

Hydraulic Pipe Table

Physical Dimensions and Pressure Ratings

Schedule 40 (Standard Weight) Pipe

Pipe Size	O.D.	I.D.	Wall Thickness	Inside Area	Working PSI*	Burst PSI*
1/8	.405	.269	.068	.0568	2238	13,432
1/4	.540	.364	.088	.1040	2173	13,037
3/8	.675	.493	.091	.1908	1797	10,785
1/2	.840	.622	.109	.3037	1730	10,380
3/4	1.050	.824	.113	.5330	1435	8609
1	1.315	1.049	.133	.8649	1348	8091
1 1/4	1.660	1.380	.140	1.495	1124	6747
1 1/2	1.900	1.610	.145	2.035	1017	6105
2	2.375	2.067	.154	3.354	864	5187
2 1/2	2.875	2.469	.203	4.785	941	5648
3	3.500	3.068	.216	7.390	823	4937

Schedule 80 (Extra Strong Weight) Pipe

Pipe Size	O.D.	I.D.	Wall Thickness	Inside Area	Working PSI*	Burst PSI*
1/8	.405	.215	.095	.0363	2238	18,765
1/4	.540	.302	.119	.0716	2173	17,630
3/8	.675	.423	.126	.1405	1797	14,933
1/2	.840	.546	.147	.2340	1730	14,000
3/4	1.050	.742	.154	.4320	1435	11,733
1	1.315	.957	.179	.7190	1348	10,890
1 1/4	1.660	1.278	.191	1.282	1124	9205
1 1/2	1.900	1.500	.200	1.766	1017	8421
2	2.375	1.939	.218	2.951	864	7343
2 1/2	2.875	2.323	.276	4.236	941	7680
3	3.500	2.900	.300	6.600	823	6857

Schedule 160 Pipe

Pipe Size	O.D.	I.D.	Wall Thickness	Inside Area	Working PSI*	Burst PSI*
1/2	.840	.464	.188	.1690	2984	17,904
3/4	1.050	.612	.219	.2940	2781	16,686
1	1.315	.815	.250	.5214	2535	15,200
1 1/4	1.660	1.160	.250	1.056	2008	12,048
1 1/2	1.900	1.338	.281	1.405	1972	11,831
2	2.375	1.687	.344	2.234	1931	11,587
2 1/2	2.875	2.125	.375	3.545	1739	10,435
3	3.500	2.624	.438	5.405	1668	10,011

*Working PSI at a safety factor of 6:1.

These charts are for welded and seamless wrought steel pipe. Wall thickness on wrought iron pipe is slightly greater than for steel pipe. and the inside area is, therefore slightly smaller. Burst strength is about the same.

Schedule 40 is the same as "standard wall" up to 10 inch size. Schedule 80 is the same as "extra strong" up to 8 inch size. There is no schedule number for "double extra strong". Schedule 160 is lighter than "double extra strong" and heavier than "extra strong".

PRESSURE RATINGS

Burst strength has been figured on a tensile strength of 40,000 PSI* for butt welded steel pipe. Lip welded steel pipe has a strength of 50,000 PSI* and will stand 20% more pressure than shown in the tables. Burst strength is by Bar

low's Formula: $P = \frac{2t \times S}{O}$ in which P is bursting pressure in PSI* t is wall thickness in inches. S is tensile strength of material in PSI* and O is outside diameter of pipe in inches.

SAFETY FACTOR

The working pressure ratings in the next to last column are figured with a safety factor of 6. In the usual hydraulic system a factor of at least 6 should be used. However, to find working pressure at another safety factor, take the burst pressure rating and divide by the desired safety factor.