

Compressed Air Distribution (Systems)



Table 4.8 Loss of Air Pressure Due to Friction

Cu ft Free Air Per Min	Equivalent Cu ft Compressed Air Per Min	Nominal Diameter, In.																
		1/2	3/4	1	1 1/4	1 1/2	2	3	4	6	8	10	12					
10	1.05	5.35	0.82	0.23														
20	2.11	21.3	3.21	0.92	0.21													
30	3.16	48.0	7.42	2.07	0.47	0.21												
40	4.21	....	13.2	3.67	0.85	0.38												
50	5.26	....	20.6	5.72	1.33	0.59												
60	6.32	....	29.7	8.25	1.86	0.84	0.23											
70	7.38	....	40.5	11.2	2.61	1.15	0.31											
80	8.42	....	53.0	14.7	3.41	1.51	0.40											
90	9.47	....	68.0	18.6	4.30	1.91	0.51											
100	10.50	....	....	22.9	5.32	2.36	0.63											
125	13.15	....	....	39.9	8.4	3.70	0.98											
150	15.79	....	....	51.6	12.0	5.30	1.41	0.17										
175	18.41	....	....	....	16.3	7.2	1.95	0.24										
200	21.05	....	....	....	21.3	9.4	2.52	0.31										
250	26.30	....	....	....	33.2	14.7	3.94	0.48										
300	31.60	....	....	....	47.3	21.2	5.62	0.70										
350	36.80	....	....	....	....	28.8	7.7	0.94	0.22									
400	42.10	....	....	....	....	37.6	10.0	1.23	0.28									
450	47.30	....	....	....	....	47.7	12.7	1.55	0.37									
500	52.60	....	....	....	....	58.8	15.7	1.93	0.46									
600	63.20	....	....	....	....	....	22.6	2.76	0.65									
700	73.80	....	....	....	....	....	30.0	3.74	0.89									
800	84.20	....	....	....	....	....	40.2	4.85	1.17									
900	94.70	....	....	....	....	....	51.2	6.2	1.48									
1,000	105.1	....	....	....	....	....	63.2	7.7	1.82									
1,500	157.9	....	....	....	....	....	....	17.2	4.1	0.47								
2,000	210.5	....	....	....	....	....	....	30.7	7.3	0.82	0.19							
2,500	263.0	....	....	....	....	....	....	48.0	11.4	1.30	0.31							
3,000	316	....	....	....	....	....	....	69.2	16.4	1.86	0.43							
3,500	368	....	....	....	....	....	....	....	22.3	2.51	0.57	0.18						
4,000	421	....	....	....	....	....	....	....	29.2	3.30	0.77	0.23						
4,500	473	....	....	....	....	....	....	....	37.0	4.2	0.98	0.24						
5,000	526	....	....	....	....	....	....	....	45.7	5.2	1.21	0.36						
6,000	632	....	....	....	....	....	....	....	65.7	7.5	1.74	0.52	0.20					
7,000	738	....	....	....	....	....	....	....	....	10.0	2.37	0.72	0.27					
8,000	842	....	....	....	....	....	....	....	....	13.2	3.10	0.93	0.38					
9,000	947	....	....	....	....	....	....	....	....	16.7	3.93	1.18	0.47					
10,000	1,051	....	....	....	....	....	....	....	....	20.6	4.85	1.46	0.57					
11,000	1,156	....	....	....	....	....	....	....	....	25.0	5.8	1.76	0.68					
12,000	1,262	....	....	....	....	....	....	....	....	29.7	7.0	2.09	0.81					
13,000	1,368	....	....	....	....	....	....	....	....	35.0	8.1	2.44	0.95					
14,000	1,473	....	....	....	....	....	....	....	....	40.3	9.7	2.85	1.11					
15,000	1,579	....	....	....	....	....	....	....	....	46.5	10.9	3.26	1.26					
16,000	1,683	....	....	....	....	....	....	....	....	53.0	12.4	3.72	1.45					
18,000	1,893	....	....	....	....	....	....	....	....	66.9	15.6	4.71	1.83					
20,000	2,150	....	....	....	....	....	....	....	....	....	19.4	5.8	2.20					
22,000	2,315	....	....	....	....	....	....	....	....	....	23.4	7.1	2.74					
24,000	2,525	....	....	....	....	....	....	....	....	....	27.8	8.4	3.17					
26,000	2,735	....	....	....	....	....	....	....	....	....	32.8	9.8	3.83					
28,000	2,946	....	....	....	....	....	....	....	....	....	37.9	16.4	4.4					
30,000	3,158	....	....	....	....	....	....	....	....	....	43.5	13.1	5.1					

In psi in 1000 ft of pipe, 125 lb gage initial pressure. For longer or shorter lengths of pipe the friction loss is proportional to the length, i.e., for 500 ft, one-half of the above; for 4,000 ft, four times the above, etc.