VELOCITY CHART

IN FEET PER SECOND

	1/2" Pipe		¾" Pipe		l' Pipe		1½" Pipe		11/2" Pipe		2" Pipe		21/2" Pipe		3' Pipe		4" Pipe		5" Pipe		6" Pipe		U.S.
U.S. Gals. per min.	Vel. ft. per Sec.	Loss in Feet	Vel. ft. per Sec.	Loss in Feet	Vel. ft. per Sec.	Loss in Feet	Vel. ft. per Sec.	Loss in Feet	Vel. ft. per Sec.	Loss in Feet	Vel. ft. per Sec.	Loss in Feet	Vel. ft. per Sec.	Loss in Feet	Vel. ft. per Sec.	Loss in Feet	Vel. ft. per Sec.	Loss in Feet	Vel. ft. per Sec.	Loss in Feet	Vel. ft. per Sec.	Loss in Feet	Gala. per min.
2 4 6 8 10	2.10 4.21 6.31 8.42 10.52	7.4 27.0 57.0 98.0 147.0	1.20 2.41 3.61 4.81 6.02	1.9 7.0 14.7 25.0 38.0	1.49 2.23 2.98 3.72	2.14 4.55 7.8 11.7		 57 1.20 2.03 3.05			 .61 .82 1.02		.52			.07							2 4 6 8 10
12 15 18 20 25 30 35			7.22 9.02 10.84 12.03	53.0 80.0 108.2 136.0	4.46 5.60 6.69 7.44 9.30 11.15 13.02	16.4 25.0 35.0 42.0 64.0 89.0 119.0	2.57 3.21 3.86 4.29 5.36 6.43 7.51	4.3 6.5 9.1 11.1 16.6 23.0 31.2		2.01 3.00 4.24 5.20 7.30 11.0	3.06 3.57				.54 .68 .82 .91 1.13 1.36 1.59	.10 .15 .21 .25 .38 .54		 .06 .09 .13	.49	.04			12 15 18 20 25 30 35
40 45 50 55 60 65					14.88	152.0	8.58 9.65 10.72 11.78 12.87 13.92	40.0 50.0 60.0 72.0 85.0 99.7	10.23	18.8 23.2 28.4 34.0 39.6 45.9		6.6 8.2 9.9 11.8 13.9 16.1	2.61 2.94 3.27 3.59 3.92 4.24	_	1.82 2.04 2.27 2.45 2.72 2.89	.91 1.15 1.38 1.58 1.92 2.16		.22 .28 .34 .41 .47 .53	.65 .73 .82 .90 .98 1.06	.08 .09 .11 .14 .16	 .57 .62 .68	.04 .05 .06	40 45 50 55 60 65
70 75 80 85 90 95							15.01 16.06 17.16 18.21 19.30	113.0 129.0 146.0 163.8 180.0	11.02 11.80 12.59 13.38 14.71 14.95	53.0 60.0 68.0 75.0 84.0 93.0	8.17 8.68 9.19 9.70		4.58 4.91 5.23 5.56 5.88 6.21	6.2 7.1 7.9 8.1 9.8 10.8	3.18 3.33 3.63 3.78 4.09 4.22	2.57 3.00 3.28 3.54 4.08 4.33	1.79 1.91 2.04 2.17 2.30 2.42	.63 .73 .81 .91 1.00 1.12		.21 .24 .27 .31 .34		.08 .10 .11 .12 .14	80 85
100 110 120 130 140 150	8" P	IPE::08							15.74 17.31 18.89 20.46 22.04	102.0 122.0 143.0 166.0 190.0	13.28 14.30 15.32		6.54 7.18 7.84 8.48 9.15 9.81	12.0 14.5 16.8 18.7 22.3 25.5	4.54 5.00 5.45 5.91 6.35 6.82	4.96 6.0 7.0 8.1 9.2 10.5	2.55 2.81 3.06 3.31 3.57 3.82	1.22 1.46 1.17 1.97 2.28 2.62		.41 .49 .58 .67 .76		.17 .21 .24 .27 .32	100 110 120 130 140 150
160 170 180 190 200 220	1.02 1.08 1.15 1.21 1.28 1.40	.10 .11 .13 .14 .15 .18	10" P	IPE .06							16.34 17.36 18.38 19.40 20.42 22.47	86.0 96.0 107.0 118.0 129.0 154.0	10.46 11.11 11.76 12.42 13.07 14.38	29.0 34.1 35.7 39.6 43.1 52.0	7.26 7.71 8.17 8.63 9.08 9.99	11.8 13.3 14.0 15.5 17.8 21.3	4.08 4.33 4.60 4.84 5.11 5.62	2.91 3.26 3.61 4.01 4.4 5.2	3.27	.98 1.08 1.22 1.35 1.48 1.77			
240 260 280 300 320 340	1.53 1.66 1.79 1.91 2.05 2.18	.22 .25 .28 .32 .37 .41	.98 1.06 1.15 1.22 1.31 1.39	.07 .08 .09 .11 .12	12" P	IPE:					24 .51 26 .55	182.0 211.0	15.69 16.99 18.30 19.61 20.92 22.22	70.0 81.0 92.0 103.0 116.0	10.89 11.80 12.71 13.62 14.52 15.43	25.1 29.1 33.4 38.0 42.8 47.9		6.2 7.2 8.2 9.3 10.5 11.7	3.92 4.25 4.58 4.90 5.23 5.54	2.08 2.41 2.77 3.14 3.54 3.97	2.72 2.95 3.18 3.40 3.64 3.84	1.00 1.14 1.32 1.47 1.62	320 340
360 380 400 450 500 550	2.30 2.43 2.60 2.92 3.19 3.52	.45 .50 .54 .68 .82 .97	1.47 1.55 1.63 1.84 2.04 2.24	.15 .17 .19 .23 .28 .33	1.08 1.14 1.28 1.42 1.56	.069 .075 .95 .113		.06 .07					23.53 24.84 26.14	128.0 142.0 156.0	16.34 17.25 18.16 20.40 22.70 24.96		9.19 9.69 10.21 11.49 12.77 14.04	13.1 14.0 16.0 19.8 24.0 28.7	5.87 6.19 6.54 7.35 8.17 8.99	4.41 4.86 5.4 6.7 8.1 9.6	4.55 5.11 5.68 6.25	1.83 2.00 2.20 2.74 2.90 3.96	500 550
600 650 760 750 800 850	3.84 4.16 4.46 4.80 5.10 5.48	1.14 1.34 1.54 1.74 1.90 2.20	2.45 2.65 2.86 3.06 3.26 3.47	.39 .45 .52 .59 .66	1.70 1.84 1.99 2.13 2.27 2.41	.159 .19 .22 .24 .27 .31	1.25 1.37 1.46 1.58 1.67 1.79	.08 .09 .10 .11 .13 .14	16"P						27 . 23	137.0	15.32 16.59 17.87 19.15 20.42 21.70	33.7 39.0 44.9 51.0 57.0 64.0		11.3 13.2 15.1 17.2 19.4 21.7		7.12 7.96 8.95	800 850
900 950 1000 1100 1200 1300	5.75 6.06 6.38 7.03 7.66 8.30	2.46 2.87 2.97 3.52 4.17 4.85	3.67 3.88 4.08 4.49 4.90 5.31	.83 .91 1.03 1.19 1.40 1.62	2.56 2.70 2.84 3.13 3.41 3.69	.34 .38 .41 .49 .58	1.88 2.00 2.10 2.31 2.52 2.71	.16 .18 .19 .23 .27 .32	1.44 1.62 1.60 1.76 1.92 2.08	.084 .095 .10 .12 .14				inr			22.98	71.0	14.71 15.52 16.34 17.97 19.61	24.0 26.7 29.2 34.9 40.9	14.72		1300
1400 1500 1600 1800 2000 2200	8.95 9.58 10.21 11.50 12.78 14.05	5.50 6.24 7.00 8.78 10.71 12.78	5.71 6.12 6.53 7.35 8.16 8.98	1.87 2.13 2.39 2.95 3.59 4.24	3.98 4.26 4.55 5.11 5.68 6.25	.78 .89 .98 1.21 1.49 1.81	2.92 3.15 3.34 3.75 4.17 4.59	.36 .41 .47 .58 .71 .84	2.24 2.39 2.56 2.87 3.19 3.51	.19 .21 .24 .30 .37 .44	1.43 1.53 1.63 1.84 2.04 2.25		24" P		30"P	IPE					15.90 17.02 18.10	22.60 25.60 26.9	1400 1500 1600 1800 2000 2200
2400 2600 2800 3000 3200 3500	15.32	14.2	9.80 10.61 11.41 12.24 13.05 14.30	5.04 6.81 6.70 7.62 7.8 10.08	6.81 7.38 7.95 8.52 9.10 9.95	2.08 2.43 2.75 3.15 3.51 4.16	5.00 5.47 5.84 6.01 6.68 7.30	.99 1.17 1.32 1.49 1.67 1.97	3.83 4.15 4.47 5.12 5.59		2.45 2.66 2.86 3.08 3.27 3.59	.17 .20 .23 .27 .30	1.70 1.84 1.98 2.13 2.20 2.49		1.09 1.16 1.27 1.37 1.46 1.56	.04.	1:::::						2400 2600 2800 3000 3200 3500
3800 4200 4500 5000 5500 6000			15.51	13.4	10.80 11.92 12.78 14.20	4.90 5.88 6.90 8.40	7.98 8.76 9.45 10.50 11.55 12.60	2.36 2.77 3.22 3.92 4.65 5.50		1 2.03 8 2.39 8 2.79	3.88 4.29 4.60 5.13 5.6 6.13	.94	2.69 3.20 3.5 3.9 4.2		1.73 1.91 2.04 2.26 2.50 2.73	.08 .09 .11 .13							3800 4200 4500 5000 5500 6000
6500 7000 8000 9000 10000 12000							13.65	6.45 7.08	10.39 11.18 12.78 14.3 15.96	3.32 8 3.70 8 4.74 7 5.90 6 7.19	12.2	1.10 1.25 1.61 2.01 2.44 3.41		.45 7 .52 8 .66 5 .81 7 .98 0 1 .40	2.96 3.18 3.64 4.08 4.54 5.46	.33							6500 7000 8000 9000 10000
14000 16000 18000 20000											14.30	4.54	9.9 11.3 12.7 14.2	1.87 8 2.40 6 2.97 0 3.60	6.37 7.28 8.18 9.10	.63 .81 1.02 1.23							14000 16000 18000 20000

Friction loss of water in feet per 100 feet length of pipe; based on the Williams & Hazen formula using constant 100 sizes of standard pipe in inches. For new smooth pipe, use 71% of these values.