

# Friction loss per 100 ft. of plastic pipe

## TABLE 24

GPM	GPH	3/8"		1/2"		3/4"		1"		1 1/4"		1 1/2"	
		Ft.	Lbs.	Ft.	Lbs.	Ft.	Lbs.	Ft.	Lbs.	Ft.	Lbs.	Ft.	Lbs.
1	60	4.25	1.85	1.38	.60	.356	.155	.11	.048				
2	120	15.13	6.58	4.83	2.10	1.21	.526	.38	.164	.10	.044		
3	180	31.97	13.9	9.96	4.33	2.51	1.09	.77	.336	.21	.090	.10	.043
4	240	54.97	23.9	17.07	7.42	4.21	1.83	1.30	.565	.35	.150	.16	.071
5	300	84.41	36.7	25.76	11.2	6.33	2.75	1.92	.835	.51	.223	.24	.104
6	360			36.34	15.8	8.83	3.84	2.69	1.17	.71	.309	.33	.145
8	480			63.71	27.7	15.18	6.60	4.58	1.99	1.19	.518	.55	.241
10	600			97.52	42.4	25.98	11.27	6.88	2.99	1.78	.774	.83	.361
15	900					49.68	21.6	14.63	6.36	3.75	1.63	1.74	.755
20	1,200					86.94	37.8	25.07	10.9	6.39	2.78	2.94	1.28
25	1,500							38.41	16.7	9.71	4.22	4.44	1.93
30	1,800									13.62	5.92	6.26	2.72
35	2,100									18.17	7.90	8.37	3.64
40	2,400									23.55	10.24	10.70	4.65
45	2,700									29.44	12.80	13.46	5.85
50	3,000											16.45	7.15
60	3,600											23.48	10.21
70	4,200												
80	4,800												
90	5,400												
100	6,000												
125	7,500												
150	9,000												
175	10,500												
200	12,000												
250	15,000												
300	18,000												
350	21,000												
400	24,000												
500	30,000												
550	33,000												
600	36,000												
700	42,000												
800	48,000												
900	54,000												
950	57,000												
1000	60,000												

TABLE 24 (CONT')

GPM	GPH	2"		2½"		3"		4"		6"		8"		10"	
		Ft.	Lbs.	Ft.	Lbs.	Ft.	Lbs.	Ft.	Lbs.	Ft.	Lbs.	Ft.	Lbs.	Ft.	Lbs.
1	60														
2	120														
3	180														
4	240														
5	300														
6	360	.10	.044												
8	480	.17	.073												
10	600	.25	.108	.11	.046										
15	900	.52	.224	.22	.094										
20	1,200	.86	.375	.36	.158	.13	.056								
25	1,500	1.29	.561	.54	.234	.19	.083								
30	1,800	1.81	.786	.75	.327	.26	.114								
35	2,100	2.42	1.05	1.00	.436	.35	.151	.09	.041						
40	2,400	3.11	1.35	1.28	.556	.44	.191	.12	.052						
45	2,700	3.84	1.67	1.54	.668	.55	.239	.15	.064						
50	3,000	4.67	2.03	1.93	.839	.66	.288	.17	.076						
60	3,600	6.60	2.87	2.71	1.18	.93	.406	.25	.107						
70	4,200	8.83	3.84	3.66	1.59	1.24	.540	.33	.143						
80	4,800	11.43	4.97	4.67	2.03	1.58	.687	.41	.180						
90	5,400	14.26	6.20	5.82	2.53	1.98	.861	.52	.224						
100	6,000			7.11	3.09	2.42	1.05	.63	.272	.08	.036				
125	7,500			10.83	4.71	3.80	1.65	.95	.415	.13	.055				
150	9,000					5.15	2.24	1.33	.580	.18	.077				
175	10,500					6.90	3.00	1.78	.774	.23	.102				
200	12,000					8.90	3.87	2.27	.985	.30	.130				
250	15,000							3.36	1.46	.45	.195	.12	.051		
300	18,000							4.85	2.11	.63	.275	.17	.072		
350	21,000							6.53	2.84	.84	.367	.22	.095		
400	24,000									1.08	.471	.28	.121		
500	30,000									1.66	.720	.42	.182	.14	.059
550	33,000									1.98	.861	.50	.219	.16	.071
600	36,000									2.35	1.02	.59	.258	.19	.083
700	42,000											.79	.343	.26	.112
800	48,000											1.02	.443	.33	.143
900	54,000											1.27	.554	.41	.179
950	57,000													.46	.198
1000	60,000													.50	.218

# Equivalent number of feet straight pipe for different fittings

Size of Fitting, Inches	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"	10"
90° Ell	1.5	2.0	2.7	3.5	4.3	5.5	6.5	8.0	10.0	14.0	15	20	25
45° Ell	0.8	1.0	1.3	1.7	2.0	2.5	3.0	3.8	5.0	6.3	7.1	9.4	12
Long Sweep Ell	1.0	1.4	1.7	2.3	2.7	3.5	4.2	5.2	7.0	9.0	11.0	14.0	
Close Return Bend	3.6	5.0	6.0	8.3	10.0	13.0	15.0	18.0	24.0	31.0	37.0	39.0	
Tee—Straight Run	1	2	2	3	3	4	5						
Tee—Side Inlet or Outlet	3.3	4.5	5.7	7.6	9.0	12.0	14.0	17.0	22.0	27.0	31.0	40.0	
Globe Valve Open	17.0	22.0	27.0	36.0	43.0	55.0	67.0	82.0	110.0	140.0	160.0	220.0	
Angle Valve Open	8.4	12.0	15.0	18.0	22.0	28.0	33.0	42.0	58.0	70.0	83.0	110.0	
Gate Valve—Fully Open	0.4	0.5	0.6	0.8	1.0	1.2	1.4	1.7	2.3	2.9	3.5	4.5	
Check Valve (Swing)	4	5	7	9	11	13	16	20	26	33	39	52	65
Check Valve (Spring)	4	6	8	12	14	19	23	32	43	58			

## Storage of water in various size of wells

$$\frac{\pi \times ID^2}{4} \times \text{Length} = \text{Cu. Ft.} \times 7.48 = \text{Gals. of Storage}$$

2" Casing = .16	8" Casing = 2.6
3" Casing = .36	10" Casing = 4.07
4" Casing = .652	12" Casing = 5.87
5" Casing = 1.02	14" Casing = 7.99
6" Casing = 1.4	16" Casing = 10.44