

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

API BULLETIN 5C2
TWENTY-FIRST EDITION, OCTOBER 1999



**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
Size Outside Diameter in. <i>D</i>	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. <i>t</i>	Inside Diameter in. <i>d</i>	Threaded and Coupled			Extreme Line			Collapse Resistance psi	Pipe Body Yield 1,000 lb
					Drift Diameter in.	Outside Diameter		Drift Diameter in.	Outside Diameter of Box-Powertight			
						Regular Coupling in. <i>W</i>	Special Clearance Coupling in. <i>Wc</i>		Standard Joint in. <i>M</i>	Optional Joint in. <i>Mc</i>		
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
Internal Yield Pressure, psi ^c								Joint Strength, 1,000 lb ^a							
								Threaded and Coupled							
								Buttress Thread						Extreme Line	
								Round Thread	Regular Coupling		Special Clearance Coupling				
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
Size Outside Diameter in. <i>D</i>	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. <i>t</i>	Inside Diameter in. <i>d</i>	Threaded and Coupled			Extreme Line			Collapse Resistance psi	Pipe Body Yield 1,000 lb
					Drift Diameter in.	Outside Diameter		Drift Diameter in.	Outside Diameter of Box-Powertight			
						Regular Coupling in. <i>W</i>	Special Clearance Coupling in. <i>Wc</i>		Standard Joint in. <i>M</i>	Optional Joint in. <i>Mc</i>		
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
Internal Yield Pressure, psi ^c								Joint Strength, 1,000 lb ^a							
								Threaded and Coupled							
								Buttress Thread				Extreme Line			
								Round Thread	Regular Coupling			Special Clearance Coupling	Regular Coupling		
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
Size Outside Diameter in. <i>D</i>	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. <i>t</i>	Inside Diameter in. <i>d</i>	Threaded and Coupled			Extreme Line			Collapse Resistance psi	Pipe Body Yield 1,000 lb
					Drift Diameter in.	Outside Diameter		Drift Diameter in.	Outside Diameter of Box-Powertight			
						Regular Coupling in. <i>W</i>	Special Clearance Coupling in. <i>Wc</i>		Standard Joint in. <i>M</i>	Optional Joint in. <i>Mc</i>		
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
Internal Yield Pressure, psi ^c								Joint Strength, 1,000 lb ^a							
								Threaded and Coupled							
								Round Thread		Buttress Thread		Buttress Thread		Extreme Line	
Plain End	Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	Round Thread	Buttress Thread		Buttress Thread		Standard Joint	Optional Joint	
	Short	Long	Same Grade	Higher ^d Grade	Same Grade	Higher ^d Grade			Same Grade	Higher Grade	Same Grade	Higher Grade			
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
Size Outside Diameter in. <i>D</i>	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. <i>t</i>	Inside Diameter in. <i>d</i>	Threaded and Coupled			Extreme Line			Collapse Resistance psi	Pipe Body Yield 1,000 lb
					Drift Diameter in.	Outside Diameter		Drift Diameter in.	Outside Diameter of Box-Powertight			
						Regular Coupling in. <i>W</i>	Special Clearance Coupling in. <i>Wc</i>		Standard Joint in. <i>M</i>	Optional Joint in. <i>Mc</i>		
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
Internal Yield Pressure, psi ^c								Joint Strength, 1,000 lb ^a							
								Threaded and Coupled							
								Buttress Thread						Extreme Line	
Round Thread		Regular Coupling		Special Clearance Coupling		Round Thread		Regular Coupling		Special Clearance Coupling					
Plain End	Short	Long	Same Grade	Higher ^d	Same Grade	Higher ^d	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
Size Outside Diameter in. <i>D</i>	Nominal Weight, Threads and Coupling lb/ft	Grade	Wall Thickness in. <i>t</i>	Inside Diameter in. <i>d</i>	Threaded and Coupled			Extreme Line			Collapse Resistance psi	Pipe Body Yield 1,000 lb
					Drift Diameter in.	Outside Diameter		Drift Diameter in.	Outside Diameter of Box-Powertight			
						Regular Coupling in. <i>W</i>	Special Clearance Coupling in. <i>Wc</i>		Standard Joint in. <i>M</i>	Optional Joint in. <i>Mc</i>		
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
Internal Yield Pressure, psi ^c								Joint Strength, 1,000 lb ^a							
Buttress Thread								Threaded and Coupled							
Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line		Round Thread		Regular Coupling		Special Clearance Coupling		Extreme Line	
Plain End	Short	Long	Same Grade	Higher ^d	Same Grade	Higher ^d	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