



Technical Information (HDPE Piping Systems)

KAMPUN supplies polyethylene pipes of following standards per national and international norms: ISO 4427; DIN 8074; EN 1220; IS 4984; IS 14151; IS 14333. KAMPUN supplies its pipes from different grades based on customer requirements however, specializes in PE100 pipes from pre-compounded black raw material. PE100 is considered as the strongest of all PE grades for piping and have maximum nominal bore for the same pressure ratings for PE 80 / 63. According to international standard ISO 4427, an HDPE material can be certified as PE100, only if it passes 10,000 hours Long Term Hydrostatic Strength (LTHS) test extrapolated to 50 years to show that it has a MRS of over 10 MPa for a lifetime of minimum 50 years.

Permissible Operating Temperature: The values in the tables apply to water, determined from the creep curve taking into account a safety coefficient of C=1.25.

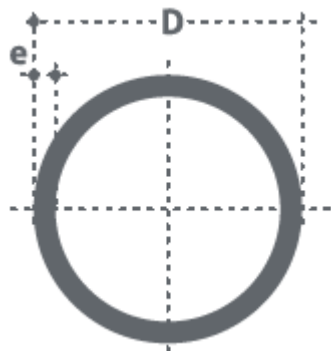
PE material for pipe extrusion is now available in three grades, PE63, PE80 and PE100. These are classified based on the MRS Strength of each grade. Specific properties can be improved by using modified piping grade materials. Eg.: ESCR etc.

Long term strength	MRS	Designation	D (mpa)	
6.3 - 7.99	6.3	PE63	5	$\sigma: MRS / C$
8 - 9.99	8	PE80	6.3	MRS - Minimum required strength.
10 - 11.19	10	PE100	8	C - 1.25 for water

- We recommend the calculation of the operating pressure in piping systems to multiply the value in the table contained operating pressure with a system reduction coefficient $f_s=0.8$ (this value contains installation technical influences such as welding joint, flange or also bending loads).
- These operating pressure have to be reduced by the reducing coefficients for every application.

Temperature °C	Operation period (years)	Standard Diameter-wall thickness relation (SDR)						
		41	33	26	17	11	7.4	6
		Pipe series (S)						
		20	16	12.5	8	5	3.2	2.5
		PN						
		4	5	6.3	10	16	25	32
		Permissible component operating pressure (bar)						
10	5	5	6.3	7.9	12.6	20.2	31.5	40.4
	10	4.9	6.2	7.8	12.4	19.8	31	39.7
	25	4.8	6	7.6	12.1	19.3	30.2	38.7
	50	4.7	5.9	7.5	11.9	19	29.7	38
	100	4.6	5.8	7.3	11.6	18.7	29.2	37.4
20	5	4.2	5.3	6.6	10.6	16.9	26.9	26.5
	10	4.1	5.2	6.5	10.4	16.6	16.6	26
	25	4	5	6.4	10.1	16.2	16.2	25.4
	50	4	5	6.3	10	16	16	25
	100	3.9	4.9	6.1	9.8	15.7	15.7	14.5
30	5	3.6	4.5	5.6	9	14.4	22.5	28.8
	10	3.5	4.4	5.5	8.8	14	22.1	28.3
	25	3.4	4.3	5.4	8.6	13.8	21.6	27.6
	50	3.3	4.2	5.3	8.4	13.5	21.2	27.1
40	5	3	3.8	4.8	7.7	12.3	19.3	24.7
	10	3	3.8	4.7	7.6	12.1	19	24.3
	25	2.9	3.7	4.6	7.4	11.8	18.5	23.7
	50	2.9	3.6	4.5	7.2	11.6	18.2	23.3
50	5	2.6	3.3	4.2	6.7	10.7	16.7	21.4
	10	2.6	3.2	4	6.5	10.4	16.2	20.3
	15	2.3	2.9	3.7	5.9	9.5	14.8	19
60	5	1.9	2.4	3	4.8	7.7	12.1	15.5
70	2	1.5	1.9	2.4	3.9	6.2	9.8	12.5

HDPE & MDPE Pipes as per ISO4427, PE80 and PE100



Please note:

- All dimensions in mm
- SDR Rating / Pipe Specs Standard to be specified
- Dimensions may change without prior notice
- Please refer pipe wall thickness chart for thickness

SDR series	SDR41		SDR26		SDR21		SDR17		SDR13.6		SDR11		SDR9		SDR7.4	
	S 20		S 12.5		S 10		S 8		S 6.3		S 5		S 4		S 3.2	
PE80	PN3.2		PN5		PN6		PN8		PN10		PN12.5		PN16		PN20	
PE100	PN4		PN6		PN8		PN10		PN12.5		PN16		PN20		PN25	
Size	e _{min}	e _{max}	e _{min}	e _{max}	e _{min}	e _{max}	e _{min}	e _{max}	e _{min}	e _{max}	e _{min}	e _{max}	e _{min}	e _{max}	e _{min}	e _{max}
20	-	-	-	-	-	-	-	-	-	-	2	2.3	2.3	2.7	3	3.4
25	-	-	-	-	-	-	-	-	2	2.3	2.3	2.7	3	3.4	2.5	4
32	-	-	-	-	-	-	2	2.3	2.4	2.8	3	3.4	3.6	4.1	4.4	5
40	-	-	-	-	2	2.3	2.4	2.8	3	3.5	3.7	4.2	4.5	5.1	5.5	6.2
50	-	-	2	2.3	2.4	2.8	3	3.4	3.7	4.2	4.6	5.2	5.6	6.3	6.9	7.7
63	-	-	2.5	2.9	3	3.4	3.8	4.3	4.7	5.3	5.8	6.5	7.1	8	8.6	9.6
75	-	-	2.9	3.3	3.6	4.1	4.5	5.1	5.6	6.3	6.8	7.6	8.4	9.4	10.3	11.5
90	-	-	-	-	3.5	4	5.4	6.1	6.7	7.5	8.2	9.2	10.1	11.3	12.3	13.7
110	-	-	4.2	4.8	5.3	6	6.6	7.4	8.1	9.1	10	11.1	12.3	13.7	15.1	16.8
125	-	-	4.8	5.4	6	6.7	7.4	8.3	9.2	10.3	11.4	12.7	14	15.6	17.1	19
140	-	-	5.4	6.1	6.7	7.5	8.3	9.3	10.3	11.5	12.7	14.1	15.7	17.4	19.2	21.3
160	-	-	6.2	7	7.7	8.6	9.5	10.6	11.8	13.1	14.6	16.2	17.9	19.8	21.9	24.2
180	-	-	6.9	7.2	8.6	9.6	10.7	11.9	13.3	14.8	16.4	18.2	20.1	22.3	24.6	27.2
200	-	-	7.7	8.6	9.6	10.7	11.9	13.2	14.7	16.3	18.2	20.2	22.4	24.8	27.4	30.3
225	-	-	8.6	9.6	10.8	12	13.4	14.9	16.6	18.4	20.5	22.7	25.2	27.9	30.8	34
250	-	-	9.6	10.7	11.9	13.2	14.8	16.4	18.4	20.4	22.7	25.1	27.9	30.8	34.2	37.8
280	-	-	10.7	11.9	13.4	14.9	16.6	18.4	20.6	22.8	25.4	28.1	31.3	34.6	38.3	42.3
315	7.7	8.6	12.1	13.5	15	16.6	18.7	20.7	23.2	25.7	28.6	31.6	35.2	38.9	43.1	47.6
355	8.7	9.7	13.6	15.1	16.9	18.7	21.1	23.4	26.1	28.9	32.2	35.6	39.7	43.8	48.5	53.5
400	9.8	10.9	15.3	17	19.1	21.2	23.7	26.2	29.4	32.5	36.3	40.1	44.7	49.3	54.7	60.3
450	11	12.2	17.2	19.1	21.5	23.8	26.7	29.5	33.1	36.6	40.9	45.1	50.3	55.5	61.5	67.8
500	12.3	13.7	19.1	21.2	23.9	26.4	29.7	32.8	36.8	40.6	45.4	50.1	55.8	61.5	-	-
560	13.7	15.2	21.4	23.7	26.7	29.5	33.2	36.7	41.2	45.5	50.8	56	-	-	-	-
630	15.4	17.1	24.1	26.7	30	33.1	37.4	41.3	46.3	51.1	57.2	63.1	-	-	-	-
710	17.4	19.3	27.2	30.1	33.9	37.4	42.1	46.5	52.2	57.6	-	-	-	-	-	-
800	19.6	21.7	30.6	33.8	38.1	42.1	47.4	52.3	58.8	64.8	-	-	-	-	-	-
900	22	24.3	34.4	38.3	42.9	47.3	53.3	58.8	-	-	-	-	-	-	-	-
1000	24.5	27.1	38.2	42.2	47.7	52.6	59.3	65.4	-	-	-	-	-	-	-	-
1200	29.4	35.5	45.9	50.6	57.2	63.1	-	-	-	-	-	-	-	-	-	-

SDR: (Standard Dimension Ratio) Pipe Outside Diameter to wall thickness.