



IPS INDUSTRIAL PIPE – THEORETICAL BURSTING AND COLLAPSING PRESSURES

Important Information

The information provided in this chart is a theoretical number to be used for comparison only. All values are based on Barlow's Formula. When selecting a size for an application, the user is responsible for deciding the appropriate safety factor based on the application and the testing of the product. The user should also consider additional sources of stress other than those caused by pressure in their design.

Nom Size Inches	Selected Number	OD Inches	Wall Thickness Inches	ID Inches	Internal Cross Sect. Area, Sq. In.	Internal Pressure psi Bursting*	External Pressure psi Collapsing
1/8	40	0.405	0.068	0.269	.057	25,185	10,761
1/4	40	0.540	0.088	0.364	0.104	24,444	10,415
3/8	40	0.675	0.091	0.493	0.191	20,132	8,397
1/2	5	0.840	0.065	0.710	0.396	11,607	4,407
	10	0.840	0.083	0.674	0.357	14,821	5,911
	40	0.840	0.109	0.622	0.304	19,464	8,084
	80	0.840	0.147	0.546	0.234	26,250	11,260
3/4	5	1.050	0.065	0.920	0.665	9,285	3,295
	10	1.050	0.083	0.884	0.614	11,857	4,624
	40	1.050	0.113	0.824	0.533	16,142	6,529
	80	1.050	0.154	0.742	0.432	22,000	9,271
1	5	1.315	0.065	1.185	1.102	7,414	2,445
	10	1.315	0.109	1.097	0.945	12,433	4,795
	40	1.315	0.133	1.049	0.864	15,171	6,075
	80	1.315	0.179	1.380	1.495	12,650	3,895
1-1/4	5	1.660	0.065	1.530	1.830	5,873	1,725
	10	1.660	0.109	1.442	1.633	9,849	3,585
	40	1.660	0.140	1.380	1.495	12,650	3,895
	80	1.660	0.191	1.278	1.282	17,259	7,052
1-1/2	5	1.900	0.065	1.770	2.460	5,131	1,376
	10	1.900	0.109	1.682	2.222	8,605	3,002
	40	1.900	0.145	1.610	2.036	11,447	4,332
	80	1.900	0.200	1.500	1.766	15,789	6,364
2	5	2.375	0.065	2.245	3.958	4,105	896
	10	2.375	0.109	2.157	3.654	6,884	2,196
	40	2.375	0.154	2.076	3.356	9,726	3,526
	80	2.375	0.218	1.939	2.953	13,768	5,418
2-1/2	5	2.875	0.083	2.709	5.761	4,330	1,001
	10	2.875	0.120	2.635	5.450	5,260	1,905
	40	2.875	0.203	2.469	4.785	10,591	3,931
3	5	3.500	0.083	3.334	8.726	3,557	639
	10	3.500	0.120	3.260	8.343	5,142	1,375
	40	3.500	0.216	3.068	7.389	9,257	3,307
3-1/2	5	4.000	0.083	3.834	11.54	3,112	431
	10	4.000	0.120	3.760	11.10	4,500	1,081
	40	4.000	0.226	3.548	9.887	8,475	2,941
4	5	4.500	0.083	4.334	14.75	2,766	315
	10	4.500	0.120	4.260	14.25	4,000	845
	40	4.500	0.237	4.026	12.72	7,900	2,672
5	5	5.563	0.109	5.345	22.43	2,949	377
	10	5.563	0.134	5.295	22.01	3,613	665
	40	5.563	0.258	5.047	20.00	6,957	2,231
6	5	6.625	0.109	6.407	32.22	2,467	225
	10	6.625	0.134	6.357	31.72	3,033	415
	40	6.625	0.280	6.065	28.89	6,340	1,942

* Bursting pressures shown are calculated on basis of minimum tensile strength of 75,000 psi. All dimensions shown are nominal. These are burst pressures and should not be considered as safe working pressure. The above values are provided as an example only for comparative purposes only and are based on ASTM properties and standard formulae. No warranty is made either expressed or implied concerning accuracy of the calculations or the formula used to calculate the values.