

TUBI range of products

Pressurised polyethylene pipe materials

Material Class	S (MPa)	MRS (MPa)	C	41	33	27.6	26	22	21	17.6	17	13.6	11	9	7.4
PE-80	5	8	1.6	PN 2.5	PN 3.2	PN 3.8	PN 4	PN4.8	PN 5	PN 6	PN 6.3	PN 8	PN 10	PN 12.5	PN 16
PE-80	6.3	8	1.25	PN 3.2	PN 4	PN 4.7	PN 5	PN6	PN 6.3	PN 7.5	PN 8	PN 10	PN 12.5	PN 16	PN 20
PE-100	6.3	10	1.6	PN 3.2	PN 4	PN 4.7	PN 5	PN6	PN 6.3	PN 7.5	PN 8	PN 10	PN 12.5	PN 16	PN 20
PE-100	8	10	1.25	PN 4	PN 5	PN 6	PN 6.3	PN7.7	PN 8	PN 9.6	PN 10	PN 12.5	PN 16	PN 20	PN 25

Material: Type og material used (PE-80 can be both PE-MD & PE-HD) MRS: Minimum Required Strength by ISO 9080-2 C: Safety factor MRS/S
 S: Design stress SDR-class: Outside pipe diameter divided by wall thickness

Outside diameter vs wall thickness and weight of different SDR Classes

OD mm	SDR 41 e(mm)	SDR 41 kg/m	SDR 33 e(mm)	SDR 33 kg/m	SDR 27,6 e(mm)	SDR 27,6 kg/m	SDR 26 e(mm)	SDR 26 kg/m	SDR 22 e(mm)	SDR 22 kg/m	SDR 21 e(mm)	SDR 21 kg/m
20												
25												
32												
40									2.0	0.251	2.0	0.251
50					2.0	0.317	2.0	0.317	2.4	0.356	2.4	0.372
63					2.3	0.455	2.5	0.482	2.9	0.561	3.0	0.586
75					2.7	0.640	2.9	0.682	3.4	0.791	3.6	0.826
90	2.2	0.633	2.8	0.800	3.3	0.917	3.5	0.987	4.1	1.14	4.3	1.19
110	2.7	0.850	3.4	1.17	4.0	1.36	4.2	1.45	5.0	1.69	5.3	1.77
125	3.1	1.23	3.9	1.53	4.5	1.75	4.8	1.86	5.7	2.18	6.0	2.28
140	3.5	1.50	4.3	1.88	5.1	2.19	5.4	2.35	6.4	2.73	6.7	2.85
160	4.0	1.86	4.9	2.50	5.8	2.86	6.2	3.08	7.3	3.55	7.7	3.73
180	4.4	2.50	5.5	3.15	6.5	3.61	6.9	3.83	8.2	4.49	8.6	4.69
200	4.9	3.08	6.2	3.85	7.2	4.46	7.7	4.74	9.1	5.54	9.6	5.81
225	5.5	3.90	6.9	4.89	8.1	5.63	8.6	5.96	10.2	7.0	10.8	7.35
250	6.2	4.77	7.7	6.09	9.0	6.95	9.6	7.38	11.4	8.64	11.9	9.03
280	6.9	5.96	8.6	7.55	10.1	8.71	10.7	9.2	12.7	10.8	13.4	11.34
315	7.7	7.60	9.7	9.7	11.4	11.0	12.1	11.7	14.3	13.7	15.0	14.3
355	8.7	9.6	10.9	12.1	12.8	14.0	13.6	14.8	16.1	17.4	16.9	18.2
400	9.8	12.5	12.3	15.7	14.5	18.1	15.3	19.1	18.2	22.5	19.1	23.6
450	11.0	15.8	13.8	19.9	16.3	22.9	17.2	24.2	20.5	28.5	21.5	29.8
500	12.3	19.4	15.3	24.4	18.1	28.3	19.1	29.9	22.7	35.2	23.9	36.9
560	13.7	24.4	17.2	30.7	20.2	35.5	21.4	37.5	25.5	44.1	26.7	46.2
600	14.7	27.8	18.7	35.2	21.7	40.7	23.1	43.3	27.3	50.6	28.6	52.9
630	15.4	30.8	19.3	38.7	22.8	44.9	24.1	47.4	28.6	55.8	30.0	58.3
710	17.4	39.0	21.8	49.2	25.7	57.0	27.2	60.2	32.3	70.9	33.9	74.2
800	19.6	49.5	24.5	62.4	28.9	72.3	30.6	76.3	36.4	89.9	38.1	94.0
900	22.0	62.8	27.6	79.0	32.5	91.5	34.4	97.4	40.9	113.8	42.9	118.9
1000	24.5	77.0	30.6	98.0	36.1	112.9	38.2	120.0	45.5	140.4	47.7	147.0
1100	26.8	93.5	34.1	117.9	39.8	136.6	42.3	145.0	50.0	169.9	52.4	177.6
1200	29.4	111.0	36.7	140.0	43.4	162.5	45.9	173.0	54.5	202.2	57.2	211.6
1400	34.3	151.3	42.9	190.9	50.6	221.1	53.5	234.7	63.6	275.2	66.7	287.5
1600	39.2	198.0	49.0	249.0	57.8	288.8	61.2	306.0	72.7	359.3	76.2	375.5
1800	43.9	250.0	54.5	308.5	65.1	365.5	69.1	387.9	81.8	454.7	85.7	475.1
2000	48.8	308.6	60.6	380.8	72.3	451.1	76.9	478.8	90.9	561.3	95.2	586.5

OD = Outside pipe diameter e = Minimum wall thickness kg/m = Weight per metre pipe

TUBI range of products

Outside diameter vs wall thickness and weight of different SDR Classes

OD mm	SDR 17.6 e(mm)	SDR 17.6 kg/m	SDR 17 e(mm)	SDR 17 kg/m	SDR 13,6 e(mm)	SDR 13,6 kg/m	SDR 11 e(mm)	SDR 11 kg/m	SDR 9 e(mm)	SDR 9 kg/m	SDR 7.4 e(mm)	SDR 7.4 kg/m
20							2.0	0.118	2.3	0.133	3.0	0.156
25					2.0	0.151	2.3	0.172	3.0	0.213	3.5	0.243
32	2.0	0.197	2.0	0.200	2.4	0.228	3.0	0.274	3.6	0.326	4.4	0.387
40	2.3	0.288	2.4	0.290	3.0	0.354	3.7	0.434	4.5	0.507	5.5	0.607
50	2.9	0.445	3.0	0.460	3.7	0.550	4.6	0.672	5.6	0.789	6.9	0.945
63	3.6	0.695	3.8	0.730	4.7	0.869	5.8	1.06	7.1	1.25	8.6	1.5
75	4.3	0.986	4.5	1.03	5.6	1.23	6.8	1.48	8.4	1.77	10.3	2.11
90	5.1	1.40	5.4	1.47	6.7	1.76	8.2	2.14	10.1	2.54	12.3	3.04
110	6.3	2.10	6.6	2.19	8.1	2.63	10.0	3.18	12.3	3.79	15.1	4.55
125	7.1	2.69	7.4	2.79	9.2	3.39	11.4	4.09	14.0	4.89	17.1	5.85
140	8.0	3.37	8.3	3.50	10.3	4.25	12.7	5.13	15.7	6.12	19.2	7.34
160	9.1	4.40	9.5	4.57	11.8	5.54	14.6	6.74	17.9	7.99	21.9	9.61
180	10.2	5.54	10.7	5.77	13.3	7.01	16.4	8.51	20.1	10.1	24.6	12.13
200	11.4	6.86	11.9	7.10	14.7	8.65	18.2	10.5	22.4	12.5	27.4	15.0
225	12.8	8.64	13.4	9.03	16.6	10.9	20.5	13.3	25.2	15.8	30.8	18.9
250	14.2	10.7	14.8	11.1	18.4	13.5	22.7	16.3	27.9	19.5	34.2	23.4
280	15.9	13.3	16.6	13.9	20.6	16.9	25.4	20.4	31.3	24.4	38.3	29.3
315	17.9	16.9	18.7	17.2	23.2	21.4	28.6	25.9	35.2	30.9	43.1	37.2
355	20.1	21.4	21.1	22.4	26.1	27.2	32.2	33.0	39.7	39.3	48.5	47.2
400	22.7	27.8	23.7	28.9	29.4	35.2	36.3	42.7	44.7	50.8	54.7	61.1
450	25.5	35.1	26.7	36.6	33.1	44.6	40.9	54.1	50.3	64.3	61.5	77.3
500	28.3	43.3	29.7	45.1	36.8	55.0	45.4	66.7	55.8	79.4		
560	31.7	54.2	33.2	56.6	41.2	69.0	50.8	83.7	62.2	99.6		
600	34.0	62.3	35.6	65.4	44.1	79.2	54.5	95.4	67.6*	115.7*		
630	35.7	68.7	37.4	71.8	46.3	87.3	57.2	105.0	71.0	127.6		
710	40.2	87.2	42.1	91.0	52.2	110.8	64.5	134.3	80.0*	162.0*		
800	45.3	111.0	47.4	115.0	58.8	140.7	72.7	170.4	90.1*	205.7*		
900	51.0	140.0	53.3	146.0	66.2	178.1	81.8*	215.6*				
1000	56.6	173.0	59.3	180.0	72.5*	216.9*	90.9*	266.2*				
1100	62.3	209.0	65.2	218.0	80.9*	266.0*						
1200	67.9	248.5	70.6	257.8	88.2*	316.5*						
1400	79.2	338.2	82.4	350.6	102.9	430.7						
1600	90.6	441.7	94.1	457.8	117.6*	562.5*						
1800	101.9	558.9	105.9*	579.3*								
2000	113.2	690.2	117.6*	715.2*								

OD = Outside pipe diameter e = Minimum wall thickness kg/m = Weight per metre pipe * =Contact Pipelife for more information about these SDR classes

Resin characteristics - typical values

Property	Unit	Test methods	PE-80 PE-MD	PE-80 PE-HD	PE-100 HPPE
Density	kg/m ³	ISO 1872/1183	948	953	961
Melt flow rate	g/10 min	ISO 1133 (190 °C/5kg)	0.8	0.5	0.4
Yield stress	N/mm ²	ISO 6259	19	21	23
Elongation at yield point	%	ISO6259	9	9	8
Elongation at break	%	ISO 6259	>600	>600	>600
Charpy impact strength	kJ/m ²	ISO 179 (Unnotched)	No failure	No failure	No failure
Shore hardness D		ISO R 868	60	61	61
Environmental stress crack resistance F ₅₀	h	ASTM D 1693 (condition A)	5000	10000	10000
Vicat softening point	°C	ISO R 306	124	121	119
Average coefficient of thermal expansion	mm/m °C	ASTM 696	0.2	0.2	0.2
Thermal stability	Min	ISO/TR-10837(210 °C)	>15	>15	>15
Tensile modulus	MPa	ISO 527-2	800	1000	1100

Stub ends different SDR classes											Backing rings						Bolt sets		
OD	DN	d4	SDR 33		SDR 26		SDR 17		SDR 11				NP	PN 10					
mm	mm	mm	h1	h3	h1	h3	h1	h3	h1	h3	d5	d7	Ø	h	h	r	hole	M	dv
20	15	45							35	10	95	32	65		14	2	4	12	14
25	20	58							35	9	105	38	75		14	2	4	12	14
32	25	68							35	10	115	48	85		16	2	4	12	14
40	32	78					40	11	40	11	140	55	100		16	2	4	16	18
50	40	88					60	12	60	12	150	66	110		16	2	4	16	18
63	50	102					75	14	75	14	165	78	125		16	2	4	16	18
75	65	122					80	16	80	16	185	92	145		16	2	4	16	18
90	80	138					90	17	90	17	200	108	160		18	2	8	16	18
110	100	158			80	26	100	18	100	18	220	128	180		18	2	8	16	18
125	100	158			80	28	110	18	110	25	220	135	180		18	2	8	16	18
140	125	188			80	30	120	18	120	25	250	155	210		18	3	8	16	18
160	150	212			80	30	130	18	130	25	285	178	240		18	3	8	20	23
180	150	212			80	32	140	20	140	30	285	188	240		18	3	8	20	23
200	200	268	100	32	100	32	145	24	145	32	340	235	295		20	5	8	20	23
225	200	268	100	32	100	32	150	24	150	32	340	238	295		20	3	8	20	23
250	250	320	100	32	100	32	160	25	160	35	395	288	350		22	5	12	20	23
280	250	320	100	34	100	34	170	25	170	35	395	294	350		26	3	12	20	23
315	300	370	100	36	100	36	190	25	190	35	445	338	400		26	5	12	20	23
355	350	430	110	40	110	40	110	30/50	205	66/40	505	376	460		28	4	16	20	23
400	400	482	120	44	120	44	120	33/54	220	72/46	565	430	515		32	4	16	24	27
450	450	535	120	44	120	44	120	56	120	74	615	465	565		36	6	20	24	27
500	500	585	120	47	120	47	120	58	120	76	670	533	620		36	6	20	24	27
560	600	645	120	50	120	50	120	60	120	80	780	618	725	35/44	7	7	20	27	30
600	600	690	85	45	92	52	100	60	110	73	780	615	725	35/44	7	7	20	27	30
630	600	690	120	56	120	56	120	64	120	82	835	645	725	35/44	7	7	20	27	30
710	700	805	120	60	120	60	120	70	120	85	895	725	840	35	50	7	24	27	30
800	800	900	120	77	120	77	120	85	120	95	1015	815	950	35	56	7	24	30	33
900	900	1005	120	88	120	86	120	90			1115	915	1050	35	68	7	28	30	33
1000	1000	1110	140	96	140	96	140	100			1230	1015	1160	35		7	28	33	36
1100	1200	1330	160	100	175	100	160	120			1455		1380	35		7	32	36	39
1200	1200	1330	160	100	160	100	160	120			1455	1215	1380	35		7	32	36	39
1400	1400	1535	180	110	180	110	180	130			1675	1440	1590	42		10	36	39	42
1600	1600	1760	190	115	190	115	190	140			1915	1650	1820	42		10	40	45	48
1800	1800	1965	215	120	215	120					2115	1860	2020	50		10	44	45	48
2000	2000	2165	240	140	240	140					2325	2060	2230	50		10	48	45	48

Stub end with backing ring

