

Table 1 Dimensions of Polyethylene Pipes for Sprinkler Irrigation

(Clauses 5.1 and A-4.3)

All dimensions in millimetres.

Nominal Diameter	Outside Diameter	Nominal Tolerance on Outside Diameter	Ovality	Wall Thickness (e)							
				Class 1 (0.25 MPa)		Class 2 (0.32 MPa)		Class 3 (0.4 MPa)		Class 4 (0.6 MPa)	
				Min	Max	Min	Max	Min	Max	Min	Max
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
40	40.0	+0.4	1.4	-	-	-	-	-	-	2.3	2.8
50	50.0	+0.5	1.4	-	-	-	-	2.0	2.4	2.9	3.4
63	63.0	+0.6	1.5	-	-	2.0	2.4	2.5	2.9	3.8	4.4
75	75.0	+0.7	1.6	2.0	2.4	2.5	2.9	3.0	3.4	4.5	5.2
90	90.0	+0.8	1.8	2.2	2.6	2.9	3.4	3.5	4.1	5.3	6.1
110	110.0	+1.0	2.2	2.7	3.2	3.4	3.9	4.2	4.8	6.5	7.4
125	125.0	+1.2	2.5	3.1	3.6	3.8	4.5	4.8	5.5	7.4	8.3
140	140.0	+1.3	2.8	3.5	4.1	4.3	5.0	5.4	6.1	8.3	9.3
160	160.0	+1.5	3.2	3.9	4.5	4.9	5.6	6.2	7.0	9.4	10.6
180	180.0	+1.7	3.6	4.4	5.0	5.5	6.3	6.9	7.8	10.6	11.9
200	200.0	+1.8	4.0	4.9	5.6	6.1	7.0	7.7	8.7	11.8	13.2

NOTES

1 Wall thickness of pipes are based on safe working stress of 5.0 MPa at 35°C for transport of cold water at atmospheric temperature. Occasional rise in temperature has no deleterious effects on the life and working pressure of the pipes.

2 Normal working conditions of pipes shall be operation of maximum 3 000 pumping hours per year at the pressure rating of pipe and at water temperature up to 35°C. If these working conditions are exceeded the next higher class of pipe with greater wall thickness should be chosen. With these working conditions the life expectancy of the pipe is 15 years.

5.1.1 The outside diameter of the pipe shall be the average of two measurements taken at right angles for pipes up to 110 mm outside diameter. For sizes greater than 110 mm the diameter shall be measured by using a flexible Pi tape or with a circometer having an accuracy of not less than 0.1 mm. The wall thickness shall be measured by a dial vernier or ball ended micrometer. The resulting dimension shall be expressed to the nearest 0.1 mm.

NOTES

1 The outside diameter shall be measured at a distance of at least 300 mm from the ends of the pipe.

2 In the case of dispute the dimension of pipes shall be measured after conditioning at room temperature for 4 hours.

5.1.2 Ovality shall be measured as the difference between maximum outside diameter and minimum outside diameter during manufacturing after extrusion but prior to coiling at the same cross section of the pipe, at 300 mm away from the cut end.

6 VISUAL APPEARANCE

6.1 The internal and external surface of the pipes shall be smooth, clean and free from grooving, pit marks and melt fractures. The ends shall be cleanly

cut and shall be square with axis of the pipe. Slight shallow longitudinal grooves or irregularities in the wall thickness shall be permissible, provided the wall thickness remains within the permissible limits.

7 PERFORMANCE REQUIREMENTS**7.1 Hydraulic Characteristics**

When subjected to internal pressure creep rupture test in accordance with the procedure given in Annex A; the pipes shall show no signs of localized swelling, leakage or weeping, and shall not rupture during the prescribed test duration. The temperature, duration of test and stresses for quality and acceptance test shall be as given in Table 2.

7.1.1 Acceptance tests carried out at a temperature of 80°C allow a fast verification of the conformity to requirements of 7.1.

Table 2 Requirements for Internal Pressure Creep Rupture Test

(Clauses 7.1 and A-4.3)

Test	Test Temperature °C	Test Duration (Minimum Holding Time) h	Induced Stresses (MPa)
(1)	(2)	(3)	(4)
Quality test	80	165	3.5
Acceptance test	80	48	3.8