



Metric Pipe Pressure Re-Rating Chart for Water

Metric Polyethylene Pipe – AS4130 Series 1 – All Diameters

This chart is used to determine the maximum working pressure and expected life of AS4130 metric polyethylene pipe when it is subjected to temperatures greater than 20°C.

Both the maximum pressure rating and life expectancy of polyethylene pipe are affected by temperature and operation above 40°C is not recommended without further consultation.

Example

Metric PE100 pipe is to be used above ground where the water supply and pipe can reach temperatures of 40°C. The maximum pressure in the system is 900kPa.

The chart below indicates that PN10 has a maximum pressure rating of 750kPa at 40°C and therefore is clearly not sufficient.

After factoring in a 10% safety margin (990kPa), PN12.5 can be recommended for this system. At this temperature the pipe has a design life in excess of 50 years.



PE80B		Maximum Working Pressure (kPa) at Various Temperatures									
SDR*	Nominal Pressure Rating	50 yrs						36 yrs	24 yrs	12 yrs	1 yr
		20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	80°C
41	PN3.2	320	320	280	260	240	220	210	190	180	130
33	PN4	400	400	350	320	300	280	260	240	230	170
21	PN6.3	630	630	550	500	470	440	410	380	350	260
17	PN8	800	800	700	640	600	560	520	480	450	330
13.6	PN10	1000	1000	880	800	750	700	650	600	560	410
11	PN12.5	1250	1250	1090	1000	940	880	810	750	700	520
9	PN16	1600	1600	1400	1280	1200	1120	1040	960	900	660
7.4	PN20	2000	2000	1750	1600	1500	1400	1300	1200	1130	830

PE100		Maximum Working pressure (kPa) at Various Temperatures									
SDR*	Nominal Pressure Rating	50 yrs						36 yrs	24 yrs	12 yrs	1 yr
		20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	80°C
41	PN4	400	400	380	360	340	320	300	290	270	210
26	PN6.3	630	630	590	560	530	500	480	450	430	340
21	PN8	800	800	750	710	680	640	600	570	540	430
17	PN10	1000	1000	940	890	840	800	760	720	680	530
13.6	PN12.5	1250	1250	1180	1120	1060	1000	950	890	850	670
11	PN16	1600	1600	1500	1430	1350	1270	1210	1150	1090	860
9	PN20	2000	2000	1880	1790	1690	1590	1510	1430	1360	1070
7.4	PN25	2500	2500	2350	2240	2210	1990	1890	1790	1700	1340

* Standard Dimension Ratio

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