

Sclairpipe Factory Mutual (FM) Approved Pipe

Class 150, 160, 200, 250, 317 & 335

Infra Pipes High-Density Polyethylene (HDPE) FM-approved pipe is listed by FM Approvals for underground fire services, water mains, in accordance with FM Approval Standard Class Number 1613-17, *Polyethylene (PE) Pipe and Fittings for Underground Fire Protection Service*.

Sclairpipe FM-approved pipe is produced from HDPE bimodal materials designed specifically for the extrusion of premium-quality piping products and meeting the requirements of NSF-14/61. The PE4710 bimodal materials conform to ASTM D3350 with the minimum cell classification of 445574C. The materials are listed in the Plastic Pipe Institute's TR-4.

Sclairpipe FM approved pipe is available in IPS and DIPS sizes and produced in PC150 (DR14.5, 150 psi, 1034 kPa), PC160 (DR13.5, 160 psi, 1103 kPa), PC200 (DR11, 200 psi, 1380kPa), PC250 (DR9, 250 psi, 1725 kPa), PC317 (DR7.3, 317 psi, 2186 kPa), and PC335 (DR7, 335 psi, 2310 kPa).

TYPICAL PROPERTIES OF INFRA PIPES PE4710 MATERIALS¹

		English Units	SI Units	Test Method
Density	Natural	0.9485-0.949 g/cm ³	0.9485-0.949 g/cm ³	ASTM D1505
	Black	0.959 g/cm ³	0.959 g/cm ³	ASTM D4883
High Load Melt Index²		5.5-8.5 g/10 min	5.5-8.5 g/10 min	ASTM D1238
Tensile Strength	Yield	> 3500 psi	> 24.1 MPa	ASTM D638
	Break	> 5100 psi	> 35.1 Mpa	ASTM D638
Elongation	Break	> 500%	> 500%	ASTM D638
Flexural Modulus		146,000 psi	1,006 MPa	ASTM D790
Brittleness Temperature		< -103°F	< -75°C	ASTM D746
Hydrostatic Design Basis	73°F (23°C)	1600 psi	11.0 MPa	ASTM D2837
	140°F (60°C)	1000 psi	6.9 MPa	ASTM D2837 ASTM D2837
Minimum Required Strength			10 MPa	ISO 12162
Notch Tensile (PENT)		> 2000 hrs	> 2000 hrs	ASTM F1473

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¹Typical properties will vary within specification limits

²190°C/21,600k

For design and installation guidelines of PE pipe, refer to the latest edition of the Plastic Pipe Institute's Handbook, *PE Piping Systems Field Manual for Municipal Water Applications M&I*, and ASTM D2774 *Standard Practice for Underground Installation of Thermoplastic Pressure Piping*. The Handbook and Field manual are available at www.plasticpipe.org, and the ASTM D2774 is available at www.astm.org

Dimension charts for FM IPS size approved pipe

FM APPROVED SCLAIRPIPE, IPS SIZE, DR14.5, CLASS 150					FM APPROVED SCLAIRPIPE, IPS SIZE, DR13.5, CLASS 150				
NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
4	4.50 (114.30mm)	3.84 (97.54mm)	0.310 (7.800mm)	1.79	4	4.50 (114.30mm)	3.79 (96.27mm)	0.333 (8.382mm)	1.91
6	6.63 (168.40mm)	5.66 (143.76mm)	0.457 (11.608mm)	3.89	6	6.63 (168.40mm)	5.58 (141.73mm)	0.491 (12.471mm)	4.15
8	8.63 (219.20mm)	7.36 (186.94mm)	0.595 (15.113mm)	6.59	8	8.63 (219.20mm)	7.27 (184.66mm)	0.639 (16.231mm)	7.03
10	10.75 (273.05mm)	9.18 (233.17mm)	0.741 (18.821mm)	10.23	10	10.75 (273.05mm)	9.06 (230.12mm)	0.796 (20.218mm)	10.93
12	12.75 (323.85mm)	10.89 (276.61mm)	0.879 (22.327mm)	14.40	12	12.75 (323.85mm)	10.75 (273.05mm)	0.944 (23.978mm)	15.37
14	14.00 (355.60mm)	11.95 (303.53mm)	0.966 (24.536mm)	17.36	14	14.00 (355.60mm)	11.80 (283.97mm)	1.037 (26.340mm)	18.53
16	16.00 (406.40mm)	13.66 (346.96mm)	1.103 (28.016mm)	22.67	16	16.00 (406.40mm)	13.49 (342.65mm)	1.185 (30.099mm)	24.21
18	18.00 (457.20mm)	15.37 (390.40mm)	1.241 (31.521mm)	28.69	18	18.00 (457.2mm)	15.17 (385.32mm)	1.333 (33.858mm)	30.64
20	20.00 (508.00mm)	17.08 (433.83mm)	1.379 (35.027mm)	35.42	20	20.00 (508.00mm)	16.86 (428.24mm)	1.481 (37.617mm)	37.82
22	22.00 (558.80mm)	18.78 (477.01mm)	1.517 (38.532mm)	42.86	22	22.00 (558.80mm)	18.55 (471.17mm)	1.63 (41.402mm)	45.77
24	24.00 (609.60mm)	20.49 (520.45mm)	1.655 (42.037mm)	51.01	24	24.00 (609.6mm)	20.23 (513.84mm)	1.778 (45.161mm)	54.47
26	26.00 (660.40mm)	22.20 (563.88mm)	1.793 (45.542mm)	59.86	26	26.00 (660.40mm)	21.92 (556.77mm)	1.926 (48.920mm)	63.92
28	28.00 (711.20mm)	23.91 (607.31mm)	1.931 (49.045mm)	69.43	28	28.00 (711.20mm)	23.6 (599.44mm)	2.074 (52.680mm)	74.13
30	30.00 (762.00mm)	25.61 (650.49mm)	2.069 (52.553mm)	79.70	30	30.00 (762.00mm)	25.29 (642.37mm)	2.222 (56.439mm)	85.1
32	32.00 (812.80mm)	27.32 (693.93mm)	2.207 (56.058mm)	90.68	32	32.00 (812.80mm)	26.97 (685.04mm)	2.370 (60.198mm)	96.83
34	34.00 (863.60mm)	29.03 (737.36mm)	2.345 (59.563mm)	102.37	34	34.00 (863.6mm)	28.66 (727.96mm)	2.519 (63.983mm)	109.31
36	36.00 (914.40mm)	30.74 (780.80mm)	2.483 (63.068mm)	114.77	36	36.00 (914.40mm)	30.35 (770.89mm)	2.667 (67.742mm)	122.55

Dimension charts for FM IPS size approved pipe

FM APPROVED SCLAIRPIPE, IPS SIZE, DR11, CLASS 200					FM APPROVED SCLAIRPIPE, IPS SIZE, DR9, CLASS 250				
NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
4	4.50 (114.30mm)	3.63 (92.20mm)	0.409 (10.389mm)	2.30	2	2.38 (60.45mm)	1.82 (46.23mm)	0.264 (6.706mm)	0.76
6	6.63 (168.40mm)	5.35 (135.89mm)	0.602 (15.291mm)	4.99	3	3.50 (88.90mm)	2.68 (68.07mm)	0.389 (9.881mm)	1.66
8	8.63 (219.20mm)	6.96 (176.78mm)	0.784 (19.914mm)	8.47	4	4.50 (114.30mm)	3.44 (87.38mm)	0.500 (12.700mm)	2.75
10	10.75 (273.05mm)	8.68 (220.47mm)	0.977 (24.816mm)	13.15	6	6.63 (168.40mm)	5.06 (128.52mm)	0.736 (18.694mm)	5.96
12	12.75 (323.85mm)	10.29 (261.37mm)	1.159 (24.439mm)	18.5	8	8.63 (219.20mm)	6.59 (167.39mm)	0.958 (24.333mm)	10.1
14	14.00 (355.60mm)	11.30 (287.02mm)	1.273 (32.334mm)	22.31	10	10.75 (273.05mm)	8.22 (208.79mm)	1.194 (30.328mm)	15.69
16	16.00 (406.40mm)	12.92 (328.17mm)	1.455 (36.957mm)	29.13	12	12.75 (323.85mm)	9.75 (247.65mm)	1.417 (35.992mm)	22.08
18	18.00 (457.20mm)	14.53 (369.06mm)	1.636 (41.554mm)	36.87	14	14.00 (355.60mm)	10.70 (271.78mm)	1.556 (39.522mm)	26.62
20	20.00 (508.00mm)	16.15 (410.21mm)	1.818 (46.177mm)	45.52	16	16.00 (406.40mm)	12.23 (310.64mm)	1.778 (45.161mm)	34.76
22	22.00 (558.80mm)	17.76 (451.10mm)	2.00 (50.800mm)	55.08	18	18.00 (457.20mm)	13.76 (349.50mm)	2.000 (50.800mm)	44
24	24.00 (609.60mm)	19.37 (492.00mm)	2.182 (55.423mm)	65.55	20	20.00 (508.00mm)	15.29 (388.37mm)	2.222 (56.439mm)	54.32
26	26.00 (660.40mm)	20.99 (533.15mm)	2.364 (60.046mm)	76.93	22	22.00 (558.80mm)	16.82 (427.23mm)	2.444 (62.078mm)	65.72
28	28.00 (711.20mm)	22.60 (574.04mm)	2.545 (64.643mm)	89.22	24	24.00 (609.60mm)	18.35 (466.09mm)	2.667 (67.742mm)	78.22
30	30.00 (762.00mm)	24.22 (614.68mm)	2.727 (69.647mm)	102.42	26	26.00 (660.40mm)	19.88 (504.95mm)	2.889 (73.381mm)	91.8
32	32.00 (812.80mm)	25.83 (656.08mm)	2.909 (73.889mm)	116.53	28	28.00 (711.20mm)	21.40 (543.56mm)	3.111 (79.019mm)	106.46
34	34.00 (863.60mm)	27.45 (697.23mm)	3.091 (78.511mm)	131.56	30	30.00 (762.00mm)	22.93 (582.42mm)	3.333 (84.658mm)	122.22
36	36.00 (914.40mm)	29.06 (738.12mm)	3.273 (83.134mm)	147.49	32	32.00 (812.80mm)	24.46 (621.28mm)	3.556 (90.322mm)	139.05
					34	34.00 (863.60mm)	25.99 (660.15mm)	3.778 (95.961mm)	156.98
					36	36.00 (914.40mm)	27.52 (699.01mm)	4.000 (101.600mm)	175.99

Dimension charts for FM IPS size approved pipe

FM APPROVED SCLAIRPIPE, IPS SIZE, DR7.3, CLASS 317					FM APPROVED SCLAIRPIPE, IPS SIZE, DR7, CLASS 335				
NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
2	2.38 (60.45mm)	1.69 (42.93mm)	0.325 (8.255mm)	0.92	2	2.38 (60.45mm)	1.66 (42.16mm)	0.339 (8.611mm)	0.95
3	3.50 (88.90mm)	2.48 (62.99mm)	0.479 (12.167mm)	1.99	3	3.50 (88.90mm)	2.44 (61.98mm)	0.500 (12.700mm)	2.06
4	4.50 (114.30mm)	3.19 (81.03mm)	0.616 (15.646mm)	3.28	4	4.50 (114.30mm)	3.14 (79.76mm)	0.643 (16.332mm)	3.40
6	6.63 (168.40mm)	4.70 (119.38mm)	0.908 (23.063mm)	7.12	6	6.63 (168.40mm)	4.62 (117.35mm)	0.946 (24.028mm)	7.37
8	8.63 (219.20mm)	6.12 (155.45mm)	1.182 (30.023mm)	12.07	8	8.63 (219.20mm)	6.01 (152.65mm)	1.232 (31.293mm)	12.49
10	10.75 (273.05mm)	7.63 (193.80mm)	1.473 (37.414mm)	18.75	10	10.75 (273.05mm)	7.49 (190.25mm)	1.536 (39.014mm)	19.41
12	12.75 (323.85mm)	9.05 (229.87mm)	1.747 (44.374mm)	26.37	12	12.75 (323.85mm)	8.89 (225.81mm)	1.821 (46.253mm)	27.30
14	14.00 (355.60mm)	9.93 (252.22mm)	1.918 (48.717mm)	31.79	14	14.00 (355.60mm)	9.76 (247.90mm)	2.000 (50.800mm)	32.92
16	16.00 (406.40mm)	11.35 (288.29mm)	2.192 (55.677mm)	41.53	16	16.00 (406.40mm)	11.15 (283.21mm)	2.286 (58.064mm)	42.99
18	18.00 (457.20mm)	12.77 (324.39mm)	2.466 (62.636mm)	52.56	18	18.00 (457.20mm)	12.55 (318.77mm)	2.571 (65.303mm)	54.41
20	20.00 (508.00mm)	14.19 (360.43mm)	2.740 (69.596mm)	64.89	20	20.00 (508.00mm)	13.94 (354.08mm)	2.857 (72.568mm)	67.17
22	22.00 (558.80mm)	15.61 (396.49mm)	3.014 (76.556mm)	78.51	22	22.00 (558.80mm)	15.34 (389.64mm)	3.143 (79.832mm)	81.28
24	24.00 (609.60mm)	17.03 (432.56mm)	3.288 (83.515mm)	93.44	24	24.00 (609.60mm)	16.73 (424.94mm)	3.429 (87.097mm)	96.73

Dimension charts for FM DIPS size approved pipe

FM APPROVED SCLAIRPIPE, DIPS SIZE, DR14.5, CLASS 150					FM APPROVED SCLAIRPIPE, DIPS SIZE, DR13.5, CLASS 160				
NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
4	4.80 (121.90mm)	4.10 (104.14mm)	0.331 (8.407mm)	2.04	4	4.80 (121.90mm)	4.05 (102.87mm)	0.356 (9.042mm)	2.18
6	6.90 (175.30mm)	5.89 (149.61mm)	0.476 (12.090mm)	4.22	6	6.90 (175.30mm)	5.82 (147.83mm)	0.511 (12.979mm)	4.50
8	9.05 (229.90mm)	7.73 (196.34mm)	0.624 (18.850mm)	7.25	8	9.05 (229.90mm)	7.63 (193.80mm)	0.670 (17.018mm)	7.74
10	11.10 (281.90mm)	9.48 (240.79mm)	0.766 (19.456mm)	10.91	10	11.10 (281.90mm)	9.36 (237.74mm)	0.822 (20.879mm)	11.65
12	13.20 (335.30mm)	11.27 (286.26mm)	0.910 (23.110mm)	15.43	12	13.20 (335.30mm)	11.13 (282.70mm)	0.978 (24.841mm)	16.48
14	15.30 (388.60mm)	13.06 (331.72mm)	1.055 (26.797mm)	20.73	14	15.30 (388.60mm)	12.90 (327.66mm)	1.133 (28.778mm)	22.14
16	17.40 (442.00mm)	14.86 (377.44mm)	1.200 (30.480mm)	26.81	16	17.40 (442.00mm)	14.67 (372.62mm)	1.289 (32.741mm)	28.63
18	19.50 (495.30mm)	16.65 (422.91mm)	1.345 (34.163mm)	33.67	18	19.50 (495.30mm)	16.44 (417.58mm)	1.444 (36.678mm)	35.96
20	21.60 (548.60mm)	18.44 (468.38mm)	1.490 (37.846mm)	41.32	20	21.60 (548.60mm)	18.21 (462.53mm)	1.600 (40.640mm)	44.12
24	25.80 (655.30mm)	22.03 (559.56mm)	1.779 (45.187mm)	58.95	24	25.80 (655.30mm)	21.75 (552.45mm)	1.911 (48.539mm)	62.94
30	32.00 (812.80mm)	27.32 (693.93mm)	2.207 (56.058mm)	90.68	30	32.00 (812.8mm)	26.97 (685.04mm)	2.370 (60.198mm)	96.83
36	38.30 (972.80mm)	32.70 (830.58mm)	2.641 (67.081mm)	129.9	36	38.30 (972.80mm)	32.29 (820.17mm)	2.837 (72.060mm)	138.71

Dimension charts for FM DIPS size approved pipe

FM APPROVED SCLAIRPIPE, DIPS SIZE, DR11, CLASS 200					FM APPROVED SCLAIRPIPE, DIPS SIZE, DR9, CLASS 250				
NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
4	4.80 (121.90mm)	3.87 (98.30mm)	0.436 (11.074mm)	2.62	3	3.96 (100.58mm)	3.03 (76.96mm)	0.440 (11.176mm)	2.13
6	6.90 (175.30mm)	5.57 (141.48mm)	0.627 (15.926mm)	5.42	4	4.80 (121.90mm)	3.67 (93.22mm)	0.533 (13.538mm)	3.13
8	9.05 (229.90mm)	7.31 (185.67mm)	0.823 (20.904mm)	9.32	6	6.90 (175.3mm)	5.27 (133.86mm)	0.767 (19.482mm)	6.47
10	11.10 (281.90mm)	8.96 (227.58mm)	1.009 (25.629mm)	14.02	8	9.05 (229.90mm)	6.92 (175.77mm)	1.006 (25.552mm)	11.12
12	13.20 (335.30mm)	10.66 (270.76mm)	1.200 (30.480mm)	19.83	10	11.10 (281.90mm)	8.49 (215.65mm)	1.233 (31.318mm)	16.73
14	15.30 (388.60mm)	12.35 (313.69mm)	1.391 (35.331mm)	26.64	12	13.20 (335.30mm)	10.09 (256.29mm)	1.467 (37.262mm)	23.66
16	17.40 (442.00mm)	14.05 (356.87mm)	1.582 (40.183mm)	34.45	14	15.30 (388.60mm)	11.70 (297.18mm)	1.700 (43.180mm)	31.79
18	19.50 (495.30mm)	15.74 (399.80mm)	1.773 (45.034mm)	43.27	16	17.40 (442.00mm)	13.30 (337.82mm)	1.933 (49.098mm)	41.11
20	21.60 (548.60mm)	17.44 (442.98mm)	1.964 (49.886mm)	53.10	18	19.50 (495.30mm)	14.91 (378.71mm)	2.167 (55.042mm)	51.64
24	25.80 (655.30mm)	20.83 (529.08mm)	2.345 (59.563mm)	75.75	20	21.60 (548.60mm)	16.51 (419.35mm)	2.400 (60.960mm)	63.36
30	32.00 (812.80mm)	25.83 (656.08mm)	2.909 (73.889mm)	116.53	24	25.80 (655.30mm)	19.72 (500.89mm)	2.867 (72.822mm)	90.39
36	38.30 (972.80mm)	30.92 (785.37mm)	3.482 (88.443mm)	166.94	30	32.00 (812.80mm)	24.46 (621.28mm)	3.556 (90.322mm)	139.05
					36	38.30 (972.80mm)	29.28 (743.71mm)	4.256 (108.120mm)	199.2

Dimension charts for FM DIPS size approved pipe

FM APPROVED SCLAIRPIPE, DIPS SIZE, DR7.3, CLASS 317					FM APPROVED SCLAIRPIPE, DIPS SIZE, DR7, CLASS 335				
NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
3	3.96 (100.58mm)	2.81 (71.37mm)	0.542 (13.767mm)	2.54	3	3.96 (100.58mm)	2.76 (70.10mm)	0.566 (14.376mm)	2.63
4	4.80 (121.9mm)	3.41 (86.61mm)	0.658 (16.713mm)	3.74	4	4.80 (121.90mm)	3.35 (85.09mm)	0.686 (17.424mm)	3.87
6	6.90 (175.30mm)	4.90 (124.46mm)	0.945 (24.003mm)	7.72	6	6.90 (175.30mm)	4.81 (122.17mm)	0.986 (25.044mm)	8.00
8	9.05 (229.90mm)	6.42 (163.07mm)	1.240 (31.496mm)	13.29	8	9.05 (229.90mm)	6.31 (160.27mm)	1.293 (32.842mm)	13.75
10	11.10 (281.90mm)	7.88 (200.15mm)	1.521 (38.633mm)	19.99	10	11.10 (281.90mm)	7.74 (196.60mm)	1.586 (40.284mm)	20.69
12	13.20 (335.3mm)	9.37 (238.00mm)	1.808 (45.923mm)	28.26	12	13.20 (335.30mm)	9.20 (233.68mm)	1.886 (47.904mm)	29.26
14	15.30 (388.60mm)	10.86 (275.84mm)	2.096 (53.238mm)	37.97	14	15.30 (388.60mm)	10.67 (271.02mm)	2.186 (55.524mm)	39.31
16	17.40 (442.00mm)	12.35 (313.69mm)	2.384 (60.554mm)	49.11	16	17.40 (442.00mm)	12.13 (308.10mm)	2.486 (63.144mm)	50.84
18	19.50 (495.30mm)	13.84 (351.54mm)	2.671 (67.843mm)	61.68	18	19.50 (495.30mm)	13.59 (345.19mm)	2.786 (70.764mm)	63.86
20	21.60 (548.60mm)	15.33 (389.38mm)	2.959 (75.159mm)	75.68	20	21.60 (548.60mm)	15.06 (382.52mm)	3.086 (78.384mm)	78.35
24	25.80 (655.30mm)	18.31 (465.07mm)	3.534 (89.764mm)	107.98	24	25.80 (655.30mm)	17.99 (456.95mm)	3.686 (93.624mm)	111.78