

- specific procedures, follow the manufacturer's recommendations.
- 2.8.3 Transition Joints**
- 2.8.3.1 Fittings.** Transitions for composite tubing to metal piping or valves shall be made only with transition fittings intended for that purpose.
- 2.8.4 Joints.** Joints shall not be allowed in piping installed in or under a concrete slab resting on grade unless for repair within a building structure. All repair joints must be properly protected with a heat shrink sleeve. All slab penetrations shall be sleeved.
- 2.9 Pressure Relief Valves**
- 2.9.1 PEX-AL-PEX Piping.** PEX-AL-PEX piping used for temperature and/or pressure relief valve drain lines shall be graded to the outlet end and shall be supported at a maximum of 8 ft. 2 in. (2,489 mm) interval horizontally. Vertical piping shall be supported at every floor. Vertical piping shall have a mid-story guide.
- 2.10 Installation**
- 2.10.1 Bends.** Piping shall be installed by bending the composite pipe by hand to a minimum radius of 5 times the nominal pipe diameter. External bend supports or sleeves are not required as the composite piping is rigid after bending.
- 2.10.2 Damage.** Kinked, buckled, gouged, or other obvious damaged pipe shall not be used.
- 2.10.3 Finish Nipples.** Finish nipples shall be connected to drop ear fittings to prevent rotation. Finish nipples shall not be PEX.
- 2.10.4 Hose Bibs.** The piping directly connected to any hose bib shall be so anchored that the load on the hose bib will not strain the composite piping.
- 2.10.5 Heated Joints.** An open flame shall not be applied to PEX-AL-PEX or PE-AL-PE piping when brazing, soldering, or welding joints.
- 2.10.6 Working Pressure and Temperature.** Long term working pressures for the PEX-AL-PEX shall not exceed a maximum of 125 psi (860 kPa) and the long term working temperature shall not exceed 180°F (82°C). Long term working pressures for the PE-AL-PE shall not exceed a maximum of 100 psi (690 kPa) and the long term working temperature shall not exceed 180°F (82°C).
- 2.10.7 Exposure to Sunlight.** Only UV stabilized composite piping can be subjected to direct sunlight after installation and can be installed on the surface of the building. Composite pipe contains an ultraviolet (UV) inhibitor to withstand limited exposure to UV light. Manufacturer's recommends placing the unused portion of a coil back in the product's box rather than storing in the sunlight while not in use.
- 2.10.8 Water Heater Connections.** PEX-AL-PEX or PE-AL-PE piping shall not be installed within the first eighteen inches (18) (457 mm) of piping connected to a water heater. [UPC 604.13.2]
- 2.10.9 Water Hammer Arrestors.** A composite hot water system will withstand repeated pressure surges, well in excess of its rated pressure. The Uniform Plumbing Code requires a means of attenuating water hammer. Consequently, water hammer arrestors shall be required when solenoid valves or other quick closing devices are used in the system. In designing for such situations, it is advisable to consult the pipe or fittings manufacturer for recommended surge pressure limits. Water hammer and surge pressure calculations are reviewed in Chapter 7, AWWA Manual M-11. [UPC 609.10]
- 2.11 Sizing**
- 2.11.1 Method.** Piping shall be sized in accordance with UPC Section 610.0.
- When UPC Appendix A is applicable, use Table 2. Add equivalent lengths from Table 3 when determining developed length.
- Maximum velocities through PEX-AL-PEX and PE-AL-PE copper alloy fittings shall be limited to eight (8) feet per second (fps) (2.4 mps) in cold water and five (5) feet per second (fps) (1.52 mps) in hot water. [UPC 610.0]