

Tech Talk

This table lists the outside & inside diameter, wall thickness and internal area for a wide range of commercial pipe sizes. The Internal Area can be used to calculate velocities of fluids. These dimensions apply to carbon, stainless steel, PVC and seamless pipe.
 STD = standard, XS = extra strong wall, XXS = double extra strong wall, S = Stainless steel

SIZE NPS	SIZE DN	O.D. (in.)	Schedules	Wall (in.)*	I.D. (in.)*	A _{int} (in. ²)	A _{int} (Ft. ²)
1/8	6	0.405	5, 5S	.035	.335	.0881	.00061
			10, 10S	.049	.307	.0740	.00051
			30	.057	.291	.0665	.00046
			STD, 40, 40S	.068	.269	.0568	.00039
			XS, 80, 80S	.095	.215	.0363	.00025
1/4	8	0.540	5, 5S	.049	.442	.1534	.00107
			10, 10S	.065	.410	.1320	.00092
			30	.073	.394	.1219	.00085
			STD, 40, 40S	.088	.364	.1041	.00072
			XS, 80, 80S	.119	.302	.0716	.00050
3/8	10	0.675	5, 5S	.049	.577	.2615	.00182
			10, 10S	.065	.545	.2333	.00162
			30	.073	.529	.2198	.00153
			STD, 40, 40S	.091	.493	.1909	.00133
			XS, 80, 80S	.126	.423	.1405	.00098
1/2	15	0.840	5, 5S	.065	.710	.3959	.00275
			10, 10S	.083	.674	.3568	.00248
			30	.095	.650	.3318	.00230
			STD, 40, 40S	.109	.622	.3039	.00211
			XS, 80, 80S	.147	.546	.2341	.00163
			120	.170	.500	.1963	.00136
			160	.187	.466	.1706	.00118
			XXS	.294	.252	.0499	.00035
3/4	20	1.050	5, 5S	.065	.920	.6648	.00462
			10, 10S	.083	.884	.6138	.00426
			30	.095	.860	.5809	.00403
			STD, 40, 40S	.113	.824	.5333	.00370
			XS, 80, 80S	.154	.742	.4324	.00300
			120	.170	.710	.3959	.00275
			160	.219	.612	.2942	.00204
			XXS	.308	.434	.1479	.00103

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1	25	1.315	5, 5S	.065	1.185	1.1029	.00766
			10, 10S	.109	1.097	.9452	.00656
			30	.114	1.087	.9280	.00644
			STD, 40, 40S	.133	1.049	.8643	.00600
			XS, 80, 80S	.179	.957	.7193	.00500
			120	.200	.915	.6576	.00457
			160	.250	.815	.5217	.00362
			XXS	.358	.599	.2818	.00196
1 ¼	32	1.660	5, 5S	.065	1.530	1.8385	.01277
			10, 10S	.109	1.442	1.6331	.01134
			30	.117	1.426	1.5971	.01109
			STD, 40, 40S	.140	1.380	1.4957	.01039
			XS, 80, 80S	.191	1.278	1.2828	.00891
			120	.215	1.230	1.1882	.00825
			160	.250	1.160	1.0568	.00734
			XXS	.382	.896	.6305	.00438
1 ½	40	1.900	5, 5S	.065	1.770	2.4606	.01709
			10, 10S	.109	1.682	2.2220	.01543
			30	.125	1.650	2.1382	.01485
			STD, 40, 40S	.145	1.610	2.0358	.01414
			XS, 80, 80S	.200	1.500	1.7671	.01227
			120	.225	1.450	1.6513	.01147
			160	.281	1.338	1.4061	.00976
			XXS	.400	1.100	.9503	.00660
2	50	2.375	5, 5S	.065	2.245	3.9584	.02749
			10, 10S	.109	2.157	3.6542	.02538
			STD, 40, 40S	.154	2.067	3.3556	.02330
			XS, 80, 80S	.218	1.939	2.9529	.02051
			120	.250	1.875	2.7612	.01917
			160	.344	1.687	2.2352	.01552
			XXS	.436	1.503	1.7742	.01232
			2 ½	65	2.875	5, 5S	.083
10, 10S	.120	2.635				5.4532	.03787
STD, 40, 40S	.203	2.469				4.7878	.03325
XS, 80, 80S	.276	2.323				4.2383	.02943
120	.300	2.275				4.0649	.02823
160	.375	2.125				3.5466	.02463
XXS	.552	1.771				2.4634	.01711

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3	80	3.500	5, 5S	.083	3.334	8.7301	.06063
			10, 10S	.120	3.260	8.3469	.05796
			STD, 40, 40S	.216	3.068	7.3927	.05134
			XS, 80, 80S	.300	2.900	6.6052	.04587
			120	.350	2.800	6.1575	.04276
			160	.438	2.624	5.4078	.03755
			XXS	.600	2.300	4.1548	.02885
3 ½	90	4.000	5, 5S	.083	3.834	11.5450	.08017
			10, 10S	.120	3.760	11.1036	.07711
			STD, 40, 40S	.226	3.548	9.8868	.06866
			XS, 80, 80S	.318	3.364	8.8879	.06172
			XXS	.636	2.728	5.8449	.04059
4	100	4.500	5, 5S	.083	4.334	14.7526	.10245
			10, 10S	.120	4.260	14.2531	.09898
			STD, 40, 40S	.237	4.026	12.7303	.08840
			60	.281	3.938	12.1798	.08458
			XS, 80, 80S	.337	3.826	11.4969	.07984
			120	.438	3.624	10.3149	.07163
			160	.531	3.438	9.2833	.06447
			XXS	.674	3.152	7.8030	.05419
4 ½	115	5.000	STD, 40, 40S	.247	4.506	15.9467	.11074
			XS, 80, 80S	.355	4.290	14.4545	.10038
			XXS	.710	3.580	10.0660	.06990
5	125	5.563	5, 5S	.109	5.345	22.4380	.15582
			10, 10S	.134	5.295	22.0202	.15292
			STD, 40, 40S	.258	5.047	20.0058	.13893
			XS, 80, 80S	.375	4.813	18.1937	.12635
			120	.500	4.563	16.3527	.11356
			160	.625	4.313	14.6099	.10146
XXS	.750	4.063	12.9653	.09004			
6	150	6.625	5, 5S	.109	6.407	32.2403	.22389
			10, 10S	.134	6.357	31.7391	.22041
			STD, 40, 40S	.280	6.065	28.8902	.20063
			XS, 80, 80S	.432	5.761	26.0667	.18102
			120	.562	5.501	23.7669	.16505
			160	.719	5.187	21.1311	.14674
XXS	.864	4.897	18.8343	.13079			
7	175	7.625	STD, 40, 40S	.301	7.023	38.7378	.26901
			XS, 80, 80S	.500	6.625	34.4716	.23939
			XXS	.875	5.875	27.1085	.18825

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8	200	8.625	5S	.109	8.407	55.5100	.38549
			10, 10S	.148	8.329	54.4848	.37837
			20	.250	8.125	51.8485	.36006
			30	.277	8.071	51.1616	.35529
			STD, 40, 40S	.322	7.981	50.0270	.34741
			60	.406	7.813	47.9430	.33294
			XS, 80, 80S	.500	7.625	45.6635	.31711
			100	.594	7.437	43.4395	.30166
			120	.719	7.187	40.5681	.28172
			140	.812	7.001	38.4955	.26733
			XXS	.875	6.875	37.1223	.25779
			160	.906	6.813	36.4558	.25317
9	225	9.625	STD, 40, 40S	.342	8.941	62.7858	.43601
			XS, 80, 80S	.500	8.625	58.4264	.40574
			XXS	.875	7.875	48.7069	.33824
10	250	10.750	5, 5S	.134	10.482	86.2934	.59926
			10, 10S	.165	10.420	85.2756	.59219
			20	.250	10.250	82.5158	.57303
			30	.307	10.136	80.6906	.56035
			STD, 40, 40S	.365	10.020	78.8542	.54760
			XS, 60, 80S	.500	9.750	74.6618	.51849
			80	.594	9.562	71.8103	.49868
			100	.719	9.312	68.1044	.47295
			120	.844	9.062	64.4967	.44789
			XXS, 140	1.000	8.750	60.1320	.41758
			160	1.125	8.500	56.7450	.39406
			11	275	11.750	STD, 40, 40S	.375
XS, 80, 80S	.500	10.750				90.7625	.63030
XXS	.875	10.000				78.2398	.54541
12	300	12.750	5, 5S	.156	12.438	121.5040	.84378
			10, 10S	.180	12.390	120.5680	.83728
			20	.250	12.250	117.8587	.81846
			30	.330	12.090	114.8001	.79722
			STD, 40S	.375	12.000	113.0972	.78540
			40	.406	11.938	111.9316	.77730
			XS, 60, 80S	.500	11.750	108.4339	.75301
			80	.688	11.374	101.6052	.70559
			100	.844	11.062	96.1074	.66741
			XXS, 120	1.000	10.750	90.7625	.63030
			140	1.125	10.500	86.5901	.60132
			160	1.312	10.126	80.5314	.55925

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SIZE NPS	SIZE DN	O.D. (in.)	Schedules	Wall (in.)*	I.D. (in.)*	A _{int} (in. ²)	A _{int} (Ft. ²)			
14	350	14.000	5S	.156	13.688	147.1531	1.02190			
			10S	.188	13.624	145.7803	1.01236			
			10	.250	13.500	143.1387	.99402			
			20	.312	13.376	140.5213	.97584			
			STD, 30, 40S	.375	13.250	137.8863	.95754			
			40	.438	13.124	135.2764	.93942			
			XS, 80S	.500	13.000	132.7322	.92175			
			60	.594	12.812	128.9209	.89528			
			80	.750	12.500	122.7184	.85221			
			100	.938	12.124	115.4467	.80171			
			120	1.094	11.812	109.5813	.76098			
			140	1.250	11.500	103.8688	.72131			
			160	1.406	11.188	98.3093	.68270			
			16	400	16.000	5S	.165	15.670	192.8535	1.33926
10S	.188	15.624				191.7229	1.33141			
10	.250	15.500				188.6917	1.31036			
20	.312	15.376				185.6848	1.28948			
STD, 30, 40S	.375	15.250				182.6540	1.26843			
XS, 40, 80S	.500	15.000				176.7144	1.22718			
60	.656	14.688				169.4396	1.17666			
80	.844	14.312				160.8756	1.11719			
100	1.031	13.938				152.5775	1.05957			
120	1.219	13.562				144.4565	1.00317			
140	1.438	13.124				135.2764	.93942			
160	1.594	12.812				128.9209	.89528			
18	450	18.000				5S	.165	17.670	245.2238	1.702943
						10S	.188	17.624	243.9487	1.69409
			10	.250	17.500	240.5280	1.67033			
			20	.312	17.376	237.1314	1.64675			
			STD, 40S	.375	17.250	233.7048	1.62295			
			30	.438	17.124	230.3032	1.59933			
			XS, 80S	.500	17.000	226.9799	1.57625			
			40	.562	16.876	223.6807	1.55334			
			60	.750	16.500	213.8245	1.48489			
			80	.938	16.124	204.1903	1.41799			
			100	1.156	15.688	193.2968	1.34234			
			120	1.375	15.250	182.6540	1.26843			
			140	1.562	14.876	173.8048	1.20698			
			160	1.781	14.438	163.7207	1.13695			

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SIZE NPS	SIZE DN	O.D. (in.)	Schedules	Wall (in.)*	I.D. (in.)*	A _{int} (in. ²)	A _{int} (Ft. ²)
20	500	20.000	5S	.188	19.624	302.4577	2.10040
			10S	.218	19.564	300.6110	2.08758
			10	.250	19.500	298.6474	2.07394
			STD, 20, 40S	.375	19.250	291.0389	2.02110
			XS, 30, 80S	.500	19.000	283.5285	1.96895
			40	.594	18.812	277.9454	1.93018
			60	.812	18.376	265.2110	1.84174
			80	1.031	17.938	252.7188	1.75499
			100	1.281	17.438	238.8267	1.65852
			120	1.500	17.000	226.9799	1.57625
			140	1.750	16.500	213.8245	1.48489
			160	1.969	16.062	202.6230	1.40710
			22	550	22.000	10, 10S	.250
STD, 20, 40S	.375	21.250				354.6561	2.46289
XS, 30, 80S	.500	21.000				346.3603	2.40528
40	.688	20.624				334.0683	2.31992
60	.875	20.250				322.0621	2.23654
80	1.125	19.750				306.3541	2.12746
100	1.375	19.250				291.0389	2.02110
120	1.625	18.750				276.1163	1.91747
140	1.875	18.250				261.5865	1.81657
160	2.125	17.750				247.4493	1.71840
24	600	24.000				5S	.218
			10, 10S	.250	23.500	433.7358	3.01205
			STD, 20, 40S	.375	23.250	424.5564	2.94831
			XS, 80S	.500	23.000	415.4753	2.88524
			30	.562	22.876	411.0074	2.85422
			40	.688	22.624	402.0021	2.79168
			60	.969	22.062	382.2780	2.65471
			80	1.219	21.562	365.1469	2.53574
			100	1.531	20.938	344.3181	2.39110
			120	1.812	20.376	326.0824	2.26446
			140	2.062	19.876	310.2755	2.15469
			160	2.344	19.312	292.9166	2.03414
			26	650	26.00	10	.312
STD, 40S	.375	25.250				500.7400	3.47736
XS, 80S	.500	25.000				490.8734	3.40884
28	700	28.00	10	.312	27.376	588.6125	4.08759
			STD, 40S	.375	27.250	583.2067	4.05005
			XS, 20, 80S	.500	27.000	572.5548	3.97607
			30	.625	26.750	562.0010	3.90278

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SIZE NPS	SIZE DN	O.D. (in.)	Schedules	Wall (in.)*	I.D. (in.)*	A _{int} (in. ²)	A _{int} (Ft. ²)
30	750	30.000	10	.312	29.376	677.7583	4.70665
			STD, 40S	.375	29.250	671.9566	4.66637
			XS, 20, 80S	.500	29.000	660.5193	4.58694
			30	.625	28.750	649.1801	4.50820
32	800	32.00	10	.312	31.376	773.1872	5.36936
			STD	.375	31.250	766.9897	5.32632
			20	.500	31.000	754.7670	5.24144
			30	.625	30.750	742.6424	5.15724
			40	.688	30.624	736.5688	5.11506
34	850	34.00	10	.312	33.376	874.8993	6.07569
			STD	.375	33.250	868.3060	6.02990
			20	.500	33.000	855.2979	5.93957
			30	.625	32.750	842.3879	5.84992
			40	.688	32.624	835.9185	5.80499
36	900	36.000	10	.312	35.376	982.8946	6.82566
			STD, 40S	.375	35.250	975.9055	6.77712
			XS, 20, 80S	.500	35.000	962.1119	6.68133
42	1050	42.000	STD, 40S	.375	41.250	1,336.4029	9.28058
			XS, 80S	.500	41.000	1,320.2532	9.16842
			30	.625	40.750	1304.2016	6.05696
			40	.750	40.500	1,288.2482	8.94617
48	1200	48.000	STD, 40S	.375	47.250	1,753.4490	12.17673
			XS, 80S	.500	47.000	1,734.9431	12.04822

*Because of differing manufacturing methods and tolerances, pipe ID and wall thickness may vary slightly from the values given.