



**SCLAIRPIPE® FACTORY MUTUAL (FM)
APPROVED PIPE
CLASS 150, 160, 200, 250, 317 & 335**

PRODUCT BULLETIN

Infra Pipe Solutions Sclairpipe High Density Polyethylene 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 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 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, 1380 kPa), PC250 (DR9, 250 psi, 1725 kPa), PC317 (DR7.3, 317 psi, 2186 kPa), and PC335 (DR7, 335 psi, 2310 kPa).

Typical Properties ¹				
		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 Index ²		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
Minimum Required Strength			10 MPa	ISO 12162
Notch Tensile (PENT)		>2000 hrs	>2000 hrs	ASTM F1473

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Figure 1 – Typical Properties of Infra Pipe Solutions PE4710 materials

For design and installation guidelines of PE pipe refer to the latest edition of the Plastic Pipe Institute 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.

¹ Typical properties will vary within specification limits

² 190°C/21,600g

FM Approved Sclairpipe, IPS Size, DR14.5, Class 150				
NPS				
	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
4	4.50	3.84	0.310	1.79
6	6.63	5.66	0.457	3.89
8	8.63	7.36	0.595	6.59
10	10.75	9.18	0.741	10.23
12	12.75	10.89	0.879	14.40
14	14.00	11.95	0.966	17.36
16	16.00	13.66	1.103	22.67
18	18.00	15.37	1.241	28.69
20	20.00	17.08	1.379	35.42
22	22.00	18.78	1.517	42.86
24	24.00	20.49	1.655	51.01
26	26.00	22.20	1.793	59.86
28	28.00	23.91	1.931	69.43
30	30.00	25.61	2.069	79.7
32	32.00	27.32	2.207	90.68
34	34.00	29.03	2.345	102.37
36	36.00	30.74	2.483	114.77

FM Approved Sclairpipe, IPS Size, DR13.5, Class 160				
NPS				
	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
4	4.50	3.79	0.333	1.91
6	6.63	5.58	0.491	4.15
8	8.63	7.27	0.639	7.03
10	10.75	9.06	0.796	10.93
12	12.75	10.75	0.944	15.37
14	14.00	11.80	1.037	18.53
16	16.00	13.49	1.185	24.21
18	18.00	15.17	1.333	30.64
20	20.00	16.86	1.481	37.82
22	22.00	18.55	1.630	45.77
24	24.00	20.23	1.778	54.47
26	26.00	21.92	1.926	63.92
28	28.00	23.60	2.074	74.13
30	30.00	25.29	2.222	85.1
32	32.00	26.97	2.370	96.83
34	34.00	28.66	2.519	109.31
36	36.00	30.35	2.667	122.55

FM Approved Sclairpipe, IPS Size, DR11, Class 200				
NPS				
	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
4	4.50	3.63	0.409	2.30
6	6.63	5.35	0.602	4.99
8	8.63	6.96	0.784	8.47
10	10.75	8.68	0.977	13.15
12	12.75	10.29	1.159	18.50
14	14.00	11.30	1.273	22.31
16	16.00	12.92	1.455	29.13
18	18.00	14.53	1.636	36.87
20	20.00	16.15	1.818	45.52
22	22.00	17.76	2.000	55.08
24	24.00	19.37	2.182	65.55
26	26.00	20.99	2.364	76.93
28	28.00	22.60	2.545	89.22
30	30.00	24.22	2.727	102.42
32	32.00	25.83	2.909	116.53
34	34.00	27.45	3.091	131.56
36	36.00	29.06	3.273	147.49

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)
2	2.38	1.82	0.264	0.76
3	3.50	2.68	0.389	1.66
4	4.50	3.44	0.500	2.75
6	6.63	5.06	0.736	5.96
8	8.63	6.59	0.958	10.10
10	10.75	8.22	1.194	15.69
12	12.75	9.75	1.417	22.08
14	14.00	10.70	1.556	26.62
16	16.00	12.23	1.778	34.76
18	18.00	13.76	2.000	44.00
20	20.00	15.29	2.222	54.32
22	22.00	16.82	2.444	65.72
24	24.00	18.35	2.667	78.22
26	26.00	19.88	2.889	91.80
28	28.00	21.40	3.111	106.46
30	30.00	22.93	3.333	122.22
32	32.00	24.46	3.556	139.05
34	34.00	25.99	3.778	156.98
36	36.00	27.52	4.000	175.99

FM Approved Sclairpipe, IPS Size, DR7.3, Class 317				
NPS				
	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
2	2.38	1.69	0.325	0.92
3	3.50	2.48	0.479	1.99
4	4.50	3.19	0.616	3.28
6	6.63	4.70	0.908	7.12
8	8.63	6.12	1.182	12.07
10	10.75	7.63	1.473	18.75
12	12.75	9.05	1.747	26.37
14	14.00	9.93	1.918	31.79
16	16.00	11.35	2.192	41.53
18	18.00	12.77	2.466	52.56
20	20.00	14.19	2.740	64.89
22	22.00	15.61	3.014	78.51
24	24.00	17.03	3.288	93.44

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)
2	2.38	1.66	0.339	0.95
3	3.50	2.44	0.500	2.06
4	4.50	3.14	0.643	3.40
6	6.63	4.62	0.946	7.37
8	8.63	6.01	1.232	12.49
10	10.75	7.49	1.536	19.41
12	12.75	8.89	1.821	27.30
14	14.00	9.76	2.000	32.92
16	16.00	11.15	2.286	42.99
18	18.00	12.55	2.571	54.41
20	20.00	13.94	2.857	67.17
22	22.00	15.34	3.143	81.28
24	24.00	16.73	3.429	96.73

Figure 2 – Dimension charts for FM IPS size approved pipe

FM Approved Sclairpipe, DIPS Size, DR14.5, Class 150				
NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
4	4.80	4.10	0.331	2.04
6	6.90	5.89	0.476	4.22
8	9.05	7.73	0.624	7.25
10	11.10	9.48	0.766	10.91
12	13.20	11.27	0.910	15.43
14	15.30	13.06	1.055	20.73
16	17.40	14.86	1.200	26.81
18	19.50	16.65	1.345	33.67
20	21.60	18.44	1.490	41.32
24	25.80	22.03	1.779	58.95
30	32.00	27.32	2.207	90.68
36	38.30	32.70	2.641	129.9

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)
4	4.80	4.05	0.356	2.18
6	6.90	5.82	0.511	4.50
8	9.05	7.63	0.670	7.74
10	11.10	9.36	0.822	11.65
12	13.20	11.13	0.978	16.48
14	15.30	12.90	1.133	22.14
16	17.40	14.67	1.289	28.63
18	19.50	16.44	1.444	35.96
20	21.60	18.21	1.600	44.12
24	25.80	21.75	1.911	62.94
30	32.00	26.97	2.370	96.83
36	38.30	32.29	2.837	138.71

FM Approved Sclairpipe, DIPS Size, DR11, Class 200				
NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
4	4.80	3.87	0.436	2.62
6	6.90	5.57	0.627	5.42
8	9.05	7.31	0.823	9.32
10	11.10	8.96	1.009	14.02
12	13.20	10.66	1.200	19.83
14	15.30	12.35	1.391	26.64
16	17.40	14.05	1.582	34.45
18	19.50	15.74	1.773	43.27
20	21.60	17.44	1.964	53.10
24	25.80	20.83	2.345	75.75
30	32.00	25.83	2.909	116.53
36	38.30	30.92	3.482	166.94

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)
3	3.96	3.03	0.440	2.13
4	4.80	3.67	0.533	3.13
6	6.90	5.27	0.767	6.47
8	9.05	6.92	1.006	11.12
10	11.10	8.49	1.233	16.73
12	13.20	10.09	1.467	23.66
14	15.30	11.70	1.700	31.79
16	17.40	13.30	1.933	41.11
18	19.50	14.91	2.167	51.64
20	21.60	16.51	2.400	63.36
24	25.80	19.72	2.867	90.39
30	32.00	24.46	3.556	139.05
36	38.30	29.28	4.256	199.20

FM Approved Sclairpipe, DIPS Size, DR7.3, Class 317				
NPS	Average Outside Diameter (inch)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)
3	3.96	2.81	0.542	2.54
4	4.80	3.41	0.658	3.74
6	6.90	4.90	0.945	7.72
8	9.05	6.42	1.240	13.29
10	11.10	7.88	1.521	19.99
12	13.20	9.37	1.808	28.26
14	15.30	10.86	2.096	37.97
16	17.40	12.35	2.384	49.11
18	19.50	13.84	2.671	61.68
20	21.60	15.33	2.959	75.68
24	25.80	18.31	3.534	107.98

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)
3	3.96	2.76	0.566	2.63
4	4.80	3.35	0.686	3.87
6	6.90	4.81	0.986	8.00
8	9.05	6.31	1.293	13.75
10	11.10	7.74	1.586	20.69
12	13.20	9.20	1.886	29.26
14	15.30	10.67	2.186	39.31
16	17.40	12.13	2.486	50.84
18	19.50	13.59	2.786	63.86
20	21.60	15.06	3.086	78.35
24	25.80	17.99	3.686	111.78

Figure 3 – Dimension charts for FM DIPS size approved pipe

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