TABLE 2
THRUST AT FITTINGS IN POUNDS AT 100 psi

Pipe Size Inches	90° Bends	45° Bends	22-1/2° Bends	Dead Ends and Tees
1-1/2	415	225	115	295
2	645	350	180	455
2-1/2	935	510	260	660
3	1395	755	385	985
3-1/2	1780	962	495	1260
4	2295	1245	635	1620
5	3500	1900	975	2490
6	4950	2710	1385	3550
8	8300	4500	2290	5860
10	12,800	6900	3540	9050
12	18,100	9800	5000	12,800

TABLE 3
THRUST AT FITTINGS IN PASCALS AT 689 kPa OF WATER PRESSURE

Pipe Size mm	90° Bends	45° Bends	22-1/2° Bends	Dead Ends and Tees
38	1846.8	1001.3	511.8	1312.8
51	2870.3	1557.5	801.0	2024.8
64	4160.8	2269.5	1157.0	3937.0
76	6207.8	3359.8	1713.3	4383.3
89	7921.0	4280.9	2202.8	5607.0
102	10,212.8	5540.3	2815.8	7209.0
127	15,575.0	8455.0	4338.8	11,080.5
152	22,027.5	12,059.5	6163.3	15,797.5
203	36,935.0	20,025.0	10,190.5	26,077.0
254	56,960.0	30,705.0	15,753.0	40,272.5
305	80,545.0	43,610.0	22,250.0	56,960.0

Example for Table 2:

For a pressure of 150 psi (1,033.5 kPa) on a 4 inch (102 mm) tee, Table 2 indicates 1,620 pounds (7,209 N) for 100 psi (689 kPa). Therefore, total thrust for 150 psi (1033.5 kPa) will equal 1-1/2 times 1620 pounds (7,209 N) for a total thrust of 2430 pounds (10,810 N).

To determine the bearing area of thrust blocks, refer to Table 4 for the safe bearing load of the soil and divide the total thrust by this safe bearing load.

TABLE 4
SAFE BEARING LOADS OF VARIOUS SOILS

Soil Lbs./sq. ft.	Safe Bearing Load kPa	
Mulch, Peat, etc.	0	0
Soft Clay	1000	6890
Sand	2000	13,780
Sand and Gravel	3000	20,670
Sand and Gravel Cement with Clay	4000	27,360
Hard Shale	10,000	68,900

Example: Assume a 4,000 pound (17,800 N) total thrust was computed. The soil condition is sand. The required bearing area of the thrust block is 4,000 lbs. (17,800 N) divided by 2,000 lbs. (13,780 kPa) or 2 square feet (0.19 m^2).

2.9 Testing

2.9.1 Rubber Gasketed Joints. Properly sized thrust blocks, either permanent or temporary, shall be installed at all required points before testing. See Section 2.8.4. When concrete thrust blocks are installed, wait at least 24 hours before pressure testing.

2.9.2 Solvent Cement Joints. The entire system shall be purged before testing to eliminate all solvent cement vapors and air.

CAUTION: *Water test only.*

2.9.3 Identification. A label shall be fastened to the main electrical meter panel stating, "This structure has a nonmetallic water service".

2.10 Sizing

2.10.1 Piping shall be sized in accordance with UPC Section 610.0. When UPC Appendix A is applicable, use UPC Chart A-5 (Fairly smooth). Flow velocity shall not exceed 8 fps (2.4 m/s). [UPC 610.0]

This standard is a combination of sections from the previous standards IS 8 and IS 14. IS 8 was originally adopted in 1968 and revised in 1971, 1972, 1973, and 1975. IS 14 was originally adopted in 1972 and revised in 1975. Upon adoption of this rewrite, IS 14 was deleted.

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[1] Appendix XI, Safety Requirements and Precautions from ASTM D2564 Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings is reprinted with permission from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103, copyright.