Engineering Information

Flow of Water and Friction

FLOW OF WATER AND FRICTION

Velocity Feet per Second	Diameter of							
	3		4		5		6	
	Discharge per Minute in Cubic Feet.							
Feet	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head
2	5.9	9.7	10.5	.55	16.4	.41	23.6	.32
2.5	7.3	1.49	13.0	.12	20.4	.64	29.3	.50
3	8.8	1.9	15.7	1.2	24.5	.82	35.2	.72
3.5	10.3	2.6	18.3	1.6	28.6	1.2	41.2	1.0
4	11.8	3.3	21.0	2.2	32.7	1.7	47.0	1.3
4.5	—	—	—	—	—	—	53.0	1.6
5	—	—	—	—	—	—	—	—
5.5	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—

FLOW OF WATER AND FRICTION

Velocity Feet per Second	Diameter of							
	15		18		21		24	
	Discharge per Minute in Cubic Feet.							
Feet	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head
2	148	.11	212	.025	298	.075	377	0.65
2.5	184	.17	264	.147	360	.117	470	.109
3	220	.25	317	.21	430	.17	565	.15
3.5	258	.34	372	.29	505	.23	680	.20
4	295	.44	425	.36	575	.31	755	.27
4.5	331	.56	475	.46	650	.39	845	.34
5	368	.70	530	.58	720	.48	940	.41
5.5	405	.84	580	.70	790	.59	1030	.50
6							1130	.59

LOSS IN CAST IRON PIPES

Pipes in Inches

6		7		8		9		10	
and loss of Head in Feet, per 100 Feet long.									
Cubic Feet	Feet of Head	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head
32	.27	42	.23	53	.19	65	.18	94	.15
40	.43	52	.36	66	.30	82	.27	117	.23
48	.61	63	.51	79	.44	98	.39	141	.33
56	.7	73	.71	93	.61	115	.52	165	.45
64	.9	86	.92	106	.79	131	.69	188	.59
72	1.2	94	1.2	119	1.01	147	.87	212	.75
—	—	—	—	132	1.2	164	1.1	325	.96
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

LOSS IN CAST IRON - (Contd.)

Pipes. In Inches

27		30		33		36		42	
and loss of Head in Feet, per 100 Feet long.									
Cubic Feet	Feet of Head	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head	Cubic Feet	Feet of Head
478	.055	590	.052	710	.049	650	.04	1150	.038
595	.088	730	.085	890	.076	1000	.07	1440	0.56
715	.13	880	.12	1070	.108	1270	.10	1730	.081
835	.18	1030	.16	1250	.15	1480	.14	2020	.111
955	.23	1180	.22	1420	.20	1700	.17	2300	.14
1070	.30	1320	.28	1600	.25	1900	.22	2590	.18
1190	.37	1470	.34	1780	.30	2120	.27	2880	.22
1310	.44	1610	.39	1950	.36	2330	.32	3170	.27
1430	.53	1760	.49	2140	.43	2540	.40	3450	.32