

*and fittings, manufactured in accordance with ASTM D2846, 1/2 inch through 2 inches in diameter.*

PVC pipe and fittings shall be cleaned and joined with primer(s) and solvent cement(s).

A solvent cement transition joint between ABS and PVC building drain or building sewer shall be made using a listed transition solvent cement.

**[HCD 1 & HCD 2]** For applications listed in Section 108.2.1 through 108.2.1.3 regulated by the Department of Housing and Community Development, plastic pipe and fittings joined with solvent cement shall utilize Low-VOC primer(s), if a primer is required, and Low-VOC solvent cement(s) as defined in Section 215.

**316.1.7 Brazing and Welding.** Brazing and welding shall conform to the applicable standard(s) in Table 14-1. Only brazing alloys having a liquid temperature above 1,000°F shall be used. All brazing on medical gas systems shall be performed by certified installers meeting the requirements of ANSI/ASME Boiler and Pressure Vessel Code, Section IX, Welding and Brazing Qualifications, or AWS B2.2, Standard for Brazing Procedure and Performance Qualifications.

**316.1.8 [Not permitted for OSHPD 1, 2, 3 & 4] Pressure-Lock-Type Connection.** This is a mechanical connection that depends on an internal retention device to prevent pipe or tubing separation. Connection is made by inserting the pipe or tubing into the fitting to a prescribed depth.

**316.1.9 [Not permitted for OSHPD 1, 2, 3 & 4] Pressed Fitting.** This is a mechanical connection for joining copper tubing that uses a crimping tool to affix the O-ring seal copper or copper alloy fitting to the tubing. The tubing shall be inserted into the fitting, and the crimp shall be made using the tool recommended by the manufacturer.

### 316.2 Special Joints.

**316.2.1 Copper Tubing to Screw Pipe Joints.** Joints from copper tubing to threaded pipe shall be made by the use of brass adapter fittings. The joint between the copper tubing and the fitting shall be a soldered brazed flared, or pressed joint and the connection between the threaded pipe and the fitting shall be made with a standard pipe size screw joint. Solder shall conform to the requirements of Section 316.1.3. Brazed joints shall conform to the requirements of Section 316.1.7. Flared joints shall conform to the requirements of Section 316.1.4.

Pressed joints shall conform to the requirements of 316.1.9.

**316.2.2 Unions.** Approved unions may be used in drainage piping when 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 1211.3.2(4).

**316.2.3 Plastic Pipe to Other Materials.** When connecting plastic pipe to other types of piping, only approved types of fittings and adapters designed for the specific transition intended shall be used.

**316.2.4 Dielectric Unions. [HCD 1 & HCD 2, DSA/SS, OSHPD 1, 2, 3 & 4]** Dielectric unions shall be used at all points of connection where there is a dissimilarity of metals.

### 316.3 Flanged Fixture Connections.

**316.3.1** Fixture connections between drainage pipes and water closets, floor outlet service sinks and urinals shall be made by means of approved brass, hard lead, ABS, PVC, or iron flanges caulked, soldered, solvent cemented; rubber compression gaskets; or screwed to the drainage pipe. The connection shall be bolted with an approved gasket, washer, or setting compound between the fixture and the connection. The bottom of the flange shall be set on an approved firm base.

**316.3.2** 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.

**316.3.3** Wall-mounted water closet fixtures shall be securely bolted to an approved carrier fitting. The connecting pipe between the carrier fitting and the fixture shall be an approved material and designed to accommodate an adequately sized gasket. Gasket material shall be neoprene, felt, or similar approved types.

### 316.4 Prohibited Joints and Connections.

**316.4.1 Drainage System.** Any 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.

**316.4.2** No fitting or connection that offers abnormal obstruction to flow shall be used. The enlargement of a three (3) inch (80 mm) closet bend or stub to four (4) inches (100 mm) shall not be considered an obstruction.

### 317.0 Increases and Reducers.

Where different sizes of pipes and fittings are to be connected, the proper size increasers or reducers or