PE 100, PE 80, PE 63

Material Designation	MRS (MPa)	Design Stress (MPa)
PE 63	6.3	5.0
PE 80	8.0	6.3
PE100	10	8.0

Clearly PE 100 has the advantage of a higher design stress allowing for higher operating working pressure. Wall thickness for a particular size and class becomes progressively less with use of material with a higher MRS and hence savings in mass and improved flow due to increase in cross sectional area. For pressure applications the choice is usually between PE 80 and PE 100 compound whilst PE 63 would normally be used for non-pressure or ducting applications.

PE 100 PIPE RANGE AND DIMENSIONS

		PN 6		PN 10		PN 12.5		PN 16	
Pressure rating	kPa	600		1000		1250		1600	
	Bars	6		10		12.5		16	
	PSI	87		145		181		232	
	Head (m)	60		100		125		160	
	MPa	0.6		1		1.25		1.6	
NOMINAL SIZE mm		min wall (mm)	nom mass (kg/m)	min wall (mm)	nom mass (kg/m)	min wall (mm)	nom mass (kg/m)	min wall (mm)	nom mass (kg/m)
20		1.9	0.1	1.9	0.1	1.9	0.1	2.0	0.1
25		1.9	0.1	1.9	0.1	2.0	0.1	2.3	0.2
32		1.9	0.2	2.0	0.2	2.4	0.2	3.0	0.3
40		1.9	0.2	2.4	0.3	3.0	0.3	3.7	0.4
50		2.1	0.3	3.0	0.4	3.7	0.5	4.6	0.7
63		2.7	0.5	3.8	0.7	4.7	0.9	5.8	1.0
75		3.3	0.7	4.5	1.0	5.6	1.2	6.8	1.4
90		4.1	1.1	5.4	1.4	6.7	1.7	8.2	2.1
110		5.1	1.7	6.6	2.1	8.1	2.6	10.0	3.1
125		4.8	1.8	7.4	2.7	9.2	3.3	11.4	4.0
140		5.4	2.3	8.3	3.4	10.3	4.2	12.7	5.1
160		6.2	3.0	9.5	4.5	11.8	5.5	14.6	6.6
180		6.9	3.7	10.7	5.7	13.3	6.9	16.4	8.4
200		7.7	5.7	11.9	7.0	14.7	8.5	18.0	10.2
225		8.6	5.8	13.4	8.9	16.6	10.8	20.5	13.1
250		9.6	7.2	14.8	10.9	18.4	13.3	22.7	16.1
280		10.7	9.0	16.6	13.7	20.6	16.7	25.4	20.2
315		12.1	11.5	18.7	17.3	23.2	21.2	28.6	25.6
355		13.6	14.5	21.1	22.0	26.1	26.8	32.2	32.5
400		15.3	18.4	23.7	27.9	29.4	34.1	36.3	41.2

Recommended Bending Radii for PE pipes

SDR	Min. Bending Radii
26	25D
17	15D
11	10D

D = outside diameter of pipe