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Schedule 80 Steel Pipes - Friction Loss

Nominal Size (inches)	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"
O.D (inches)	0.840	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.500	5.560	6.625	8.630
Wall Thichness (inches)	0.147	0.154	0.179	0.191	0.200	0.218	0.276	0.300	0.337	0.375	0.432	0.500
I.D (inches)	0.546	0.742	0.957	1.278	1.500	1.939	2.323	2.900	3.826	4.810	5.761	7.630

Flow			Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss	Velocity	Friction Loss
(US gpm)	(liter/s)	(m3/h)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)	(fps)	(psi/100ft)
1	0.06	0.23	1.369	1.713	0.741	0.385	0.445	0.112																				
2	0.13	0.45	2.737	6.176	1.482	1.389	0.891	0.403																				
3	0.19	0.68	4.106	13.077	2.223	2.940	1.336	0.852	0.749	0.209																		
4	0.25	0.91	5.474	22.266	2.964	5.006	1.782	1.452	0.999	0.355	0.725	0.163																
5	0.32	1.14	6.843	33.645	3.705	7.565	2.227	2.193	1.249	0.537	0.907	0.246																
6	0.38	1.36	8.212	47.142	4.446	10.599	2.673	3.073	1.499	0.752	1.088	0.345																
7	0.44	1.59	9.580	62.699	5.187	14.097	3.118	4.087	1.749	1.001	1.269	0.459																
8	0.50	1.82	10.949	80.268	5.928	18.047	3.564	5.233	1.998	1.281	1.451	0.588	0.868	0.169														
9	0.57	2.04	12.317	99.811	6.670	22.441	4.009	6.507	2.248	1.593	1.632	0.731	0.977	0.210														
10	0.63	2.27	13.686	121.291	7.411	27.270	4.455	7.907	2.498	1.936	1.813	0.888	1.085	0.255														
11	0.69	2.50			8.152	32.529	4.900	9.432	2.748	2.309	1.995	1.059	1.194	0.304														
12	0.76	2.72			8.893	38.210	5.346	11.079	2.998	2.712	2.176	1.244	1.302	0.357														
14	0.88	3.18			10.375	50.819	6.237	14.735	3.497	3.607	2.539	1.655	1.519	0.475	1.058	0.197												
16	1.01	3.63			11.857	65.059	7.128	18.864	3.997	4.618	2.901	2.118	1.736	0.608	1.210	0.252												
18	1.13	4.09			13.339	80.899	8.019	23.457	4.496	5.742	3.264	2.634	1.953	0.755	1.361	0.314												
20	1.26	4.54			14.821	98.309	8.910	28.505	4.996	6.978	3.627	3.201	2.170	0.918	1.512	0.381												
22	1.39	4.99					9.801	34.001	5.496	8.323	3.989	3.818	2.387	1.095	1.663	0.455												
24	1.51	5.45					10.692	39.939	5.995	9.777	4.352	4.485	2.604	1.286	1.815	0.534	1.164	0.181										
26	1.64	5.90					11.583	46.314	6.495	11.337	4.715	5.201	2.821	1.492	1.966	0.619	1.261	0.210										
30	1.89	6.81					13.365	60.351	7.494	14.774	5.440	6.777	3.256	1.944	2.268	0.807	1.455	0.274										
35	2.21	7.95							8.743	19.649	6.347	9.013	3.798	2.585	2.646	1.073	1.698	0.365										
40	2.52	9.08							9.992	25.155	7.253	11.539	4.341	3.309	3.024	1.374	1.941	0.467	1.115	0.121								
45	2.84	10.22							11.241	31.279	8.160	14.349	4.883	4.115	3.402	1.708	2.183	0.580	1.254	0.151								
50	3.15	11.35							12.490	38.011	9.067	17.437	5.426	5.001	3.780	2.076	2.426	0.705	1.394	0.183								
55	3.47	12.49							13.739	45.340	9.973	20.799	5.969	5.965	4.158	2.476	2.668	0.841	1.533	0.219	0.970	0.072						
60	3.78	13.62							14.988	53.259	10.880	24.431	6.511	7.007	4.536	2.909	2.911	0.988	1.672	0.257	1.058	0.084						
65	4.10	14.76									11.787	28.331	7.054	8.125	4.914	3.373	3.153	1.146	1.812	0.298	1.146	0.098						
70	4.4	15.9									12.693	32.494	7.596	9.319	5.292	3.869	3.396	1.315	1.951	0.341	1.234	0.112						
80	5.0	18.2									14.507	41.599	8.681	11.930	6.049	4.953	3.881	1.683	2.230	0.437	1.411	0.144						
90	5.7	20.4											9.767	14.835	6.805	6.158	4.366	2.093	2.508	0.543	1.587	0.178	1.106	0.074	0.631	0.019		
100	6.3	22.7											10.852	18.027	7.561	7.484	4.851	2.543	2.787	0.660	1.763	0.217	1.229	0.090	0.701	0.023		
110	6.9	25.0											11.937	21.503	8.317	8.927	5.337	3.033	3.066	0.788	1.940	0.259	1.352	0.108	0.771	0.027		
120	7.6	27.2											13.022	25.259	9.073	10.486	5.822	3.563	3.345	0.925	2.116	0.304	1.475	0.126	0.841	0.032		
130	8.2	29.5											14.107	29.290	9.829	12.160	6.307	4.132	3.623	1.073	2.293	0.352	1.598	0.146	0.911	0.037		
140	8.8	31.8													10.585	13.946	6.792	4.739	3.902	1.231	2.469	0.404	1.721	0.168	0.981	0.043		
150	9.5	34.1													11.341	15.845	7.277	5.384	4.181	1.398	2.645	0.459	1.844	0.191	1.051	0.049		
160	10.1	36.3													12.097	17.855	7.762	6.067	4.460	1.575	2.822	0.517	1.967	0.215	1.121	0.055		
170	10.7	38.6													12.853	19.974	8.247	6.787	4.738	1.762	2.998	0.579	2.090	0.241	1.191	0.061		
180	11.3	40.9													13.609	22.201	8.732	7.544	5.017	1.959	3.174	0.643	2.213	0.267	1.261	0.068		
190	12.0	43.1													14.365	24.537	9.218	8.337	5.296	2.165	3.351	0.711	2.336	0.296	1.332	0.075		
200	12.6	45.4													15.121	26.979	9.703	9.167	5.574	2.381	3.527	0.782	2.459	0.325	1.402	0.083		
225	14.2	51.1															10.916	11.399	6.271	2.960	3.968	0.972	2.766	0.404	1.577	0.103		
250	15.8	56.8															12.128	13.853	6.968	3.597	4.409	1.181	3.073	0.491	1.752	0.125		
275	17.3	62.4															13.341	16.524	7.665	4.291	4.850	1.409	3.381	0.586	1.927	0.149		
300	18.9	68.1															14.554	19.410	8.362	5.040	5.290	1.655	3.688	0.688	2.102	0.175		
350	22.1	79.5															16.980	25.815	9.755	6.704	6.172	2.201	4.303	0.915	2.453	0.233		
400	25.2	90.8															19.405	33.049	11.149	8.582	7.054	2.818	4.917	1.172	2.803	0.299		
450	28.4	102.2																	12.542	10.672	7.936	3.504	5.532	1.457	3.154	0.371		
500	31.5	113.5																	13.936	12.968	8.817	4.258	6.147	1.770	3.504	0.451		
550	34.7	124.9																	15.330	15.469	9.699	5.080	6.761	2.112	3.855	0.538		
600	37.8	136.2																	16.723	18.171	10.581	5.967	7.376	2.480	4.205	0.632		
650	41.0	147.6																			11.463	6.919	7.991	2.876	4.555	0.733		
700	44.1	158.9																			12.344	7.936	8.605	3.299	4.906	0.841		
800	50.4	181.6																			14.108	10.160	9.835	4.223	5.607	1.076		
900	56.7	204.3																					11.064	5.252	6.307	1.338		
1000	63.0	227.0																					12.293	6.382	7.008	1.626		
1100	69.3	249.7																					13.523	7.612	7.709	1.940		
1200	75.6	272.4																					14.752	8.942	8.410	2.279		