NAYLOR

Spiralweld PIPE SYSTEMS

The Complete Line of
Spiral Buttweld Pipe and Lockseam Spiralweld Pipe

Fittings • Flanges • Couplings • Fabrications • Coatings • Linings

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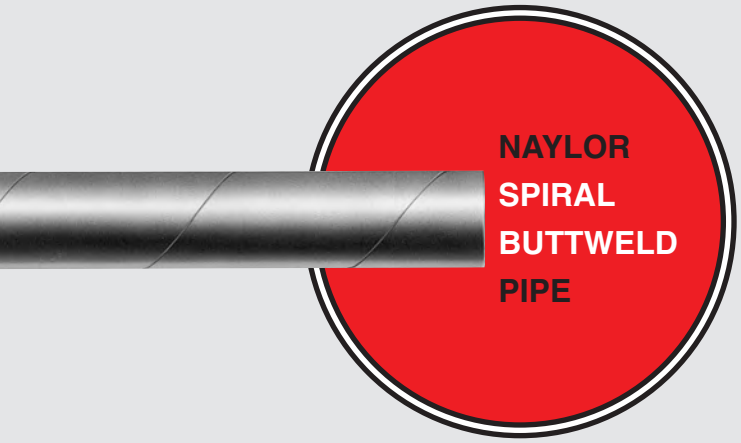


Naylor Spiral Buttweld Pipe is manufactured in accordance with ASTM A-139; ASTM A-252, and AWWA C200. It is made from steel strip on automatic equipment designed by Naylor that forms, sizes and completes the manufacture; first, by a sound initial penetrating weld, then followed by a second weld along the outside spiral seam. Each length of completed Naylor Spiral Buttweld Pipe is carefully inspected, and where service conditions require, a hydrostatic test is given to ASTM requirements as shown on pages 3, 4 and 5.

Naylor Spiral Buttweld Pipe is produced in a number of grades of steel to give users a choice of piping to meet their specific needs. From this selection of steels, a complete system can be developed for handling such diverse applications as abrasion-resistant service, corrosion-resistant piping, construction purposes and general industrial uses. In addition to the steels shown, other alloys can be furnished to meet your service requirements. If a size is required that is not listed, it can be made to your order. Standard sizes and wall thicknesses are shown on pages 3, 4 and 5.

EXACT LENGTHS

Naylor Spiral Buttweld can be furnished in industrial standard lengths of 20'0"; line pipe standard lengths of 40'0", 50'0" and 60'0"; and structural lengths up to 100'0". All piping can be cut to any required length to tolerance of plus-or-minus 1/8".

STRUCTURAL STRENGTH

Naylor Spiral Buttweld Pipe features two welds along the spiral seam. This creates a pipe structure in which the weld is as strong or stronger than the parent metal.

UNIFORM WALL

Because thickness tolerances of steel strip are governed by the standards established by the American Iron and Steel Institute, uniform wall thicknesses are assured. This minimizes irregularities which could cause uneven wear.

ACCURATE DIAMETER

The Naylor manufacturing process creates a pipe that maintains an accurate diameter throughout its length. The uniformity of the pipe ends speeds connections, whether mechanically coupled or welded.

INSPECTION AND TESTING

Every length of Naylor pipe is inspected and where required is tested to the hydrostatic mill test pressure specified in the applicable ASTM specification.

ECONOMY

Naylor Spiral Buttweld Pipe is manufactured in a wide range of wall thicknesses. The fact that this pipe is available in lighter weights than other pipe makes it possible to save money, not only on the initial cost, but also in transportation, handling and installation. It means that by sizing the diameter of the pipe to the exact requirements, with exact lengths and factory-sized ends, the greatest economies can be realized.

STEEL ANALYSES

Naylor Spiral Buttweld Pipe is offered as standard in grades of steel as shown. Variations from these analyses are also available to meet your specific applications.

BASIC CARBON STEEL (ASTM A-139)

Carbon	.30 Max.
Manganese	1.0 Max.
Phosphorus	.035 Max.
Sulphur	.035 Max.

ABRASION-RESISTANT STEEL

Carbon	.30-.35
Manganese	1.00-1.50
Phosphorus.	.008-.025
Sulphur	.020-.035
Silicon	.035 Max.

STRUCTURAL STEEL (ASTM A-252)

Physical Requirements	Grade 2	Grade 3
Tensile Strength Min.	60,000 p.s.i.	66,000 p.s.i.
Yield Point Min.	35,000 p.s.i.	45,000 p.s.i.

WEATHERING STEEL (ASTM A-588)

OTHER STEELS AVAILABLE

Naylor also offers steel grades suitable for your specific applications, including copper bearing, low-alloy high strength steels, as well as grades alloyed to meet your exact requirements.

NAYLOR PIPE

FOR OVER 85 YEARS, WE HAVE BEEN AVAILABLE TO MEET YOUR NEEDS WITH TOP QUALITY PRODUCTS AND ON TIME SHIPMENTS OF SPIRALWELD PIPE SYSTEMS.

STANDARD SPECIFICATIONS
NAYLOR SPIRAL BUTTWELD PIPE

Size Inches	Wall Thickness Inches	Weight of Pipe Lbs./Ft.	INTERNAL PRESSURE			
			Working Pressure P.S.I. S=15,000	Minimum Mill Test P.S.I. ①		Approx. Bursting Pressure P.S.I. S=60,000
				Grade A S=18,000	Grade B S=21,000	
6 O.D.	.134	8.40	701	842	982	2805
	.187	11.62	997	1197	1396	3989
6 I.D.	.134	8.79	670	804	938	2680
	.187	12.37	935	1122	1309	3739
6⅝ O.D.	.134	9.30	632	759	885	2529
	.187	12.87	897	1077	1256	3590
8 O.D.	.134	11.27	520	624	728	2080
	.187	15.62	736	883	1030	2943
8 I.D.	.134	11.65	503	603	704	2010
	.187	16.37	701	841	982	2805
8⅝ O.D.	.134	12.16	481	577	673	1924
	.187	16.87	680	816	952	2720
9 O.D.	.134	12.70	460	552	645	1842
	.187	17.62	650	780	911	2601
	.250	23.38	882	1059	1235	3529
9 I.D.	.134	13.08	447	536	625	1787
	.187	18.37	623	748	873	2493
	.250	24.72	833	1000	1167	3333
9⅝ O.D.	.134	13.60	430	516	601	1718
	.187	18.87	606	728	849	2426
	.250	25.06	822	986	1151	3288
10 O.D.	.134	14.13	413	496	578	1652
	.187	19.62	583	699	816	2331
	.250	26.06	789	947	1105	3158
10 I.D.	.134	14.52	402	482	563	1608
	.187	20.37	561	673	785	2244
	.250	27.39	750	900	1050	3000
10¾ O.D.	.134	15.21	384	460	537	1534
	.179	20.23	517	620	723	2067
	.187	21.12	541	649	757	2163
	.250	28.06	732	878	1024	2927
11 O.D.	.134	15.57	375	449	524	1498
	.179	20.71	505	606	706	2018
	.187	21.62	528	634	739	2112
	.250	28.73	714	857	1000	2857
11 I.D.	.134	15.95	365	439	512	1462
	.179	21.39	488	586	683	1953
	.187	22.37	510	612	714	2040
	.250	30.07	682	818	955	2727
12 O.D.	.134	17.00	343	411	480	1371
	.179	22.62	461	554	646	1845
	.187	23.61	483	579	676	1930
	.250	31.40	652	783	913	2609
	.312	39.04	824	989	1154	3297

Size Inches	Wall Thickness Inches	Weight of Pipe Lbs./Ft.	INTERNAL PRESSURE			
			Working Pressure P.S.I. S=15,000	Minimum Mill Test P.S.I. ①		Approx. Bursting Pressure P.S.I. S=60,000
				Grade A S=18,000	Grade B S=21,000	
12 I.D.	.134	17.38	335	402	469	1340
	.179	23.30	448	537	627	1790
	.187	24.36	467	561	654	1870
	.250	32.74	625	750	875	2500
	.312	41.13	781	938	1094	3125
12¾ O.D.	.134	18.07	322	386	451	1288
	.179	24.06	433	520	607	1733
	.187	25.11	453	544	635	1813
	.250	33.41	612	735	857	2449
	.312	41.55	773	928	1082	3093
14 O.D.	.134	19.86	293	351	410	1171
	.187	27.61	412	494	576	1647
	.250	36.75	556	667	778	2222
	.312	45.73	701	841	981	2804
	.375	54.62	849	1019	1189	3396
14 I.D.	.134	20.25	287	345	402	1149
	.187	28.36	401	481	561	1603
	.250	38.08	536	643	750	2143
	.312	47.81	670	804	938	2679
	.375	57.63	804	964	1125	3214
16 O.D.	.134	22.73	256	307	358	1022
	.187	31.61	359	431	503	1436
	.250	42.09	484	581	677	1935
	.312	52.41	610	732	854	2439
	.375	62.64	738	885	1033	2951
16 I.D.	.134	23.11	251	302	352	1005
	.187	32.36	351	421	491	1402
	.250	43.43	469	563	656	1875
	.312	54.49	586	703	820	2344
	.375	65.64	703	844	984	2813
18 O.D.	.134	25.59	227	272	317	907
	.187	35.61	318	382	446	1273
	.250	47.44	429	514	600	1714
	.312	59.09	540	647	755	2158
	.375	70.66	652	783	913	2609
18 I.D.	.134	25.98	223	268	313	893
	.187	36.36	312	374	436	1247
	.250	48.77	417	500	583	1667
	.312	61.18	521	625	729	2083
	.375	73.66	625	750	875	2500
20 O.D.	.134	28.46	204	244	285	815
	.187	39.61	286	343	400	1143
	.250	52.78	385	462	538	1538
	.312	65.77	484	581	677	1935
	.375	78.67	584	701	818	2338
20 I.D.	.134	28.84	201	241	281	804
	.187	40.36	280	337	393	1122
	.250	54.12	375	450	525	1500
	.312	67.86	469	563	656	1875
	.375	81.68	563	675	788	2250

① Mill Test Pressure 60% of Sy in accordance with ASTM: A-139.

STANDARD SPECIFICATIONS
NAYLOR SPIRAL BUTTWELD PIPE

Size Inches	Wall Thickness Inches	Weight of Pipe Lbs./Ft.	INTERNAL PRESSURE			
			Working Pressure P.S.I. S=15,000	Minimum Mill Test P.S.I. ①		Approx. Bursting Pressure P.S.I. S=60,000
				Grade A S=18,000	Grade B S=21,000	
22 O.D.	.134	31.32	185	222	259	740
	.187	43.61	259	311	363	1038
	.250	58.13	349	419	488	1395
	.312	72.45	439	526	614	1754
	.375	86.69	529	635	741	2118
22 I.D.	.134	31.71	183	219	256	731
	.187	44.36	255	306	357	1020
	.250	59.46	341	409	477	1364
	.312	74.54	426	511	597	1705
	.375	89.70	511	614	716	2045
24 O.D.	.134	34.19	169	203	237	678
	.187	47.60	237	285	332	950
	.250	63.47	319	383	447	1277
	.312	79.13	401	481	561	1604
	.375	94.71	484	581	677	1935
24 I.D.	.134	34.57	168	201	235	670
	.187	48.35	234	280	327	935
	.250	64.81	313	375	438	1250
	.312	81.22	391	469	547	1563
	.375	97.71	469	563	656	1875
26 O.D.	.134	37.05	156	187	219	625
	.187	51.60	219	263	306	876
	.250	68.82	294	353	412	1176
	.312	85.81	369	443	517	1478
	.375	102.73	446	535	624	1782
	.500	136.30	600	720	840	2400
26 I.D.	.134	37.44	155	186	216	618
	.187	52.35	216	259	302	863
	.250	70.15	288	346	404	1154
	.312	87.90	361	433	505	1442
	.375	105.73	433	519	606	1731
	.500	141.64	577	692	808	2308
28 O.D.	.134	39.92	145	174	203	580
	.187	55.60	203	244	284	812
	.250	74.16	273	327	382	1091
	.312	92.49	342	411	479	1370
	.375	110.74	413	495	578	1651
	.500	146.99	556	667	778	2222
28 I.D.	.134	40.30	144	172	201	574
	.187	56.35	200	240	280	801
	.250	67.48	300	360	420	1200
	.312	94.58	335	402	469	1339
	.375	113.75	402	482	563	1607
	.500	152.33	536	643	750	2143
30 O.D.	.134	42.78	135	162	189	541
	.187	59.60	189	227	265	757
	.250	79.51	254	305	356	1017
	.312	99.18	319	383	447	1277
	.375	118.76	385	462	538	1538
	.500	157.68	517	621	724	2069

Size Inches	Wall Thickness Inches	Weight of Pipe Lbs./Ft.	INTERNAL PRESSURE			
			Working Pressure P.S.I. S=15,000	Minimum Mill Test P.S.I. ①		Approx. Bursting Pressure P.S.I. S=60,000
				Grade A S=18,000	Grade B S=21,000	
30 I.D.	.134	43.10	134	161	188	536
	.187	60.35	187	224	262	748
	.250	80.84	250	300	350	1000
	.312	101.26	313	375	438	1250
	.375	121.77	375	450	525	1500
	.500	163.02	500	600	700	2000
32 O.D.	.134	45.65	127	152	177	507
	.187	63.60	177	213	248	710
	.250	84.85	238	286	333	952
	.312	105.86	299	359	418	1195
	.375	126.78	360	432	504	1440
	.500	168.37	484	581	677	1935
34 O.D.	.134	48.51	119	143	167	477
	.187	67.59	167	200	234	667
	.250	90.20	224	269	313	896
	.312	112.54	281	337	393	1124
	.375	134.80	338	406	474	1353
	.500	179.06	455	545	636	1818
36 O.D.	.134	51.38	113	135	158	450
	.187	71.59	157	189	220	630
	.250	95.54	211	254	296	845
	.312	119.22	265	318	371	1060
	.375	142.81	319	383	447	1277
	.500	189.75	429	514	600	1714
38 O.D.	.187	75.59	149	179	209	596
	.250	100.89	200	240	280	800
	.312	125.90	251	301	351	1003
	.375	150.83	302	362	423	1208
	.500	200.44	405	486	568	1622
40 O.D.	.187	79.59	142	170	198	566
	.250	106.23	190	228	266	759
	.312	132.58	238	286	333	952
	.375	158.85	287	344	401	1146
	.500	211.13	385	462	538	1538
42 O.D.	.187	83.59	135	162	189	539
	.250	111.58	181	217	253	723
	.312	139.26	227	272	317	906
	.375	166.87	273	327	382	1091
	.500	221.82	366	439	512	1463
44 O.D.	.187	87.58	129	154	180	514
	.250	116.92	172	207	241	690
	.312	145.95	216	259	303	865
	.375	174.88	260	312	364	1040
	.500	232.51	349	419	488	1395
46 O.D.	.187	91.58	123	148	172	492
	.250	122.27	165	198	231	659
	.312	152.63	207	248	289	826
	.375	182.90	249	298	348	994
	.500	243.20	333	400	467	1333
48 O.D.	.187	95.58	118	141	165	471
	.250	127.61	158	189	221	632
	.312	159.31	198	237	277	792
	.375	190.92	238	286	333	952
	.500	253.89	319	383	447	1277

① Mill Test Pressure 60% of Sy in accordance with ASTM: A-139.

STANDARD SPECIFICATIONS
NAYLOR SPIRAL BUTTWELD PIPE

Size Inches	Wall Thickness Inches	Weight of Pipe Lbs./Ft.	INTERNAL PRESSURE			
			Working Pressure P.S.I. S=15,000	Minimum Mill Test P.S.I. ①		Approx. Bursting Pressure P.S.I. S=60,000
				Grade A S=18,000	Grade B S=21,000	
50 O.D.	.250	132.96	152	182	212	606
	.312	165.99	190	228	266	759
	.375	198.94	228	274	320	914
	.500	264.58	306	367	429	1224
52 O.D.	.250	138.30	146	175	204	583
	.312	172.67	182	219	255	730
	.375	206.95	220	263	307	878
	.500	275.27	294	353	412	1176
54 O.D.	.250	143.65	140	168	196	561
	.312	179.35	176	211	246	703
	.375	214.97	211	254	296	845
	.500	285.96	283	340	396	1132
56 O.D.	.250	148.99	135	162	189	541
	.312	186.03	169	203	237	677
	.375	222.99	204	244	285	814
	.500	296.65	273	327	382	1091
58 O.D.	.250	154.34	130	157	183	522
	.312	192.71	163	196	229	654
	.375	231.01	197	236	275	786
	.500	307.34	263	316	368	1053
60 O.D.	.250	159.68	126	151	176	504
	.312	199.40	158	189	221	632
	.375	239.03	190	228	266	759
	.500	318.03	254	305	356	1017
62 O.D.	.250	165.03	122	146	171	488
	.312	206.08	153	183	214	611
	.375	247.04	184	220	257	735
	.500	328.72	246	295	344	984
64 O.D.	.250	170.37	118	142	165	472
	.312	212.76	148	178	207	592
	.375	255.06	178	213	249	711
	.500	339.41	238	286	333	952
66 O.D.	.250	175.72	115	137	160	458
	.312	219.44	143	172	201	574
	.375	263.08	172	207	241	690
	.500	350.10	231	277	323	923
68 O.D.	.250	181.06	111	133	156	444
	.312	226.12	139	167	195	557
	.375	271.10	167	201	234	669
	.500	360.79	224	269	313	896
70 O.D.	.250	186.41	108	129	151	432
	.312	232.80	135	162	189	541
	.375	279.11	162	195	227	650
	.500	371.48	217	261	304	870
72 O.D.	.250	191.75	105	126	147	420
	.312	239.48	131	158	184	525
	.375	287.13	158	189	221	632
	.500	382.17	211	254	296	845
74 O.D.	.250	196.91	101	122	143	405
	.312	245.54	126	153	179	506
	.375	294.87	152	184	215	608
	.500	393.16	203	247	288	811

① Mill Test Pressure 60% of Sy in accordance with ASTM: A-139.

Size Inches	Wall Thickness Inches	Weight of Pipe Lbs./Ft.	INTERNAL PRESSURE			
			Working Pressure P.S.I. S=15,000	Minimum Mill Test P.S.I. ①		Approx. Bursting Pressure P.S.I. S=60,000
				Grade A S=18,000	Grade B S=21,000	
76 O.D.	.250	202.25	99	118	138	395
	.312	252.20	123	148	172	493
	.375	302.95	148	178	207	592
	.500	403.17	197	237	276	789
78 O.D.	.250	207.59	96	115	135	385
	.312	258.87	120	144	168	480
	.375	310.97	144	173	202	577
	.500	413.85	192	231	269	769
80 O.D.	.250	212.93	94	113	131	375
	.312	265.53	117	140	164	468
	.375	318.98	141	169	197	563
	.500	424.53	188	225	263	750
82 O.D.	.312	272.20	114	137	160	457
	.375	326.99	137	165	192	549
	.500	435.21	183	220	256	732
84 O.D.	.312	278.86	111	134	156	446
	.375	335.00	134	161	188	536
	.500	445.89	179	214	250	714
86 O.D.	.312	285.53	109	131	152	435
	.375	343.01	131	157	183	523
	.500	456.57	174	209	244	698
88 O.D.	.312	292.19	106	128	149	425
	.375	351.03	128	153	179	511
	.500	467.25	170	205	239	682
90 O.D.	.312	298.85	104	125	146	416
	.375	359.04	125	150	175	500
	.500	477.93	167	200	233	667
92 O.D.	.312	305.52	102	122	142	407
	.375	367.05	122	147	171	489
	.500	488.61	163	196	228	652
94 O.D.	.312	312.18	100	119	139	398
	.375	375.31	120	144	168	479
	.500	499.29	160	191	223	638
96 O.D.	.312	318.85	98	117	137	390
	.375	383.07	117	141	164	469
	.500	509.97	156	188	219	625

Notes:
Please call for diameters and wall thicknesses other than those shown.

Collapse pressures and recommended span data available on request.
All pressures in pounds per square inch.

Above 40" diameter, certain test pressures are reduced in heavy wall thickness to conform with testing equipment capacity.

NAYLOR PIPE
PILING

Your direct call to Naylor's Chicago plant will give you personalized service including:

- ❒ Competitive Pricing
- ❒ 100% domestic steel
- ❒ Exact lengths
- ❒ Attached or loose end plates
- ❒ Conical points, chill & splice rings as required
- ❒ In-plant inspection
- ❒ Certification with the shipment
- ❒ Prompt availability and on time delivery of test and production pile

NAYLOR STANDARD PILING SIZES
(Weights per foot in pounds)

OUTSIDE DIAMETER	WALL THICKNESS									
Inches / mm	0.179 / 4.55	0.188 / 4.78	0.203 / 5.66	0.209 / 5.31	0.219 / 5.56	0.230 / 5.84	0.250 / 6.35	0.281 / 7.14	0.312 / 7.92	0.375 / 9.53
10" 254mm	18.8	19.7	21.2	21.9	22.9	24.0	26.0	N/A	N/A	N/A
10¾" 273mm	20.2	21.2	22.9	23.5	24.6	25.8	28.0	N/A	N/A	N/A
12" 305mm	22.6	23.7	25.6	26.3	27.6	28.9	31.4	35.2	38.9	N/A
12¾" 324mm	24.0	25.2	27.2	28.0	29.3	30.8	33.4	37.4	41.4	49.6
14" 356mm	26.4	27.7	29.9	30.8	32.2	33.8	36.7	41.2	45.6	54.6
16" 406mm	30.2	31.7	34.2	35.2	36.9	38.7	42.1	47.2	52.3	62.6
18" 457mm	34.1	35.8	38.6	39.7	41.6	43.7	47.4	53.2	58.9	70.6
20" 508mm	37.9	39.8	42.9	44.2	46.3	48.6	52.7	59.2	65.6	78.6

Other sizes and wall thicknesses are available upon request.





NAYLOR PIPE
...SINCE 1925

**While other pipe manufacturers have come and gone,
Naylor continues to grow and prosper, concentrating on what it does best...
the manufacture of spiralweld pipe.**





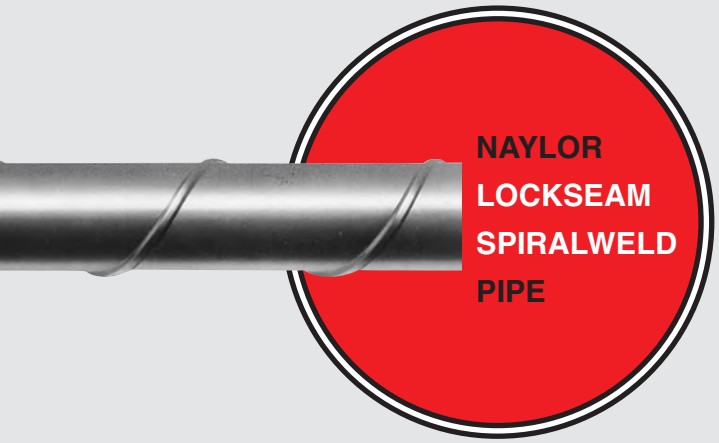












Naylor Lockseam Spiralweld steel pipe is manufactured in strict accordance with ASTM A-211. The standards set forth in this specification are closely adhered to in every phase of production. Quality control is maintained by careful inspection throughout. This is your assurance that Naylor pipe equals or exceeds the ASTM specification in every respect.

EXCLUSIVE STRUCTURE

Naylor Lockseam Spiralweld Pipe is formed from strip which is lockseamed over an internal mandrel. This process creates an accurate tubular structure before it is welded. Thus, the lockseam carries the load and relieves the weld of stresses encountered when the pipe is in service. After the lockseaming operation, the pipe is welded by completely automatic methods which insure a weld that is as strong as the parent metal. Every length of Naylor Lockseam Spiralweld Pipe is inspected and tested to the hydrostatic mill test pressures shown in the tables on the opposite page.

STRENGTH

Naylor Lockseam Spiralweld Pipe provides greater overall strength than other steel pipe of the same wall thickness--under crushing loads, compression, collapse, and beam load at supports. This greater strength--combined with the ability of the lockseam spiralweld to absorb shock loads, stresses and strains--makes it possible for Naylor Lockseam Spiralweld Pipe to handle jobs normally requiring heavier wall pipe.

SAFETY

Naylor Lockseam Spiralweld Pipe incorporates a safety factor found in no other pipe. When strains are put on the line, the "heel" of the lockseam moves minutely, shortening or lengthening the pipe. Because the "heel" is in spiral form, it acts as a continuous expansion joint throughout the line. It absorbs shock loads and vibration, often destructive to a weld on a rigid structure. It cushions expansion and contraction under varying changes of pressure, temperature and ground stress. It protects both pipe and coupling medium. This factor of "give" is of major importance in pipe line construction because it assures closer conformity to topographical conditions without any sacrifice of strength.

ACCURATE DIAMETER

Naylor Lockseam Spiralweld Pipe is formed under tension on a lathe-turned mandrel, which assures a perfectly-round pipe of accurate diameter. The lockseam structure provides reinforced strength to preserve the original true cylindrical form in transportation, installation and service. With ends that always match correctly and this adherence to accurate diameter, Naylor Lockseam Spiralweld Pipe reduces the time required to make connections, whether mechanically coupled or welded.

UNIFORM WALL THICKNESS

Naylor pipe is manufactured from strip or sheet steel which assures uniform wall thickness. Thickness tolerances are governed by the standards established by the American Iron and Steel Institute.

EXACT LENGTHS

Naylor Lockseam Spiralweld Pipe can be furnished in any desired cut length up to and including 40'0". While standard lengths are 20'0", 30'0" or 40'0", the piping can be cut to any required length, to tolerance of plus-or-minus 1/8".

STANDARD WEIGHT ENDS

Naylor pioneered the development of lightweight pipe combined with standard weight ends. Thus, the advantage of light weight pipe is realized and combined with standard fittings and equipment common to industry.

ECONOMY

Naylor Lockseam Spiralweld Pipe saves time, material and money for users. Its structure permits use on jobs normally requiring heavier-wall pipe. The relatively light weight reduces transportation, handling and installation costs as well as the initial investment. High salvage and re-use value are assured by the accurate diameter and true cylindrical form which results from the lockseam spiralweld structure.

STANDARD SPECIFICATIONS
NAYLOR LOCKSEAM SPIRALWELD PIPE

Inside Diameter Inches	Wall Thickness Decimal Inches	Weight of Pipe lbs./Ft.	Overall Diameter Lockseam	Recommended Max. Span Pipe Filled with Water—Feet ③	Mill Test Pressure P.S.I. Grade A S=20,000 # ①	Working Pressure P.S.I. S=12,500#	Approx. Bursting Pressure P.S.I. S=50,000#	External Collapse Pressure P.S.I. ②
4	.074	3.96	4.5976	16.6	740	467	1866	550.0
5	.074	4.74	5.5976	18.4	592	373	1492	375.0
6	.074 .104 .134	5.57 7.94 10.42	6.5976 6.8368 7.0760	20.0 21.6 22.8	493 693 893	311 435 562	1244 1740 2248	248.0 479.0 777.0
8	.074 .104 .134	7.22 10.23 13.20	8.5976 8.8368 9.0760	22.6 24.6 26.1	370 520 670	234 326 422	934 1304 1688	142.6 273.7 445.4
10	.074 .104 .134 .164	9.00 12.74 16.45 20.40	10.5976 10.8368 11.0760 11.3152	24.8 27.0 28.8 30.1	296 416 536 656	187 261 337 412	746 1042 1348 1646	91.9 176.8 287.3 428.4
12	.074 .104 .134 .164	10.72 14.85 19.10 23.90	12.5976 12.8368 13.0760 13.3152	26.6 29.2 31.2 32.8	247 347 447 547	156 217 282 343	622 868 1126 1372	71.6 124.4 200.6 299.2
13¼	.074 .104 .134 .164	11.82 16.39 21.08 26.35	13.8476 14.0868 14.3260 14.5652	25.6 30.4 32.5 34.2	223 314 405 495	141 197 255 311	564 788 1018 1242	56.8 102.5 167.9 248.2
14	.074 .104 .134 .164	12.50 17.31 22.25 27.82	14.5976 14.8368 15.0760 15.3152	24.6 31.1 33.3 35.0	211 297 383 469	134 186 241 294	534 744 964 1176	49.8 91.9 150.7 219.3
15¼	.074 .104 .134 .164	13.74 19.03 24.21 30.28	15.8476 16.0868 16.3260 16.5652	22.6 32.2 34.4 36.2	194 273 351 430	123 171 222 270	490 684 886 1080	40.9 77.5 127.3 187.0
16	.074 .104 .134 .164	14.42 19.96 25.41 31.75	16.5976 16.8368 17.0760 17.3152	21.3 32.5 35.2 37.0	185 260 335 410	117 163 211 258	466 652 844 1030	36.4 70.7 115.9 170.0
17¼	.074 .104 .134 .164	15.68 21.51 27.37 34.19	17.8476 18.0868 18.3260 18.5652	18.9 30.6 36.2 38.2	172 241 311 380	108 151 196 239	432 604 782 954	30.5 60.8 99.9 148.5
18	.074 .104 .134 .164	16.35 22.43 28.55 35.66	18.5976 18.8368 19.0760 19.3152	18.3 29.5 36.9 38.9	164 231 298 364	105 145 188 229	420 580 750 914	27.6 55.9 91.9 136.3
19¼	.074 .104 .134 .164	17.50 23.98 30.52 38.12	19.8476 20.0868 20.3260 20.5652	16.8 27.9 37.1 40.0	154 216 278 341	97 136 175 214	388 542 700 856	23.6 48.9 80.5 119.5
20	.074 .104 .134 .164	18.17 24.91 31.69 39.60	20.5976 20.8368 21.0760 21.3152	15.7 26.5 35.9 40.5	148 208 268 328	94 131 169 206	374 522 676 822	21.5 45.3 74.6 110.8
21¼	.074 .104 .134 .164	19.30 26.46 33.66 42.06	21.8476 22.0868 22.3260 22.5652	14.2 24.7 34.2 41.5	139 196 252 309	88 123 159 194	352 492 636 774	18.7 40.2 66.2 98.4
23⅛	.074 .104 .134 .164	21.01 28.78 36.61 45.74	23.7226 23.9618 24.2010 24.4402	12.4 22.1 31.6 39.7	128 179 231 283	81 113 146 178	324 452 584 712	15.3 33.8 55.9 83.3
24	.074 .104 .134 .164	21.80 29.87 37.99 47.44	24.5976 24.8368 25.0760 25.3152	11.5 21.0 30.3 38.6	123 173 223 273	78 109 141 172	312 434 562 686	14.0 31.0 52.0 77.3
26	.074 .104 .134 .164	23.59 32.34 41.14 51.37	26.5976 26.8368 27.0760 27.3152	9.9 18.6 27.4 36.1	114 160 206 252	72 101 130 159	288 402 518 634	11.5 25.7 44.5 66.1
28	.074 .104 .134 .164	25.42 34.81 44.28 55.30	28.5976 28.8368 29.0760 29.3152	8.6 16.5 25.2 33.4	106 149 191 234	67 94 121 147	268 374 481 588	9.7 21.6 38.2 57.1
30	.074 .104 .134 .164	27.23 37.29 47.23 59.23	30.5976 30.8368 31.0760 31.3152	7.5 14.6 22.8 30.9	99 138 179 218	62 87 113 138	248 348 450 550	8.2 18.3 33.1 49.8

① In accord with ASTM 211 using A570 Grade "A" Steel.
② Collapse pressures shown are for 6 pipe diameter lengths. Collapse pressure on longer lengths will be lower.
③ Assume pipe bearing on 120° saddle supports.

STEEL ANALYSES

Unless otherwise specified, Naylor Lockseam Spiralweld Pipe is furnished in basic carbon steel. For application where a high strength steel with superior abrasion and corrosion resistance is desirable, this pipe is available in stainless steel to meet specific requirements. The following are typical analyses of materials.

BASIC CARBON STEEL (ASTM A-570)

Carbon	.08-.25
Manganese	.30-.90
Phosphorus	.04 Max.
Sulphur	.04 Max.
Silicon	.10 Max.

STAINLESS STEEL

Type 304:

Carbon	.08 Max.
Manganese	2.00 Max.
Silicon	1.00 Max.
Chromium	18.00-20.00
Nickel	8.00-12.00

Type 316:

Carbon	.08 Max.
Manganese	2.00 Max.
Silicon	1.00 Max.
Chromium	16.00-18.00
Nickel	10.00-14.00
Molybdenum	2.00-3.00

Extra Low Carbon (ELC) grades and other analyses are also available.

NAYLOR
CONVENTIONAL WEDGELOCK COUPLINGS

Standard One-Piece, Positive Type Couplings for Speed, Simplicity and Economy of Connection on Spiral Buttweld and Lockseam Spiralweld Pipe

Built in one piece with gasket already in place, Naylor Wedgelock Couplings provide the fastest and easiest way to connect grooved end or shoulder end pipe.

They provide a simple yet positive connection that is anchored to the end of the pipe and will not allow the line to separate or pull apart. A hammer is the only tool required to connect or disconnect them. A joint can be made up with only one side of the pipeline in the open. Since the Wedgelock takes up little more space than the diameter of the pipe itself, the line can hug the wall in tunnels, mines, or wherever space is limited.

Wedgelock Couplings are designed to provide a small degree of deflection in each joint. This design allows for expansion and contraction, and replacement of joints can be made at any point without disturbing the balance of the line. The couplings also permit a number of lengths to be rotated, when desired, without disturbing the balance of the line.

Fig. 1SB

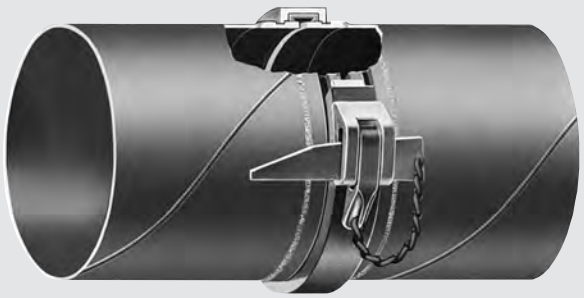


Fig. 1

HEAVY DUTY WEDGELOCK COUPLING

The Naylor Heavy Duty Wedgelock Coupling was designed for use with both Naylor Lockseam and Spiral Buttweld Piping Systems. This coupling, when used with exact Naylor sized ends, enables you to select the proper combination of diameter and wall thickness to fit your exact requirements.

Use of this coupling is well-suited on such applications as hydraulicking, water supply lines, dredging, sludge lines and air lines. Figure 1 shows the standard accurately-sized Naylor grooved ends buttwelded to the pipe.

Figure 1SB shows the slip-over type end which is preferred for use in abrasive service where the pipe is subject to excessive wear. The slip-over end can be a standard grooved end or the less expensive band type end as illustrated.

Fig. 2A

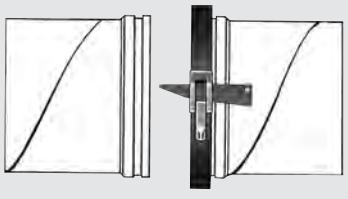
Fig. 2

LOW PRESSURE WEDGELOCK COUPLING

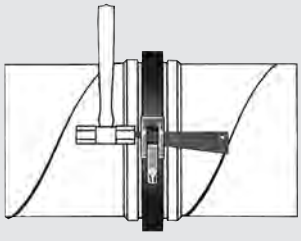
Naylor offers the Low-pressure Wedgelock Coupling to meet the need for a fast, positive type coupling method in ventilating lines and similar low-pressure service on either lockseam spiralweld or spiral buttweld pipe. Figure 2 shows the 3/8" Square Shoulder End which is the conventional end preparation for the Low-pressure Wedgelock Coupling. Figure 2A shows the alternate grooved end.

FOUR SIMPLE STEPS SPEED CONNECTIONS WITH STANDARD WEDGELOCK COUPLINGS

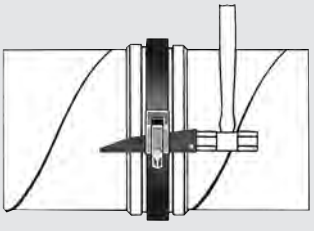
1 To open one-piece coupling, drive wedge into two parallel lugs.



2 Slip coupling over pipe and put next section of pipe in place.



3 Drive out opening wedge so coupling snaps into place on grooved ends of pipe.



4 Drive wedge home into the three lugs on coupling. Nothing so simple...nothing so fast.

NAYLOR
HINGED WEDGELOCK COUPLINGS

Fig. 1H

HINGED HEAVY-DUTY WEDGELOCK COUPLING

The Naylor Heavy-Duty Hinged Wedgelock Coupling shown in Figure 1H is a variation of the Naylor standard one-piece heavy-duty coupling and offers additional advantages for both permanent and temporary lines. While retaining the simplicity and speed of the standard Wedgelock, the hinged coupling introduces greater flexibility to broaden the use of this versatile connection. The continuous ring gasket provides the seal to withstand the stresses and strains of expansion and contraction in prolonged service. The hinged design and ease of operation offer users the opportunity to replace uniform pipe lengths and/or rotate a number of lengths without disturbing the balance of the line.

Fig. 2H

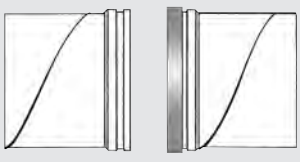
HINGED INTERMEDIATE PRESSURE WEDGELOCK VENTILATING COUPLING

For use with Naylor Spiral Buttweld ventilating lines, this variation of the Naylor Hinged Wedgelock Coupling meets the requirements for an inexpensive yet air-tight connector. This quick-connecting and versatile coupling is available in sizes to 72". The multiple hinge design with a one-piece ring gasket provides the leak-tight positive connection.

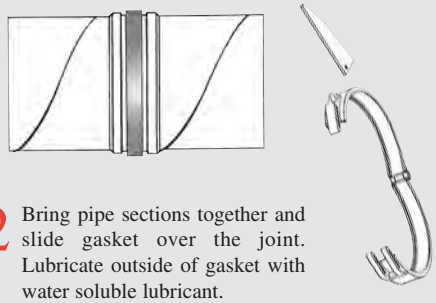
HINGED HIGH PRESSURE WEDGELOCK COUPLING

The Naylor Extra-Heavy-Duty Hinged Wedgelock Coupling is similar to Figure 1H and is designed to accommodate higher pressure applications and provide an efficient coupling for larger diameter lines. Accurately sized ends and gaskets, combined with a heavier cross section coupling channel extend the size and pressure range of this effective, economical connector.

EASY-TO-INSTALL HINGED WEDGELOCK COUPLINGS

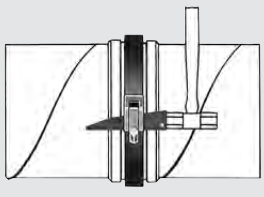


1 Lubricate pipe ends with water soluble lubricant and slide gasket over one pipe end.



2 Bring pipe sections together and slide gasket over the joint. Lubricate outside of gasket with water soluble lubricant.

3 Fit housing over gasket and close coupling into grooved ends of pipe.



4 Insert wedge into the three lugs on coupling and drive it home with a hammer.

NAYLOR PIPE
ADDITIONAL CONNECTIONS

PLAIN END FOR LOWER COST CONSTRUCTION

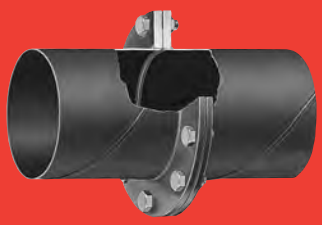
Naylor Spiral Buttweld and Lockseam Spiralweld Pipe can be furnished with plain, square-cut ends for field butt welding. The Naylor structure provides accurate diameter, preserves true cylindrical form, with ends that always match correctly, makes possible the welding of plain-end pipe.

PLAIN END WITH BACK-UP RING

To facilitate field welding of plain-end pipe, a back-up ring can be supplied.

NAYLOR STEEL FLANGED JOINTS

Naylor steel flanges are designed to slip over the ends of spiral buttweld or lockseam spiralweld pipe for welding. They can be furnished drilled to American Standard (125 lb.), to the Spiral Pipe Standard (SPS), or drilled to meet special requirements.

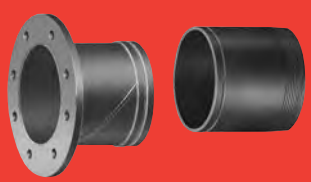


MECHANICAL COUPLINGS FOR GROOVED END PIPE

Standard weight grooved ends are furnished to permit use of this type of coupling on both spiral buttweld and lockseam spiralweld pipe. Simple and easily connected, this joint provides some flexibility and allowance for expansion and contraction. It will not allow the line to blow apart as the coupling is anchored in the groove.

MECHANICAL COUPLINGS FOR PLAIN END PIPE

The outside weld bead on the pipe is ground smooth for a suitable distance to enable the coupling to properly seat on the plain end pipe. This coupling will take up considerable expansion and contraction, and permit some flexibility at each joint. On exposed lines subject to temperature variations, it is often necessary to provide harnesses to prevent the coupling from working itself off the line.



SHORT NIPPLES OR ADAPTORS

Naylor short nipples or adaptors for spiral buttweld or lockseam spiralweld pipe are standardized at one foot in length, but can be furnished longer or shorter. Practically any combination can be made, permitting coupling of any type to be changed to another. Illustrations show flange-to-groove and groove-to-thread. Other units are available to transpose to any connection in this section, or special connections where required.

DREDGING SHORE PIPE JOINT

A standard connection for dredging shore pipe using taper band and lug type construction. The Naylor taper is accurately shrunk to size either from cylindrical stock or directly on plain end pipe. This thickens the small end of the taper where most wear occurs. On the female end, the reinforcing band is set back slightly from the end to allow a slight flaring action which improves the seal. Lugs are ample in weight and size with plenty of hand room. This connection can be used with either spiral buttweld or lockseam spiralweld pipe.

PONTOON PIPE JOINT FOR RUBBER SLEEVE CONNECTION

Conventional half-oval band type pontoon pipe joint. These half-ovals are accurately sized and fit close to the wall of the pipe. The outside weld bead on the spiral buttweld pipe is ground smooth a sufficient distance to allow the rubber sleeve to fit snug against the pipe wall. Upper illustration shows an alternate type construction using slip-over grooved ends for retaining the rubber sleeves. This permits the use of Naylor Heavy-Duty Wedgelock couplings in the line where rubber sleeves are not required at every joint for flexibility. Cost is reduced because the Wedgelock is less expensive and operating efficiency is improved by reducing the friction loss.

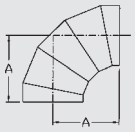
STANDARD NAYLOR FITTINGS

Standard Naylor fittings are available in carbon steel, alloys and stainless steel in wall thicknesses to exactly match Naylor pipe sizes. Extra heavy, special radius or combination of fabricated fittings are available.

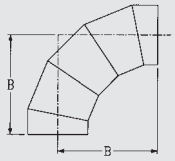
The plain ends can be prepared to accommodate all standard type end connections to include: (1) slip-on welding flanges; (2) welding rings, collars, slip joints or heavy beveled ends; *(3) standard weight ends grooved for Naylor Wedgelock couplings or other positive type couplings; *(4) standard weight ends smooth for mechanical couplings.

The tables show dimensional specifications for standard Naylor fittings used with pipe having plain or flanged ends.

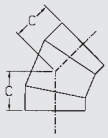
**Note: If heavy reinforced grooved ends are attached, add the length of the end to the standard dimension shown.*



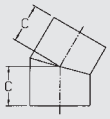
61°-90° ELL (Standard Radius) Figure 1



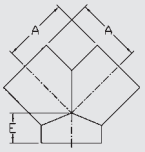
61°-90° ELL (Long Radius) Figure 2



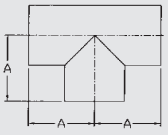
31°-60° ELL Figure 3



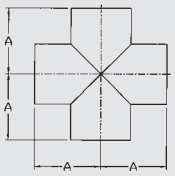
0°-30° ELL Figure 4



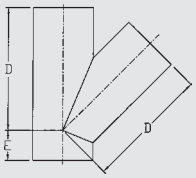
TRUE WYE Figure 5



TEE Figure 6



CROSS Figure 7



LATERAL Figure 8

REDUCER Figure 9

NAYLOR STANDARD DIMENSIONS

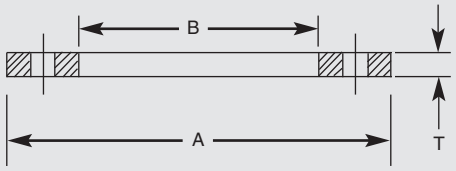
Size in Inches	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	48	54	60	66	72
"A"	5½	6½	7½	8	9	11	12	14	15	16½	18	20	22	23	24	25	26	27	28	29	30	31	34	39	44	48	53
"B"	7¾	9	10¼	11½	14	16½	19	21½	24	26½	29	31½	34	36½	39	41½	44	46½	49	51½	54	56½	64	71½	79	86½	94
"C"	3	4	4½	5	5½	6½	7½	7½	8	8½	9½	10	11	13	14	15	16	17	18	19	20	21	24	27	30	33	36
"D"	10	12	13½	14½	17½	20½	24½	27	30	32	35	37½	40½	44	46½	49	52	56	60	63	66	69	75	80	88	95	104
"E"	3	3	3½	3½	4½	5	5½	6	6½	7	8	8½	9	9	9½	10	14	19	24	24¾	25½	26	26	26	26	28	28
"L"	6	7	8	9	11	12	14	16	18	19	20	22	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24

WELDING FITTING STANDARD DIMENSIONS

Size in Inches	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	48	54	60	66	72
"A"	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	48	54	60	66	72
"B"	4½	6	7½	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	72	81	90	99	108
"C"	2	2½	3	3¾	5	6¼	7½	8¾	10	11¼	12½	13½	15	16	17¼	18½	20	21	22¼	23½	25	26	30	33½	37	41	45
"D"	10	12	13½	14½	17½	20½	24½	27	30	32	35	37½	40½	44	46½	49	52	56	60	63	66	69	75	80	88	95	104
"E"	3	3	3½	3½	4½	5	5½	6	6½	7	8	8½	9	9	9½	10	14	19	24	24¾	25½	26	26	26	26	28	28
"L"	6	7	8	9	11	12	14	16	18	19	20	22	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24

Note: For sizes not listed, contact Naylor Pipe Company.

NAYLOR SLIP-ON WELDING FLANGES



Slip-on flanges for Naylor pipe are carried in stock as shown below. Special drillings or bores are available on request. Flanges can be attached to pipe by Naylor or furnished loose for field installation. When attached by Naylor, the flanges are completely welded, front and back. The bolt holes will straddle normal center lines unless otherwise specified.

ASME PLATE STEEL—Drilled 125 Pound American Standard

Size in Inches	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	36	42	48	54	60	66	72
O.D. "A"	7½	9	10	11	13½	16	19	21	23½	25	27½	29½	32	34¼	36½	38¾	46	53	59½	66¼	73	80	86½
I.D. "B"	BORE TO SUIT EXACT DIAMETER OF PIPE																						
Thickness "T"	½	½	9/16	9/16	9/16	11/16	11/16	¾	¾	¾	¾	1	1	1	1	1	1⅛	1¼	1⅜	1⅜	1½	1½	1½
No. Holes	4	8	8	8	8	12	12	12	16	16	20	20	20	24	28	28	32	36	44	44	52	52	60
Dia. Holes	¾	¾	⅞	⅞	⅞	1	1	1⅛	1⅛	1¼	1¼	1⅜	1⅜	1⅜	1⅜	1⅜	1⅝	1⅝	1⅝	1⅞	1⅞	1⅞	1⅞
Bolt Circle	6	7½	8½	9½	11¾	14¼	17	18¾	21¼	22¾	25	27¼	29½	31¾	34	36	42¾	49½	56	62¾	69¼	76	82½

Note: Forged, Spiral Pipe Standard (SPS), special drilling, angle and sizes not listed are available.

NAYLOR SPIRALWELD
PIPE APPLICATIONS

CONSTRUCTION
Temporary or permanent lines for high and low-pressure air; high and low-pressure water; ventilating lines; cement placing; hydraulic sluicing; de-watering and drainage; well-point headers; exhaust and intake; foundation piling; caissons and tank supports.

MINING AND QUARRYING
Water pipe; high and low-pressure air lines; ventilating pipe; tailings or slurry pipe lines; sand, gravel and other product lines.

DREDGING
Available in abrasion resistant steel. Shore pipe; pontoon pipe; intake and discharge pipe; sand and gravel conveying lines. All types of dredging connections.

MATERIALS HANDLING
Sand, gravel, product and material handling lines; wash water lines; slurry and tailings pipe; rubber-lined pipe; sludge lines; fly ash disposal pipe; pneumatic conveyors.

POLLUTION CONTROL
Filtration plant piping; waste water lines; air purification pipe; sludge disposal systems.

SEWAGE DISPOSAL
Force mains, sludge lines; disposal plant aeration piping; siphons; temporary sewer by-pass lines.

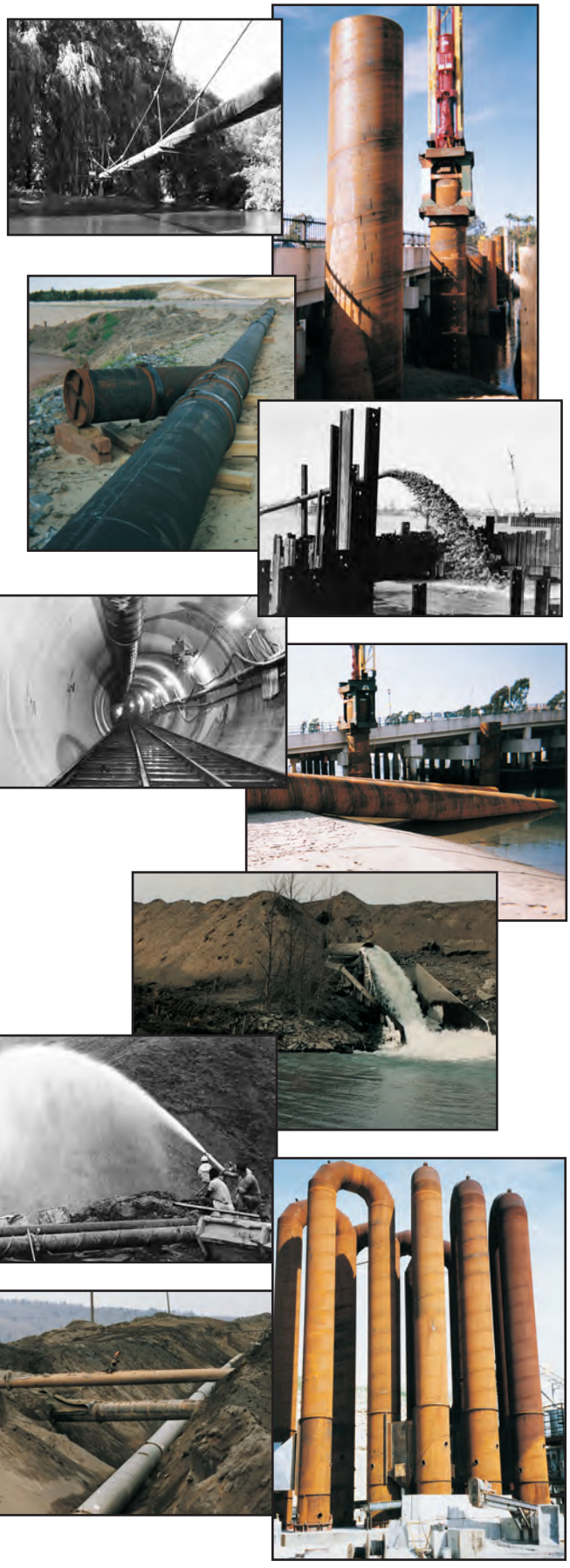
PAPER MILLS
Stock lines; pulp lines; vacuum lines; white water lines; hot and cold water lines; condensate lines; ventilating pipe; exhaust steam; compressed air lines; pneumatic conveying lines; bark, chips and trim disposal.

AGRICULTURE
Surface and underground main lines for irrigation; water-well casing; water supply and de-watering.

INDUSTRIAL PLANTS
High and low-pressure air; water supply; ventilating lines; gas piping and manifolds; diesel exhaust and in-take, low-pressure steam lines; cooling tower piping, drainage lines; spray pond piping; bridge crossings.

PRODUCT COMPONENTS
Pipe sections furnished as component parts of manufactured products; such as portable grain conveyors, tanks, containers, manifolds, and structural members.

FABRICATIONS
Standard fittings and all types of connections are available from stock for standard piping layouts. Precision fabrications to meet specifications for special or complex layouts are available.



NAYLOR PIPE
ORDERING GUIDE

NAYLOR SPIRAL BUTTWELD PIPE (ASTM A-139)

Sizes:
6” to 96” in diameter

Thicknesses:
10 gauge (.134) to 1/2” (.500)

Lengths:
Pipe cut to exact specified lengths or 20’0” industrial standard, 40’0”, 50’0”, 60’0” line pipe standard. Structural piping up to 100’0” long.

NAYLOR LOCKSEAM SPIRALWELD PIPE (ASTM A-211)

Sizes:
4” to 30” in diameter

Thicknesses:
14 gauge (.074) to 8 gauge (.164)

Lengths:
40’0” line pipe standard
20’0” industrial standard
Cut to exact specified lengths

Supplemental Information Required For Ordering Naylor Pipe

Service:
State operating conditions
Material being conveyed
Temperature range
Pressure -- positive or vacuum
Location -- If above ground, state whether suspended or supported. If below ground, give depth and type of fill.

Coatings:
Standard black mill coating
  Outside only or inside and out
Red Iron Oxide
  Outside only or inside and out
Galvanized
Epoxy type coatings
Fusion Bond Epoxy
Other Coatings Available

Fabrications:
All types of pipe and fitting fabrications, regardless of complexity, built to meet exact design specifications.

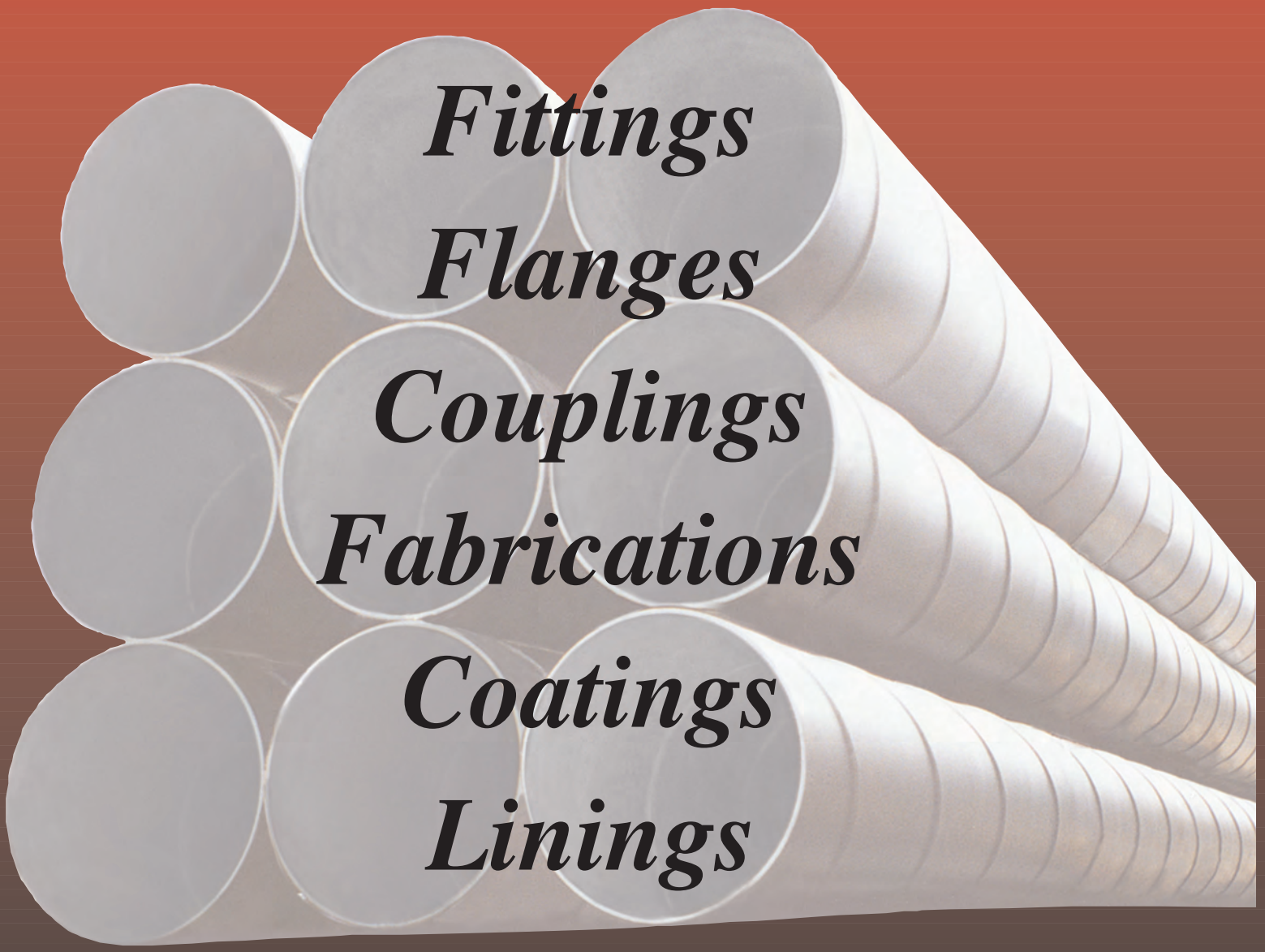
Linings:
Rubber
Plastic
Synthetic Resin
Epoxy
Cement
Basalt
Ceramic
Polyurethane

Fittings:
A complete line of welded steel fittings, standard or special.
See page 13.

Flanges:
ASME Plate Steel
SPS Plate Steel
Special Plates
Forgings
See page 13.

Connections:
All types of connections available including one-piece positive type Naylor Wedgelock coupling.
See pages 10, 11 and 12.

The Complete Line Manufacturer of Spiral Buttweld and Lockseam Spiralweld Pipe Systems



Fittings
Flanges
Couplings
Fabrications
Coatings
Linings

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