

## Pipes Data

Pipe Size Inches	Outside Diam. Inches	Identification			Wall Thickness (t) Inches	Inside Diameter (d) Inches	Area of Metal Square Inches	Transverse Internal Area		Moment of Inertia (I) Inches	Weight Pipe Pounds per foot	Weight Water Pounds per foot	External Surface Sq. Ft. per foot of pipe	Section Modulus
		Steel		Stainless Steel Sched. No.				(a) Square Inches	(A) Square Feet					
		Iron Pipe Size	Sched. No.											
1/8	0.405	STD	40	10S	0.49	.307	.0548	.0740	.00051	.00088	.19	.032	.106	.00437
		XS	80	40S	0.68	.269	.0720	.0568	.00040	.00106	.24	.025	.106	.00523
		XXS	80	80S	0.95	.215	.0925	.0364	.00025	.00122	.31	.016	.106	.00602
¼	0.540	STD	40	10S	.065	.410	.0970	.1320	.00091	.00279	.33	.057	.141	.01032
		XS	80	40S	.088	.364	.1250	.1041	.00072	.00331	.42	.045	.141	.01227
		XXS	80	80S	.119	.302	.1574	.0716	.00050	.00377	.54	.031	.141	.01395
3/8	0.675	STD	40	10S	.065	.545	.1246	.2333	.00162	.00586	.42	.101	.178	.01736
		XS	80	40S	.091	.493	.1670	.1910	.00133	.00729	.57	.083	.178	.02160
		XXS	80	80S	.126	.423	.2173	.1405	.00098	.00862	.74	.061	.178	.02554
½	0.840	STD		5S	.065	.710	.1583	.3959	.00275	.01197	.54	.172	.220	.02849
		XS	40	10S	.083	.674	.1974	.3568	.00248	.01431	.67	.155	.220	.03407
			80	40S	.109	.622	.2503	.3040	.00211	.01709	.85	.132	.220	.04069
		XXS	160	80S	.147	.546	.3200	.2340	.00163	.02008	1.09	.102	.220	.04780
					.187	.466	.3836	.1706	.00118	.02212	1.31	.074	.220	.05267
					.294	.252	.5043	.050	.00035	.02424	1.71	.022	.220	.05772
¾	1.050	STD		5S	.065	.920	.2011	.6648	.00462	.02450	.69	.288	.275	.04667
		XS	40	10S	.083	.884	.2521	.6138	.00426	.02969	.86	.266	.275	.05655
			80	40S	.113	.824	.3326	.5330	.00371	.03704	1.13	.231	.275	.07055
		XXS	160	80S	.154	.742	.4335	.4330	.00300	.04479	1.47	.188	.275	.08531
					.219	.612	.5698	.2961	.00206	.05269	1.94	.128	.275	.10036
					.308	.434	.7180	.148	.00103	.05792	2.44	.064	.275	.11032
1	1.315	STD		5S	.065	1.185	.2553	1.1029	.00766	.04999	.87	.478	.344	.07603
		XS	40	10S	.109	1.097	.4130	.9452	.00656	.07569	1.40	.409	.344	.11512
			80	40S	.133	1.049	.4939	.8640	.00600	.08734	1.68	.375	.344	.1328
		XXS	160	80S	.179	.957	.6388	.7190	.00499	.1056	2.17	.312	.344	.1606
					.250	.815	.8365	.5217	.00362	.1251	2.84	.230	.344	.1903
					.358	.599	1.0760	.282	.00196	.1405	3.66	.122	.344	.2136
1 ¼	1.660	STD		5S	.065	1.530	.3257	1.839	.01277	.1038	1.11	.797	.435	.1250
		XS	40	10S	.109	1.442	.4717	1.633	.01134	.1605	1.81	.708	.435	.1934
			80	40S	.140	1.380	.6685	1.495	.01040	.1947	2.27	.649	.435	.2346
		XXS	160	80S	.191	1.278	.8815	1.283	.00891	.2418	3.00	.555	.435	.2913
					.250	1.160	1.1070	1.057	.00734	.2839	3.76	.458	.435	.3421
					.382	.896	1.534	.630	.00438	.3411	5.21	.273	.435	.4110
1 ½	1.900	STD		5S	.065	1.770	.3747	2.461	.01709	.1579	1.28	1.066	.497	.1662
		XS	40	10S	.109	1.682	.6133	2.222	.01543	.2468	2.09	.963	.497	.2598
			80	40S	.145	1.610	.7995	2.036	.01414	.3099	2.72	.882	.497	.3262
		XXS	160	80S	.200	1.500	1.068	1.767	.01225	.3912	3.63	.765	.497	.4118
					.281	1.338	1.429	1.406	.00976	.4824	4.86	.608	.497	.5078
					.400	1.100	1.885	.950	.00660	.5678	6.41	.42	.497	.5977
2	2.375	STD		5S	.065	2.245	.4717	3.958	.02749	.3149	1.61	1.72	.622	.2652
		XS	40	10S	.109	2.157	.7760	3.654	.02538	.4992	2.64	1.58	.622	.4204
			80	40S	.154	2.067	1.075	3.355	.02330	.6657	3.65	1.45	.622	.5606
		XXS	160	80S	.218	1.939	1.477	2.953	.02050	.8679	5.02	1.28	.622	.7309
					.344	1.687	2.190	2.241	.01556	1.162	7.46	.97	.622	.979
					.436	1.503	2.656	1.774	.01232	1.311	9.03	.77	.622	1.104
2 ½	2.875	STD		5S	.083	2.709	.7280	5.764	.04002	.7100	2.48	2.50	.753	.4939
		XS	40	10S	.120	2.635	1.039	5.453	.03787	.9873	3.53	2.36	.753	.6868
			80	40S	.203	2.469	1.704	4.788	.03322	1.530	5.79	2.07	.753	1.064
		XXS	160	80S	.276	2.323	2.254	4.238	.02942	1.924	7.66	1.87	.753	1.339
					.375	2.125	2.945	3.546	.02463	2.353	10.01	1.54	.753	1.638

					.552	1.771	4.028	2.464	.01710	2.871	13.69	1.07	.753	1.997
3	3.500	STD		5S	.083	3.334	.8910	8.730	.06063	1.301	3.03	3.78	.916	.7435
		XS	40	10S	.120	3.260	1.274	8.347	.05796	1.822	4.33	3.62	.916	1.041
		XXS	80	40S	.216	3.068	2.228	7.393	.05130	3.017	7.58	3.20	.916	1.724
			160	80S	.300	2.900	3.016	6.605	.04587	3.894	10.25	2.6	.916	2.225
						.438	2.624	4.205	5.408	.03755	5.032	14.32	2.35	.916
					.600	2.300	5.466	4.155	.02885	5.993	18.58	1.80	.916	3.424
3 ½	4.000	STD	40	5S	.083	3.834	1.021	11.545	.08017	1.960	3.48	5.00	1.047	.9799
		XS	80	10S	.120	3.760	1.463	11.104	.07711	2.755	4.97	4.81	1.047	1.378
		XXS		40S	.226	3.548	2.680	9.886	.06870	4.788	9.11	4.29	1.047	2.394
				80S	.318	3.364	3.678	8.888	.06170	6.280	12.50	3.84	1.047	3.140
4	4.500	STD		5S	.083	4.334	1.152	14.75	.10245	2.810	3.92	6.39	1.178	1.249
		NS	40	10S	.120	4.260	1.651	14.25	.09898	3.963	5.61	6.18	1.178	1.761
		XXS	80	40S	.237	4.026	3.174	12.73	.08840	7.233	10.79	5.50	1.178	3.214
			120	80S	.337	3.826	4.407	11.50	.07986	9.610	14.98	4.98	1.178	4.271
				160		.438	3.624	5.595	10.31	.0716	11.65	19.0	4.47	1.178
					.531	3.438	6.621	9.28	.0645	13.27	22.51	4.02	1.178	5.898
					.674	3.152	8.101	7.80	.0542	15.28	27.54	3.38	1.178	6.791
5	5.563	STD	40	5S	.109	5.345	1.868	22.44	.1558	6.947	6.36	9.72	1.456	2.498
		XS	80	10S	.134	5.295	2.285	22.02	.1529	8.425	7.77	9.54	1.456	3.029
		XXS	120	40S	.258	5.047	4.300	20.01	.1390	15.16	14.62	8.67	1.456	5.451
			160	80S	.375	4.813	6.112	18.19	.1263	20.67	20.78	7.88	1.456	7.431
						.500	4.563	7.953	16.35	.1136	25.73	27.04	7.09	1.456
					.625	4.313	9.696	14.61	.1015	30.03	32.96	6.33	1.456	10.796
					.750	4.063	11.340	12.97	.0901	33.63	38.55	5.61	1.456	12.090
6	6.625	STD	40	5S	.109	6.407	2.231	32.24	.2239	11.85	7.60	13.97	1.734	3.576
		XS	80	10S	.134	6.357	2.733	31.74	.2204	14.40	9.29	13.75	1.734	4.346
		XXS	120	40S	.280	6.065	5.581	28.89	.2006	28.14	18.97	12.51	1.734	8.496
			160	80S	.432	5.761	8.405	26.07	.1810	40.49	28.57	11.29	1.734	12.22
						.562	5.501	10.70	23.77	.1650	49.61	36.39	10.30	1.734
					.719	5.187	13.32	21.15	.1469	58.97	45.35	9.16	1.734	17.81
					.864	4.897	15.64	18.84	.1308	66.33	53.16	8.16	1.734	20.02
8	8.625	STD	20	5S	.109	8.407	2.916	55.51	.3855	26.44	9.93	24.06	2.258	6.131
		XS	30	10S40S80S	.148	8.329	3.941	54.48	.3784	35.41	13.40	23.61	2.258	8.212
			40		.250	8.125	6.57	51.85	.3601	57.72	22.36	22.47	2.258	13.39
		XXS	60		.277	8.071	7.26	51.16	.3553	63.35	24.70	22.17	2.258	14.69
			80		.322	7.981	8.40	50.03	.3474	72.49	28.55	21.70	2.258	16.81
			100		.406	7.813	10.48	47.94	.3329	88.73	35.64	20.77	2.258	20.58
		120		.500	7.625	12.76	45.66	.3171	105.7	43.39	19.78	2.258	24.51	
			140		.594	7.437	14.96	43.46	.3018	121.3	50.95	18.83	2.258	28.14
		160		.719	7.187	17.84	40.59	.2819	140.5	60.71	17.59	2.258	32.58	
				.812	7.001	19.93	38.50	.2673	153.7	67.76	16.68	2.258	35.65	
		.875	6.875	21.30	37.12	.2578	162.0	72.42	16.10	2.258	37.56			
		.906	6.813	21.97	36.46	.2532	165.9	74.69	15.80	2.258	38.48			
10	10.750	STD	20	5S	.134	10.482	4.36	86.29	.5992	63.0	15.19	37.39	2.814	11.71
		XS	30	10S40S	.165	10.420	5.49	85.28	.5922	76.9	18.65	36.95	2.814	14.30
		XXS	40	80S	.250	10.250	8.24	82.52	.5731	113.7	28.04	35.76	2.814	21.15
			60		.307	10.136	10.07	80.69	.5603	137.4	34.24	34.96	2.814	25.57
			80		.365	10.020	11.90	78.86	.5475	160.7	40.48	34.20	2.814	29.90
		100		.500	9.750	16.10	74.66	.5185	212.0	54.74	32.35	2.814	39.43	
			120		.594	9.562	18.92	71.84	.4989	244.8	64.43	31.13	2.814	45.54
		140		.719	9.312	22.63	68.13	.4732	286.1	77.03	29.53	2.814	53.22	
160		.844	9.062	26.24	64.53	.4481	324.2	89.29	27.96	2.814	60.32			
				1.000	8.750	30.63	60.13	.4176	367.8	104.13	26.06	2.814	68.43	
				1.125	8.500	34.02	56.75	.3941	399.3	115.64	24.59	2.814	74.29	
12	12.75	STD	20	5S	.156	12.438	6.17	121.50	.8438	122.4	20.98	52.65	3.338	19.2
		XS	30	10S40S80S	.180	12.390	7.11	120.57	.8373	140.4	24.17	52.25	3.338	22.0
					.250	12.250	9.82	117.86	.8185	191.8	33.38	51.07	3.338	30.2
					.330	12.090	12.87	114.80	.7972	248.4	43.77	49.74	3.338	39.0

		XS	40		.375	12.000	14.58	113.10	.7854	279.3	49.56	49.00	3.338	43.8		
					.406	11.938	15.77	111.93	.7773	300.3	53.52	48.50	3.338	47.1		
		XXS	60		.500	11.750	19.24	108.43	.7528	361.5	65.42	46.92	3.338	56.7		
			80		.562	11.626	21.52	106.16	.7372	400.4	73.15	46.00	3.338	62.8		
			100		.688	11.374	26.03	101.64	.7058	475.1	88.63	44.04	3.338	74.6		
			120		.844	11.062	31.53	96.14	.6677	561.6	107.32	41.66	3.338	88.1		
			140		1.000	10.750	36.91	90.76	.6303	641.6	125.49	39.33	3.338	100.7		
			160		1.125	10.500	41.08	86.59	.6013	700.5	139.67	37.52	3.338	109.9		
					1.312	10.126	47.14	80.53	.5592	781.1	160.27	34.89	3.338	122.6		
14	14.00	STD	10	5S	.156	13.688	6.78	147.15	1.0219	162.6	23.07	63.77	3.665	23.2		
			20	10S	.188	13.624	8.16	145.78	1.0124	194.6	27.73	63.17	3.665	27.8		
		XS	30		.250	13.500	10.80	143.14	.9940	255.3	36.71	62.03	3.665	36.6		
			40		.312	13.376	13.42	140.52	.9758	314.4	45.61	60.89	3.665	45.0		
					.375	13.250	16.05	137.88	.9575	372.8	54.57	59.75	3.665	53.2		
			60		.438	13.124	18.66	135.28	.9394	429.1	63.44	58.64	3.665	61.3		
			80		.500	13.000	21.21	132.73	.9217	483.8	72.09	57.46	3.665	69.1		
			100		.594	12.812	24.98	128.96	.8956	562.3	85.05	55.86	3.665	80.3		
			120		.750	12.500	31.22	122.72	.8522	678.3	106.13	53.18	3.665	98.2		
			140		.938	12.124	38.45	115.49	.8020	824.4	130.85	50.04	3.665	117.8		
			160		1.094	11.812	44.32	109.62	.7612	929.6	150.79	47.45	3.665	132.8		
					1.250	11.500	50.07	103.87	.7213	1027.0	170.28	45.01	3.665	146.8		
					1.406	11.188	55.63	98.31	.6827	1117.0	189.11	42.60	3.665	159.6		
		16	16.00	STD	10	5S	.165	15.670	8.21	192.85	1.3393	257.3	27.90	83.57	4.189	32.2
XS	20			10S	.188	15.624	9.34	191.72	1.3314	291.9	31.75	83.08	4.189	36.5		
	30				.250	15.500	12.37	188.69	1.3103	383.7	42.05	81.74	4.189	48.0		
	40				.312	15.376	15.38	185.69	1.2895	473.2	52.27	80.50	4.189	59.2		
	60				.375	15.250	18.41	182.65	1.2684	562.1	62.58	79.12	4.189	70.3		
	80				.500	15.000	24.35	176.72	1.2272	731.9	82.77	76.58	4.189	91.5		
	100				.656	14.688	31.62	169.44	1.1766	932.4	107.50	73.42	4.189	116.6		
	120				.844	14.312	40.14	160.92	1.175	1155.8	136.61	69.73	4.189	144.5		
	140				1.031	13.938	48.48	152.58	1.0596	1364.5	164.82	66.12	4.189	170.5		
	160				1.219	13.562	56.56	144.50	1.0035	1555.8	192.43	62.62	4.189	194.5		
					1.438	13.124	65.78	135.28	.9394	1760.3	223.64	58.64	4.189	220.0		
					1.594	12.812	72.10	128.96	.8956	1893.5	245.25	55.83	4.189	236.7		
18	18.00			STD	10	5S	.165	17.670	9.25	245.22	1.7029	367.6	31.43	106.26	4.712	40.8
				XS	20	10S	.188	17.624	10.52	243.95	1.6941	417.3	35.76	105.71	4.712	46.4
			30		.250	17.500	13.94	240.53	1.6703	549.1	47.39	104.21	4.712	61.1		
			40		.312	17.376	17.34	237.13	1.6467	678.2	58.94	102.77	4.712	75.5		
			60		.375	17.250	20.76	233.71	1.6230	806.7	70.59	101.18	4.712	89.6		
			80		.438	17.124	24.17	230.30	1.5990	930.3	82.15	99.84	4.712	103.4		
			100		.500	17.000	27.49	226.98	1.5763	1053.2	93.45	98.27	4.712	117.0		
			120		.562	16.876	30.79	223.68	1.5533	1171.5	104.67	96.93	4.712	130.1		
			140		.750	16.500	40.64	213.83	1.4849	1514.7	138.17	92.57	4.712	168.3		
			160		.938	16.124	50.23	204.24	1.4183	1833.0	170.92	88.50	4.712	203.8		
					1.156	15.688	61.17	193.30	1.3423	2180.0	207.96	83.76	4.712	242.3		
					1.375	15.250	71.81	182.66	1.2684	2498.1	244.14	79.07	4.712	277.6		
					1.562	14.876	80.66	173.80	1.2070	2749.0	274.22	75.32	4.712	305.5		
					1.781	14.438	90.75	163.72	1.1369	3020.0	308.50	70.88	4.712	335.6		
20	20.00	STD	10	5S	.188	19.624	11.70	302.46	2.1004	574.2	39.78	131.06	5.236	57.4		
		XS	20	10S	.218	19.564	13.55	300.61	2.0876	662.8	46.06	130.27	5.236	66.3		
			30		.250	19.500	15.51	298.65	2.0740	765.4	52.73	129.42	5.236	75.6		
			40		.375	19.250	23.12	290.04	2.0142	1113.0	78.60	125.67	5.236	111.3		
			60		.500	19.000	30.63	283.53	1.9690	1457.0	104.13	122.87	5.236	145.7		
			80		.594	18.812	36.15	278.00	1.9305	1703.0	123.11	120.46	5.236	170.4		
			100		.812	18.376	48.95	265.21	1.8417	2257.0	166.40	114.92	5.236	225.7		
			120		1.031	17.938	61.44	252.72	1.7550	2772.0	208.87	109.51	5.236	277.1		
			140		1.281	17.438	75.33	238.83	1.6585	3315.2	256.10	103.39	5.236	331.5		
			160		1.500	17.000	87.18	226.98	1.5762	3754.0	296.37	98.35	5.236	375.5		
			1.750	16.500	100.33	213.82	1.4849	4216.0	341.09	92.66	5.236	421.7				

					1.969	16.062	111.49	202.67	1.4074	4585.5	379.17	87.74	5.236	458.5
22	22.00	STD XS	10	5S	.188	21.624	12.88	367.25	2.5503	766.2	43.80	159.14	5.760	69.7
			20	10S	.218	21.564	14.92	365.21	2.5362	884.8	50.71	158.26	5.760	80.4
			30		.250	21.500	17.08	363.05	2.5212	1010.3	58.07	157.32	5.760	91.8
			60		.375	21.250	25.48	354.66	2.4629	1489.7	86.61	153.68	5.760	135.4
			80		.500	21.000	33.77	346.36	2.4053	1952.5	114.81	150.09	5.760	117.5
			100		.875	20.250	58.07	322.06	2.2365	3244.9	197.41	139.56	5.760	295.0
			120		1.125	19.75	73.78	306.35	2.1275	4030.4	250.81	132.76	5.760	366.4
			140		1.375	19.25	89.09	291.04	2.0211	4758.5	302.88	126.12	5.760	432.6
			160		1.625	18.75	104.02	276.12	1.9175	5432.0	353.61	119.65	5.760	493.8
					1.875	18.25	118.55	261.59	1.8166	6053.7	403.00	113.36	5.760	550.3
					2.125	17.75	132.68	247.45	1.71840	6626.4	451.06	107.23	5.760	602.4
24	24.00	STD XS	10	5S	.218	23.564	16.29	436.10	3.0285	1151.6	55.37	188.98	6.283	96.0
			2030	10S	.250	23.500	18.65	433.74	3.0121	1315.4	63.41	187.95	6.283	109.6
			40		.375	23.250	27.83	424.56	2.9483	1942.0	94.62	183.95	6.283	161.9
			60		.500	23.000	36.91	415.48	2.8853	2549.5	125.49	179.87	6.283	212.5
			80		.562	22.876	41.39	411.00	2.8542	2843.0	140.68	178.09	6.283	237.0
			100		.688	22.624	50.31	402.07	2.7921	3421.3	171.29	174.23	6.283	285.1
			120		.969	22.062	70.04	382.35	2.6552	4652.8	238.35	165.52	6.283	387.7
			140		1.219	21.562	87.17	365.22	2.5362	5672.0	296.58	158.26	6.283	472.8
			160		1.531	20.938	108.07	344.32	2.3911	6849.9	367.39	149.06	6.283	570.8
					1.812	20.376	126.31	326.08	2.2645	7825.0	429.39	141.17	6.283	652.1
					2.062	19.876	142.11	310.28	2.1547	8625.0	483.12	134.45	6.283	718.9
		2.344	19.312	159.41	292.98	2.0346	9455.9	542.13	126.84	6.283	787.9			
26	26.00	STD XS	1020		.312	25.376	25.18	505.75	3.5122	2077.2	85.60	219.16	6.806	159.8
					.375	25.250	30.19	500.74	3.4774	2478.4	102.63	216.99	6.806	190.6
					.500	25.000	40.06	490.87	3.4088	3257.0	136.17	212.71	6.806	250.5
28	28.00	STD XS	1020		.312	27.376	27.14	588.61	4.0876	2601.0	92.26	255.07	7.330	185.8
			30		.375	27.250	32.54	583.21	4.0501	3105.1	110.64	252.73	7.330	221.8
					.500	27.000	43.20	572.56	3.9761	4084.8	146.85	248.11	7.330	291.8
					.625	26.750	53.75	562.00	3.9028	5037.7	182.73	243.53	7.330	359.8

30	30.00	STD XS	1020 30	5S 10S	.250	29.500	23.37	683.49	4.7465	2585.2	79.43	296.18	7.854	172.3
					.312	29.376	29.10	677.76	4.7067	3206.3	98.93	293.70	7.854	213.8
					.375	29.250	34.90	671.96	4.6664	3829.4	118.65	291.18	7.854	255.3
					.500	29.000	46.34	660.52	4.5869	5042.2	157.53	286.22	7.854	336.1
					.625	28.750	57.68	649.18	4.5082	6224.0	196.08	281.31	7.854	414.9
32	32.00	STD XS	1020 30 40		.312	31.376	31.06	773.19	5.3694	3898.9	105.59	335.05	8.378	243.7
					.375	31.250	37.26	766.99	5.3263	4658.5	126.66	332.36	8.378	291.2
					.500	31.000	49.48	754.77	5.2414	6138.6	168.21	327.06	8.378	383.7
					.625	30.750	61.60	742.64	5.1572	7583.4	209.43	321.81	8.378	474.0
					.688	30.624	67.68	736.57	5.1151	8298.3	230.08	319.18	8.378	518.6
34	34.00	STD XS	1020 30 40		.344	33.312	36.37	871.55	6.0524	5150.5	123.65	377.67	8.901	303.0
					.375	33.250	39.61	868.31	6.0299	5599.3	134.67	376.27	8.901	329.4
					.500	33.000	52.62	855.30	5.9396	7383.5	178.89	370.63	8.901	434.3
					.625	32.750	65.53	842.39	5.8499	9127.6	222.78	365.03	8.901	536.9
					.688	32.624	72.00	835.92	5.8050	9991.6	244.77	362.23	8.901	587.7

36	36.00	STD XS	1020		.312	35.376	34.98	982.90	6.8257	5569.5	118.92	425.92	9.425	309.4
			30		.375	35.250	41.97	975.91	6.7771	6658.9	142.68	422.89	9.425	369.9
			40		.500	35.000	55.76	962.11	6.6813	8786.2	189.57	416.91	9.425	488.1
					.625	34.750	69.46	948.42	6.5862	10868.4	236.13	417.22	9.425	603.8
					.750	34.500	83.06	934.82	6.4918	12906.1	282.35	405.09	9.425	717.0