

ProPress® Stainless Flow Data

Dimensional Data			
Nominal Pipe Size	Weight		
	Pipe (lb./ft.)	Water (lb./ft.)	Total (lb./ft.)
1/2"	0.41	0.06	0.47
3/4"	0.59	0.12	0.71
1"	0.77	0.20	0.97
1-1/4"	0.95	0.31	1.26
1-1/2"	1.13	0.43	1.56
2"	1.50	0.76	2.26
2-1/2"	2.18	1.61	3.79
3"	2.60	2.29	4.89
4"	3.46	4.06	7.52

Flow Rate, Velocity and Friction Loss (Water)

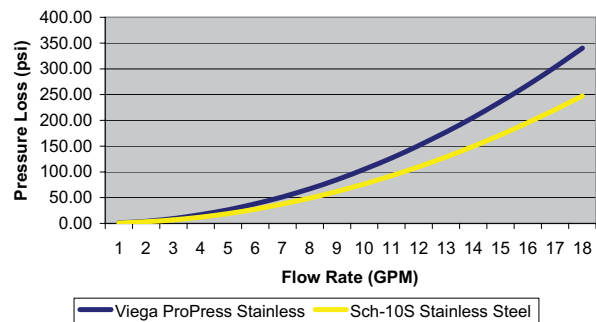
Friction loss state within the following tables is based on pipe dimensional data using the Darcy-Weisbach equation:

$$h_f = f \cdot \frac{L}{D} \cdot \frac{V^2}{2g}$$

h_f = friction loss
 L = pipe length
 D = pipe ID
 V = velocity (ft./sec.)
 g = gravity constant (32.174ft./sec.²)
 f = pipe friction factor

1/2" Pipe		
Flow Rate (gpm)	Velocity (ft/sec)	Press Loss (psi/100')
1.00	1.70	1.05
2.00	3.40	4.20
3.00	5.10	9.44
4.00	6.81	16.79
5.00	8.51	26.23
6.00	10.21	37.78
7.00	11.91	51.42
8.00	13.61	67.16
9.00	15.31	85.00
10.00	17.01	104.94
11.00	18.71	126.98
12.00	20.42	151.11
13.00	22.12	177.35
14.00	23.82	205.68
15.00	25.52	236.11
16.00	27.22	268.64
17.00	28.92	303.27
18.00	30.62	340.00

1/2" ProPress Stainless vs IPS pressure loss per 100 ft



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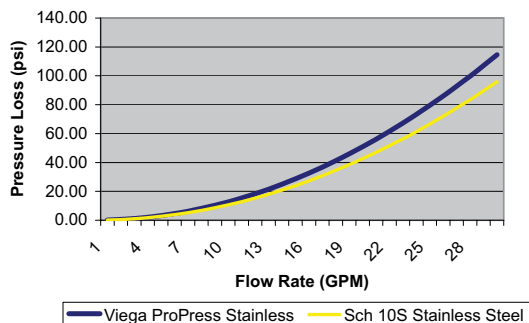
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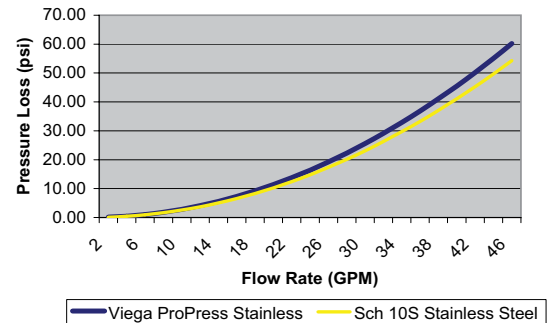
3/4" Pipe		
Flow Rate (gpm)	Velocity (ft./sec.)	Press Loss (psi/100')
1.00	0.75	0.13
2.00	1.49	0.51
3.00	2.24	1.15
4.00	2.98	2.04
5.00	3.73	3.19
6.00	4.48	4.59
7.00	5.22	6.25
8.00	5.97	8.16
9.00	6.71	10.33
10.00	7.46	12.75
11.00	8.21	15.43
12.00	8.95	18.36
13.00	9.70	21.55
14.00	10.44	24.99
15.00	11.19	28.69
16.00	11.94	32.64
17.00	12.68	36.85
18.00	13.43	41.32
19.00	14.17	46.03
20.00	14.92	51.01
21.00	15.67	56.23
22.00	16.41	61.72
23.00	17.16	67.46
24.00	17.90	73.45
25.00	18.65	79.70
26.00	19.40	86.20
27.00	20.14	92.96
28.00	20.89	99.97
29.00	21.63	107.24
30.00	22.38	114.77

1" Pipe		
Flow Rate (gpm)	Velocity (ft./sec.)	Press Loss (psi/100')
2.00	0.83	0.11
4.00	1.67	0.45
6.00	2.50	1.02
8.00	3.33	1.81
10.00	4.17	2.83
12.00	5.00	4.08
14.00	5.84	5.55
16.00	6.67	7.25
18.00	7.50	9.18
20.00	8.34	11.33
22.00	9.17	13.72
24.00	10.00	16.32
26.00	10.84	19.16
28.00	11.67	22.22
30.00	12.50	25.50
32.00	13.34	29.02
34.00	14.17	32.76
36.00	15.00	36.73
38.00	15.84	40.92
40.00	16.67	45.34
42.00	17.51	49.99
44.00	18.34	54.86
46.00	19.17	59.96

3/4" ProPress Stainless vs IPS pressure loss per 100 ft



1" ProPress Stainless vs IPS pressure loss per 100 ft



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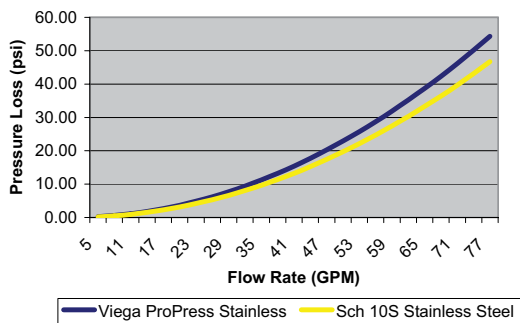
1-1/4" Pipe

Flow Rate (gpm)	Velocity (ft./sec.)	Press Loss (psi/100')
5.00	1.33	0.23
8.00	2.13	0.59
11.00	2.92	1.11
14.00	3.72	1.80
17.00	4.52	2.66
20.00	5.31	3.68
23.00	6.11	4.86
26.00	6.91	6.21
29.00	7.70	7.73
32.00	8.50	9.41
35.00	9.30	11.26
38.00	10.10	13.27
41.00	10.89	15.45
44.00	11.69	17.80
47.00	12.49	20.31
50.00	13.28	22.98
53.00	14.08	25.82
56.00	14.88	28.83
59.00	15.67	32.00
62.00	16.47	35.33
65.00	17.27	38.84
68.00	18.07	42.50
71.00	18.86	46.34
74.00	19.66	50.34
77.00	20.46	54.50

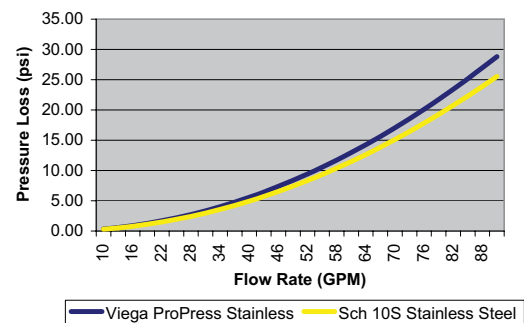
1-1/2" Pipe

Flow Rate (gpm)	Velocity (ft./sec.)	Press Loss (psi/100')
10.00	1.84	0.35
13.00	2.39	0.59
16.00	2.94	0.89
19.00	3.50	1.26
22.00	4.05	1.69
25.00	4.60	2.18
28.00	5.15	2.73
31.00	5.70	3.35
34.00	6.26	4.03
37.00	6.81	4.77
40.00	7.36	5.58
43.00	7.91	6.45
46.00	8.46	7.38
49.00	9.02	8.37
52.00	9.57	9.43
55.00	10.12	10.55
58.00	10.67	11.73
61.00	11.22	12.97
64.00	11.78	14.28
67.00	12.33	15.65
70.00	12.88	17.08
73.00	13.43	18.58
76.00	13.98	20.14
79.00	14.54	21.76
82.00	15.09	23.44
85.00	15.64	25.19
88.00	16.19	27.00
91.00	16.74	28.87

1-1/4" ProPress Stainless vs IPS pressure loss per 100 ft



1-1/2" ProPress Stainless vs IPS pressure loss per 100 ft



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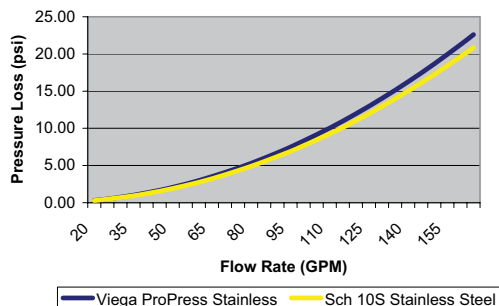
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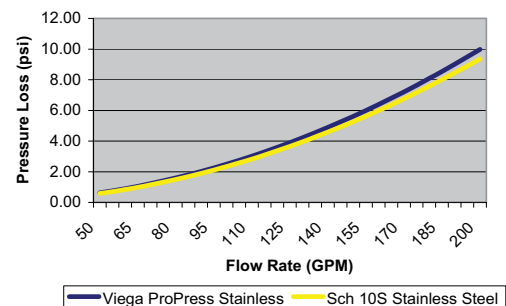
Flow Rate (gpm)	Velocity (ft./sec.)	Press Loss (psi/100')
20.00	2.06	0.31
25.00	2.58	0.49
30.00	3.09	0.70
35.00	3.61	0.95
40.00	4.13	1.24
45.00	4.64	1.57
50.00	5.16	1.94
55.00	5.67	2.35
60.00	6.19	2.80
65.00	6.70	3.28
70.00	7.22	3.81
75.00	7.74	4.37
80.00	8.25	4.97
85.00	8.77	5.61
90.00	9.28	6.29
95.00	9.80	7.01
100.00	10.32	7.77
105.00	10.83	8.57
110.00	11.35	9.40
115.00	11.86	10.28
120.00	12.38	11.19
125.00	12.89	12.14
130.00	13.41	13.13
135.00	13.93	14.16
140.00	14.44	15.23
145.00	14.96	16.34
150.00	15.47	17.49
155.00	15.99	18.67
160.00	16.50	19.89
165.00	17.02	21.16

Flow Rate (gpm)	Velocity (ft./sec.)	Press Loss (psi/100')
50.00	3.35	0.62
55.00	3.68	0.75
60.00	4.02	0.90
65.00	4.35	1.05
70.00	4.69	1.22
75.00	5.02	1.40
80.00	5.36	1.59
85.00	5.69	1.80
90.00	6.03	2.02
95.00	6.36	2.25
100.00	6.70	2.49
105.00	7.03	2.75
110.00	7.37	3.01
115.00	7.70	3.30
120.00	8.03	3.59
125.00	8.37	3.89
130.00	8.70	4.21
135.00	9.04	4.54
140.00	9.37	4.88
145.00	9.71	5.24
150.00	10.04	5.61
155.00	10.38	5.99
160.00	10.71	6.38
165.00	11.05	6.78
170.00	11.38	7.20
175.00	11.72	7.63
180.00	12.05	8.07
185.00	12.39	8.53
190.00	12.72	8.99
195.00	13.06	9.47
200.00	13.39	9.97

2" ProPress Stainless vs IPS pressure loss per 100 ft



2-1/2" ProPress Stainless vs IPS pressure loss per 100 ft



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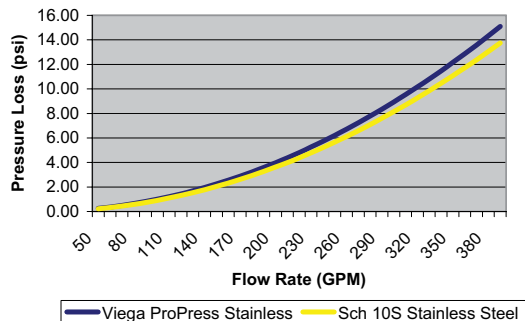
3" Pipe

Flow Rate (gpm)	Velocity (ft./sec.)	Press Loss (psi/100')
50.00	2.32	0.25
60.00	2.78	0.36
70.00	3.24	0.49
80.00	3.70	0.63
90.00	4.17	0.80
100.00	4.63	0.99
110.00	5.09	1.20
120.00	5.56	1.43
130.00	6.02	1.68
140.00	6.48	1.94
150.00	6.95	2.23
160.00	7.41	2.54
170.00	7.87	2.86
180.00	8.34	3.21
190.00	8.80	3.58
200.00	9.26	3.96
210.00	9.73	4.37
220.00	10.19	4.80
230.00	10.65	5.24
240.00	11.11	5.71
250.00	11.58	6.20
260.00	12.04	6.70
270.00	12.50	7.23
280.00	12.97	7.77
290.00	13.43	8.34
300.00	13.89	8.92
310.00	14.36	9.53
320.00	14.82	10.15
330.00	15.28	10.79
340.00	15.75	11.46
350.00	16.21	12.14
360.00	16.67	12.85
370.00	17.13	13.57
380.00	17.60	14.31
390.00	18.06	15.08

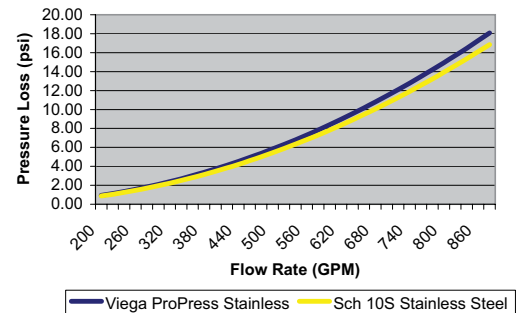
4" Pipe

Flow Rate (gpm)	Velocity (ft./sec.)	Press Loss (psi/100')
200.00	5.18	0.93
220.00	5.70	1.12
240.00	6.22	1.34
260.00	6.74	1.57
280.00	7.26	1.82
300.00	7.78	2.09
320.00	8.29	2.38
340.00	8.81	2.69
360.00	9.33	3.01
380.00	9.85	3.35
400.00	10.37	3.72
420.00	10.89	4.10
440.00	11.40	4.50
460.00	11.92	4.91
480.00	12.44	5.35
500.00	12.96	5.81
520.00	13.48	6.28
540.00	14.00	6.77
560.00	14.51	7.28
580.00	15.03	7.81
600.00	15.55	8.36
620.00	16.07	8.93
640.00	16.59	9.51
660.00	17.11	10.12
680.00	17.62	10.74
700.00	18.14	11.38
720.00	18.66	12.04
740.00	19.18	12.72
760.00	19.70	13.42
780.00	20.22	14.13
800.00	20.73	14.87
820.00	21.25	15.62
840.00	21.77	16.39
860.00	22.29	17.18
880.00	22.81	17.99

3" ProPress Stainless vs IPS pressure loss per 100 ft

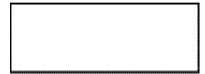


4" ProPress Stainless vs IPS pressure loss per 100 ft



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Fitting Friction Loss

Equivalent Length of Pipe (ft)

Fitting Type	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
90° elbow (long radius)	0.66	0.99	1.33	1.65	1.98	2.66	3.30	3.97	5.30
45° elbow	0.66	0.99	1.33	1.65	1.98	2.66	3.30	3.97	5.30
tee (straight flow)	0.82	1.24	1.66	2.06	2.48	3.32	4.12	4.96	6.62
tee (branch outlet)	2.46	3.72	4.98	6.18	7.44	9.96	12.36	14.88	19.86
ball valve (full port)	6.15	9.30	12.45	15.45	18.60	24.90	n/a	n/a	n/a

MSS SP-69 or the following maximum spacing and minimum rod sizes

Nominal Pipe Size (in.)	Stainless Steel Pipe Max. Span (ft.)	Min. Rod Diameter (in.)
Up to 3/4	10	3/8
1	10	3/8
1-1/4	10	3/8
1-1/2	10	3/8
2	10	3/8
2-1/2	11	1/2
3	12	1/2
4	14	5/8