

OCTG – Casing & Tubing

Products

Method	O.D(inch)	W.T(inch)	Standards/Grades
Tubing	2 3/8~4 1/2	0.167~0.630	J55, K55, L80, N80, C90, C95, P110
Casing			

Dimension and Tolerance

Item	Tolerance		
O.D	Pipe Body	D ≤ 101.60mm ± 0.79mm	
		D ≥ 101.60mm	+1.0%D
			-0.5%D
Wall Thickness	-12.5%t		
Weight	Single Lengths	+6.5%, -3.5%	



Mechanical Properties

Specification	Application	Grade	Mechanical Properties			
			Yield Strength		Tensile Strength	Elongation(%)
			min ksi (Mpa)	max ksi (Mpa)	min ksi (Mpa)	
API 5CT	Group 1	H40	40 (276)	80 (552)	≥ 60 (414)	API Formula
		J55	55 (379)	80 (552)	≥ 75 (517)	API Formula
		K55	55 (379)	80 (552)	≥ 95 (655)	API Formula
		N80	80 (552)	110 (758)	≥ 100 (689)	API Formula
		R95	95 (655)	110 (758)	≥ 105 (724)	API Formula
	Group 2	M65	65 (448)	85 (586)	≥ 85 (586)	API Formula
		L80-1	80 (552)	95 (655)	≥ 95 (655)	API Formula
		C90-1	90 (621)	105 (724)	≥ 100 (689)	API Formula
		T95-1	95 (655)	110 (758)	≥ 105 (724)	API Formula
	Group 3	C110	110 (758)	120 (828)	≥ 115 (793)	API Formula
		P110	110 (758)	140 (965)	≥ 125 (862)	API Formula

Chemical Composition

Specifi- cation	Appli- cation	Grade	C		Mn		Mo		Cr		Ni	Cu	P	S	Si
			min.	max.	min.	max.	min.	max.	min.	max.	max.	max.	max.	max.	max.
API 5CT	Group 1	H40											0.030	0.030	
		J55											0.030	0.030	
		K55											0.030	0.030	
		N80											0.030	0.030	
		R95	0.45 ^c		1.90								0.030	0.030	0.45
	Group 2	M65											0.030	0.030	
		L80-1	0.43 ^a		1.90						0.25	0.35	0.030	0.030	0.45
		C90-1	0.35		1.20	0.25 ^b	0.85		1.50	0.99			0.020	0.010	
		T95-1	0.35		1.20	0.25 ^d	0.85	0.40	1.50	0.99			0.020	0.005	
	Group 3	C110											0.030	0.030	
		P110	0.35		1.35		0.85		1.50	0.99			0.020	0.010	

a. The carbon content for L80 may be increased up to 0.05% maximum if the product is oil-quenched.

b. The molybdenum content for Grade C90 Type 1 has no minimum tolerance if the wall thickness is less than 17.78mm.

c. The carbon content for R95 may be increased up to 0.55% maximum if the product is oil-quenched.

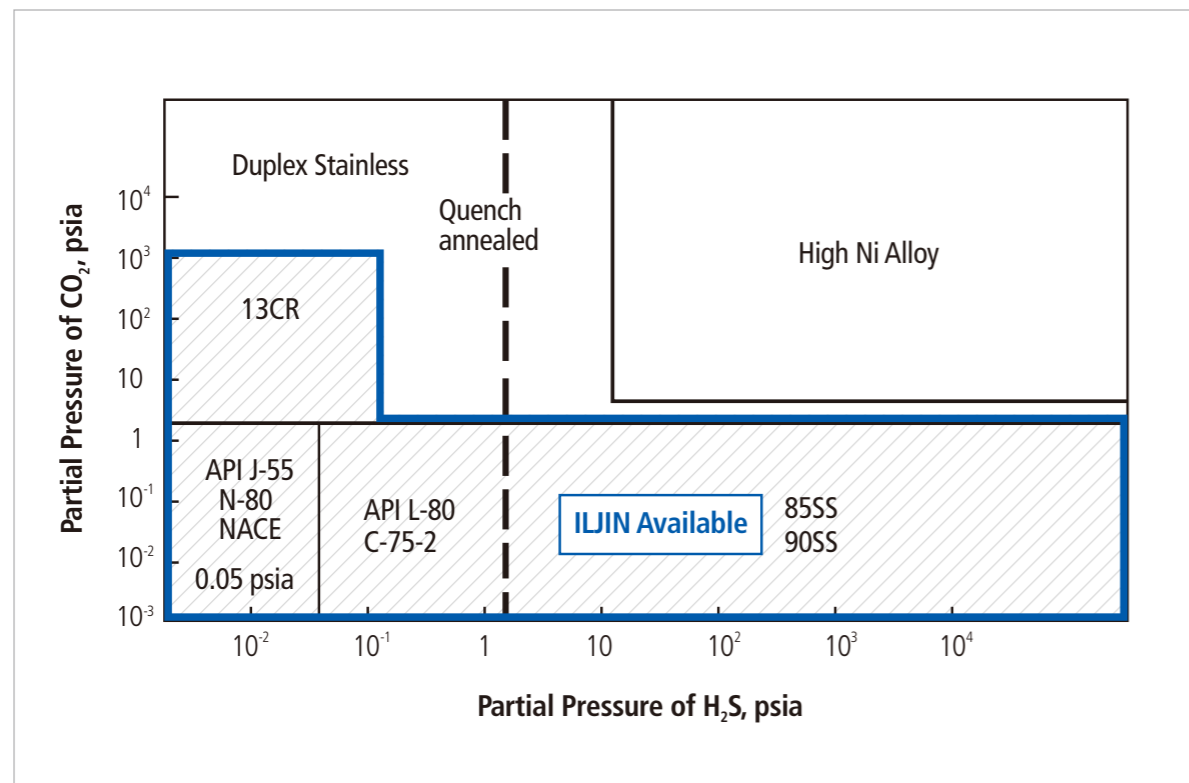
d. The molybdenum content for T95 Type 1 may be decreased to 0.15 minimum if the wall thickness is less than 17.78mm.

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Materials selection

Min. Y.S (ksi)	Group 1	Group 2	Group 3	Group 4	High Collapse	Sour Service	Arctic Service
40	H40						
55	J55 K55						
65	M65						
80	N80Q	L80-1 L80-13Cr			HC L80		L80L
90		C90-1				C90	
95		C95 T95-1			HC T95	T95	
110			P110		HC P110	C110	P110L
125				Q125-1			

Available Materials for Sour and Sweet Service



Tubing Dimensional Range and Performance Properties Size 2 3/8 ~ 2 7/8"

Size O.D	Grade	Dimensions, in				Performance Properties	
		Wall Thickness	Inside Diameter	Drift Diameter	Special Clearance	Collapse (psi)	Burst (psi)
2 3/8	J55	0.167	2.04	1.95		7190	6770
	L80					9980	9840
	N80					9980	9840
	C90					10940	11070
2 3/8	J55	0.190	2.00	1.90	2.91	8100	7700
	L80					11780	11200
	N80					11780	11200
	C90					13250	12600
	T95					13980	13300
2 3/8	P110	0.254	1.87	1.77	2.91	16130	15400
	L80					15280	14970
	N80					15280	14970
	C90					17190	16840
	T95					18150	17780
2 3/8	P110	0.295	1.79	1.69		21010	20590
	L80					17410	17390
	C90					19580	19560
	T95					20670	20650
2 3/8	C90	0.336	1.70	1.61	2.91	21860	22280
	T95					23080	23520
2 7/8	J55	0.217	2.44	2.35	3.46	7680	7260
	L80					11170	10570
	N80					11170	10570
	C90					12380	11890
	T95					12940	12550
2 7/8	P110	0.276	2.32	2.23	3.46	14550	14530
	L80					13890	13440
	N80					13890	13440
	C90					15620	15120
	T95					16490	15960
2 7/8	P110	0.308	2.26	2.17	3.46	19090	18480
	L80					15300	15000
	N80					15300	15000
	C90					17220	16870
	T95					18170	17810
2 7/8	P110	0.340	2.20	2.10	3.46	21040	20260
	L80					16680	16560
	C90					18770	18630
	T95					19810	19660

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Tubing Dimensional Range and Performance Properties Size 2 7/8 ~ 4"

Size O.D	Grade	Dimensions, in				Performance Properties	
		Wall Thickness	Inside Diameter	Drift Diameter	Special Clearance	Collapse (psi)	Burst (psi)
2 7/8	L80	0.392	2.09	2.00		18840	19090
	C90					21200	21470
	T95					22370	22670
2 7/8	L80	0.440	2.00	1.90		20740	21430
	C90					23330	24100
	T95					24630	25440
3 1/2	J55	0.216	3.07	2.94		5970	5940
	L80					7870	8640
	N80					7870	8640
	C90					8540	9720
3 1/2	J55	0.254	2.99	2.87	4.18	7400	6990
	L80					10540	10160
	N80					10540	10160
	C90					11570	11430
	T95					12080	12070
	P110					13530	13970
3 1/2	J55	0.289	2.92	2.80		8330	7950
	L80					12120	11560
	N80					12120	11560
	C90					13640	13010
	T95					14390	13730
3 1/2	L80	0.375	2.75	2.63	4.18	15310	15000
	N80					15310	15000
	C90					17220	16880
	T95					18180	17810
	P110					21050	20630
3 1/2	L80	0.430	2.64	2.52		17240	17200
	C90					19400	19350
	T95					20480	20430
3 1/2	L80	0.476	2.55	2.42		18800	19040
	C90					21150	21420
	T95					22330	22610
3 1/2	L80	0.530	2.44	2.32		20560	21200
	C90					23130	23850
	T95					24410	25170
4	J55	0.226	3.55	3.42		5110	5440
	L80					6590	7910
	N80					6590	7910
	C90					7080	8900

Tubing Dimensional Range and Performance Properties Size 4 ~ 4 1/2"

Size O.D	Grade	Dimensions, in				Performance Properties	
		Wall Thickness	Inside Diameter	Drift Diameter	Special Clearance	Collapse (psi)	Burst (psi)
4	J55	0.262	3.48	3.35		6590	6300
	L80					8800	9170
	N80					8800	9170
	C90					9590	10320
	T95					9980	10890
4	L80	0.330	3.34	3.22		12110	11550
	C90					13620	12990
	T95					14380	13720
4	L80	0.415	3.17	3.05		14880	14530
	C90					16740	16340
	T95					17670	17250
4	L80	0.500	3.00	2.88		17500	17500
	C90					19690	19690
	T95					20780	20780
4	L80	0.610	2.78	2.66		20680	21350
	C90					23260	24020
	T95					24560	25350
4 1/2	J55	0.271	3.96	3.88		5730	5800
	L80					7500	8430
	N80					7500	8430
	C90					8120	9490
	T95					8410	10010
4 1/2	L80	0.337	3.83	3.70		11080	10480
	C90					12220	11800
	T95					12760	12450
4 1/2	L80	0.380	3.74	3.62		12370	11820
	C90					13920	13300
	T95					14690	14040
4 1/2	L80	0.430	3.64	3.52		13830	13380
	C90					15560	15050
	T95					16420	15890
4 1/2	L80	0.500	3.50	3.38		15800	15560
	C90					17780	17500
	T95					18770	18470
4 1/2	L80	0.560	3.38	3.26		17430	17420
	C90					19610	19600
	T95					20700	20690
4 1/2	L80	0.630	3.24	3.12		19260	19600
	C90					21670	22050
	T95					22880	23280

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Casing Dimensional Range and Performance Properties Size 4 1/2"

Size O.D	Wall Thickness (in)	Weight Plain End (lb/ft)	Grade	Dimensions		Performance Properties	
				Inside Diameter (in)	Drift Diameter (in)	Collapse Pressure (psi)	Burst Pressure (psi)
4 1/2	0.205	9.50 9.41	H40	4.09	3.97	2760	3190
			J55			3310	4380
			K55			3310	4380
			M65			3600	5180
4 1/2	0.224	10.50 10.24	J55	4.05	3.93	4010	4790
			K55			4010	4790
			M65			4430	5660
4 1/2	0.250	11.60 11.36	J55	4.00	3.88	4960	5350
			K55			4960	5350
			M65			5560	6320
			L80			6350	7780
			N80			6350	7780
			C90			6820	8750
			C95			7030	9240
			T95			7030	9240
			P110			7580	10690
			HC-P110			8650	10690
4 1/2	0.290	13.50 13.05	M65	3.92	3.80	7310	7330
			L80			8540	9020
			N80			8540	9020
			C95			9660	10710
			P110			10690	12410
			HC-P110			11600	12410
4 1/2	0.337	15.10 15.00	P110	3.83	3.70	14340	14420
			HC-P110			14350	14420
			Q125			15830	16380

Casing Dimensional Range and Performance Properties Size 5"

Size O.D	Wall Thickness (in)	Weight Plain End (lb/ft)	Grade	Dimensions		Performance Properties						
				Inside Diameter (in)	Drift Diameter (in)	Collapse Pressure (psi)	Burst Pressure (psi)					
5	0.220	11.50 11.24	J55	4.56	4.44	3060	4240					
			K55			3060	4240					
			M65			3290	5010					
5	0.253	13.00 12.84	J55	4.49	4.37	4140	4870					
			K55			4140	4870					
			M65			4590	5760					
5	0.296	15.00 14.88	J55	4.41	4.28	5560	5700					
			K55			5560	5700					
			M65			6280	6730					
			L80			7250	8290					
			N80			7250	8290					
			C90			7830	9320					
			C95			8110	9840					
			T95			8110	9840					
5	0.362	18.00 17.95	P110	4.28	4.15	8850	11400					
			M65			8730	8240					
			L80			10500	10140					
			N80			10500	10140					
			C90			11520	11400					
			C95			12030	12040					
			T95			12030	12040					
			P110			13470	13940					
			Q125			14820	15840					
			5			0.437	21.40 21.32	M65	4.13	4.00	10370	9940
L80	12760	12240										
N80	12760	12240										
C90	14360	13770										
C95	15150	14530										
T95	15160	14530										
P110	17550	16820										
Q125	19940	19120										
5	0.478	23.20 23.11		L80	4.04			3.92			13830	13380
				N80							13830	13380
			C90	15560		15060						
			C95	16430		15890						
			T95	16430		15890						
			P110	19020		18400						
			Q125	21620		20910						
5	0.500	24.10 24.05	L80	4.00	3.88	14400	14000					
			N80			14400	14000					
			C90			16200	15750					
			C95			17100	16630					
			T95			17100	16630					
			P110			19800	19250					
Q125	22500	21880										

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Casing Dimensional Range and Performance Properties Size 5 1/2"

Size O.D	Wall Thickness (in)	Weight Plain End (lb/ft)	Grade	Dimensions		Performance Properties	
				Inside Diameter (in)	Drift Diameter (in)	Collapse Pressure (psi)	Burst Pressure (psi)
5 1/2	0.244	14.00 13.71	J55	5.01	4.89	3120	4270
			K55			3120	4270
			M65			3360	5050
5 1/2	0.275	15.50 15.36	J55	4.95	4.83	4040	4810
			K55			4040	4810
			M65			4470	5690
5 1/2	0.304	17.00 16.89	J55	4.89	4.77	4910	5320
			K55			4910	5320
			M65			5510	6290
			L80			6290	7740
			N80			6290	7740
			C90			6740	8710
			C95			6940	9190
			T95			6940	9190
			P110			7480	10640
			HC-P110			12080	12640
5 1/2	0.361	20.00 19.83	I65	4.78	4.65	7540	7470
			M65			7540	7470
			L80			8830	9190
			N80			8830	9190
			C90			9630	10340
			C95			10020	10910
			T95			10020	10910
			P110			11100	12640
			HC-P110			12080	12640
			5 1/2			0.415	23.00 22.56
L80	11160	10560					
N80	11160	10560					
C90	12380	11880					
C95	12930	12540					
T95	12930	12540					
P110	14540	14530					
Q125	16060	16510					
5 1/2	0.500	26.80 26.73		C90	4.50		
			T95	15700		15100	
5 1/2	0.562	29.70 29.67	C90	4.38	4.25	16510	16090
			T95			17430	16990
5 1/2	0.625	32.60 32.57	C90	4.25	4.13	18130	17900
			T95			19140	18890

Casing Dimensional Range and Performance Properties Size 5 1/2 ~ 7"

Size O.D	Wall Thickness (in)	Weight Plain End (lb/ft)	Grade	Dimensions		Performance Properties	
				Inside Diameter (in)	Drift Diameter (in)	Collapse Pressure (psi)	Burst Pressure (psi)
5 1/2	0.687	35.30 35.35	C90	4.13	4.00	19680	19670
			T95			20770	20770
5 1/2	0.750	38.00 38.08	C90	4.00	3.88	21200	21480
			T95			22380	22670
5 1/2	0.812	40.50 40.69	C90	3.88	3.75	22650	23250
			T95			23910	24540
5 1/2	0.875	43.10 43.26	C90	3.75	3.63	24080	25060
			T95			25420	26450
6 5/8	0.288	20.00 19.51	H40	6.05	5.92	2520	3040
			J55			2970	4180
			K55			2970	4180
			M65			3190	4940
6 5/8	0.352	24.00 23.60	J55	5.92	5.80	4560	5110
			K55			4560	5110
			M65			5080	6040
			L80			5760	7440
			N80			5760	7440
			C90			6140	8370
			C95			6310	8830
			T95			6310	8830
			P110			6730	10230
			HC-P110			12080	12640
6 5/8	0.417	28.00 27.67	M65	5.79	5.67	7010	7160
			L80			8170	8810
			N80			8170	8810
			C90			8880	9910
			C95			9220	10460
			T95			9220	10460
			P110			10160	12120
6 5/8	0.475	32.00 31.23	L80	5.68	5.55	10320	10040
			N80			10320	10040
			C90			11330	11290
			C95			11820	11920
			T95			11820	11920
6 5/8	0.562	39.70 39.67	P110	5.68	5.55	13220	13800
			Q125			14540	15680
			H40			1420	2310

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Casing Dimensional Range and Performance Properties Size 7"

Size O.D	Wall Thickness (in)	Weight Plain End (lb/ft)	Grade	Dimensions		Performance Properties	
				Inside Diameter (in)	Drift Diameter (in)	Collapse Pressure (psi)	Burst Pressure (psi)
7	0.317	23.00 22.65	J55	6.37	6.24 6.25	3270	4360
			K55			3270	4360
			I65			3540	5150
			M65			3540	5150
			L80			3830	6340
			N80			3830	6340
			C90			4030	7130
			C95			4140	7530
			T95			4140	7530
7	0.362	26.00 25.69	J55	6.28	6.15	4330	4980
			K55			4330	4980
			I65			4810	5880
			M65			4810	5880
			L80			5410	7240
			N80			5410	7240
			HC-L80			7000	7240
			C90			5740	8150
			C95			5890	8600
			T95			5890	8600
			P110			6230	9960
7	0.408	29.00 28.75	I65	6.18	6.06	6100	6630
			M65			6100	6630
			L80			7030	8160
			N80			7030	8160
			HC-L80			7720	8160
			C90			7580	9180
			C95			7840	9690
			T95			7840	9690
			P110			8530	11220
7	0.453	32.00 31.70	M65	6.09	5.97 6.00	7360	7360
			L80			8600	9060
			N80			8600	9060
			C90			9380	10190
			C95			9740	10760
			T95			9740	10760
			P110			10780	12460

Casing Dimensional Range and Performance Properties Size 7"

Size O.D	Wall Thickness (in)	Weight Plain End (lb/ft)	Grade	Dimensions		Performance Properties						
				Inside Diameter (in)	Drift Diameter (in)	Collapse Pressure (psi)	Burst Pressure (psi)					
7	0.498	35.00 34.61	L80	6.00	5.88	10180	9960					
			N80			10180	9960					
			C90			11170	11210					
			C95			11650	11830					
			T95			11650	11830					
			P110			13030	13700					
			Q125			14310	15560					
			7			0.540	38.00 37.29	L80	5.92	5.80	11390	10800
								N80			11390	10800
C90	12810	12150										
C95	13430	12830										
T95	13430	12830										
P110	15130	14850										
Q125	16740	16880										
7	0.625	42.70 42.59		C90	5.75			5.63			14640	14060
				T95							15450	14840
7	0.687	46.40 46.36	C90	5.63	5.50	15930	15460					
			T95			16820	16320					
7	0.750	50.10 50.11	C90	5.50	5.38	17220	16880					
			T95			18180	17810					
7	0.812	53.60 53.71	C90	5.38	5.25	18460	18270					
			T95			19480	19290					
7	0.875	57.10 57.29	C90	5.25	5.13	19690	19690					
			T95			20780	20780					