

# **Acoustic Velocities for Common Liquids and Solids & Common Pipe Sizes**

*Revised 3/19/2020*

**Acoustic Velocities for Pipe Solids at 25 deg. C (Shear velocity)**

<b><i>Material</i></b>	<b><i>ft/sec</i></b>	<b><i>m/sec</i></b>
Acrylic*	8954	2730
Aluminum	10102	3080
Aluminum (rolled)	9971	3040
Aluminum (2024)	10365	3160
Asbestos Cement	7216	2200
Brass (Naval)	6724	2050
Carbon Steel	10516	3206
Cast Iron	10594	3230
Copper	7413	2260
Copper (annealed)	7626	2325
Copper (rolled)	7446	2270
Copper-Nickel (70-30)	8331	2540
Copper-Nickel (90-10)	6757	2060
Ductile Iron	9840	3000
FRP	8216	2505
Glass, Crown	9315	2840
Glass, Pyrex	10758	3280
Glass, Quartz	11546	3520
Gold	3936	1200
Inconel	9906	3020
Iron	10611	3235
Iron, Ductile	9840	3000
Lead	7118	2170
Lucite	4133	1260
Mild Steel	10611	3235
Monel	8922	2720
Mortar	8200	2500
Nickel	9709	2960
Nylon	7872	2400
Nylon, 6-6	3510	1070
Polyethylene (LD)*	6363	1940
Polyethylene (HD)*	7577	2310
PVC, CPVC*	7872	2400
Steel, 1% carbon	10562	3220
Steel, galvanized - standard	10590	3223
Steel, hardened 1% carbon	10332	3150
Stainless Steel - 302	10234	3120
Stainless Steel - 303	10234	3120
Stainless Steel - 304	10516	3206
Stainless Steel - 316	10414	3175
Stainless Steel - 347	10168	3100
Stainless Steel - 410	9807	2990
Stainless Steel - 430	11021	3360
Tar epoxy	6560	2000
Tin, rolled	5478	1670
Titanium	10250	3125
Tungsten, annealed	9479	2890
Tungsten, drawn	8659	2640
Tungsten, carbide	13054	3980
Zinc, rolled	8003	2440

\*Longitudinal velocity used when friction coefficients is low

**Longitudinal Acoustic Velocities for Common Liquids at 25 deg C or other temperature indicates**

<u>Substance</u>	<u>Specific Gravity</u>	<u>Ft/ Sec.</u>	<u>M./Sec.</u>
Acetate, Ethyl	0.901	3560	1085
Acetate, Methyl	0.934	3973	1211
Acetic Anhydride (22)	1.082	3871	1180
Acetic Acid, Nitrile	0.783	4232	1290
Acetic Acid, Ethyl Ester (33)	0.901	3560	1085
Acetic Acid, Methyl Ester	0.934	3973	1211
Acetone	0.791	3852	1174
Acetonitrile	0.783	4232	1290
Acetylacetone	0.729	4590	1399
Acetylen Dichloride	1.26	3330	1015
Acetylene Tetrabromide (47)	2.966	3369	1027
Acetylene Tetrachloride (47)	1.595	3763	1147
Alcohol	0.789	3960	1207
Alcohol - Ethyl	0.83	3960	1207
Alcohol - Isopropyl		3839	1170
Alkazene-13	0.86	4321	1317
Alkazene-25	1.2	4288	1307
2-Amino-Ethanol	1.018	5656	1724
Aminobenzene	1.022	5376	1639
2-Aminotolidine (46)	0.999	5308	1618
4-Aminotolidine (46)	0.966	4856	1480
Ammonia (35)	0.771	5672	1729
Amorphous Polyolefin	0.98	3158	963
n-Amyl Alcohol		4015	1224
t-Amyl Alcohol	0.81	3950	1204
Aniline	10.2	5377	1639
Argon (45)	1.4	2799	853
Azine	0.982	4642	1415
Benzene	0.879	4285	1306
Benzol (29,40,41)	0.879	4285	1306
Bromine (21)	2.928	2917	889
Bromo-Benzene (46)	1.522	3839	1170
1-Bromo Butane (46)	1.276	3343	1.019
Bromo-Ethane (46)	1.46	2953	900
Bromoform (46,47)	2.89	3012	918
n-Butane (-5)	0.601	3560	1085
Sec-Butylalcohol	0.81	4068	1240
n-Butyl Bromide (46)	1.276	3343	1019
n-Butyl Chloride (22,46)	0.887	3740	1140
tert Butyl Chloride	0.84	3228	984
Butyl oleate	1.019	4869	1484
2,3,Butylene glycol	1.019	4869	1484

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<u>Substance</u>	<u>Specific Gravity</u>	<u>Ft/ Sec.</u>	<u>M./Sec.</u>
Cadmium (7)		7342	2238
Carbinol (40,41)	0.791	3530	1076
Carbitol	0.988	4784	1458
Carbon Dioxide	1.101	2757	839
Carbon Disulphide	1.261	3770	1149
Carbon Tetrachloride	1.595	3038	926
Carbon Tetraflouride (-150)	1.75	2872	875
Cetane (23)	0.773	4390	1338
Chloro-benezene	0.887	3740	1140
Chloroform (20)		3054	931
1-Chloro-propane (47)	0.892	3471	1058
Chloro-diFluoromethane (3)	1.491	2933	894
Cinnamaldehyde	1.112	5098	1554
Colamine	1.018	5656	1724
o-Cresol (46)	1.047	5056	1541
m-Cresol (46)	1.034	4921	1500
Cyanomethane	0.783	4232	1290
Cyclohexane (15)	0.779	4095	1284
Cyclohexanol	0.962	4770	1454
Cyclohexanone	0.948	4669	1423
Decane (46)	0.73	4108	1252
1-Decene (27)	0.746	4052	1235
Diacetyl	0.99	4055	1236
Diamylamine		4121	1256
1,2 Dibromo-ethane (47)	2.18	3264	995
trans-1,2-Dibromoethene (47)	2.231	3068	935
Dibutyl phthalate		4619	1408
Dichloro-t-butyl alcohol		4278	1304
2,3,Dichlorodioxane		4564	1391
Dichlorodifluoromethane(3)Freon(12)	1.516	2540	774
1,2 Dichloro ethane (47)	1.253	3914	1193
cis 1,2-Dichloro-ethene (3, 47)	1.284	3481	1061
trans1,2-Dichloro-ethene (3,47)	1.257	3314	1010
1-2-Dichlorohexafluorocyclobutane (47)	1.65	2195	669
1-3-Dichloro-isobutane	1.14	4003	1220
Dichloro methane (3)	1.327	3511	1070
1,1-Dichloro-1,2,2,2,tetra fluoroethane	1.455	21853	665
Diesel fuel		4100	1250
Diethyl ether	0.713	3232	985
Diethylene glycol	1.116	5203	1586
Diethylene glycol, monoethyl ether	0.988	4784	1458
Diethylenimide oxide	1	4731	1442
1,2-bis (DiFluoramino) butane (43)	1.216	3281	1000
1,2-bis(diFluoramino) 2-methylpropane	1.213	2953	900

**Longitudinal Acoustic Velocities for Common Liquids at 25 deg C or other temperature indicates**

<u>Substance</u>	<u>Specific Gravity</u>	<u>Ft/ Sec.</u>	<u>M./Sec.</u>
1,2-bis(diFlouramino) propane (43)	1.265	3150	960
2,2-Dihydroxydiethyl ether	1.116	5203	1586
Dihydroxyethane	1.113	5440	1658
1,3-Dimethyl-benzene (46)	0.868	4406	1343
1,4-Dimehyl-benzene (46)		4377	1334
2,2-Dimethyl-butane (29,33)	0.649	3540	1079
Dimethyl Ketone	0.0791	3852	1174
Dimethyl pentane (47)	0.674	3488	1063
Dimethyl phthalate	1.2	4800	1463
Diiodo-methane	3.24	3215	980
Dimethyl Silocan (Dow Corning 200)		2991	912
Dioxane	1.033	4514	1376
Dodecane (23)	0.749	4196	1279
1,2-Ethanediol	1.113	5440	1658
Ethanenitrile	0.783	4232	1290
Ethanoic anhydride (22)	1.082	3871	1180
Ethanol	0.789	3960	1207
Ethanol amide	1.018	5656	1724
Ethoxyethane	0.713	3232	985
Ethyl acetate (33)	901	3560	1085
Ethyl alcohol	0.789	3960	1207
Ethyl benzene (46)	0.867	4390	1338
Ethyl Bromide (46)	1.461	2953	900
Ethyl iodide (460)	1.95	2874	876
Ether	0.713	3232	985
Ethyl ether	0.713	3232	985
Ethylene bromide	2.18	3264	995
Ethylene Chloride	1.253	3914	1193
Ethyle glycol	1113	5440	1658
d-2-Fenechanone	0.947	4331	1320
Fluorine	0.0545	1322	403
Fluoro-benzene (46)	1.024	3901	1189
Formaldehyde, methyl ester	0.974	3698	1127
Formamide	1.134	5322	1622
Freon R12		2540	774
Furfural	1.157	4738	1444
Furfuryl alcohol	1.135	4757	1450
Fural	1.157	4738	1444
2-Furancarboxaldehyde	1.157	4738	1444
2-Furyl-Methanol	1.135	4757	1450
Gallium	6.095	9416	2870
Glycerin	1.26	6247	1904
Glycol	1.113	5440	1658

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<u>Substance</u>	<u>Specific Gravity</u>	<u>Ft/ Sec.</u>	<u>M./Sec.</u>
Heptane (22, 23)	0.684	3711	1131
n-Heptane (29,33)	0.684	3871	1180
Hexachloro-Cyclopentadiene (47)	1.718	3773	1150
Hexadecane (23)	0.773	4390	1338
Hexalin	0.962	4770	1454
Hexane (16,22,23)	0.659	3540	1079
n-Hexane (29,33)	0.649	3540	1079
2,5-Hexanedione	0.729	4590	1399
n-Hexanol	0.819	4265	1300
Hexahydrobenzene (15)	0.779	4095	1248
Hexahydrophenol	0.962	4770	1454
Hydrogen (45)	0.071	3894	1187
2-Hydroxy-toluene (46)	1.047	5056	1541
3-Hydroxy-toluene (46)	1.034	4921	1500
Iodo-benzene (46)	1.823	3655	1114
Iodo-ethane (46)	1.95	2874	876
Iodo-methane	2.28	3209	978
Isobutyl acetate (22)		3871	1180
Isobutanol	0.81	3976	1212
Iso-Butane		4002	1220
Isopentane (36)	0.62	3215	980
Isopropanol (46)	0.785	3839	1170
Isopropyl alcohol (46)	0.785	3839	1170
Kerosene	0.81	4343	1324
Ketohexamethylene	0.948	4669	1423
Lithium fluoride (42)		8153	2485
Mercury (45)	13.6	4754	1449
Mesityloxide	0.85	4298	1310
Methane (25,28,38,39)	0.162	1329	405
Methanol (40,41)	0.791	3530	1076
Methyl acetate	0.934	3973	1211
o-Methylaniline (46)	0.999	5308	1618
4-Methylaniline (46)	0.966	4856	1480
Methyl alcohol (40,44)	0.791	3530	1076
Methyl benzene (16,52)	0.867	4357	1328
2-Methyl-butane (36)	0.62	3215	980
Methyl carbinol	0.789	3960	1207
Methyl-chloroform (47)	1.33	3232	985
Methyl-cyanide	0.783	4232	1290
3-Methyl cyclohexanol	0.92	4593	1400
Methylene chloride (3)	1.327	3511	1070

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<u>Substance</u>	<u>Specific Gravity</u>	<u>Ft/ Sec.</u>	<u>M./Sec.</u>
Methylene iodide	3.235	3215	980
Methyl formate (22)	0.974	3698	1127
Methyl iodide	2.28	3209	978
a-Methyl naphthalene	1.09	4954	1510
2-Methylphenol (46)	1.047	5056	1541
3-Methylphenol (46)	1.034	4921	1500
Milk, homogenized		1548	5080
Morpholine	1	4731	1442
Naphtha	0.76	4019	1225
Natural Gas (37)	0.316	2471	753
Neon (45)	1.207	1952	595
Nitrobenzene (46)	1.204	4642	1415
Nitrogen (45)	0.808	3156	962
Nitromethane (43)	1.135	4265	1300
Nonane (23)	0.718	3960	1207
1-Nonene (27)	0.736	3960	1207
Octane	0.703	3845	1172
n-Octane	0.704	3978	1213
l-Octene	0.723	3857	1176
Oil, Auto crankcase - SAE 20		2854	870
Oil of Camphor Sassafrassy		4560	1390
Oil, Car (SAE 20a.30)	1.74	2854	870
Oil, Castor	0.969	4849	1477
Oil, Fuel AA gravity	0.99	4872	1485
Oil, Diesel	0.8	4101	1250
Oil, Lube - X200		5020	1530
Oil (Olive)	0.912	4695	1431
Oil (Peanut)	0.936	4784	1458
Oil (Sperm)	0.88	4724	1440
Oil, 6		4951	1509
2,2-Oxydiethanol	1.116	5203	1586
Oxygen (45)	1.155	3123	952
Pentachloro-ethane (47)	1.687	3550	1082
Pentalin (47)	1.687	3550	1082
Pentane (36)	0.626	3347	1020
n-Pentane (47)	0.557	3301	1006
Perchlorocyclopentadiene (47)	1.718	3773	1150
Perchloro-ethylene (47)	1.632	3399	1036
Perfluoro-1-Hepten (47)	1.67	1913	583
Perfluoro-n-Hexane (47)	1.672	1667	508
Phene (29,40,41)	0.879	4285	1306
b-Phenyl acrolein	1.112	5098	1554
Phenylamine (41)	1.022	5377	1639

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<u>Substance</u>	<u>Specific Gravity</u>	<u>Ft/ Sec.</u>	<u>M./Sec.</u>
Phenyl bromide (46)	1.522	3839	1170
Phenyl chloride	1.106	4177	1273
Phenyl iodide (46)	1.823	3655	1114
Phenyl methane (16,52)	0.867	4357	1328
3-Phenyl propenal	1.112	5098	1554
Phthalardione		3691	1125
Phthalic acid, anhydride		3691	1125
Pimelic ketone	0.948	4669	1423
Polyterpene Resin	0.77	3608	1100
Potassium bromide (42)		3835	1169
Potassium fluoride (42)		5879	1792
Potassium iodide (42)		3232	985
Potassium nitrate (48)	1.859	5709	1740
Propane (2,13)	0.585	3291	1003
1,2,3-Propanetriol	1.26	6247	1904
1-Propanol (46)	0.78	4009	1222
2-Propanol (46)	0.78	3839	1170
2-Propanone	0.791	3852	1174
Propene (17,18, 35)	0.563	3159	963
n-Propyl acetate (22)		4199	1280
n-Propyl-alcohol	0.78	4009	1222
Propylchloride (47)	0.892	3471	1058
Propylene (17,18, 35)	0.563	-3159	963
Pyridine	0.982	4642	1415
Refrigerant 11	1.49	2718	828
Refrigerant 12 (-40)	1.52	2540	774
Refrigerant 14 (-150)	1.75	2872	875
Refrigerant 21	1.43	2923	891
Refrigerant 22	1.49	2933	894
Refrigerant 113	1.56	2571	784
Refrigerant 114	1.46	2183	665
Refrigerant 115		2153	656
Refrigerant C318	1.62	1883	574
Selenium (8)		3717	1072
Silicone (30 cp)	0.993	3248	990
Sodium fluoride (42)	0.877	6831	2082
Sodium nitrate (48)	1.884	5785	1763
Sodium nitrite (48)	1.805	6158	1877
Solvesso #3	0.877	4495	1370
Spirit of wine	0.789	3960	1207
Sulfur		3862	1177
Sufuric Acid	1.841	4126	1258
Tellurium		3251	991



**Longitudinal Acoustic Velocities for Common Liquids at 25 deg C or other temperature indicates**

<u>Substance</u>	<u>Specific Gravity</u>	<u>Ft/ Sec.</u>	<u>M./Sec.</u>
1,1,2,2-Tetrabromo-ethane (47)	2.966	3369	1027
Tetrachloroethane (46)	1.553	3839	1170
Tetrachloro-ethene (47)	1.632	3399	1036
Tetrachloro-Methane (33, 47)	1.595	3038	926
Tetradecane (46)	0.763	4367	1331
Tetraethylene glycol	1.123	5203	1586
Tetrafluoro-methane (14) (Freon 14)	1.75	2872	875
Tetrahydro-1,4-isoxazine	1	4731	1442
Toluene (16,52)	0.867	4357	1328
o-Toluidine (46)	0.999	5308	1618
p-Toluidine (46)	0.966	4856	1480
Toluol	866	4291	1308
Tribromo-methane	2.89	3019	918
Trichloro-ethene	1.33	3232	985
Trifluorotrichlorethene - Freon 113	1.464	3373	1028
Trichloro-fluoromethane (3) (Freon 11)	1.49	2718	828
Trichloro-methane (47)	1.489	3212	979
1,1,2-Trichloro-Trifluoro-Etham	1.563	2571	784
Triethyl-amine (33)	0.726	3684	1123
Triethylene glycol	1.123	5276	1608
1,1,1-Trifluoro-2-Chloro-2-Bromo-Ethane	1.869	2274	693
d-1,3,3-Trimethylnorcamphor	0.947	4331	1320
Trinitrotoluene	1.64	5282	1610
Unisis 800	0.87	4416	1346
Water, distilled	0.996	4915	1498
Water, heavy		4593	1400
Water, sea	1.025	5023	1531
Wood Alcohol	0.791	3530	1076
Xenon		2067	630
m-Xylene	0.868	4406	1343
o-Xylene	0.897	4368	1332
p-Xylene		4377	1334
Xylene hexafluoride	1.37	2884	879
Zinc		10820	3298

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**Sound Speeds in Water at Selected Temperatures**

Temperature		Sound Speed in Water	
°C	°F	m/s	ft/s
0	32.0	1,402	4,600
1	33.8	1,407	4,616
2	35.6	1,412	4,633
3	37.4	1,417	4,649
4	39.2	1,421	4,662
5	41.0	1,426	4,679
6	42.8	1,430	4,692
7	44.6	1,434	4,705
8	46.4	1,439	4,721
9	48.2	1,443	4,734
10	50.0	1,447	4,748
11	51.8	1,451	4,761
12	53.6	1,455	4,774
13	55.4	1,458	4,784
14	57.2	1,462	4,797
15	59.0	1,465	4,807
16	60.8	1,469	4,820
17	62.6	1,472	4,830
18	64.4	1,476	4,843
19	66.2	1,479	4,853
20	68.0	1,482	4,862
21	69.8	1,485	4,872
22	71.6	1,488	4,882
23	73.4	1,491	4,892
24	75.2	1,493	4,899
25	77.0	1,496	4,908
26	78.8	1,499	4,918
27	80.6	1,501	4,925
28	82.4	1,504	4,935
29	84.2	1,506	4,941
30	86.0	1,509	4,951
31	87.8	1,511	4,958
32	89.6	1,513	4,964
33	91.4	1,515	4,971
34	93.2	1,517	4,977
35	95.0	1,519	4,984
36	96.8	1,521	4,990
37	98.6	1,523	4,997
38	100.4	1,525	5,004
39	102.2	1,527	5,010
40	104.0	1,528	5,013
41	105.8	1,530	5,020
42	107.6	1,532	5,026
43	109.4	1,534	5,033
44	111.2	1,535	5,036
45	113.0	1,536	5,040
46	114.8	1,538	5,046
47	116.6	1,539	5,049

Temperature		Sound Speed in Water	
°C	°F	m/s	ft/s
48	118.4	1,540	5,053
49	120.2	1,541	5,056
50	122.0	1,543	5,063
51	123.8	1,543	5,063
52	125.6	1,544	5,066
53	127.4	1,545	5,069
54	129.2	1,546	5,072
55	131.0	1,547	5,076
56	132.8	1,548	5,079
57	134.6	1,548	5,079
58	136.4	1,549	5,082
59	138.2	1,550	5,086
60	140.0	1,550	5,086
61	141.8	1,551	5,089
62	143.6	1,552	5,092
63	145.4	1,552	5,092
64	147.2	1,553	5,095
65	149.0	1,553	5,095
66	150.8	1,553	5,095
67	152.6	1,554	5,099
68	154.4	1,554	5,099
69	156.2	1,554	5,099
70	158.0	1,554	5,099
71	159.8	1,554	5,099
72	161.6	1,555	5,102
73	163.4	1,555	5,102
74	165.2	1,555	5,102
75	167.0	1,555	5,102
76	168.8	1,555	5,102
77	170.6	1,554	5,099
78	172.4	1,554	5,099
79	174.2	1,554	5,099
80	176.0	1,554	5,099
81	177.8	1,554	5,099
82	179.6	1,553	5,095
83	181.4	1,553	5,095
84	183.2	1,553	5,095
85	185.0	1,552	5,092
86	186.8	1,552	5,092
87	188.6	1,552	5,092
88	190.4	1,551	5,089
89	192.2	1,551	5,089
90	194.0	1,550	5,086
91	195.8	1,549	5,082
92	197.6	1,549	5,082
93	199.4	1,548	5,079
94	201.2	1,547	5,076
95	203.0	1,547	5,076

Temperature		Sound Speed in Water	
°C	°F	m/s	ft/s
96	204.8	1,546	5,072
97	206.6	1,545	5,069
98	208.4	1,544	5,066
99	210.2	1,543	5,063
100	212.0	1,543	5,063
104	220.0	1,538	5,046
110	230.0	1,532	5,026
116	140.0	1,524	5,000
121	250.0	1,526	5,007
127	260.0	1,507	4,944
132	270.0	1,497	4,912
138	280.0	1,487	4,879
143	290.0	1,479	4,843
149	300.0	1,465	4,807
154	310.0	1,453	4,767
160	320.0	1,440	4,725
166	330.0	1,426	4,679
171	340.0	1,412	4,633
177	350.0	1,398	4,587
182	360.0	1,383	4,538
188	370.0	1,368	4,488
193	380.0	1,353	4,439
199	390.0	1,337	4,387
204	400.0	1,320	4,331
210	410.0	1,320	4,272
216	420.0	1,283	4,210
221	430.0	1,264	4,147
227	440.0	1,244	4,082
232	450.0	1,220	4,003
238	460.0	1,200	3,937
243	470.0	1,180	3,872
249	480.0	1,160	3,806
254	490.0	1,140	3,740
260	500.0	1,110	3,642

**FPS TO GPM CROSS - REFERENCE (Schedule 40)**

<b>Nominal Pipe (Inches)</b>	<b>I.D. INCH</b>	<b>1</b>	<b>1.5</b>	<b>2</b>	<b>2.5</b>	<b>3</b>	<b>3.5</b>	<b>4</b>	<b>4.5</b>	<b>5</b>	<b>5.5</b>	<b>6</b>	<b>6.5</b>	<b>7</b>	<b>7.5</b>	<b>8</b>	<b>8.5</b>	<b>9</b>
1	1.05	2.70	4.05	5.40	6.75	8.10	9.44	10.79	12.14	13.49	14.84	16.19	17.54	18.89	20.24	21.59	22.94	24.29
1.25	1.38	4.66	6.99	9.32	11.65	13.98	16.31	18.65	20.98	23.31	25.64	27.97	30.30	32.63	34.96	37.29	39.62	41.95
1.5	1.61	6.34	9.52	12.69	15.86	19.03	22.21	25.38	28.55	31.72	34.89	38.07	41.24	44.41	47.58	50.76	53.93	57.10
2	2.07	10.49	15.73	20.98	26.22	31.46	36.71	41.95	47.20	52.44	57.68	62.93	68.17	73.42	78.66	83.90	89.15	94.39
2.5	2.47	14.93	22.40	29.87	37.33	44.80	52.26	59.73	67.20	74.66	82.13	89.60	97.06	104.53	112.00	119.46	126.93	134.40
3	3.07	23.07	34.60	46.14	57.67	69.21	80.74	92.28	103.81	115.34	126.88	138.41	149.95	161.48	173.02	184.55	196.08	207.62
3.5	3.55	30.85	46.27	61.69	77.12	92.54	107.96	123.39	138.81	154.23	169.66	185.08	200.50	215.92	231.35	246.77	262.19	277.62
4	4.03	39.75	59.63	79.50	99.38	119.26	139.13	159.01	178.88	198.76	218.64	238.51	258.39	278.26	298.14	318.02	337.89	357.77
5	5.05	62.42	93.63	124.84	156.05	187.26	218.47	249.68	280.89	312.10	343.32	374.53	405.74	436.95	468.16	499.37	530.58	561.79
6	6.06	89.89	134.83	179.77	224.72	269.66	314.60	359.54	404.49	449.43	494.37	539.32	584.26	629.20	674.15	719.09	764.03	808.98
8	7.98	155.87	233.80	311.73	389.67	467.60	545.53	623.47	701.40	779.33	857.27	935.20	1013.13	1091.07	1169.00	1246.93	1324.87	1402.80
10	10.02	245.74	368.62	491.49	614.36	737.23	860.10	982.98	1105.85	1228.72	1351.59	1474.46	1597.34	1720.21	1843.08	1965.95	2088.82	2211.70
12	11.94	348.94	523.42	697.89	872.36	1046.83	1221.31	1395.78	1570.25	1744.72	1919.19	2093.67	2268.14	2442.61	2617.08	2791.55	2966.03	3140.50
14	13.13	421.97	632.95	843.93	1054.91	1265.90	1476.88	1687.86	1898.84	2109.83	2320.81	2531.79	2742.78	2953.76	3164.74	3375.72	3586.71	3797.69
16	15.00	550.72	826.08	1101.44	1376.80	1652.16	1927.52	2202.88	2478.24	2753.60	3028.95	3304.31	3579.67	3855.03	4130.39	4405.75	4681.11	4956.47
18	16.88	697.42	1046.13	1394.83	1743.54	2092.25	2440.96	2789.67	3138.38	3487.08	3835.79	4184.50	4533.21	4881.92	5230.63	5579.33	5928.04	6276.75
20	18.81	866.01	1299.02	1732.03	2165.04	2598.04	3031.05	3464.06	3897.06	4330.07	4763.08	5196.09	5629.09	6062.10	6495.11	6928.12	7361.12	7794.13
24	22.63	1253.48	1880.22	2506.96	3133.69	3760.43	4387.17	5013.91	5640.65	6267.39	6894.13	7520.87	8147.61	8774.34	9401.08	10027.82	10654.56	11281.30
26	25.25	1560.52	2340.79	3121.05	3901.31	4681.57	5461.83	6242.09	7022.36	7802.62	8582.88	9363.14	10143.40	10923.66	11703.93	12484.19	13264.45	14044.71
28	27.25	1817.53	2726.29	3635.05	4543.81	5452.58	6361.34	7270.10	8178.87	9087.63	9996.39	10905.15	11813.92	12722.68	13631.44	14540.21	15448.97	16357.73
30	29.25	2094.11	3141.16	4188.22	5235.27	6282.33	7329.38	8376.44	9423.49	10470.54	11517.60	12564.65	13611.71	14658.76	15705.82	16752.87	17799.93	18846.98
32	31.25	2390.27	3585.41	4780.55	5975.68	7170.82	8365.96	9561.09	10756.23	11951.37	13146.50	14341.64	15536.78	16731.91	17927.05	19122.19	20317.32	21512.46
34	33.25	2706.02	4059.03	5412.04	6765.05	8118.06	9471.07	10824.08	12177.09	13530.09	14883.10	16236.11	17589.12	18942.13	20295.14	21648.15	23001.16	24354.17
36	35.25	3041.35	4562.02	6082.69	7603.36	9124.04	10644.71	12165.38	13686.06	15206.73	16727.40	18248.07	19768.75	21289.42	22810.09	24330.77	25851.44	27372.11
42	41.25	4164.81	6247.22	8329.62	10412.03	12494.44	14576.84	16659.25	18741.66	20824.06	22906.47	24988.87	27071.28	29153.69	31236.09	33318.50	35400.91	37483.31
48	47.99	5637.01	8455.52	11274.03	14092.53	16911.04	19729.55	22548.05	25366.56	28185.07	31003.57	33822.08	36640.58	39459.09	42277.60	45096.10	47914.61	50733.12
54	53.98	7132.03	10698.05	14264.06	17830.08	21396.10	24962.11	28528.13	32094.15	35660.16	39226.18	42792.19	46358.21	49924.23	53490.24	57056.26	60622.27	64188.29
60	60.09	8837.96	13256.94	17675.92	22094.90	26513.88	30932.85	35351.83	39770.81	44189.79	48608.77	53027.75	57446.73	61865.71	66284.69	70703.67	75122.65	79541.63
72	72.1	12723.84	19085.75	25447.67	31809.59	38171.51	44533.43	50895.35	57257.26	63619.18	69981.10	76343.02	82704.94	89066.85	95428.77	101790.69	108152.61	114514.53
84	84.1	17311.69	25967.54	34623.39	43279.23	51935.08	60590.92	69246.77	77902.62	86558.46	95214.31	103870.16	112526.00	121181.85	129837.70	138493.54	147149.39	155805.23



**Common Pipe Sizes for Welded Steel, Aluminum, and Copper (continued)**

Nominal Diameter	ALUMINUM	COPPER TUBING				WELDED STEEL															
		Type K	Type L	Type M	Copper & Brass Pipe	16 Gage	14 Gage	12 Gage	10 Gage	7 Gage	3 Gage	1/4	5/16	3/8	7/16	1/2					
10"	O.D.	10.000						10.000	10.000	10.000	10.000	10.000	10.000								
	Wall	0.094						0.075	0.105	0.135	0.179	2.000									
	I.D.	9.812						9.851	9.791	9.731	9.641	9.522									
10-3/4"	O.D.							10.750	10.750	10.750	10.750	10.750									
	Wall							0.075	0.105	0.135	0.179	0.239									
	I.D.							10.601	10.541	10.481	10.391	10.272									
12"	O.D.							12.000	12.000	12.000	12.000	12.000									
	Wall							0.075	0.105	0.135	0.179	0.239									
	I.D.							11.851	11.791	11.731	11.641	11.522									
12-3/4"	O.D.							12.750	12.750	12.750	12.750	12.750									
	Wall							0.075	0.105	0.135	0.179	0.239									
	I.D.							12.601	12.541	12.481	12.391	12.272									
14"	O.D.							14.000	14.000	14.000	14.000	14.000									
	Wall							0.075	0.105	0.135	0.179	0.239									
	I.D.							13.851	13.791	13.731	13.641	13.522									
16"	O.D.							16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000					
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375						
	I.D.							15.851	15.791	15.731	15.641	15.522	15.500	15.370	15.250						
18"	O.D.							18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000					
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375						
	I.D.							17.851	17.791	17.731	17.641	17.522	17.500	17.370	17.250						
20"	O.D.							20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000				
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438					
	I.D.							19.851	19.791	19.731	19.641	19.522	19.500	19.370	19.250	19.124					
22"	O.D.							22.000	22.000	22.000	22.000	22.000	22.000	22.000	22.000	22.000	22.000				
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438					
	I.D.							21.851	21.791	21.731	21.641	21.522	21.500	21.370	21.250	21.124					
24"	O.D.							24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000		
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	0.500				
	I.D.							23.851	23.791	23.731	23.641	23.522	23.500	23.370	23.250	23.124	23.000				
30"	O.D.							30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000		
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	0.500				
	I.D.							29.851	29.791	29.731	29.641	29.522	29.500	29.370	29.250	29.124	29.000				
36"	O.D.							36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000		
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	0.500				
	I.D.							35.851	35.791	35.731	35.641	35.522	35.500	35.370	35.250	35.124	35.000				
42"	O.D.								42.000	42.000	42.000	42.000	42.000	42.000	42.000	42.000	42.000	42.000	42.000		
	Wall								0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	0.500				
	I.D.								41.791	41.731	41.641	41.522	41.500	41.370	41.250	41.124	41.000				
48"	O.D.								48.000	48.000	48.000	48.000	48.000	48.000	48.000	48.000	48.000	48.000	48.000		
	Wall								0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	0.500				
	I.D.								47.791	47.731	47.641	47.522	47.500	47.370	47.250	47.124	47.000				
54"	O.D.								54.000	54.000	54.000	54.000	54.000	54.000	54.000	54.000	54.000	54.000	54.000		
	Wall								0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	0.500				
	I.D.								53.791	53.731	53.641	53.522	53.500	53.370	53.250	53.124	53.000				
60"	O.D.								60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000		
	Wall								0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	0.500				
	I.D.								59.791	59.731	59.641	59.522	59.500	59.370	59.250	59.124	59.000				
66"	O.D.								66.000	66.000	66.000	66.000	66.000	66.000	66.000	66.000	66.000	66.000	66.000		
	Wall								0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	0.500				
	I.D.								65.791	65.731	65.641	65.522	65.500	65.370	65.250	65.124	65.000				
72"	O.D.								72.000	72.000	72.000	72.000	72.000	72.000	72.000	72.000	72.000	72.000	72.000		
	Wall								0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	0.500				
	I.D.								71.791	71.731	71.641	71.522	71.500	71.370	71.250	71.124	71.000				

**CARBON STEEL**

**STAINLESS STEEL**

Nominal Diameter		Schedule 10	Schedule 20	Schedule 30	Schedule 40	Schedule 60	Schedule 80	Schedule 100	Schedule 120	Schedule 140	Schedule 160	Standard Weight	Extra Strong	Double Extra Strong	Schedule 5	Schedule 10	Schedule 40	Schedule 80
1/2"	O.D.				0.840		0.840				0.840	0.840	0.840	0.840				
	Wall				0.109		0.147				0.187	0.109	0.147	0.294				
	I.D.				0.612		0.546				0.466	0.612	0.546	0.252				
3/4"	O.D.				1.050		1.050				1.050	1.050	1.050	1.050				
	Wall				0.113		0.154				0.218	0.113	0.154	0.308				
	I.D.				0.824		0.742				0.614	0.824	0.742	0.434				
1"	O.D.				1.315		1.315				1.315	1.315	1.315	1.315	1.315	1.315	1.315	1.315
	Wall				0.133		0.179				0.250	0.133	0.179	0.358	0.065	0.109	0.133	0.179
	I.D.				1.049		0.957				0.815	1.049	0.957	0.559	1.185	1.097	1.049	0.957
1-1/4"	O.D.				1.660		1.660				1.660	1.660	1.660	1.660	1.660	1.660	1.660	1.660
	Wall				0.140		0.191				0.250	0.140	0.191	0.382	0.065	0.109	0.140	0.191
	I.D.				1.380		1.278				1.160	1.380	1.278	0.896	1.530	1.442	1.380	1.278
1-1/2"	O.D.				1.900		1.900				1.900	1.900	1.900	1.900	1.900	1.900	1.900	1.900
	Wall				0.145		0.200				0.281	0.145	0.200	0.400	0.065	0.109	0.145	0.200
	I.D.				1.610		1.500				1.338	1.610	1.500	1.100	1.770	1.682	1.610	1.500
2"	O.D.				2.375		2.375				2.375	2.375	2.375	2.375	2.375	2.375	2.375	2.375
	Wall				0.154		0.218				0.343	0.154	0.218	0.436	0.065	0.109	0.154	0.218
	I.D.				2.067		1.939				1.689	2.067	1.939	1.503	2.245	2.157	2.067	1.939
2-1/2"	O.D.				2.875		2.875				2.875	2.875	2.875	2.875	2.875	2.875	2.875	2.875
	Wall				0.203		0.276				0.375	0.203	0.276	0.552	0.083	0.120	0.203	0.276
	I.D.				2.469		2.323				2.125	2.469	2.323	1.771	2.709	2.635	2.469	2.323
3"	O.D.				3.500		3.500				3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500
	Wall				0.216		0.300				0.438	0.216	0.300	0.600	0.083	0.120	0.216	0.300
	I.D.				3.067		2.900				2.624	3.068	2.900	2.300	3.334	3.260	3.068	2.900
3-1/2"	O.D.				4.000		4.000				4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
	Wall				0.226		0.318				0.438	0.226	0.318	0.636	0.083	0.120	0.226	0.318
	I.D.				3.548		3.364				3.000	3.548	3.364	2.728	3.834	3.760	3.548	3.364
4"	O.D.				4.500		4.500	4.500			4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500
	Wall				0.237		0.337	0.438			0.531	0.237	0.337	0.674	0.083	0.120	0.237	0.337
	I.D.				4.026		3.826	3.626			3.438	4.026	3.826	3.152	4.334	4.260	4.026	3.826
5"	O.D.				5.563		5.563	5.563			5.563	5.563	5.563	5.563	5.563	5.563	5.563	5.563
	Wall				0.258		0.375	0.500			0.625	0.258	0.375	0.750	0.083	0.134	0.258	0.375
	I.D.				5.047		4.813	4.563			4.313	5.047	4.813	4.063	5.397	5.295	5.047	4.813
6"	O.D.				6.625		6.625	6.625			6.625	6.625	6.625	6.625	6.625	6.625	6.625	6.625
	Wall				0.280		0.432	0.562			0.718	0.280	0.432	0.897	0.109	0.134	0.280	0.432
	I.D.				6.065		5.761	5.501			5.189	6.065	5.761	4.897	6.407	6.357	6.065	5.761
8"	O.D.		8.625	8.625	8.625	8.625	8.625	8.625	8.625	8.625	8.625	8.625	8.625	8.625	8.625	8.625	8.625	8.625
	Wall		0.250	0.277	0.322	0.406	0.500	0.593	0.718	0.812	0.906	0.322	0.500	0.875	0.109	0.148	0.322	0.500
	I.D.		8.125	8.071	7.981	7.813	7.625	7.439	7.189	7.001	6.813	7.981	7.625	6.875	8.407	8.329	7.981	7.625
10"	O.D.		10.750	10.750	10.750	10.750	10.750	10.750	10.750	10.750	10.750	10.750	10.750	10.750	10.750	10.750	10.750	10.750
	Wall		0.250	0.307	0.365	0.500	0.593	0.718	0.843	1.000	1.125	0.365	0.500	1.000	0.134	0.165	0.365	0.500
	I.D.		10.250	10.136	10.020	9.750	9.564	9.314	9.064	8.750	8.500	10.020	9.750	8.750	10.482	10.420	10.020	9.750
12"	O.D.		12.750	12.750	12.750	12.750	12.750	12.750	12.750	12.750	12.750	12.750	12.750	12.750	12.750	12.750	12.750	12.750
	Wall		0.250	0.330	0.406	0.562	0.687	0.843	1.000	1.125	1.312	0.375	0.500	1.000	0.156	0.180	0.375	0.500
	I.D.		12.250	12.090	11.938	11.626	11.376	11.064	10.750	10.500	10.126	12.000	11.750	10.750	12.438	12.390	12.000	11.750

**CARBON STEEL**

**STAINLESS STEEL**

Nominal Diameter		Schedule 10	Schedule 20	Schedule 30	Schedule 40	Schedule 60	Schedule 80	Schedule 100	Schedule 120	Schedule 140	Schedule 160	Standard Weight	Extra Strong	Double Extra Strong	Schedule 5	Schedule 10	Schedule 40	Schedule 80
14"	O.D.	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000	14.000		14.000	14.000		
	Wall	0.250	0.312	0.375	0.438	0.593	0.750	0.937	1.093	1.250	1.406	0.375	0.500		0.156	0.188		
	I.D.	13.500	13.375	13.250	13.124	12.814	12.500	12.126	11.814	11.500	11.188	13.250	13.000		13.688	13.624		
16"	O.D.	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000		16.000	16.000		
	Wall	0.250	0.312	0.375	0.500	0.656	0.843	1.031	1.218	1.438	1.593	0.375	0.500		0.165	0.188		
	I.D.	15.500	15.375	15.250	15.000	14.688	14.314	13.938	13.564	13.124	12.814	15.250	15.000		15.670	15.624		
18"	O.D.	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000		18.000	18.000		
	Wall	0.250	0.312	0.438	0.562	0.750	0.937	1.156	1.375	1.562	1.781	0.375	0.500		0.165	0.188		
	I.D.	17.500	17.375	17.124	16.876	16.500	16.126	15.688	15.250	14.876	14.438	17.250	17.000		17.670	17.624		
20"	O.D.	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000		20.000	20.000		
	Wall	0.250	0.375	0.500	0.593	0.812	1.031	1.281	1.500	1.750	1.968	0.375	0.500		0.188	0.218		
	I.D.	19.500	19.250	19.000	18.814	18.376	17.938	17.438	17.000	16.500	16.064	19.250	19.000		19.624	19.564		
22"	O.D.	22.000	22.000	22.000	22.000	22.000	22.000	22.000	22.000	22.000	22.000	22.000	22.000		22.000	22.000		
	Wall	0.250	0.375	0.500	0.594	0.812	1.031	1.281	1.500	1.750	1.969	0.375	0.500		0.188	0.218		
	I.D.	21.500	21.250	21.000	20.812	20.376	19.938	19.438	19.000	18.500	18.062	21.250	21.000		21.624	21.564		
24"	O.D.	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000		24.000	24.000		
	Wall	0.250	0.375	0.562	0.687	0.968	1.218	1.531	1.812	2.062	2.343	0.375	0.500		0.218	0.250		
	I.D.	23.500	23.250	22.875	22.626	22.064	21.564	20.938	20.376	19.876	19.314	23.250	23.000		23.564	23.500		
26"	O.D.	26.000	26.000									26.000	26.000					
	Wall	0.312	0.500									0.375	0.500					
	I.D.	25.376	25.000									25.250	25.000					
28"	O.D.	28.000	28.000	28.000								28.000	28.000					
	Wall	0.312	0.500	0.625								0.375	0.500					
	I.D.	27.376	27.000	26.750								27.250	27.000					
30"	O.D.	30.000	30.000	30.000	30.000							30.000	30.000		30.000	30.000		
	Wall	0.312	0.500	0.625	0.750							0.375	0.500		0.250	0.312		
	I.D.	29.376	29.000	28.750	28.500							29.250	29.000		29.500	29.376		
32"	O.D.	32.000	32.000	32.000	32.000							32.000	32.000					
	Wall	0.312	0.500	0.625	0.688							0.375	0.500					
	I.D.	31.376	31.000	30.750	30.624							31.250	31.000					
34"	O.D.	34.000	34.000	34.000	34.000							34.000	34.000					
	Wall	0.344	0.500	0.625	0.688							0.375	0.500					
	I.D.	33.312	33.000	32.750	32.624							33.250	33.000					
36"	O.D.	36.000	36.000	36.000	36.000							36.000	36.000					
	Wall	0.312	0.500	0.625	0.750							0.375	0.500					
	I.D.	35.312	35.000	34.750	34.500							35.250	35.000					
42"	O.D.		42.000	42.000	42.000							42.000	42.000					
	Wall		0.500	0.625	0.750							0.375	0.500					
	I.D.		41.000	40.750	40.500							41.250	41.000					
48"	O.D.											48.000	48.000					
	Wall											0.375	0.500					
	I.D.											47.250	47.000					

**Common Pipe Sizes for Welded Steel, Aluminum, and Copper (all dimensions in inches)**

Nominal Diameter		ALUMINUM	COPPER TUBING			Copper & Brass Pipe	WELDED STEEL										
			Type K	Type L	Type M		16 Gage	14 Gage	12 Gage	10 Gage	7 Gage	3 Gage	1/4	5/16	3/8	7/16	
1/2"	O.D.		0.625	0.625	0.625	0.840											
	Wall		0.049	0.040	0.028	0.108											
	I.D.		0.527	0.545	0.569	0.625											
5/8"	O.D.		0.750	0.750	0.750												
	Wall		0.049	0.042	0.030												
	I.D.		0.652	0.666	0.690												
3/4"	O.D.		0.875	0.875	0.875	1.050											
	Wall		0.065	0.045	0.032	0.114											
	I.D.		0.745	0.785	0.811	0.822											
1"	O.D.		1.125	1.125	1.125	1.315											
	Wall		0.065	0.050	0.035	0.127											
	I.D.		0.995	1.025	1.055	1.062											
1-1/4"	O.D.		1.375	1.375	1.375	1.660											
	Wall		0.065	0.055	0.042	0.146											
	I.D.		1.245	1.265	1.291	1.368											
1-1/2"	O.D.		1.625	1.625	1.625	1.900											
	Wall		0.072	0.060	0.027	0.150											
	I.D.		1.481	1.505	1.571	1.600											
2"	O.D.		2.125	2.125	2.125	2.375											
	Wall		0.083	0.070	0.058	0.157											
	I.D.		1.959	1.985	2.009	2.062											
2-1/2"	O.D.	2.500	2.625	2.625	2.625	2.875											
	Wall	0.050	0.095	0.080	0.065	0.188											
	I.D.	2.400	2.435	2.465	2.495	2.500											
3"	O.D.	3.000	3.125	3.125	3.125	3.500											
	Wall	0.050	0.109	0.090	0.072	0.219											
	I.D.	2.900	2.907	2.945	2.981	3.062											
3-1/2"	O.D.		3.625	3.625	3.625	4.000											
	Wall		0.120	0.100	0.083	0.250											
	I.D.		3.385	3.425	3.459	3.500											
4"	O.D.	4.000	4.125	4.125	4.125	4.500	4.000	4.000	4.000	4.000							
	Wall	0.063	0.134	0.110	0.095	0.250	0.060	0.075	0.105	0.135							
	I.D.	3.874	3.857	3.905	3.935	4.000	3.880	3.851	3.791	3.731							
4-1/2"	O.D.					5.000	4.500	4.500	4.500	4.500							
	Wall					0.250	0.060	0.075	0.105	0.135							
	I.D.					4.500	4.380	4.351	4.291	4.231							
5"	O.D.	5.000	5.125	5.125	5.125	5.563	5.000	5.000	5.000	5.000	5.000						
	Wall	0.063	0.160	0.125	0.109	0.250	0.060	0.075	0.105	0.135	0.179						
	I.D.	4.875	4.805	4.875	4.907	5.063	4.880	4.851	4.791	4.731	4.641						
6"	O.D.	6.000	6.125	6.125	6.125	6.625	6.000	6.000	6.000	6.000	6.000						
	Wall	0.063	0.192	0.140	0.122	0.250	0.060	0.075	0.105	0.135	0.179						
	I.D.	5.874	5.741	5.845	5.881	6.125	5.880	5.851	5.791	5.731	5.641						
6-5/8"	O.D.					6.625	6.625	6.625	6.625	6.625							
	Wall					0.060	0.075	0.105	0.135	0.179							
	I.D.					6.505	6.476	6.416	6.356	6.266							
7"	O.D.	7.000				7.625	7.000	7.000	7.000	7.000	7.000	7.000					
	Wall	0.078				0.282	0.060	0.075	0.105	0.135	0.179	0.239					
	I.D.	6.844				7.062	6.880	6.851	6.791	6.731	6.641	6.522					
8"	O.D.	8.000	8.125	8.125	8.125	8.625	8.000	8.000	8.000	8.000	8.000	8.000					
	Wall	0.094	0.271	0.200	0.170	0.313	0.060	0.075	0.105	0.135	0.179	0.239					
	I.D.	7.812	7.583	7.725	7.785	8.000	7.880	7.851	7.791	7.731	7.641	7.522					



**Common Pipe Sizes for Welded Steel, Aluminum, and Copper**(all dimensions in inches) (continued)

Nominal Diameter		ALUMINUM	COPPER TUBING			Copper & Brass Pipe	WELDED STEEL									
			Type K	Type L	Type M		16 Gage	14 Gage	12 Gage	10 Gage	7 Gage	3 Gage	1/4	5/16	3/8	7/16
8-5/8"	O.D.						8.625	8.625	8.625	8.625	8.625	8.625				
	Wall						0.060	0.075	0.105	0.135	0.179	0.239				
	I.D.						8.505	8.476	8.416	8.356	8.266	8.147				
10"	O.D.	10.000						10.000	10.000	10.000	10.000	10.000				
	Wall	0.094						0.075	0.105	0.135	0.179	0.239				
	I.D.	9.812						9.851	9.791	9.731	9.641	9.522				
10-3/4"	O.D.							10.750	10.750	10.750	10.750	10.750				
	Wall							0.075	0.105	0.135	0.179	0.239				
	I.D.							10.601	10.541	10.481	10.391	10.272				
12"	O.D.							12.000	12.000	12.000	12.000	12.000				
	Wall							0.075	0.105	0.135	0.179	0.239				
	I.D.							11.851	11.791	11.731	11.641	11.522				
12-3/4"	O.D.							12.750	12.750	12.750	12.750	12.750				
	Wall							0.075	0.105	0.135	0.179	0.239				
	I.D.							12.601	12.541	12.481	12.391	12.272				
14"	O.D.							14.000	14.000	14.000	14.000	14.000				
	Wall							0.075	0.105	0.135	0.179	0.239				
	I.D.							13.851	13.791	13.731	13.641	13.522				
16"	O.D.							16.000	16.000	16.000	16.000	16.000	16.000	16.000	16.000	
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	
	I.D.							15.851	15.791	15.731	15.641	15.522	15.500	15.370	15.250	
18"	O.D.							18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	
	I.D.							17.851	17.791	17.731	17.641	17.522	17.500	17.370	17.250	
20"	O.D.							20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438
	I.D.							19.851	19.791	19.731	19.641	19.522	19.500	19.370	19.250	19.124
22"	O.D.							22.000	22.000	22.000	22.000	22.000	22.000	22.000	22.000	22.000
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438
	I.D.							21.851	21.791	21.731	21.641	21.522	21.500	21.370	21.250	21.124
24"	O.D.							24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438
	I.D.							23.851	23.791	23.731	23.641	23.522	23.500	23.370	23.250	23.124
30"	O.D.							30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000	30.000
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438
	I.D.							29.851	29.791	29.731	29.641	29.522	29.500	29.370	29.250	29.124
36"	O.D.							36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000	36.000
	Wall							0.075	0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438
	I.D.							35.851	35.791	35.731	35.641	35.522	35.500	35.370	35.250	35.124
42"	O.D.							42.000	42.000	42.000	42.000	42.000	42.000	42.000	42.000	42.000
	Wall							0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	
	I.D.							41.791	41.731	41.641	41.522	41.500	41.370	41.250	41.124	
48"	O.D.							48.000	48.000	48.000	48.000	48.000	48.000	48.000	48.000	48.000
	Wall							0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	
	I.D.							47.791	47.731	47.641	47.522	47.500	47.370	47.250	47.124	
54"	O.D.							54.000	54.000	54.000	54.000	54.000	54.000	54.000	54.000	54.000
	Wall							0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	
	I.D.							53.791	53.731	53.641	53.522	53.500	53.370	53.250	53.124	
60"	O.D.							60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
	Wall							0.105	0.135	0.179	0.239	0.250	0.315	0.375	0.438	
	I.D.							59.791	59.731	59.641	59.522	59.500	59.370	59.250	59.124	

**Common Pipe Sizes for PVC (all dimensions in inches)**

Nominal Diameter		PVC IPS CLASS					SCHEDULE		PVC Cast Iron O.D.								PVC	PVC PIP CLASS						
		100	125	160	200	315	PVC		100 psi	125 psi	100 psi	165 psi	200 psi	150 psi	235 psi	200 psi	Sewer	100 Foot	63	80	100	125		
		SDR-41	SDR-32.5	SDR-26	SDR-21	SDR-13.5	Sch. 40	Sch. 80	DR-41	DR-32.5	DR-25	DR-25	DR-21	DR-18	DR-18	DR-14	DR-35	Head	SDR-64	SDR-51	SDR-41	SDR-32.5		
1/2"	O.D.				0.840	0.840	0.840	0.840																
	Wall				0.062	0.062	0.109	0.147																
	I.D.				0.716	0.716	0.612	0.546																
3/4"	O.D.				1.050	1.050	1.050	1.050																
	Wall				0.060	0.078	0.113	0.154																
	I.D.				0.930	0.894	0.824	0.742																
1"	O.D.		1.315	1.315	1.315	1.315	1.315	1.315																
	Wall		0.052	0.060	0.063	0.097	0.133	0.179																
	I.D.		1.211	1.195	1.189	1.121	1.049	0.957																
1-1/4"	O.D.		1.660	1.660	1.660	1.660	1.660	1.660																
	Wall		0.060	0.064	0.079	0.123	0.140	0.191																
	I.D.		1.540	1.532	1.502	1.414	1.380	1.278																
1-1/2"	O.D.		1.900	1.900	1.900	1.900	1.900	1.900																
	Wall		0.060	0.073	0.090	0.141	0.145	0.200																
	I.D.		1.780	1.754	1.720	1.618	1.610	1.500																
2"	O.D.		2.375	2.375	2.375	2.375	2.375	2.375																
	Wall		0.073	0.091	0.113	0.176	0.154	0.218																
	I.D.		2.229	2.193	2.149	2.023	2.067	1.939																
2-1/2"	O.D.		2.875	2.875	2.875	2.875	2.875	2.875																
	Wall		0.088	0.110	0.137	0.213	0.203	0.276																
	I.D.		2.699	2.655	2.601	2.449	2.469	2.323																
3"	O.D.	3.500	3.500	3.500	3.500	3.500	3.500	3.500																
	Wall	0.085	0.108	0.135	0.167	0.259	0.216	0.300																
	I.D.	3.330	3.284	3.230	3.166	2.982	3.068	2.900																
3-1/2"	O.D.	4.000	4.000	4.000	4.000		4.000	4.000																
	Wall	0.098	0.123	0.154	0.190		0.226	0.318																
	I.D.	3.804	3.754	3.692	3.620		3.548	3.364																
4"	O.D.	4.500	4.500	4.500	4.500	4.500	4.500	4.500			4.800			4.800		4.800	4.125				4.130	4.130	4.130	
	Wall	0.110	0.138	0.173	0.214	0.333	0.237	0.337			0.192			0.267		0.343	0.125				0.081	0.101	0.127	
	I.D.	4.280	4.224	4.154	4.072	3.384	4.026	3.826			4.416			4.266		4.114	3.875				3.968	3.928	3.876	
5"	O.D.	5.563	5.563	5.563	5.563		5.563	5.563																
	Wall	0.136	0.171	0.214	0.265		0.258	0.375																
	I.D.	5.291	5.221	5.135	5.033		5.047	4.813																
6"	O.D.	6.625	6.625	6.625	6.625		6.625	6.625			6.900			6.900		6.900	6.275	6.140			6.140	6.140	6.140	
	Wall	0.162	0.205	0.255	0.316		0.280	0.432			0.276			0.383		0.493	0.180	0.120			0.120	0.150	0.189	
	I.D.	6.301	6.215	6.115	5.993		6.065	5.761			6.348			6.134		5.914	5.915	5.900			5.900	5.840	5.762	
8"	O.D.	8.625	8.625	8.625	8.625		8.625	8.625			9.050			9.050		9.050	8.400	8.160			8.160	8.160	8.160	
	Wall	0.210	0.265	0.332	0.411		0.322	0.500			0.362			0.503		0.646	0.240	0.087			0.160	0.199	0.251	
	I.D.	8.205	8.095	7.961	7.803		7.981	7.625			8.326			8.044		7.758	7.920	7.986			7.840	7.762	7.658	



**Common Pipe Sizes for Ductile Iron and Cast Iron (all dimensions in inches)**

Nominal Diameter		DUCTILE IRON							CAST IRON							
		CLASS 50	CLASS 51	CLASS 52	CLASS 53	CLASS 54	CLASS 55	CLASS 56	Class A	Class B	Class C	Class D	Class E	Class F	Class G	Class H
<b>3"</b>	<b>O.D.</b>		<b>3.960</b>	<b>3.960</b>	<b>3.960</b>	<b>3.960</b>	<b>3.960</b>	<b>3.960</b>	<b>3.800</b>	<b>3.960</b>	<b>3.960</b>	<b>3.960</b>				
	Wall		0.250	0.280	0.310	0.340	0.370	0.400	0.390	0.420	0.450	0.480				
	I.D.		3.460	3.400	3.340	3.280	3.220	3.160	3.020	3.120	3.060	3.000				
<b>4"</b>	<b>O.D.</b>		<b>4.800</b>	<b>4.800</b>	<b>4.800</b>	<b>4.800</b>	<b>4.800</b>	<b>4.800</b>	<b>4.800</b>	<b>5.000</b>	<b>5.000</b>	<b>5.000</b>				
	Wall		0.260	0.290	0.320	0.350	0.380	0.410	0.420	0.450	0.480	0.520				
	I.D.		4.280	4.220	4.160	4.100	4.040	3.980	3.960	4.100	4.040	3.960				
<b>6"</b>	<b>O.D.</b>	<b>6.900</b>	<b>6.900</b>	<b>6.900</b>	<b>6.900</b>	<b>6.900</b>	<b>6.900</b>	<b>6.900</b>	<b>6.900</b>	<b>7.100</b>	<b>7.100</b>	<b>7.100</b>	<b>7.220</b>	<b>7.220</b>	<b>7.380</b>	<b>7.380</b>
	Wall	0.250	0.280	0.310	0.340	0.370	0.400	0.430	0.440	0.480	0.510	0.550	0.580	0.610	0.650	0.690
	I.D.	6.400	6.340	6.280	6.220	6.160	6.100	6.040	6.020	6.140	6.080	6.000	6.060	6.000	6.080	6.000
<b>8"</b>	<b>O.D.</b>	<b>9.050</b>	<b>9.050</b>	<b>9.050</b>	<b>9.050</b>	<b>9.050</b>	<b>9.050</b>	<b>9.050</b>	<b>9.050</b>	<b>9.050</b>	<b>9.300</b>	<b>9.300</b>	<b>9.420</b>	<b>9.420</b>	<b>9.600</b>	<b>9.600</b>
	Wall	0.270	0.300	0.330	0.360	0.390	0.420	0.450	0.460	0.510	0.560	0.600	0.660	0.660	0.750	0.800
	I.D.	8.510	8.450	8.390	8.330	8.270	8.210	8.150	8.130	8.030	8.180	8.100	8.100	8.100	8.100	8.000
<b>10"</b>	<b>O.D.</b>	<b>11.100</b>	<b>11.100</b>	<b>11.100</b>	<b>11.100</b>	<b>11.100</b>	<b>11.100</b>	<b>11.100</b>	<b>11.100</b>	<b>11.100</b>	<b>11.400</b>	<b>11.400</b>	<b>11.600</b>	<b>11.600</b>	<b>11.840</b>	<b>11.840</b>
	Wall	0.290	0.320	0.350	0.380	0.410	0.440	0.470	0.500	0.570	0.620	0.680	0.740	0.800	0.860	0.920
	I.D.	10.520	10.460	10.400	10.340	10.280	10.220	10.160	10.100	9.960	10.100	10.400	10.120	10.000	10.120	10.000
<b>12"</b>	<b>O.D.</b>	<b>13.200</b>	<b>13.200</b>	<b>13.200</b>	<b>13.200</b>	<b>13.200</b>	<b>13.200</b>	<b>13.200</b>	<b>13.200</b>	<b>13.200</b>	<b>13.500</b>	<b>13.500</b>	<b>13.780</b>	<b>13.780</b>	<b>14.080</b>	<b>14.080</b>
	Wall	0.310	0.340	0.370	0.400	0.430	0.460	0.490	0.540	0.620	0.680	0.750	0.820	0.890	0.970	1.040
	I.D.	12.580	12.520	12.460	12.400	12.340	12.280	12.220	12.120	11.960	12.140	12.000	12.140	12.000	12.140	12.000
<b>14"</b>	<b>O.D.</b>	<b>15.300</b>	<b>15.300</b>	<b>15.300</b>	<b>15.300</b>	<b>15.300</b>	<b>15.300</b>	<b>15.300</b>	<b>15.300</b>	<b>15.300</b>	<b>15.650</b>	<b>15.650</b>	<b>15.980</b>	<b>15.980</b>	<b>16.320</b>	<b>16.320</b>
	Wall	0.330	0.360	0.390	0.420	0.450	0.480	0.510	0.570	0.660	0.740	0.820	0.900	0.990	1.070	1.160
	I.D.	14.640	14.580	14.520	14.460	14.400	14.340	14.280	14.160	13.980	14.170	14.010	14.180	14.000	14.180	14.000
<b>16"</b>	<b>O.D.</b>	<b>17.400</b>	<b>17.400</b>	<b>17.400</b>	<b>17.400</b>	<b>17.400</b>	<b>17.400</b>	<b>17.400</b>	<b>17.400</b>	<b>17.400</b>	<b>17.800</b>	<b>17.800</b>	<b>18.160</b>	<b>18.160</b>	<b>18.540</b>	<b>18.540</b>
	Wall	0.340	0.370	0.400	0.430	0.460	0.490	0.520	0.600	0.700	0.800	0.890	0.980	1.050	1.180	1.270
	I.D.	16.720	16.660	16.600	16.540	16.480	16.420	16.360	16.200	16.000	16.200	16.020	16.200	16.000	16.180	16.000
<b>18"</b>	<b>O.D.</b>	<b>19.500</b>	<b>19.500</b>	<b>19.500</b>	<b>19.500</b>	<b>19.500</b>	<b>19.500</b>	<b>19.500</b>	<b>19.500</b>	<b>19.500</b>	<b>19.920</b>	<b>19.920</b>	<b>20.340</b>	<b>20.340</b>	<b>20.780</b>	<b>20.780</b>
	Wall	0.350	0.380	0.410	0.440	0.470	0.500	0.530	0.640	0.750	0.870	0.960	1.070	1.170	1.280	1.390
	I.D.	18.800	18.740	18.680	18.620	18.560	18.500	18.440	18.220	18.000	18.180	18.000	18.200	18.000	18.220	18.000
<b>20"</b>	<b>O.D.</b>	<b>21.600</b>	<b>21.600</b>	<b>21.600</b>	<b>21.600</b>	<b>21.600</b>	<b>21.600</b>	<b>21.600</b>	<b>21.600</b>	<b>21.600</b>	<b>22.060</b>	<b>22.060</b>	<b>22.540</b>	<b>22.540</b>	<b>23.020</b>	<b>23.020</b>
	Wall	0.360	0.390	0.420	0.450	0.480	0.510	0.540	0.670	0.800	0.920	1.030	1.150	1.270	1.390	1.510
	I.D.	20.880	20.820	20.760	20.700	20.640	20.580	20.520	20.260	20.000	20.220	20.000	20.240	20.000	20.240	20.000
<b>24"</b>	<b>O.D.</b>	<b>25.800</b>	<b>25.800</b>	<b>25.800</b>	<b>25.800</b>	<b>25.800</b>	<b>25.800</b>	<b>25.800</b>	<b>25.800</b>	<b>25.800</b>	<b>26.320</b>	<b>26.320</b>	<b>26.900</b>	<b>26.900</b>	<b>27.760</b>	<b>27.760</b>
	Wall	0.380	0.410	0.440	0.470	0.500	0.530	0.560	0.760	0.890	1.050	1.160	1.310	1.450	1.750	1.880
	I.D.	25.040	24.980	24.920	24.860	24.800	24.740	24.680	24.280	24.020	24.220	24.000	24.280	24.000	24.260	24.000

**Common Pipe Sizes for Ductile Iron and Cast Iron (all dimensions in inches) [continued]**

Nominal Diameter		DUCTILE IRON							CAST IRON							
		CLASS 50	CLASS 51	CLASS 52	CLASS 53	CLASS 54	CLASS 55	CLASS 56	Class A	Class B	Class C	Class D	Class E	Class F	Class G	Class H
<b>30"</b>	<b>O.D.</b>	<b>32.000</b>	<b>32.000</b>	<b>32.000</b>	<b>32.000</b>	<b>32.000</b>	<b>32.000</b>	<b>32.000</b>	<b>31.740</b>	<b>32.000</b>	<b>32.400</b>	<b>32.740</b>	<b>33.100</b>	<b>33.460</b>		
	Wall	0.390	0.430	0.470	0.510	0.550	0.590	0.630	0.880	1.030	1.200	1.370	1.550	1.730		
	I.D.	31.220	31.140	31.060	30.980	30.900	30.820	30.740	29.980	29.940	30.000	30.000	30.000	30.000		
<b>36"</b>	<b>O.D.</b>	<b>38.300</b>	<b>38.300</b>	<b>38.300</b>	<b>38.300</b>	<b>38.300</b>	<b>38.300</b>	<b>38.300</b>	<b>37.960</b>	<b>38.300</b>	<b>38.700</b>	<b>39.160</b>	<b>39.600</b>	<b>40.040</b>		
	Wall	0.430	0.480	0.530	0.580	0.630	0.680	0.730	0.990	1.150	1.360	1.580	1.800	2.020		
	I.D.	37.440	37.340	37.240	37.140	37.040	36.940	36.840	35.980	36.000	35.980	36.000	36.000	36.000		
<b>42"</b>	<b>O.D.</b>	<b>44.500</b>	<b>44.500</b>	<b>44.500</b>	<b>44.500</b>	<b>44.500</b>	<b>44.500</b>	<b>44.500</b>	<b>44.200</b>	<b>44.500</b>	<b>45.100</b>	<b>45.580</b>				
	Wall	0.470	0.530	0.590	0.650	0.710	0.770	0.830	1.100	1.280	1.540	1.780				
	I.D.	43.560	43.440	43.320	43.200	43.080	42.960	42.840	42.000	41.940	42.020	42.020				
<b>48"</b>	<b>O.D.</b>	<b>50.800</b>	<b>50.800</b>	<b>50.800</b>	<b>50.800</b>	<b>50.800</b>	<b>50.800</b>	<b>50.800</b>	<b>50.500</b>	<b>50.800</b>	<b>51.400</b>	<b>51.980</b>				
	Wall	0.510	0.580	0.650	0.720	0.790	0.860	0.930	1.260	1.420	1.710	1.990				
	I.D.	49.780	49.640	49.500	49.360	49.220	49.080	48.940	47.980	47.960	47.980	48.000				
<b>54"</b>	<b>O.D.</b>	<b>57.100</b>	<b>57.100</b>	<b>57.100</b>	<b>57.100</b>	<b>57.100</b>	<b>57.100</b>	<b>57.100</b>	<b>56.660</b>	<b>57.100</b>	<b>57.800</b>	<b>58.400</b>				
	Wall	0.570	0.650	0.730	0.810	0.890	0.970	1.050	1.350	1.550	1.900	2.230				
	I.D.	55.960	55.800	55.640	55.480	55.320	55.160	55.000	53.960	54.000	54.000	53.940				
<b>60"</b>	<b>O.D.</b>								<b>62.800</b>	<b>63.400</b>	<b>64.200</b>	<b>64.820</b>				
	Wall								1.390	1.670	2.000	2.380				
	I.D.								60.020	60.060	60.200	60.060				
<b>72"</b>	<b>O.D.</b>								<b>75.340</b>	<b>76.000</b>	<b>76.880</b>					
	Wall								1.620	1.950	2.390					
	I.D.								72.100	72.100	72.100					

**Common Pipe Sizes for Galvanized Steel Tubing and Pipe (all dimensions in inches)**

Nominal Diameter		Sch 5	Sch 10	Sch 20	Sch 30	Sch 40	Std.	Sch 60	Sch 80	E.H.	Sch 100	Sch 120	Sch 140	Sch 160	Double E.H.
<b>0.375 (3/8")</b>	<b>O.D.</b>	<b>0.6750</b>	<b>0.6750</b>			<b>0.6750</b>			<b>0.6750</b>						
	Wall	0.0490	0.0650			0.0910			0.1260						
	I.D.	0.5770	0.5450			0.4930			0.4230						
<b>0.500 (1/2")</b>	<b>O.D.</b>	<b>0.8400</b>	<b>0.8400</b>			<b>0.8400</b>			<b>0.8400</b>						
	Wall	0.0490	0.0650			0.0880			0.1190						
	I.D.	0.7420	0.7100			0.6640			0.6020						
<b>0.750 (3/4")</b>	<b>O.D.</b>	<b>1.0500</b>	<b>1.0500</b>			<b>1.0500</b>			<b>1.0500</b>						
	Wall	0.0650	0.0830			0.1130			0.1540						
	I.D.	0.9200	0.8840			0.8240			0.7420						
<b>1.000</b>	<b>O.D.</b>	<b>1.3150</b>	<b>1.3150</b>			<b>1.3150</b>			<b>1.3150</b>					<b>1.3150</b>	<b>1.3150</b>
	Wall	0.0650	0.0830			0.1090			0.1790					0.2500	0.4000
	I.D.	1.1850	1.1490			1.0970			0.9570					0.8150	0.5150
<b>1.250 (1 1/4")</b>	<b>O.D.</b>	<b>1.6600</b>	<b>1.6600</b>			<b>1.6600</b>			<b>1.6600</b>					<b>1.6600</b>	<b>1.6600</b>
	Wall	0.0650	0.1090			0.1400			0.1910					0.2500	0.3820
	I.D.	1.5300	1.4420			1.3800			1.2780					1.1600	0.8960
<b>1.500 (1 1/2")</b>	<b>O.D.</b>	<b>1.9000</b>	<b>1.9000</b>			<b>1.9000</b>			<b>1.9000</b>					<b>1.9000</b>	<b>1.9000</b>
	Wall	0.0650	0.1090			0.1450			0.2000					0.2810	0.4000
	I.D.	1.7700	1.6820			1.6100			1.5000					1.3380	1.1000
<b>2.000</b>	<b>O.D.</b>	<b>2.3750</b>	<b>2.3750</b>			<b>2.3750</b>			<b>2.3750</b>					<b>2.3750</b>	<b>2.3750</b>
	Wall	0.0650	0.1090			0.1540			0.2180					0.3430	0.4360
	I.D.	2.2450	2.1570			2.0670			1.9390					1.6890	1.5030
<b>2.500 (2 1/2")</b>	<b>O.D.</b>	<b>2.8750</b>	<b>2.8750</b>			<b>2.8750</b>			<b>2.8750</b>					<b>2.8750</b>	<b>2.8750</b>
	Wall	0.0830	0.1200			0.2030			0.2760					0.3750	0.5520
	I.D.	2.7090	2.6350			2.4690			2.3230					2.1250	1.7710
<b>3.000</b>	<b>O.D.</b>	<b>3.5000</b>	<b>3.5000</b>			<b>3.5000</b>			<b>3.5000</b>					<b>3.5000</b>	<b>3.5000</b>
	Wall	0.0830	0.1200			0.2160			0.3000					0.4370	0.6000
	I.D.	3.3340	3.2600			3.0680			2.9000					2.6260	2.3000
<b>3.500 (3 1/2")</b>	<b>O.D.</b>	<b>4.0000</b>	<b>4.0000</b>			<b>4.0000</b>			<b>4.0000</b>						<b>4.0000</b>
	Wall	0.0830	0.1200			0.2260			0.3180						0.6360
	I.D.	3.8340	3.7600			3.5480			3.3640						2.7280
<b>4.000</b>	<b>O.D.</b>	<b>4.5000</b>	<b>4.5000</b>			<b>4.5000</b>		<b>4.5000</b>	<b>4.5000</b>			<b>4.5000</b>		<b>4.5000</b>	<b>4.5000</b>
	Wall	0.0830	0.1200			0.2370		0.2810	0.3370			0.4370		0.5310	0.6740
	I.D.	4.3340	4.2600			4.0260		3.9380	3.8260			3.6260		3.4380	3.1520

**Common Pipe Sizes for Galvanized Steel Tubing and Pipe** (all dimensions in inches)

Nominal Diameter		Sch 5	Sch 10	Sch 20	Sch 30	Sch 40	Std.	Sch 60	Sch 80	E.H.	Sch 100	Sch 120	Sch 140	Sch 160	Double E.H.
<b>4.500</b> (4 1/2")	<b>O.D.</b>						<b>5.0000</b>			<b>5.0000</b>					<b>5.0000</b>
	Wall						0.2470			0.3550					0.7100
	I.D.						4.5060			4.2900					3.5800
<b>5.000</b>	<b>O.D.</b>	<b>5.5630</b>	<b>5.5630</b>			<b>5.5630</b>			<b>5.5630</b>			<b>5.5630</b>		<b>5.5630</b>	<b>5.5630</b>
	Wall	0.1090	0.1340			0.2580			0.3750			0.5000		0.6250	0.7500
	I.D.	5.3450	5.2950			5.0470			4.8130			4.5630		4.3130	4.0630
<b>6.000</b>	<b>O.D.</b>	<b>6.6250</b>	<b>6.6250</b>			<b>6.6250</b>			<b>6.6250</b>			<b>6.6250</b>		<b>6.6250</b>	<b>6.6250</b>
	Wall	0.1090	0.1340			0.2800			0.4320			0.5620		0.7180	0.8640
	I.D.	6.4070	6.3570			6.0650			5.7610			5.5010		5.1890	4.8970
<b>7.000</b>	<b>O.D.</b>						<b>7.6250</b>			<b>7.6250</b>					<b>7.6250</b>
	Wall						0.3010			0.5000					0.8750
	I.D.						7.0230			6.6250					5.8750
<b>8.000</b>	<b>O.D.</b>	<b>8.6250</b>	<b>8.6250</b>	<b>8.6250</b>	<b>8.6250</b>	<b>8.6250</b>		<b>8.6250</b>	<b>8.6250</b>		<b>8.6250</b>	<b>8.6250</b>	<b>8.6250</b>	<b>8.6250</b>	<b>8.6250</b>
	Wall	0.1090	0.1480	0.2500	0.2770	0.3220		0.4060	0.5000		0.5930	0.7180	0.8120	0.9060	0.8750
	I.D.	8.4070	8.3290	8.1250	8.0710	7.9810		7.8130	7.6250		7.4390	7.1890	7.0010	6.8130	6.8750
<b>9.000</b>	<b>O.D.</b>						<b>9.6250</b>			<b>9.6250</b>					
	Wall						0.3420			0.5000					
	I.D.						8.9410			8.6250					
<b>10.000</b>	<b>O.D.</b>	<b>10.7500</b>	<b>10.7500</b>	<b>10.7500</b>	<b>10.7500</b>	<b>10.7500</b>		<b>10.7500</b>	<b>10.7500</b>	<b>10.7500</b>	<b>10.7500</b>	<b>10.7500</b>	<b>10.7500</b>	<b>10.7500</b>	
	Wall	0.1340	0.1650	0.2500	0.3070	0.3650		0.5000	0.5930	0.5000	0.7180	0.8430	1.0000	1.1250	
	I.D.	10.4820	10.4200	10.2500	10.1360	10.0200		9.7500	9.5640	9.7500	9.3140	9.0640	8.7500	8.5000	
<b>11.000</b>	<b>O.D.</b>						<b>11.7500</b>			<b>11.7500</b>					
	Wall						0.3750			0.5000					
	I.D.						11.0000			10.7500					
<b>12.000</b>	<b>O.D.</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	<b>12.7500</b>	
	Wall	0.1650	0.1800	0.2500	0.3300	0.4060	0.3750	0.5620	0.6870	0.5000	0.8430	1.0000	1.1250	1.3120	
	I.D.	12.4200	12.3900	12.2500	12.0900	11.9380	12.0000	11.6260	11.3760	11.7500	11.0640	10.7500	10.5000	10.1260	
<b>14.000</b>	<b>O.D.</b>		<b>14.0000</b>	<b>14.0000</b>	<b>14.0000</b>	<b>14.0000</b>	<b>14.0000</b>	<b>14.0000</b>	<b>14.0000</b>	<b>14.0000</b>	<b>14.0000</b>	<b>14.0000</b>	<b>14.0000</b>	<b>14.0000</b>	
	Wall		0.2500	0.3120	0.3750	0.4370	0.3750	0.5930	0.7500	0.5000	0.9370	1.0930	1.2500	1.4060	
	I.D.		13.5000	13.3760	13.2500	13.1260	13.2500	12.8140	12.5000	13.0000	12.1260	11.8140	11.5000	11.1880	
<b>16.000</b>	<b>O.D.</b>		<b>16.0000</b>	<b>16.0000</b>	<b>16.0000</b>	<b>16.0000</b>	<b>16.0000</b>	<b>16.0000</b>	<b>16.0000</b>	<b>16.0000</b>					
	Wall		0.2500	0.3120	0.3750	0.5000	0.3750	0.6560	0.8430	0.5000					
	I.D.		15.5000	15.3760	15.2500	15.0000	15.2500	14.6880	14.3140	15.0000					

# HDPE PIPE High Density Polyethylene Pipe

SIZE		DR 26 CLASS 65		DR 21 CLASS 80		DR 17 CLASS 100		DR 13.5 CLASS 128		DR 11 CLASS 160		DR 9 CLASS 200		DR 7 CLASS 267	
Pipe Size	OD (in)	ID (in)	Wall (in)	ID (in)	Wall (in)	ID (in)	Wall (in)	ID (in)	Wall (in)	ID (in)	Wall (in)	ID (in)	Wall (in)	ID (in)	Wall (in)
2"	2.375					2.078	0.140	2.002	0.176	1.917	0.216	1.815	0.264	1.656	0.339
3"	3.500					3.063	0.206	2.951	0.259	2.826	0.318	2.675	0.389	2.440	0.500
4"	4.500			4.046	0.214	3.938	0.265	3.794	0.333	3.633	0.409	3.440	0.500	3.137	0.643
5"	5.563	5.109	0.214	5.001	0.265	4.870	0.327	4.690	0.412	4.490	0.506	4.253	0.618	3.877	0.795
6"	6.625	6.084	0.255	5.957	0.315	5.798	0.390	5.584	0.491	5.349	0.602	5.065	0.736	4.619	0.946
8"	8.625	7.921	0.332	7.754	0.411	7.550	0.507	7.270	0.639	6.963	0.784	6.594	0.958	6.013	1.232
10"	10.750	9.874	0.413	9.665	0.512	9.410	0.632	9.062	0.796	8.679	0.977	8.219	1.194	7.494	1.536
12"	12.750	11.711	0.490	11.463	0.607	11.160	0.750	10.749	0.994	10.293	1.159	9.746	1.417	8.889	1.821
14"	14.000	12.859	0.538	12.586	0.667	12.253	0.824	11.802	1.037	11.301	1.273	10.701	1.556	9.760	2.000
16"	16.000	14.696	0.615	14.385	0.762	14.005	0.941	13.488	1.185	12.915	1.455	12.231	1.778	11.154	2.286
18"	18.000	16.533	0.692	16.183	0.857	15.755	1.059	15.174	1.333	14.532	1.636	13.760	2.000	12.549	2.571
20"	20.000	18.370	0.769	17.982	0.952	17.507	1.176	16.860	1.481	16.146	1.818	15.289	2.222	13.943	2.857
22"	22.000	20.206	0.846	19.778	1.048	19.257	1.294	18.544	1.630	17.760	2.000	16.819	2.444	15.337	3.143
24"	24.000	22.043	0.923	21.577	1.143	21.007	1.412	20.231	1.778	19.374	2.182	18.346	2.667	16.731	3.429



### C900 (BLUE PVC)

Nominal Pipe Size (inches)	DR	Average Pipe OD (inches)	Approx Pipe ID (inches)	Min Wall Thickness (t) (inches)
4	25	4.80	4.42	0.192
4	18	4.80	4.27	0.267
4	14	4.80	4.11	0.343
6	25	6.90	6.35	0.276
6	18	6.90	6.13	0.383
6	14	6.90	5.91	0.493
8	25	9.05	8.33	0.362
8	18	9.05	8.04	0.503
8	14	9.05	7.76	0.646
10	25	11.10	10.21	0.444
10	18	11.10	9.87	0.617
10	14	11.10	9.51	0.793
12	25	13.20	12.14	0.528
12	18	13.20	11.73	0.733
12	14	13.20	11.31	0.943
14	25	15.30	14.08	0.612
14	18	15.30	13.6	0.850
16	25	17.40	16.01	0.696
16	18	17.40	15.47	0.967
18	25	19.50	17.83	0.780
18	18	19.50	17.18	1.083
20	25	21.60	19.75	0.864
20	18	21.60	19.03	1.200
24	25	25.80	23.59	1.032

304 / 316 Stainless Steel Tube Wall Thickness I.D. and Weights

Tube O.D	Wall Thickness	I.D.
0.188	0.035	0.118
0.250	0.020	0.210
	0.028	0.194
	0.035	0.180
	0.049	0.152
	0.065	0.120
0.313	0.035	0.243
	0.049	0.215
0.375	0.028	0.319
	0.035	0.305
	0.049	0.277
	0.065	0.245
0.500	0.035	0.430
	0.490	-0.480
	0.065	0.370
0.625	0.035	0.555
	0.049	0.527
	0.065	0.495
0.750	0.035	0.680
	0.049	0.652
	0.065	0.620
	0.120	0.510
0.875	0.035	0.805
	0.490	-0.105
	0.065	0.745
	0.120	0.635
1.000	0.035	0.930
	0.049	0.902
	0.065	0.870
	0.083	0.834
	0.095	0.810
	0.120	0.760
1.125	0.065	0.995
1.250	0.065	1.120
	0.083	1.084
	0.120	1.010
1.375	0.035	1.305

Tube O.D	Wall Thickness	I.D.
1.500	0.049	1.402
	0.065	1.370
	0.083	1.334
	0.120	1.260
1.750	0.035	1.680
	0.065	1.620
1.875	0.083	1.584
	0.065	1.870
2.000	0.049	1.902
	0.065	1.870
	0.083	1.834
	0.120	1.760
2.125	0.065	1.995
2.250	0.065	2.120
	0.083	2.084
	0.120	2.010
2.500	0.065	2.370
	0.083	2.334
	0.120	2.260
2.750	0.065	2.620
3.000	0.049	2.902
	0.065	2.870
	0.083	2.834
	0.120	2.760
3.250	0.065	3.120
	0.120	3.010
3.500	0.065	3.370
4.000	0.065	3.870
	0.083	3.834
4.250	0.120	4.010
4.500	0.065	4.370
5.000	0.065	4.870
	0.083	4.834
	0.120	4.760
6.000	0.188	4.624
	0.065	5.870
	0.083	5.834
8.000	0.120	5.760
	0.120	7.760

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