TABLE 1
Thermal Expansion Table
Chart Shows Length Changes in Inches vs. Degrees Temperature Change
Coefficient of Linear Expansion: $e = 5.5 \times 10^{-5}$ in/in °F

Length (feet)	40°F	50°F	60°F	70°F	80°F	90°F	100°F
20	0.536	0.670	0.804	0.938	1.072	1.206	1.340
40	1.070	1.340	1.610	1.880	2.050	2.420	2.690
60	1.609	2.010	2.410	2.820	3.220	3.620	4.020
80	2.143	2.680	3.220	3.760	4.290	4.830	5.360
100	2.680	3.350	4.020	4.700	5.360	6.030	6.700

TABLE 1 (Metric)
Thermal Expansion Table
Chart Shows Length Changes in Millimeters vs. Degrees Temperature Change
Coefficient of Linear Expansion: $e = \frac{0.3 \text{ mm}}{\text{mm °C}}$

Length (mm)	4°C	10°C	16°C	21°C	27°C	32°C	38°C
6096	13.6	17.0	20.4	23.8	27.2	30.6	34.0
12192	27.2	34.0	40.8	47.8	52.1	61.5	68.3
18288	40.9	51.1	61.2	71.6	81.8	92.0	102.1
24384	54.4	68.1	81.8	95.5	110.0	122.7	136.1
30480	68.1	85.1	102.1	119.4	136.1	153.2	170.2

Example:

Highest Temperature expected	100°F	(38°C)
Lowest Temperature expected	- 50°F	(10°C)
	50°F	(10°C)

Length of run – 60 feet (18288 mm) from chart, read 2.010 inches (51 mm) linear expansion that must be provided for.

or caulked joints made in an approved manner. In caulking, pack the joint with oakum or hemp and fill with molten lead to a depth of not less than (1) inch (25.4 mm). Allow a period of four (4) minutes for cooling, following which, caulk the lead at the inside and outside edges of the joint. Lead shall not be overheated. Heat lead to melting point only. [UPC 705.1]

Note: Caulked joints should be avoided if possible.

2.5.2 Solvent Cement Joints

2.5.2.1 Selection. Solvent cement shall be recommended for ABS by the manufacturer. Follow manufacturer's recommendations for types of solvent cement for such conditions as temperature over 100°F (38°C), or humidity over 60%. [UPC 316.1.6]

2.5.2.2 Handling (to maintain effectiveness). Solvent cement containers no larger than 1 gallon (3.8 liters) should be used in the field (to avoid thickening due to evaporation). Keep container closed and in the shade when not in use. Keep applicator submerged in solvent cement between applications. When solvent cement becomes thicker, THROW IT AWAY. Solvent cement shall NOT be thinned.

2.5.2.3 Size of Applicator. Applicator should be about one half the pipe diameter. Do not use small applicator on large pipes. Ordinary pure bristle paint brush or applicators furnished with product are satisfactory.

2.5.2.4 Application. Solvent cement shall be applied deliberately, but without delay