

Seamless steel pipe is a long steel material with hollow section but without joint line. There are two kinds: cold-drawn and hot rolled. It is mostly used in transportation of oil, natural gas, coal gas, water and some solid materials. Meanwhile, many structure and mechanical spares are made by this pipe.

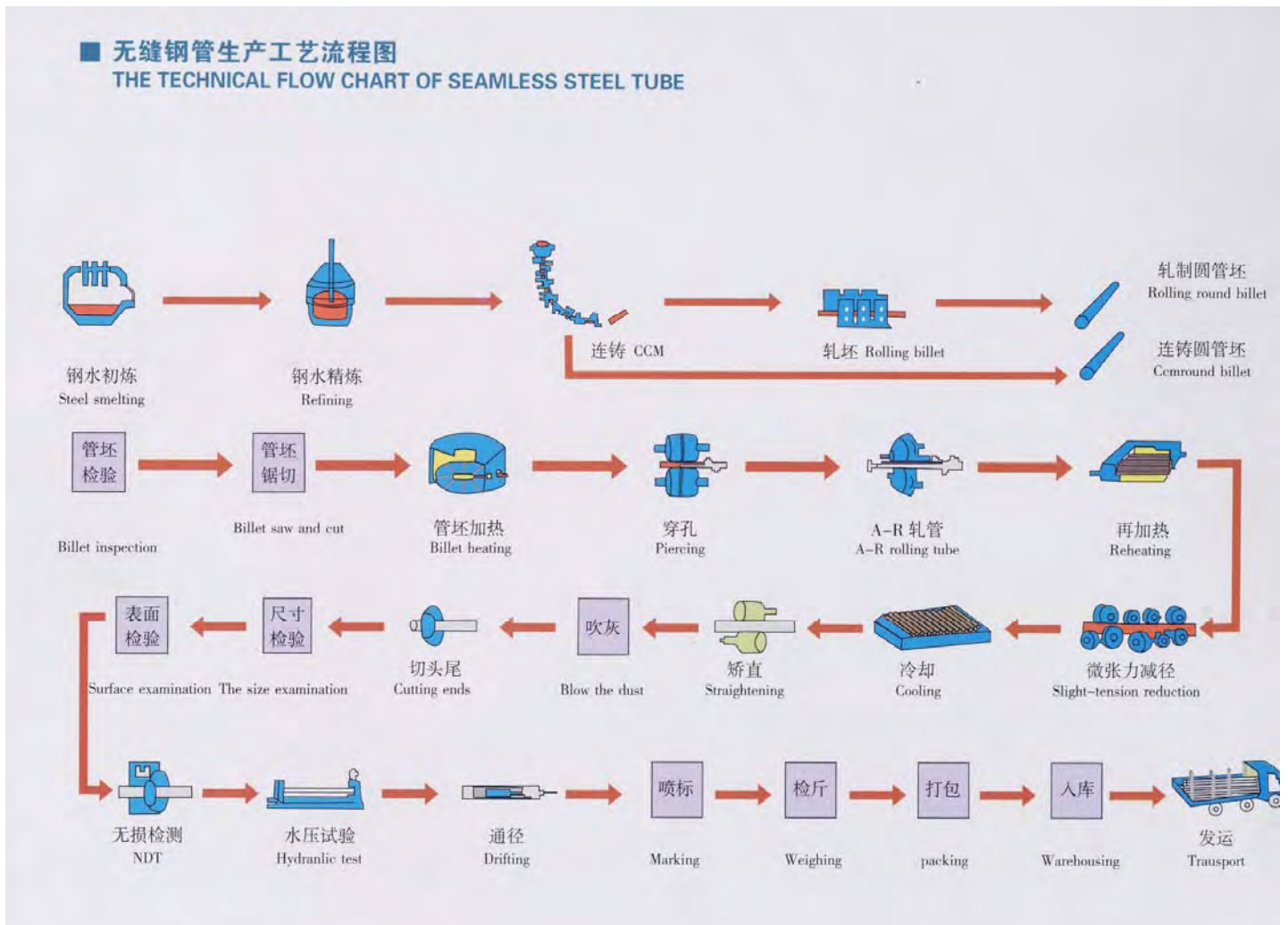
Advantages: large transported quantity, light weight with the same strength, widespread usage.

Standards: Seamless carbon steel tube for high temperature service ASTM-A106



Seamless steel tube for special service DIN1629

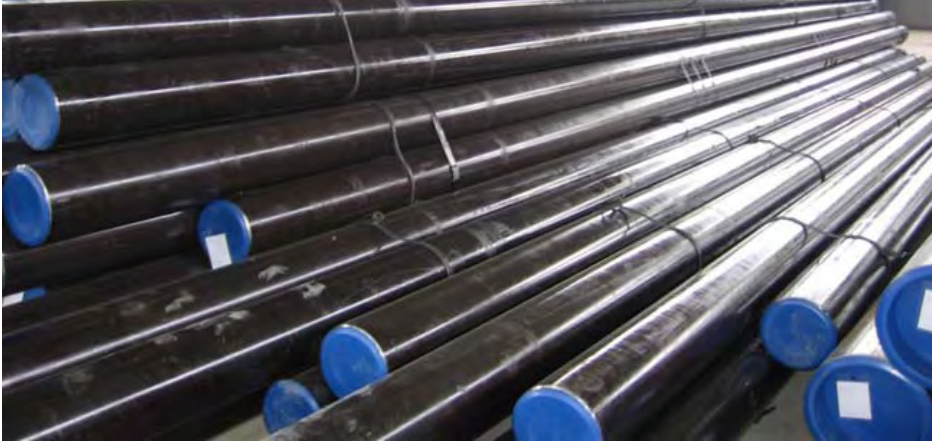
SEAMLESS STEEL PIPE FLOW CHART



HIGH TEMPERATURE SEAMLESS CARBON STEEL PIPE

STANDARD:**ASTM A 106 / ASME SA 106****APPLICATION:**

It is used for conveying water, petroleum, gas and other common fluids.

MAIN STEEL PIPE GRADE:**A106A, A106B, A106C****OTHER GRADE IS ALSO NEGOTIABLE.****CHEMICAL COMPOSITION & MECHANICAL PROPERTISE**

Standard	Grade	Chemical Composition(%)									
		C	Mn	Si	Cu	Ni	Cr	Mo	V	P	S
ASTMA106/ ASMESA106	A	≤0.25	0.27-0.93	≥0.10	≤0.40	≤0.40	≤0.40	≤0.15	≤0.08	≤0.035	≤0.035
	B	≤0.30	0.29-1.06	≥0.10	≤0.40	≤0.40	≤0.40	≤0.15	≤0.08	≤0.035	≤0.035
	C	≤0.35	0.29-1.06	≥0.10	≤0.40	≤0.40	≤0.40	≤0.15	≤0.08	≤0.035	≤0.035
Mechanical Propertise		(Mpa) Tensile Strength					(Mpa) Yield Strength				
	A	≥330					≥205				
	B	≥415					≥240				
	C	≥485					≥275				

SEAMLESS NOMINAL-SIZE TUBES**STANDARD:****ASTM A53 / A53M / ASME SA-53/ SA-53M****APPLICATION:**

It is used for conveying water, petroleum, gas and other common fluids.

MAIN STEEL PIPE GRADE:**A53A, A53B****OTHER GRADE IS ALSO NEGOTIABLE.****CHEMICAL COMPOSITION & MECHANICAL PROPERTISE**

Standard	Grade	Chemical Composition (%) , ≤									
		C	Mn	P	S	Cu	Ni	Cr	Mo	V	
ASTMA53/ ASMESA53	A	0.25	0.95	0.05	0.045	0.4	0.4	0.4	0.15	0.08	
	B	0.3	1.2	0.05	0.045	0.4	0.4	0.4	0.15	0.08	
Mechanical Propertise		Tensile Strength (Mpa)					Yield Strength (Mpa)				
	A	≥330					≥205				
	B	≥415					≥240				

SEAMLESS MEDIUM-CARBON STEEL TUBES FOR BOILERS AND SUPERHEATERS

STANDARD:

ASTM A210 / A210M / ASME SA - 210 / SA - 210M

APPLICATION:

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

MAIN STEEL PIPE GRADE:

SA210A1、SA210C

OTHER GRADE IS ALSO NEGOTIABLE.



CHEMICAL COMPOSITION & MECHANICAL PROPERTISE

Standard	Grade	Chemical Composition(%)					Mechanical Propertise		
		C	Mn	Si	P	S	Tensile Strength(Mpa)	Yield Strength(Mpa)	Elongation(%)
ASTM A210/ ASMESA210	A-1	≤0.27	≤0.93	≥0.1	≤0.035	≤0.035	≥415	≥255	≥30
	C	≤0.35	0.29~1.06	≥0.1	≤0.035	≤0.035	≥485	≥275	≥30

SEAMLESS FERRITE ALLOY AND AUSTENITIZED ALLOY TUBES FOR BOILERS, SUPERHEATERS AND HEAT EXCHANGERS

STANDARD:

ASTM A213 / A213M / ASME SA - 213 / SA - 213M

APPLICATION:

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

MAIN STEEL PIPE GRADE:

SA213T11、SA213T12、SA213T22

OTHER GRADE IS ALSO NEGOTIABLE.



CHEMICAL COMPOSITION & MECHANICAL PROPERTISE

Standard	Grade	Chemical Composition(%)						Mechanical Propertise	
		C	Mn	Si	Mo	Cr	P.S	Tensile Strength(Mpa)	Yield Strength(Mpa)
ASTM A213/ ASME213	T11	0.05~0.15	0.3~0.6	0.5~1	1~1.5	0.5~1	≤0.025	≥415	≥205
	T12	0.05~0.15	0.3~0.61	≤0.5	0.44~0.65	0.8~1.25	≤0.025	≥415	≥220
	T22	0.05~0.15	0.3~0.6	≤0.5	0.87~1.13	1.9~2.6	≤0.025	≥415	≥205

COLD-DRAWN SEAMLESS LOW – CARBON STEEL TUBES FOR HEAT

EXCHANGERS AND CONDENSERS

STANDARD:

ASTM A179 / A179M / ASME SA - 179 / SA - 179M

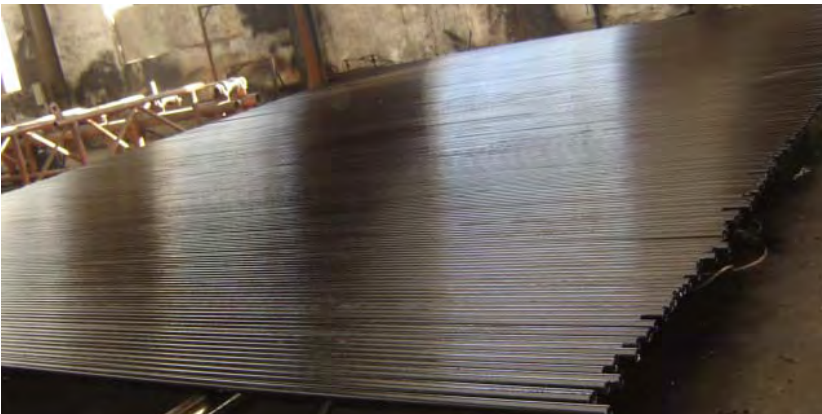
APPLICATION:

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

MAIN STEEL PIPE GRADE:

SA179

OTHER GRADE IS ALSO NEGOTIABLE.



CHEMICAL COMPOSITION & MECHANICAL PROPERTISE

Standard	Grade	Chemical Composition(%)			Mechanical Propertise		
		C	Mn	P.S	Tensile Strength(Mpa)	Yield Strength(Mpa)	Elongation(%)
ASTMA179	A179	0.06~0.18	0.27~0.63	≤0.035	≥325	≥180	≥35

SEAMLESS CARBON STEEL TUBES FOR HIGH PRESSURE BOILERS

STANDARD:

ASTM A192 / A192M / ASME SA - 192 / SA - 192M

APPLICATION:

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

MAIN STEEL PIPE GRADE:

SA192

OTHER GRADE IS ALSO NEGOTIABLE.

CHEMICAL COMPOSITION & MECHANICAL PROPERTISE

Standard	Grade	Chemical Composition(%)			Mechanical Propertise		
		C	Mn	P.S	Tensile Strength(Mpa)	Yield Strength(Mpa)	Elongation(%)
ASTMA192	A192	0.06~0.18	0.27~0.63	≤0.035	≥325	≥180	≥35

Main Steel Tube Size (“ √ ” means “available”)

Wall Thickness S Outside Diameter Φ	Wall Thickness S									
	1	1.0-2.0	2.0-2.5	2.5-3.5	3.5-5.0	5.0-6.0	6.0-7.5	7.5-9.0	9.0-11.0	
10-15	√	√	√	√						
15-24		√	√	√	√	√	√			
24-33		√	√	√	√	√	√			
33-48			√	√	√	√	√	√		
48-65			√	√	√	√	√	√	√	
65-76				√	√	√	√	√	√	
76				√	√	√	√	√		
77-88.9				√	√	√	√	√		

Remark : Φ38~51mm, the maximal length can be 25 metres, the products of this specification are used for HRSG .

LINE PIPE

STANDARD:

API SPEC 5L

APPLICATION:

It is used for conveying gas, water, and petroleum of both the oil and natural gas industries.

Tolerance on Dimension

Standard	Outside Dimension Tolerance		Wall Thickness Tolerance			
			A25, A, B		X42~X70	
API SPEC 5L	D<60.3	+0.41/-0.80mm	D<73mm	+20%/-12.5%	D<73mm	+15%/-12.5%
API SPEC 5L	D≥60.3	+0.75%/-0.75%mm	D≥73mm	+15%/-12.5%	D≥73mm	+15%/-12.5%

Chemical Composition

PSL 1 Chemical Requirements for Melting and Product Analysis

Standard	Grade	Chemical Composition(%)				
		C	Mn	Ti	P	S
API SPEC 5L	A25,C1 I	≤0.21	≤0.60	/	≤0.03	≤0.03
	A25,C1 II	≤0.21	≤0.60	/	0.045~0.08	≤0.03
	A	≤0.22	≤0.90	/	≤0.03	≤0.03
	B	≤0.28	≤1.2	≤0.04	≤0.03	≤0.03
	X42	≤0.28	≤1.3	≤0.04	≤0.03	≤0.03
	X46,X52,X56	≤0.28	≤1.4	≤0.04	≤0.03	≤0.03
	X60	≤0.28	≤1.4	≤0.04	≤0.03	≤0.03
	X65,X70	≤0.28	≤1.4	≤0.06	≤0.03	≤0.03

PSL 2 Chemical Requirements for Melting and Product Analysis

Standard	Grade	Chemical Composition(%)				
		C	Mn	Ti	P	S
API SPEC 5L	B	≤0.24	≤1.2	≤0.04	≤0.025	≤0.015
	X42	≤0.24	≤1.3	≤0.04	≤0.025	≤0.015
	X46,X52,X56,X60	≤0.24	≤1.4	≤0.04	≤0.025	≤0.015
	X65,X70,X80	≤0.24	≤1.4	≤0.06	≤0.025	≤0.015

Mechanical Properties

PSL1:

Standard	Grade	Mechanical Propertise				
		Tensile Strength(Mpa)	Yield Strength(Mpa)	Elongation(%)	Impact Energy(J)	
API SPEC 5L	PSL 1					
	≥					
		psi	Mpa	psi	Mpa	%
	A25	25,000	172	45,000	310	28-35
	A	30,000	207	48,000	331	26-33
	B	35,000	241	60,000	414	21-27
	X42	42,000	290	60,000	414	21-27
	X46	46,000	317	63,000	434	20-26
	X52	52,000	359	66,000	455	20-24
	X56	56,000	386	71,000	490	18-23
	X60	60,000	414	75,000	517	18-22
	X65	65,000	448	77,000	531	17-21
X70	70,000	483	82,000	565	16-20	

PSL2:

Standard	Grade	Mechanical Propertise					
		Tensile Strength(Mpa)		Yield Strength(Mpa)		Elongation(%)	Impact Energy(J)
API SPEC 5L	PSL 2						
		Min	Max	Min	Max	%	Min
	B	241	448	414	758	21-27	41(27)
	X42	290	496	414	758	21-27	41(27)
	X46	317	524	434	758	20-26	41(27)
	X52	359	531	455	758	20-24	41(27)
	X56	385	544	490	758	18-23	41(27)
	X60	414	565	517	758	18-22	41(27)
	X65	448	600	531	758	17-21	41(27)
	X70	483	621	565	758	16-20	41(27)
X80	552	690	621	827	15-19	101(68)	

SIZE RANGE**API SPEC 5L**

Size (in)	Outside Diameter		Wall Thickness		Theoretical Weight
	in	mm	in	mm	kg/m
0.405	0.405	10.3	0.068	1.7	0.36
0.54	0.54	13.7	0.088	2.2	0.62
0.675	0.675	17.1	0.091	2.3	0.84
0.84	0.84	21.3	0.19	2.8	1.28
1.05	1.05	26.7	0.113	2.9	1.7
1.315	1.315	33.4	0.113	3.4	2.52
1.66	1.66	42.2	0.14	3.6	3.43
1.9	1.9	48.3	0.145	3.7	4.07
2-3/8	2.375	60.3	0.154	3.9	5.42
2-7/8	2.875	73	0.203	5.2	8.69
3-1/2	3.5	88.9	0.216	5.5	11.31
4	4	101.6	0.226	5.7	13.48
4-1/2	4.5	114.3	0.237	6	16.02
5-9/16	5.563	141.3	0.258	6.6	21.92
6-5/8	6.625	168.3	0.28	7.1	28.22
8-5/8	8.625	219.1	0.277	7	36.61
8-5/8	8.625	219.1	0.322	8.2	42.65
10-3/4	10.75	273.1	0.279	7.1	46.57
10-3/4	10.75	273.1	0.307	7.8	21.03
10-3/4	10.75	273.1	0.365	9.3	60.5
12-3/4	12.75	323.9	0.33	8.4	65.35
12-3/4	12.75	323.9	0.375	9.5	73.65

TUBE AND CASING

STANDARD:

API SPEC 5CT

APPLICATION:

**Tubing is used for extracting petroleum and natural gas from a well.
Casing serves as walls of a well.**

Chemical Composition

Standard	Grade	Chemical Composition(%)				
		C	Mn	Si	P	S
API SPEC 5CT	H40	—	—	—	≤0.03	≤0.03
	J55	—	—	—	≤0.03	≤0.03
	K55	—	—	—	≤0.03	≤0.03
	N80-1	—	—	—	≤0.03	≤0.03

Mechanical Properties

Standard	Grade	Mechanical Propertise			
		Tensile Strength(Mpa)	Yield Strength(Mpa)		Elongation under load, (%)
			Min	Max	
API SPEC 5CT	H40	414	276	552	0.5
	J55	517	379	552	0.5
	K55	655	379	552	0.5
	N80-1	689	552	758	0.5

SIZE RANGE

API SPEC 5CT TUBE

Size (Outside Diameter)		Wall Thickness	kg/m
in	mm	mm	
1.9	48.26	3.68	4.05
1.9	48.26	5.08	5.41
2-3/8	60.32	4.24	5.86
2-3/8	60.32	4.83	6.61
2-3/8	60.32	6.45	8.57
2-7/8	73.02	5.51	9.17
2-7/8	73.02	7.01	11.41
2-7/8	73.02	7.82	12.57
3-1/2	88.9	5.49	11.29
3-1/2	88.9	6.45	13.11
3-1/2	88.9	7.34	14.76
3-1/2	88.9	9.52	18.64
4	101.6	5.74	13.57
4	101.6	6.65	15.57
4	101.6	8.38	19.26

API SPEC 5CT Casing

Size (Outside Diameter)		Wall Thickness	kg/m
in	mm	mm	
4-1/2	114.3	5.21	14.02
4-1/2	114.3	5.69	15.24
4-1/2	114.3	6.35	16.91
4-1/2	114.3	7.37	19.44
4-1/2	114.3	8.56	22.32
5	127	5.59	16.74
5	127	6.43	19.12
5	127	7.52	22.16
5	127	9.19	26.7
5	127	11.1	31.73
5	127	12.14	34.39
5	127	12.7	35.8
5-1/2	139.7	6.2	20.41
5-1/2	139.7	6.98	22.85
5-1/2	139.7	7.72	25.13
5-1/2	139.7	9.17	29.52
5-1/2	139.7	10.54	33.57
5-1/2	139.7	12.7	39.78
5-1/2	139.7	14.27	44.14
5-1/2	139.7	15.88	48.49
5-1/2	139.7	17.45	52.61
5-1/2	139.7	19.05	56.68
5-1/2	139.7	20.62	60.55
5-1/2	139.7	22.22	64.38
6-5/8	168.28	7.32	29.06
6-5/8	168.28	8.94	35.13
6-5/8	168.28	10.59	41.18
6-5/8	168.28	12.06	46.46
7	177.8	5.87	24.89
7	177.8	6.91	29.12
7	177.8	8.05	33.7

Size (Outside Diameter)		Wall Thickness	kg/m
in	mm	mm	
7	177.8	20.62	79.93
7	177.8	22.22	85.25
7-5/8	193.68	7.62	34.96
7-5/8	193.68	8.33	38.08
7-5/8	193.68	9.52	43.24
7-5/8	193.68	10.92	49.22
7-5/8	193.68	12.7	56.68
7-5/8	193.68	14.27	63.14
7-5/8	193.68	15.11	66.54
7-5/8	193.68	15.88	69.63
8-5/8	219.08	11.43	58.53
8-5/8	219.08	12.7	64.64
8-5/8	219.08	14.15	71.51
9-5/8	244.48	7.92	46.2
9-5/8	244.48	8.94	51.93
9-5/8	244.48	10.03	57.99
9-5/8	244.48	11.05	63.61
9-5/8	244.48	11.99	68.75
9-5/8	244.48	13.84	78.72
9-5/8	244.48	15.11	85.47
9-5/8	244.48	15.47	87.37
9-5/8	244.48	17.07	95.73
9-5/8	244.48	18.64	103.82
9-5/8	244.48	20.24	111.93
10-3/4	273.05	7.09	46.5
10-3/4	273.05	8.89	57.91
10-3/4	273.05	10.16	65.87
10-3/4	273.05	11.43	73.75
10-3/4	273.05	12.57	80.75
10-3/4	273.05	13.84	88.47
10-3/4	273.05	15.11	96.12

Size (Outside Diameter)		Wall Thickness	kg/m
in	mm	mm	
7	177.8	8.05	33.7
7	177.8	9.19	38.21
7	177.8	10.36	42.78
7	177.8	11.51	47.2
7	177.8	12.65	51.52
7	177.8	13.72	55.52
7	177.8	15.88	63.41
7	177.8	17.45	69.01
7	177.8	19.05	74.58
7-5/8	193.68	17.45	75.84
7-5/8	193.68	19.05	82.04
7-3/4	196.85	15.11	67.72
8-5/8	219.08	6.71	35.14
8-5/8	219.08	7.72	40.24
8-5/8	219.08	8.94	46.33
8-5/8	219.08	10.16	52.35

Size (Outside Diameter)		Wall Thickness	kg/m
in	mm	mm	
10-3/4	273.05	15.11	96.12
10-3/4	273.05	17.07	107.76
10-3/4	273.05	18.64	116.95
10-3/4	273.05	20.24	126.19
11-3/4	298.45	8.46	62.56
11-3/4	298.45	9.53	67.83
11-3/4	298.45	11.05	78.32
11-3/4	298.45	12.42	87.61
11-3/4	298.45	13.56	95.27
11-3/4	298.45	14.78	103.4
13-3/8	339.72	8.38	68.48
13-3/8	339.72	9.65	78.55
13-3/8	339.72	10.92	88.55
13-3/8	339.72	12.19	98.46
13-3/8	339.72	13.06	105.21

DIN 1629

Seamless Circular Tubes of Non-alloy Steels

Steel Grade	Chemical composition						
	C	Si	Mn	S	P	Ni	Al
St37.0	≤0.17	—	—	≤0.04	≤0.04	≤0.009	—
St44.0	≤0.21	—	—	≤0.04	≤0.04	—	≤0.009
St52.0	≤0.22	≤0.55	≤1.6	≤0.04	≤0.04	—	≤0.02

Mechanical Properties

Steel Grade	Tensile Strength(min)		Yield Strength(min)		Elongation , % (min)	
	WT < 15mm	WT ≥ 15mm	WT < 15mm	WT ≥ 15mm	WT < 15mm	WT ≥ 15mm
St37.0	350-480	350-480	235	225	L:25	L:25
					L:23	L:23
St44.0	420-550	420-550	275	265	L:21	L:21
					T:19	T:19
St52.0	350-500	350-500	355	345	L:21	L:21
					T:19	T:19

P.S:L is long,T is transverse.

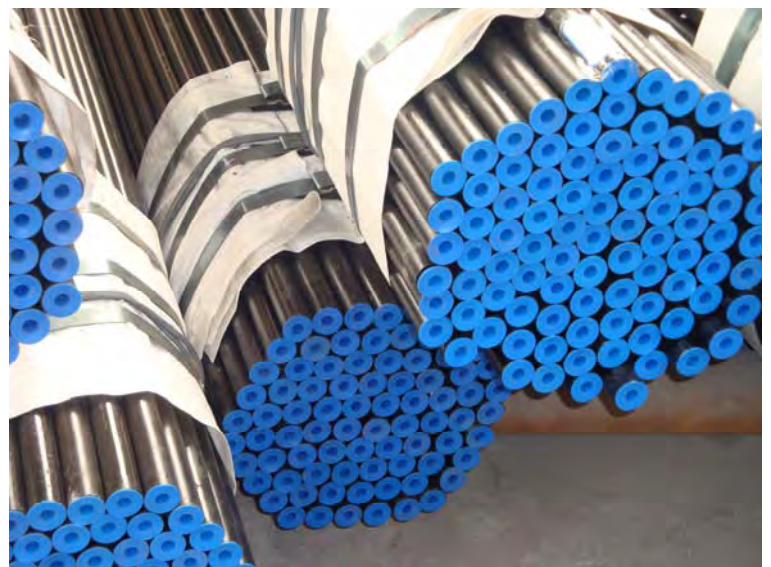
General International Standards			
ASTM A53 EN 10210	ASTM A519	ASTM A106	EN 10216
EN 10255 DIN 1629	API 5L	API 5CT	DIN 17175

UNIT WEIGHT AND SIZE OF DIN STANDARD

DIN2448/1629、DIN2440/2444

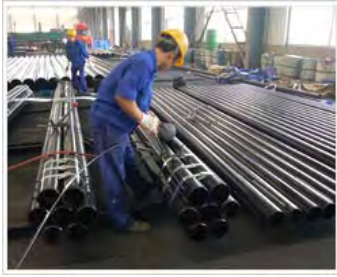
Size		Wall Thickness	kg/m
mm	in	mm	mm
21.3	1/2"	2.6	1.2
26.9	3/4"	2.6	1.56
33.7	1"	2.5	1.92
33.7	1"	2.6	1.99
33.7	1"	3.2	2.41
33.7	1"	3.5	2.61
42.4	1-1/4"	2.5	2.46
42.4	1-1/4"	2.6	2.55
42.4	1-1/4"	3.2	3.09
48.3	1-1/2"	2.6	2.93
48.3	1-1/2"	3.2	3.56
60.3	2"	2.9	4.1
60.3	2"	3	4.24
60.3	2"	3.2	4.51
60.3	2"	3.6	5.03
60.3	2"	4	5.55
63.5	2-1/4"	3.2	4.76
70	2-3/4"	2.9	4.8
70	2-3/4"	3.5	5.74
76.1	2-1/2"	2.9	5.24
76.1	2-1/2"	3.5	6.27
76.1	2-1/2"	3.6	6.44
76.1	2-1/2"	4	7.11
76.1	2-1/2"	5	8.77
76.1	2-1/2"	6.3	10.84
88.9	3"	3.2	6.76
88.9	3"	4	8.38
108	---	8	19.73
101.6	3-1/2"	3.6	8.7
101.6	3-1/2"	4	9.63
114.3	4"	3.6	9.83
114.3	4"	3.96	10.78
114.3	4"	4.5	12.18
114.3	4"	4.78	12.91
114.3	4"	5	13.48
114.3	4"	5.56	14.91
114.3	4"	5.6	15.01
133	5-1/2"	6.3	19.68
133	5-1/2"	8	24.66
139.7	4-3/4"	4	13.39

Size		Wall Thickness	kg/m
139.7	5"	5	16.61
139.7	5"	5.6	18.52
159	--	6.3	23.72
168.3	6"	4.5	18.18
168.3	6"	6.3	25.17
219.1	8"	6.3	33.06
219.1	8"	7.1	37.12
244.5		10	57.83



Bundling, storage and loading of steel pipes

1. Bundling



2. Storage



3. Loading

