

Process Fittings

ASTM / ASME A/SA 312 STAINLESS STEEL PIPE THEORETICAL WALL THICKNESS & WEIGHTS

Pipe Size	OD Inches		5s	5	10s	10	20	30	40s	40	60	80s	80	100	120	140	160	XXH
1/8	0.405	Wall Thickness		0.035	0.049	0.049			0.068	0.068		0.095	0.095					
		Weight / Foot		0.1383	0.1863	0.1863			0.2447	0.2447		0.3145	0.3145					
1/4	0.540	Wall Thickness		0.049	0.065	0.065			0.088	0.088		0.119	0.119					
		Weight / Foot		0.2570	0.3297	0.3297			0.4248	0.4248		0.5351	0.5351					
3/8	0.675	Wall Thickness		0.049	0.065	0.065			0.091	0.091		0.126	0.126					
		Weight / Foot		0.3276	0.4235	0.4235			0.5676	0.5676		0.7338	0.7338					
1/2	0.840	Wall Thickness	0.065	0.065	0.083	0.083			0.109	0.109		0.147	0.147				0.188	0.294
		Weight / Foot	0.5383	0.5383	0.6710	0.6710			0.8510	0.8510		1.088	1.088				1.31	1.714
3/4	1.050	Wall Thickness	0.065	0.065	0.083	0.083			0.113	0.113		0.154	0.154				0.219	0.308
		Weight / Foot	0.5383	0.6838	0.8572	0.8572			1.131	1.131		1.474	1.474				1.94	2.441
1	1.315	Wall Thickness	0.065	0.065	0.109	0.109			0.133	0.133		0.179	0.179				0.250	0.358
		Weight / Foot	0.8678	0.8678	1.404	1.404			1.679	1.679		2.172	2.172				2.844	3.659
1-1/4	1.660	Wall Thickness	0.065	0.065	0.109	0.109			0.140	0.140		0.191	0.191				0.250	0.382
		Weight / Foot	1.107	1.107	1.806	1.806			2.273	2.273		2.997	2.997				3.765	5.214
1-1/2	1.900	Wall Thickness	0.065	0.065	0.109	0.109			0.145	0.145		0.200	0.200				0.281	0.400
		Weight / Foot	1.274	1.274	2.085	2.085			2.718	2.718		3.631	3.631				4.859	6.408
2	2.375	Wall Thickness	0.065	0.065	0.109	0.109			0.154	0.154		0.218	0.218				0.344	0.436
		Weight / Foot	1.604	1.604	2.638	2.638			3.653	3.653		5.022	5.022				7.46	9.029
2-1/2	2.875	Wall Thickness	0.083	0.083	0.120	0.120			0.203	0.203		0.276	0.276				0.375	0.552
		Weight / Foot	2.475	2.475	3.531	3.531			5.793	5.793		7.661	7.661				10.01	13.70
3	3.500	Wall Thickness	0.083	0.083	0.120	0.120			0.216	0.216		0.300	0.300				0.438	0.600
		Weight / Foot	3.029	3.029	4.332	4.332			7.576	7.576		10.25	10.25				14.32	18.58
3-1/2	4.000	Wall Thickness	0.083	0.083	0.120	0.120			0.226	0.226		0.318	0.318					0.636
		Weight / Foot	3.472	3.472	4.973	4.973			9.109	9.109		12.51	12.51					22.85
4	4.500	Wall Thickness	0.083	0.083	0.120	0.120			0.237	0.237	0.281	0.337	0.337		0.438		0.531	0.674
		Weight / Foot	3.915	3.915	5.613	5.613			10.79	10.79	12.66	14.98	14.98		19.00		22.51	27.54
4-1/2	5.000	Wall Thickness							0.247			0.355						0.710
		Weight / Foot							12.53			17.61						32.53
5	5.563	Wall Thickness	0.109	0.109	0.134	0.134	0.203		0.258	0.258		0.375	0.375		0.500		0.625	0.750
		Weight / Foot	6.349	6.349	7.770	7.770	11.62		14.62	14.62		20.78	20.78		27.04		32.96	38.55
6	6.625	Wall Thickness	0.109	0.109	0.134	0.134	0.203		0.280	0.280		0.432	0.432		0.562		0.719	0.864
		Weight / Foot	7.585	7.585	9.290	9.290	13.92		18.97	18.97		28.57	28.57		36.39		45.35	53.16
7	7.625	Wall Thickness							0.301			0.500						0.875
		Weight / Foot							23.57			38.05						63.08
8	8.625	Wall Thickness	0.109	0.109	0.148	0.148	0.250	0.277	0.322	0.322	0.406	0.500	0.500	0.594	0.719	0.812	0.906	0.875
		Weight / Foot	9.914	9.914	13.40	13.40	22.36	24.70	28.55	28.55	35.64	43.39	43.39	50.95	60.71	67.76	74.69	72.42
9	9.625	Wall Thickness							0.342			0.500						
		Weight / Foot							33.90			48.72						
10	10.750	Wall Thickness	0.134	0.134	0.165	0.165	0.250	0.307	0.365	0.365	0.500	0.500	0.594	0.719	0.844	1.000	1.125	1.000
		Weight / Foot	15.19	15.19	18.65	18.65	28.04	34.24	40.48	40.48	54.74	54.74	64.43	77.03	89.29	104.13	115.64	104.13
11	11.750	Wall Thickness							0.375			0.500						
		Weight / Foot							45.55			60.07						
12	12.750	Wall Thickness	0.156	0.165	0.180	0.180	0.250	0.330	0.375	0.406	0.562	0.500	0.688	0.844	1.000	1.125	1.312	1.000
		Weight / Foot	21.07	22.18	24.16	24.16	33.38	43.77	49.56	53.53	73.16	65.42	88.63	107.32	125.50	139.70	160.30	125.49
14	14.000	Wall Thickness	0.156		0.188	0.250	0.312	0.375	0.375	0.438	0.594	0.500	0.750	0.938	1.094	1.250	1.406	
		Weight / Foot	23.07		27.73	36.71	45.61	54.57	54.57	63.44	85.05	72.09	106.10	130.85	150.79	170.20	189.10	
16	16.000	Wall Thickness	0.165		0.188	0.250	0.312	0.375	0.375	0.500	0.656	0.500	0.844	1.031	1.219	1.428	1.594	
		Weight / Foot	27.90		31.75	42.05	52.27	62.58	62.58	82.77	107.50	82.77	136.61	164.80	192.43	223.64	245.25	
18	18.000	Wall Thickness	0.165		0.188	0.250	0.312	0.438	0.375	0.562	0.750	0.500	0.938	1.156	1.375	1.562	1.781	
		Weight / Foot	31.43		35.76	47.39	58.94	82.15	70.59	104.67	138.20	93.45	170.92	208.00	244.10	274.20	308.50	
20	20.000	Wall Thickness	0.188		0.219	0.250	0.375	0.500	0.375	0.594	0.812	0.500	1.031	1.281	1.500	1.750	1.969	
		Weight / Foot	39.78		46.27	52.73	78.60	104.10	78.60	123.11	166.40	104.10	208.90	256.10	296.40	341.10	379.17	
22	22.000	Wall Thickness	0.188		0.219	0.250	0.375	0.500	0.375		0.875	0.500	1.125	1.375	1.625	1.875	2.125	
		Weight / Foot	43.80		50.94	58.07	86.61	114.81	86.61		197.41	114.81	250.81	302.88	353.61	403.00	451.06	
24	24.000	Wall Thickness	0.218		0.250	0.250	0.375	0.562	0.375	0.688	0.969	0.500	1.219	1.531	1.812	2.062	2.344	
		Weight / Foot	55.37		63.41	63.41	94.62	140.80	94.62	171.29	238.35	125.50	296.58	367.40	429.40	483.10	542.13	
26	26.000	Wall Thickness				0.312	0.500		0.375			0.500						
		Weight / Foot				85.60	136.17		102.63				136.17					
28	28.000	Wall Thickness				0.312	0.500	0.625	0.375									
		Weight / Foot				92.26	146.85	182.73	110.64									
30	30.000	Wall Thickness	.250		0.312	0.312	0.500	0.625	0.375			0.500						
		Weight / Foot	79.43		98.93	98.93	157.53	196.08	118.65			157.53						
32	32.000	Wall Thickness				0.312	0.500	0.625	0.375	0.688		0.500						
		Weight / Foot				105.59	168.21	209.43	126.66	230.08		168.21						
34	34.000	Wall Thickness				0.312	0.500	0.625	0.375	0.688		0.500						
		Weight / Foot				112.25	178.89	222.78	134.67	244.77		178.89						
36	36.000	Wall Thickness				0.312	0.500	0.625	0.375	0.750		0.500						
		Weight / Foot				118.92	189.57	236.13	142.68	282.35		189.57						
42	42.000	Wall Thickness							0.375			0.500						
		Weight / Foot							166.71			221.61						
48	48.000	Wall Thickness							0.375			0.500						
		Weight / Foot							190.74			253.65						

Wall thickness displayed are in Inches, and weights displayed are in pound/foot. Theoretical Bursting Pressure is based on an ultimate strength of $s=70,000$ psi. Using Barlow's Formula where:

$$P = \frac{2TS}{OD} \quad T = \text{Wall Thickness}$$

When establishing a working pressure a safety factor of 4 of 5 is typically used, the joint efficiency