Head Loss Chart

HEAD LOSS DUE TO FRICTION IN SMOOTHWALL PLASTIC PIPE (feet)

Note: The shaded areas below represent a velocity of less than 2 feet per second. The minimum velocity required to carry solids is 2 feet per second.

GPM FLOW	NOMINAL PIPE DIAMETER (inches)					
	1	1.5	2	3	4	6
1						
2	0.28					
3	0.59	0.07				
4	1.01	0.13				
5	1.52	0.19				
6	2.13	0.27	0.08			
7	2.84	0.35	0.11			
8	3.64	0.45	0.13			
9	4.52	0.56	0.17			
10	5.51	0.68	0.21	0.03		
11	6.56	0.81	0.24	0.04		
12	7.71	0.96	0.28	0.04		
13	8.93	1.11	0.33	0.05		
14	10.25	1.27	0.38	0.06		
15	11.65	1.45	0.43	0.06		
16	13.13	1.63	0.48	0.07		
17	14.69	1.82	0.54	0.08		
18	16.33	2.03	0.61	0.09		
19	18.05	2.24	0.66	0.11		
20	19.85	2.46	0.73	0.11	0.03	
25		3.73	1.11	0.16	0.04	
30		5.22	1.55	0.23	0.06	
35		6.95	2.06	0.31	0.08	
40		8.91	2.63	0.38	0.11	
45		11.06	3.28	0.48	0.13	
50		13.45	3.98	0.58	0.15	0.02
60			5.58	0.82	0.22	0.03
70			7.43	1.09	0.29	0.04
80			9.51	1.39	0.37	0.05
90			11.83	1.73	0.46	0.06
100			14.38	2.11	0.56	0.08
125				3.18	0.85	0.11
150				4.45	1.19	0.16
175				5.92	1.58	0.22
200				7.58	2.02	0.28
250				11.47	3.05	0.42

Notes:

1 Values are for 100 feet of Schedule-40 pressure-rated pipe.

2 Actual I.D. of pipe: 1.049, 1.61, 2.067, 3.068, 4.026, 6.065

3 Formula for friction loss is: $Hf = \frac{10.46\ (Q / C)\ ^{1.852}}{D\ ^{4.87}} \times 100$

Q = flow (gpm)
C = coefficient of roughness (150)
D = actual I.D. of pipe (inches)

Chart from the "On-site Waste Water Treatment" publication from the National Symposium on Individual and Small Community Sewage Systems.