can be viewed as a high-frequency short duration process. Because fixtures for outdoor water use may operate continuously for very long periods, they are not included in the WDC. To account for water use from one or more outdoor fixtures, add the demand of the single outdoor fixture with the highest flowrate to the calculated demand for indoor water use. With two hose bibbs, the demand of only one hose bibb is included. Hence, in this example, the total demand for the whole house is 8.5 gpm (0.54 L/s) + 2.0 gpm (0.13 L/s) = 10.5 gpm (**0.662 L/s**).