



Friction Loss Chart



Friction Loss in Sanitary Tube and Fittings

This table indicates loss of head due to friction in feet loss per foot of tubing or in feet loss per fitting.

Capacity in US GPM	OD Tube Size																	
	1" I.D. = 0.870"			1½" I.D. = 1.370"			2" I.D. = 1.870"			2½" I.D. = 2.370"			3" I.D. = 2.870"			4" I.D. = 3.834"		
	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee	Tubing	Elbow	Tee
5	.035	.025	.25															
10	.12	.06	.40	.02	.01	.15	.005	.015	.10									
15	.25	.10	.80	.04	.02	.25	.013	.02	.15									
20	.43	.22	1.5	.06	.03	.30	.02	.025	.20	.005	.02	.10	.003	.02	.06			
25	.66	.40	2.3	.08	.04	.40	.025	.03	.25	.006	.03	.15	.004	.03	.08			
30	.93	.70	3.3	.105	.06	.55	.035	.05	.30	.008	.05	.20	.005	.04	.10			
35	1.22	1.25	5.2	.135	.09	.80	.04	.06	.40	.011	.06	.25	.006	.05	.13			
40				.17	.11	1.0	.05	.08	.50	.015	.07	.30	.007	.06	.15			
45				.21	.16	1.3	.063	.10	.60	.02	.09	.35	.008	.065	.18			
50				.25	.20	1.6	.073	.12	.70	.022	.10	.40	.01	.07	.20			
60				.34	.35	2.2	.10	.18	.90	.03	.12	.45	.015	.08	.25			
80				.57	.76	3.7	.16	.30	1.5	.05	.15	.55	.02	.10	.40			
100				.85	1.35	5.8	.23	.44	2.3	.075	.18	.60	.03	.11	.50	.008	.04	.10
120				1.18	2.05	9.1	.32	.64	3.3	.105	.21	1.0	.04	.13	.60	.01	.05	.15
140							.42	.85	4.5	.14	.23	1.25	.05	.16	.80	.013	.06	.2
160							.54	1.13	5.8	.17	.28	1.6	.07	.20	1.1	.015	.07	.25
180							.67	1.45	7.4	.205	.31	2.0	.08	.21	1.3	.02	.08	.30
200							.81	1.82	9.0	.245	.35	2.5	.10	.26	1.6	.025	.09	.40
220							.95	2.22	11.0	.29	.41	3.0	.12	.30	1.9	.028	.10	.50
240							1.10	2.63	13.5	.34	.48	3.7	.14	.33	2.2	.035	.11	.55
260										.39	.53	4.5	.165	.39	2.5	.04	.115	.60
280										.45	.61	5.3	.19	.42	2.8	.045	.12	.65
300										.515	.70	6.2	.22	.50	3.1	.05	.13	.70
350										.68	1.05	8.5	.28	.67	4.1	.07	.15	.90
400										.86	1.55	11.0	.38	.88	5.2	.085	.18	1.2
450										1.05	2.25	13.5	.44	1.1	6.6	.105	.20	1.5
500													.54	1.4	8.0	.13	.23	1.75
550													.64	1.7	9.5	.15	.27	2.1
600													.75	2.05	10.2	.175	.30	2.5
650													.87	2.41	13.0	.20	.34	2.8
700													1.0	2.8	15.0	.23	.40	3.4
750																.26	.43	3.8
800																.30	.50	4.4