

# Standard Physical Properties of Spiral Pipe

Spiral Galvanized Pipe Weight Table Lbs. per foot						
Pipe Size	Nominal U.S. Standard Gauge					
	26	24	22	20	18	16
3"	0.8	1.1	1.3	1.5		
4"	1.1	1.4	1.7	2.0		
5"	1.4	1.7	2.1	2.5	3.4	
6"	1.6	2.0	2.5	3.0	3.9	4.8
7"	1.9	2.4	2.9	3.4	4.6	5.6
8"	2.1	2.8	3.3	3.9	5.2	6.4
9"	2.4	3.1	3.8	4.4	5.9	7.2
10"	2.6	3.4	4.2	4.9	6.5	8.0
11"	2.9	3.8	4.6	5.4	7.1	9.1
12"	3.2	4.1	5.0	5.9	7.8	9.6
13"	3.4	4.5	5.4	6.4	8.5	10.7
14"	3.7	4.8	5.8	6.9	9.1	11.2
15"		5.1	6.2	7.4	9.8	12.5
16"		5.5	6.6	7.8	10.4	12.8
17"		5.8	7.1	8.3	11.1	13.3
18"		6.1	7.5	8.8	11.7	14.4
20"		6.8	8.3	9.8	13.0	16.0
22"			9.1	10.8	14.3	15.6
24"			9.9	11.7	15.6	19.2
26"			10.8	12.7	16.9	20.8
28"			11.6	13.7	18.2	22.4
30"			12.4	14.6	19.5	24.0
32"			13.3	15.6	20.8	25.6
34"			14.1	16.6	22.0	27.9
36"			14.9	17.6	23.3	28.8
38"				18.5	24.6	29.8
40"				19.5	25.9	32.0
42"				20.5	27.2	33.5
44"				21.5	28.5	35.2
46"				22.5	29.8	36.7
48"				23.4	31.1	38.3
50"				24.5	32.4	40.0
52"				25.3	33.7	41.6
54"					35.0	43.2
56"					36.3	44.8
58"					37.6	46.4
60"					38.8	48.0
62"					41.1	50.7
64"					43.4	53.4
66"					44.7	55.1
68"					46.1	56.7
70"					47.4	58.4
72"					48.8	60.1

Nominal Thickness	Gauge	Lbs/Ft <sup>2</sup>
.0635	16	2.66
.0516	18	2.16
.0396	20	1.66
.0336	22	1.41
.0276	24	1.16
.0217	26	.91

Spiral standard pipe outlined in boxes.

### A special note to our readers

Special made fittings  
Special items are made on a time and material basis. Once accepted for production they cannot be cancelled, nor can they be returned for credit.

Check Measurements Carefully

Terms and Conditions  
All shipments F.O.B. factory Mpls, MN  
No returns unless authorized by: Spiral Manufacturing Co., Inc.  
Request return authorization form #66A or download from web site.

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Bursting Pressure (Seam Failure)								
Pipe Size	24 Gauge		22 Gauge		20 Gauge		18 Gauge	
	PSI	"wg	PSI	"wg	PSI	"wg	PSI	"wg
3"	*	*	*	*	*	*	*	*
4"	500	13865	*	*	*	*	*	*
5"	380	10537	480	13310	*	*	*	*
6"	310	8596	360	9983	500	*	*	*
7"	230	6378	280	7764	400	11092	*	*
8"	200	5546	240	6655	312	8652	450	12479
9"	160	4437	180	4991	250	6933	350	9706
10"	147	4076	170	4714	225	6239	325	9012
11"	125	3466	150	4160	175	4853	280	7764
12"	112	3106	130	3605	165	4575	240	6655
13"	95	2634	120	3328	145	4021	225	6239
14"	85	2357	105	2912	135	3744	185	5130
15"	82	2274	90	2496	120	3328	170	4714
16"	78	2163	85	2357	112	3106	160	4437
17"	63	1747	81	2246	100	2773	145	4021
18"	56	1553	50	1387	82	2274	140	3882
20"	54	1497	64	1775	82	2274	120	3328
22"			52	1442	71	1969	100	2773
24"			48	1331	66	1830	90	2496
26"			42	1165	54	1497	82	2274
28"			37	1026	50	1387	70	1941
30"			33	915	45	1248	66	1830
32"			30	832	37	1026	58	1608
34"			28	776	37	1026	54	1497
36"			27	749	33	915	50	1387
38"					30	832	50	1387
40"					30	832	42	1165
42"					29	804	36	998
44"					29	804	36	998
46"					29	804	33	915
48"					29	804	33	915

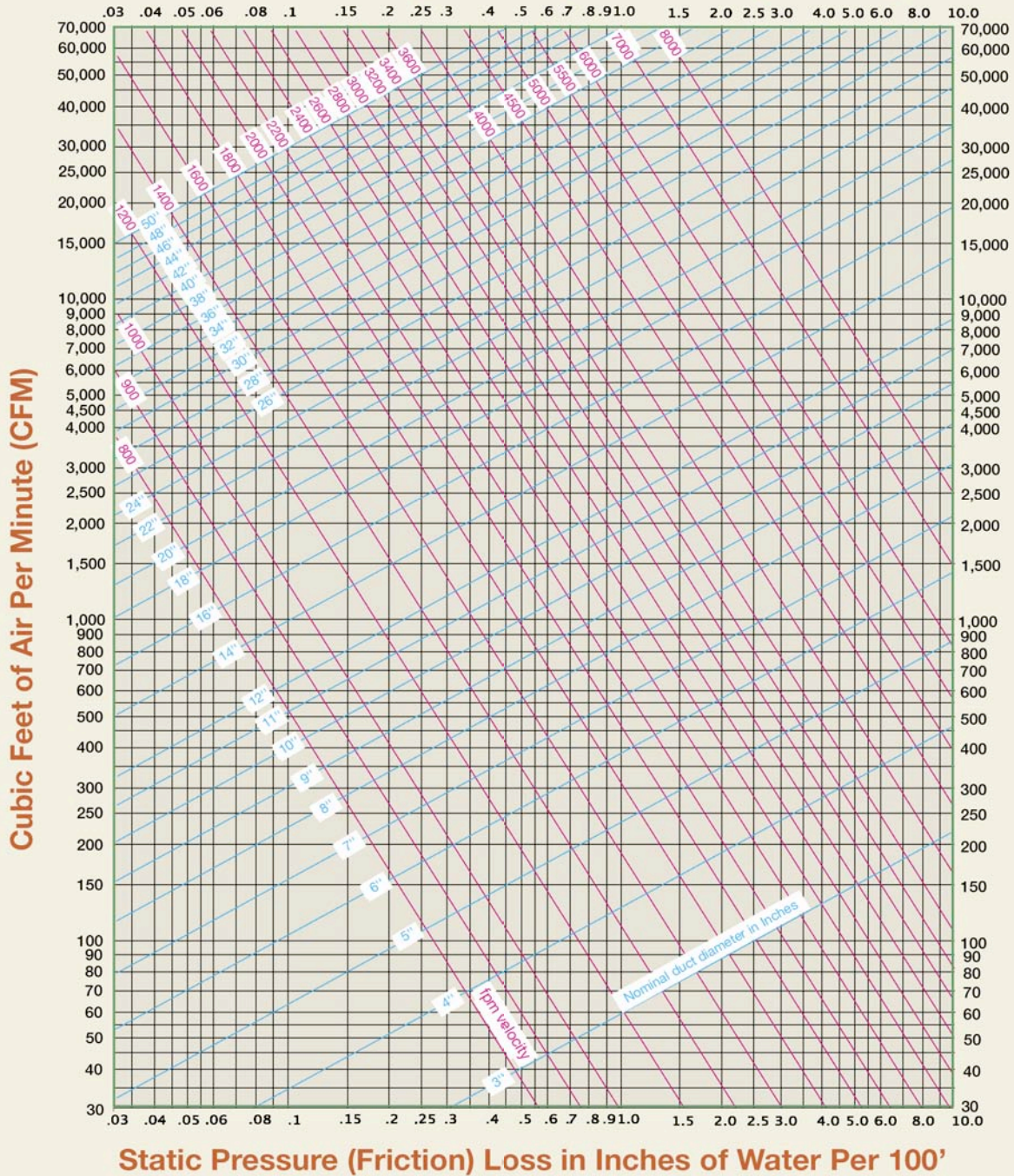
Internal Negative Pressure to Collapse								
Pipe Size	24 Gauge		22 Gauge		20 Gauge		18 Gauge	
	P.S.I.	"wg	P.S.I.	"wg	P.S.I.	"wg	P.S.I.	"wg
3"	**	**	**	**	**	**	**	**
4"	**	**	**	**	**	**	**	**
5"	**	**	**	**	**	**	**	**
6"	**	**	**	**	**	**	**	**
7"	**	**	**	**	**	**	**	**
8"	**	**	**	**	**	**	**	**
9"	11.0	304.7	**	**	**	**	**	**
10"	7.8	216.1	14.0	387.8	**	**	**	**
11"	5.5	152.4	8.6	238.2	**	**	**	**
12"	3.7	102.5	6.6	182.8	14.0	387.8	**	**
13"	2.5	69.3	4.9	135.7	7.8	216.1	**	**
14"	1.6	44.3	3.2	88.6	4.9	135.7	**	**
15"	1.6	44.3	2.2	60.9	4.2	116.3	14.0	387.8
16"	1.5	41.6	1.7	47.1	3.8	103.9	12.0	332.4
17"	1.3	36.0	1.6	44.3	2.8	77.6	7.9	218.8
18"	1.2	33.2	1.4	38.8	1.6	44.3	6.6	182.8
20"	1.2	33.2	1.3	34.6	1.6	44.3	4.5	124.7
22"	***	***	1.3	36.0	1.4	38.8	2.8	77.6
24"	***	***	1.2	33.2	1.3	36.0	2.5	69.3
26"	***	***	1.2	33.2	1.2	33.2	1.6	44.3
28"	***	***	***	***	***	***	1.4	38.8
30"	***	***	***	***	***	***	1.3	36.0
32"	***	***	***	***	***	***	1.2	33.2
34"	***	***	***	***	***	***	1.2	33.2
36"	***	***	***	***	***	***	***	***

\* Theoretically did not fail at 500 PSI      \*\*\* Less than 1.2 PSI  
\*\* Did not fail at -14.7 PSI (-407 "wg)

Spiral standard pipe outlined in boxes.



Static Pressure (Friction) Loss of Spiral Pipe

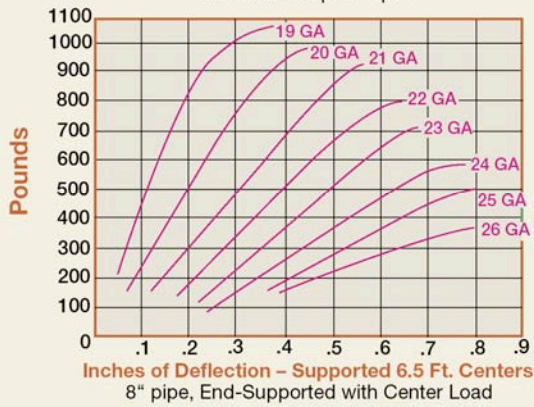
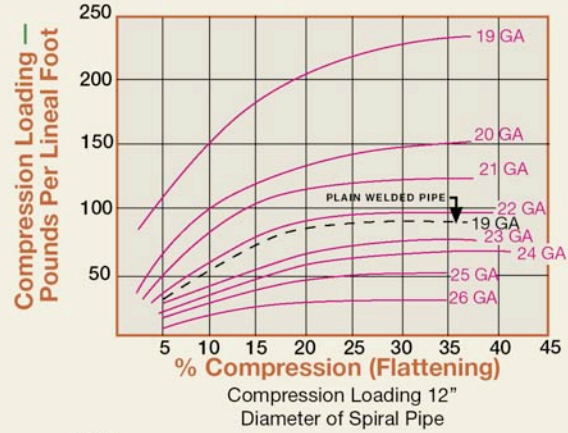
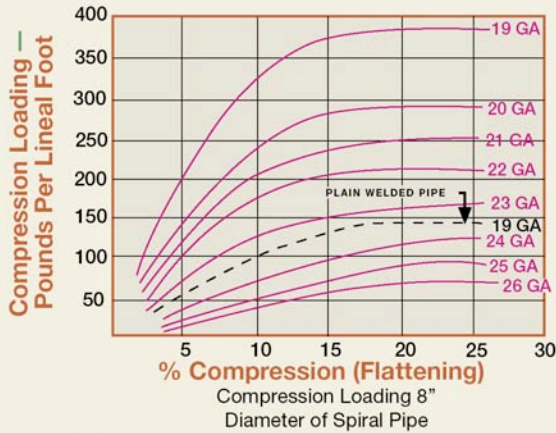




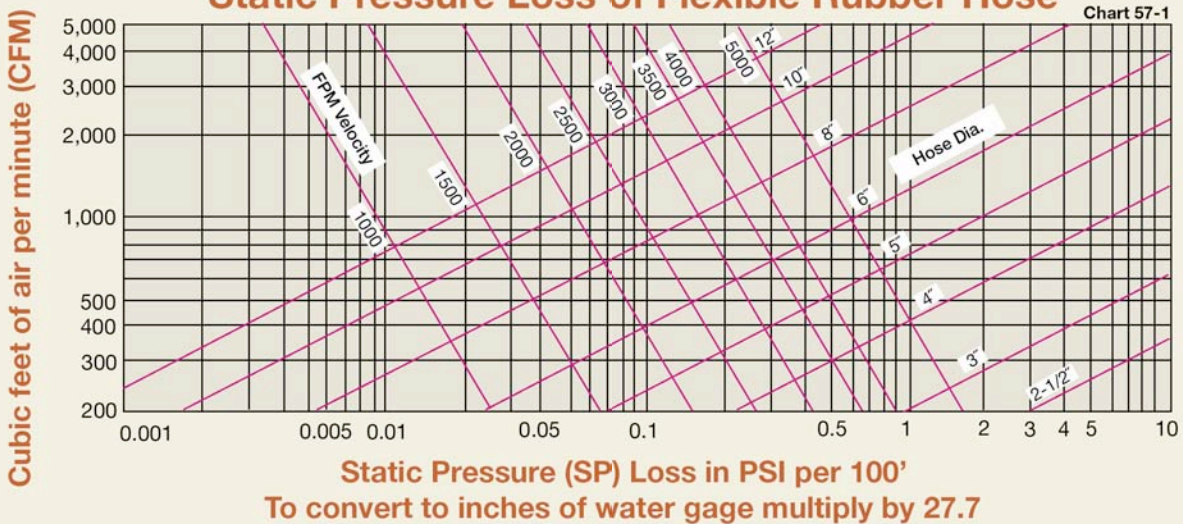
# Engineering Data

## Compression & Deflection Properties of Spiral Pipe, Static Pressure (SP) Loss in Flexible Rubber Hose

### Physical Properties of Spiral Pipe



### Static Pressure Loss of Flexible Rubber Hose



# Diameter, Gauge & Strength Properties; Collapsing & Bursting Pressures

# Engineering Data

## Diameters, Gauge, and Strength Properties of Spiral Pipe

Nominal Diameter (inches)	Steel Gauge		Bursting Pressure (Seam Failure) P.S.I.		Internal Negative Pressure To Collapse Standard Pipe	
	Std.	Max.	Std.	Max.	In. "wg	PSI
3	24	22	*	*	**	**
4	24	20	500	*	**	**
5	24	18	350	*	**	**
6	24	18	275	*	**	**
7	24	18	220	*	**	**
8	24	18	175	460	**	**
9	24	18	150	375	304	11.0
10	24	18	135	325	193	7.0
11	24	18	115	275	111	4.0
12	24	18	95	240	83	3.0
13	24	18	85	220	66	2.4
14	24	18	80	185	47	1.7
15	24	18	72	170	44	1.6
16	24	18	65	160	39	1.4
17	24	18	58	145	36	1.3
18	24	18	53	140	35	1.25
20	24	18	47	120	33	1.2
22	24	18	41	100	33	1.2
24	22	18	48	87	33	1.2
26	22	18	42	78	***	***
28	22	18	37	68	***	***
30	22	18	33	60	***	***
32	22	18	30	55	***	***
34	22	18	28	52	***	***
36	22	18	27	48	***	***
42	22	18	29	37	***	***
48	22	18	25	32	***	***

\*Did not fail at 500 PSI    \*\* Did not fail at -14.7 PSI (-407 in. H<sub>2</sub>O)  
\*\*\* Less than 1.2 PSI

Calculation of wall thickness to diameter ratio:  $(\frac{T}{D})$

Example: For 24 gauge steel and duct diameter of 13".

$$(\frac{T}{D}) = .0296/13 = .0023$$

Above reference, for lower charts, to predict bursting and collapsing pressures.

Gauge	Mean Thickness
16	.0635
18	.0516
20	.0396
22	.0336
24	.0276
26	.0217

1 PSI = 27.7 "wg    1 "wg = .0361 PSI

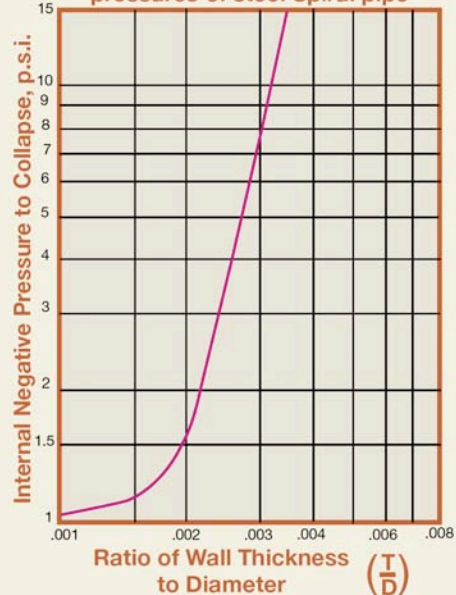
Properties are approximate, based on both empirical and extrapolated data

Chart to predict bursting pressures of steel Spiral pipe



Refer to upper right corner of page for more details

Chart to predict collapsing pressures of steel Spiral pipe



Refer to upper right corner of page for more details