

Friction Loss Table

Volume rate of flow LPM	Nominal Pipe outer dia. in mm								
	25	32	40	50	65	80	100	125	150
	Friction loss in mtr.								
30	0.364								
60	1.315	0.341							
75	1.988	0.516	0.246						
96	3.140	0.814	0.388						
120		1.231	0.587						
150		1.861	0.888	0.282					
192		2.940	1.402	0.190	0.126				
240			2.120	0.288	0.190				
300			3.205	0.887	0.288				
480				1.038	0.887	0.313			
600				1.570	1.038	0.474	0.131		
750				2.479	1.570	0.716	0.198		
960				3.747	2.479	1.131	0.312	0.111	
1200					3.747	1.710	0.472	0.167	
1500						2.585	0.713	0.253	0.106
1920						4.033	1.127	0.400	0.157
2400							1.704	0.605	0.252
3000							2.576	0.914	0.351
3600								1.281	0.534
4800								0.182	0.910
6000								3.299	1.376
7500									0.051

Permissible Flow Rate Table

Grade	Nominal Pipe outer dia. in mm						
	40	50	65	80	100	125	150
	Rate of flow in LPM						
Light (A-class)	114 - 164	164 - 314	314 - 598	598 - 932	932 - 1850	-	-
Medium (B-class)	107 - 160	160 - 297	297 - 588	588 - 898	898 - 1800	1800 - 3150	3150 - 5088
Heavy (C-class)	95 - 144	144 - 272	272 - 550	550 - 852	852 - 1720	1720 - 3082	3082 - 4957

- Friction loss in metres for 10 mtrs. long pipe (C=140)
- Permissible ranges of volume rates of flow (LPM) to limit friction losses to 10 % of the pipe length.

Friction Loss Table

Volume rate of flow LPM	Nominal Pipe outer dia. in mm								
	40	50	63	75	90	110	125	140	160
	Friction loss in mtr.								
30	0.074								
60	0.268								
75	0.405	0.131							
96	0.640	0.211							
120	0.967	0.310							
150	1.462	0.483	0.150						
192	2.309	0.762	0.250	0.106					
240	3.491	1.153	0.337	0.160					
300		1.742	0.571	0.242					
480		4.161	1.363	0.577	0.237				
600			2.060	0.873	0.358	0.133			
750			3.114	1.319	0.542	0.201			
960			4.919	2.084	0.856	0.317	0.172		
1200				3.151	1.293	0.479	0.260		
1500					1.955	0.715	0.392	0.225	0.117
1920					3.089	1.145	0.020	0.355	0.184
2400						1.731	0.937	0.537	0.279
3000						2.617	1.416	0.812	0.421
3600						3.008	1.985	1.138	0.590
4800							3.382	1.939	.006
6000								2.931	1.521
7500									2.299

Permissible Flow Rate Table

Capacity / Grade	Nominal Pipe outer dia. in mm								
	40	50	63	75	90	110	125	140	160
	Rate of flow in LPM								
2.5 kg/cm ² (0.25Mpa)	-	-	-	-	690 - 1174	1174 - 1995	1995 - 2798	2798 - 3775	3775 - 5357
4.0 kg/cm ² (0.40Mpa)	-	-	228 - 434	434 - 688	688 - 1110	1110 - 1902	1902 - 2660	2660 - 3587	3587 - 5097
6.0 kg/cm ² (0.60Mpa)	Up to 122	122 - 222	222 - 406	406 - 645	645 - 1044	1044 - 1785	1785 - 2486	2486 - 3358	3358 - 4785

- Friction loss in metres for 10 mtrs. long pipe (C=150)
- Permissible ranges of volume rates of flow (LPM) to limit friction losses to 10 % of the pipe length.

Head - Loss Table

Length of Straight Pipe in Metres Giving Equivalent Head Loss in Pipe Fittings, Valves etc.

Size of Pipe in mm	Standard Elbow	Medium Elbow	Long Radius Elbow	45° Elbow	Tee	Sluice Valve Full Open	Globe Valve Full Open	Angle Valve Open	Foot Valve or Reflux Valve
25	0.82	0.70	0.52	0.40	1.77	0.18	8.24	4.57	2.04
40	1.31	1.10	0.85	0.61	2.74	0.29	13.4	6.71	3.05
50	1.67	1.40	1.07	0.76	3.35	0.37	17.4	8.54	3.96
65	1.98	1.65	1.28	0.92	4.26	0.42	20.1	10.0	5.18
80	2.47	2.00	1.55	1.15	5.18	0.52	25.9	12.8	6.10
100	3.35	2.77	2.13	1.53	6.71	0.70	33.5	17.7	8.23
125	4.26	3.66	2.78	1.86	8.24	0.88	42.6	21.2	10.0
150	4.87	4.26	3.35	2.35	10.0	1.07	48.7	25.3	12.2
200	6.40	5.48	4.26	3.05	13.1	1.37	67.1	33.5	16.2
250	7.62	6.71	5.18	3.86	17.1	1.74	88.5	42.6	20.4
300	9.75	7.92	6.10	4.57	20.1	2.04	100.5	51.8	24.4