

Safe Pulling Force Table (Tons) - HDPE PE100

Safety Factor: 1.5 | Temp: 20°C

Diameter (mm)	SDR 17 (PN 10)	SDR 13.6 (PN 12.5)	SDR 11 (PN 16)	SDR 7.4 (PN 25)	SDR 6 (PN 32)
75.0	0.7	0.8	1.0	1.4	1.7
90.0	1.0	1.2	1.4	2.0	2.4
110.0	1.4	1.8	2.1	3.0	3.6
125.0	1.8	2.3	2.8	3.9	4.6
140.0	2.3	2.9	3.5	4.9	5.8
160.0	3.0	3.7	4.5	6.4	7.6
180.0	3.8	4.7	5.7	8.1	9.6
200.0	4.7	5.8	7.1	10.0	11.9
225.0	6.0	7.4	8.9	12.6	15.0
250.0	7.4	9.1	11.0	15.6	18.5
280.0	9.3	11.4	13.8	19.6	23.2
315.0	11.7	14.4	17.5	24.8	29.4
355.0	14.9	18.3	22.2	31.4	37.4
400.0	18.9	23.3	28.2	39.9	47.4
450.0	23.9	29.5	35.7	50.5	60.0
500.0	29.5	36.4	44.1	62.4	74.1
560.0	37.1	45.6	55.3	78.2	93.0
630.0	46.9	57.7	70.0	99.0	117.7
710.0	59.6	73.3	88.9	125.8	149.5
800.0	75.6	93.1	112.9	159.7	189.8
900.0	95.7	117.8	142.9	202.1	240.2
1000.0	118.2	145.4	176.4	249.5	296.5
1200.0	170.2	209.4	254.1	359.3	427.0

Calculation Method:

- Cross Sectional Area (A) = $\pi * (OD - WT) * WT$
- Safe Force (F) = (A * Allowable Stress) / Safety Factor
- Base Allowable Stress (PE100): 10 MPa @ 20°C
- Safety Factor applied: 1.5

CRITICAL WARNINGS:

- TEMPERATURE: Allowable force decreases significantly above 20°C.
- DURATION: Values are for short-term pulling (HDD). Long-term stress causes creep.
- PIPE CONDITION: Deep scratches (>10% WT) reduce safe pulling force.
- DYNAMIC LOADS: Sudden jerks or stops increase actual tension beyond gauge readings.

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