2.4 Thermal Expansion

2.4.1 Snaking. The pipe and tubing shall be "snaked" in the trench bottom with enough slack to provide for thermal expansion and contraction before stabilizing. The normal slack created by residual coiling is generally sufficient for this purpose. If, however, the pipe has been allowed to straighten before it is placed in the trench, 6 inches (152 mm) per 100 feet (30,480 mm) of pipe length shall be allowed for this purpose.

2.4.2 Stabilizing. Pipe and tubing temperature shall be stabilized by one of the following methods:

(a) Shade backfill. Leave all joints exposed so they can be examined during the pressure test.

(b) Allow to stand overnight.

2.5 Trenching and Backfill

2.5.1 Trenching. Trenching bottoms shall be smooth and regular of either undisturbed soil or a layer of compacted backfill so that minimum settlement will take place. Pipe or tubing shall not be wedged or blocked. Voids shall be filled and compacted to level of trench bottom. The minimum cover shall be 18 inches (457 mm) below finish grade. [UPC 315.0, 1211.1.2]

Exceptions:

(1) Tubing for gas lights shall be buried a minimum of 12 inches (305 mm) below finish grade where gas flow is restricted to 10 cubic feet per hour (8 x $10^{-5}m^3/s$) at its source by a mechanical means or a fixed orifice.

Note: *Local climatic conditions may affect required burial depth.*

(2) Piping may terminate a maximum of one foot above ground when encased in a listed anodeless transition riser.

2.5.2 Backfill. The pipe and tubing temperature shall be stabilized before backfilling. See Section 2.4.2. [UPC 315.4, 1211.1.2]

2.6 Types of Joints

PE joints shall be made as follows:

2.6.1 Heat Fusion Joints. Heat fusion joints shall be made according to the manufacturer's procedures using recommended heat times, temperature and joining pressures. [UPC 1209.5.9]

2.6.2 Mechanical Joints. Mechanical joints shall be assembled in an approved manner with tools recommended by the fitting manufacturer. Mechanical joints shall be made with listed mechanical fittings. [UPC 1209.5.9]

2.7 Special Joints

2.7.1 Listed transition fittings or listed mechanical fittings shall be used when making joints between PE and steel or PE and copper.

2.7.2 Transition fittings shall be installed outside of meter vaults with metallic piping extending into the vaults a sufficient distance to permit the use of backup wrenches.

2.8 Inspections

2.8.1 Temperature. Pipe temperatures shall be stabilized before testing. See Section 2.4.2. [UPC 1214.0]

2.8.2 Piping shall be subjected to the pressure test required in Section 1214.0 of the Uniform Plumbing Code. [UPC 1214.0]

2.9 Materials

2.9.1 Location. PE pipe and tubing shall be installed only outside the foundation of any building or structure or parts thereof. It shall be buried in the ground for its entire length with cover as provided in Section 2.5.1. It shall not be installed within or under any building or structure or mobile home or commercial coach or parts thereof. The term "building or structure or parts thereof" shall include structures such as porches and steps, whether covered or uncovered, roofed porte-cocheres, roofed patios, carports, covered walks, covered driveways and similar structures or appurtenances. [UPC 1211.0]

Exception: Tubing may extend into gas light support columns provided it is not exposed to external damage.

2.9.2 Maximum Working Pressure. Gas pressure shall not be more than 5 psi (34.5 kPa) for natural gas nor more than 10 psi (69 kPa) for liquified petroleum gas.

2.9.3 Gas Supplier. Installation shall be acceptable to the serving gas supplier.

2.10 Installation of Gas Piping

2.10.1 Types of Joints. See Sections 2.6 and 2.7 of this standard. [UPC 1209.5.9]

2.10.2 Prohibited Joints. PE pipe shall not be joined by a threaded joints. Joints made with adhesives or solvent cement shall be prohibited.