TECHNICAL DATA PRODUCT

AMERICAN STANDARD CONTRAST FORM

Nominal diameter in inches	Extemal diameter in millimeters	ANSI B36.19								ANSI B36.10					
		Nominal diameter in inches													
		5S		10s		Sched. 40s		Sched. 80s		10		20		30	
		mm	Kg/m	mm	Kg/m	mm	Kg/m	mm	Kg/m	mm	Kg/m	mm	Kg/m	mm	Kg/m
1/8"	10.29	-	-	1.24	0.281	1.73	0.371	2.41	0.467	-	-	-	-	-	-
1/4"	13.72	-	-	1.65	0.499	2.24	0.644	3.02	0.809	-	-	-	-	-	-
3/8"	17.15	-	-	1.65	0.640	2.31	0.858	3.20	1.118	-	-	-	-	-	-
1/2"	21.34	1.65	0.81	2.11	1.016	2.77	1.26	3.73	1.62	-	-	-	-	-	-
3/4"	26.67	1.65	1.03	2.11	1.298	2.87	1.68	3.91	2.19	-	-	-	-	-	-
1"	33.40	1.65	1.31	2.77	2.125	3.38	2.50	4.55	3.23	-	-	-	-	-	-
1 1/4"	42.16	1.65	1.67	2.77	2.732	3.56	3.38	4.85	4.46	-	-	-	-	-	-
1 1/2"	48.26	1.65	1.93	2.77	3.155	3.68	4.05	5.08	5.40	-	-	-	-	-	-
2"	60.33	1.65	2.42	2.77	3.992	3.91	5.43	5.54	7.47	-	-	-	-	-	-
2 1/2"	73.03	2.11	3.75	3.05	5.345	5.16	8.62	7.01	11.40	-	-	-	-	-	-
3"	88.90	2.11	4.59	3.05	6.557	5.49	11.28	7.62	15.25	-	-	-	-	-	-
3 1/2"	101.60	2.11	5.27	3.05	7.526	5.74	13.56	8.08	18.62	-	-	-	-	-	-
4"	114.30	2.11	5.95	3.05	8.496	6.02	16.06	8.56	22.29	-	-	-	-	-	-
5"	141.30	2.77	9.64	3.40	11.740	6.55	21.76	9.52	30.92	-	-	-	-	-	-
6"	168.30	2.77	11.51	3.40	14.037	7.11	28.23	10.97	42.52	-	-	-	-	-	-
8"	219.08	2.77	15.05	3.76	20.334	8.18	42.49	12.7	64.57	-	-	6.35	33.28	7.04	36.80
10"	273.05	3.40	23.03	4.19	28.290	9.27	60.24	12.7	81.46	-	-	6.35	41.70	7.8	51.00
12"	323.85	3.96	31.81	4.57	36.633	9.52	73.76	12.7	97.36	-	-	6.35	49.68	8.38	65.14
14"	355.60	3.98	34.99	4.78	42.102	-	-	-	-	6.35	54.63	7.92	67.98	9.52	81.21
16"	406.40	4.19	42.35	4.78	48.220	-	-	-	-	6.35	62.58	7.92	77.90	9.52	93.13
18"	457.20	4.19	47.7	4.78	54.300	-	-	-	-	6.35	70.50	7.92	87.80	11.13	122.12
20"	508	4.77	60.32	5.53	69.766	-	-	-	-	6.35	78.47	9.52	116.97	12.7	155.00
22"	553.8	4.77	-	5.53	-	-	-	-	-	6.35	86.42	9.52	128.89	2.7	170.86
24"	609.6	5.54	84.10	6.35	96.215	-	-	-	-	6.35	96.215	9.52	140.80	14.7	209.54
26"	660.4	-	-	-	-	-	-	-	-	7.92	127.58	12.7	202.65		
28"	711.6	-	-	-	-	-	-	-	-	7.92	137.52	12.7	218.54	15.88	271.94
30"	762	6.35	120.59	7.92	147.45	-	-	-	-	7.92	147.45	12.7	234.44	15.88	291.94
32"	812.8	-	-	-	-	-	-	-	-	7.92	157.39	12.7	250.33	15.88	311.67
34"	863.6	-	-	-	-	-	-	-	-	7.92	167.32	12.7	266.22	15.88	331.54
36"	914.4	-	-	-	-	-	-	-	-	7.92	177.26	12.7	282.18	15.88	351.41

钢管规范重量表

SPECIFICATION AND WEIGHTS OF STEEL PIPES

标准 (standard) :

ANSI Pipe Schedule
SI-units(metric)

OD's=mm
Wall thickness=mm
Weight=kg/m(plain end mass)

For 5 S,10 S,40 S,80 S:
Figures based on austenitic steel

(ASTM/API/ASME)

■ 钢管规范重量表/ Specification and Weights of Steel Pipes

Nominal pipe sizd mm/inch	OD mm	10	20	30	STD	40	60	XS	80	100	120	140	160	XXS
6 1/8	10.3				1.73 0.73	1.73 0.73		2.41 0.47	2.41 0.47					
8 1/4	13.7				2.24 0.63	2.24 0.63		3.02 0.80	3.02 0.80					
10 3/8	17.1				2.31 0.84	2.31 0.84		3.20 1.10	3.20 1.10					
15 1/2	21.3				2.77 1.27	2.77 1.27		3.73 1.62	3.73 1.62				4.78 1.95	4.77 2.55
20 3/4	26.7				2.87 1.69	2.87 1.69		3.91 2.20	3.91 2.20				5.56 2.90	7.82 3.64
25 1	33.4				3.38 2.50	3.38 2.50		4.55 3.24	4.55 3.24				6.35 4.24	9.09 5.45
32 11/4	42.2				3.56 3.39	3.56 3.39		4.85 4.47	4.85 4.47				6.35 5.61	9.70 7.77
40 11/2	48.3				3.68 4.05	3.68 4.05		5.08 5.41	5.08 5.41				7.14 7.25	10.15 9.56
50 2	60.3				3.91 5.44	3.91 5.44		5.54 7.48	5.54 7.48				8.74 11.11	11.07 13.44
65 21/2	73.0				5.16 8.63	5.16 8.63		7.01 11.41	7.01 11.41				9.53 14.92	14.02 20.39
80 3	88.9				5.49 11.29	5.49 11.29		7.62 15.27	7.62 15.27				11.13 21.35	15.24 27.68
90 31/2	101.6				5.74 13.57	5.74 13.57		8.08 18.63	8.08 18.63				-	-
100 4	114.3				6.02 16.07	6.02 16.07		8.56 22.32	8.56 22.32		11.13 28.32		13.49 33.54	17.12 41.03
125 5	141.3				6.55 21.77	6.55 21.77		9.53 30.97	9.53 30.97		12.70 40.26		15.88 49.11	19.05 57.43
150 6	168.3				7.11 28.26	7.11 28.26		10.97 42.56	10.97 42.56		14.27 54.2		18.26 67.56	21.95 79.22
200 8	219.1		6.35 33.31	7.04 36.81	8.18 42.55	8.18 42.55	10.31 53.08	12.70 64.64	12.70 64.64	15.09 75.92	18.26 90.44	20.62 100.92	23.01 111.27	22.23 107.92
250 10	273.1		6.35 41.77	7.80 51.03	9.27 60.31	9.27 60.31	12.70 81.55	12.70 81.55	15.09 96.01	18.26 114.75	21.44 133.06	25.40 155.15	28.58 172.33	25.40 155.15
300 12	323.9		6.35 49.73	8.38 65.20	9.53 73.88	10.31 79.73	14.27 108.96	12.70 97.46	17.48 132.08	21.44 159.91	25.40 186.75	28.58 208.14	33.32 238.76	25.40 186.97
350 14	355.6	6.35 54.69	7.92 67.90	9.53 81.33	9.53 81.33	11.13 94.55	15.09 126.71	12.70 107.39	19.05 158.10	23.83 194.96	27.79 224.65	31.75 253.56	35.71 281.70	
400 16	406.4	6.35 62.64	7.92 77.83	9.53 93.27	9.53 93.27	12.70 123.30	16.66 160.12	12.70 123.30	21.44 203.53	26.19 245.56	30.96 286.64	36.53 333.19	40.49 365.35	
450 18	457.2	6.35 70.57	7.92 87.71	11.13 122.38	9.53 105.16	14.27 155.80	19.05 205.74	12.70 139.15	23.88 254.55	29.36 309.62	34.93 363.56	39.67 408.26	45.24 459.37	
500 20	508.0	6.35 78.55	9.53 117.15	12.7 155.12	9.53 117.15	15.09 183.42	20.62 247.83	12.70 155.12	26.19 311.17	32.54 381.53	38.10 441.49	44.45 508.11	50.01 564.81	
550 22	558.8	6.35 86.54	9.53 129.13	12.7 171.09	9.53 129.13	-	22.23 294.25	12.70 171.09	28.58 373.83	34.93 451.42	41.28 527.02	47.63 600.63	53.98 672.26	
600 24	609.6	6.35 94.53	9.53 141.12	14.27 209.64	9.53 141.12	17.48 255.41	24.61 355.26	12.70 187.06	30.96 442.08	38.89 547.71	46.02 640.03	52.37 720.15	59.54 808.22	
650 26	660.4	7.92 127.36	12.7 202.72	- -	9.53 152.87	-		12.70 202.72						
700 28	711.2	7.92 137.32	12.7 218.69	15.88 271.21	9.53 164.85	-		12.70 218.69						
750 30	762.0	7.92 147.28	12.7 234.67	15.88 292.18	9.53 176.84	-		12.70 234.67						
800 32	812.8	7.92 157.24	12.7 250.64	15.88 312.15	9.53 188.82	17.48 342.91		12.70 250.64						
850 34	863.6	7.92 167.20	12.7 266.61	15.88 332.12	9.53 200.31	17.48 364.90		12.70 266.61						
900 36	914.4	7.92 176.96	12.7 282.27	15.88 351.70	9.53 212.56	19.05 420.40		12.70 282.27						

Wall Thickness=mm
Weight=kg/m(plam end mass)
5s,10s,40s,80s,-ANSI B36.19

结构用管
TUBE FOR STRUCTURES

标准（standard）：
GB/T 8162　China National Standard
DIN 1629　Deutsche Industrie Normen

用途（Uses）：
用于制造管道、容器、设备、管件及钢结构
For manufacture of pipelines,vessels,equipment, pipe fittings and steel structures

化学成分/ Chemical Composition(%)

标准 Standard	牌号 Grade	C	Si	Mn	P	S	Cr	Ni	Cu	V
GB/T 8162	10	0.07-0.13	0.17-0.37	0.35-0.65	≤0.025	≤0.020	≤0.15	≤0.30	≤0.25	-
	20	0.17-0.23	0.17-0.37	0.35-0.65	≤0.025	≤0.020	≤0.25	≤0.30	≤0.25	-
	35	0.32-0.39	0.17-0.37	0.50-0.80	≤0.025	≤0.020	≤0.25	≤0.30	≤0.25	-
	45	0.42-0.50	0.17-0.37	0.50-0.80	≤0.025	≤0.020	≤0.25	≤0.30	≤0.25	-
	Q345A	≤0.20	≤0.55	1.00-1.60	≤0.025	≤0.020	≤0.30	≤0.30	≤0.30	-
	Q345B	≤0.20	≤0.55	1.00-1.60	≤0.025	≤0.020	≤0.30	≤0.30	≤0.30	-
	Q345C	≤0.20	≤0.55	1.00-1.60	≤0.025	≤0.020	≤0.30	≤0.30	≤0.30	0.02-0.15
	Q345D	≤0.18	≤0.55	1.00-1.60	≤0.025	≤0.020	≤0.30	≤0.30	≤0.30	0.02-0.15
	Q345E	≤0.18	≤0.55	1.00-1.60	≤0.025	≤0.020	≤0.30	≤0.30	≤0.30	0.02-0.15
DIN 1629	St37.0	≤0.17	0.17-0.37	0.35-0.65	≤0.025	≤0.020	≤0.25	≤0.25	≤0.25	-
	St44.0	≤0.21	0.17-0.37	0.50-0.80	≤0.025	≤0.020	≤0.25	≤0.25	≤0.25	-
	St55	0.33-0.41	0.17-0.37	0.50-0.80	≤0.025	≤0.020	≤0.25	≤0.25	≤0.25	-
	St52.0	≤0.22	≤0.55	≤1.60	≤0.025	≤0.020	≤0.25	≤0.25	≤0.25	-
	CK45	0.42-0.50	0.17-0.37	0.50-0.80	≤0.025	≤0.020	≤0.25	≤0.25	≤0.25	-

注：经协商，也可供应其他牌号的钢管 Note:Other grades than the a.m. Chart can be made avaiable is through consultations.

机械性能/ Mechanical Properties

标准 Standard	钢级 Grade	抗拉强度 Tensile strength（MPa）	屈服强度（MPa）不小于 Yield Strength Not less than		伸长率（%）不小于 Elongation Not less than	冲击实验 Impact test	
			≤16mm	>16-30mm		温度(℃) Temperature	吸收功(KV/J) Absorbed evergy
GB/T 8162	10	≥335	205	195	24	-	-
	20	≥410	245	235	20	-	-
	35	≥510	305	295	17	-	-
	45	≥590	335	325	14	-	-
	Q345A	470-630	345	325	20	-	-
	Q345B	470-630	345	325	20	20	34
	Q345C	470-630	345	325	21	0	34
	Q345D	470-630	345	325	21	-20	34
	Q345E	470-630	345	325	21	-40	27
DIN 1629	-	-	≤16mm	>16mm	-	-	-
	St37.0	350-480	235	225	25	-	-
	St44.0	420-550	275	265	21	-	-
	St55	540-645	295	285	17	-	-
	St52.0	500-650	355	345	21	-	-
	CK45	590-730	335	325	14	-	-

标准 (standard) :

JIS(日本工业规格协会)　　JIS G3452 SGP

JIS G3454 STPG　　JIS G3455 STS

JIS G3456 STPT　　JIS G3460 STPL

钢管规范重量表/ Specification and Weights of Steel Pipes

名称 Name		外径 Outside Diameter	外径厚度 (mm) Outside Diameter Thickness											外径 Outside Diameter
(A)	(B)	(mm)	S.G.P.	Sch. 10	Sch. 20	Sch. 30	Sch. 40	Sch. 60	Sch. 80	Sch. 100	Sch. 120	Sch. 140	Sch. 160	(mm)
6	1/8	10.5	2.0 0.419				1.7 0.369	2.2 0.450	2.4 0.479					10.5
8	1/4	13.8	2.3 0.652				2.2 0.629	2.4 0.675	3.0 0.799					13.8
10	3/8	17.3	2.3 0.851				2.3 0.851	2.8 1.00	3.2 1.11					17.3
15	1/2	21.7	2.8 1.31				2.8 1.31	3.2 1.46	3.7 1.64				4.7 1.97	21.7
20	3/4	27.2	2.8 1.68				2.9 1.74	3.4 2.00	3.9 2.24				5.5 2.94	27.2
25	1	34.0	3.2 2.43				3.4 2.57	3.9 2.89	4.5 3.27				6.4 4.36	34.0
32	1 ¼	42.7	3.5 3.38				3.6 3.47	4.5 4.24	4.9 4.57				6.4 5.73	42.7
40	1 ½	48.6	3.5 3.89				3.7 4.10	4.5 4.89	5.1 5.47				7.1 7.27	48.6
50	2	60.5	3.8 5.31		3.2 4.52		3.9 5.44	4.9 6.72	5.5 7.46				8.7 11.1	60.5
65	2 ½	76.3	4.2 7.47		4.5 7.97		5.2 9.12	6.0 10.4	7.0 12.0				9.5 15.6	76.3
80	3	89.1	4.2 8.79		4.5 9.39		5.5 11.3	6.6 13.4	7.6 15.3				11.1 21.4	89.1
90	3½	101.6	4.2 10.1		4.5 10.8		5.7 13.5	7.0 16.3	8.1 18.7				12.7 27.8	101.6
100	4	114.3	4.5 12.2		4.9 13.2		6.0 16.0	7.1 18.8	8.6 22.4		11.1 28.2		13.5 33.6	114.3
125	5	139.8	4.5 15.0		5.1 16.9		6.6 21.7	8.1 26.3	9.5 30.5		12.7 39.8		15.9 48.6	139.8
150	6	165.2	5.0 19.8		5.5 21.7		7.1 27.7	9.3 35.8	11.0 41.8		14.3 53.2		18.2 66.0	165.2
200	8	216.3	5.8 30.1		6.4 33.1	7.0 36.1	8.2 42.1	10.3 52.3	12.7 63.8	15.1 74.9	18.3 88.9	20.6 99.4	23.0 110	216.3
250	10	267.4	6.6 42.4		6.4 41.2	7.8 49.9	9.3 59.2	12.7 79.8	15.1 93.9	18.2 112	21.4 130	25.4 152	28.6 168	267.4
300	12	318.5	6.9 53.0		6.4 49.3	8.4 64.2	10.3 78.3	14.3 107	17.4 129	21.4 157	25.4 184	28.6 204	33.3 234	318.5
350	14	355.6	7.9 67.7	6.4 55.1	7.9 67.7	9.5 81.1	11.1 94.3	15.1 127	19.0 158	23.8 195	27.8 225	31.8 254	35.7 282	355.6
400	16	406.4	7.9 77.6	6.4 63.1	7.9 77.6	9.5 93.0	12.7 123	16.7 160	21.4 203	26.2 246	30.9 286	36.5 333	40.5 365	406.4
450	18	457.2	7.9 87.5	6.4 71.1	7.9 87.5	11.1 122	14.3 156	19.0 206	23.8 254	29.4 310	34.9 263	39.7 409	45.2 459	457.2
500	20	508.0	7.9 97.4	6.4 79.2	9.5 117	12.7 155	15.1 184	20.6 248	26.2 311	32.5 381	38.1 441	44.4 508	50.0 565	508.0
550	22	558.8		6.4 86.5	9.5 129	12.7 171	15.9 213	22.2 294	28.6 374	34.9 451	41.3 527	47.6 600	54.0 672	558.8
600	24	609.6		6.4 94.5	9.5 141	14.3 210	17.5 256	24.6 355	31.0 442	38.9 547	46.0 639	52.4 720	59.5 807	609.6
650	26	660.4					18.9 299	26.4 413	34.0 525	41.6 635	49.1 740	56.6 843	64.2 944	660.4
(A)	(B)	(mm)	S.G.P.	Sch. 10	Sch. 20	Sch. 30	Sch. 40	Sch. 60	Sch. 80	Sch. 100	Sch. 120	Sch. 140	Sch. 160	(mm)

END:1 ½ " & under plain square cut ends　　2 " & above bevelled ends

锅炉管技术参数
TECHNICAL PARAMETERS OF BOILER TUBE

标准（standard）：

美国机械工程师协会标准/American Society of Mechanical Engineers

ASME SA-106、ASME SA-192M、ASME SA-209M、ASME SA-210M、ASME SA-213M

德国工业标准/Deutsche Industrie Normen / DIN17175

中国国家标准/China National Standard/ GB 3087、GB5310

日本工业标准/Japanese Industrie Standard/ JIS G 3461

用途（Uses）：

用于锅炉水冷壁、省煤器、再热器、过热器和蒸汽管道的制造。

For manufacture wall panel,economizer,reheater,superheater and steam pipeline of boilers.

尺寸公差/ Tolerances on Dimensions

外径允许偏差/ Outside Diameter Tolerance

标准 Standard	外径 Outside Diameter（mm）	外径允许偏差 Tolerance
DIN17175	≤100	±0.75% (min.±0.5mm)
	>100	±0.90%
GB 3087	≤180	±1.0% (min.±0.5mm)
GB 5310	≤50	±0.5mm
	>50	±1.0%
ASME SA-192M、ASME SA-209M、ASME SA-210M、ASME SA-213M、JIS G 3461	≤101.6	±0.4,-0.8mm
	>101.6～190.5	±0.4,-1.2mm
ASME SA-106	≤48.3	±0.40mm
	>48.3～114.3	±0.79mm
	>114.3	+1.5,-0.79mm

壁厚允许偏差/ Wall Thickness Tolerance

标准 Standard	外径Outside Diameter da（mm）	壁厚 Wall Thickness S（mm）	壁厚允许偏差 Tolerance
DIN17175	≤130	S≤2Sn	+15%,-10%
		2Sn<S≤4Sn	+12.5%,-10%
		S>4Sn	±9%
	>130	S≤0.05da	+17.5%,-12.5%
		0.05da<S≤0.11da	±12.5%
		S>0.11da	±10%
GB 3087	—	3-20	+15%,-12.5% (min.+0.45mm-0.35mm)
		>20	±12.5%
GB 5310	—	<3.5	+15%,-10% (min.±0.48mm-0.32mm)
		3.5-20	+15%,-10%
		>20	±10%
ASME SA-192M、ASME SA-209M ASME SA-210M、ASME SA-213M JIS G 3461	—	2.41-3.8	+35%,-0%
		>3.8-4.6	+33%,-0%
		>4.6	+28%,-0%
ASME SA-106	—	—	±12.5%

注：Sn为标准壁厚。 Note: " Sn " is standard wall thickness.

管线管技术参数
TECHNICAL PARAMETERS OF LINE PIPE

标准（standard）：

API SPEC 5L

用途（Uses）：

用于石油、天然气工业中的气、水、油输送。

For conveying gas,water,and oil in both the oil and natural gas industries.

尺寸公差/ Tolerances on Dimensions

标准 Standard	外径公差 Outside Diameter Tolerance		壁厚公差 Wall Thickness Tolerance
API SPEC 5L	D<60.3mm	+0.41mm / -0.40mm	+15% / -12.5%
	D≥60.3mm	+0.75% / -0.40mm	

机械性能/ Mechanical Properties

标准 Standard	钢级 Grade	屈服强度（MPa） Yield Strength		抗拉强度（MPa） Tensile strength		伸长率（%） Elongation	冲击功（J） Impact Energy
API SPEC 5L	PSL1					查API SPEC 5L表3 See table 3 of API SPEC 5L	
	A25	≥172		≥310			
	A	≥207		≥331			
	B	≥241		≥414			
	X42	≥290		≥414			
	X46	≥317		≥434			
	X52	≥359		≥455			
	X56	≥386		≥490			
	X60	≥414		≥517			
	X65	≥448		≥531			
	X70	≥483		≥565			
	PSL2						
		Min	Max	Min	Max		Min
	B	241	448	414	758		41(27)
	X42	290	496	414	758		41(27)
	X46	317	524	434	758		41(27)
	X52	359	531	455	758		41(27)
	X56	386	544	490	758		41(27)
	X60	414	565	517	758		41(27)
	X65	448	600	531	758		41(27)
	X70	483	621	565	758		41(27)
	X80	552	690	621	827		101(68)

注：括号内为横向冲击功要求 Note:Transverse impact energy requirements are shown in brackets.

化学成分/ Chemical Composition(%)

标准 Standard	钢级 Grade	C	Mn	P		S	Ti
		Max.	Max.	Min.	Max.	Max.	Max.
API SPEC 5L	PSL1						
	A25 I	0.21	0.60		0.030	0.030	
	A25 II	0.21	0.60	0.45	0.080	0.030	
	A	0.22	0.90		0.030	0.030	
	B	0.28	1.20		0.030	0.030	0.04
	X42	0.28	1.30		0.030	0.030	0.04
	X46,X52,X56	0.28	1.40		0.030	0.030	0.04
	X60	0.28	1.40		0.030	0.030	0.04
	X65,X70	0.28	1.40		0.030	0.030	0.06
	PSL2						
	B	0.24	1.20		0.025	0.015	0.04
	X42	0.24	1.30		0.025	0.015	0.04
	X46,X52,X56,X60	0.24	1.40		0.025	0.015	0.04
	X65,X70,X80	0.24	1.40		0.025	0.015	0.06

注：PSL2最大碳当量CE(II W)为0.43% Note:CE(II W) 0.43%MAX.for PSL2.

锅炉管技术参数
TECHNICAL PARAMETERS OF BOILER TUBE

化学成分/ Chemical Composition(%)

采用标准 Standard	牌号 Grade	C	Si	Mn	P	S	Cr	Mo	V	Ti	B	W	Nb
GB 3087	10	0.07-0.13	0.17-0.37	0.35-0.65	≤0.025	≤0.020	≤0.15	—	—	—	—	—	—
	20	0.17-0.23	0.17-0.37	0.35-0.65	≤0.025	≤0.020	≤0.25	—	—	—	—	—	—
DIN17175	St35.8	≤0.17	0.10-0.35	0.40-0.80	≤0.025	≤0.020	—	—	—	—	—	—	—
	St45.8	≤0.21	0.10-0.35	0.40-1.20	≤0.025	≤0.020	—	—	—	—	—	—	—
	15Mo3	0.12-0.20	0.10-0.35	0.40-0.80	≤0.025	≤0.020	—	0.25-0.35	—	—	—	—	—
	13CrMo44	0.10-0.18	0.10-0.35	0.40-0.70	≤0.025	≤0.020	0.70-1.10	0.45-0.65	—	—	—	—	—
	10CrMo910	0.08-0.15	≤0.50	0.40-0.70	≤0.025	≤0.020	2.00-2.50	0.90-1.20	—	—	—	—	—
	14MoV63	0.10-0.18	0.10-0.35	0.40-0.70	≤0.025	≤0.020	0.30-0.60	0.50-0.70	0.22-0.32	—	—	—	—
	12Cr1MoV	0.08-0.15	0.17-0.37	0.40-0.70	≤0.025	≤0.020	0.90-1.20	0.25-0.35	0.15-0.30	—	—	—	—
GB 5310	20G	0.17-0.24	0.17-0.37	0.35-0.65	≤0.025	≤0.020	—	—	—	—	—	—	—
	20MnG	0.17-0.24	0.17-0.37	0.70-1.00	≤0.025	≤0.020	—	—	—	—	—	—	—
	25MnG	0.22-0.30	0.17-0.37	0.70-1.00	≤0.025	≤0.020	—	—	—	—	—	—	—
	15MoG	0.12-0.20	0.17-0.37	0.40-0.80	≤0.025	≤0.020	—	0.25-0.35	—	—	—	—	—
	20MoG	0.15-0.25	0.17-0.37	0.40-0.80	≤0.025	≤0.020	—	0.44-0.65	—	—	—	—	—
	12CrMoG	0.08-0.15	0.17-0.37	0.40-0.70	≤0.025	≤0.020	0.40-0.70	0.40-0.55	—	—	—	—	—
	15CrMoG	0.12-0.18	0.17-0.37	0.40-0.70	≤0.025	≤0.020	0.80-1.10	0.40-0.55	—	—	—	—	—
	12Cr2MoG	0.08-0.15	≤0.50	0.40-0.70	≤0.025	≤0.020	2.00-2.50	0.90-1.20	—	—	—	—	—
	12Cr1MoVG	0.08-0.15	0.17-0.37	0.40-0.70	≤0.025	≤0.020	0.90-1.20	0.25-0.35	0.15-0.30	—	—	—	—
	12Cr2MoWVTiB	0.08-0.15	0.45-0.75	0.45-0.65	≤0.025	≤0.020	1.60-2.10	0.50-0.65	0.28-0.42	0.08-0.18	0.002-0.18	0.002-0.008	—
	10Cr9Mo1VNb	0.08-0.12	0.20-0.50	0.30-0.60	≤0.025	≤0.010	8.00-9.50	0.85-1.05	0.18-0.25	Ni ≤0.40	Al ≤0.40	N 0.030-0.070	0.06-0.10
ASME SA-192M	SA-192	0.06-0.18	≤0.25	0.27-0.63	≤0.025	≤0.020	—	—	—	—	—	—	—
ASME SA-106	SA-106B	≤0.30	≥0.10	0.29-1.06	≤0.025	≤0.020	—	—	—	—	—	—	—
	SA-106C	≤0.35	≥0.10	0.29-1.06	≤0.025	≤0.020	—	—	—	—	—	—	—
ASME SA-209M	SA-209T1a	0.15-0.25	0.10-0.50	0.30-0.80	≤0.025	≤0.020	—	0.44-0.65	—	—	—	—	—
ASME SA-210M	SA-210A1	≤0.27	≥0.10	≤0.93	≤0.025	≤0.020	—	—	—	—	—	—	—
	SA-210C	≤0.35	≥0.10	0.29-1.06	≤0.025	≤0.020	—	—	—	—	—	—	—
ASME SA-213M	SA-213T11	0.05-0.15	0.50-1.00	0.30-0.60	≤0.025	≤0.020	1.00-1.50	0.44-0.65	—	—	—	—	—
	SA-213T22	0.05-0.15	≤0.50	0.30-0.60	≤0.025	≤0.020	1.90-2.60	0.87-1.13	—	—	—	—	—
	SA-213T91	0.08-0.12	0.20-0.50	0.30-0.60	≤0.025	≤0.010	8.00-9.50	0.85-1.05	0.18-0.25	Ni ≤0.40	Al ≤0.40	N 0.030-0.070	0.06-0.10
	SA-213T23	0.04-0.10	0.50	0.10-0.60	≤0.025	≤0.010	1.90-2.60	0.05-0.30	0.20-0.30	Al、Ni ≤0.030	0.0005-0.006	1.45-1.75	0.02-0.08
	SA-213T2	0.10-0.20	0.10-0.30	0.30-0.61	≤0.025	≤0.020	0.50-0.81	0.44-0.65	—	—	—	—	—
	SA-213T12	0.05-0.15	≤0.50	0.30-0.61	≤0.025	≤0.020	0.80-1.25	0.44-0.65	—	—	—	—	—
JIS G 3461	STB 340	≤0.18	≤0.35	0.30-0.60	≤0.025	≤0.020	—	—	—	—	—	—	—
	STB 410	≤0.32	≤0.35	0.30-0.80	≤0.025	≤0.020	—	—	—	—	—	—	—

注：经协商，也可供应其他牌号的钢管　Note:Other grade also be provided after consulting with customers.

力学性能/ Mechanical Properties

标准 Standard	牌号 Grade	抗拉强度 Tensile strength (MPa)	屈服强度（MPa）不小于 Yield Strength Not less than		伸长率（%）不小于 Elongation Not less than	冲击功（J）不小于 Impact Not less than	硬度 不大于 Hardness Not more than
			<15mm	≥15mm			
GB 3087	10	335-475	195		24	—	—
	20	410-550	245	225	20	—	—
DIN17175			≤16mm	>16mm			
	St35.8	360-480	235	225	25	—	—
	St45.8	410-530	255	245	21	—	—
	15Mo3	450-600	270		22	—	—
	13CrMo44	440-590	270		22	—	—
	10CrMo910	450-600	280		20	—	—
	14MoV63	460-610	320		20	55	—
	12Cr1MoV	470-640	255		21	41	—
GB 5310	20G	410-550	245		24	35	—
	20MnG	≥415	240		22	35	—
	25MnG	≥485	275		20	35	—
	15MoG	450-600	270		22	35	—
	20MoG	≥415	220		22	35	—
	12CrMoG	410-560	205		21	35	—
	15CrMoG	440-640	235		21	35	—
	12Cr2MoG	450-600	280		20	35	—
	12Cr1MoG	470-640	255		21	35	—
	12CrMoWVTiB	540-735	345		18	35	—
	10Cr9Mo1VNb	≥585	415		20	—	77HRB(137HB)
ASME SA-192M	SA-192	≥325	180		35	—	—
ASME SA-106M	SA-106B	≥415	240		查表 See table	—	—
	SA-106C	≥485	275			—	79HRB(143HB)
ASME SA-210M	SA-210A1	≥415	255			—	89HRB(179HB)
	SA-210C	≥485	275			—	81HRB(153HB)
ASME SA-209M	SA-209Tla	≥415	220			—	85HRB(163HB)
ASME SA-213M	SA-213T2	≥415	205			—	85HRB(163HB)
	SA-213T11	≥415	205			—	85HRB(163HB)
	SA-213T12	≥415	220			—	85HRB(163HB)
	SA-213T22	≥415	205			—	85HRB(163HB)
	SA-213T23	≥510	400			—	97HRB(220HB)
	SA-213T91	≥585	415			—	25HRC(250HB)
JIS G 3461	STB 340	≥340	175			—	—
	STB 410	≥410	255			—	—

流体输送管 TUBE FOR CONVEYANCE OF FLUID

标准（standard）：

GB/T 8163　中国国家标准　China National Standard

ASTM A 53M　美国材料与测试协会标准　Standard of American Society for Testing & Materials

ASTM A 106M　美国材料与测试协会标准　Standard of American Society for Testing & Materials

JIS G 3454　JIS G 3455　JIS G 3456　日本工业标准　Japanese Industrical Standard

用途（Uses）：

用于石油、天然气输送以及其他流体输送。

For conveying oil,gas and other fluid.

化学成分/ Chemical Composition(%)

标准 Standard	牌号 Grade	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V
GB/T 8163	10	0.07-0.13	0.07-0.37	0.35-0.65	≤0.035	≤0.035	≤0.30	≤0.15	≤0.25	-	-
	20	0.17-0.23	0.17-0.37	0.35-0.65	≤0.035	≤0.035	≤0.30	≤0.25	≤0.25	-	-
	Q345A	≤0.20	≤0.55	1.00-1.60	≤0.045	≤0.045	≤0.30	≤0.30	≤0.30	-	-
	Q345B	≤0.20	≤0.55	1.00-1.60	≤0.040	≤0.040	≤0.30	≤0.30	≤0.30	-	-
	Q345C	≤0.20	≤0.55	1.00-1.60	≤0.035	≤0.035	≤0.30	≤0.30	≤0.30	-	0.02-0.15
	Q345D	≤0.18	≤0.55	1.00-1.60	≤0.030	≤0.030	≤0.30	≤0.30	≤0.30	-	0.02-0.15
	Q345E	≤0.18	≤0.5	1.00-1.60	≤0.025	≤0.025	≤0.30	≤0.30	≤0.30	-	0.02-0.15
ASTM A 53M	A	≤0.25	-	≤0.95	≤0.05	≤0.045	≤0.40	≤0.40	≤0.40	≤0.15	≤0.08
	B	≤0.30	-	≤1.20	≤0.05	≤0.045	≤0.40	≤0.40	≤0.40	≤0.15	≤0.08
ASTM A 106M	A	≤0.25	≥0.10	0.27-0.93	≤0.035	≤0.035	≤0.40	≤0.40	≤0.40	≤0.15	≤0.08
	B	≤0.30	≥0.10	0.29-1.06	≤0.035	≤0.035	≤0.40	≤0.40	≤0.40	≤0.15	≤0.08
	C	≤0.35	≥0.10	0.29-1.06	≤0.035	≤0.035	≤0.40	≤0.40	≤0.40	≤0.15	≤0.08

化学成分/ Chemical Composition(%)

标准 Standard	牌号 Grade	C	Si	Mn	P	S	Ni	Cr	Cu	Mo	V
JIS G 3454	STPG 370	≤0.25	≤0.35	0.30-0.90	≤0.040	≤0.040	-	-	-	-	-
	STPG 410	≤0.30	≤0.35	0.30-1.00	≤0.040	≤0.040	-	-	-	-	-
JIS G 3455	STS 370	≤0.25	0.10-0.35	0.30-1.10	≤0.035	≤0.035	-	-	-	-	-
	STS 410	≤0.30	0.10-0.35	0.30-1.40	≤0.035	≤0.035	-	-	-	-	-
	STS 480	≤0.33	0.10-0.35	0.30-1.50	≤0.035	≤0.035	-	-	-	-	-
JIS G 3456	STPT 370	≤0.25	0.10-0.35	0.30-0.90	≤0.035	≤0.035	-	-	-	-	-
	STPT 410	≤0.30	0.10-0.35	0.30-1.00	≤0.035	≤0.035	-	-	-	-	-
	STPT 480	≤0.33	0.10-0.35	0.30-1.00	≤0.035	≤0.035	-	-	-	-	-

注：经协商，也可供应其他牌号的钢管 Note:Other grade than the a.m. Chart can be made avaiable is through consultations.

机械性能/ Mechanical Properties

标准 Standard	牌号 Grade	抗拉强度 Tensile strength（MPa）	屈服强度（MPa） Yield Strength		伸长率（%） Elongation	冲击实验 Impact test	
			≥16mm	>16mm		温度(℃) Temperature	吸收功(KV/J) Absorbed evergy
GB/T 8163	10	335-475	≥205	≥195	≥24	-	-
	20	410-530	≥245	≥235	≥20	-	-
	Q345A	470-630	345	325	20	-	-
	Q345B	470-630	345	325	20	20	34
	Q345C	470-630	345	325	21	0	34
	Q345D	470-630	345	325	21	-20	34
	Q345E	470-630	345	325	21	-40	27
ASTM A 53M	A	≥330	≥205		查ASTM A53的表3 See table 3 of ASTM A 53	-	-
	B	≥415	≥240				
ASTM A 106M	A	≥330	≥205		查ASTM A106的表4 See table 4 of ASTM A 106	-	-
	B	≥415	≥240				
	C	≥485	≥275				
JIS G 3454	STPG 370	≥215	≥370		查JIS G 3454的表3-2 See table3-2 of JIS G 3454	-	-
	STPG 410	≥245	≥410				
JIS G 3455	STS 370	≥215	≥370		查JIS G 3455的表3-2 See table3-2 of JIS G 3455	-	-
	STS 410	≥245	≥410				
	STS 480	≥275	≥480				
JIS G 3456	STPT 370	≥215	≥370		查JIS G 3456的表3-2 See table3-2 of JIS G 3456	-	-
	STPT 410	≥245	≥410				
	STPT 480	≥275	≥480				

ASTM A333 低温合金管

ASTM A333 Seamless and Welded Steel Pipe for Low-Temperature Service

ASTM A333冲击温度/ ASTM A333 Impact temperature:

级别 Grade	最低冲击试验温度 Minimum Impad test temperature	
	℉	℃
Grade 1	-50	-45
Grade 3	-150	-100
Grade 4	-150	-100
Grade 6	-50	-45
Grade 7	-100	-75
Grade 8	-320	-195
Grade 9	-100	-75
Grade 10	-75	-60

ASTM A333机械性能/ ASTM A333 Mechanical properties:

标准 Standard	牌号 Grade	抗拉强度 Tensile Strength (Rm) (Mpa)	屈服强度 Yield Strength(ReH) (Mpa)	伸长率 Elongation A %	
				纵向冲击 Longitudinal impact	横向冲击 Transverse impact
ASTM A333	Grade 1	≥380	≥205	≥35	≥25
	Grade 3	≥450	≥240	≥30	≥20
	Grade 4	≥415	≥240	≥30	≥16.5
	Grade 6	≥415	≥240	≥30	≥16.5
	Grade 7	≥450	≥240	≥30	≥22
	Grade 8	≥690	≥515	≥22	
	Grade 9	≥435	≥315	≥28	
	Grade 10	≥550	≥450	≥22	
	Grade 11	≥450	≥240	≥18	

ASTM A333化学成分/ ASTM A333 Chemical Composition:

标准 Standard	牌号 Grade	化学成分 Chemical Composition%										
		C	Si	Mn	P	S	Cr	Ni	Cu	Mo	V	Al
ASTM A333	Grade 1	≤0.30		0.40-1.06	≤0.025	≤0.025						
	Grade 3	≤0.19	0.18-0.37	0.31-0.64	≤0.025	≤0.025		3.18-3.82				
	Grade 4	≤0.12	0.18-0.37	0.50-1.05	≤0.025	≤0.025	0.44-1.01	0.47-0.98	0.40-0.75			0.04-0.30
	Grade 6	≤0.30	≥0.10	0.29-1.06	≤0.025	≤0.025						
	Grade 7	≤0.19	0.13-0.32	≤0.90	≤0.025	≤0.025		2.03-2.57				
	Grade 8	≤0.13	0.13-0.32	≤0.90	≤0.025	≤0.025		8.40-9.60				
	Grade 9	≤0.20		0.40-1.06	≤0.025	≤0.025		1.60-2.24	0.75-1.25			
	Grade 10	≤0.20	0.10-0.35	1.15-1.50	≤0.03	≤0.015	≤0.15	≤0.25	≤0.015	≤0.50	≤0.12	≤0.06
	Grade 11	≤0.10	≤0.35	≤0.6	≤0.025	≤0.025	≤0.50	35.0-37.0		≤0.50		

标准 Standard:

EN10297-1

机械和通用工程用途的无缝圆形钢管

SEAMLESS CIRCULAR STEEL TUBES FOR MECHANICAL AND GENERAL ENGINEERING PURPOSES.

合金钢管 ALLOY STEEL TUBE

化学成分/Chemical Composition:

钢 级 Steel Grade	C		Si		Mn		P	S	Cr		Mo		Ni		Al [a]	Cu	N	Nb	Ti	V	
	min.	Max.	min.	Max.	min.	Max.	max.	max.	max.	min.	max.	min.	max.	min.	max.	max.	max.	max.	max.	min.	max.
E275K2	-	0.20	-	0.40	0.50	1.40	0.030	0.030	0.30	-	0.10	-	0.30	0.020	0.35	0.015	0.05	0.03	-	0.05	
E355K2	-	0.20	-	0.50	0.90	1.65	0.030	0.030	0.30	-	0.10	-	0.50	0.020	0.35	0.015	0.05	0.05	-	0.12	
E420J2	0.16	0.22	0.10	0.50	1.30	1.70	0.030	0.035	0.30	-	0.08	-	0.40	0.010	0.30	0.020	0.07b	0.05	0.08	0.15b	
E460K2	-	0.20	-	0.60	1.00	1.70	0.030	0.030	0.30	-	0.10	-	0.80	0.020	0.70	0.025	0.05b	0.05	-	0.20b	
E590K2	0.16	0.22	0.10	0.50	1.30	1.70	0.030	0.035	0.30	-	0.08	-	0.40	0.010	0.30	0.020	0.07b	0.05	0.08	0.15b	
E730K2	-	0.20	-	0.50	1.40	1.70	0.025	0.025	0.30	0.30	0.45	0.30	0.70	0.020	0.20	0.020	0.05	0.05	-	0.12	
钢 级 Steel Grade	C		Si		Mn		P	S	Cr		Mo		Ni		Cu						
	min.	max.	min.	max.	min.	max.	max.	max.	min.	max.	min.	max.	min.	max.	max.						
41Cr4	0.38	0.45	-	0.40	0.60	0.90	0.035	0.035	0.90	1.20	-		-	-	-	-	-	-	-	-	
25CrMo4	0.22	0.29	-	0.40	0.60	0.90	0.035	0.035	0.90	1.20	0.15	0.30	-	-	-	-	-	-	-	-	
30CrMo4	0.27	0.34	-	0.35	0.35	0.60	0.035	0.035	0.80	1.15	0.15	0.30	-	-	-	-	-	-	-	-	
34CrMo4	0.30	0.37	-	0.40	0.60	0.90	0.035	0.035	0.90	1.20	0.15	0.30	-	-	-	-	-	-	-	-	
42CrMo4	0.38	0.45	-	0.40	0.60	0.90	0.035	0.035	0.90	1.20	0.15	0.30	-	-	-	-	-	-	-	-	
36CrNiMo4	0.32	0.40	-	0.40	0.50	0.80	0.035	0.035	0.90	1.20	0.15	0.30	0.90	1.20	-	-	-	-	-	-	
30CrNiMo8	0.26	0.34	-	0.40	0.30	0.60	0.035	0.035	1.80	2.20	0.30	0.50	1.80	2.20	-	-	-	-	-	-	
41NiCrMo7-3-2	0.38	0.44	-	0.30	0.60	0.90	0.025	0.025	0.70	0.90	0.15	0.30	1.65	2.00	0.25	-	-	-	-	-	

a:如有充足的其他氮粘合物出现，最小铝含量就不适用。
If sufficient other N-binding elements are present the minimum total Al content does not apply.
b:铌和钒总含量最大值为0.20%。 Nb+V=0.20% Max.

机械性能/Mechanical Properties:

钢 级 Steel Grade	Minimum Mechanical Properties											冲击性能 Impact properties	
	屈服强度 Yield Strength(ReH)Mpa 壁厚 For T in mm					抗拉强度 Tensile Strength (Rm)Mpa 壁厚 For T in mm				伸长率 Elongation A %		Minimum average absorbed engery,KV min.,at a test temperatrue of-20℃	
	≤16	>16 ≤40	>40 ≤65	>65 ≤80	>80 ≤100	≤16	>16 ≤40	>40 ≤65	>65 ≤100	l	t	l	t
E275K2	275	265	255	245	235	410	410	410	380	22	20	40	27
E355K2	355	345	335	315	295	490	490	470	470	20	18	40	27
E420J2	420	400	390	370	360	600	560	530	500	19	17	27	20
E460K2	460	440	430	410	390	550	550	550	520	19	17	40	27
E590K2	590	540	480	455	420	700	650	570	520	16	14	40	27
E730K2	730	670	620	580	540	790	750	700	680	15	13	40	27

钢 级 Steel Grade	屈服强度 Yield Strength(ReH)Mpa 壁厚 For T in mm				抗拉强度 Tensile Strength (Rm)Mpa 壁厚 For T in mm				伸长率 Elongation A %							
	≤8	>8 ≤20	>20 ≤50	>50 ≤80	≤8	>8 ≤20	>20 ≤50	>50 ≤80	≤8		>8≤20		>20≤50		>50≤80	
									l	t	l	t	l	t	l	t
41Cr4	800	660	560	-	1000	900	800	-	11	9	12	10	14	12	-	-
25CrMo4	700	600	450	400	900	800	700	650	12	10	14	12	15	13	16	14
30CrMo4	750	630	520	480	950	850	750	700	12	10	13	11	14	12	15	13
34CrMo4	800	650	550	500	1000	900	800	750	11	9	12	10	14	12	15	13
42CrMo4	900	750	650	550	1100	1000	900	800	10	8	11	9	12	10	13	11
36CrNiMo4	900	800	700	600	1100	1000	900	800	10	8	11	9	12	10	13	11
30CrNiMo8	1050	1050	900	800	1250	1250	1100	1000	9	7	9	7	10	8	11	9
41NiCrMo7-3-2	950	870	800	750	1150	1050	1000	900	9	7	10	8	11	9	12	10

注/Note:l=longitudinal,纵向的；t=transverse横向的.

EN 标准

EUROPEAN STANDARD

标准 Standard:

EN10297-1

机械和通用工程用途的无缝圆形钢管

SEAMLESS CIRCULAR STEEL TUBES FOR MECHANICAL AND GENERAL ENGINEERING PURPOSES.

非合金钢管 NON-ALLOY STEEL TUBE

化学成分/Chemical Composition:

钢 级 Steel Grade		C		Si		Mn		P	S	其它元素 Other elements
Steel Name	Steel No .	min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
E235	1.0308	-	0.17	-	0.35	-	1.20	0.030	0.035	
E275	1.0225	-	0.21	-	0.35	-	1.40	0.030	0.035	
E315	1.0236	-	0.21	-	0.30	-	1.50	0.030	0.035	
E355a	1.0580	-	0.22	-	0.55	-	1.60	0.030	0.035	
E470	1.0536	0.16	0.22	0.10	0.50	1.30	1.70	0.030	0.035	Al:min.0.010;N:max.0.020; Nb:max.0.07; V:0.08-0.15
C22E	1.1151	0.17	0.24	-	0.40	0.40	0.70	0.035	0.035	b
C35E	1.1181	0.32	0.39	-	0.40	0.50	0.80	0.035	0.035	b
C45E	1.1191	0.42	0.50	-	0.40	0.50	0.80	0.035	0.035	b
C60E	1.1221	0.57	0.65	-	0.40	0.60	0.90	0.035	0.035	b
38Mn6	1.1127	0.34	0.42	0.15	0.35	1.40	1.65	0.035	0.035	b

a:制造商可根据需要添加铌、钒和钛元素，但这些元素的成分含量应注明。
Additions of Nb,V and Ti are permitted at the discretion of the manufacturer,the content of these elements shall be reported.
b:Cr:max 0.40%,Mo:max.0.10%;Ni:max. 0.40%;Cr+Mo+Ni max. 0.63%

机械性能/Mechanical Properties:

钢 级 Steel Grade	Minimum Mechanical Properties										
	屈服强度 Yield Strength(ReH)Mpa					抗拉强度 Tensile Strength (Rm)Mpa				伸长率 Elongation A %	
	壁厚 For T in mm					壁厚 For T in mm					
	≤16	>16 ≤40	>40 ≤65	>65 ≤80	>80 ≤100	≤16	>16 ≤40	>40 ≤65	>80 ≤100	l	t
E235	235	225	215	205	195	360	360	360	340	25	23
E275	275	265	255	245	235	410	410	410	380	22	20
E315	315	305	295	280	270	450	450	450	420	21	19
E355	355	345	335	315	295	490	490	490	470	20	18
E470	470	430	-	-	-	650	600	-	-	17	15

钢 级 Steel Grade	屈服强度 Yield Strength(ReH)Mpa			抗拉强度 Tensile Strength (Rm)Mpa			伸长率 Elongation A %					
	壁厚 For T in mm			壁厚 For T in mm			≤16		>16≤40		>40≤80	
	≤16	>16 ≤40	>40 ≤80	≤16	>16 ≤40	>40 ≤80	l	t	l	t	l	t
C22E	240	210	210	430	410	410	24	22	25	23	25	23
C35E	300	270	270	550	520	520	18	16	19	17	19	17
C45E	340	305	305	620	580	580	14	12	16	14	16	14
C60E	390	350	340	710	670	670	10	8	11	9	11	9
38Mn6	400	380	360	670	620	570	14	12	15	13	16	14

注/Note:l=longitudinal,纵向的；t=transverse横向的 a:1Mpa=1 N/mm2

管道、压力容器、锅炉钢管
TUBE FOR PRESSURE PURPOSES

标准 Standard:
EN10216-1
EN10216-2

用途 Application
适用于制造管道、容器、设备、管件及钢结构
It is available to manufanture pipeline,vessel,equipment,pipe fittings and steel structure.

主要生产钢管牌号 Main Steel Grad supplied
P195TR1、P195TR2、P235TR1、P235TR2、P265TR1、T265TR2、P195GH、P235GH、P265GH、13CrMo4-5、10CrMo9-10

化学成分/Chemical Composition:

标准 Standard	牌号 Steel Grad	化学成分 Chemical Composition%												
		C	Si	Mn	P	S	Cr	Mo	Ni	Al	Cu	Nb	Ti	V
EN10216-1	P195TR1	≤0.13	≤0.35	≤0.70	≤0.025	≤0.02	≤0.30	≤0.08	≤0.30	\	≤0.30	≤0.01	≤0.04	≤0.02
	P195TR2	≤0.13	≤0.35	≤0.70	≤0.025	≤0.02	≤0.30	≤0.08	≤0.30	≥0.02	≤0.30	≤0.01	≤0.04	≤0.02
	P235TR1	≤0.16	≤0.35	≤1.20	≤0.025	≤0.02	≤0.30	≤0.08	≤0.30	\	≤0.30	≤0.01	≤0.04	≤0.02
	P235TR2	≤0.16	≤0.35	≤1.20	≤0.025	≤0.02	≤0.30	≤0.08	≤0.30	≥0.02	≤0.30	≤0.01	≤0.04	≤0.02
	P265TR1	≤0.20	≤0.40	≤1.40	≤0.025	≤0.02	≤0.30	≤0.08	≤0.30	\	≤0.30	≤0.01	≤0.04	≤0.02
	P265TR2	≤0.20	≤0.40	≤1.40	≤0.025	≤0.02	≤0.30	≤0.08	≤0.30	≥0.02	≤0.30	≤0.01	≤0.04	≤0.02
EN10216-2	P195GH	≤0.13	≤0.35	≤0.70	≤0.025	≤0.020	≤0.03	≤0.08	≤0.30	≥0.02	≤0.30	≤0.01	≤0.04	≤0.02
	P235GH	≤0.16	≤0.35	≤1.20	≤0.025	≤0.020	≤0.03	≤0.08	≤0.30	≥0.02	≤0.30	≤0.01	≤0.04	≤0.02
	P265GH	≤0.20	≤0.40	≤1.40	≤0.025	≤0.020	≤0.03	≤0.08	≤0.30	≥0.02	≤0.30	≤0.01	≤0.04	≤0.02
	13CrMo4-5	0.10-0.17	≤0.35	0.40-0.70	≤0.025	≤0.020	0.70-1.15	0.40-0.60	≤0.30	≤0.04	≤0.30	\	\	\
	10CrMo9-10	0.08-0.14	≤0.50	0.30-0.70	≤0.025	≤0.020	2.00-2.50	0.90-1.10	≤0.30	≤0.04	≤0.30	\	\	\

机械性能/Mechanical Properties:

标准 Standard	牌号 Steel Grad	机械性能 Mechanical Properties			
		抗拉强度(Mpa) Tensile Strength	屈服强度(Mpa)Yield Strength	伸长率(%)Elongation	冲击功(J) Impact Energy
EN10216-1	P195TR1	320-440	≥195	≥27	\
	P195TR2	320-440	≥195	≥27	≥40
	P235TR1	360-500	≥235	≥25	\
	P235TR2	360-500	≥235	≥25	≥40
	P265TR1	410-570	≥265	≥21	\
	P265TR2	410-570	≥265	≥21	≥40
EN10216-2	P195GH	320-440	≥195	≥27	≥40
	P235GH	360-500	≥235	≥25	≥40
	P265GH	410-570	≥265	≥23	≥40
	13CrMo4-5	440-590	≥290	≥22	≥40
	10CrMo9-10	480-630	≥280	≥22	≥40

标准 Standard:
EN10210-1

非合金结构钢和细晶粒结构钢制热成型空心型材
HOT FINISHED STRUCTURAL HOLLOW SECTIONS OF NON-ALLOY AND FINE GRAIN STEELS

主要生产牌号 Main steel tube grade:
S235 JRH S275JOH S275J2H S355JOH S355J2H S355K2H

化学成分/Chemical Composition:

钢 级 Steel Grade	化学成分 Chemical Composition limits,%					
	C max.	Si max.	Mn max.	P max.	S max.	N max.
S235JRH	0.17	/	1.40	0.040	0.040	0.009
S275JOH	0.20	/	1.50	0.035	0.035	0.009
S275J2H	0.20	/	1.50	0.030	0.030	/
S355JOH	0.22	0.55	1.60	0.035	0.035	0.009
S355J2H	0.22	0.55	1.60	0.030	0.030	/
S355K2H	0.22	0.55	1.60	0.030	0.030	/

机械性能/Mechanical Properties:

钢 级 Steel Grade	机械性能 Mechanical Properties			冲击功 Impact energy KV J min.		
	屈服强度 Yield Strength Mpa	抗拉强度 Tensile Strength Mpa	伸长率 Elongation %	试验温度 At test temperature of ℃		
				-20	0	20
S235JRH	235	360-510	26	/	/	27
S275JOH	275	410-560	23	/	27	/
S275J2H	275	410-560	23	27	/	/
S355JOH	355	510-680	22	/	27	/
S355J2H	355	510-680	22	27	/	/
S355K2H	355	510-680	22	40	/	/

API 5CT 标准

API 5CT STANDARD

油套管

TUBING AND CASING

标准：Standard:

Standard:API SPEC 5CT、API SPEC 5B、ISO11960

用途：Application:

油管用于油井中抽取石油或天然气。

套管用作油气井的井壁。

Tubing is used to extracting petroleum and natural gas from a well.

Casting serves as walls of a well.

油管规格/ Size of Tubing

尺寸代号 Size Designation	重量代号 Weight Designation		外径 Outside Diameter		壁厚 Wall Thickness		端部加工形式Type of End Finish					
							钢级Grade					
	不加厚 T&C Non-Upset	外加厚 T&C External Upset	In	mm	In	mm	J55	L80-1	N80	C90	T95	P110
1.900"	2.40	-	1.900	48.26	0.125	3.18	PI	-	-	-	-	-
	2.75	2.90	1.900	48.26	0.145	3.68	PNUI	PNUI	PNUI	PNUI	PNUI	-
	3.65	-	1.900	48.26	0.200	5.08	PU	PU	PU	PU	PU	PU
2 3/8"	4.00	-	2.375	60.32	0.167	4.24	PN	PN	PN	PN	PN	-
	4.00	4.70	3.375	60.32	0.190	4.83	PNU	PNU	PNU	PNU	PNU	PNU
	5.80	5.95	2.375	60.32	0.254	6.45	-	PNU	PNU	PNU	PNU	PNU
	6.60	-	2.375	60.32	0.259	7.49	-	P	-	P	P	-
	7.35	7.45	2.375	60.32	0.336	8.53	-	PU	-	PU	PU	-
2 7/8"	6.40	6.50	2.875	73.02	0.217	5.51	PNU	PNU	PNU	PNU	PNU	PNU
	7.80	7.90	2.875	73.02	0.276	7.01	-	PNU	PNU	PNU	PNU	PNU
	8.60	8.70	2.875	73.02	0.308	7.82	-	PNU	PNU	PNU	PNU	PNU
	9.35	9.45	2.875	73.02	0.340	8.64	-	PU	-	PU	PU	-
	10.50	-	2.875	73.02	0.392	9.96	-	P	-	P	P	-
	11.50	-	2.875	73.02	0.440	11.18	-	P	-	P	P	-
3 1/2"	7.70	-	3.500	88.90	0.216	5.49	PN	PN	PN	PN	PN	-
	9.20	9.30	3.500	88.90	0.254	6.45	PNU	PNU	PNU	PNU	PNU	PNU
	10.20	-	3.500	88.90	0.289	7.34	PN	PN	PN	PN	PN	-
	12.70	12.95	3.500	88.90	0.375	9.52	-	PNU	PNU	PNU	PNU	PNU
	14.30	-	3.500	88.90	0.430	10.92	-	P	-	P	P	-
	15.50	-	3.500	88.90	0.476	12.00	-	P	-	P	P	-
	17.00	-	3.500	88.90	0.530	13.46	-	P	-	P	P	-
4"	9.50	-	4.000	101.60	0.226	5.74	PN	PN	PN	PN	PN	-
	10.70	11.00	4.000	101.60	0.262	6.65	PU	PU	PU	PU	PU	-
4 1/2"	12.60	12.75	4.500	114.30	0.271	6.88	PNU	PNU	PNU	PNU	PNU	-
	15.20	-	4.500	114.30	0.337	8.56	-	P	-	P	P	-
	17.00	-	4.500	114.30	0.380	9.65	-	P	-	P	P	-
	18.90	-	4.500	114.30	0.430	10.92	-	P	-	P	P	-
	21.50	-	4.500	114.30	0.500	12.70	-	P	-	P	P	-
	23.70	-	4.500	114.30	0.560	14.22		P		P	P	-
	26.10	-	4.500	114.30	0.630	16.00	-	P	-	P	P	-

注：1、P---平端；N--不加厚、U---外加厚、T&C---车螺纹带接箍、I---整体接头。

Note:1、P-Plain-end;N-Non upset;U-Upset;T&C-Threaded and coupled;I--Integrate connector

ASME/ASTM标准
ASME/ASTM STANDARD

机械结构管
MECHANICAL TUBE

标准 Standard:

ASTM A519-03---美国材料和试验协会标准Standard of American Society for Testing & Materials

SAE----美国汽车工程师协会标准 Standard of American Society of Automotive Engineers

用途 Application:

机械、汽车及其他零部件用无缝钢管
It is used for machine,automobile and other mechanical accessory purposes.

化学成分/Chemical Composition:

钢 级 Steel Grade	化学成分 Chemical Composition limits,%						
	C	Mn	P max	S max	Si	Cr	Mo
MT 1010	0.05-0.15	0.30-0.60	0.040	0.050	/	/	/
MT 1015	0.10-0.20	0.30-0.60	0.040	0.050	/	/	/
MTX 1015	0.10-0.20	0.60-0.90	0.040	0.050	/	/	/
MT 1020	0.15-0.25	0.30-0.60	0.040	0.050	/	/	/
MTX 1020	0.15-0.25	0.70-1.00	0.040	0.050	/	/	/
1008	0.10	0.30-0.50	0.040	0.050	/	/	/
1010	0.08-0.13	0.30-0.60	0.040	0.050	/	/	/
1012	0.10-0.15	0.30-0.60	0.040	0.050	/	/	/
1015	0.13-0.18	0.30-0.60	0.040	0.050	/	/	/
1016	0.13-0.18	0.60-0.90	0.040	0.050	/	/	/
1017	0.15-0.20	0.30-0.60	0.040	0.050	/	/	/
1018	0.15-0.20	0.60-0.90	0.040	0.050	/	/	/
1019	0.15-0.20	0.70-1.00	0.040	0.050	/	/	/
1020	0.18-0.23	0.30-0.60	0.040	0.050	/	/	/
1021	0.18-0.23	0.60-0.90	0.040	0.050	/	/	/
1022	0.18-0.23	0.70-1.00	0.040	0.050	/	/	/
1025	0.22-0.28	0.30-0.60	0.040	0.050	/	/	/
1026	0.22-0.28	0.60-0.90	0.040	0.050	/	/	/
1030	0.28-0.34	0.60-0.90	0.040	0.050	/	/	/
1035	0.32-0.38	0.60-0.90	0.040	0.050	/	/	/
1040	0.37-0.44	0.60-0.90	0.040	0.050	/	/	/
1045	0.43-0.50	0.60-0.90	0.040	0.050	/	/	/
1050	0.48-0.55	0.60-0.90	0.040	0.050	/	/	/
1518	0.15-0.21	1.10-1.40	0.040	0.050	/	/	/
1524	0.19-0.25	1.35-1.65	0.040	0.050	/	/	/
1541	0.36-0.44	1.35-1.65	0.040	0.050	/	/	/
4118	0.18-0.23	0.70-0.90	0.040	0.040	0.15-0.35	0.40-0.60	0.08-0.15
4130	0.28-0.33	0.40-0.60	0.040	0.040	0.15-0.35	0.80-1.10	0.15-0.25
4135	0.33-0.38	0.70-0.90	0.040	0.040	0.15-0.35	0.80-1.10	0.15-0.25
4137	0.35-0.40	0.70-0.90	0.040	0.040	0.15-0.35	0.80-1.10	0.15-0.25

套管规格/Size of Casing

尺寸代号 Size Designation	重量代号 Weight Designation	外径 Outside Diameter		壁厚 Wall Thickness		端部加工形式 Type of End Finish / 钢级 Grade							
		in	mm	in	mm	J55 K55	L80-1	N80	C90	C95	T95	P110	M65
4 1/2 "	9.50	4.500	114.30	0.205	5.21	PS	-	-	-	-	-	-	-
	10.50	4.500	114.30	0.224	5.69	PS B	-	-	-	-	-	-	-
	11.60	4.500	114.30	0.250	6.35	PSLB	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	13.50	4.500	114.30	0.290	7.37	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	15.10	4.500	114.30	0.337	8.56	-	-	-	-	-	-	PLB	-
5 "	11.50	5.000	127.00	0.220	5.59	PS	-	-	-	-	-	-	-
	13.00	5.000	127.00	0.253	6.43	PSLB	-	-	-	-	-	-	-
	15.00	5.000	127.00	0.296	7.52	PSLB	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	18.00	5.000	127.00	0.362	9.19	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	21.40	5.000	127.00	0.437	11.10	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	23.20	5.000	127.00	0.478	12.14	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	24.10	5.000	127.00	0.500	12.70	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
5 1/2 "	14.00	5.500	139.70	0.244	6.20	PS	-	-	-	-	-	-	-
	15.50	5.500	139.70	0.275	6.99	PSLB	-	-	-	-	-	-	-
	17.00	5.500	139.70	0.304	7.72	PSLB	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	20.00	5.500	139.70	0.361	9.17	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	23.00	5.500	139.70	0.415	10.54	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	26.80	5.500	139.70	0.500	12.70	-	-	-	P	-	P	-	-
	29.70	5.500	139.70	0.562	14.27	-	-	-	P	-	P	-	-
	32.60	5.500	139.70	0.625	15.88	-	-	-	P	-	P	-	-
	35.30	5.500	139.70	0.687	17.45	-	-	-	P	-	P	-	-
	38.00	5.500	139.70	0.750	19.05	-	-	-	P	-	P	-	-
	40.50	5.500	139.70	0.812	20.62	-	-	-	P	-	P	-	-
	43.10	5.500	139.70	0.875	22.22	-	-	-	P	-	P	-	-
6 5/8 "	20.00	6.625	168.28	0.288	7.32	PSLB	-	-	-	-	-	-	-
	24.00	6.625	168.28	0.352	8.94	PSLB	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	28.00	6.625	168.28	0.417	10.59	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	32.00	6.625	168.28	0.475	12.06	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
7 "	20.00	7.000	177.80	0.272	6.91	PS	-	-	-	-	-	-	PS
	23.00	7.000	177.80	0.317	8.05	PSLB	PLB	PLB	PLB	PLB	-	-	PLB
	26.00	7.000	177.80	0.362	9.19	PSLB	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	29.00	7.000	177.80	0.408	10.36	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	32.00	7.000	177.80	0.453	11.51	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	35.00	7.000	177.80	0.498	12.65	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	38.00	7.000	177.80	0.540	13.72	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
7 5/8 "	26.40	7.625	193.68	0.328	8.33	PSLB	PLB	PLB	PLB	PLB	PLB	PLB	-
	29.70	7.625	193.68	0.375	9.52	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	33.70	7.625	193.68	0.430	10.92	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	39.00	7.625	193.68	0.500	12.70	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	42.80	7.625	193.68	0.562	14.27	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	45.30	7.625	193.68	0.595	15.11	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	47.10	7.625	193.68	0.625	15.88	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB

套管规格/Size of Casing

尺寸代号 Siae Designation	重量代号 Weight Designation	外径 Outside Diameter		壁厚 Wall Thickness		端部加工形式Type of End Finish							
						钢级Grade							
		In	mm	In	mm	J55 K55	L80-1	N80	C90	C95	T95	P110	M65
8 5/8"	24.00	8.625	219.08	0.264	6.71	PS	-	-	-	-	-	-	-
	28.00	8.625	219.08	0.304	7.72	-	-	-	-	-	-	-	-
	32.00	8.625	219.08	0.352	8.94	PSLB	-	-	-	-	-	-	-
	36.00	8.625	219.08	0.400	10.16	PSLB	PLB	PLB	PLB	PLB	PLB	PLB	-
	40.00	8.625	219.08	0.450	11.43	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	44.00	8.625	219.08	0.500	12.70	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	49.00	8.625	219.08	0.557	14.15	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
9 5/8"	32.30	9.625	244.48	0.312	7.92	-	-	-	-	-	-	-	-
	36.00	9.625	244.48	0.352	8.94	PSLB	-	-	-	-	-	-	PSLB
	40.00	9.625	244.48	0.395	10.03	PSLB	PLB	PLB	PLB	PLB	PLB		PSLB
	43.50	9.625	244.48	0.435	11.05	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	47.00	9.625	244.48	0.472	11.99	-	PLB	PLB	PLB	PLB	PLB	PLB	PLB
	53.50	9.625	244.48	0.545	13.84	-	PLB	PLB	PLB	PLB	PLB	PLB	-
	58.40	9.625	244.48	0.595	15.11	-	PLB	PLB	PLB	PLB	PLB	PLB	-
	59.40	9.625	244.48	0.609	15.47	-	-	-	P	-	P	-	-
	64.90	9.625	244.48	0.672	17.07	-	-	-	P	-	P	-	-
	70.30	9.625	244.48	0.734	18.64	-	-	-	P	-	P	-	-
	75.60	9.625	244.48	0.797	20.24	-	-	-	P	-	P	-	-
10 3/4"	32.75	10.750	273.05	0.279	7.09	-	-	-	-	-	-	-	-
	40.50	10.750	273.05	0.350	8.89	PSB	-	-	-	-	-	-	PSB
	45.50	10.750	273.05	0.400	10.16	PSB	-	-	-	-	-	-	PSB
	51.00	10.750	273.05	0.450	11.43	PSB	PSB	PSB	PSB	PSB	PSB	PSB	PSB
	55.50	10.750	273.05	0.495	12.57	-	PSB	PSB	PSB	PSB	PSB	PSB	PSB
	60.70	10.750	273.05	0.545	13.84	-	-	-	PSB	-	PSB	PSB	-
	65.70	10.750	273.05	0.595	15.11	-	-	-	PSB	-	PSB	PSB	-
	73.20	10.750	273.05	0.672	17.07	-	-	-	P	-	P	-	-
	79.20	10.750	273.05	0.734	18.64	-	-	-	P	-	P	-	-
	85.30	10.750	273.05	0.797	20.24	-	-	-	P	-	P	-	-
11 3/4"	42.00	11.750	298.45	0.333	8.46	-	-	-	-	-	-	-	-
	47.00	11.750	298.45	0.375	9.53	PSB	-	-	-	-	-	-	PSB
	54.00	11.750	298.45	0.435	11.05	PSB	-	-	-	-	-	-	PSB
	60.00	11.750	298.45	0.489	12.42	PSB	PSB	PSB	PSB	PSB	PSB	PSB	PSB
	65.00	11.750	298.45	0.534	13.56	-	P	P	P	P	P	P	-
	71.00	11.750	298.45	0.582	14.78	-	P	P	P	P	P	P	-
13 3/8"	48.00	13.375	339.72	0.330	8.38	-	-	-	-	-	-	-	-
	54.50	13.375	339.72	0.380	9.65	PSB	-	-	-	-	-	-	PSB
	61.00	13.375	339.72	0.430	10.92	PSB	-	-	-	-	-	-	PSB
	68.00	13.375	339.72	0.480	12.19	PSB	PSB	PSB	PSB	PSB	PSB	PSB	PSB
	72.00	13.375	339.72	0.514	13.06	-	PSB	PSB	PSB	PSB	PSB	PSB	-
16"	65.00	16.000	406.40	0.375	9.53	-	-	-	-	-	-	-	-
	75.00	16.000	407.40	0.438	11.13	PSB	-	-	-	-	-	-	PSB
	84.0	16.000	408.40	0.495	12.57	PSB	-	-	-	-	-	-	PSB
	109.00	16.000	409.40	0.660	16.66	PSB	P	P	-	-	-	P	-

注：P---平端；S--短圆螺纹、L---长圆螺纹、B---偏梯形螺纹；
Note:P-Plain end;S-Short round thread;L--long round thread;B--Buttress thread;

API 5CT标准
API 5CT STANDARD

接箍：Coupling:

1、标准接箍
Standard Coupling
2、特殊间隙接箍
Special Space Coupling
3、特殊倒角接箍
Special Bevelled Coupling
4、改进型带密封环接箍
API Improved Seal-Ring Coupling(SR13)
5、组合接箍或异径接箍
Combination Coupling or Special Diameter Coupling

短节或连接管 Pup Joint or Connector:

包括所有油套管规格、螺纹或其他组合
All size,thread or their combination of tubing and casing are supplied.

尺寸偏差：Dimensions and Tolerances:

外径、壁厚、重量允许偏差 Outside Diameter,Wall Thickness and Weight Tolerances:

项目 Item		允许偏差 Tolerance
外径 Outside Diameter	管体 Pipe Body	D≤101.60mm±0.79mm
		D≥114.30mm $^{+1.0\%D}_{-0.5\%D}$
	接箍 Coupling	±1%D
壁厚 Wall Thickness		0,-12.5%t
重量Weight	单根 Single Lengths	$^{+6.5\%D}_{-3.5\%D}$
	车载量Carload Lots	0,-1.75%

螺纹参数允许偏差 Thread Parameter Tolerance:

品种规格 Type and Size			锥度 Taper mm/m	螺距 Pitch mm		齿高 Height mm	螺纹角度 Angle 度 deg.	螺纹长度a Length L4 (外螺纹 External Thread)	管端倒角 Chamfer on End of Pipe 度 deg.	紧密矩a Standoff	
				每英寸 Per Inch	累计 Accu-mulative					管体螺纹 Pipe Thread	接箍螺纹 Coupling Thread
圆螺纹油管 Round Thread Tubing 2 3/8" -4 1/2"	10	牙/英寸 Threads per inch	+5.208 -2.600	±0.076	±0.152	+0.051 -0.102	11/2 11/2	11/2P	+5 -0	±11/2P	±11/2P
	8	牙/英寸 Threads per inch	+5.208 -2.600	±0.076	±0.152	+0.051 -0.102	11/2	1P	+5 -0	±1P	±1P
圆螺纹套管Round Thread Casing 4"-7"			+5.208 -2.600	±0.076	±0.152	+0.051 -0.102	11/2	1P	+5 -0	±1P	±1P
偏梯形螺纹套管 Buttress Thread Casing 4 1/2"-7"	接箍 Coupling		+4.50 -2.50	±0.051	±0.102	±0.025	-	-	+5 -0	+1 1/2P -0	+0 -1 1/2P
		完整螺纹 Perfect thread	+3.50 -1.50								
		不完整螺纹 Imperfect thread length	+4.50 -1.50								

注a: p—螺距
Note a: p—Pitch.

化学成分/Chemical Composition:

钢级 Grade	化学成分 Chenical Composition%												
	C		Mn		Mo		Cr		Ni	Cu	P	S	Si
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Max.	Max.	max.	max.	max.
J55	-	-	-	-	-	-	-	-	-	-	0.030	0.030	-
K55	-	-	-	-	-	-	-	-	-	-	0.030	0.030	-
N80	-	-	-	-	-	-	-	-	-	-	0.030	0.030	-
L80-1	-	0.43	-	1.90	-	-	-	-	0.25	0.35	0.030	0.030	0.45
C90-1	-	0.35	-	1.00	0.25	0.75	-	1.20	0.99	-	0.020	0.010	-
C90-2	-	0.50	-	1.90	-	N.L.	-	N.L.	0.99	-	0.030	0.010	-
C95	-	0.45	-	1.90	-	-	-	-	-	-	0.030	0.030	0.45
T95-1	-	0.35	-	1.20	0.25	0.85	0.40	1.50	0.99	-	0.020	0.010	-
T95-2	-	0.50	-	1.90	-	-	-	-	-	-	0.030	0.010	-
P110	-	-	-	-	-	-	-	-	-	-	0.030	0.020	-

机械性能/Mechanical Properties:

钢级 Grade	屈服强度 Yield Strength				抗拉强度 Tensile Strength		硬度 Hardness		允许硬度变化 Allowable Hardness Variation
	最低min.		最高max.		最低min.		最高max.		
	Psi	Mpa	Psi	Mpa	Psi	Mpa	HRC	BHN	HRC
J55	55,000	379	80,000	552	75,000	517	-	-	-
K55	55,000	379	80,000	552	95,000	655	-	-	-
N80	80,000	552	110,000	758	100,000	689	-	-	-
L80-1	80,000	552	95,000	655	95,000	655	23	241	-
C90	90,000	621	105,000	724	100,000	689	25.4	255	3.0
C95	95,000	655	110,000	758	105,000	724	-	-	-
T95	95,000	655	110,000	758	105,000	724	25.4	255	3.0
P110	110,000	758	140,000	965	125,000	862	-	-	-

长度/Lengths:

	范围1（Range 1）	范围2（Range 2）	范围3（Range 3）
油管 Tubing	6.10-7.32m	8.53-9.75m	11.58-12.80m
套管 Casing	4.88-7.62m	7.62-10.36m	10.36-14.63m
短节 Pup Joint	0.5m-6.0m(2FEET-20FEET)		