

Product Notes



Product Note 3.120

Re: Specification for Single Wall Corrugated Polyethylene Pipe

Date: February 2000

This specification applies to high density corrugated polyethylene pipe, Type C. Nominal sizes for which this specification is acceptable are 75 – 600 mm (3 – 24 inch) diameters. Requirements for test methods, dimensions and markings are found in AASHTO designation M-252 and M-294.

Pipe and fittings shall be made of virgin PE compounds that conform with the requirements of cell classification 335420C as defined and described in ASTM D-3350. Compounds that have higher cell classifications in one or more properties are acceptable provided product requirements are met.

The minimum parallel plate stiffness values when tested in accordance with D-2412 shall be as follows:

Diameter (nominal)	Pipe Stiffness (minimum)	Diameter (nominal)	Pipe Stiffness (minimum)
75 mm (3")	240 kN/m ² (35 pii)	250 mm (10")	240 kN/m ² (35 pii)
100 mm (4")	240 kN/m ² (35 pii)	300 mm (12")	345 kN/m ² (50 pii)
125 mm (5")	240 kN/m ² (35 pii)	375 mm (15")	290 kN/m ² (42 pii)
150 mm (6")	240 kN/m ² (35 pii)	450 mm (18")	275 kN/m ² (40 pii)
200 mm (8")	240 kN/m ² (35 pii)	600 mm (24")	235 kN/m ² (34 pii)

The pipe and fittings shall be free of foreign inclusions and visible defects. For pipe sizes 300 mm (12 inch) diameter and greater, designed drainage perforations shall be permitted in corrugation valleys only. All holes of any kind in the corrugation crests or sidewalls shall be considered unacceptable. Standard perforations for 75 - 250 mm (3 - 10 inch) shall be AASHTO M-252 Class 2 and for 300 - 600 mm (12 - 24 inch) shall be AASHTO M-294 Class 2. The ends of the pipe shall be cut squarely and cleanly so as not to adversely affect joining.

The nominal size for the pipe and fittings is based on the nominal inside diameter of the pipe. Corrugated fittings may be either molded or fabricated by the manufacturer. Fittings supplied by manufacturers other than the supplier of the pipe shall not be permitted without approval of the Project Engineer.

Joints for 75 – 150 mm (3 – 6 inch) shall be made with snap couplings. Joints for 200 – 600 mm (8 – 24 inch) shall be made with split couplings to engage the pipe corrugations.

Installation shall be in accordance with ASTM Recommended Practice D-2321 or as specified by the Project Engineer or local approval agency.

A manufacturer's certification that the product was manufactured, tested and supplied in accordance with this specification shall be furnished to the Project Engineer upon request.

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Nominal Diameter	Inside Diameter, Average	Outside Diameter, Average	Minimum Pipe Stiffness @ 5% Deflection	Weight kg./6m (lbs./20 ft.)	Area mm ² /mm	"I" cm ⁴ /cm	"C" mm
75 mm (3")	79 mm (3.12")	93 mm (3.66")	240 kN/m ² 35 psi	1.97 kg (4.40 lbs)	1.88 (0.074 in ² /in)	0.0066 (0.0004 in ⁴ /in)	2.97 (0.117 in)
100 mm (4")	102 mm (4.03")	120 mm (4.71")	240 kN/m ² 35 psi	2.81 kg (6.30 lbs)	2.06 (0.081 in ² /in)	0.0169 (0.001 in ⁴ /in)	4.29 (0.169 in)
125 mm (5")	127 mm (4.99")	148 mm (5.81")	240 kN/m ² 35 psi	4.43 kg (9.90 lbs)	2.34 (0.092 in ² /in)	0.0229 (0.0014 in ⁴ /in)	4.78 (0.188 in)
150 mm (6")	151 mm (5.95")	176 mm (6.92")	240 kN/m ² 35 psi	6.39 kg (14.30 lbs)	3.15 (0.124 in ² /in)	0.0459 (0.0028 in ⁴ /in)	6.22 (0.245 in)
200 mm (8")	207 mm (8.14")	240 mm (9.45")	240 kN/m ² 35 psi	11.02 kg (24.60 lbs)	3.25 (0.128 in ² /in)	0.1082 (0.0066 in ⁴ /in)	8.08 (0.318 in)
250 mm (10")	255 mm (10.05")	300 mm (11.83")	240 kN/m ² 35 psi	16.23 kg (36.30 lbs)	3.48 (0.137 in ² /in)	0.1966 (0.0120 in ⁴ /in)	11.20 (0.441 in)
300 mm (12")	306 mm (12.04")	366 mm (14.41")	345 kN/m ² 50 psi	26.56 kg (59.40 lbs)	5.23 (0.206 in ² /in)	0.5211 (0.0318 in ⁴ /in)	15.88 (0.625 in)
375 mm (15")	378 mm (14.87")	444 mm (17.49")	290 kN/m ² 42 psi	36.39 kg (81.40 lbs)	4.67 (0.184 in ² /in)	0.5440 (0.0332 in ⁴ /in)	14.86 (0.585 in)
450 mm (18")	454 mm (17.86")	534 mm (21.04")	275 kN/m ² 40 psi	53.51 kg (119.70 lbs)	6.22 (0.245 in ² /in)	1.062 (0.0648 in ⁴ /in)	20.02 (0.788 in)
600 mm (24")	600 mm (23.61")	699 mm (27.50")	235 kN/m ² 34 psi	100.33 kg 224.40 lbs	8.99 (0.354 in ² /in)	2.161 (0.1318 in ⁴ /in)	25.38 (0.999 in)

Date: June 2000