

**Exception:** Where a grounding system acceptable to the Authority Having Jurisdiction is installed, inspected, and approved, metallic pipe shall be permitted to be replaced with nonmetallic pipe. Plastic materials for water service piping outside underground shall have a blue insulated copper tracer wire or other approved conductor installed adjacent to the piping. Access shall be provided to the tracer wire or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG and the insulation type shall be suitable for direct burial.

**604.5** Water pipe and fittings with a lead content which exceeds 8 percent shall be prohibited in piping systems used to convey potable water.

**604.6 Plastic Fittings.** Female PVC screwed fittings for water piping shall be used with plastic male fittings and plastic male threads.

**604.7 Flexible Corrugated Connectors.** Flexible corrugated connectors of copper or stainless steel shall be limited to the following connector lengths:

- (1) Fixture Connectors – 80cm (30 in.).
- (2) Washing Machine Connectors – 1.8m (72 in.).
- (3) Dishwasher and Ice maker Connectors – 3m (120 in.).

**604.8 Slip Joints.** In water piping, slip joints shall be permitted to be used on the exposed fixture supply.

## **605.0 Joining Methods.**

**605.1 PVC Plastic Pipe and Joints.** PVC plastic pipe and fittings joining methods shall comply with the following:

- (1) Solvent cement joints for PVC pipe and fittings shall be clean from dirt and moisture. Pipe shall be cut square and pipe shall be deburred. Where surfaces to be joined are cleaned and free of dirt, moisture, oil and other foreign material, apply primer purple in color conforming to ASTM F656 or equivalent International Standard(s) approved by the Authority Having Jurisdiction. Primer shall be applied until pipe and fitting is softened. Solvent cements complying with ASTM D2564 or equivalent International Standard(s) approved by the Authority Having Jurisdiction shall be applied to all joint surfaces. Joints shall be made while both the inside socket surface and outside surface of pipe are wet with solvent cement. Hold joint in place and undisturbed for 1 minute after assembly. Universal or multi-purpose solvent cement shall be prohibited. Solvent cement joints shall be installed in accordance with the manufacturer's instructions.

- (2) Mechanical joints shall be installed in accordance with the manufacturer's instructions. Such joints shall be designed to provide a permanent seal and shall be of the mechanical or push-on joint.

The mechanical joint shall include a pipe spigot that has a wall thickness to withstand without deformation or collapse; the compressive force exerted where the fitting is tightened.

The push-on joint shall have a minimum wall thickness of the bell at any point between the ring and the pipe barrel. The gasket shall be of such size and shape as to provide a compressive force against the spigot and socket after assembly to provide a positive seal.

- (3) Threaded joints shall be installed in accordance with the manufacturer's installation instructions. A minimum of Schedule 80 shall be permitted to be threaded; however, the pressure rating shall be reduced by 50 percent. The use of molded fittings does not result in a 50 percent reduction in the pressure rating of the pipe because the molded fittings are fabricated so that the wall thickness of the material is maintained at the threads. Caution shall be used during assembly to prevent over-tightening of the PVC components once the thread sealant has been applied.

**605.2 CPVC Plastic Pipe and Joints.** CPVC plastic pipe and fittings joining methods shall comply with the following:

- (1) Solvent cement joints for CPVC pipe and fittings shall be clean from dirt and moisture. Solvent cements complying with ASTM F493 or equivalent International Standard(s) approved by the Authority Having Jurisdiction, requiring the use of a primer shall be orange in color. The primer shall be colored and conform to ASTM F656 or equivalent International Standard(s) approved by the Authority Having Jurisdiction. Listed solvent cement complying with ASTM F493 or equivalent International Standard(s) approved by the Authority Having Jurisdiction that does not require the use of primers, yellow in color, shall be permitted for pipe and fittings manufactured in accordance with ASTM D2846 or equivalent International Standard(s) approved by the Authority Having Jurisdiction, 15mm through 65mm (0.5 - 2.5 in.) in external pipe diameter. Apply primer where required inside the fitting and to the depth of the fitting on the pipe. Apply liberal coat of cement to the outside surface of pipe to depth of fitting and inside of fitting. Place pipe inside fitting to forcefully bottom the pipe in the socket and hold together until joint is set. Solvent cement joints shall be installed in accordance with the manufacturer's instructions.