Bulletin on Performance Properties of Casing, Tubing, and Drill Pipe

API BULLETIN 5C2
TWENTY-FIRST EDITION, OCTOBER 1999

American Petroleum Institute

Helping You Get The Job Done Right.SM

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Upstream Segment

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FOREWORD

This bulletin is under the jurisdiction of the Subcommittee on Standardization of Tubular Goods.

This bulletin is not intended as a design manual. Its purpose is to provide minimum performance properties on which the design of casing, tubing, and drill pipe strings may be based.

The performance properties as given herein cover the grades, sizes, and weights of casing, tubing, and drill pipe as given in API Specification 5CT.

Formulas and procedures for calculating the values are given in Bulletin 5C3. Formulas and calculations appearing in the 13th and preceding editions of Bull 5C2 were transferred in 1971 to Bull 5C3: *Bulletin on Formulas and Calculations for Casing, Tubing, Drill Pipe, and Line Pipe Properties*.

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Bulletin on Performance Properties of Casing, Tubing, and Drill Pipe

Table 1—Minimum Performance Properties of Casing

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
4.500	9.50	H-40	.205	4.090	3.965	5.000	—	—	—	—	2,760	111
4.500	9.50	J-55	.205	4.090	3.965	5.000	—	—	—	—	3,310	152
4.500	10.50	J-55	.224	4.052	3.927	5.000	4.875	—	—	—	4,010	166
4.500	11.60	J-55	.250	4.000	3.875	5.000	4.875	—	—	—	4,960	184
4.500	9.50	K-55	.205	4.090	3.965	5.000	—	—	—	—	3,310	152
4.500	10.50	K-55	.224	4.052	3.927	5.000	4.875	—	—	—	4,010	166
4.500	11.60	K-55	.250	4.000	3.875	5.000	4.875	—	—	—	4,960	184
4.500	9.50	M-65	.205	4.090	3.965	5.000	—	—	—	—	3,600	180
4.500	10.50	M-65	.224	4.052	3.927	5.000	—	—	—	—	4,430	196
4.500	11.60	M-65	.250	4.000	3.875	5.000	4.875	—	—	—	5,560	217
4.500	13.50	M-65	.290	3.920	3.795	5.000	4.875	—	—	—	7,310	249
4.500	11.60	L-80	.250	4.000	3.875	5.000	4.875	—	—	—	6,350	267
4.500	13.50	L-80	.290	3.920	3.795	5.000	4.875	—	—	—	8,540	307
4.500	11.60	N-80	.250	4.000	3.875	5.000	4.875	—	—	—	6,350	267
4.500	13.50	N-80	.290	3.920	3.795	5.000	4.875	—	—	—	8,540	307
4.500	11.60	C-90	.250	4.000	3.875	5.000	4.875	—	—	—	6,820	300
4.500	13.50	C-90	.290	3.920	3.795	5.000	4.875	—	—	—	9,300	345
4.500	11.60	C-95	.250	4.000	3.875	5.000	4.875	—	—	—	7,030	317
4.500	13.50	C-95	.290	3.920	3.795	5.000	4.875	—	—	—	9,660	364
4.500	11.60	T-95	.250	4.000	3.875	5.000	4.875	—	—	—	7,030	317
4.500	13.50	T-95	.290	3.920	3.795	5.000	4.875	—	—	—	9,660	364
4.500	11.60	P-110	.250	4.000	3.875	5.000	4.875	—	—	—	7,580	367
4.500	13.50	P-110	.290	3.920	3.795	5.000	4.875	—	—	—	10,690	422
4.500	15.10	P-110	.337	3.826	3.701	5.000	4.875	—	—	—	14,340	485
4.500	15.10	Q-125	.337	3.826	3.701	5.000	—	—	—	—	15,830	551
5.000	11.50	J-55	.220	4.560	4.435	5.563	—	—	—	—	3,060	182
5.000	13.00	J-55	.253	4.494	4.369	5.563	5.375	—	—	—	4,140	208
5.000	15.00	J-55	.296	4.408	4.283	5.563	5.375	4.151	5.360	—	5,560	241
5.000	11.50	K-55	.220	4.560	4.435	5.563	—	—	—	—	3,060	182
5.000	13.00	K-55	.253	4.494	4.369	5.563	5.375	—	—	—	4,140	208
5.000	15.00	K-55	.296	4.408	4.283	5.563	5.375	4.151	5.360	—	5,560	241
5.000	11.50	M-65	.220	4.560	4.435	5.563	—	—	—	—	3,290	215
5.000	13.00	M-65	.253	4.494	4.369	5.563	5.375	—	—	—	4,590	245
5.000	15.00	M-65	.296	4.408	4.283	5.563	5.375	—	—	—	6,280	284
5.000	18.00	M-65	.362	4.276	4.151	5.563	5.375	—	—	—	8,730	343
5.000	21.40	M-65	.437	4.126	4.001	5.563	5.375	—	—	—	10,370	407

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
3,190	3,190	—	—	—	—	—	—	77	—	—	—	—	—	—	—
4,380	4,380	—	—	—	—	—	—	101	—	—	—	—	—	—	—
4,790	4,790	—	4,790	4,790	4,790	4,790	—	132	—	203	203	203	203	—	—
5,350	5,350	5,350	5,350	5,350	5,350	5,350	—	154	162	225	225	225	225	—	—
4,380	4,380	—	—	—	—	—	—	112	—	—	—	—	—	—	—
4,790	4,790	—	4,790	4,790	4,790	4,790	—	146	—	249	249	249	249	—	—
5,350	5,350	5,350	5,350	5,350	5,350	5,350	—	170	180	277	277	277	277	—	—
5,180	5,180	—	—	—	—	—	—	118	—	—	—	—	—	—	—
5,660	5,660	—	5,660	—	5,660	—	—	154	—	231	—	231	—	—	—
6,320	—	6,320	6,320	—	6,320	—	—	—	188	256	—	256	—	—	—
7,330	—	7,330	7,330	—	7,330	—	—	—	228	295	—	295	—	—	—
7,780	—	7,780	7,780	—	7,780	—	—	—	211	291	—	291	—	—	—
9,020	—	9,020	9,020	—	7,990	—	—	—	256	334	—	319	—	—	—
7,780	—	7,780	7,780	7,780	7,780	7,780	—	—	222	304	304	304	304	—	—
9,020	—	9,020	9,020	9,020	7,990	9,020	—	—	270	349	349	336	349	—	—
8,750	—	8,750	8,750	—	8,750	—	—	—	222	309	—	309	—	—	—
10,150	—	10,150	10,150	—	8,990	—	—	—	270	355	—	336	—	—	—
9,240	—	9,240	9,240	—	9,240	—	—	—	234	325	—	325	—	—	—
10,710	—	10,710	10,710	—	9,490	—	—	—	283	373	—	353	—	—	—
9,240	—	9,240	9,240	—	9,240	—	—	—	234	325	—	325	—	—	—
10,710	—	10,710	10,710	—	9,490	—	—	—	283	373	—	353	—	—	—
10,690	—	10,690	10,690	10,690	10,690	10,690	—	—	278	385	385	385	385	—	—
12,410	—	12,410	12,410	12,410	10,990	12,410	—	—	337	443	443	420	443	—	—
14,420	—	14,420	13,460	14,420	10,990	12,490	—	—	405	509	509	420	454	—	—
16,380	—	16,380	15,300	—	—	—	—	—	438	554	—	—	—	—	—
4,240	4,240	—	—	—	—	—	—	133	—	—	—	—	—	—	—
4,870	4,870	4,870	4,870	4,870	4,870	4,870	—	169	182	252	252	252	252	—	—
5,700	5,700	5,700	5,700	5,700	5,130	5,700	5,700	207	223	293	293	287	293	328	—
4,240	4,240	—	—	—	—	—	—	147	—	—	—	—	—	—	—
4,870	4,870	4,870	4,870	4,870	4,870	4,870	—	186	201	309	309	309	309	—	—
5,700	5,700	5,700	5,700	5,700	5,130	5,700	5,700	228	246	359	359	359	359	416	—
5,010	5,010	—	—	—	—	—	—	155	—	—	—	—	—	—	—
5,760	5,760	5,760	5,760	—	5,760	—	—	196	212	288	—	288	—	—	—
6,730	—	6,730	6,730	—	6,730	—	—	—	259	334	—	334	—	—	—
8,240	—	8,240	8,240	—	7,460	—	—	—	331	402	—	363	—	—	—
9,940	—	9,940	9,910	—	7,460	—	—	—	409	478	—	363	—	—	—

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
5.000	15.00	L-80	.296	4.408	4.283	5.563	5.375	4.151	5.360	—	7,250	350
5.000	18.00	L-80	.362	4.276	4.151	5.563	5.375	4.151	5.360	—	10,490	422
5.000	21.40	L-80	.437	4.126	4.001	5.563	5.375	—	—	—	12,760	501
5.000	23.20	L-80	.478	4.044	3.919	5.563	5.375	—	—	—	13,830	543
5.000	24.10	L-80	.500	4.000	3.875	5.563	5.375	—	—	—	14,400	565
5.000	15.00	N-80	.296	4.408	4.283	5.563	5.375	4.151	5.360	—	7,250	350
5.000	18.00	N-80	.362	4.276	4.151	5.563	5.375	4.151	5.360	—	10,490	422
5.000	21.40	N-80	.437	4.126	4.001	5.563	5.375	—	—	—	12,760	501
5.000	23.20	N-80	.478	4.044	3.919	5.563	5.375	—	—	—	13,830	543
5.000	24.10	N-80	.500	4.000	3.875	5.563	5.375	—	—	—	14,400	565
5.000	15.00	C-90	.296	4.408	4.283	5.563	5.375	4.151	5.360	—	7,830	394
5.000	18.00	C-90	.362	4.276	4.151	5.563	5.375	4.151	5.360	—	11,520	475
5.000	21.40	C-90	.437	4.126	4.001	5.563	5.375	—	—	—	14,360	564
5.000	23.20	C-90	.478	4.044	3.919	5.563	5.375	—	—	—	15,560	611
5.000	24.10	C-90	.500	4.000	3.875	5.563	5.375	—	—	—	16,200	636
5.000	15.00	C-95	.296	4.408	4.283	5.563	5.375	4.151	5.360	—	8,110	416
5.000	18.00	C-95	.362	4.276	4.151	5.563	5.375	4.151	5.360	—	12,030	501
5.000	21.40	C-95	.437	4.126	4.001	5.563	5.375	—	—	—	15,150	595
5.000	23.20	C-95	.478	4.044	3.919	5.563	5.375	—	—	—	16,430	645
5.000	24.10	C-95	.500	4.000	3.875	5.563	5.375	—	—	—	17,100	672
5.000	15.00	T-95	.296	4.408	4.283	5.563	5.375	4.151	5.360	—	8,110	416
5.000	18.00	T-95	.362	4.276	4.151	5.563	5.375	4.151	5.360	—	12,030	501
5.000	21.40	T-95	.437	4.126	4.001	5.563	5.375	—	—	—	15,150	595
5.000	23.20	T-95	.478	4.044	3.919	5.563	5.375	—	—	—	16,430	645
5.000	24.10	T-95	.500	4.000	3.875	5.563	5.375	—	—	—	17,100	672
5.000	15.00	P-110	.296	4.408	4.283	5.563	5.375	4.151	5.360	—	8,850	481
5.000	18.00	P-110	.362	4.276	4.151	5.563	5.375	4.151	5.360	—	13,470	580
5.000	21.40	P-110	.437	4.126	4.001	5.563	5.375	—	—	—	17,550	689
5.000	23.20	P-110	.478	4.044	3.919	5.563	5.375	—	—	—	19,020	747
5.000	24.10	P-110	.500	4.000	3.875	5.563	5.375	—	—	—	19,800	778
5.000	18.00	Q-125	.362	4.276	4.151	5.563	—	4.151	5.360	—	14,820	659
5.000	21.40	Q-125	.437	4.126	4.001	5.563	—	—	—	—	19,940	783
5.000	23.20	Q-125	.478	4.044	3.919	5.563	—	—	—	—	21,620	849
5.000	24.10	Q-125	.500	4.000	3.875	5.563	—	—	—	—	22,500	884
5.500	14.00	H-40	.244	5.012	4.887	6.050	—	—	—	—	2,620	161
5.500	14.00	J-55	.244	5.012	4.887	6.050	—	—	—	—	3,120	222
5.500	15.50	J-55	.275	4.950	4.825	6.050	5.875	4.653	5.860	5.780	4,040	248
5.500	17.00	J-55	.304	4.892	4.767	6.050	5.875	4.653	5.860	5.780	4,910	273
5.500	14.00	K-55	.244	5.012	4.887	6.050	—	—	—	—	3,120	222
5.500	15.50	K-55	.275	4.950	4.825	6.050	5.875	4.653	5.860	5.780	4,040	248
5.500	17.00	K-55	.304	4.892	4.767	6.050	5.875	4.653	5.860	5.780	4,910	273

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
8,290	—	8,290	8,290	—	7,460	—	—	—	295	379	—	363	—	416	—
10,140	—	10,140	9,910	—	7,460	—	—	—	376	457	—	363	—	446	—
12,240	—	10,810	9,910	—	7,460	—	—	—	465	509	—	363	—	—	—
13,380	—	10,810	9,910	—	7,460	—	—	—	513	509	—	363	—	—	—
14,000	—	10,810	9,910	—	7,460	—	—	—	538	509	—	363	—	—	—
8,290	—	8,290	8,290	8,290	7,460	8,290	8,290	—	310	396	396	383	396	437	—
10,140	—	10,140	9,910	10,140	7,460	10,140	10,140	—	396	477	477	383	477	469	—
12,240	—	10,810	9,910	12,240	7,460	10,250	—	—	490	536	566	383	478	—	—
13,380	—	10,810	9,910	13,380	7,460	10,250	—	—	540	536	614	383	478	—	—
14,000	—	10,810	9,910	13,620	7,460	10,250	—	—	566	536	639	383	478	—	—
9,320	—	9,320	9,320	—	8,390	—	—	—	310	404	—	383	—	437	—
11,400	—	11,400	11,150	—	8,390	—	—	—	396	487	—	383	—	469	—
13,770	—	12,170	11,150	—	8,390	—	—	—	490	536	—	383	—	—	—
15,060	—	12,170	11,150	—	8,390	—	—	—	540	536	—	383	—	—	—
15,750	—	12,170	11,150	—	8,390	—	—	—	566	536	—	383	—	—	—
9,840	—	9,840	9,840	—	8,850	—	—	—	326	424	—	402	—	459	—
12,040	—	12,040	11,770	—	8,850	—	—	—	416	512	—	402	—	493	—
14,530	—	12,840	11,770	—	8,850	—	—	—	514	563	—	402	—	—	—
15,890	—	12,840	11,770	—	8,850	—	—	—	567	563	—	402	—	—	—
16,630	—	12,840	11,770	—	8,850	—	—	—	595	563	—	402	—	—	—
9,840	—	9,840	9,840	—	8,850	—	—	—	326	424	—	402	—	459	—
12,040	—	12,040	11,770	—	8,850	—	—	—	416	512	—	402	—	493	—
14,530	—	12,840	11,770	—	8,850	—	—	—	514	563	—	402	—	—	—
15,890	—	12,840	11,770	—	8,850	—	—	—	567	563	—	402	—	—	—
16,630	—	12,840	11,770	—	8,850	—	—	—	595	563	—	402	—	—	—
11,400	—	11,400	11,400	—	10,250	—	—	—	388	503	—	478	—	547	—
13,940	—	13,940	13,620	13,940	10,250	11,650	13,940	—	495	606	606	478	517	587	—
16,820	—	14,870	13,620	15,480	10,250	11,650	—	—	612	670	720	478	517	—	—
18,400	—	14,870	13,620	15,480	10,250	11,650	—	—	675	670	724	478	517	—	—
19,250	—	14,870	13,620	15,480	10,250	11,650	—	—	708	670	724	478	517	—	—
15,840	—	15,840	15,480	—	—	—	15,840	—	534	661	—	—	—	634	—
19,120	—	16,900	15,480	—	—	—	—	—	661	724	—	—	—	—	—
20,910	—	16,900	15,480	—	—	—	—	—	729	724	—	—	—	—	—
21,880	—	16,900	15,480	—	—	—	—	—	765	724	—	—	—	—	—
3,110	3,110	—	—	—	—	—	—	130	—	—	—	—	—	—	—
4,270	4,270	—	—	—	—	—	—	172	—	—	—	—	—	—	—
4,810	4,810	4,810	4,810	4,810	4,730	4,810	4,810	202	217	300	300	300	300	339	339
5,320	5,320	5,320	5,320	5,320	4,730	5,320	5,320	229	247	329	329	317	329	372	372
4,270	4,270	—	—	—	—	—	—	189	—	—	—	—	—	—	—
4,810	4,810	4,810	4,810	4,810	4,730	4,810	4,810	222	239	366	366	366	366	429	429
5,320	5,320	5,320	5,320	5,320	4,730	5,320	5,320	252	272	402	402	402	402	471	471

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
5.500	14.00	M-65	.244	5.012	4.887	6.050	—	—	—	—	3,360	262
5.500	15.50	M-65	.275	4.950	4.825	6.050	5.875	—	—	—	4,470	293
5.500	17.00	M-65	.304	4.892	4.767	6.050	5.875	—	—	—	5,500	323
5.500	20.00	M-65	.361	4.778	4.653	6.050	5.875	—	—	—	7,540	379
5.500	23.00	M-65	.415	4.670	4.545	6.050	5.875	—	—	—	9,070	431
5.500	17.00	L-80	.304	4.892	4.767	6.050	5.875	4.653	5.860	5.780	6,290	397
5.500	20.00	L-80	.361	4.778	4.653	6.050	5.875	4.653	5.860	5.780	8,830	466
5.500	23.00	L-80	.415	4.670	4.545	6.050	5.875	4.545	5.860	5.780	11,160	530
5.500	17.00	N-80	.304	4.892	4.767	6.050	5.875	4.653	5.860	5.780	6,290	397
5.500	20.00	N-80	.361	4.778	4.653	6.050	5.875	4.653	5.860	5.780	8,830	466
5.500	23.00	N-80	.415	4.670	4.545	6.050	5.875	4.545	5.860	5.780	11,160	530
5.500	17.00	C-90	.304	4.892	4.767	6.050	5.875	4.653	5.860	5.780	6,740	447
5.500	20.00	C-90	.361	4.778	4.653	6.050	5.875	4.653	5.860	5.780	9,630	525
5.500	23.00	C-90	.415	4.670	4.545	6.050	5.875	4.545	5.860	5.780	12,380	597
5.500	26.80	C-90	.500	4.500	4.375	—	—	—	—	—	14,880	707
5.500	29.70	C-90	.562	4.376	4.251	—	—	—	—	—	16,510	785
5.500	32.60	C-90	.625	4.250	4.125	—	—	—	—	—	18,130	861
5.500	35.30	C-90	.687	4.126	4.001	—	—	—	—	—	19,680	935
5.500	38.00	C-90	.750	4.000	3.875	—	—	—	—	—	21,200	1,007
5.500	40.50	C-90	.812	3.876	3.751	—	—	—	—	—	22,650	1,076
5.500	43.10	C-90	.875	3.750	3.625	—	—	—	—	—	24,080	1,144
5.500	17.00	C-95	.304	4.892	4.767	6.050	5.875	4.653	5.860	5.780	6,940	471
5.500	20.00	C-95	.361	4.778	4.653	6.050	5.875	4.653	5.860	5.780	10,020	554
5.500	23.00	C-95	.415	4.670	4.545	6.050	5.875	4.545	5.860	5.780	12,930	630
5.500	17.00	T-95	.304	4.892	4.767	6.050	5.875	4.653	5.860	5.780	6,940	471
5.500	20.00	T-95	.361	4.778	4.653	6.050	5.875	4.653	5.860	5.780	10,020	554
5.500	23.00	T-95	.415	4.670	4.545	6.050	5.875	4.545	5.860	5.780	12,930	630
5.500	26.80	T-95	.500	4.500	4.375	—	—	—	—	—	15,700	746
5.500	29.70	T-95	.562	4.376	4.251	—	—	—	—	—	17,430	828
5.500	32.60	T-95	.625	4.250	4.125	—	—	—	—	—	19,140	909
5.500	35.30	T-95	.687	4.126	4.001	—	—	—	—	—	20,770	987
5.500	38.00	T-95	.750	4.000	3.875	—	—	—	—	—	22,380	1,063
5.500	40.50	T-95	.812	3.876	3.751	—	—	—	—	—	23,910	1,136
5.500	43.10	T-95	.875	3.750	3.625	—	—	—	—	—	25,420	1,208
5.500	17.00	P-110	.304	4.892	4.767	6.050	5.875	4.653	5.860	5.780	7,480	546
5.500	20.00	P-110	.361	4.778	4.653	6.050	5.875	4.653	5.860	5.780	11,100	641
5.500	23.00	P-110	.415	4.670	4.545	6.050	5.875	4.545	5.860	5.780	14,540	729
5.500	23.0	Q-125	.415	4.670	4.545	6.050	—	4.545	5.860	—	16,060	829
6.625	20.00	H-40	.288	6.049	5.924	7.390	—	—	—	—	2,520	229
6.625	20.00	J-55	.288	6.049	5.924	7.390	7.000	—	—	—	2,970	315
6.625	24.00	J-55	.352	5.921	5.796	7.390	7.000	5.730	7.000	6.930	4,560	382

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
5,050	5,050	—	—	—	—	—	—	200	—	—	—	—	—	—	—
5,690	5,690	5,690	5,690	—	5,690	—	—	235	253	342	—	342	—	—	—
6,290	—	6,290	6,290	—	6,290	—	—	—	287	376	—	376	—	—	—
7,470	—	7,470	7,470	—	6,880	—	—	—	353	442	—	402	—	—	—
8,580	—	8,580	8,580	—	6,880	—	—	—	415	502	—	402	—	—	—
7,740	—	7,740	7,740	—	6,880	—	7,740	—	338	428	—	402	—	471	471
9,190	—	9,190	8,990	—	6,880	—	9,190	—	416	503	—	402	—	497	479
10,560	—	9,880	8,990	—	6,880	—	10,560	—	488	550	—	402	—	549	479
7,740	—	7,740	7,740	7,740	6,880	7,740	7,740	—	348	446	446	423	446	496	496
9,190	—	9,190	8,990	9,190	6,880	9,190	9,190	—	428	524	524	423	524	523	504
10,560	—	9,880	8,990	10,560	6,880	9,460	10,560	—	502	579	596	423	529	577	504
8,710	—	8,710	8,710	—	7,740	—	8,710	—	355	456	—	423	—	496	496
10,340	—	10,340	10,120	—	7,740	—	10,340	—	438	536	—	423	—	523	504
11,880	—	11,110	10,120	—	7,740	—	11,880	—	514	579	—	423	—	577	504
14,320	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16,090	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17,900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
19,670	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21,480	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
23,250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25,060	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9,190	—	9,190	9,190	—	8,170	—	9,190	—	373	480	—	444	—	521	521
10,910	—	10,910	10,680	—	8,170	—	10,910	—	460	563	—	444	—	549	530
12,540	—	11,730	10,680	—	8,170	—	12,540	—	540	608	—	444	—	606	530
9,190	—	9,190	9,190	—	8,170	—	9,190	—	373	480	—	444	—	521	521
10,910	—	10,910	10,680	—	8,170	—	10,910	—	460	563	—	444	—	549	530
12,540	—	11,730	10,680	—	8,170	—	12,540	—	540	608	—	444	—	606	530
15,110	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16,990	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18,890	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
20,770	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22,670	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24,540	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
26,450	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10,640	—	10,640	10,640	10,640	9,460	10,640	10,640	—	444	568	568	529	568	620	620
12,640	—	12,640	12,360	12,640	9,460	10,740	12,640	—	547	667	667	529	571	654	630
14,530	—	13,580	12,360	14,050	9,460	10,740	14,530	—	642	724	759	529	571	722	630
16,510	—	15,430	14,050	—	—	—	16,510	—	694	782	—	—	—	779	—
3,040	3,040	—	—	—	—	—	—	184	—	—	—	—	—	—	—
4,180	4,180	4,180	4,180	4,180	4,060	4,180	—	245	266	374	374	374	374	—	—
5,110	5,110	5,110	5,110	5,110	4,060	5,110	5,110	314	340	453	453	390	453	477	477

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
6.625	20.00	K-55	.288	6.049	5.924	7.390	7.000	—	—	—	2,970	315
6.625	24.00	K-55	.352	5.921	5.796	7.390	7.000	5.730	7.000	6.930	4,560	382
6.625	20.00	M-65	.288	6.049	5.924	7.390	7.000	—	—	—	3,190	373
6.625	24.00	M-65	.352	5.921	5.796	7.390	7.000	—	—	—	5,080	451
6.625	28.00	M-65	.417	5.791	5.666	7.390	7.000	—	—	—	7,010	529
6.625	24.00	L-80	.352	5.921	5.796	7.390	7.000	5.730	7.000	6.930	5,760	555
6.625	28.00	L-80	.417	5.791	5.666	7.390	7.000	5.666	7.000	6.930	8,170	651
6.625	32.00	L-80	.475	5.675	5.550	7.390	7.000	5.550	7.000	6.930	10,320	734
6.625	24.00	N-80	.352	5.921	5.796	7.390	7.000	5.730	7.000	6.930	5,760	555
6.625	28.00	N-80	.417	5.791	5.666	7.390	7.000	5.666	7.000	6.930	8,170	651
6.625	32.00	N-80	.475	5.675	5.550	7.390	7.000	5.550	7.000	6.930	10,320	734
6.625	24.00	C-90	.352	5.921	5.796	7.390	7.000	5.730	7.000	6.930	6,140	624
6.625	28.00	C-90	.417	5.791	5.666	7.390	7.000	5.666	7.000	6.930	8,880	732
6.625	32.00	C-90	.475	5.675	5.550	7.390	7.000	5.550	7.000	6.930	11,330	826
6.625	24.00	C-95	.352	5.921	5.796	7.390	7.000	5.730	7.000	6.930	6,310	659
6.625	28.00	C-95	.417	5.791	5.666	7.390	7.000	5.666	7.000	6.930	9,220	773
6.625	32.00	C-95	.475	5.675	5.550	7.390	7.000	5.550	7.000	6.930	11,820	872
6.625	24.00	T-95	.352	5.921	5.796	7.390	7.000	5.730	7.000	6.930	6,310	659
6.625	28.00	T-95	.417	5.791	5.666	7.390	7.000	5.666	7.000	6.930	9,220	773
6.625	32.00	T-95	.475	5.675	5.550	7.390	7.000	5.550	7.000	6.930	11,820	872
6.625	24.00	P-110	.352	5.921	5.796	7.390	7.000	5.730	7.000	6.930	6,730	763
6.625	28.00	P-110	.417	5.791	5.666	7.390	7.000	5.666	7.000	6.930	10,160	895
6.625	32.00	P-110	.475	5.675	5.550	7.390	7.000	5.550	7.000	6.930	13,220	1,010
6.625	32.00	Q-125	.475	5.675	5.550	7.390	—	5.550	7.000	—	14,540	1,147
7.000	17.00	H-40	.231	6.538	6.413	7.656	—	—	—	—	1,420	196
7.000	20.00	H-40	.272	6.456	6.331	7.656	—	—	—	—	1,970	230
7.000	20.00	J-55	.272	6.456	6.331	7.656	—	—	—	—	2,270	316
7.000	23.00	J-55	.317	6.366	6.241	7.656	7.375	6.151	7.390	7.310	3,270	366
7.000	26.00	J-55	.362	6.276	6.151	7.656	7.375	6.151	7.390	7.310	4,330	415
7.000	20.00	K-55	.272	6.456	6.331	7.656	—	—	—	—	2,270	316
7.000	23.00	K-55	.317	6.366	6.241	7.656	7.375	6.151	7.390	7.310	3,270	366
7.000	26.00	K-55	.362	6.276	6.151	7.656	7.375	6.151	7.390	7.310	4,330	415
7.000	20.00	M-65	.272	6.456	6.331	7.656	—	—	—	—	2,480	374
7.000	23.00	M-65	.317	6.366	6.241	7.656	7.375	—	—	—	3,540	433
7.000	26.00	M-65	.362	6.276	6.151	7.656	7.375	—	—	—	4,810	491
7.000	29.00	M-65	.408	6.184	6.059	7.656	7.375	—	—	—	6,100	549
7.000	32.00	M-65	.453	6.094	5.969	7.656	7.375	—	—	—	7,360	606

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
4,180	4,180	4,180	4,180	4,180	4,060	4,180	—	267	290	453	453	453	453	—	—
5,110	5,110	5,110	5,110	5,110	4,060	5,110	5,110	342	372	548	548	494	494	605	605
4,940	4,940	4,940	4,940	—	4,940	—	—	285	309	428	—	428	—	—	—
6,040	—	6,040	6,040	—	5,910	—	—	—	396	518	—	494	—	—	—
7,160	—	7,160	7,160	—	5,910	—	—	—	483	607	—	494	—	—	—
7,440	—	7,440	7,440	—	5,910	—	7,440	—	473	591	—	494	—	605	605
8,810	—	8,810	8,810	—	5,910	—	8,810	—	576	693	—	494	—	648	644
10,040	—	10,040	9,820	—	5,910	—	10,040	—	666	783	—	494	—	717	644
7,440	—	7,440	7,440	7,440	5,910	7,440	7,440	—	481	615	615	520	615	637	637
8,810	—	8,810	8,810	8,810	5,910	8,120	8,810	—	586	721	721	520	650	682	678
10,040	—	10,040	9,820	10,040	5,910	8,120	10,040	—	677	814	814	520	650	755	678
8,370	—	8,370	8,370	—	6,650	—	8,370	—	519	633	—	520	—	637	637
9,910	—	9,910	9,910	—	6,650	—	9,910	—	633	742	—	520	—	682	678
11,290	—	11,290	11,050	—	6,650	—	11,290	—	732	837	—	520	—	755	678
8,830	—	8,830	8,830	—	7,020	—	8,830	—	545	665	—	546	—	668	668
10,460	—	10,460	10,460	—	7,020	—	10,460	—	664	780	—	546	—	716	712
11,920	—	11,920	11,660	—	7,020	—	11,920	—	769	880	—	546	—	793	712
8,830	—	8,830	8,830	—	7,020	—	8,830	—	545	665	—	546	—	668	668
10,460	—	10,460	10,460	—	7,020	—	10,460	—	664	780	—	546	—	716	712
11,920	—	11,920	11,660	—	7,020	—	11,920	—	769	880	—	546	—	793	712
10,230	—	10,230	10,230	10,230	8,120	9,230	10,230	—	641	786	786	650	702	796	796
12,120	—	12,120	12,120	12,120	8,120	9,230	12,120	—	781	922	922	650	702	852	848
13,800	—	13,800	13,500	13,800	8,120	9,230	13,800	—	904	1,040	1,040	650	702	944	848
15,680	—	15,680	15,340	—	—	—	15,680	—	988	1,138	—	—	—	1,019	—
2,310	2,310	—	—	—	—	—	—	122	—	—	—	—	—	—	—
2,720	2,720	—	—	—	—	—	—	176	—	—	—	—	—	—	—
3,740	3,740	—	—	—	—	—	—	234	—	—	—	—	—	—	—
4,360	4,360	4,360	4,360	4,360	3,950	4,360	4,360	284	313	432	432	420	432	499	499
4,980	4,980	4,980	4,980	4,980	3,950	4,980	4,980	334	367	490	490	420	490	506	506
3,740	3,740	—	—	—	—	—	—	254	—	—	—	—	—	—	—
4,360	4,360	4,360	4,360	4,360	3,950	4,360	4,360	309	341	521	521	521	521	632	632
4,980	4,980	4,980	4,980	4,980	3,950	4,980	4,980	364	401	592	592	533	533	641	641
4,420	4,420	—	—	—	—	—	—	272	—	—	—	—	—	—	—
5,150	—	5,150	5,150	—	5,150	—	—	—	364	494	—	494	—	—	—
5,880	—	5,880	5,880	—	5,740	—	—	—	428	561	—	533	—	—	—
6,630	—	6,630	6,630	—	5,740	—	—	—	492	628	—	533	—	—	—
7,360	—	7,360	7,360	—	5,740	—	—	—	554	692	—	533	—	—	—

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
7.000	23.00	L-80	.317	6.366	6.241	7.656	7.375	6.151	7.390	7.310	3,830	532
7.000	26.00	L-80	.362	6.276	6.151	7.656	7.375	6.151	7.390	7.310	5,410	604
7.000	29.00	L-80	.408	6.184	6.059	7.656	7.375	6.059	7.390	7.310	7,030	676
7.000	32.00	L-80	.453	6.094	5.969	7.656	7.375	5.969	7.390	7.310	8,600	745
7.000	35.00	L-80	.498	6.004	5.879	7.656	7.375	5.879	7.530	7.390	10,180	814
7.000	38.00	L-80	.540	5.920	5.795	7.656	7.375	5.795	7.530	7.390	11,390	877
7.000	23.00	N-80	.317	6.366	6.241	7.656	7.375	6.151	7.390	7.310	3,830	532
7.000	26.00	N-80	.362	6.276	6.151	7.656	7.375	6.151	7.390	7.310	5,410	604
7.000	29.00	N-80	.408	6.184	6.059	7.656	7.375	6.059	7.390	7.310	7,030	676
7.000	32.00	N-80	.453	6.094	5.969	7.656	7.375	5.969	7.390	7.310	8,600	745
7.000	35.00	N-80	.498	6.004	5.879	7.656	7.375	5.879	7.530	7.390	10,180	814
7.000	38.00	N-80	.540	5.920	5.795	7.656	7.375	5.795	7.530	7.390	11,390	877
7.000	23.00	C-90	.317	6.366	6.241	7.656	7.375	6.151	7.390	7.310	4,030	599
7.000	26.00	C-90	.362	6.276	6.151	7.656	7.375	6.151	7.390	7.310	5,740	679
7.000	29.00	C-90	.408	6.184	6.059	7.656	7.375	6.059	7.390	7.310	7,580	760
7.000	32.00	C-90	.453	6.094	5.969	7.656	7.375	5.969	7.390	7.310	9,380	839
7.000	35.00	C-90	.498	6.004	5.879	7.656	7.375	5.879	7.530	7.390	11,170	916
7.000	38.00	C-90	.540	5.920	5.795	7.656	7.375	5.795	7.530	7.390	12,810	986
7.000	42.70	C-90	.625	5.750	5.625	—	—	—	—	—	14,640	1,127
7.000	46.40	C-90	.687	5.626	5.501	—	—	—	—	—	15,930	1,226
7.000	50.10	C-90	.750	5.500	5.375	—	—	—	—	—	17,220	1,325
7.000	53.60	C-90	.812	5.376	5.251	—	—	—	—	—	18,460	1,421
7.000	57.10	C-90	.875	5.250	5.125	—	—	—	—	—	19,690	1,515
7.000	23.00	C-95	.317	6.366	6.241	7.656	7.375	6.151	7.390	7.310	4,140	632
7.000	26.00	C-95	.362	6.276	6.151	7.656	7.375	6.151	7.390	7.310	5,890	717
7.000	29.00	C-95	.408	6.184	6.059	7.656	7.375	6.059	7.390	7.310	7,840	803
7.000	32.00	C-95	.453	6.094	5.969	7.656	7.375	5.969	7.390	7.310	9,740	885
7.000	35.00	C-95	.498	6.004	5.879	7.656	7.375	5.879	7.530	7.390	11,650	966
7.000	38.00	C-95	.540	5.920	5.795	7.656	7.375	5.795	7.530	7.390	13,430	1,041
7.000	23.00	T-95	.317	6.366	6.241	7.656	7.375	6.151	7.390	7.310	4,140	632
7.000	26.00	T-95	.362	6.276	6.151	7.656	7.375	6.151	7.390	7.310	5,890	717
7.000	29.00	T-95	.408	6.184	6.059	7.656	7.375	6.059	7.390	7.310	7,840	803
7.000	32.00	T-95	.453	6.094	5.969	7.656	7.375	5.969	7.390	7.310	9,740	885
7.000	35.00	T-95	.498	6.004	5.879	7.656	7.375	5.879	7.530	7.390	11,650	966
7.000	38.00	T-95	.540	5.920	5.795	7.656	7.375	5.795	7.530	7.390	13,430	1,041
7.000	42.70	T-95	.625	5.750	5.625	—	—	—	—	—	15,450	1,189
7.000	46.40	T-95	.687	5.626	5.501	—	—	—	—	—	16,820	1,294
7.000	50.10	T-95	.750	5.500	5.375	—	—	—	—	—	18,180	1,399
7.000	53.60	T-95	.812	5.376	5.251	—	—	—	—	—	19,480	1,500
7.000	57.10	T-95	.875	5.250	5.125	—	—	—	—	—	20,780	1,600
7.000	26.00	P-110	.362	6.276	6.151	7.656	7.375	6.151	7.390	7.310	6,230	830
7.000	29.00	P-110	.408	6.184	6.059	7.656	7.375	6.059	7.390	7.310	8,530	929
7.000	32.00	P-110	.453	6.094	5.969	7.656	7.375	5.969	7.390	7.310	10,780	1,025
7.000	35.00	P-110	.498	6.004	5.879	7.656	7.375	5.879	7.530	7.390	13,030	1,119
7.000	38.00	P-110	.540	5.920	5.795	7.656	7.375	5.795	7.530	7.390	15,130	1,206

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
6,340	—	6,340	6,340	—	5,740	—	6,340	—	435	565	—	533	—	632	632
7,240	—	7,240	7,240	—	5,740	—	7,240	—	511	641	—	533	—	641	641
8,160	—	8,160	8,160	—	5,740	—	8,160	—	587	718	—	533	—	685	674
9,060	—	9,060	8,460	—	5,740	—	9,060	—	661	791	—	533	—	761	674
9,960	—	9,240	8,460	—	5,740	—	9,960	—	734	832	—	533	—	850	761
10,800	—	9,240	8,460	—	5,740	—	10,800	—	801	832	—	533	—	917	761
6,340	—	6,340	6,340	6,340	5,740	6,340	6,340	—	442	588	588	561	588	666	666
7,240	—	7,240	7,240	7,240	5,740	7,240	7,240	—	519	667	667	561	667	675	675
8,160	—	8,160	8,160	8,160	5,740	7,890	8,160	—	597	746	746	561	701	721	709
9,060	—	9,060	8,460	9,060	5,740	7,890	9,060	—	672	823	823	561	701	801	709
9,960	—	9,240	8,460	9,960	5,740	7,890	9,960	—	746	876	898	561	701	895	801
10,800	—	9,240	8,460	10,800	5,740	7,890	10,800	—	814	876	968	561	701	965	801
7,130	—	7,130	7,130	—	6,460	—	7,130	—	479	605	—	561	—	666	666
8,140	—	8,140	8,140	—	6,460	—	8,140	—	563	687	—	561	—	675	675
9,180	—	9,180	9,180	—	6,460	—	9,180	—	648	768	—	561	—	721	709
10,190	—	10,190	9,520	—	6,460	—	10,190	—	729	847	—	561	—	801	709
11,210	—	10,390	9,520	—	6,460	—	11,210	—	809	876	—	561	—	895	801
12,150	—	10,390	9,520	—	6,460	—	12,150	—	883	876	—	561	—	965	801
14,060	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15,460	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16,880	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18,270	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
19,690	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7,530	—	7,530	7,530	—	6,810	—	7,530	—	505	636	—	589	—	699	699
8,600	—	8,600	8,600	—	6,810	—	8,600	—	593	722	—	589	—	709	709
9,690	—	9,690	9,690	—	6,810	—	9,690	—	683	808	—	589	—	757	744
10,760	—	10,760	10,050	—	6,810	—	10,760	—	768	891	—	589	—	841	744
11,830	—	10,970	10,050	—	6,810	—	11,830	—	853	920	—	589	—	940	841
12,830	—	10,970	10,050	—	6,810	—	12,830	—	931	920	—	589	—	1,014	841
7,530	—	7,530	7,530	—	6,810	—	7,530	—	505	636	—	589	—	699	699
8,600	—	8,600	8,600	—	6,810	—	8,600	—	593	722	—	589	—	709	709
9,690	—	9,690	9,690	—	6,810	—	9,690	—	683	808	—	589	—	757	744
10,760	—	10,760	10,050	—	6,810	—	10,760	—	768	891	—	589	—	841	744
11,830	—	10,970	10,050	—	6,810	—	11,830	—	853	920	—	589	—	940	841
12,830	—	10,970	10,050	—	6,810	—	12,830	—	931	920	—	589	—	1,014	841
14,840	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16,320	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17,810	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
19,290	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
20,780	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9,960	—	9,960	9,960	9,960	7,890	8,970	9,960	—	693	853	853	701	757	844	844
11,220	—	11,220	11,220	11,220	7,890	8,970	11,220	—	797	955	955	701	757	902	886
12,460	—	12,460	11,640	12,460	7,890	8,970	12,460	—	897	1,053	1,053	701	757	1,002	886
13,700	—	12,700	11,640	13,220	7,890	8,970	13,700	—	996	1,095	1,150	701	757	1,119	1,002
14,850	—	12,700	11,640	13,220	7,890	8,970	14,850	—	1,087	1,095	1,183	701	757	1,207	1,002

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
7.000	35.00	Q-125	.498	6.004	5.879	7.656	—	5.879	7.530	—	14,310	1,272
7.000	38.00	Q-125	.540	5.920	5.795	7.656	—	5.795	7.530	—	16,740	1,370
7.625	24.00	H-40	.300	7.025	6.900	8.500	—	—	—	—	2,030	276
7.625	26.40	J-55	.328	6.969	6.844	8.500	8.125	6.750	8.010	7.920	2,900	414
7.625	26.40	K-55	.328	6.969	6.844	8.500	8.125	6.750	8.010	7.920	2,900	414
7.625	26.40	M-65	.328	6.969	6.844	8.500	8.125	—	—	—	3,100	489
7.625	29.70	M-65	.375	6.875	6.750	8.500	8.125	—	—	—	4,310	555
7.625	33.70	M-65	.430	6.765	6.640	8.500	8.125	—	—	—	5,720	632
7.625	26.40	L-80	.328	6.969	6.844	8.500	8.125	6.750	8.010	7.920	3,400	602
7.625	29.70	L-80	.375	6.875	6.750	8.500	8.125	6.750	8.010	7.920	4,790	683
7.625	33.70	L-80	.430	6.765	6.640	8.500	8.125	6.640	8.010	7.920	6,560	778
7.625	39.00	L-80	.500	6.625	6.500	8.500	8.125	6.500	8.010	7.920	8,820	895
7.625	42.80	L-80	.562	6.501	6.376	8.500	8.125	—	—	—	10,810	998
7.625	45.30	L-80	.595	6.435	6.310	8.500	8.125	—	—	—	11,510	1,051
7.625	47.10	L-80	.625	6.375	6.250	8.500	8.125	—	—	—	12,040	1,100
7.625	26.40	N-80	.328	6.969	6.844	8.500	8.125	6.750	8.010	7.920	3,400	602
7.625	29.70	N-80	.375	6.875	6.750	8.500	8.125	6.750	8.010	7.920	4,790	683
7.625	33.70	N-80	.430	6.765	6.640	8.500	8.125	6.640	8.010	7.920	6,560	778
7.625	39.00	N-80	.500	6.625	6.500	8.500	8.125	6.500	8.010	7.920	8,820	895
7.625	42.80	N-80	.562	6.501	6.376	8.500	8.125	—	—	—	10,810	998
7.625	45.30	N-80	.595	6.435	6.310	8.500	8.125	—	—	—	11,510	1,051
7.625	47.10	N-80	.625	6.375	6.250	8.500	8.125	—	—	—	12,040	1,100
7.625	26.40	C-90	.328	6.969	6.844	8.500	8.125	6.750	8.010	7.920	3,610	677
7.625	29.70	C-90	.375	6.875	6.750	8.500	8.125	6.750	8.010	7.920	5,030	769
7.625	33.70	C-90	.430	6.765	6.640	8.500	8.125	6.640	8.010	7.920	7,050	875
7.625	39.00	C-90	.500	6.625	6.500	8.500	8.125	6.500	8.010	7.920	9,620	1,007
7.625	42.80	C-90	.562	6.501	6.376	8.500	8.125	—	—	—	11,890	1,122
7.625	45.30	C-90	.595	6.435	6.310	8.500	8.125	—	—	—	12,950	1,183
7.625	47.10	C-90	.625	6.375	6.250	8.500	8.125	—	—	—	13,540	1,237
7.625	51.20	C-90	.687	6.251	6.126	—	—	—	—	—	14,760	1,348
7.625	55.30	C-90	.750	6.125	6.000	—	—	—	—	—	15,960	1,458
7.625	26.40	C-95	.328	6.969	6.844	8.500	8.125	6.750	8.010	7.920	3,710	714
7.625	29.70	C-95	.375	6.875	6.750	8.500	8.125	6.750	8.010	7.920	5,130	811
7.625	33.70	C-95	.430	6.765	6.640	8.500	8.125	6.640	8.010	7.920	7,280	923
7.625	39.00	C-95	.500	6.625	6.500	8.500	8.125	6.500	8.010	7.920	10,000	1,063
7.625	42.80	C-95	.562	6.501	6.376	8.500	8.125	—	—	—	12,410	1,185
7.625	45.30	C-95	.595	6.435	6.310	8.500	8.125	—	—	—	13,670	1,248
7.625	47.10	C-95	.625	6.375	6.250	8.500	8.125	—	—	—	14,300	1,306
7.625	26.40	T-95	.328	6.969	6.844	8.500	8.125	6.750	8.010	7.920	3,710	714
7.625	29.70	T-95	.375	6.875	6.750	8.500	8.125	6.750	8.010	7.920	5,130	811
7.625	33.70	T-95	.430	6.765	6.640	8.500	8.125	6.640	8.010	7.920	7,280	923

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
15,560	—	14,430	13,220	—	—	—	15,560	—	1,105	1,183	—	—	—	1,208	—
16,880	—	14,430	13,220	—	—	—	16,880	—	1,206	1,183	—	—	—	1,303	—
2,750	2,750	—	—	—	—	—	—	212	—	—	—	—	—	—	—
4,140	4,140	4,140	4,140	4,140	4,140	4,140	4,140	315	346	483	483	483	483	553	553
4,140	4,140	4,140	4,140	4,140	4,140	4,140	4,140	342	377	581	581	581	581	700	700
4,890	4,890	4,890	4,890	—	4,890	—	—	368	403	554	—	554	—	—	—
5,590	—	5,590	5,590	—	5,590	—	—	—	474	629	—	629	—	—	—
6,410	—	6,410	6,410	—	6,410	—	—	—	556	716	—	716	—	—	—
6,020	—	6,020	6,020	—	6,020	—	6,020	—	482	635	—	635	—	700	700
6,890	—	6,890	6,890	—	6,550	—	6,890	—	566	721	—	721	—	700	700
7,900	—	7,900	7,900	—	6,550	—	7,900	—	664	820	—	734	—	766	744
9,180	—	9,180	9,180	—	6,550	—	9,180	—	786	945	—	734	—	851	744
10,320	—	10,320	9,790	—	6,550	—	—	—	891	1,053	—	734	—	—	—
10,920	—	10,490	9,790	—	6,550	—	—	—	947	1,109	—	734	—	—	—
11,480	—	10,490	9,790	—	6,550	—	—	—	997	1,160	—	734	—	—	—
6,020	—	6,020	6,020	6,020	6,020	6,020	6,020	—	490	659	659	659	659	737	737
6,890	—	6,890	6,890	6,890	6,550	6,890	6,890	—	575	749	749	749	749	737	737
7,900	—	7,900	7,900	7,900	6,550	7,900	7,900	—	674	852	852	773	852	806	784
9,180	—	9,180	9,180	9,180	6,550	9,000	9,180	—	798	981	981	773	966	896	784
10,320	—	10,320	9,790	10,320	6,550	9,000	—	—	905	1,093	1,093	773	966	—	—
10,920	—	10,490	9,790	10,920	6,550	9,000	—	—	962	1,152	1,152	773	966	—	—
11,480	—	10,490	9,790	11,480	6,550	9,000	—	—	1,013	1,205	1,205	773	966	—	—
6,780	—	6,780	6,780	—	6,780	—	6,780	—	532	681	—	681	—	737	737
7,750	—	7,750	7,750	—	7,370	—	7,750	—	625	773	—	773	—	737	737
8,880	—	8,880	8,880	—	7,370	—	8,880	—	733	880	—	773	—	806	784
10,330	—	10,330	10,330	—	7,370	—	10,330	—	867	1,013	—	773	—	896	784
11,610	—	11,610	11,010	—	7,370	—	—	—	983	1,129	—	773	—	—	—
12,290	—	11,810	11,010	—	7,370	—	—	—	1,045	1,189	—	773	—	—	—
12,910	—	11,810	11,010	—	7,370	—	—	—	1,100	1,238	—	773	—	—	—
14,190	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15,490	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7,150	—	7,150	7,150	—	7,150	—	7,150	—	560	716	—	716	—	774	774
8,180	—	8,180	8,180	—	7,780	—	8,180	—	659	813	—	811	—	774	774
9,380	—	9,380	9,380	—	7,780	—	9,380	—	772	925	—	811	—	846	823
10,900	—	10,900	10,900	—	7,780	—	10,900	—	914	1,065	—	811	—	941	823
12,250	—	12,250	11,620	—	7,780	—	—	—	1,037	1,187	—	811	—	—	—
12,970	—	12,460	11,620	—	7,780	—	—	—	1,101	1,251	—	811	—	—	—
13,630	—	12,460	11,620	—	7,780	—	—	—	1,159	1,300	—	811	—	—	—
7,150	—	7,150	7,150	—	7,150	—	7,150	—	560	716	—	716	—	774	774
8,180	—	8,180	8,180	—	7,780	—	8,180	—	659	813	—	811	—	774	774
9,380	—	9,380	9,380	—	7,780	—	9,380	—	772	925	—	811	—	846	823

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
7.625	39.00	T-95	.500	6.625	6.500	8.500	8.125	6.500	8.010	7.920	10,000	1,063
7.625	42.80	T-95	.562	6.501	6.376	8.500	8.125	—	—	—	12,410	1,185
7.625	45.30	T-95	.595	6.435	6.310	8.500	8.125	—	—	—	13,670	1,248
7.625	47.10	T-95	.625	6.375	6.250	8.500	8.125	—	—	—	14,300	1,306
7.625	51.20	T-95	.687	6.251	6.126	—	—	—	—	—	15,580	1,423
7.625	55.30	T-95	.750	6.125	6.000	—	—	—	—	—	16,850	1,539
7.625	29.70	P-110	.375	6.875	6.750	8.500	8.125	6.750	8.010	7.920	5,350	940
7.625	33.70	P-110	.430	6.765	6.640	8.500	8.125	6.640	8.010	7.920	7,870	1,069
7.625	39.00	P-110	.500	6.625	6.500	8.500	8.125	6.500	8.010	7.920	11,080	1,231
7.625	42.80	P-110	.562	6.501	6.376	8.500	8.125	—	—	—	13,930	1,372
7.625	45.30	P-110	.595	6.435	6.310	8.500	8.125	—	—	—	15,440	1,445
7.625	47.10	P-110	.625	6.375	6.250	8.500	8.125	—	—	—	16,550	1,512
7.625	39.00	Q-125	.500	6.625	6.500	8.500	—	6.500	8.010	—	12,060	1,399
7.625	42.80	Q-125	.562	6.501	6.376	8.500	—	—	—	—	15,350	1,559
7.625	45.30	Q-125	.595	6.435	6.310	8.500	—	—	—	—	17,100	1,643
7.625	47.10	Q-125	.625	6.375	6.250	8.500	—	—	—	—	18,700	1,718
7.750	46.10	L-80	.595	6.560	6.435	—	—	—	—	—	11,340	1,070
7.750	46.10	N-80	.595	6.560	6.435	—	—	—	—	—	11,340	1,070
7.750	46.10	C-90	.595	6.560	6.435	—	—	—	—	—	12,750	1,204
7.750	46.10	C-95	.595	6.560	6.435	—	—	—	—	—	13,320	1,271
7.750	46.10	T-95	.595	6.560	6.435	—	—	—	—	—	13,320	1,271
7.750	46.10	P-110	.595	6.560	6.435	—	—	—	—	—	15,000	1,471
7.750	46.10	Q-125	.595	6.560	6.435	—	—	—	—	—	16,590	1,672
8.625	28.00	H-40	.304	8.017	7.892	9.625	—	—	—	—	1,610	318
8.625	32.00	H-40	.352	7.921	7.796	9.625	—	—	—	—	2,200	366
8.625	24.00	J-55	.264	8.097	7.972	9.625	—	—	—	—	1,370	381
8.625	32.00	J-55	.352	7.921	7.796	9.625	9.125	7.700	9.120	9.030	2,530	503
8.625	36.00	J-55	.400	7.825	7.700	9.625	9.125	7.700	9.120	9.030	3,450	568
8.625	24.00	K-55	.264	8.097	7.972	9.625	—	—	—	—	1,370	381
8.625	32.00	K-55	.352	7.921	7.796	9.625	9.125	7.700	9.120	9.030	2,530	503
8.625	36.00	K-55	.400	7.825	7.700	9.625	9.125	7.700	9.120	9.030	3,450	568
8.625	24.00	M-65	.264	8.097	7.972	9.625	—	—	—	—	1,420	451
8.625	28.00	M-65	.304	8.017	7.892	9.625	—	—	—	—	2,020	517
8.625	32.00	M-65	.352	7.921	7.796	9.625	—	—	—	—	2,740	595
8.625	36.00	M-65	.400	7.825	7.700	9.625	—	—	—	—	3,760	672
8.625	40.00	M-65	.450	7.725	7.600	9.625	—	—	—	—	4,900	751

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
10,900	—	10,900	10,900	—	7,780	—	10,900	—	914	1,065	—	811	—	941	823
12,250	—	12,250	11,620	—	7,780	—	—	—	1,037	1,187	—	811	—	—	—
12,970	—	12,460	11,620	—	7,780	—	—	—	1,101	1,251	—	811	—	—	—
13,630	—	12,460	11,620	—	7,780	—	—	—	1,159	1,300	—	811	—	—	—
14,980	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16,350	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9,470	—	9,470	9,470	9,470	9,000	9,470	9,470	—	769	960	960	960	960	922	922
10,860	—	10,860	10,860	10,860	9,000	10,230	10,860	—	901	1,093	1,093	966	1,043	1,008	979
12,620	—	12,620	12,620	12,620	9,000	10,230	12,620	—	1,066	1,258	1,258	966	1,043	1,120	979
14,190	—	14,190	13,460	14,190	9,000	10,230	—	—	1,210	1,402	1,402	966	1,043	—	—
15,020	—	14,430	13,460	15,020	9,000	10,230	—	—	1,285	1,477	1,477	966	1,043	—	—
15,780	—	14,430	13,460	15,290	9,000	10,230	—	—	1,353	1,545	1,545	966	1,043	—	—
14,340	—	14,340	14,340	—	—	—	14,340	—	1,194	1,379	—	—	—	1,210	—
16,120	—	16,120	15,290	—	—	—	—	—	1,355	1,536	—	—	—	—	—
17,070	—	16,400	15,290	—	—	—	—	—	1,439	1,619	—	—	—	—	—
17,930	—	16,400	15,290	—	—	—	—	—	1,515	1,671	—	—	—	—	—
10,750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10,750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,090	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,760	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,760	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14,780	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16,790	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2,470	2,470	—	—	—	—	—	—	233	—	—	—	—	—	—	—
2,860	2,860	—	—	—	—	—	—	279	—	—	—	—	—	—	—
2,950	2,950	—	—	—	—	—	—	244	—	—	—	—	—	—	—
3,930	3,930	3,930	3,930	3,930	3,930	3,930	3,930	372	417	579	579	579	579	686	686
4,460	4,460	4,460	4,460	4,460	4,060	4,460	4,460	434	486	654	654	654	654	688	688
2,950	2,950	—	—	—	—	—	—	263	—	—	—	—	—	—	—
3,930	3,930	3,930	3,930	3,930	3,930	3,930	3,930	402	452	690	690	690	690	869	869
4,460	4,460	4,460	4,460	4,460	4,060	4,460	4,460	468	526	780	780	780	780	871	871
3,480	3,480	—	—	—	—	—	—	285	—	—	—	—	—	—	—
4,010	4,010	—	—	—	—	—	—	362	—	—	—	—	—	—	—
4,640	4,640	4,640	4,640	—	—	—	—	435	487	664	—	—	—	—	—
5,280	5,280	5,280	5,280	—	—	—	—	506	567	751	—	—	—	—	—
5,930	—	5,930	5,930	—	—	—	—	—	649	839	—	—	—	—	—

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
8.625	36.00	L-80	.400	7.825	7.700	9.625	9.125	7.700	9.120	9.030	4,100	827
8.625	40.00	L-80	.450	7.725	7.600	9.625	9.125	7.600	9.120	9.030	5,520	925
8.625	44.00	L-80	.500	7.625	7.500	9.625	9.125	7.500	9.120	9.030	6,950	1,021
8.625	49.00	L-80	.557	7.511	7.386	9.625	9.125	7.386	9.120	9.030	8,570	1,129
8.625	36.00	N-80	.400	7.825	7.700	9.625	9.125	7.700	9.120	9.030	4,100	827
8.625	40.00	N-80	.450	7.725	7.600	9.625	9.125	7.600	9.120	9.030	5,520	925
8.625	44.00	N-80	.500	7.625	7.500	9.625	9.125	7.500	9.120	9.030	6,950	1,021
8.625	49.00	N-80	.557	7.511	7.386	9.625	9.125	7.386	9.120	9.030	8,570	1,129
8.625	36.00	C-90	.400	7.825	7.700	9.625	9.125	7.700	9.120	9.030	4,250	930
8.625	40.00	C-90	.450	7.725	7.600	9.625	9.125	7.600	9.120	9.030	5,870	1,040
8.625	44.00	C-90	.500	7.625	7.500	9.625	9.125	7.500	9.120	9.030	7,490	1,149
8.625	49.00	C-90	.557	7.511	7.386	9.625	9.125	7.386	9.120	9.030	9,340	1,271
8.625	36.00	C-95	.400	7.825	7.700	9.625	9.125	7.700	9.120	9.030	4,350	982
8.625	40.00	C-95	.450	7.725	7.600	9.625	9.125	7.600	9.120	9.030	6,020	1,098
8.625	44.00	C-95	.500	7.625	7.500	9.526	9.125	7.500	9.120	9.030	7,740	1,212
8.625	49.00	C-95	.557	7.511	7.386	9.625	9.125	7.386	9.120	9.030	9,700	1,341
8.625	36.00	T-95	.400	7.825	7.700	9.625	9.125	7.700	9.120	9.030	4,350	982
8.625	40.00	T-95	.450	7.725	7.600	9.625	9.125	7.600	9.120	9.030	6,020	1,098
8.625	44.00	T-95	.500	7.625	7.500	9.625	9.125	7.500	9.120	9.030	7,740	1,212
8.625	49.00	T-95	.557	7.511	7.386	9.625	9.125	7.386	9.120	9.030	9,700	1,341
8.625	40.00	P-110	.450	7.725	7.600	9.625	9.125	7.600	9.120	9.030	6,390	1,271
8.625	44.00	P-110	.500	7.625	7.500	9.625	9.125	7.500	9.120	9.030	8,420	1,404
8.625	49.00	P-110	.557	7.511	7.386	9.625	9.125	7.386	9.120	9.030	10,730	1,553
8.625	49.00	Q-125	.557	7.511	7.386	9.625	—	7.386	9.120	—	11,660	1,765
9.625	32.30	H-40	.312	9.001	8.845	10.625	—	—	—	—	1,370	365
9.625	36.00	H-40	.352	8.921	8.765	10.625	—	—	—	—	1,720	410
9.625	36.00	J-55	.352	8.921	8.765	10.625	10.125	—	—	—	2,020	564
9.625	40.00	J-55	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	2,570	630
9.625	36.00	K-55	.352	8.921	8.765	10.625	10.125	—	—	—	2,020	564
9.625	40.00	K-55	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	2,570	630
9.625	36.00	M-65	.352	8.921	8.765	10.625	10.125	—	—	—	2,190	667
9.625	40.00	M-65	.395	8.835	8.679	10.625	10.125	—	—	—	2,770	744
9.625	43.50	M-65	.435	8.755	8.599	10.625	10.125	—	—	—	3,530	816
9.625	47.00	M-65	.472	8.681	8.525	10.625	10.125	—	—	—	4,280	882
9.625	40.00	L-80	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	3,090	916
9.625	43.50	L-80	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	3,810	1,005
9.625	47.00	L-80	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	4,750	1,086
9.625	53.50	L-80	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	6,620	1,244
9.625	58.40	L-80	.595	8.435	8.279	10.625	10.125	—	—	—	7,890	1,350

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
6,490	—	6,490	6,490	—	5,900	—	6,490	—	678	863	—	838	—	871	871
7,300	—	7,300	7,300	—	5,900	—	7,300	—	776	966	—	838	—	942	886
8,120	—	8,120	8,120	—	5,900	—	8,120	—	874	1,066	—	838	—	1,007	886
9,040	—	9,040	9,040	—	5,900	—	9,040	—	983	1,179	—	838	—	1,007	886
6,490	—	6,490	6,490	6,490	5,900	6,490	6,490	—	688	895	895	882	895	917	917
7,300	—	7,300	7,300	7,300	5,900	7,300	7,300	—	788	1,001	1,001	882	1,001	992	932
8,120	—	8,120	8,120	8,120	5,900	8,110	8,120	—	887	1,105	1,105	882	1,103	1,060	932
9,040	—	9,040	9,040	9,040	5,900	8,110	9,040	—	997	1,222	1,222	882	1,103	1,060	932
7,300	—	7,300	7,300	—	6,640	—	7,300	—	749	928	—	882	—	917	917
8,220	—	8,220	8,220	—	6,640	—	8,220	—	858	1,038	—	882	—	992	932
9,130	—	9,130	9,130	—	6,640	—	9,130	—	965	1,146	—	882	—	1,060	932
10,170	—	10,170	10,170	—	6,640	—	10,170	—	1,085	1,268	—	882	—	1,060	932
7,710	—	7,710	7,710	—	7,010	—	7,710	—	789	976	—	926	—	963	963
8,670	—	8,670	8,670	—	7,010	—	8,670	—	904	1,092	—	926	—	1,042	979
9,640	—	9,640	9,640	—	7,010	—	9,640	—	1,017	1,206	—	926	—	1,113	979
10,740	—	10,740	10,740	—	7,010	—	10,740	—	1,144	1,334	—	926	—	1,113	979
7,710	—	7,710	7,710	—	7,010	—	7,710	—	789	976	—	926	—	963	963
8,670	—	8,670	8,670	—	7,010	—	8,670	—	904	1,092	—	926	—	1,042	979
9,640	—	9,640	9,640	—	7,010	—	9,640	—	1,017	1,206	—	926	—	1,113	979
10,740	—	10,740	10,740	—	7,010	—	10,740	—	1,144	1,334	—	926	—	1,113	979
10,040	—	10,040	10,040	10,040	8,110	9,220	10,040	—	1,055	1,288	1,288	1,103	1,191	1,240	1,165
11,160	—	11,160	11,160	11,160	8,110	9,220	11,160	—	1,186	1,423	1,423	1,103	1,191	1,326	1,165
12,430	—	12,430	12,430	12,430	8,110	9,220	12,430	—	1,335	1,574	1,574	1,103	1,191	1,326	1,165
14,130	—	14,130	14,130	—	—	—	14,130	—	1,496	1,728	—	—	—	1,432	—
2,270	2,270	—	—	—	—	—	—	254	—	—	—	—	—	—	—
2,560	2,560	—	—	—	—	—	—	294	—	—	—	—	—	—	—
3,520	3,520	3,520	3,520	3,520	3,520	3,520	—	394	453	639	639	639	639	—	—
3,950	3,950	3,950	3,950	3,950	3,660	3,950	3,950	452	520	714	714	714	714	770	770
3,520	3,520	3,520	3,520	3,520	3,520	3,520	—	423	489	755	755	755	755	—	—
3,950	3,950	3,950	3,950	3,950	3,660	3,950	3,950	486	561	843	843	843	843	975	975
4,160	4,160	4,160	4,160	—	4,160	—	—	460	529	734	—	734	—	—	—
4,670	4,670	4,670	4,670	—	4,670	—	—	528	607	820	—	820	—	—	—
5,140	—	5,140	5,140	—	5,140	—	—	—	679	899	—	899	—	—	—
5,580	—	5,580	5,580	—	5,320	—	—	—	745	972	—	933	—	—	—
5,750	—	5,750	5,750	—	5,320	—	5,750	—	727	947	—	933	—	975	975
6,330	—	6,330	6,330	—	5,320	—	6,330	—	813	1,038	—	933	—	975	975
6,870	—	6,870	6,870	—	5,320	—	6,870	—	893	1,122	—	933	—	1,032	1,032
7,930	—	7,930	7,930	—	5,320	—	7,930	—	1,047	1,285	—	933	—	1,173	1,053
8,650	—	8,650	8,650	—	5,320	—	—	—	1,151	1,396	—	933	—	—	—

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
9.625	40.00	N-80	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	3,090	916
9.625	43.50	N-80	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	3,810	1,005
9.625	47.00	N-80	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	4,750	1,086
9.625	53.50	N-80	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	6,620	1,244
9.625	58.40	N-80	.595	8.435	8.279	10.625	10.125	—	—	—	7,890	1,350
9.625	40.00	C-90	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	3,260	1,031
9.625	43.50	C-90	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	4,010	1,130
9.625	47.00	C-90	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	4,990	1,222
9.625	53.50	C-90	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	7,110	1,399
9.625	58.40	C-90	.595	8.435	8.279	10.625	10.125	—	—	—	8,570	1,519
9.625	59.40	C-90	.609	8.407	8.251	—	—	—	—	—	8,970	1,552
9.625	64.90	C-90	.672	8.281	8.125	—	—	—	—	—	10,800	1,701
9.625	70.30	C-90	.734	8.157	8.001	—	—	—	—	—	12,600	1,845
9.625	75.60	C-90	.797	8.031	7.875	—	—	—	—	—	13,670	1,989
9.625	40.00	C-95	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	3,330	1,088
9.625	43.50	C-95	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	4,130	1,193
9.625	47.00	C-95	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	5,090	1,289
9.625	53.00	C-95	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	7,340	1,477
9.625	58.40	C-95	.595	8.435	8.279	10.625	10.125	—	—	—	8,890	1,604
9.625	40.00	T-95	.395	8.835	8.679	10.625	10.125	8.599	10.100	10.020	3,330	1,088
9.625	43.50	T-95	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	4,130	1,193
9.625	47.00	T-95	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	5,090	1,289
9.625	53.00	T-95	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	7,340	1,477
9.625	58.40	T-95	.595	8.435	8.279	10.625	10.125	—	—	—	8,890	1,604
9.625	59.40	T-95	.609	8.407	8.251	—	—	—	—	—	9,320	1,639
9.625	64.90	T-95	.672	8.281	8.125	—	—	—	—	—	11,260	1,796
9.625	70.30	T-95	.734	8.157	8.001	—	—	—	—	—	13,170	1,948
9.625	75.60	T-95	.797	8.031	7.875	—	—	—	—	—	14,430	2,100
9.625	43.50	P-110	.435	8.755	8.599	10.625	10.125	8.599	10.100	10.020	4,420	1,381
9.625	47.00	P-110	.472	8.681	8.525	10.625	10.125	8.525	10.100	10.020	5,300	1,493
9.625	53.50	P-110	.545	8.535	8.379	10.625	10.125	8.379	10.100	10.020	7,950	1,710
9.625	58.40	P-110	.595	8.435	8.279	10.625	10.125	—	—	—	9,770	1,857
9.625	47.00	Q-125	.472	8.681	8.525	10.625	—	8.525	10.100	—	5,630	1,697
9.625	53.50	Q-125	.545	8.535	8.379	10.625	—	8.379	10.100	—	8,440	1,943
9.625	58.40	Q-125	.595	8.435	8.279	10.625	—	—	—	—	10,540	2,110
10.750	32.75	H-40	.279	10.192	10.036	11.750	—	—	—	—	840	367
10.750	40.50	H-40	.350	10.050	9.894	11.750	—	—	—	—	1,390	457
10.750	40.50	J-55	.350	10.050	9.894	11.750	11.250	—	—	—	1,580	629
10.750	45.50	J-55	.400	9.950	9.794	11.750	11.250	9.794	11.460	—	2,090	715
10.750	51.00	J-55	.450	9.850	9.694	11.750	11.250	9.694	11.460	—	2,710	801
10.750	40.50	K-55	.350	10.050	9.894	11.750	11.250	—	—	—	1,580	629
10.750	45.50	K-55	.400	9.950	9.794	11.750	11.250	9.794	11.460	—	2,090	715
10.750	51.00	K-55	.450	9.850	9.694	11.750	11.250	9.694	11.460	—	2,710	801

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
5,750	—	5,750	5,750	5,750	5,320	5,750	5,750	—	737	979	979	979	979	1,027	1,027
6,330	—	6,330	6,330	6,330	5,320	6,330	6,330	—	825	1,074	1,074	983	1,074	1,027	1,027
6,870	—	6,870	6,870	6,870	5,320	6,870	6,870	—	905	1,161	1,161	983	1,161	1,086	1,086
7,930	—	7,930	7,930	7,930	5,320	7,310	7,930	—	1,062	1,329	1,329	983	1,228	1,235	1,109
8,650	—	8,650	8,650	8,650	5,320	7,310	—	—	1,167	1,443	1,443	983	1,228	—	—
6,460	—	6,460	6,460	—	5,980	—	6,460	—	804	1,021	—	983	—	1,027	1,027
7,120	—	7,120	7,120	—	5,980	—	7,120	—	899	1,119	—	983	—	1,027	1,027
7,720	—	7,720	7,720	—	5,980	—	7,720	—	987	1,210	—	983	—	1,086	1,086
8,920	—	8,920	8,920	—	5,980	—	8,920	—	1,157	1,386	—	983	—	1,235	1,109
9,740	—	9,740	9,740	—	5,980	—	—	—	1,272	1,504	—	983	—	—	—
9,970	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,010	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
13,040	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6,820	—	6,820	6,820	—	6,310	—	6,820	—	847	1,074	—	1,032	—	1,078	1,078
7,510	—	7,510	7,510	—	6,310	—	7,510	—	948	1,178	—	1,032	—	1,078	1,078
8,150	—	8,150	8,150	—	6,310	—	8,150	—	1,040	1,273	—	1,032	—	1,141	1,141
9,410	—	9,410	9,410	—	6,310	—	9,410	—	1,220	1,458	—	1,032	—	1,297	1,164
10,280	—	10,280	10,280	—	6,310	—	—	—	1,341	1,583	—	1,032	—	—	—
6,820	—	6,820	6,820	—	6,310	—	6,820	—	847	1,074	—	1,032	—	1,078	1,078
7,510	—	7,510	7,510	—	6,310	—	7,510	—	948	1,178	—	1,032	—	1,078	1,078
8,150	—	8,150	8,150	—	6,310	—	8,150	—	1,040	1,273	—	1,032	—	1,141	1,141
9,410	—	9,410	9,410	—	6,310	—	9,410	—	1,220	1,458	—	1,032	—	1,297	1,164
10,280	—	10,280	10,280	—	6,310	—	—	—	1,341	1,583	—	1,032	—	—	—
10,520	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,610	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,680	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
13,770	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,700	—	8,700	8,700	8,700	7,310	8,310	8,700	—	1,105	1,388	1,388	1,228	1,327	1,283	1,283
9,440	—	9,440	9,440	9,440	7,310	8,310	9,440	—	1,213	1,500	1,500	1,228	1,327	1,358	1,358
10,900	—	10,900	10,900	10,900	7,310	8,310	10,900	—	1,422	1,718	1,718	1,228	1,327	1,544	1,386
11,900	—	11,900	11,900	11,900	7,310	8,310	—	—	1,563	1,865	1,865	1,228	1,327	—	—
10,730	—	10,730	10,730	—	—	—	10,730	—	1,360	1,650	—	—	—	1,467	—
12,390	—	12,390	12,390	—	—	—	12,390	—	1,595	1,890	—	—	—	1,667	—
13,520	—	13,520	13,520	—	—	—	—	—	1,754	2,052	—	—	—	—	—
1,820	1,820	—	—	—	—	—	—	205	—	—	—	—	—	—	—
2,280	2,280	—	—	—	—	—	—	314	—	—	—	—	—	—	—
3,130	3,130	—	3,130	3,130	3,130	3,130	—	420	—	700	700	700	700	—	—
3,580	3,580	—	3,580	3,580	3,290	3,580	3,580	493	—	796	796	796	796	975	—
4,030	4,030	—	4,030	4,030	3,290	4,030	4,030	565	—	891	891	822	891	1,092	—
3,130	3,130	—	3,130	3,130	3,130	3,130	—	450	—	819	819	819	819	—	—
3,580	3,580	—	3,580	3,580	3,290	3,580	3,580	528	—	931	931	931	931	1,236	—
4,030	4,030	—	4,030	4,030	3,290	4,030	4,030	606	—	1,043	1,043	1,041	1,041	1,383	—

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
10.750	40.50	M-65	.350	10.050	9.894	11.750	—	—	—	—	1,670	743
10.750	45.50	M-65	.400	9.950	9.794	11.750	—	—	—	—	2,270	845
10.750	51.00	M-65	.450	9.850	9.694	11.750	—	—	—	—	2,870	946
10.750	55.50	M-65	.450	9.850	9.694	11.750	—	—	—	—	2,870	946
10.750	51.00	L-80	.450	9.850	9.694	11.750	11.250	9.694	11.460	—	3,220	1,165
10.750	55.50	L-80	.495	9.760	9.604	11.750	11.250	9.604	11.460	—	4,020	1,276
10.750	51.00	N-80	.450	9.850	9.694	11.750	11.250	9.694	11.460	—	3,220	1,165
10.750	55.50	N-80	.495	9.760	9.604	11.750	11.250	9.604	11.460	—	4,020	1,276
10.750	51.00	C-90	.450	9.850	9.694	11.750	11.250	9.694	11.460	—	3,400	1,311
10.750	55.50	C-90	.495	9.760	9.604	11.750	11.250	9.604	11.460	—	4,160	1,435
10.750	60.70	C-90	.545	9.660	9.504	11.750	11.250	9.504	11.460	—	5,460	1,573
10.750	65.70	C-90	.595	9.560	9.404	11.750	—	—	—	—	6,760	1,708
10.750	73.20	C-90	.672	9.406	9.250	—	—	—	—	—	8,760	1,915
10.750	79.20	C-90	.734	9.282	9.126	—	—	—	—	—	10,370	2,079
10.750	85.30	C-90	.797	9.156	9.000	—	—	—	—	—	12,010	2,243
10.750	51.00	C-95	.450	9.850	9.694	11.750	11.250	9.694	11.460	—	3,480	1,383
10.750	55.50	C-95	.495	9.760	9.604	11.750	11.250	9.604	11.460	—	4,290	1,515
10.750	51.00	T-95	.450	9.850	9.694	11.750	11.250	9.694	11.460	—	3,480	1,383
10.750	55.50	T-95	.495	9.760	9.604	11.750	11.250	9.604	11.460	—	4,290	1,515
10.750	60.70	T-95	.545	9.660	9.504	11.750	11.250	9.504	11.460	—	5,580	1,660
10.750	65.70	T-95	.595	9.560	9.404	11.750	—	—	—	—	6,970	1,803
10.750	73.20	T-95	.672	9.406	9.250	—	—	—	—	—	9,090	2,021
10.750	79.20	T-95	.734	9.282	9.126	—	—	—	—	—	10,800	2,194
10.750	85.30	T-95	.797	9.156	9.000	—	—	—	—	—	12,540	2,367
10.750	51.00	P-110	.450	9.850	9.694	11.750	11.250	9.694	11.460	—	3,660	1,602
10.750	55.50	P-110	.495	9.760	9.604	11.750	11.250	9.604	11.460	—	4,610	1,754
10.750	60.70	P-110	.545	9.660	9.504	11.750	11.250	9.504	11.460	—	5,880	1,922
10.750	65.70	P-110	.595	9.560	9.404	11.750	11.250	—	—	—	7,500	2,088
10.750	60.70	Q-125	.545	9.660	9.504	11.750	—	9.504	11.460	—	6,070	2,184
10.750	65.70	Q-125	.595	9.560	9.404	11.750	—	—	—	—	7,920	2,373
11.750	42.00	H-40	.333	11.084	10.928	12.750	—	—	—	—	1,040	478
11.750	47.00	J-55	.375	11.000	10.844	12.750	—	—	—	—	1,510	737
11.750	54.00	J-55	.435	10.880	10.724	12.750	—	—	—	—	2,070	850
11.750	60.00	J-55	.489	10.772	10.616	12.750	—	—	—	—	2,670	951
11.750	47.00	K-55	.375	11.000	10.844	12.750	—	—	—	—	1,510	737
11.750	54.00	K-55	.435	10.880	10.724	12.750	—	—	—	—	2,070	850
11.750	60.00	K-55	.489	10.772	10.616	12.750	—	—	—	—	2,670	951

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
3,700	3,700	—	3,700	—	3,700	—	—	491	—	806	—	806	—	—	—
4,230	4,230	—	4,230	—	4,230	—	—	576	—	916	—	916	—	—	—
4,760	4,760	—	4,760	—	4,760	—	—	661	—	1,026	—	1,026	—	—	—
4,760	4,760	—	4,760	—	4,760	—	—	661	—	1,026	—	1,026	—	—	—
5,860	5,860	—	5,860	—	4,790	—	5,860	794	—	1,190	—	1,041	—	1,383	—
6,450	6,450	—	6,450	—	4,790	—	6,450	884	—	1,303	—	1,041	—	1,515	—
5,860	5,860	—	5,860	5,860	4,790	5,860	5,860	804	—	1,228	1,228	1,096	1,228	1,456	—
6,450	6,450	—	6,450	6,450	4,790	6,450	6,450	895	—	1,345	1,345	1,096	1,345	1,595	—
6,590	6,590	—	6,590	—	5,380	—	6,590	879	—	1,287	—	1,096	—	1,456	—
7,250	7,250	—	7,250	—	5,380	—	7,250	979	—	1,409	—	1,096	—	1,595	—
7,980	7,980	—	7,980	—	5,380	—	7,980	1,089	—	1,544	—	1,096	—	1,600	—
8,720	8,720	—	8,720	—	5,380	—	—	1,198	—	1,677	—	1,096	—	—	—
9,850	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10,750	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,680	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6,960	6,960	—	6,960	—	5,680	—	6,960	927	—	1,354	—	1,150	—	1,529	—
7,660	7,660	—	7,660	—	5,680	—	7,660	1,032	—	1,483	—	1,150	—	1,674	—
6,960	6,960	—	6,960	—	5,680	—	6,960	927	—	1,354	—	1,150	—	1,529	—
7,660	7,660	—	7,660	—	5,680	—	7,660	1,032	—	1,483	—	1,150	—	1,674	—
8,430	8,430	—	8,430	—	5,680	—	8,430	1,148	—	1,625	—	1,150	—	1,680	—
9,200	9,200	—	9,200	—	5,680	—	—	1,263	—	1,765	—	1,150	—	—	—
10,390	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11,350	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12,330	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,060	8,060	—	8,060	8,060	6,580	7,480	8,060	1,079	—	1,594	1,594	1,370	1,479	1,820	—
8,860	8,860	—	8,860	8,860	6,580	7,480	8,860	1,202	—	1,745	1,745	1,370	1,479	1,993	—
9,760	9,760	—	9,760	9,760	6,580	7,480	9,760	1,337	—	1,912	1,912	1,370	1,479	2,000	—
10,650	10,650	—	10,650	10,650	6,580	7,480	—	1,471	—	2,077	2,077	1,370	1,479	—	—
11,090	11,090	—	11,090	—	—	—	11,090	1,502	—	2,109	—	—	—	2,159	—
12,110	12,110	—	12,110	—	—	—	—	1,652	—	2,291	—	—	—	—	—
1,980	1,980	—	—	—	—	—	—	307	—	—	—	—	—	—	—
3,070	3,070	—	3,070	3,070	—	—	—	477	—	807	807	—	—	—	—
3,560	3,560	—	3,560	3,560	—	—	—	568	—	931	931	—	—	—	—
4,010	4,010	—	4,010	4,010	—	—	—	649	—	1,042	1,042	—	—	—	—
3,070	3,070	—	3,070	3,070	—	—	—	509	—	935	935	—	—	—	—
3,560	3,560	—	3,560	3,560	—	—	—	606	—	1,079	1,079	—	—	—	—
4,010	4,010	—	4,010	4,010	—	—	—	693	—	1,208	1,208	—	—	—	—

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
11.750	47.00	M-65	.375	11.000	10.844	12.750	—	—	—	—	1,590	871
11.750	54.00	M-65	.435	10.880	10.724	12.750	—	—	—	—	2,250	1,005
11.750	60.00	M-65	.489	10.772	10.616	12.750	—	—	—	—	2,840	1,124
11.750	60.00	L-80	.489	10.772	10.616	12.750	—	—	—	—	3,180	1,384
11.750	65.00	L-80	.534	10.682	10.526	—	—	—	—	—	3,870	1,505
11.750	71.00	L-80	.582	10.586	10.430	—	—	—	—	—	4,880	1,634
11.750	60.00	N-80	.489	10.772	10.616	12.750	—	—	—	—	3,180	1,384
11.750	65.00	N-80	.534	10.682	10.526	—	—	—	—	—	3,870	1,505
11.750	71.00	N-80	.582	10.586	10.430	—	—	—	—	—	4,880	1,634
11.750	60.00	C-90	.489	10.772	10.616	12.750	—	—	—	—	3,360	1,557
11.750	65.00	C-90	.534	10.682	10.526	—	—	—	—	—	4,060	1,693
11.750	71.00	C-90	.582	10.586	10.430	—	—	—	—	—	5,130	1,838
11.750	60.00	T-95	.489	10.772	10.616	12.750	—	—	—	—	3,440	1,643
11.750	65.00	T-95	.534	10.682	10.526	—	—	—	—	—	4,170	1,788
11.750	71.00	T-95	.582	10.586	10.430	—	—	—	—	—	5,240	1,940
11.750	60.00	C-95	.489	10.772	10.616	12.750	—	—	—	—	3,440	1,643
11.750	65.00	C-95	.534	10.682	10.526	—	—	—	—	—	4,170	1,788
11.750	71.00	C-95	.582	10.586	10.430	—	—	—	—	—	5,240	1,940
11.750	60.00	P-110	.489	10.772	10.616	12.750	—	—	—	—	3,610	1,903
11.750	65.00	P-110	.534	10.682	10.526	—	—	—	—	—	4,480	2,070
11.750	71.00	P-110	.582	10.586	10.430	—	—	—	—	—	5,470	2,246
11.750	60.00	Q-125	.489	10.772	10.616	12.750	—	—	—	—	3,680	2,162
11.750	65.00	Q-125	.534	10.682	10.526	—	—	—	—	—	4,690	2,352
11.750	71.00	Q-125	.582	10.586	10.430	—	—	—	—	—	5,760	2,552
13.375	48.00	H-40	.330	12.715	12.559	14.375	—	—	—	—	740	541
13.375	54.50	J-55	.380	12.615	12.459	14.375	—	—	—	—	1,130	853
13.375	61.00	J-55	.430	12.515	12.359	14.375	—	—	—	—	1,540	962
13.375	68.00	J-55	.480	12.415	12.259	14.375	—	—	—	—	1,950	1,069
13.375	54.50	K-55	.380	12.615	12.459	14.375	—	—	—	—	1,130	853
13.375	61.00	K-55	.430	12.515	12.359	14.375	—	—	—	—	1,540	962
13.375	68.00	K-55	.480	12.415	12.259	14.375	—	—	—	—	1,950	1,069
13.375	54.50	M-65	.380	12.615	12.459	14.375	—	—	—	—	1,140[b]	1,008
13.375	61.00	M-65	.430	12.515	12.359	14.375	—	—	—	—	1,620	1,137
13.375	68.00	M-65	.480	12.415	12.259	14.375	—	—	—	—	2,100	1,264
13.375	68.00	L-80	.480	12.415	12.259	14.375	—	—	—	—	2,260	1,556
13.375	72.00	L-80	.514	12.347	12.191	14.375	—	—	—	—	2,670	1,661

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
3,630	3,630	—	3,630	—	—	—	—	557	—	930	—	—	—	—	—
4,210	4,210	—	4,210	—	—	—	—	664	—	1,074	—	—	—	—	—
4,730	4,730	—	4,730	—	—	—	—	759	—	1,201	—	—	—	—	—
5,830	5,830	—	5,830	—	—	—	—	913	—	1,399	—	—	—	—	—
6,360	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6,930	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5,830	5,830	—	5,830	5,830	—	—	—	924	—	1,440	1,440	—	—	—	—
6,360	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6,930	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6,550	6,550	—	6,550	—	—	—	—	1,011	—	1,517	—	—	—	—	—
7,160	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7,800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6,920	6,920	—	6,920	—	—	—	—	1,066	—	1,596	—	—	—	—	—
7,560	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,230	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6,920	6,920	—	6,920	—	—	—	—	1,066	—	1,596	—	—	—	—	—
7,560	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,230	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,010	8,010	—	8,010	8,010	—	—	—	1,242	—	1,877	1,877	—	—	—	—
8,750	—	—	—	—		—	—	—	—	—	—	—	—	—	—
9,530	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9,100	9,100	—	9,100	—	—	—	—	1,395	—	2,074	—	—	—	—	—
9,940	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10,840	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1,730	1,730	—	—	—	—	—	—	322	—	—	—	—	—	—	—
2,730	2,730	—	2,730	2,730	—	—	—	514	—	909	909	—	—	—	—
3,090	3,090	—	3,090	3,090	—	—	—	595	—	1,025	1,025	—	—	—	—
3,450	3,450	—	3,450	3,450	—	—	—	675	—	1,140	1,140	—	—	—	—
2,730	2,730	—	2,730	2,730	—	—	—	547	—	1,037	1,037	—	—	—	—
3,090	3,090	—	3,090	3,090	—	—	—	633	—	1,169	1,169	—	—	—	—
3,450	3,450	—	3,450	3,450	—	—	—	718	—	1,300	1,300	—	—	—	—
3,230	3,230	—	3,230	—	—	—	—	602	—	1,052	—	—	—	—	—
3,660	3,660	—	3,660	—	—	—	—	697	—	1,185	—	—	—	—	—
4,080	4,080	—	4,080	—	—	—	—	790	—	1,318	—	—	—	—	—
5,020	5,020	—	5,020	—	—	—	—	952	—	1,545	—	—	—	—	—
5,380	5,380	—	5,380	—	—	—	—	1,029	—	1,650	—	—	—	—	—

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
13.375	68.00	N-80	.480	12.415	12.259	14.375	—	—	—	—	2,260	1,556
13.375	72.00	N-80	.514	12.347	12.191	14.375	—	—	—	—	2,670	1,661
13.375	68.00	C-90	.480	12.415	12.259	14.375	—	—	—	—	2,320	1,750
13.375	72.00	C-90	.514	12.347	12.191	14.375	—	—	—	—	2,780	1,869
13.375	68.00	C-95	.480	12.415	12.259	14.375	—	—	—	—	2,330	1,847
13.375	72.00	C-95	.514	12.347	12.191	14.375	—	—	—	—	2,820	1,973
13.375	68.00	T-95	.480	12.415	12.259	14.375	—	—	—	—	2,330	1,847
13.375	72.00	T-95	.514	12.347	12.191	14.375	—	—	—	—	2,820	1,973
13.375	68.00	P-110	.480	12.415	12.259	14.375	—	—	—	—	2,330[b]	2,139
13.375	72.00	P-110	.514	12.347	12.191	14.375	—	—	—	—	2,880	2,284
13.375	72.00	Q-125	.514	12.347	12.191	14.375	—	—	—	—	2,880[b]	2,596
16.000	65.00	H-40	.375	15.250	15.062	17.000	—	—	—	—	630[b]	736
16.000	75.00	J-55	.438	15.124	14.936	17.000	—	—	—	—	1,020	1,178
16.000	84.00	J-55	.495	15.010	14.822	17.000	—	—	—	—	1,410	1,326
16.000	109.00	J-55	.656	14.688	14.500	—	—	—	—	—	2,560	1,739
16.000	75.00	K-55	.438	15.124	14.936	17.000	—	—	—	—	1,020	1,178
16.000	84.00	K-55	.495	15.010	14.822	17.000	—	—	—	—	1,410	1,326
16.000	109.00	K-55	.656	14.688	14.500	—	—	—	—	—	2,560	1,739
16.000	75.00	M-65	.438	15.124	14.936	17.000	—	—	—	—	1,020[b]	1,392
16.000	84.00	M-65	.495	15.010	14.822	17.000	—	—	—	—	1,460	1,567
16.000	109.00	L-80	.656	14.688	14.500	—	—	—	—	—	3,080	2,530
16.000	109.00	N-80	.656	14.688	14.500	—	—	—	—	—	3,080	2,530
16.000	109.00	C-95	.656	14.688	14.500	—	—	—	—	—	3,320	3,004
16.000	109.00	P-110	.656	14.688	14.500	—	—	—	—	—	3,470	3,478
16.000	109.00	Q-125	.656	14.688	14.500	—	—	—	—	—	3,520	3,953
18.625	87.50	H-40	.435	17.755	17.567	20.000	—	—	—	—	630[b]	994
18.625	87.50	J-55	.435	17.755	17.567	20.000	—	—	—	—	630[b]	1,367
18.625	87.50	K-55	.435	17.755	17.567	20.000	—	—	—	—	630[b]	1,367
18.625	87.50	M-65	.435	17.755	17.567	20.000	—	—	—	—	630[b]	1,616
20.000	94.00	H-40	.438	19.124	18.936	21.000	—	—	—	—	520[b]	1,077

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
5,020	5,020	—	5,020	5,020	—	—	—	963	—	1,585	1,585	—	—	—	—
5,380	5,380	—	5,380	5,380	—	—	—	1,040	—	1,693	1,693	—	—	—	—
5,650	5,650	—	5,650	—	—	—	—	1,057	—	1,683	—	—	—	—	—
6,050	6,050	—	6,050	—	—	—	—	1,142	—	1,797	—	—	—	—	—
5,970	5,970	—	5,970	—	—	—	—	1,114	—	1,772	—	—	—	—	—
6,390	6,390	—	6,390	—	—	—	—	1,204	—	1,893	—	—	—	—	—
5,970	5,970	—	5,970	—	—	—	—	1,114	—	1,772	—	—	—	—	—
6,390	6,390	—	6,390	—	—	—	—	1,204	—	1,893	—	—	—	—	—
6,910	6,910	—	6,910	6,910	—	—	—	1,297	—	2,079	2,079	—	—	—	—
7,400	7,400	—	7,400	7,400	—	—	—	1,401	—	2,221	2,221	—	—	—	—
8,410	8,410	—	8,410	—	—	—	—	1,576	—	2,463	—	—	—	—	—
1,640	1, 640	—	—	—	—	—	—	439	—	—	—	—	—	—	—
2,630	2,630	—	2,630	2,630	—	—	—	710	—	1,200	1,200	—	—	—	—
2,980	2,980	—	2,980	2,980	—	—	—	817	—	1,351	1,351	—	—	—	—
3,950	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2,630	2,630	—	2,630	2,630	—	—	—	752	—	1,331	1,331	—	—	—	—
2,980	2,980	—	2,980	2,980	—	—	—	865	—	1,498	1,498	—	—	—	—
3,950	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3,110	3,110	—	3,110	—	—	—	—	832	—	1,394	—	—	—	—	—
3,520	3,520	—	3,520	—	—	—	—	957	—	1,570	—	—	—	—	—
5,740	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5,740	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6,820	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7,890	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8,970	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1,630	1,630	—	—	—	—	—	—	559	—	—	—	—	—	—	—
2,250	2,250	—	2,250	2,250	—	—	—	754	—	1,329	1,329	—	—	—	—
2,250	2,250	—	2,250	2,250	—	—	—	794	—	1,427	1,427	—	—	—	—
2,660	2,660	—	2,660	—	—	—	—	884	—	1,552	—	—	—	—	—
1,530	1,530	1,530	—	—	—	—	—	581	673	—	—	—	—	—	—

Table 1—Minimum Performance Properties of Casing (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13
					Threaded and Coupled			Extreme Line				
						Outside Diameter			Outside Diameter of Box-Powertight			
Size Outside Diameter in. *D*	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Regular Coupling in. *W*	Special Clearance Coupling in. *Wc*	Drift Diameter in.	Standard Joint in. *M*	Optional Joint in. *Mc*	Collapse Resistance psi	Pipe Body Yield 1,000 lb
20.00	94.00	J-55	.438	19.124	18.936	21.000	—	—	—	—	520[b]	1,480
20.00	106.50	J-55	.500	19.000	18.812	21.000	—	—	—	—	770[b]	1,685
20.00	133.00	J-55	.635	18.730	18.542	21.000	—	—	—	—	1,500	2,125
20.00	94.00	K-55	.438	19.124	18.936	21.000	—	—	—	—	520[b]	1,480
20.00	106.50	K-55	.500	19.000	18.812	21.000	—	—	—	—	770[b]	1,685
20.00	133.00	K-55	.635	18.730	18.542	21.000	—	—	—	—	1,500	2,125
20.00	94.00	M-65	.438	19.124	18.936	21.000	—	—	—	—	520[b]	1,750
20.00	106.50	M-65	.500	19.000	18.812	21.000	—	—	—	—	770[b]	1,991

Table 1—Minimum Performance Properties of Casing (Continued)

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
								Joint Strength, 1,000 lb[a]							
Internal Yield Pressure, psi[c]								Threaded and Coupled							
			Buttress Thread							Buttress Thread					
	Round Thread		Regular Coupling		Special Clearance Coupling			Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher[d] Grade	Same Grade	Higher[d] Grade	Extreme Line	Short	Long	Same Grade	Higher Grade	Same Grade	Higher Grade	Standard Joint	Optional Joint
2,110	2,110	2,110	2,110	2,110	—	—	—	783	907	1,402	1,402	—	—	—	—
2,410	2,410	2,410	2,410	2,410	—	—	—	913	1,056	1,595	1,595	—	—	—	—
3,060	3,060	3,060	3,060	3,060	—	—	—	1,192	1,379	2,012	2,012	—	—	—	—
2,110	2,110	2,110	2,110	2,110	—	—	—	823	955	1,479	1,479	—	—	—	—
2,410	2,410	2,410	2,410	2,410	—	—	—	959	1,113	1,683	1,683	—	—	—	—
3,060	3,060	3,060	3,060	3,060	—	—	—	1,252	1,453	2,123	2,123	—	—	—	—
2,490	2,490	2,490	2,490	—	—	—	—	918	1,063	1,643	—	—	—	—	—
2,840	2,840	2,840	2,840	—	—	—	—	1,070	1,238	1,870	—	—	—	—	—

[a]Some joint strengths listed in Col. 20 through 29 are greater than the corresponding pipe body yield strength listed in Col. 13.
[b]Collapse resistance values calculated by elastic formula.
[c]Minimum internal yield pressure is the lowest of the internal yield pressure of the pipe or the internal yield pressure of the coupling. The pressure leak resistance at the E1 or E7 plane is less than the internal yield pressure at minimum yield. Leak resistance is as follows:
[d]For J-55 and K55 casing the next higher grade is L-80.
For N-80 casing the next higher grade is P-110.
For P-110 casing the next higher grade is Q125.
No higher grades have been established for other grades.

Size		STC	LTC	BTC	BTC SPL CLR
$4^{1}/_{2}$		17,920	17,920	17,380	13,910
5		16,000	16,000	19,580	14,240
$5^{1}/_{2}$		13,160	13,160	16,100	11,880
$6^{5}/_{8}$		11,830	11,830	14,780	8,310
7		9,520	9,520	11,790	7,480
$7^{5}/_{8}$		11,800	11,800	12,680	8,030
$8^{5}/_{8}$		10,380	10,380	11,230	6,340
$9^{5}/_{8}$	C/T-95 and Lower	8,460	8,460	9,160	5,140
$9^{5}/_{8}$	P-110 and Higher	9,710	9,710	9,160	5,140
$10^{3}/_{4}$	C/T-95 and Lower	6,880	—	7,450	4,150
$10^{3}/_{4}$	P-110 and Higher	7,890	—	7,450	4,150
$11^{3}/_{4}$		5,820	—	6,300	—
$13^{3}/_{8}$		4,550	—	4,950	—
16		3,230	—	3,560	—
$18^{5}/_{8}$		3,150	—	3,500	—
20	H-40	2,100	2,100	2,320	—
20	J-55 and Higher	2,410	2,410	2,320	—

Table 2—Performance Properties of Tubing

1	2	3	4	5	6	7	8	9	10	11	12	13
	Nominal Weight						Threaded and Coupled					
								Coupling Outside Diameter			Integral Joint	
									Upset			
Size Outside Diameter in. D	Threaded and Coupled		Integral Joint lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Non-Upset in. *W*	Regular in. *W*	Special Clearance in. *Wc*	Drift Diameter in.	Outside Diameter of Box in.
	Non-Upset lb/ft	Upset lb/ft										
1.050	1.14	1.20	—	H-40	.113	.824	.730	1.313	1.660	—	—	—
1.050	—	1.54	—	H-40	.154	.742	.648	—	1.660	—	—	—
1.050	1.14	1.20	—	J-55	.113	.824	.730	1.313	1.660	—	—	—
1.050	—	1.54	—	J-55	.154	.742	.648	—	1.660	—	—	—
1.050	1.14	1.20	—	L-80	.113	.824	.730	1.313	1.660	—	—	—
1.050	—	1.54	—	L-80	.154	.742	.648	—	1.660	—	—	—
1.050	1.14	1.20	—	N-80	.113	.824	.730	1.313	1.660	—	—	—
1.050	—	1.54	—	N-80	.154	.742	.648	—	1.660	—	—	—
1.050	1.14	1.20	—	C-90	.113	.824	.730	1.313	1.660	—	—	—
1.050	—	1.54	—	C-90	.154	.742	.648	—	1.660	—	—	—
1.050	1.14	1.20	—	T-95	.113	.824	.730	1.313	1.660	—	—	—
1.050	—	1.54	—	T-95	.154	.742	.648	—	1.600	—	—	—
1.050	—	1.54	—	P-110	.154	.742	.648	—	1.660	—	—	—
1.315	1.70	1.80	1.72	H-40	.133	1.049	.955	1.660	1.900	—	.955	1.550
1.315	—	2.24	—	H-40	.179	.957	.863	—	1.900	—	—	—
1.315	1.70	1.80	1.72	J-55	.133	1.049	.955	1.660	1.900	—	.955	1.550
1.315	—	2.24	—	J-55	.179	.957	.863	—	1.900	—	—	—
1.315	1.70	1.80	1.72	L-80	.133	1.049	.955	1.660	1.900	—	.955	1.550
1.315	—	2.24	—	L-80	.179	.957	.863	—	1.900	—	—	—
1.315	1.70	1.80	1.72	N-80	.133	1.049	.955	1.660	1.900	—	.955	1.550
1.315	—	2.24	—	N-80	.179	.957	.863	—	1.900	—	—	—
1.315	1.70	1.80	1.72	C-90	.133	1.049	.955	1.660	1.900	—	.955	1.550
1.315	—	2.24	—	C-90	.179	.957	.863	—	1.900	—	—	—
1.315	1.70	1.80	1.72	T-95	.133	1.049	.955	1.660	1.900	—	.955	1.550
1.315	—	2.24	—	T-95	.179	.957	.863	—	1.900	—	—	—
1.315	—	2.24	—	P-110	.179	.957	.863	—	1.900	—	—	—
1.660	—	—	2.10	H-40	.125	1.410	1.316	—	—	—	1.316	1.880
1.660	2.30	2.40	2.33	H-40	.140	1.380	1.286	2.054	2.200	—	1.286	1.880
1.660	—	3.07	—	H-40	.191	1.278	1.184	—	2.200	—	—	—
1.660	—	—	2.10	J-55	.125	1.410	1.316	—	—	—	1.316	1.880
1.660	2.30	2.40	2.33	J-55	.140	1.380	1.286	2.054	2.200	—	1.286	1.880
1.660	—	3.07	—	J-55	.191	1.278	1.184	—	2.200	—	—	—
1.660	2.30	2.40	2.33	L-80	.140	1.380	1.286	2.054	2.200	—	1.286	1.880
1.660	—	3.07	—	L-80	.191	1.278	1.184	—	2.200	—	—	—

Table 2—Performance Properties of Tubing (Continued)

14	15	16	17	18	19	20	21	22	23	24
	Internal Yield Pressure					Joint Yield Strength				
		Threaded and Coupled					Threaded and Coupled			
			Upset					Upset		
Collapse Resistance	Plain End	Non-Upset psi	Regular psi	Special Clearance psi	Integral Joint psi	Pipe Body Yield lb	Non-Upset lb	Regular lb	Special Clearance lb	Integral Joint lb
7,680	7,530	7,530	7,530	—	—	13,320	6,320	13,320	—	—
10,010	10,270	—	9,420	—	—	17,320	—	17,320	—	—
10,560	10,360	10,360	10,360	—	—	18,320	8,690	18,320	—	—
13,770	14,120	—	12,950	—	—	23,820	—	23,820	—	—
15,370	15,070	15,070	15,070	—	—	26,640	12,640	26,640	—	—
20,020	20,530	—	18,840	—	—	34,640	—	34,640	—	—
15,370	15,070	15,070	15,070	—	—	26,640	12,640	26,640	—	—
20,020	20,530	—	18,840	—	—	34,640	—	34,640	—	—
17,290	16,950	16,950	16,950	—	—	29,970	14,220	29,970	—	—
22,530	23,100	—	21,200	—	—	38,970	—	38,970	—	—
18,250	17,890	17,890	17,890	—	—	31,640	15,010	31,640	—	—
23,780	24,380	—	22,380	—	—	41,140	—	41,140	—	—
27,530	28,230	—	25,910	—	—	47,630	—	47,630	—	—
7,270	7,080	7,080	7,080	—	7,080	19,760	10,920	19,760	—	15,940
9,410	9,530	—	9,530	—	—	25,560	—	25,560	—	—
10,000	9,730	9,730	9,730	—	9,730	27,170	15,020	27,170	—	21,910
12,940	13,100	—	13,100	—	—	35,150	—	35,150	—	—
14,550	14,160	14,160	14,160	—	14,160	39,520	21,840	39,520	—	31,870
18,810	19,060	—	19,060	—	—	51,120	—	51,120	—	—
14,550	14,160	14,160	14,160	—	14,160	39,520	21,840	39,520	—	31,870
18,810	19,060	—	19,060	—	—	51,120	—	51,120	—	—
16,360	15,930	15,930	15,930	—	15,930	44,460	24,570	44,460	—	35,860
21,170	21,440	—	21,440	—	—	57,510	—	57,510	—	—
17,270	16,810	16,810	16,810	—	16,810	46,930	25,940	46,930	—	37,850
22,340	22,630	—	22,630	—	—	60,710	—	60,710	—	—
25,870	26,200	—	26,200	—	—	70,290	—	70,290	—	—
5,570	5,270	—	—	—	5,270	24,120	—	—	—	22,230
6,180	5,900	5,900	5,900	—	5,810	26,760	15,480	26,760	—	22,230
8,150	8,050	—	8,050	—	—	35,240	—	35,240	—	—
7,660	7,250	—	—	—	7,250	33,170	—	—	—	30,560
8,490	8,120	8,120	8,120	—	7,990	36,800	21,290	36,800	—	30,560
11,200	11,070	—	11,070	—	—	48,460	—	48,460	—	—
12,360	11,810	11,810	11,810	—	11,620	53,520	30,960	53,520	—	44,460
16,290	16,110	—	16,110	—	—	70,480	—	70,480	—	—

Table 2—Performance Properties of Tubing

1	2	3	4	5	6	7	8	9	10	11	12	13
	Nominal Weight						Threaded and Coupled					
								Coupling Outside Diameter			Integral Joint	
									Upset			
Size Outside Diameter in. D	Threaded and Coupled		Integral Joint lb/ft	Grade	Wall Thickness in. t	Inside Diameter in. d	Drift Diameter in.	Non-Upset in. W	Regular in. W	Special Clearance in. Wc	Drift Diameter in.	Outside Diameter of Box in.
	Non-Upset lb/ft	Upset lb/ft										
1.660	2.30	2.40	2.33	N80	.140	1.380	1.286	2.054	2.200	—	1.286	1.880
1.660	—	3.07	—	N80	.191	1.278	1.184	—	2.200	—	—	—
1.660	2.30	2.40	2.33	C-90	.140	1.380	1.286	2.054	2.200	—	1.286	1.880
1.660	—	3.07	—	C-90	.191	1.278	1.184	—	2.200	—	—	—
1.660	2.30	2.40	2.33	T-95	.140	1.380	1.286	2.054	2.200	—	1.286	1.880
1.660	—	3.07	—	T-95	.191	1.278	1.184	—	2.200	—	—	—
1.660	—	3.07	—	P-110	.191	1.278	1.184	—	2.200	—	—	—
1.900	—	—	2.40	H-40	.125	1.650	1.556	—	—	—	1.556	2.110
1.900	2.75	2.90	2.76	H-40	.145	1.610	1.516	2.200	2.500	—	1.516	2.110
1.900	—	3.73	—	H-40	.200	1.500	1.406	—	2.500	—	—	—
1.900	—	—	2.40	J-55	.125	1.650	1.556	—	—	—	1.556	2.110
1.900	2.75	2.90	2.76	J-55	.145	1.610	1.516	2.200	2.500	—	1.516	2.110
1.900	—	3.73	—	J-55	.200	1.500	1.406	—	2.500	—	—	—
1.900	2.75	2.90	2.76	L-80	.145	1.610	1.516	2.200	2.500	—	1.516	2.110
1.900	—	3.73	—	L-80	.200	1.500	1.406	—	2.500	—	—	—
1.900	4.42	—	—	L-80	.250	1.400	1.306	—	—	—	—	—
1.900	5.15	—	—	L-80	.300	1.300	1.206	—	—	—	—	—
1.900	2.75	2.90	2.76	N-80	.145	1.610	1.516	2.200	2.500	—	1.516	2.110
1.900	—	3.73	—	N-80	.200	1.500	1.406	—	2.500	—	—	—
1.900	2.75	2.90	2.76	C-90	.145	1.610	1.516	2.200	2.500	—	1.516	2.110
1.900	—	3.73	—	C-90	.200	1.500	1.406	—	2.500	—	—	—
1.900	4.42	—	—	C-90	.250	1.400	1.306	—	—	—	—	—
1.900	5.15	—	—	C-90	.300	1.300	1.206	—	—	—	—	—
1.900	2.75	2.90	2.76	T-95	.145	1.610	1.516	2.200	2.500	—	1.516	2.110
1.900	—	3.73	—	T-95	.200	1.500	1.406	—	2.500	—	—	—
1.900	4.42	—	—	T-95	.250	1.400	1.306	—	—	—	—	—
1.900	5.15	—	—	T-95	.300	1.300	1.206	—	—	—	—	—
1.900	—	3.73	—	P-110	.200	1.500	1.406	—	2.500	—	—	—
2.063	—	—	3.25	H-40	.156	1.751	1.657	—	—	—	1.657	2.325
2.063	4.50	—	—	H-40	.225	1.613	1.519	—	—	—	—	—
2.063	—	—	3.25	J-55	.156	1.751	1.657	—	—	—	1.657	2.325
2.063	4.50	—	—	J-55	.225	1.613	1.519	—	—	—	—	—
2.063	—	—	3.25	L-80	.156	1.751	1.657	—	—	—	1.657	2.325
2.063	4.50	—	—	L-80	.225	1.613	1.519	—	—	—	—	—
2.063	—	—	3.25	N-80	.156	1.751	1.657	—	—	—	1.657	2.325
2.063	4.50	—	—	N-80	.225	1.613	1.519	—	—	—	—	—

Table 2—Performance Properties of Tubing (Continued)

14	15	16	17	18	19	20	21	22	23	24
	Internal Yield Pressure					Joint Yield Strength				
		Threaded and Coupled					Threaded and Coupled			
			Upset					Upset		
Collapse Resistance	Plain End	Non-Upset psi	Regular psi	Special Clearance psi	Integral Joint psi	Pipe Body Yield lb	Non-Upset lb	Regular lb	Special Clearance lb	Integral Joint lb
12,360	11,810	11,810	11,810	—	11,620	53,520	30,960	53,520	—	44,460
16,290	16,110	—	16,110	—	—	70,480	—	70,480	—	—
13,900	13,280	13,280	13,280	—	13,070	60,210	34,830	60,210	—	50,010
18,330	18,120	—	18,120	—	—	79,290	—	79,290	—	—
14,670	14,020	14,020	14,020	—	13,800	63,560	36,770	63,560	—	52,790
19,350	19,130	—	19,130	—	—	83,700	—	83,700	—	—
22,400	22,150	—	22,150	—	—	96,910	—	96,910	—	—
4,920	4,610	—	—	—	4,610	27,880	—	—	—	26,940
5,640	5,340	5,340	5,340	—	5,140	31,960	19,040	31,960	—	26,940
7,530	7,370	—	7,370	—	—	42,720	—	42,720	—	—
6,640	6,330	—	—	—	6,330	38,340	—	—	—	37,040
7,750	7,350	7,350	7,350	—	7,060	43,950	26,180	43,950	—	37,040
10,360	10,130	—	10,130	—	—	58,740	—	58,740	—	—
11,280	10,680	10,680	10,680	—	10,270	63,920	38,080	63,920	—	53,880
15,070	14,740	—	14,740	—	—	85,440	—	85,440	—	—
18,280	18,420	—	—	—	—	103,680	—	—	—	—
21,270	22,110	—	—	—	—	120,640	—	—	—	—
11,280	10,680	10,680	10,680	—	10,270	63,920	38,080	63,920	—	53,880
15,070	14,740	—	14,740	—	—	85,440	—	85,440	—	—
12,620	12,020	12,020	12,020	—	11,560	71,910	42,840	71,910	—	60,610
16,950	16,580	—	16,580	—	—	96,120	—	96,120	—	—
20,570	20,720	—	—	—	—	116,640	—	—	—	—
23,930	24,870	—	—	—	—	135,720	—	—	—	—
13,190	12,690	12,690	12,690	—	12,200	75,910	45,220	75,910	—	63,980
17,890	17,500	—	17,500	—	—	101,460	—	101,460	—	—
21,710	21,880	—	—	—	—	123,120	—	—	—	—
25,260	26,250	—	—	—	—	143,260	—	—	—	—
20,720	20,260	—	20,260	—	—	117,480	—	117,480	—	—
5,590	5,290	—	—	—	5,090	37,400	—	—	—	35,800
7,770	7,630	—	—	—	—	52,000	—	—	—	—
7,690	7,280	—	—	—	7,000	51,400	—	—	—	49,300
10,690	10,500	—	—	—	—	71,400	—	—	—	—
11,180	10,590	—	—	—	10,180	74,800	—	—	—	71,700
15,550	15,270	—	—	—	—	103,900	—	—	—	—
11,180	10,590	—	—	—	10,180	74,800	—	—	—	71,700
15,550	15,270	—	—	—	—	103,900	—	—	—	—

Table 2—Performance Properties of Tubing

1	2	3	4	5	6	7	8	9	10	11	12	13
	Nominal Weight						Threaded and Coupled					
								Coupling Outside Diameter			Integral Joint	
									Upset			
Size Outside Diameter in. D	Threaded and Coupled		Integral Joint lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Non-Upset in. *W*	Regular in. *W*	Special Clearance in. *Wc*	Drift Diameter in.	Outside Diameter of Box in.
	Non-Upset lb/ft	Upset lb/ft										
2.063	—	—	3.25	C-90	.156	1.751	1.657	—	—	—	1.657	2.325
2.063	4.50	—	—	C-90	.225	1.613	1.519	—	—	—	—	—
2.063	—	—	3.25	T-95	.156	1.751	1.657	—	—	—	1.657	2.325
2.063	4.50	—	—	T-95	.225	1.613	1.519	—	—	—	—	—
2.063	4.50	—	—	P-110	.225	1.613	1.519	—	—	—	—	—
2.375	4.00	—	—	H-40	.167	2.041	1.947	2.875	—	—	—	—
2.375	4.60	4.70	—	H-40	.190	1.995	1.901	2.875	3.063	2.910	—	—
2.375	4.00	—	—	J-55	.167	2.041	1.947	2.875	—	—	—	—
2.375	4.60	4.70	—	J-55	.190	1.995	1.901	2.875	3.063	2.910	—	—
2.375	4.00	—	—	L-80	.167	2.041	1.947	2.875	—	—	—	—
2.375	4.60	4.70	—	L-80	.190	1.995	1.901	2.875	3.063	2.910	—	—
2.375	5.80	5.95	—	L-80	.254	1.867	1.773	2.875	3.063	2.910	—	—
2.375	6.60	—	—	L-80	.295	1.785	1.691	—	—	—	—	—
2.375	7.35	7.45	—	L-80	.336	1.703	1.609	—	3.063	2.910	—	—
2.375	4.00	—	—	N-80	.167	2.041	1.947	2.875	—	—	—	—
2.375	4.60	4.70	—	N-80	.190	1.995	1.901	2.875	3.063	2.910	—	—
2.375	5.80	5.95	—	N-80	.254	1.867	1.773	2.875	3.063	2.910	—	—
2.375	4.00	—	—	C-90	.167	2.041	1.947	2.875	—	—	—	—
2.375	4.60	4.70	—	C-90	.190	1.995	1.901	2.875	3.063	2.910	—	—
2.375	5.80	5.95	—	C-90	.254	1.867	1.773	2.875	3.063	2.910	—	—
2.375	6.60	—	—	C-90	.295	1.785	1.691	—	—	—	—	—
2.375	7.35	7.45	—	C-90	.336	1.703	1.609	—	3.063	2.910	—	—
2.375	4.00	—	—	T-95	.167	2.041	1.947	—	—	—	—	—
2.375	4.60	4.70	—	T-95	.190	1.995	1.901	2.875	3.063	2.910	—	—
2.375	5.80	5.95	—	T-95	.254	1.867	1.773	2.875	3.063	2.910	—	—
2.375	6.60	—	—	T-95	.295	1.785	1.691	—	—	—	—	—
2.375	7.35	7.45	—	T-95	.336	1.703	1.609	—	3.063	2.910	—	—
2.375	4.60	4.70	—	P-110	.190	1.995	1.901	2.875	3.063	2.910	—	—
2.375	5.80	5.95	—	P-110	.254	1.867	1.773	2.875	3.063	2.910	—	—
2.875	6.40	6.50	—	H-40	.217	2.441	2.347	3.500	3.668	3.460	—	—
2.875	6.40	6.50	—	J-55	.217	2.441	2.347	3.500	3.668	3.460	—	—
2.875	6.40	6.50	—	L-80	.217	2.441	2.347	3.500	3.668	3.460	—	—
2.875	7.80	7.90	—	L-80	.276	2.323	2.229	3.500	3.668	3.460	—	—
2.875	8.60	8.70	—	L-80	.308	2.259	2.165	3.500	3.668	3.460	—	—
2.875	9.35	9.45	—	L-80	.340	2.195	2.101	—	3.668	3.460	—	—
2.875	10.50	—	—	L-80	.392	2.091	1.997	—	—	—	—	—
2.875	11.50	—	—	L-80	.440	1.995	1.901	—	—	—	—	—

Table 2—Performance Properties of Tubing (Continued)

14	15	16	17	18	19	20	21	22	23	24
	Internal Yield Pressure					Joint Yield Strength				
		Threaded and Coupled					Threaded and Coupled			
			Upset					Upset		
Collapse Resistance	Plain End	Non-Upset psi	Regular psi	Special Clearance psi	Integral Joint psi	Pipe Body Yield lb	Non-Upset lb	Regular lb	Special Clearance lb	Integral Joint lb
12,420	11,910	—	—	—	11,460	84,200	—	—	—	80,700
17,490	17,180	—	—	—	—	116,900	—	—	—	—
12,980	12,570	—	—	—	12,090	88,800	—	—	—	85,100
18,460	18,130	—	—	—	—	123,400	—	—	—	—
21,380	20,990	—	—	—	—	142,900	—	—	—	—
5,230	4,920	4,920	—	—	—	46,300	30,100	—	—	—
5,890	5,600	5,600	5,600	5,600	—	52,200	35,900	52,200	52,200	—
7,190	6,770	6,770	—	—	—	63,700	41,400	—	—	—
8,100	7,700	7,700	7,700	7,700	—	71,700	49,400	71,700	71,700	—
9,980	9,840	9,840	—	—	—	92,600	60,200	—	—	—
11,780	11,200	11,200	11,200	11,200	—	104,300	71,800	104,300	104,300	—
15,280	14,970	14,970	14,860	11,440	—	135,400	102,900	135,400	135,400	—
17,410	17,390	—	—	—	—	154,200	—	—	—	—
19,430	19,810	—	14,860	11,440	—	172,200	—	172,200	141,300	—
9,980	9,840	9,840	—	—	—	92,600	60,200	—	—	—
11,780	11,200	11,200	11,200	11,200	—	104,300	71,800	104,300	104,300	—
15,280	14,970	14,970	14,860	11,440	—	135,400	102,900	135,400	135,400	—
10,940	11,070	11,070	—	—	—	104,200	67,700	—	—	—
13,250	12,600	12,600	12,600	12,600	—	117,400	80,800	117,400	117,400	—
17,190	16,840	16,840	16,720	12,870	—	152,300	115,700	152,300	152,300	—
19,580	19,560	—	—	—	—	173,500	—	—	—	—
21,860	22,280	—	16,720	12,870	—	193,700	—	193,700	159,000	—
11,410	11,690	—	—	—	—	110,000	—	—	—	—
13,980	13,300	13,300	13,300	13,300	—	123,900	85,300	123,900	123,900	—
18,150	17,780	17,780	17,650	13,580	—	160,700	122,200	160,700	160,700	—
20,670	20,650	—	—	—	—	183,200	—	—	—	—
23,080	23,520	—	17,650	13,580	—	204,400	—	204,400	167,800	—
16,130	15,400	15,400	15,400	15,400	—	143,400	98,800	143,400	143,400	—
21,010	20,590	20,590	20,430	15,730	—	186,100	141,500	186,100	186,100	—
5,580	5,280	5,280	5,280	5,280	—	72,500	52,700	72,500	72,500	—
7,680	7,260	7,260	7,260	7,260	—	99,700	72,500	99,700	99,700	—
11,170	10,570	10,570	10,570	10,570	—	145,000	105,400	145,000	145,000	—
13,890	13,440	13,440	13,440	11,030	—	180,300	140,700	180,300	180,300	—
15,300	15,000	15,000	14,940	11,030	—	198,700	159,200	198,700	193,100	—
16,680	16,560	—	14,940	11,030	—	216,600	—	216,600	193,100	—
18,840	19,090	—	—	—	—	244,600	—	—	—	—
20,740	21,430	—	—	—	—	269,300	—	—	—	—

Table 2—Performance Properties of Tubing

1	2	3	4	5	6	7	8	9	10	11	12	13
	Nominal Weight						Threaded and Coupled					
								Coupling Outside Diameter			Integral Joint	
									Upset			
Size Outside Diameter in. D	Threaded and Coupled		Integral Joint lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Non-Upset in. *W*	Regular in. *W*	Special Clearance in. *Wc*	Drift Diameter in.	Outside Diameter of Box in.
	Non-Upset lb/ft	Upset lb/ft										
2.875	6.40	6.50	—	N-80	.217	2.441	2.347	3.500	3.668	3.460	—	—
2.875	7.80	7.90	—	N-80	.276	2.323	2.229	3.500	3.668	3.460	—	—
2.875	8.60	8.70	—	N-80	.308	2.259	2.165	3.500	3.668	3.460	—	—
2.875	6.40	6.50	—	C-90	.217	2.441	2.347	3.500	3.668	3.460	—	—
2.875	7.80	7.90	—	C-90	.276	2.323	2.229	3.500	3.668	3.460	—	—
2.875	8.60	8.70	—	C-90	.308	2.259	2.165	3.500	3.668	3.460	—	—
2.875	9.35	9.45	—	C-90	.340	2.195	2.101	—	3.668	3.460	—	—
2.875	10.50	—	—	C-90	.392	2.091	1.997	—	—	—	—	—
2.875	11.50	—	—	C-90	.440	1.995	1.901	—	—	—	—	—
2.875	6.40	6.50	—	T-95	.217	2.441	2.347	3.500	3.668	3.460	—	—
2.875	7.80	7.90	—	T-95	.276	2.323	2.229	3.500	3.668	3.460	—	—
2.875	8.60	8.70	—	T-95	.308	2.259	2.165	3.500	3.668	3.460	—	—
2.875	9.35	9.45	—	T-95	.340	2.195	2.101	—	3.668	3.460	—	—
2.875	10.50	—	—	T-95	.392	2.091	1.997	—	—	—	—	—
2.875	11.50	—	—	T-95	.440	1.995	1.901	—	—	—	—	—
2.875	6.40	6.50	—	P-110	.217	2.441	2.347	3.500	3.668	3.460	—	—
2.875	7.80	7.90	—	P-110	.276	2.323	2.229	3.500	3.668	3.460	—	—
2.875	8.60	8.50	—	P-110	.308	2.259	2.165	3.500	3.668	3.460	—	—
3.500	7.70	—	—	H-40	.216	3.068	2.943	4.250	—	—	—	—
3.500	9.20	9.30	—	H-40	.254	2.992	2.867	4.250	4.500	4.180	—	—
3.500	10.20	—	—	H-40	.289	2.922	2.797	4.250	—	—	—	—
3.500	7.70	—	—	J-55	.216	3.068	2.943	4.250	—	—	—	—
3.500	9.20	9.30	—	J-55	.254	2.992	2.867	4.250	4.500	4.180	—	—
3.500	10.20	—	—	J-55	.289	2.922	2.797	4.250	—	—	—	—
3.500	7.70	—	—	L-80	.216	3.068	2.943	4.250	—	—	—	—
3.500	9.20	9.30	—	L-80	.254	2.992	2.867	4.250	4.500	4.180	—	—
3.500	10.20	—	—	L-80	.289	2.922	2.797	4.250	—	—	—	—
3.500	12.70	12.95	—	L-80	.375	2.750	2.625	4.250	4.500	4.180	—	—
3.500	14.30	—	—	L-80	.430	2.640	2.515	—	—	—	—	—
3.500	15.50	—	—	L-80	.476	2.548	2.423	—	—	—	—	—
3.500	17.00	—	—	L-80	.530	2.440	2.315	—	—	—	—	—
3.500	7.70	—	—	N-80	.216	3.068	2.943	4.250	—	—	—	—
3.500	9.20	9.30	—	N-80	.254	2.992	2.867	4.250	4.500	4.180	—	—
3.500	10.20	—	—	N-80	.289	2.922	2.797	4.250	—	—	—	—
3.500	12.70	12.95	—	N-80	.375	2.750	2.625	4.250	4.500	4.180	—	—
3.500	7.70	—	—	C-90	.216	3.068	2.943	4.250	—	—	—	—
3.500	9.20	9.30	—	C-90	.254	2.992	2.867	4.250	4.500	4.180	—	—
3.500	10.20	—	—	C-90	.289	2.922	2.797	4.250	—	—	—	—
3.500	12.70	12.95	—	C-90	.375	2.750	2.625	4.250	4.500	4.180	—	—
3.500	14.30	—	—	C-90	.430	2.640	2.515	—	—	—	—	—
3.500	15.50	—	—	C-90	.476	2.548	2.423	—	—	—	—	—
3.500	17.00	—	—	C-90	.530	2.440	2.315	—	—	—	—	—

Table 2—Performance Properties of Tubing (Continued)

14	15	16	17	18	19	20	21	22	23	24
	Internal Yield Pressure					Joint Yield Strength				
		Threaded and Coupled					Threaded and Coupled			
			Upset					Upset		
Collapse Resistance	Plain End	Non-Upset psi	Regular psi	Special Clearance psi	Integral Joint psi	Pipe Body Yield lb	Non-Upset lb	Regular lb	Special Clearance lb	Integral Joint lb
11,170	10,570	10,570	10,570	10,570	—	145,000	105,400	145,000	145,000	—
13,890	13,440	13,440	13,440	11,030	—	180,300	140,700	180,300	180,300	—
15,300	15,000	15,000	14,940	11,030	—	198,700	159,200	198,700	193,100	—
12,380	11, 890	11,890	11,890	11,890	—	163,100	118,600	163,100	163,100	—
15,620	15,120	15,120	15,120	12,410	—	202,900	158,300	202,900	202,900	—
17,220	16,870	16,870	16,810	12,410	—	223,600	179,100	223,600	217,300	—
18,770	18,630	—	16,810	12,410	—	243,700	—	243,700	217,300	—
21,200	21,470	—	—	—	—	275,200	—	—	—	—
23,330	24,100	—	—	—	—	302,900	—	—	—	—
12,940	12,550	12,550	12,550	12,550	—	172,100	125,200	172,100	172,100	—
16,490	15,960	15,960	15,960	13,100	—	214,100	167,100	214,100	214,100	—
18,170	17,810	17,810	17,740	13,100	—	236,000	189,100	236,000	229,400	—
19,810	19,660	—	17,740	13,100	—	257,300	—	257,300	229,400	—
22,370	22,670	—	—	—	—	290,500	—	—	—	—
24,630	25,440	—	—	—	—	319,800	—	—	—	—
14,550	14,530	14,530	14,530	14,530	—	199,300	145,000	199,300	199,300	—
19,090	18,480	18,480	18,480	15,160	—	247,900	193,500	247,900	247,900	—
21,040	20,620	20,620	20,540	15,160	—	273,200	218,900	273,200	265,600	—
4,630	4,320	4,320	—	—	—	89,100	65,000	—	—	—
5,380	5,080	5,080	5,080	5,080	—	103,600	79,400	103,600	103,600	—
6,060	5,780	5,780	—	—	—	116, 600	92,500	—	—	—
5,970	5,940	5,940	—	—	—	122,500	89,400	—	—	—
7,400	6,990	6,990	6,990	6,990	—	142,500	109,200	142,500	142,500	—
8,330	7,950	7,950	—	—	—	160,300	127,200	—	—	—
7,870	8,640	8,640	—	—	—	178,200	130,000	—	—	—
10,540	10,160	10,160	10,160	10,160	—	207,200	158,900	207,200	207,200	—
12,120	11,560	11,560	—	—	—	233,200	185,000	—	—	—
15,310	15,000	15,000	15,000	10,660	—	294,600	246,200	294,600	273,100	—
17,240	17,200	—	—	—	—	331,800	—	—	—	—
18,800	19,040	—	—	—	—	361,800	—	—	—	—
20,560	21,200	—	—	—	—	395,600	—	—	—	—
7,870	8,640	8,640	—	—	—	178,200	130,000	—	—	—
10,540	10,160	10,160	10,160	10,160	—	207,200	158,900	207,200	207,200	—
12,120	11,560	11,560	—	—	—	233,200	185,000	—	—	—
15,310	15,000	15,000	15,000	10,660	—	294,600	246,200	294,600	273,100	—
8,540	9,720	9,720	—	—	—	200,500	146,300	—	—	—
11,570	11,430	11,430	11,430	11,430	—	233,100	178,700	233,100	233,100	—
13,640	13,010	13,010	—	—	—	262,400	208,100	—	—	—
17,220	16,880	16,880	16,880	11,990	—	331,400	277,000	331,400	307,300	—
19,400	19,350	—	—	—	—	373,200	—	—	—	—
21,150	21,420	—	—	—	—	407,000	—	—	—	—
23,130	23,850	—	—	—	—	445,100	—	—	—	—

Table 2—Performance Properties of Tubing

1	2	3	4	5	6	7	8	9	10	11	12	13
	Nominal Weight						Threaded and Coupled					
								Coupling Outside Diameter			Integral Joint	
									Upset			
Size Outside Diameter in. D	Threaded and Coupled		Integral Joint lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Non-Upset in. *W*	Regular in. *W*	Special Clearance in. *Wc*	Drift Diameter in.	Outside Diameter of Box in.
	Non-Upset lb/ft	Upset lb/ft										
3.500	7.70	—	—	T-95	.216	3.068	2.943	4.250	—	—	—	—
3.500	9.20	9.30	—	T-95	.254	2.992	2.867	4.250	4.500	4.180	—	—
3.500	10.20	—	—	T-95	.289	2.922	2.797	4.250	—	—	—	—
3.500	12.70	12.95	—	T-95	.375	2.750	2.625	4.250	4.500	4.180	—	—
3.500	14.30	—	—	T-95	.430	2.640	2.515	—	—	—	—	—
3.500	15.50	—	—	T-95	.476	2.548	2.423	—	—	—	—	—
3.500	17.00	—	—	T-95	.530	2.440	2.315	—	—	—	—	—
3.500	9.20	9.30	—	P-110	.254	2.992	2.867	4.250	4.500	4.180	—	—
3.500	12.70	12.95	—	P-110	.375	2.750	2.625	4.250	4.500	4.180	—	—
4.000	9.50	—	—	H-40	.226	3.548	3.423	4.750	—	—	—	—
4.000	—	11.00	—	H-40	.262	3.476	3.351	—	5.000	—	—	—
4.000	9.50	—	—	J-55	.226	3.548	3.423	4.750	—	—	—	—
4.000	—	11.00	—	J-55	.262	3.476	3.351	—	5.000	—	—	—
4.000	9.50	—	—	L-80	.226	3.548	3.423	4.750	—	—	—	—
4.000	—	11.00	—	L-80	.262	3.476	3.351	—	5.000	—	—	—
4.000	13.20	—	—	L-80	.330	3.340	3.215	—	—	—	—	—
4.000	16.10	—	—	L-80	.415	3.170	3.045	—	—	—	—	—
4.000	18.90	—	—	L-80	.500	3.000	2.875	—	—	—	—	—
4.000	22.20	—	—	L-80	.610	2.780	2.655	—	—	—	—	—
4.000	9.50	—	—	N-80	.226	3.548	3.423	4.750	—	—	—	—
4.000	—	11.00	—	N-80	.262	3.476	3.351	—	5.000	—	—	—
4.000	9.50	—	—	C-90	.226	3.548	3.423	4.750	—	—	—	—
4.000	—	11.00	—	C-90	.262	3.476	3.351	—	5.000	—	—	—
4.000	13.20	—	—	C-90	.330	3.340	3.215	—	—	—	—	—
4.000	16.10	—	—	C-90	.415	3.170	3.045	—	—	—	—	—
4.000	18.90	—	—	C-90	.500	3.000	2.875	—	—	—	—	—
4.000	22.20	—	—	C-90	.610	2.780	2.655	—	—	—	—	—
4.000	9.50	—	—	T-95	.226	3.548	3.423	4.750	—	—	—	—
4.000	—	11.00	—	T-95	.262	3.476	3.351	—	5.000	—	—	—
4.000	13.20	—	—	T-95	.330	3.340	3.215	—	—	—	—	—
4.000	16.10	—	—	T-95	.415	3.170	3.045	—	—	—	—	—
4.000	18.90	—	—	T-95	.500	3.000	2.875	—	—	—	—	—
4.000	22.20	—	—	T-95	.610	2.780	2.655	—	—	—	—	—
4.500	12.60	12.75	—	H-40	.271	3.958	3.833	5.200	5.563	—	—	—
4.500	12.60	12.75	—	J-55	.271	3.958	3.833	5.200	5.563	—	—	—
4.500	12.60	12.75	—	L-80	.271	3.958	3.833	5.200	5.563	—	—	—
4.500	15.20	—	—	L-80	.337	3.826	3.701	—	—	—	—	—
4.500	17.00	—	—	L-80	.380	3.740	3.615	—	—	—	—	—
4.500	18.90	—	—	L-80	.430	3.640	3.515	—	—	—	—	—
4.500	21.50	—	—	L-80	.500	3.500	3.375	—	—	—	—	—

Table 2—Performance Properties of Tubing (Continued)

14	15	16	17	18	19	20	21	22	23	24
	Internal Yield Pressure					Joint Yield Strength				
		Threaded and Coupled					Threaded and Coupled			
			Upset					Upset		
Collapse Resistance	Plain End	Non-Upset psi	Regular psi	Special Clearance psi	Integral Joint psi	Pipe Body Yield lb	Non-Upset lb	Regular lb	Special Clearance lb	Integral Joint lb
8,850	10,260	10,260	—	—	—	211,700	154,400	—	—	—
12,080	12,070	12,070	12,070	12,070	—	246,000	188,700	246,000	246,000	—
14,390	13,730	13,730	—	—	—	276,900	219,600	—	—	—
18,180	17,810	17,810	17,810	12,660	—	349,800	292,400	349,800	324,300	—
20,480	20,430	—	—	—	—	394,000	—	—	—	—
22,330	22,610	—	—	—	—	429,600	—	—	—	—
24,410	25,170	—	—	—	—	469,800	—	—	—	—
13,530	13,970	13,970	13,970	13,970	—	284,900	218,500	284,900	284,900	—
21,050	20,630	20,630	20,630	14,660	—	405,000	338,600	405,000	375,500	—
4,050	3,960	3,960	—	—	—	107,200	72,000	—	—	—
4,900	4,590	—	4,590	—	—	123,100	—	123,100	—	—
5,110	5,440	5,440	—	—	—	147,400	99,000	—	—	—
6,590	6,300	—	6,300	—	—	169,200	—	169,200	—	—
6,590	7,910	7,910	—	—	—	214,400	144,000	—	—	—
8,800	9,170	—	9,170	—	—	246,200	—	246,200	—	—
12,110	11,550	—	—	—	—	304,400	—	—	—	—
14,880	14,530	—	—	—	—	373,900	—	—	—	—
17,500	17,500	—	—	—	—	439,800	—	—	—	—
20,680	21,350	—	—	—	—	519,800	—	—	—	—
6,590	7,910	7,910	—	—	—	214,400	144,000	—	—	—
8,800	9,170	—	9,170	—	—	246,200	—	246,200	—	—
7,080	8,900	8,900	—	—	—	241,200	162,000	—	—	—
9,590	10,320	—	10,320	—	—	276,900	—	276,900	—	—
13,620	12,990	—	—	—	—	342,500	—	—	—	—
16,740	16,340	—	—	—	—	420,700	—	—	—	—
19,690	19,690	—	—	—	—	494,800	—	—	—	—
23,260	24,020	—	—	—	—	584,700	—	—	—	—
7,310	9,390	9,390	—	—	—	254,600	171,000	—	—	—
9,980	10,890	—	10,890	—	—	292,300	—	292,300	—	—
14,380	13,720	—	—	—	—	361,500	—	—	—	—
17,670	17,250	—	—	—	—	444,000	—	—	—	—
20,780	20,780	—	—	—	—	522,300	—	—	—	—
24,560	25,350	—	—	—	—	617,200	—	—	—	—
4,490	4,220	4,220	4,220	—	—	144,000	104,400	144,000	—	—
5,730	5,800	5,800	5,800	—	—	198,000	143,500	198,000	—	—
7,500	8,430	8,430	8,430	—	—	288,000	208,700	288,000	—	—
11,080	10,480	—	—	—	—	352,600	—	—	—	—
12,370	11,820	—	—	—	—	393,400	—	—	—	—
13,830	13,380	—	—	—	—	439,800	—	—	—	—
15,800	15,560	—	—	—	—	502,600	—	—	—	—

Table 2—Performance Properties of Tubing

1	2	3	4	5	6	7	8	9	10	11	12	13
	Nominal Weight						Threaded and Coupled					
								Coupling Outside Diameter			Integral Joint	
									Upset			
Size Outside Diameter in. D	Threaded and Coupled		Integral Joint lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Drift Diameter in.	Non-Upset in. *W*	Regular in. *W*	Special Clearance in. *Wc*	Drift Diameter in.	Outside Diameter of Box in.
	Non-Upset lb/ft	Upset lb/ft										
4.500	23.70	—	—	L-80	.560	3.380	3.255	—	—	—	—	—
4.500	26.00	—	—	L-80	.630	3.240	3.115	—	—	—	—	—
4.500	12.60	12.75	—	N-80	.271	3.958	3.833	5.200	5.563	—	—	—
4.500	12.60	12.75	—	C-90	.271	3.958	3.833	5.200	5.563	—	—	—
4.500	15.20	—	—	C-90	.337	3.826	3.701	—	—	—	—	—
4.500	17.00	—	—	C-90	.380	3.740	3.615	—	—	—	—	—
4.500	18.90	—	—	C-90	.430	3.640	3.515	—	—	—	—	—
4.500	21.50	—	—	C-90	.500	3.500	3.375	—	—	—	—	—
4.500	23.70	—	—	C-90	.560	3.380	3.255	—	—	—	—	—
4.500	26.00	—	—	C-90	.630	3.240	3.115	—	—	—	—	—
4.500	12.60	12.75	—	T-95	.271	3.958	3.833	5.200	5.563	—	—	—
4.500	15.20	—	—	T-95	.337	3.826	3.701	—	—	—	—	—
4.500	17.00	—	—	T-95	.380	3.740	3.615	—	—	—	—	—
4.500	18.90	—	—	T-95	.430	3.640	3.515	—	—	—	—	—
4.500	21.50	—	—	T-95	.500	3.500	3.375	—	—	—	—	—
4.500	23.70	—	—	T-95	.565	3.380	3.255	—	—	—	—	—
4.500	26.00	—	—	T-95	.630	3.240	3.115	—	—	—	—	—

Table 2—Performance Properties of Tubing (Continued)

14	15	16	17	18	19	20	21	22	23	24
	Internal Yield Pressure					Joint Yield Strength				
		Threaded and Coupled					Threaded and Coupled			
			Upset					Upset		
Collapse Resistance	Plain End	Non-Upset psi	Regular psi	Special Clearance psi	Integral Joint psi	Pipe Body Yield lb	Non-Upset lb	Regular lb	Special Clearance lb	Integral Joint lb
17,430	17,420	—	—	—	—	554,600	—	—	—	—
19,260	19,600	—	—	—	—	612,800	—	—	—	—
7,500	8,430	8,430	8,430	—	—	288,000	208,700	288,000	—	—
8,120	9,490	9,490	9,490	—	—	324,000	234,800	324,000	—	—
12,220	11,800	—	—	—	—	396,600	—	—	—	—
13,920	13,300	—	—	—	—	442,600	—	—	—	—
15,560	15,050	—	—	—	—	494,800	—	—	—	—
17,780	17,500	—	—	—	—	565,500	—	—	—	—
19,610	19,600	—	—	—	—	623,900	—	—	—	—
21,670	22,050	—	—	—	—	689,400	—	—	—	—
8,410	10,010	10,010	10,010	—	—	342,000	247,900	342,000	—	—
12,760	12,450	—	—	—	—	418,700	—	—	—	—
14,690	14,040	—	—	—	—	467,200	—	—	—	—
16,420	15,890	—	—	—	—	522,300	—	—	—	—
18,770	18,470	—	—	—	—	596,900	—	—	—	—
20,700	20,690	—	—	—	—	658,500	—	—	—	—
22,880	23,280	—	—	—	—	727,700	—	—	—	—

Table 3—Minimum Performance Properties of Drill Pipe

1	2	3	4	5	6	7	8
Size Outside Diameter in. *D*	Nominal Weight lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Collapse Resistance psi	Internal Yield Pressure psi	Pipe Body Yield Strength 1000 lb
$2^{3}/_{8}$	6.65	E	0.280	1.815	15,600	15,470	138
	6.65	X	0.280	1.815	19,760	19,600	175
	6.65	G	0.280	1.815	21,840	21,660	194
	6.65	S	0.280	1.815	28,080	27,850	249
$2^{7}/_{8}$	10.40	E	0.362	2.151	16,510	16,530	214
	10.40	X	0.362	2.151	20,910	20,930	272
	10.40	G	0.362	2.151	23,110	23,140	300
	10.40	S	0.362	2.151	29,720	29,750	386
$3^{1}/_{2}$	9.50	E	0.254	2.992	10,040	9,520	194
	13.30	E	0.368	2.764	14,110	13,800	272
	15.50	E	0.449	2.602	16,770	16,840	323
	13.30	X	0.368	2.764	17,880	17,480	344
	15.50	X	0.449	2.602	21,250	21,330	409
	13.30	G	0.368	2.764	19,760	19,320	380
	15.50	G	0.449	2.602	23,480	23,570	452
	13.30	S	0.368	2.764	25,400	24,840	489
	15.50	S	0.449	2.602	30,190	30,310	581
4	11.85	E	0.262	3.476	8,410	8,600	231
	14.00	E	0.330	3.340	11,350	10,830	285
	14.00	X	0.330	3.340	14,380	13,720	361
	14.00	G	0.330	3.340	15,900	15,160	400
	14.00	S	0.330	3.340	20,170	19,490	514
$4^{1}/_{2}$	13.75	E	0.271	3.958	7,200	7,900	270
	16.60	E	0.337	3.826	10,390	9,830	331
	20.00	E	0.430	3.640	12,960	12,540	412
	16.60	X	0.337	3.826	12,750	12,450	419
	20.00	X	0.430	3.640	16,420	15,890	522
	16.60	G	0.337	3.826	13,820	13,760	463
	20.00	G	0.430	3.640	18,150	17,560	577
	16.60	S	0.337	3.826	16,800	17,690	595
	20.00	S	0.430	3.640	23,330	22,580	742
5	16.25	E	0.296	4.408	6,970	7,770	328
	19.50	E	0.362	4.276	10,000	9,500	396
	16.25	X	0.296	4.408	8,090	9,840	416
	19.50	X	0.362	4.276	12,010	12,040	501
	25.60	X	0.500	4.000	17,100	16,620	672

Table 3—Minimum Performance Properties of Drill Pipe (Continued)

1	2	3	4	5	6	7	8
Size Outside Diameter in. *D*	Nominal Weight lb/ft	Grade	Wall Thickness in. *t*	Inside Diameter in. *d*	Collapse Resistance psi	Internal Yield Pressure psi	Pipe Body Yield Strength 1000 lb
	16.25	G	0.296	4.408	8,610	10,880	459
	19.50	G	0.362	4.276	12,990	13,300	554
	25.60	G	0.500	4.000	18,900	18,380	742
	16.25	S	0.296	4.408	9,860	13,990	591
	19.50	S	0.362	4.276	15,700	17,100	712
	25.60	S	0.500	4.000	24,300	23,630	954
$5^{1}/_{2}$	21.90	E	0.361	4.778	8,440	8,610	437
	24.70	E	0.415	4.670	10,460	9,900	497
	21.90	X	0.361	4.778	10,000	10,910	554
	24.70	X	0.415	4.670	12,920	12,540	630
	21.90	G	0.361	4.778	10,740	12,060	612
	24.70	G	0.415	4.670	14,000	13,860	696
	21.90	S	0.361	4.778	12,710	15,510	787
	24.70	S	0.415	4.670	17,050	17,830	895
$6^{5}/_{8}$	25.20	E	0.330	5.965	4,810	6,540	489
	27.70	E	0.362	5.901	5,890	7,170	534
	25.20	X	0.330	5.965	5,320	8,280	620
	27.70	X	0.362	5.901	6,750	9,080	677
	25.20	G	0.330	5.965	5,500	9,150	685
	27.70	G	0.362	5.901	7,100	10,040	748
	25.20	S	0.330	5.965	6,040	11,770	881
	27.70	S	0.362	5.901	7,810	12,910	962

Table 4—Minimum Collapse Resistance of Casing Under Axial Load (1 of 7)
Grade H-40

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				Axial Stress—psi												
D in.	wt/ft lb/ft	D/T	Area in.^{2}	–10,000	–5,000	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000
				Collapse Pressure—psi												
4.500	9.50	21.95	2.766	2,930	2,860	2,760	2,640	2,500	2,320	2,100	1,840	—	—	—	—	—
5.500	14.00	22.54	4.029	2,770	2,710	2,620	2,510	2,380	2,220	2,010	1,760	—	—	—	—	—
6.625	20.00	23.00	5.734	2,650	2,600	2,520	2,420	2,290	2,140	1,950	1,710	—	—	—	—	—
7.000	17.00	30.30	4.912	1,490	1,460	1,420	1,380	1,320	1,260	1,170	1,080	—	—	—	—	—
	20.00	25.74	5.749	2,050	2,020	1,970	1,910	1,830	1,730	1,590	1,420	—	—	—	—	—
7.625	24.00	25.42	6.904	2,120	2,080	2,030	1,960	1,880	1,770	1,630	1,450	—	—	—	—	—
7.750	46.00	—	—	6,240	5,990	5,670	5,280	4,830	4,300	3,690	—	—	—	—	—	—
8.625	28.00	28.37	7.947	1,690	1,650	1,610	1,550	1,490	1,410	1,320	1,200	—	—	—	—	—
	32.00	24.50	9.149	2,310	2,260	2,200	2,120	2,020	1,900	1,740	1,550	—	—	—	—	—
9.625	32.30	30.85	9.128	1,430	1,410	1,370	1,330	1,280	1,220	1,140	1,050	—	—	—	—	—
	36.00	27.34	10.254	1,810	1,770	1,720	1,660	1,600	1,520	1,420	1,290	—	—	—	—	—
10.750	32.75	38.53	9.178	860	850	840	830	810	780	750	700	—	—	—	—	—
	40.50	30.71	11.435	1,450	1,420	1,390	1,340	1,290	1,230	1,150	1,050	—	—	—	—	—
11.750	42.00	35.29	11.944	1,070	1,060	1,040	1,010	980	940	890	830	—	—	—	—	—
13.375	48.00	40.53	13.524	740	740	740	730	720	700	670	640	—	—	—	—	—
16.000	65.00	42.67	18.408	630	630	630	630	630	620	600	570	—	—	—	—	—
18.625	87.50	42.82	24.858	630	630	630	630	620	610	590	570	—	—	—	—	—
20.000	94.00	45.66	26.918	520	520	520	520	520	510	510	490	—	—	—	—	—

Table 4—Minimum Collapse Resistance of Casing Under Axial Load (2 of 7)
Grades J-55 and K-55

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				Axial Stress—psi												
D in.	wt/ft lb/ft	D/T	Area in.^{2}	–10,000	–5,000	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000
				Collapse Pressure—psi												
4.500	9.50	21.95	2.766	3,440	3,390	3,310	3,230	3,120	3,000	2,850	2,680	2,470	2,220	1,930	1,420	—
	10.50	20.09	3.009	4,200	4,110	4,010	3,880	3,740	3,570	3,380	3,150	2,890	2,570	2,150	1,540	—
	11.60	18.00	3.338	5,220	5,100	4,960	4,790	4,590	4,360	4,100	3,800	3,450	2,980	2,380	1,710	—
5.000	11.50	22.73	3.304	3,170	3,120	3,060	2,980	2,890	2,790	2,660	2,500	2,320	2,090	1,820	1,370	—
	13.00	19.76	3.773	4,340	4,250	4,140	4,010	3,860	3,690	3,480	3,240	2,970	2,640	2,180	1,570	—
	15.00	16.89	4.374	5,880	5,730	5,560	5,360	5,120	4,860	4,550	4,210	3,730	3,160	2,530	1,820	—
5.500	14.00	22.54	4.029	3,230	3,180	3,120	3,040	2,950	2,840	2,700	2,550	2,350	2,130	1,850	1,380	—
	15.50	20.00	4.514	4,230	4,150	4,040	3,920	3,770	3,600	3,410	3,180	2,910	2,590	2,160	1,550	—
	17.00	18.09	4.962	5,180	5,060	4,910	4,740	4,550	4,320	4,060	3,770	3,430	2,970	2,370	1,700	—
6.625	20.00	23.00	5.734	3,070	3,030	2,970	2,900	2,820	2,720	2,590	2,450	2,270	2,050	1,790	1,360	—
	24.00	18.82	6.937	4,790	4,690	4,560	4,410	4,230	4,030	3,800	3,530	3,220	2,850	2,290	1,640	—
7.000	20.00	25.74	5.749	2,370	2,320	2,270	2,210	2,140	2,090	2,020	1,930	1,810	1,670	1,480	1,220	—
	23.00	22.08	6.656	3,400	3,340	3,270	3,180	3,080	2,960	2,820	2,650	2,450	2,200	1,910	1,410	—
	26.00	19.34	7.549	4,540	4,440	4,320	4,190	4,020	3,840	3,620	3,370	3,080	2,730	2,230	1,600	—
7.625	26.40	23.25	7.519	2,990	2,950	2,890	2,830	2,750	2,650	2,530	2,390	2,220	2,010	1,760	1,340	—
7.750	46.00	—	—	8,410	8,130	7,800	7,420	6,990	6,510	5,980	5,400	4,750	4,030	—	—	—
8.625	24.00	32.67	6.934	1,400	1,390	1,370	1,350	1,320	1,290	1,250	1,200	1,140	1,070	980	870	—
	32.00	24.50	9.149	2,600	2,570	2,530	2,490	2,430	2,350	2,260	2,150	2,010	1,830	1,610	1,280	—
	36.00	21.56	10.336	3,590	3,530	3,450	3,360	3,240	3,110	2,960	2,770	2,550	2,290	1,980	1,440	—
9.625	36.00	27.34	10.254	2,100	2,070	2,020	1,970	1,920	1,850	1,770	1,670	1,590	1,480	1,330	1,150	—
	40.00	24.37	11.454	2,640	2,610	2,570	2,520	2,460	2,380	2,290	2,170	2,030	1,850	1,630	1,280	—
10.750	40.50	30.71	11.435	1,630	1,610	1,580	1,550	1,520	1,470	1,420	1,360	1,280	1,190	1,090	960	—
	45.50	26.88	13.006	2,170	2,140	2,090	2,040	1,980	1,900	1,820	1,740	1,650	1,530	1,370	1,180	—
	51.00	23.89	14.561	2,780	2,750	2,700	2,650	2,580	2,500	2,390	2,260	2,110	1,920	1,680	1,310	—
11.750	47.00	31.33	13.401	1,550	1,540	1,510	1,490	1,450	1,410	1,360	1,310	1,230	1,150	1,050	930	—
	54.00	27.01	15.463	2,150	2,120	2,070	2,020	1,960	1,890	1,810	1,720	1,630	1,520	1,360	1,170	—
	60.00	24.03	17.300	2,740	2,710	2,660	2,610	2,540	2,460	2,360	2,240	2,080	1,900	1,660	1,300	—
13.375	54.50	35.20	15.514	1,140	1,140	1,130	1,120	1,110	1,090	1,060	1,030	980	930	860	770	—
	61.00	31.10	17.487	1,580	1,560	1,540	1,510	1,480	1,440	1,380	1,320	1,250	1,160	1,060	940	—
	68.00	27.86	19.445	2,020	1,990	1,950	1,900	1,850	1,780	1,710	1,620	1,520	1,420	1,290	1,120	—
16.000	75.00	36.53	21.414	1,020	1,020	1,020	1,010	1,010	990	970	950	910	860	800	720	—
	84.00	32.32	24.112	1,440	1,420	1,410	1,390	1,360	1,320	1,280	1,230	1,160	1,090	1,000	890	—
18.625	87.50	42.82	24.858	630	630	630	630	630	630	630	630	620	600	580	530	—
20.000	94.00	45.66	26.918	520	520	520	520	520	520	520	520	520	510	490	470	—
	106.50	40.00	30.631	770	770	770	770	770	770	770	760	740	710	670	610	—
	133.00	31.50	38.632	1,530	1,520	1,500	1,470	1,440	1,400	1,350	1,290	1,220	1,140	1,040	920	—

Table 4—Minimum Collapse Resistance of Casing Under Axial Load (3 of 7)
Grades L-80 and N-80

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				Axial Stress—psi												
D in.	wt/ft lb/ft	D/T	Area in.^{2}	–10,000	–5,000	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000
				Collapse Pressure—psi												
4.500	11.60	18.00	3.338	6,570	6,470	6,350	6,230	6,080	5,920	5,730	5,530	5,310	5,050	4,770	4,460	4,100
	13.50	15.52	3.836	8,890	8,720	8,540	8,330	8,100	7,850	7,570	7,260	6,930	6,560	6,150	5,710	5,100
5.000	15.00	16.89	4.374	7,520	7,400	7,250	7,090	6,910	6,710	6,490	6,240	5,970	5,670	5,340	4,970	4,560
	18.00	13.81	5.275	10,970	10,750	10,500	10,220	9,910	9,580	9,150	8,670	8,150	7,590	7,000	6,360	5,680
	21.40	11.44	6.264	13,490	13,140	12,760	12,350	11,890	11,400	10,870	10,290	9,680	9,020	8,310	7,560	6,740
	23.20	10.46	6.791	14,620	14,250	13,830	13,380	12,890	12,350	11,780	11,160	10,490	9,780	9,010	8,190	7,310
	24.10	10.00	7.069	15,220	14,830	14,400	13,930	13,420	12,860	12,260	11,610	10,920	10,180	9,380	8,530	7,610
5.500	17.00	18.09	4.962	6,500	6,400	6,290	6,160	6,020	5,860	5,680	5,480	5,260	5,010	4,730	4,420	4,070
	20.00	15.24	5.828	9,200	9,020	8,830	8,610	8,370	8,100	7,810	7,490	7,140	6,760	6,340	5,810	5,180
	23.00	13.25	6.630	11,770	11,500	11,160	10,800	10,400	9,970	9,500	9,000	8,470	7,890	7,270	6,610	5,900
6.625	24.00	18.82	6.937	5,940	5,860	5,760	5,650	5,530	5,390	5,230	5,060	4,860	4,640	4,400	4,120	3,800
	28.00	15.89	8.133	8,500	8,340	8,170	7,970	7,760	7,520	7,260	6,970	6,650	6,300	5,920	5,500	4,990
	32.00	13.95	9.177	10,780	10,560	10,320	10,050	9,750	9,420	9,060	8,590	8,070	7,520	6,940	6,300	5,630
7.000	23.00	22.08	6.656	3,980	3,870	3,830	3,790	3,740	3,690	3,620	3,530	3,430	3,320	3,180	3,010	2,820
	26.00	19.34	7.549	5,570	5,490	5,410	5,310	5,200	5,080	4,940	4,780	4,600	4,400	4,170	3,920	3,620
	29.00	17.16	8.449	7,280	7,160	7,020	6,870	6,700	6,510	6,300	6,060	5,800	5,510	5,200	4,840	4,440
	32.00	15.45	9.317	8,960	8,800	8,610	8,400	8,170	7,910	7,630	7,320	6,980	6,610	6,200	5,730	5,120
	35.00	14.06	10.172	10,630	10,420	10,180	9,910	9,620	9,300	8,950	8,520	8,020	7,470	6,890	6,260	5,580
	38.00	12.96	10.959	12,040	11,730	11,390	11,020	10,610	10,170	9,700	9,190	8,640	8,050	7,420	6,750	6,020
7.625	26.40	23.25	7.519	3,500	3,450	3,400	3,340	3,270	3,190	3,150	3,090	3,020	2,930	2,820	2,690	2,540
	29.70	20.33	8.541	4,910	4,850	4,790	4,720	4,630	4,530	4,420	4,290	4,140	3,980	3,780	3,560	3,310
	33.70	17.73	9.720	6,790	6,680	6,560	6,430	6,270	6,100	5,910	5,700	5,460	5,200	4,900	4,580	4,210
	39.00	15.25	11.192	9,180	9,010	8,820	8,600	8,360	8,090	7,800	7,480	7,130	6,750	6,330	5,800	5,180
	42.80	13.57	12.470	11,300	11,070	10,810	10,520	10,180	9,750	9,300	8,810	8,280	7,720	7,110	6,470	5,770
	45.30	12.82	13.141	12,160	11,850	11,510	11,130	10,720	10,280	9,800	9,280	8,730	8,130	7,500	6,820	6,080
	47.10	12.20	13.745	12,720	12,400	12,040	11,650	11,220	10,750	10,250	9,710	9,130	8,510	7,840	7,130	6,360
7.750	46.00	—	—	11,980	11,680	11,340	10,970	10,570	10,130	9,650	9,150	8,600	8,010	7,390	6,710	5,990
8.625	36.00	21.56	10.336	4,180	4,140	4,100	4,050	3,990	3,920	3,840	3,740	3,630	3,500	3,350	3,170	2,960
	40.00	19.17	11.557	5,690	5,610	5,520	5,420	5,310	5,180	5,030	4,870	4,690	4,480	4,250	3,980	3,680
	44.00	17.25	12.763	7,200	7,080	6,950	6,800	6,630	6,440	6,230	6,000	5,750	5,460	5,150	4,800	4,410
	49.00	15.48	14.118	8,930	8,760	8,580	8,370	8,140	7,880	7,600	7,290	6,960	6,590	6,180	5,720	5,110
9.625	40.00	24.37	11.454	3,107	3,130	3,090	3,030	2,980	2,910	2,840	2,750	2,660	2,600	2,520	2,420	2,290
	43.50	22.13	12.559	3,870	3,840	3,810	3,770	3,720	3,660	3,590	3,510	3,410	3,300	3,160	3,000	2,810
	47.00	20.39	13.572	4,870	4,820	4,760	4,680	4,600	4,500	4,390	4,260	4,120	3,950	3,760	3,540	3,290
	53.50	17.66	15.547	6,850	6,740	6,620	6,480	6,320	6,150	5,960	5,740	5,500	5,240	4,940	4,610	4,240
10.750	51.00	23.89	14.561	3,310	3,260	3,220	3,160	3,100	3,030	2,950	2,860	2,810	2,730	2,640	2,530	2,390
	55.50	21.72	15.947	4,090	4,060	4,020	3,970	3,920	3,850	3,770	3,680	3,570	3,440	3,290	3,120	2,920
11.750	60.00	24.03	17.300	3,260	3,220	3,180	3,120	3,060	2,990	2,920	2,830	2,760	2,690	2,610	2,500	2,360
13.375	68.00	27.86	19.445	2,290	2,280	2,260	2,240	2,220	2,180	2,140	2,100	2,040	1,970	1,900	1,810	1,710
	72.00	26.02	20.768	2,730	2,700	2,670	2,630	2,590	2,540	2,490	2,420	2,350	2,260	2,160	2,050	1,970

Table 4—Minimum Collapse Resistance of Casing Under Axial Load (4 of 7)
Grade C-90

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				Axial Stress—psi												
D in.	wt/ft lb/ft	D/T	Area in.^{2}	–10,000	–5,000	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000
				Collapse Pressure—psi												
4.500	11.60	18.00	3.338	7,010	6,920	6,820	6,700	6,570	6,430	6,270	6,100	5,900	5,690	5,450	5,180	4,890
	13.50	15.52	3.836	9,630	9,470	9,300	9,100	8,890	8,660	8,400	8,130	7,820	7,490	7,140	6,740	6,320
5.000	15.00	16.89	4.374	8,090	7,970	7,840	7,690	7,530	7,350	7,150	6,930	6,690	6,430	6,140	5,830	5,480
	18.00	13.81	5.275	11,990	11,770	11,530	11,260	10,970	10,660	10,320	9,950	9,550	9,030	8,470	7,880	7,240
	21.40	11.44	6.264	15,090	14,740	14,360	13,940	13,490	13,010	12,500	11,940	11,350	10,730	10,060	9,350	8,600
	23.20	10.46	6.791	16,360	15,980	15,560	15,110	14,630	14,100	13,540	12,940	12,310	11,630	10,910	10,140	9,320
	24.10	10.00	7.069	17,020	16,630	16,200	15,730	15,220	14,680	14,100	13,470	12,810	12,100	11,350	10,550	9,700
5.500	17.00	18.09	4.962	6,930	6,840	6,740	6,630	6,500	6,360	6,210	6,030	5,840	5,630	5,400	5,130	4,840
	20.00	15.24	5.828	9,980	9,810	9,630	9,420	9,200	8,950	8,690	8,400	8,080	7,740	7,360	6,950	6,510
	23.00	13.25	6.630	12,890	12,650	12,380	12,090	11,770	11,380	10,930	10,450	9,930	9,380	8,800	8,180	7,520
	26.80	11.00	7.854	15,630	15,270	14,880	14,450	13,980	13,480	12,950	12,370	11,760	11,110	10,420	9,690	8,910
	29.70	9.79	8.718	17,350	16,950	16,510	16,030	15,510	14,960	14,370	13,730	13,050	12,330	11,570	10,750	9,890
	32.60	8.80	9.572	19,050	18,610	18,130	17,610	17,040	16,430	15,780	15,080	14,340	13,550	12,700	11,810	10,860
	35.30	8.01	10.388	20,670	20,190	19,670	19,100	18,480	17,820	17,110	16,360	15,550	14,690	13,780	12,810	11,780
	38.00	7.33	11.192	22,290	21,770	21,210	20,590	19,930	19,220	18,450	17,640	16,770	15,840	14,860	13,810	12,700
	40.50	6.77	11.959	23,810	23,260	22,660	22,000	21,300	20,530	19,720	18,850	17,920	16,930	15,880	14,760	13,570
	43.10	6.29	12.714	25,290	24,710	24,070	23,370	22,620	21,810	20,940	20,020	19,030	17,980	16,860	15,680	14,410
6.625	24.00	18.82	6.937	6,290	6,220	6,140	6,050	5,940	5,820	5,690	5,540	5,380	5,190	4,990	4,760	4,500
	28.00	15.89	8.133	9,190	9,040	8,880	8,700	8,500	8,280	8,040	7,780	7,500	7,190	6,850	6,480	6,080
	32.00	13.95	9.177	11,770	11,560	11,330	11,070	10,780	10,480	10,140	9,780	9,390	8,950	8,390	7,800	7,170
7.000	23.00	22.08	6.656	4,130	4,080	4,030	3,960	3,890	3,850	3,810	3,750	3,680	3,600	3,500	3,380	3,230
	26.00	19.34	7.549	5,870	5,810	5,740	5,660	5,570	5,460	5,350	5,220	5,070	4,900	4,720	4,510	4,270
	29.00	17.16	8.449	7,810	7,700	7,580	7,440	7,280	7,110	6,920	6,720	6,490	6,240	5,960	5,660	5,330
	32.00	15.45	9.317	9,720	9,560	9,380	9,180	8,970	8,730	8,470	8,190	7,890	7,550	7,190	6,800	6,360
	35.00	14.06	10.172	11,610	11,400	11,170	10,910	10,640	10,340	10,010	9,650	9,270	8,860	8,330	7,750	7,120
	38.00	12.96	10.959	13,390	13,140	12,820	12,450	12,050	11,610	11,150	10,660	10,140	9,580	8,980	8,350	7,680
	42.70	11.20	12.517	15,380	15,030	14,640	14,210	13,760	13,260	12,740	12,170	11,570	10,940	10,260	9,530	8,770
	46.40	10.19	13.625	16,740	16,350	15,930	15,470	14,970	14,440	13,860	13,250	12,600	11,900	11,160	10,380	9,540
	50.10	9.33	14.726	18,100	17,680	17,220	16,730	16,190	15,610	14,990	14,330	13,620	12,870	12,070	11,220	10,320
	53.60	8.62	15.785	19,400	18,950	18,460	17,930	17,350	16,730	16,060	15,350	14,600	13,790	12,940	12,020	11,050
	57.10	8.00	16.837	20,690	20,210	19,690	19,120	18,500	17,840	17,130	16,370	15,570	14,710	13,800	12,820	11,790
7.625	26.40	23.25	7.519	3,700	3,660	3,610	3,560	3,500	3,440	3,360	3,280	3,190	3,130	3,060	2,980	2,870
	29.70	20.33	8.541	5,130	5,090	5,040	4,980	4,910	4,830	4,740	4,640	4,520	4,390	4,240	4,060	3,860
	33.70	17.73	9.720	7,260	7,160	7,050	6,930	6,790	6,640	6,480	6,290	6,090	5,860	5,610	5,330	5,020
	39.00	15.25	11.192	9,970	9,800	9,620	9,410	9,190	8,940	8,680	8,390	8,070	7,730	7,350	6,950	6,500
	42.80	13.57	12.470	12,370	12,140	11,890	11,610	11,310	10,980	10,630	10,220	9,720	9,180	8,610	8,000	7,360
	45.30	12.82	13.141	13,600	13,290	12,950	12,570	12,170	11,730	11,260	10,770	10,240	9,670	9,070	8,430	7,750
	47.10	12.20	13.745	14,230	13,910	13,540	13,150	12,730	12,270	11,790	11,270	10,710	10,120	9,490	8,820	8,110
	51.20	11.10	14.974	15,510	15,150	14,760	14,330	13,870	13,370	12,840	12,270	11,670	11,020	10,340	9,610	8,840
	55.30	10.17	16.199	16,770	16,380	15,960	15,500	15,000	14,460	13,890	13,270	12,620	11,920	11,180	10,400	9,560
7.750	46.00	—	—	13,280	13,030	12,750	12,390	11,990	11,560	11,100	10,610	10,090	9,530	8,940	8,310	7,640
8.625	36.00	21.56	10.336	4,340	4,290	4,250	4,220	4,180	4,130	4,070	4,000	3,920	3,820	3,700	3,570	3,410
	40.00	19.17	11.557	6,010	5,940	5,870	5,780	5,690	5,580	5,460	5,320	5,170	5,000	4,800	4,590	4,340
	44.00	17.25	12.763	7,720	7,610	7,490	7,350	7,200	7,040	6,850	6,650	6,420	6,180	5,910	5,610	5,280
	49.00	15.48	14.118	9,680	9,520	9,340	9,150	8,930	8,700	8,440	8,160	7,860	7,530	7,170	6,770	6,340

Table 4—Minimum Collapse Resistance of Casing Under Axial Load (4 of 7)
Grade C-90 (Continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				Axial Stress—psi												
D in.	wt/ft lb/ft	D/T	Area in.^{2}	–10,000	–5,000	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000
				Collapse Pressure—psi												
9.625	40.00	24.37	11.454	3,320	3,290	3,250	3,210	3,170	3,110	3,050	2,980	2,910	2,820	2,720	2,630	2,550
	43.50	22.13	12.559	4,120	4,070	4,010	3,940	3,870	3,830	3,780	3,730	3,660	3,580	3,480	3,360	3,220
	47.00	20.39	13.572	5,090	5,040	5,000	4,940	4,870	4,800	4,710	4,610	4,490	4,360	4,210	4,040	3,840
	53.50	17.66	15.547	7,330	7,230	7,120	6,990	6,850	6,700	6,530	6,340	6,130	5,900	5,650	5,370	5,060
	59.40	15.80	17.250	9,290	9,140	8,980	8,790	8,590	8,370	8,130	7,860	7,580	7,260	6,920	6,540	6,130
	64.90	14.32	18.901	11,230	11,030	10,810	10,570	10,300	10,010	9,700	9,360	8,990	8,590	8,160	7,620	7,000
	70.30	13.11	20.502	13,130	12,880	12,610	12,310	11,920	11,490	11,040	10,550	10,030	9,480	8,890	8,260	7,600
	75.60	12.08	22.104	14,360	14,030	13,670	13,270	12,840	12,390	11,890	11,370	10,810	10,210	9,580	8,900	8,180
10.750	51.00	23.89	14.561	3,480	3,440	3,400	3,360	3,310	3,250	3,180	3,110	3,020	2,930	2,840	2,770	2,680
	55.50	21.72	15.947	4,280	4,220	4,160	4,130	4,090	4,040	3,990	3,920	3,840	3,750	3,640	3,510	3,360
	59.40	19.72	17.473	5,580	5,520	5,460	5,390	5,310	5,210	5,110	4,990	4,850	4,700	4,530	4,330	4,110
	64.53	18.07	18.982	6,950	6,860	6,760	6,640	6,520	6,380	6,220	6,050	5,860	5,640	5,410	5,140	4,850
	73.20	16.00	21.276	9,060	8,920	8,760	8,580	8,390	8,170	7,940	7,680	7,400	7,100	6,770	6,400	6,010
	79.20	14.65	23.096	10,760	10,570	10,370	10,140	9,890	9,620	9,320	9,000	8,650	8,270	7,860	7,420	6,860
	85.30	13.49	24.921	12,500	12,260	12,010	11,730	11,420	11,090	10,730	10,280	9,770	9,230	8,660	8,050	7,400
11.750	60.00	24.03	17.300	3,430	3,400	3,360	3,320	3,270	3,210	3,140	3,070	2,990	2,890	2,800	2,730	2,640
13.375	68.00	27.86	19.445	2,330	2,330	2,320	2,310	2,300	2,280	2,250	2,220	2,180	2,130	2,080	2,010	1,930
	72.00	26.02	20.768	2,820	2,800	2,780	2,760	2,730	2,690	2,650	2,600	2,540	2,470	2,390	2,300	2,200

Table 4—Minimum Collapse Resistance of Casing Under Axial Load (5 of 7)
Grade T-95

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				Axial Stress—psi												
D in.	wt/ft lb/ft	D/T	Area in.^{2}	–10,000	–5,000	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000
				Collapse Pressure—psi												
4.500	11.60	18.00	3.338	7,210	7,120	7,030	6,920	6,800	6,670	6,520	6,350	6,170	5,970	5,750	5,510	5,240
	13.50	15.52	3.836	9,990	9,830	9,660	9,470	9,270	9,040	8,800	8,540	8,250	7,940	7,600	7,230	6,830
5.000	15.00	16.89	4.374	8,350	8,240	8,110	7,970	7,810	7,640	7,460	7,250	7,030	6,780	6,510	6,220	5,890
	18.00	13.81	5.275	12,480	12,270	12,030	11,770	11,490	11,180	10,850	10,500	10,110	9,700	9,200	8,620	8,000
	21.40	11.44	6.264	15,890	15,540	15,160	14,740	14,300	13,820	13,310	12,760	12,190	11,570	10,920	10,230	9,500
	23.20	10.46	6.791	17,220	16,840	16,430	15,980	15,490	14,980	14,420	13,830	13,210	12,540	11,840	11,090	10,300
	24.10	10.00	7.069	17,930	17,530	17,100	16,630	16,130	15,590	15,010	14,400	13,750	13,060	12,320	11,540	10,720
5.500	17.00	18.09	4.962	7,120	7,040	6,940	6,840	6,720	6,590	6,450	6,290	6,110	5,910	5,700	5,460	5,190
	20.00	15.24	5.828	10,360	10,190	10,010	9,810	9,600	9,360	9,110	8,830	8,520	8,200	7,840	7,460	7,040
	23.00	13.25	6.630	13,440	13,200	12,940	12,650	12,340	12,000	11,640	11,160	10,660	10,120	9,550	8,950	8,310
6.625	24.00	18.82	6.937	6,450	6,380	6,310	6,220	6,130	6,020	5,900	5,760	5,610	5,440	5,250	5,040	4,810
	28.00	15.89	8.133	9,520	9,370	9,220	9,040	8,850	8,640	8,410	8,170	7,900	7,600	7,290	6,940	6,560
	32.00	13.95	9.177	12,250	12,040	11,810	11,560	11,290	10,990	10,670	10,320	9,940	9,540	9,100	8,540	7,930
7.000	23.00	22.08	6.656	4,240	4,200	4,140	4,080	4,020	3,940	3,880	3,830	3,780	3,710	3,620	3,520	3,400
	26.00	19.34	7.549	6,000	5,950	5,880	5,810	5,730	5,630	5,530	5,410	5,280	5,120	4,960	4,760	4,550
	29.00	17.16	8.449	8,060	7,950	7,830	7,700	7,560	7,390	7,220	7,020	6,810	6,580	6,320	6,040	5,730
	32.00	15.45	9.317	10,080	9,920	9,750	9,560	9,350	9,120	8,880	8,610	8,320	8,000	7,660	7,290	6,880
	35.00	14.06	10.172	12,080	11,870	11,650	11,400	11,130	10,840	10,520	10,180	9,810	9,410	8,990	8,470	7,870
	38.00	12.96	10.959	13,970	13,720	13,440	13,140	12,760	12,330	11,880	11,390	10,880	10,330	9,750	9,130	8,480
7.625	26.40	23.25	7.519	3,780	3,750	3,710	3,660	3,610	3,550	3,480	3,400	3,320	3,220	3,150	3,080	2,990
	29.70	20.33	8.541	5,220	5,180	5,140	5,090	5,030	4,960	4,880	4,790	4,690	4,570	4,430	4,280	4,100
	33.70	17.73	9.720	7,470	7,380	7,280	7,160	7,030	6,890	6,740	6,560	6,370	6,160	5,930	5,670	5,390
	39.00	15.25	11.192	10,340	10,180	10,000	9,800	9,590	9,350	9,090	8,820	8,510	8,190	7,830	7,450	7,030
	42.80	13.57	12.470	12,880	12,660	12,410	12,140	11,840	11,530	11,180	10,810	10,410	9,900	9,350	8,760	8,130
	45.30	12.82	13.141	14,330	14,010	13,670	13,300	12,890	12,460	12,000	11,510	10,990	10,440	9,850	9,230	8,570
	47.10	12.20	13.745	14,990	14,660	14,300	13,910	13,490	13,030	12,550	12,040	11,490	10,920	10,300	9,650	8,960
7.750	46.00	—	—	13,850	13,600	13,320	13,030	12,700	12,280	11,820	11,340	10,830	10,280	9,700	9,090	8,440
8.625	36.00	21.56	10.336	4,470	4,410	4,350	4,290	4,250	4,210	4,160	4,100	4,030	3,950	3,850	3,730	3,600
	40.00	19.17	11.557	6,150	6,090	6,020	5,940	5,860	5,760	5,650	5,520	5,380	5,230	5,050	4,850	4,630
	44.00	17.25	12.763	7,960	7,860	7,740	7,610	7,470	7,310	7,140	6,950	6,740	6,510	6,260	5,980	5,670
	49.00	15.48	14.118	10,040	9,880	9,710	9,520	9,310	9,090	8,840	8,580	8,290	7,970	7,630	7,260	6,860
9.625	40.00	24.37	11.454	3,380	3,350	3,320	3,290	3,250	3,200	3,150	3,090	3,010	2,940	2,850	2,740	2,640
	43.50	22.13	12.559	4,220	4,180	4,120	4,070	4,000	3,920	3,850	3,810	3,750	3,680	3,600	3,500	3,380
	47.00	20.39	13.572	5,170	5,140	5,090	5,040	4,990	4,920	4,840	4,760	4,650	4,540	4,400	4,250	4,070
	53.50	17.66	15.547	7,540	7,450	7,340	7,230	7,100	6,950	6,790	6,620	6,420	6,210	5,980	5,720	5,430
10.750	51.00	23.89	14.561	3,550	3,520	3,480	3,440	3,400	3,340	3,280	3,220	3,140	3,050	2,960	2,860	2,790
	55.50	21.72	15.947	4,400	4,350	4,290	4,220	4,150	4,120	4,070	4,020	3,950	3,870	3,780	3,670	3,540
11.750	60.00	24.03	17.300	3,500	3,470	3,440	3,400	3,350	3,300	3,240	3,180	3,100	3,020	2,920	2,820	2,750
13.375	68.00	27.86	19.445	2,340	2,340	2,330	2,330	2,320	2,310	2,290	2,260	2,230	2,190	2,150	2,090	2,020
	72.00	26.02	20.768	2,850	2,840	2,820	2,800	2,780	2,750	2,710	2,670	2,620	2,560	2,490	2,410	2,320

Table 4—Minimum Collapse Resistance of Casing Under Axial Load (6 of 7)
Grade P-110

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				Axial Stress—psi												
D in.	wt/ft lb/ft	D/T	Area in.^{2}	–10,000	–5,000	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000
				Collapse Pressure—psi												
4.500	11.60	18.00	3.338	7,720	7,650	7,580	7,490	7,390	7,290	7,170	7,040	6,900	6,740	6,560	6,370	6,160
	13.50	15.52	3.836	10,980	10,840	10,680	10,510	10,330	10,130	9,920	9,690	9,440	9,170	8,880	8,560	8,230
	15.10	13.35	4.407	14,820	14,590	14,350	14,080	13,790	13,490	13,160	12,810	12,430	12,030	11,610	11,140	10,550
5.000	15.00	16.89	4.374	9,060	8,960	8,850	8,730	8,600	8,460	8,300	8,130	7,940	7,740	7,520	7,270	7,010
	18.00	13.81	5.275	13,900	13,700	13,470	13,230	12,970	12,690	12,390	12,060	11,720	11,350	10,960	10,530	10,080
	21.40	11.44	6.264	18,290	17,940	17,550	17,140	16,700	16,230	15,740	15,210	14,660	14,080	13,470	12,820	12,140
	23.20	10.46	6.791	19,830	19,440	19,020	18,570	18,100	17,590	17,050	16,490	15,890	15,260	14,600	13,900	13,160
	24.10	10.00	7.069	20,640	20,230	19,800	19,330	18,840	18,310	17,750	17,160	16,540	15,880	15,190	14,470	13,700
5.500	17.00	18.09	4.962	7,620	7,550	7,480	7,400	7,300	7,200	7,090	6,960	6,820	6,660	6,490	6,300	6,100
	20.00	15.24	5.828	11,410	11,260	11,100	10,920	10,720	10,510	10,280	10,040	9,780	9,490	9,190	8,860	8,500
	23.00	13.25	6.630	15,030	14,800	14,540	14,270	13,980	13,670	13,330	12,980	12,590	12,190	11,750	11,220	10,620
6.625	24.00	18.82	6.937	6,830	6,790	6,730	6,670	6,590	6,510	6,420	6,320	6,200	6,080	5,930	5,780	5,600
	28.00	15.89	8.133	10,430	10,300	10,160	10,000	9,830	9,650	9,450	9,240	9,010	8,760	8,490	8,190	7,880
	32.00	13.95	9.177	13,640	13,440	13,220	12,980	12,730	12,460	12,160	11,850	11,510	11,150	10,770	10,350	9,910
7.000	26.00	19.34	7.549	6,310	6,270	6,230	6,180	6,120	6,050	5,980	5,890	5,800	5,690	5,560	5,420	5,270
	29.00	17.16	8.449	8,720	8,630	8,530	8,420	8,290	8,160	8,010	7,850	7,680	7,480	7,270	7,040	6,790
	32.00	15.45	9.317	11,090	10,940	10,780	10,610	10,430	10,230	10,010	9,770	9,520	9,250	8,950	8,640	8,300
	35.00	14.06	10.172	13,430	13,240	13,020	12,790	12,540	12,280	11,990	11,680	11,350	11,000	10,620	10,220	9,780
	38.00	12.96	10.959	15,650	15,400	15,140	14,850	14,540	14,210	13,860	13,480	13,080	12,570	12,020	11,450	10,840
7.625	29.70	20.33	8.541	5,440	5,390	5,350	5,320	5,290	5,250	5,200	5,140	5,080	5,000	4,910	4,800	4,680
	33.70	17.73	9.720	8,030	7,960	7,870	7,780	7,670	7,560	7,430	7,290	7,140	6,970	6,790	6,580	6,360
	39.00	15.25	11.192	11,400	11,250	11,080	10,900	10,710	10,500	10,270	10,030	9,760	9,480	9,170	8,850	8,490
	42.80	13.57	12.470	14,370	14,160	13,920	13,670	13,390	13,100	12,780	12,450	12,080	11,700	11,290	10,850	10,380
	45.30	12.82	13.141	15,970	15,720	15,440	15,150	14,830	14,490	14,130	13,720	13,220	12,700	12,140	11,560	10,950
	47.10	12.20	13.745	17,260	16,920	16,550	16,170	15,750	15,310	14,840	14,350	13,830	13,280	12,700	12,090	11,460
7.750	46.00	—	—	15,500	15,260	15,000	14,720	14,410	14,090	13,740	13,360	12,970	12,510	11,960	11,390	10,790
8.625	40.00	19.17	11.557	6,480	6,440	6,390	6,340	6,270	6,200	6,120	6,030	5,930	5,810	5,680	5,540	5,370
	44.00	17.25	12.763	8,610	8,520	8,420	8,310	8,190	8,060	7,920	7,760	7,590	7,400	7,190	6,970	6,720
	49.00	15.48	14.118	11,040	10,900	10,740	10,570	10,390	10,190	9,970	9,740	9,480	9,210	8,920	8,610	8,270
9.625	43.50	22.13	12.559	4,490	4,460	4,420	4,370	4,320	4,270	4,200	4,130	4,050	3,970	3,870	3,810	3,750
	47.00	20.39	13.572	5,410	5,350	5,300	5,270	5,240	5,200	5,160	5,100	5,030	4,960	4,870	4,770	4,650
	53.50	17.66	15.547	8,110	8,040	7,950	7,850	7,750	7,630	7,500	7,360	7,200	7,030	6,840	6,640	6,410
10.750	51.00	23.89	14.561	3,700	3,680	3,660	3,640	3,610	3,570	3,530	3,490	3,430	3,370	3,300	3,220	3,130
	55.50	21.72	15.947	4,690	4,650	4,610	4,560	4,510	4,440	4,370	4,300	4,210	4,140	4,090	4,020	3,950
	60.70	19.72	17.473	5,950	5,920	5,880	5,840	5,790	5,740	5,670	5,600	5,510	5,410	5,300	5,180	5,030
	65.70	18.07	18.982	7,640	7,580	7,500	7,420	7,320	7,220	7,100	6,980	6,840	6,680	6,510	6,320	6,110

Table 4—Minimum Collapse Resistance of Casing Under Axial Load (7 of 7)
Grade Q125

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				Axial Stress—psi												
D in.	wt/ft lb/ft	D/T	Area in.^{2}	–10,000	–5,000	0	5,000	10,000	15,000	20,000	25,000	30,000	35,000	40,000	45,000	50,000
				Collapse Pressure—psi												
4.500	15.10	13.35	4.407	16,290	16,070	15,840	15,590	15,320	15,040	14,730	14,410	14,070	13,700	13,320	12,910	12,470
5.000	18.00	13.81	5.275	15,230	15,040	14,830	14,600	14,360	14,100	13,820	13,530	13,220	12,880	12,530	12,160	11,760
5.000	21.40	11.44	6.264	20,690	20,330	19,940	19,530	19,100	18,640	18,160	17,650	17,110	16,560	15,970	15,360	14,720
5.000	24.10	10.00	7.069	23,350	22,940	22,500	22,040	21,550	21,030	20,480	19,910	19,310	18,680	18,020	17,330	16,610
5.500	23.00	13.25	6.630	16,520	16,300	16,070	15,810	15,540	15,250	14,940	14,610	14,260	13,890	13,490	13,080	12,640
6.625	32.00	13.95	9.177	14,930	14,740	14,530	14,310	14,080	13,830	13,560	13,270	12,970	12,650	12,300	11,940	11,550
7.000	35.00	14.06	10.172	14,690	14,500	14,310	14,090	13,860	13,620	13,360	13,080	12,780	12,460	12,130	11,770	11,390
7.000	38.00	12.96	10.959	17,240	17,000	16,750	16,480	16,190	15,880	15,550	15,200	14,830	14,440	14,030	13,590	13,120
7.625	39.00	15.25	11.192	12,340	12,210	12,060	11,900	11,730	11,540	11,340	11,120	10,890	10,640	10,380	10,100	9,790
7.625	42.80	13.57	12.470	15,770	15,570	15,350	15,110	14,850	14,580	14,290	13,980	13,650	13,300	12,930	12,540	12,120
7.625	47.10	12.20	13.745	19,270	18,990	18,700	18,380	18,010	17,580	17,130	16,650	16,140	15,620	15,070	14,490	13,880
7.750	46.00	—	—	17,080	16,840	16,590	16,330	16,040	15,740	15,410	15,070	14,700	14,310	13,900	13,470	13,010
8.625	49.00	15.48	14.118	11,930	11,800	11,660	11,510	11,350	11,170	10,980	10,780	10,560	10,330	10,070	9,800	9,510
9.625	47.00	20.39	13.572	5,720	5,680	5,640	5,580	5,520	5,460	5,390	5,310	5,270	5,230	5,180	5,120	5,040
9.625	53.50	17.66	15.547	8,560	8,500	8,440	8,360	8,280	8,190	8,090	7,970	7,850	7,710	7,560	7,400	7,220
10.750	60.70	19.72	17.473	6,180	6,130	6,070	6,020	6,000	5,970	5,930	5,890	5,840	5,780	5,700	5,620	5,520
10.750	65.70	18.07	18.982	8,020	7,970	7,920	7,850	7,780	7,710	7,620	7,520	7,410	7,290	7,160	7,010	6,850
11.750	60.00	24.03	17.300	3,680	3,680	3,680	3,670	3,660	3,650	3,630	3,610	3,580	3,550	3,500	3,450	3,400
13.375	72.00	26.02	20.768	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,870	2,850	2,830	2,800

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