Stancor Tubulars

PIPING SOLUTIONS

PRODUCT CATALOG 2020

www.stancortubulars.com

Manufacturer and Exporter of Carbon, Stainless & Nickel Alloys

Company Profile

Stancor Tubular Products Pvt. Ltd. is an Multinational Company Having Operations in Multiple Countries in Asia, Middle East and Europe and is involved into Manufacturing of Seamless / welded steel pipes and Pipe Fittings & Exporter of Steel Plates and Sheets of carbon steel, stainless steel, Alloy Steel and Nickel Alloys.

Our Mother Company was started in the year 1975 and has more than 45 year's track record of stability, trust & growth.

Our world is based on high tech seamless & Welded pipes that can withstand the toughest conditions in the world. We promise highest performance based on the core values of innovation and sustainability.

CONTENT

About Us

We Stancor are a Multinational Company Having 10 Offices and Warehouses Worldwide, Manufacturing and Distribution of high quality Plates and Pipes of Special Steel. Our Mother Company was started in the year 1975 and has more than 45 year's track record of stability, trust & growth.

From trading to manufacturing value added steel products, we had pre-eminent position in manufacturing, import, stocking and supplying Steel Pipes and Plates. Accepting challenges and ensuring customer delight has been the hallmark of our group. In just the last two decades, our group has grown to become a multi-product, multi location company providing total piping solutions to a diverse range of industries.

We always maintain the bulk stock of 25000 Tons for above mentioned materials for catering to our esteemed customers. Catering to various industrial projects in India and abroad, we have earned the reputation as a dependable supplier among our vast international client base

We have strong infrastructure to serve all types of customers in various sectors like Oil & Gas, Power Plants, Refineries, Petrochemicals, Pipelines etc. Our commitment & dedication to deliver quality product is realized by our professional team of highly qualified Project Sales Engineers, Big Warehousing Facilities, Logistic Experts, Procurement Specialists, and Efficient Coordinating Staff.

Our Mission, Vision

For more than 45 years, Stancor's story has always been about innovation. In 1975 we began supplying basic steel to our customers in india, and in 1985 we pioneered the idea of keeping all steel under one roof. Then in 1995, We decided to expand and keep stocks at various locations to take the location advantage. In 2005, We Build One of the World's best Warehousing Facilities in Mumbai. In 2015, We Established Our branches All Over Middle East and Europe and In 2020, We are Expanding our Manufacturing Facilities.

Over a Half Century later, we maintain Stancor mark of quality, and continue to establish new standards in quality to protect consumers and our clients' reputations across the world. Today we are a global force, operating in over 10 countries, offering Total Quality Assurance expertise, delivered consistently with precision, pace and passion, enabling our customers to power ahead safely.

Our Core Values

Quality

Delivering quality and timely services at all the times, to satisfy customer needs

Positive Working Environment

We maintain positive and healthy work environment to our employees.

Cooperation

Stancor's main vision is to maintain Good mutual cooperation across all the departments.

Teamwork

We have dedicated Team for better growth, Improvement and satisfaction of customer, who works loyal to one another personally & professionally.

Quality Control

Quality Policy

- To improve the internal procedure control and to strengthen the communication and management.
- Make bestow our efforts to deliver high value added products to broaden the service scope.
- To promote wide variety of value aaded services and to make sure all the customers requirements are met on time.
- Promoting technical skill to higher level and continuously putting the concept of " Qualify that inspires the customer confidence™ ahead of everything.

Clientele


Reliance
Industries Limited


GAIL (India) Limited
Gas & Beyond


HP


DORR-OLIVER
HINDUSTAN DORR-OLIVER LIMITED


ESSAR


HIL
PROTECT TO PROSPER


MCF
Mangalore Chemicals
& Fertilizers Limited


TNPL


BVFC
BVFCL NAMRUP
A Govt of India Undertaking


आर सी एफ


Pharmalab
INDIA PRIVATE LIMITED
TECHNOLOGY YOU CAN TRUST


NPCIL


THERMAL Systems
(Hyderabad) Pvt Ltd


एनटीपीसी
NTPC


TATA POWER


GE
Energy


ESSAR
ENERGY


CHEM
Process Systems


सेल SAIL


Cairn


VIZAG
STEEL
Pride of Steel


ADITYA BIRLA GROUP


BOC


APGENCO
APGENCO AE Syllabus


EIL

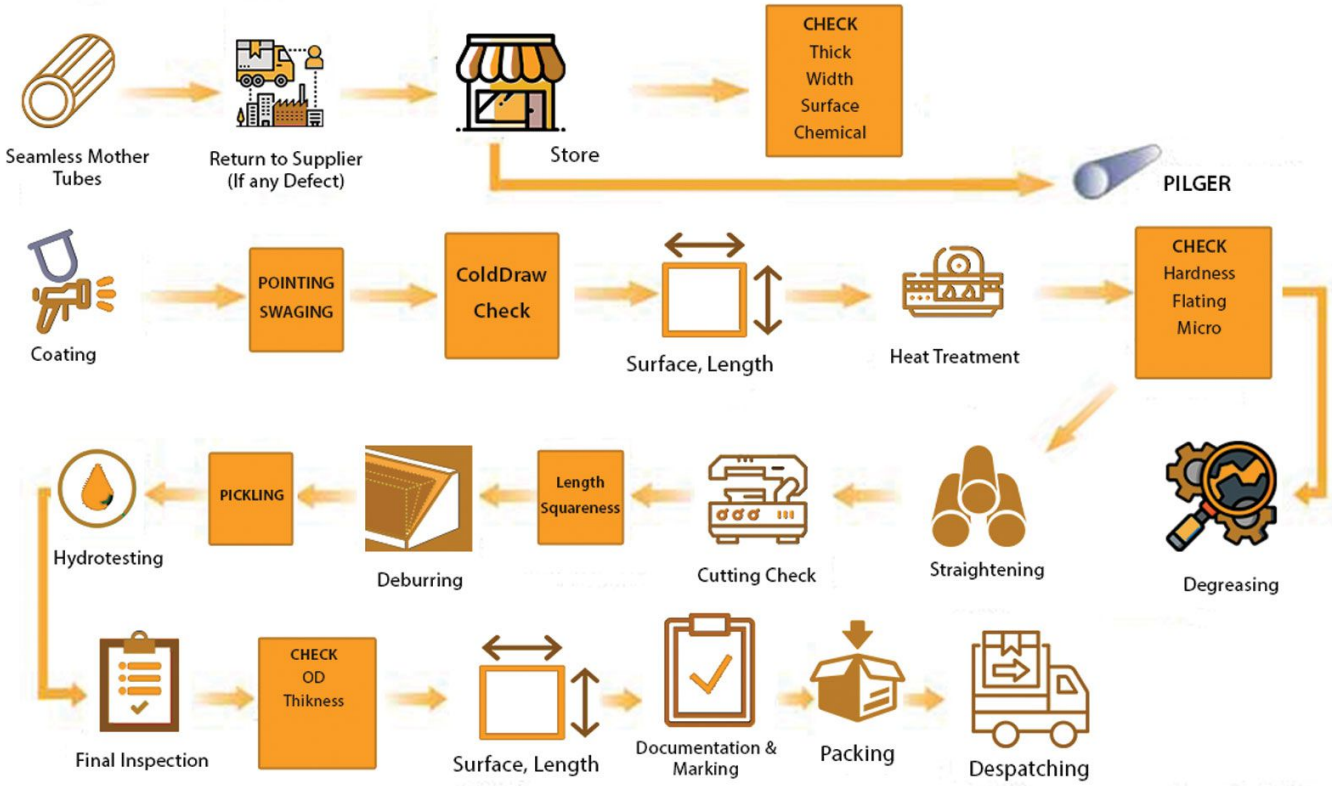

INDIAN RAILWAYS


IBR
Approved


एन एस आई सी
NSIC
ISO 9001 : 2008


KANDLA
PORT TRUST

Manufacturing Process



Raw material: Stainless Steel Strips / Hollows of Carbon Steel / Alloy Steel / Stainless Steel

The company uses Raw Material from reputed suppliers from India and abroad. As per technical specification standard ASTM, Hot/ Cold finished materials are cheCked for quali as per test certificate and then send for manufacturing process We have two apes of cold drawing process.

SEAMLESS PIPES & TUBES

PILGERING

Cold Pilgering process using full link die and tapper mandral

To reduce the cross section by upto90°A, because the process relies on largenumberof small forming steps

Cold Pilgering are longitudinal cold rolling process that reduCe the diameter ana wall thickness of metal tube in one process step

Bycold Pilgering process surface finish achieved matter than cold drawing finish(Less than O.4 micron) and improved microstructuregrain size

Our pilgering ranBe are OD12to 73mm and wall thickness 0.8to 4mm

COLD DRAWING

In cold drawingprocess raw material tubes are coatea with some special chemical or applies some special lubricant oil

The tubes are pulled through tungsten carbide die and hotting/ fixed plug in side lhe tubes, resulting in reducedtube diameter and wall thickness corresponding increase in tube length.

Our capacity of drawing are OD6to 219mm 6‹thickness are a.a to 12mm.

HEAT TREATMENT (SOLUTION ANNEALING)

After each process of manufacturing tubes & pipes are subjected to heat treatment in a continuous annealing furnace at the specified temperatures as per grade of materiels and followed by rapidly quenching as per the grade to prevent carbide formation.

SOLUTION ANNEALING ENSURE

Homogenous structure for optimum inter - granular corrosion resistance

Removal of residual stresses developed during the cold process

Transformation of weld and heat affected zone to homogenous austenitic structure

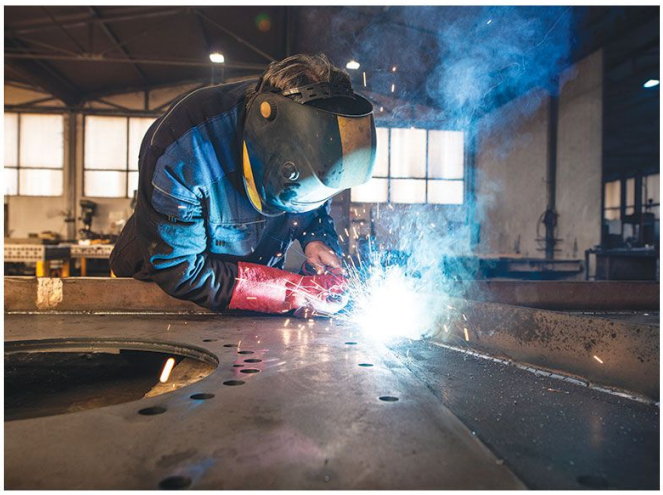
BRIGHT ANNEALING

We have bright annealing electric furnace which is run by protective atmosphere of cracked ammonia

Brightness of the tubes largely depend upon atmosphere prevailing in side furnace, due point and
Oxygen content

We have provide due point meteroxygen analyzer for measurement of dryness of crack ammonia and oxygen content

Testing Equiments



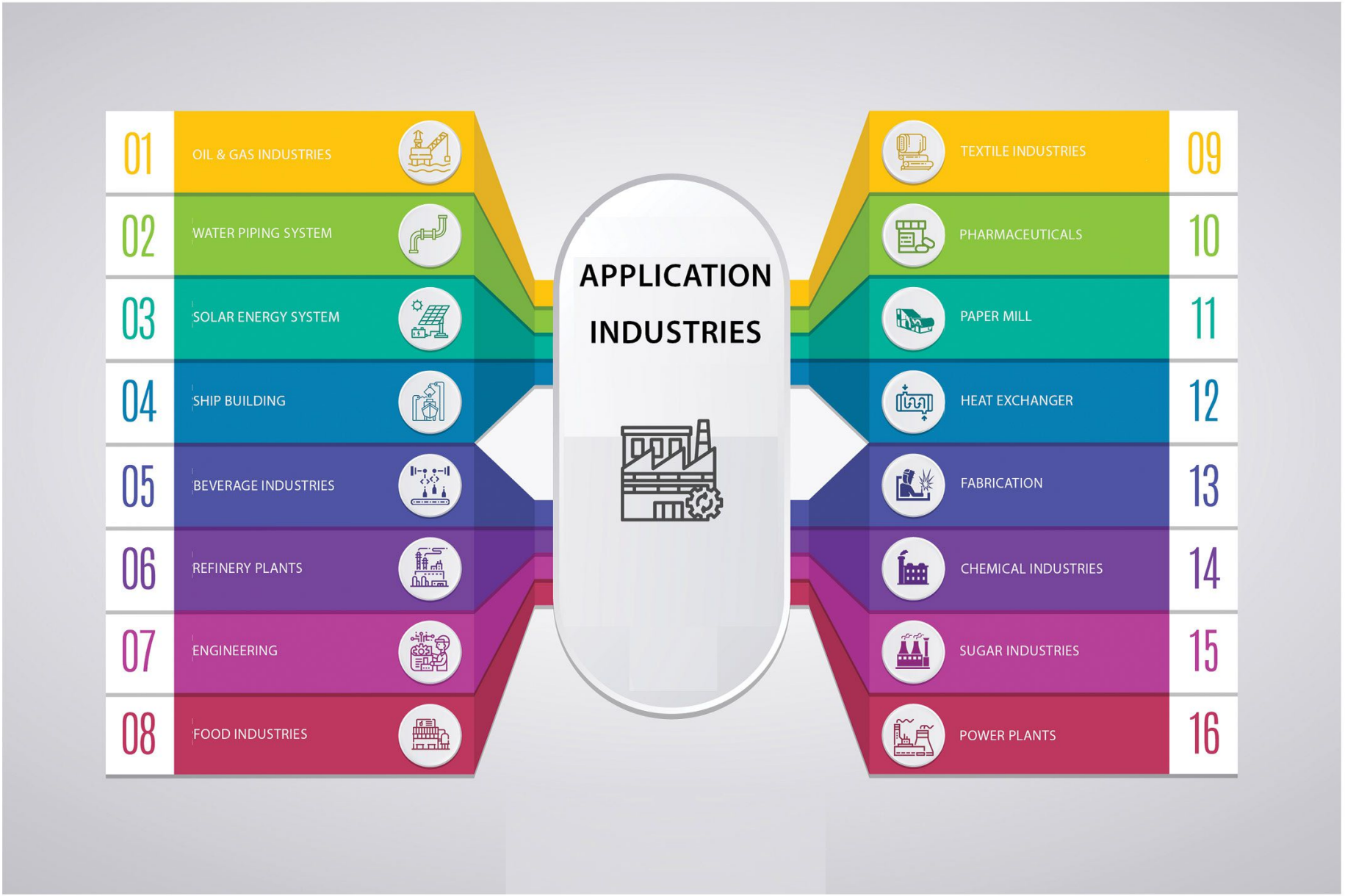
Inspection & Testing offered by Stancor Tubulars are as follows:

- Mechanical Testing, Chemical Testing
- Fully equipped laboratory for Corrosion Testing, Chloride
- Contamination Testing, Residual Stress Measurement
- Micro Structure Examination / Analysis
- Laboratory Spectrometer
- Positive Material Identification (PMI) Tester
- Hydro Testing - Straight as well as U - Tubes
- Air Under Water Testing Straight Length upto 30 meters
- Ferrite Content and Surface Finish

Non Destructive Testing Offered:

- Eddy Current Testing
- Ultrasonic Testing
- Radiography Testing
- Dye - Penetrant Testing

Applications



Stancor Tubulars - Products

We are global suppliers of seamless steel tubes in carbon, alloyed, high-alloyed and stainless steel through the companies that form part of the Stancor Group.We are a global company with presence in over 10 countries in 3 continents and Our commitment is to be the global leaders to satisfy customized requirements of tubular Premium products in the countries were we are present.

STAINLESS STEEL SEAMLESS PIPES

We Stancor Tubulars are the leading supplier and exporters of stainless steel seamless pipes

STAINLESS STEEL WELDED PIPES

We supply wide range of high quality Stainless Steel Welded pipes

DUPLEX STEEL SEAMLESS PIPES

Stainless steel duplex pipe is composed of approximately the same amount of ferrite and austenite stainless steels

SUPER DUPLEX STEEL SEAMLESS PIPES

Super Duplex Stainless Steel Pipes having standard quality and high efficiency

Stancor Tubulars - Products

Stancor Tubulars supplies seamless tubular products with an outside diameter up to 219.1 mm (8 inches).

DUPLEX STEEL WELDED PIPES

We Stancor Tubulars, are leading manufactures & suppliers of Duplex Steel Weded Pipes.

SUPER DUPLEX STEEL WELDED PIPES

Super Duplex Steel Welded Pipes is a mixed microstructure of austenite and ferrite (50 / 50)

CARBON STEEL SEAMLESS PIPES

Carbon Steel Seamless Pipe are extensively used in chemical, oil, construction, digging, automotive, fertilizers and many other industries

ALLOY STEEL SEAMLESS PIPES

Alloy steel seamless pipe is ideally suitable for chemical, petrochemicals and other energy related applications

Stancor Tubulars produces Line Pipe, Automotive Tubes, Mechanical Tubes, Boiler, pressure and superheater tubes and Hollows for redraw. These pipes are used in the Automotive, Petrochemical, Construction, Mining, Tunneling and Fluid Transportation Industries.

NICKEL ALLOY SEAMLESS PIPES

nickel alloy seamless pipes are made from both nickel and nickel based alloys.

NICKEL ALLOY WELDED PIPES

Welded with over alloyed filler metals, these high pitted andcorrosion resistant pipes are provided by us in standard dimensions

Quality

Quality is the prerequisite for products that have to withstand extreme conditions.

Flexibility

Our dedicated employees work continuously on solutions to our customers' challenges with technical experience, flexibility and ingenuity.
Quality standards are more to us than rules, they serve as the baseline which we strive to exceed.

Safety

The outcome: safe, reliable products and product solutions.

STAINLESS STEEL SEAMLESS PIPES

PRODUCT DESCRIPTION :

Stainless Steel Seamless Pipe and Tube is made up of stainless steel materials, having Rugged Construction and Good Finishing. These pipes are having High Tensile Strength and Good Functionality. These Pipes are Anti-Corrosive and having Good Dimensional Accuracy.

PRODUCT SPECIFICATION :

Material	**Stainless Steel**
Unit Length	**6m, 3m**
Type	**Welded, U-Tubes, Condensor &**
Length	**2-4 meters, 6-8 meters, 0-2 meters,**
Surface Finish	**Mill Finished, Brushed, Finished Pol-**
Features	**Pickled, Cold Drawn, Anealed, Polished**
Color	**Silver**
Hollow Sections	**Square, Elliptical, Rectangular, Circular**

PRODUCT FEATURES:

Desirable Hardness

High Electrical Conductivity

Low Temperature

STAINLESS STEEL WELDED PIPES

PRODUCT DESCRIPTION :

Stainless Steel 317L Welded Pipes was embraced as a nonexclusive name for these steels and now covers a wide scope of steel types and grades for erosion or oxidation safe applications. The principle prerequisite for Stainless Steel 317L Welded Pipes is that they ought to be erosion safe for a predefined application or condition.

PRODUCT SPECIFICATION :

Material	**Stainless Steel**
End Type	**Plain End, Beveled End, Treaded**
Type	**Seamless / ERW / Welded / Fabricated / LSAW Pipes**
Usage	**Paper & Pulp Companies**
Form	**Round, Square, Rectangular, Hydraulic Etc**
Length	**Upto 26 meters**
Color	**Silver**
Application	**Oil and Gas Industry, Chemical Refinery,Pipeline**

PRODUCT FEATURES:

Corrosion Resistant

Accurate Dimensions

Can sustain high pressure & temperature load

Rust proof

DUPLEX STEEL SEAMLESS PIPES

PRODUCT DESCRIPTION :

"Standuple" describes a family of stainless steels that are neither fully austenitic, like 304 stainless, nor purely ferritic, like 430 stainless.

PRODUCT SPECIFICATION :

Material	**Stainless Steel**
Unit Pipe Length	**9 meter, Customized, 3 meter, 6 meter**
Form	**Round, Rectangular**
End Connection	**Plain End, Beveled End, Threaded**
Range	**1 mm OD upto 219 mm O**
Grades	**UNS NO. S 31803, S 32205, S 32550, S 32750, S 32760**
Length	**Single Random, Double Random & Required**
Thickness	**0.3mm – 50 mm**

PRODUCT FEATURES:

Polished

Cold Drawn

SUPER DUPLEX STEEL SEAMLESS PIPES

PRODUCT DESCRIPTION :

Stainless Steel 317L Welded Pipes was embraced as a nonexclusive name for these steels and now covers a wide scope of steel types and grades for erosion or oxidation safe applications. The principle prerequisite for Stainless Steel 317L Welded Pipes is that they ought to be erosion safe for a predefined application or condition.

PRODUCT SPECIFICATION :

Application	**Drinking Water, Utilities Water**
Unit Pipe	**3 meter, 6 meter, 9 meter**
Single Piece	**3 meter, 6 meter**
Size	**1/2 " to 8 "**
Type	**Seamless / ERW / Welded / Fabricated**
Form	**Round, Hydraulic Etc**
End	**Plain End, Beveled End, Treaded**
Specialized in	**Large Diameter Size**

PRODUCT FEATURES:

Corrosion Resistant

Accurate Dimensions

Can sustain high pressure & temperature load

Rust proof

DUPLEX STEEL WELDED PIPES

PRODUCT DESCRIPTION :

"Duplex" describes a family of stainless steels that are neither fully austenitic, like 304 stainless, nor purely ferritic, like 430 stainless.

Duplex stainless steels are about twice as strong as regular austenitic or ferritic stainless steel.

PRODUCT SPECIFICATION :

Grades	UNS S31803, UNS S32205
Dimensions	ASTM, ASME and API
Size	1/2NB TO 12 "NB IN
Thickness	0.5-45mm
Outer Diameter	6.0-630mm
Specialized in	Large Diameter Size
Schedule	SCH20, SCH30, SCH40, STD, SCH80
Length	Single Random, Double Random & Cut Length

PRODUCT FEATURES:

Good weldability & workability

Good corrosion resistance

Resistance to chloride stress corrosion cracking

High Strength

SUPER DUPLEX STEEL WELDED PIPES

PRODUCT DESCRIPTION :

Super Duplex Steel S32760 Welded Pipes is a super duplex stainless steel developed for applications that demand high strength and corrosion resistance.

PRODUCT SPECIFICATION :

Dimensions	ASTM, ASME and API
Size	1/8"NB TO 30"NB IN
Specialized in	Large Diameter Size
Schedule	SCH20, SCH30, SCH40, STD, SCH80
Type	Seamless / ERW / Welded / Fabricated
Form	Round, Hydraulic Etc
End	Plain End, Beveled End, Treaded
Length	Single Random, Double Random & Cut Length.

PRODUCT FEATURES:

Corrosion Resistant

Accurate Dimensions

Can sustain high pressure & temperature load

Rust proof

CARBON STEEL SEAMLESS PIPES

PRODUCT DESCRIPTION :

The carbon steel comprises of carbon and iron for the most part. Trace amounts of silicon, manganese and copper are allowed in different quantities depending on the grades. The Carbon Steel Seamless Pipe material therefore is stronger and is highly stress resistant.

PRODUCT SPECIFICATION :

Dimensions	ASME, ASTM, and API
Type	Welded / ERW / Seamless / Fabricated
Length	3m, 6m, 12m, 18m, 24m, >24m
Usage/Application	Industrial & Construction
End	Beveled End, Plain End, Treaded
Surface Finish	Anodized, Brushed, Mill Finished, Finished Polished
Schedule	Schedule 40, 80, 160, XS, XXS
Size	1/2 NB to 36 NB

PRODUCT FEATURES:

Sturdy construction

Durable

Zero maintenance

ALLOY STEEL SEAMLESS PIPES

PRODUCT DESCRIPTION :

Alloy steel seamless pipe is ideally suitable for chemical, petrochemicals and other energy-related applications. It has characteristics of high corrosion resistance and can be used in a wide range of industrial sectors.

PRODUCT SPECIFICATION :

Dimensions	ASTM, ASME and API
Size	1/8□NB TO 30□NB IN
Outer Diameter	6-2500mm; WT:1-200mm
Length	Within 13500mm
Type	Seamless / Fabricated
Length	Single Random, Double Random & Cut Length
End	Plain End, Beveled End, Treaded
Length	1 / 2" OD up to 5" OD, customs diameters also available

PRODUCT FEATURES:

Corrosion Resistant

Accurate Dimensions

NICKEL ALLOY WELDED PIPES

PRODUCT DESCRIPTION :

These days nickels alloys are a popular type of alloy. They reflect high resistance to the corrosion, oxidation, heat, warping, and pressure.

PRODUCT SPECIFICATION :

Material	Nickel Alloy
Size	2-4 inch
Unit Length	12 m
Shape	Round
Thickness	SCH 40, SCH 80, SCH 160, SCH XS, SCH XXS, All Schedules
Length	Within 13500mm
Types	Seamless / ERW / Welded / Fabricated / CDW
End	Plain End, Beveled End, Treaded

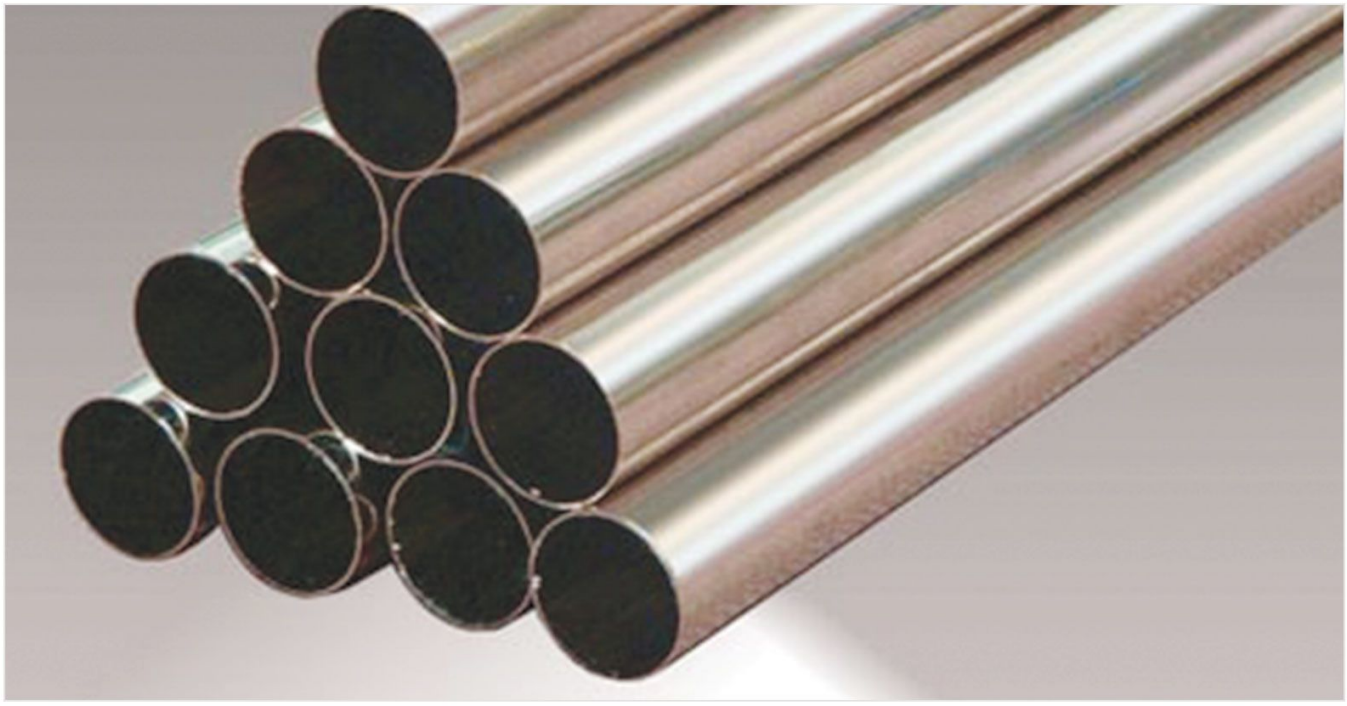
PRODUCT FEATURES:

Toughness and High Strength

High temperature

First-rate resistance to corrosion.

NICKEL ALLOY SEAMLESS PIPES



PRODUCT DESCRIPTION :

Nickel Alloy is available in various application industries such as chemical & petrochemical industries, fertilizers industries, oil refinery etc.

PRODUCT SPECIFICATION :

Dimensions	ASTM, ASME and API
Size	15□NB TO 150□NB IN
Specialized in	Large Diameter Size
Range	6.35 mm OD upto 254 mm OD in 0.6 TO 20 mm thickness
Type	Seamless / ERW / Welded / Fabricated / LSAW Pipes
Length	Single Random, Double Random & Cut Length
End	Plain End, Beveled End, Treaded
Length	1 / 2" OD up to 5" OD, customs diameters also available

PRODUCT FEATURES:

Lightweight

Tough construction

Dimensionally accurate

Stancor Tubulars
PIPING SOLUTIONS

STAINLESS STEEL PIPE & TUBE KG/MTRS

N.B	O.D	Schedule		Schedule		Schedule		Schedule		Schedule		Schedule	
		5 S		10 S		40 S		80 S		160		XX-Strong	
		Wall											
Inch	mm	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	0.476				
1/4”	13.72			1.65	0.498	2.24	0.643	3.02	0.809				
3/8”	17.15			1.65	0.640	2.31	0.858	3.20	1.12				
1/2”	21.34	1.65	0.814	2.11	1.01	2.77	1.29	3.73	1.65	4.78	1.98	7.47	2.59
3/4”	26.67	1.65	1.033	2.11	1.30	2.87	1.71	3.91	2.23	5.56	2.94	7.82	3.69
1”	33.40	1.65	1.31	2.77	2.12	3.38	2.54	4.55	3.29	6.35	4.30	9.10	5.53
11/4”	42.16	1.65	1.67	2.77	2.73	3.56	3.44	4.85	4.53	6.35	5.59	9.70	7.88
11/12”	48.26	1.65	1.925	2.77	3.15	3.68	4.11	5.08	5.49	7.14	7.35	10.16	9.69
2”	60.33	1.65	2.424	2.77	3.99	3.91	5.52	5.54	7.60	8.74	11.29	11.07	13.65
2 1/2”	73.03	2.11	3.75	3.05	5.34	5.16	8.77	7.01	11.6	9.53	15.15	14.02	20.71
3”	88.90	2.11	4.58	3.05	6.56	5.49	11.5	4.62	15.5	11.13	21.67	15.24	28.11
3 1/2”	101.60	2.11	5.26	3.05	7.53	5.74	13.8	8.08	18.9				
4”	114.30	2.11	5.93	3.05	8.50	6.02	16.3	8.56	22.7	13.49	34.05	17.12	41.66
5”	141.30	2.77	9.61	3.40	11.74	6.55	22.1	9.53	31.4	15.88	49.87	19.05	58.31
6”	168.28	2.77	11.48	3.40	14.0	7.11	28.7	10.97	43.2	18.26	68.59	21.95	80.43
8”	219.08	2.77	15.00	3.76	20.27	8.18	43.2	12.70	65.5	23.01	113.01	22.22	109.57
10”	273.05	3.40	22.96	4.19	28.21	9.27	61.23	12.70	82.79	28.58	174.90	25.40	157.51
12”	323.85	3.96	31.72	4.57	36.54	9.53	74.93	12.70	98.95	33.32	242.53	25.40	189.81
14”	355.60	3.96	34.9	4.78	41.9								
16”	406.40	4.19	49.2	4.78	48.1								
18”	457	4.19	47.5	4.78	54.2								
20”	508	4.78	60.2	5.54	69.9								
24”	610	5.54	83.9	6.35	96.0								

N.B	O.D	Schedule 20[1] Wall		Schedule 120[1]	
Inch	mm	mm	kg/mm	mm	kg/m
4”	114.30			11.13	28.8
5”	141.30			12.70	40.9
6”	168.28			14.27	55.0
8”	219.08	6.35	33.8	18.26	91.8
10”	273.08	6.35	42.4	21.44	135.1
12”	323.85	6.35	50.4	25.40	189.8
14”	355.60	7.92	68.9	27.79	228.1
16	406.40	7.92	79.0		
18”	457.20	7.92	89.1		
20.”	508	9.53	118.9		
24”	610	9.53	143.3		

ANSI B 36.10

Gauge	BWG Birmingham/Stubs Iron Wire and Sheets		SWG Imperial / Legal Standards Wire Gauge	
	inch	mm	inch	mm
14	0.0830	2.108	0.0800	2.032
16	0.0650	1.651	0.0640	1.626
18	0.0490	1.245	0.0480	1.219
20	0.0350	0.889	0.0360	0.914

DN	DIN 2440, O.D mm	for threading Wall mm	Din 2633, Welding neck flanges Tube O.D Group 1,mm	Tube O.D Group2, mm
6	10.2	2.0		
8	13.5	2.35		
10	17.2	2.35	17.2	14
15	21.3	2.65	21.3	20
20	26.9	2.65	26.9	25
25	33.7	3.25	33.7	30
32	42.4	3.25	42.4	38
40	48.3	3.25	48.3	44.5
50	60.3	3.65	60.3	57
65	76.1	3.65	76.1	
80	88.9	4.05	88.9	
100	114.3	4.5	114.3	108
125	139.7	4.85	139.7	133
150	165.1	4.85	168.3	159
175			193.7	
200			219.1	
250			273	267
300			323.9	
350			355.6	368
400			406.4	419

Stancor Tubulars
PIPING SOLUTIONS

TOLERANCE: ASTM SPECIFICATION FOR TUBING & PIPING

Specification	Allowable Outside Diameter Variation in mm			Allowable Wall Thickness Variation		Exact Length Testing Tolerance in mm		
	Nominal Diameter	Over	Under	%Over	%Under	Over	Under	
ASTM-A213 Seamless Boiler Superheater and Heat Exchanger Tubes	Under 25.4	.1016	.1016	+20	-0	3.175	0	Tension Test
	25.4-38.1 incl	.1524	.1524	+22	-0	3.175	0	Flattening Test
	38.1-50.8 excl	.2032	.2032	+22	-0	3.176	0	Flare Test
	50.8-63.5 excl	.254	.254	+2	-0	4.46	0	Hardness Test
	63.5-76.2 excl	.3048	.3048	+22	-0	4.76	0	100% Hydrostatic test
	76.2-101.6 incl	.381	.381	+22	-0	4.76	0	Refer to ASTM A-450
ASTM-A249 Welded Boiler Superheater, Heat Exchanger And Condenser Tubes	Under 25.4	.1016	.1016	+10	-10	3.175	0	Tension Test
	25.4-38.1 incl	.1524	.1524	+10	-10	3.175	0	Flattening Test
	38.1-50.8 Excl	.2032	.2032	+10	-10	3.175	0	Flare Test
	50.0-63.5 excl	.254	.254	+10	-10	4.76	0	Reverse Bend Test
	63.5-76.2 excl	.3848	.3048	+10	-10	4.76	0	Hardness Test
	76.2-101.6 incl	.381	.381	+10	-10	4.76	0	100% Hydrostatic Test
				Minimum Wall tubes + 18% 0 available On request				*Reverse flattening Test Refer to ASTM A-450 *Wherever applicable
ASTM-A269 Seamless & Welded Tubing for General Service	Untp 12.7	.13	.13	+15	-15	3.2	0	Flare Test
	12.7-38.1 excl	.13	.13	+10	-10	3.2	0	Flance Test (Welded Only)
	38.1-88.9 excl	.25	.25	+10	-10	4.8	0	Hardness Test
	88.9-139.7 excl	.38	.38	+10	-10	4.8	0	Reverse Flattening Test
	139.7-203.2 excl	.76	.76	+10	-10	4.8	0	(Welded only) 100% Hydrostatic Test Refer to ASTM-A269
ASTM-A270 Semless & Welded Sanitary Tubing	25.4	.05	.20	+12.5	-12.5	3.2	0	Reverse flattening Test
	38.1	.05	.20	+12.5	-12.5	3.2	0	100% Hydrostastic Test
	50.8	.05	.28	+12.5	-12.5	3.2	0	Externa' polish on all tubes
	60.5	.05	.28	+12.5	-12.5	3.2	0	
	76.2	.08	.30	+12.5	-12.5	3.2	0	Refer to ASTM A-270
	101.6	.08	.38	+12.5	-12.5	3.2	0	
ASTM-A312 Semless & Welded pipe	3.175-38.1 incl	.4	.79	Minimum Wall 12.5% under nominal wall Specified		6.4	0	Tension Test
	38.1-1016 incl	.79	.79			6.4	0	Flattening Test
	101.6-203.2 imcl	1.59	.79			6.4	0	100% Hydrostatic Test
						(Normally Random Lengths ordered		Refer to ASTM A-530
ASTM A-358 Welded pipe	219.08-750mm or 0.01 inch	+0.5%		-0.3		6.0		Refer to ASTM A-530

Stancor Tubulars
PIPING SOLUTIONS

CHEMICAL COMPOSITION OF S. S. PIPES & TUBES

Grade	UNS Designation	Composition %															
		Carbon max	Manganese max	Sulfur max	Phosphorus max	Silicon	Nickel	Chromium	Molybdenum	Titanium	Columblum plus Tantalum	Tantalum max	Nitrogen[C]	Vanadium	Copper	Cerlum	Bom
TP304	S30400	0.08	2.00	0.040	0.030	0.75 max	8.00-11.0	18.0-20.0	--	--	--	--	--	--	--	--	--
TP304H	S30409	0.04-0.10	2.00	0.040	0.030	0.75 max	8.00-11.0	18.0-20.0	---	---	---	---	---	---	---	---	
TP304L	S30403	0.035	2.00	0.040	0.030	0.75 max	8.00-13.0	18.0-20.0	---	---	---	---	---	---	---	---	
TP304N	S30451	0.08	2.00	0.040	0.030	0.75 max	8.00-11.0	18.0-20.0	---	---	---	---	0.10-0.16	---	---	---	
TP304LN	S30453	0.035	2.00	0.040	0.030	0.75 max	8.00-11.0	18.0-20.0	---	---	---	---	0.10-0.18	---	---	---	
TP309Cb	S30940	0.08	2.00	0.045	0.030	0.75 max	12.0-16.0	22.0-24.0	0.75 max	---	10 x C min 1.10 max	---	---	---	---	---	
TP309H	S30909	0.04-0.10	2.00	0.040	0.030	0.75 max	12.0-15.0	22.0-24.0	---	---	---	---	---	---	---	---	
TP309HCb	S3041	0.04-0.10	2.00	0.045	0.030	0.75 max	12.0-16.0	22.0-24.0	0.75 max	---	10 x C min 1.10 max	---	---	---	---	---	
TP309S	S30908	0.08	2.00	0.045	0.030	0.75 max	12.0-15.0	22.0-24.0	0.75 max	---	---	---	---	---	---	---	
TP310Cb	S31040	0.08	2.00	0.045	0.030	0.75 max	19.0-22.0	24.0-26.0	0.75 max	---	10 x C min 1.10 max	---	---	---	---	---	
TP310H	S31009	0.04-0.10	2.00	0.040	0.030	0.75 max	19.0-22.0	24.0-26.0	---	---	---	---	---	---	---	---	
TP310HCb	S31041	0.04-0.10	2.00	0.045	0.030	0.75 max	19.0-22.0	24.0-26.0	0.75 max	---	10 x C min 1.10 max	---	---	---			
TP310S	S31008	0.08	2.00	0.045	0.030	0.75 max	19.0-22.0	24.0-26.0	0.75 max	---	---	---	---	---		---	
	S31272	0.08-0.12	1.5 2.00	0.030	0.015	0.3-0.7	14.0-16.0	14.0-16.0	1.0-1.4	0.3-0.6							0.04 0.00
TP316	S31600	0.08	2.00	0.040	0.030	0.75 max	11.0-14.0	16.0-18.0	2.00-3.00	---	---	---	---	---	---	---	
TP316H	S31609	0.04-0.10	2.00	0.040	0.030	0.75 max	11.0-14.0	16.0-18.0	2.00-3.00	---	---	---	---	---	---	---	
TP316L	S31603	0.035	2.00	0.040	0.030	0.75 max	10.0-15.0	16.0-18.0	2.00-3.00	---	---	---	---	---	---	---	
TP316N	S31651	0.08	2.00	0.040	0.030	0.75 max	11.0-14.0	16.0-18.0	2.00-3.00				0.10-0.16	--	---	---	
TP316LN	S31653	0.035	2.00	0.040	0.030	0.75 max	11.0-14.0	16.0-18.0	2.00-3.00	---	---	---	0.10-0.18	---	----	---	
TP317	S31700	0.08	2.00	0.040	0.030	0.75 max	11.0-14.0	18.0-20.0	3.00-4.00	---	---	---	---	---	---	---	
TP317L	S31703	0.035	2.00	0.040	0.030	0.75 max	11.0-15.0	18.0-20.0	3.00-4.00	---	---	---	---	---	---	---	
TP321	S32100	0.08	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	[F]	---	---	---	---	---	---	
TP321H	S32109	0.04-0.10	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	[G]	---	---	---	---	---	---	
TP347	S34700	0.08	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	--	--- [H]	---	---	---	---	---	---	
TP347H	S34709	0.04-0.10	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	--	--- [I]	---	---	---	---	---	---	---
TP347LN	S34751	0.005-0.020	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	---	0.2-0.5[H]	---	0.06-0.10	---	---	---	
TP348	S34800	0.08	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	--- [H]		0.10	---	--	---	---	
TP348H	S34809	0.04-0.10	2.00	0.040	0.030	0.75 max	9.00-13.0	17.0-20.0	---	--- [I]		0.10	---	--	---	---	
TPXM 10	S21900	0.08-1000	8.00-10.00	0.040	0.030	1.00 max	5.50-7.50	19.0-21.5	---	---	---	---	0.15-0.40	---	---	---	
TPXM 11	S21904	0.04-10.00	8.00-10.00	0.040	0.030	1.00 max	5.50-7.50	19.0-21.5	---	---	---	---	0.15-0.40	---	---	---	
TPXM-15	S38100	0.08	2.00	0.030	0.030	1.50-2.50	17.5-18-5	17.0-19.0	---	---	---	---	---	---	---	---	
TPXM-19	S20910	0.060	4.00-6.00	0.040	0.030	1.00 max	11.5-13.5	20.5-3.00	1.50-3.00	---	0.10-0.30	---	0.20-0.40	0.10-0.30	---	---	
TPXM-29	S24000	0.080	11.5-14.5	0.060	0.030	1.00 max	2.25-3.75	17.0-19.0	---	---	--	---	0.20-0.40	---	---	---	
---	S31254	0.020	1.00	0.030	0.010	0.80 max	17.5-18.5	19.5-20.5	6.00-6.50	---	---	---	0.18-0.22	---	0.50-1.00		
---	S30615	0.16-0.24	2.00	0.030	0.030	3.2-4.0	13.5-16.0	17.0-19.5	---	---	---	---	---	---	---	---	
---	S30815	0.05-0.10	0.80	0.040	0.030	1.40-2.00	10.0-12.0	20.0-22.0	---	---	---	---	0.14-0.20	---	---	0.03-0.08	
---	S31050	0.025	2.00	0.020	0.015	0.4	20.5-23.5	24.0-26.0	1.6-2.6	---	---	---	0.09-0.15	---	---	---	
---	S30600	0.018	2.00	0.020	0.020	3.7-4.3	14.0-15.5	17.0-18.5	0.20 max	---	---	---	---	---	0.50 max	---	
---	S31725	0.03	2.00	0.040[J]	0.030	0.75	13.5-17.5	18.0-20.0	4.0-5.0	---	---	---	0.10 max	---	0.75 max	---	
---	S31726	0.03	2.00	0.040[J]	0.030	0.75	13.5-17.5	17.0-20.0	4.0-5.0	---	---	---	0.10-0.20	---	0.75 max	---	
---	S32615	0.07	2.00	0.045	0.030	4.8-6.0	19.0-22.0	16.5-19.5	0.3-1.5	---	---	---	---	---	1.5-2.5	---	
---	S33228	0.04-0.08	1.00	0.020	0.015	0.30 max	31.0-33.0	26.0-28.0	---	---	0.6-1.0	---	---	---	---	0.05-0.10	---
---	S24565	0.03	5.0-7.0	0.030	0.010	1.00max	16.0-18.0	23.0-25.0	4.0-5.0	---	0.1 max		0.04-0.6	---	---	---	---
---	S30415	0.4-0.06	0.80	0.045	0.030	1.00-2.00	9.00-10.0	18.0-19.0	---	---	---	---	0.12-0.16	---	---	0.03-0.08	
---	S32654	0.020	2.00-4.00	0.030	0.005	0.50 max	21.0-23.0	24.0-25.0	7.00-8.00	---	---	---	0.45-0.55	---	0.030-0.60	---	
	S25315	0.04-0.08	2.00	0.045	0.030	0.75	24.0-26.0	24.0-26.0					0.12-0.18			0.03	

New designation established in accordance with Practice E 527 and SAE J 1086.

Maximum, unless otherwise indicated.The method of analysis for nitrogen shall be a matter of agreement between the purchaser and manufacturer.

For welded TP316, TP316N, TP316LN, and TP316H pipe, the nickel range shall be 10.0-14.0 %. For small diameter or thin walls or both, where many drawing passes are required, a carbon maximum of 0.040 % is necessary in grades TP304L and TP316L. Small diameter tubes are defined as those less 0.500 in (12.7mm) in outside diameter and light wall tubes as those less than 0.049 in (1.20 mm) in average wall thickness (1.10 mm) in minimum wall thickness

The titanium content shall be not less than five times the carbon content and not more than 0.70 %. The titanium content shall be not be less than four times the carbon content and not more than 0.60 %. The Columblum plus titanium content shall be not less than ten times carbon content and not more than 1.00 %.

The Columblum plus titanium content shall be not less than eight times carbon content and not more than 1.00 %.

For welded pipe, the phosphorus maximum shall be 0.045 %. Grade S34751 shall have a columblum (Nioblum) plus tantalum content of not less than 15 times the carbon content.

Stancor Tubulars
PIPING SOLUTIONS

MECHANICAL PROPERTIES OF S.S.PIPES

Table-2 Annealing Requirements — A 312/ A 312M

Grade or UNS Designation	Solution Treating Temperature	Cooling Requirements
All Grades not individually listed below	1900°F(1040°C)	rapid[c]
TP321H, TP347H, TP348H		
Cold Rolled	2000°F (1100°C)	
Hot Rolled only	1925°F (1050°C)	
TP304H, TP316H		
Cold Rolled	1900°F (1040°C)	
Hot rolled only	1900°F (1040°C)	
TP309H, TP309HCb, TP310H	1900°F (1040°C)	
TP310HCb		
S30815	1920°F (1050°C)	rapid
S31272	1920°F (1050°C)	rapid
S31254	2100°F (1150°C)	rapid
S24565	2050-2140°F (1120-1170°C)	rapid
S35315	2010°F (1100°C)	rapid
N08367	2010°F (1100°C)	rapid
N08904	2010°F (1100°C)	rapid

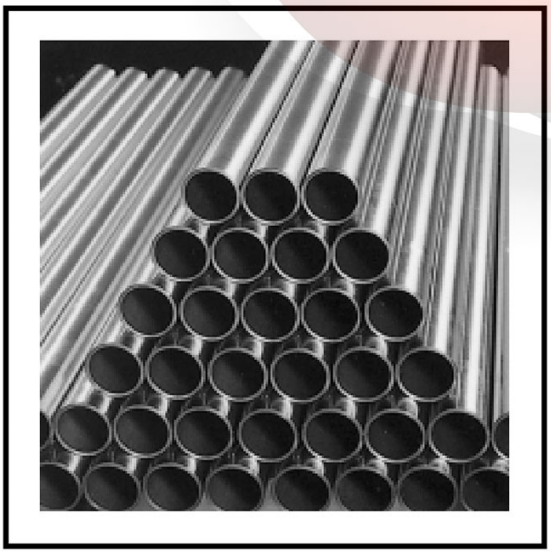


Table-3 Tensile Requirements

Grade	UNS Designation	Tensile Strength, min Ksi (MPa)	Yield Strength, Min Ksi (MPa)
TP304L	S30403	70 (485)	25 (170)
TP316L	S31603	70 (485)	25 (170)
TP304	S30400	75 (515)	30 (205)
TP304H	S30409	75 (515)	30 (205)
TP309Cb	S30940	75 (515)	30 (205)
TP309H	S30909	75 (515)	30 (205)
TP309HCb	S30941	75 (515)	30 (205)
TP309S	S30908	75 (515)	30 (205)
TP310Cb	S31040	75 (515)	30 (205)
TP310H	S31009	75 (515)	30 (205)
TP310HCb	S31041	75 (515)	30 (205)
TP310S	S31008	75 (515)	30 (205)
	S31272	65 (450)	29 (200)
TP316	S31600	75 (515)	30 (2050
TP316H	S31609	75 (515)	30 (205)
TP317	S31700	75 (515)	30 (205)
TP317L	S31703	75 (515)	30 (205)
TP321	S32100		
Welded		75 (515)	30 (205)
Seamless			
≤ 3/8 in.		75 (515)	30 (205)
> 3/8 in.		70 (485)	25 (170)
TP321H	S32109		
Welded		75 (515)	30 (205)
Seamless			
< 3/8 in.		75 (515)	30 (205)
> 3/8 in.		70 (485)	25 (170)
TP347	s34700	75 (515)	30 (205)
TP347H	S3470	75 (515)	30 (205)
TP347LN	S34751	75 (515)	30 (205)
TP348	S34800	75 (515)	30 (205)
TP348H	S34809	75 (515)	30 (205)
TPXM-10	S21900	90 (620)	50 (345)
TPXM-11	S21904	90 (620)	50 (345)
TPXM-15	S38100	75 (515)	30 (205)
TPXM-29	S24000	100 (690)	55 (380)
TPXM-19	S20910	100 (690)	55 (380)
TP304N	S30451	80 (550)	35(240)
TP316N	S31651	80 (550)	35 (240)
TP304LN	S31653	75 (515)	30 (205)
---	S31254	94 (650)	44 (300)
---	S30615	90 (620)	40 (275)
---	S30815	87 (600)	45 (310)
---	S30600	78 (540)	35 (240)
---	S31725	75 (515)	30 (205)
---	S31726	80 (550)	35 (240)
---	S31050		
T<0.25 IN.		84 (580)	39 (270)
T>0.25 in.		78 (540)	37 (255)
---	S32615	80 (550)	32 (220)
---	S33228	73 (500)	27 (185)
---	S24565	115 (795)	60 (415)
---	S30415	87 (600)	42 (290)
---	S32654	109 (750)	62 (430)
---	S35315	94 (650)	39 (270)
---	N08367:		
t<0.187		100 (690)	45 (310)
t>0.187		95 (655	45 (310)
---	N08904	71(490)	31(215)

Elongation in 2 in or 50 mm (or 4D), min,% Longitudinal Transverse
All Grades except S 31050 and S 32615 35 25 S32615, S31050 25 --NO8367
Prior to the inssuance of A 312/A 312 M- 88a, the tensile and yield strength values were 76 (515) and 30 (205) respectively, for nominal wall greater than 3/8 in. (9.5 mm).

Stancor Tubulars
PIPING SOLUTIONS

STAINLESS STEEL PIPES & TUBES- CHEMICAL COMPOSITION & MECHANICAL PROPERTIES

					Chemical Composition %									Tensile Test			
ASTM Specifications	Grade	Scope	Production Process. Steel	Production Process. Tube	C	Mn	P	S	Si	Ni	Cr	Mo	Others	psi min	Kg/mm²	psi	Kg/mm²
A 268-62 T Seamless and Welded Ferritic Stainless Steel tubing for General Service	TP 405	General Corrosion resisting and high temperature service	Electric furnace	Seam-less or welded	0.08 max	1.00 max	0.040 max	0.030 max	0.75 max	0.50 max	11.5~13.5	- -	AlO.10 0.30	60000 min	42 min	30000 min	21 min
	TP 410				0.15	1.00 max	0.040 max	0.030 max	0.75 max	0.50 max	11.5~13.5	- -	-	60000 min			
	TP 430				0.12 max	1.00 max	0.040 max	0.030 max	0.75 max	0.50 max	16.0~18.0~	- -	- -	60000		35000 min	25 min
	TP 443				0.20 max	1.00 max	0.040 max	0.030 max	0.75 max	0.50 max	18.0~23.0~	-	Cu 0.90-1.25	70000	47 min	40000	26 min
	TP 446				0.20 max	1.50 max	0.040 max	0.030 max	0.75 max	0.50 max	23.0~30.0~	- -	No 10-0.25	min 70000		min	
	TP 329				0.20 max	1.00 max	0.040 max	0.030 max	0.76 max	2.50 5.00	23.0~28.0	1.0-2.0	-	75000 min	53 min	45000 min	32 min
A 269-62 T Seamless and Welded Austenitic Stainless Steel tubing for General Service	TP 304	General Corrosion resisting and high temperature service	Electric furnace	Seam-less or welded	0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	8.0-11.0	18.0 20.0	-	-				
	TP 304L				0.035 max	2.00 max	0.040 max	0.030 max	0.75 max	8.00~13.00	18.00~20.00	-	-				
	TP 316				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	11.0~14.0~	16.0~18.0	2.0-3.00	- -				
	TP 316L				0.035 max	2.00 max	0.040 max	0.030 max	0.75 max	10.00 15.00	16.00~18.00	2.00 3.00	-				
	TP 317				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	11.0~14.0	18.0~20.0	3.0~4.00	-				
	TP 321				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	9.0~13.0	17.0~20.0	-	Ti 5 x C-0.60				
	TP 347				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	9.0~13.0	17.0~20.0	-	(Co+To)10 xC-1.0				
	TP 348				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	9.0~13.0	17.0~20.00	-					
	TP 304				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	8.0~11.0	18-0~20.2		(Co+To) 10 Ta 0.10 max				
A 269-62 T Seamless and Austenitic Chromium-Nickel Steel Tubes for Refinery Service	TP 304H	General Corrosion resisting and high temperature service	Electric furnace	Seam-less or welded	0.04-0.10	2.00 max	0.040 max	0.030 max	0.75 max	8.0~11.0	18.0~20.0	-	-	75000 min	53 min	30000 min	21 min
	TP 321				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	9.0~13.0	17.0 20.0	-	Ti 5xC-0.60				
	TP 321H				0.04-0.10	2.00 max	0.040 max	0.030 max	0.75 max	9.0~13.0	17.0~20.0	-	Ti 4 x C 0.60				
	TP 347				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	9.0~13.0	17.0~20.0	- -	(Co+To) 8 XC-1.0				
	TP 347H				0.04-0.10	2.00 max	0.040 max	0.030 max	0.75 max	9.0~13.0	17.0~20.0	-	(Co+To) 10 XC-1.0				
A 334-62 T Seamless hand Welded Carbon and Alloy-Steel I Tubes for low Tempera-ture Service (1)	0	Carbon and alloy steel tubes for low temperature service	Open hearth or Electric furnace	Seamless or automatic welding process with no addition of filler metal in the welding operation	0.25 max	0.64-1.06	0.050 max	0.060 max	-	-	-	-	-	55000 min	39 min	30000 min	21 min
	3				0.19 max	0.31-0.64	0.050 max	0.050 max	0.18~0.37	3.18~3.82	-	-	-	55000 min	39 min	30000 min	21 min
	5				0.19 max	0.20-0.64	0.050 max	0.050 max	0.18~0.37	4.68~5.32	-	-	-	65000 min	46 min	35000 min	25 min

Stancor Tubulars
PIPING SOLUTIONS

STAINLESS STEEL PIPES & TUBES- CHEMICAL COMPOSITION & MECHANICAL PROPERTIES

Elongation (in 2 in %)		Flattening Test	Flaring Test		Hardness Test		Hydrostatic Test	Impact Test			
								Impact Temp.	Impact Requirement		
5/16 in & over in wall thickness	Standard round 2 in gauge length test specimen		d/D	d1 (min)	Brinel T T>0.200 (5.0mm)	Rockwell 0.200 in (15.0 mm)> t > 0.65 (1.7 mm)	Test Pressure psi (kg/cm²)	Min. impact test temp. deg-faht	Size of specimen mm	Min. average notched bar impact value of each set of three specimen ft-1b	Min. notched bar impact value of one specimen only of a set ft - 1b
20 min				1.10d	207 max	B 95 max	1000 (70) min 30000 (2110) x 1/D max	-	-	-	-
					207 max	B 95 max					
					190 max	B 90 max					
					207 max	B 95 max					
					207 max	B 95 max					
18 min	-				241 max	B 100max					
10 min	-										
			0.9	1.21 d							
			0.8	1.22 d							
			0.7	1.25 d							
			0.6	1.30 d	200 max	B 90 max	1000 (70) min 30000(2110) x 1/D max	-	-	-	-
			0.5	1.39 d							
			0.4	1.51 d							
			0.3	1.68 d							
			0.9	1.21 d							
			0.8	1.22 d							
			0.7	1.25 d	200 max		30000(2110) x 1/D d 3 IN (76.2 MM) 2500 (176) d 3 IN (76.2 MM) 4500 (316) MAX				
35 min			0.6	1.30 d							
			0.5	1.39 d							
			0.4	1.51 d							
			0.3	1.68 d							
35 min	28 min	Medium carbon steel $H = \frac{1.07\ t}{0.07 + f/D}$ Ferritic alloy steel $H = \frac{1.08\ t}{0.08 + t/D}$ Austenitic steel and 10W carbon steel $H = \frac{1.09f}{0.09+f/D}$	0.9	Carbon moly bodenum and austenitic steel: 1.21 d Other ferritic alloy steel: 1.15 d	163 max	B 85 max		- 50			
			0.8	1.22 d 1.17 d							
			0.7	1.25 d 1.19 d				- 150	10 by 10	15	10
			0.6	1.30 d 1.23 d	190 max	B 90 max	13200 (2250) x 1/D D 1 in (25.4 mm) 1000 (70) D 1 1/2 in (38.1 mm) 1500 (105) S 2 in (50.8) 2000 (141) D 3 (76.2 mm) 2500 (176) D 5 in (127.0mm) 3500 (246) D 5 in (127.0 mm) 4500 (316) MAX		10 by 7.5	12.5	9.5
			0.5	1.39 d 1.28 d	207 max	B 95 max			10 by 5	10	7.0
30 min	22 min		0.4	1.51 d 1.38 d				- 150	10 by 2.5	5	3.5
			0.3	1.68 d 1.50 d							

Stancor Tubulars
PIPING SOLUTIONS

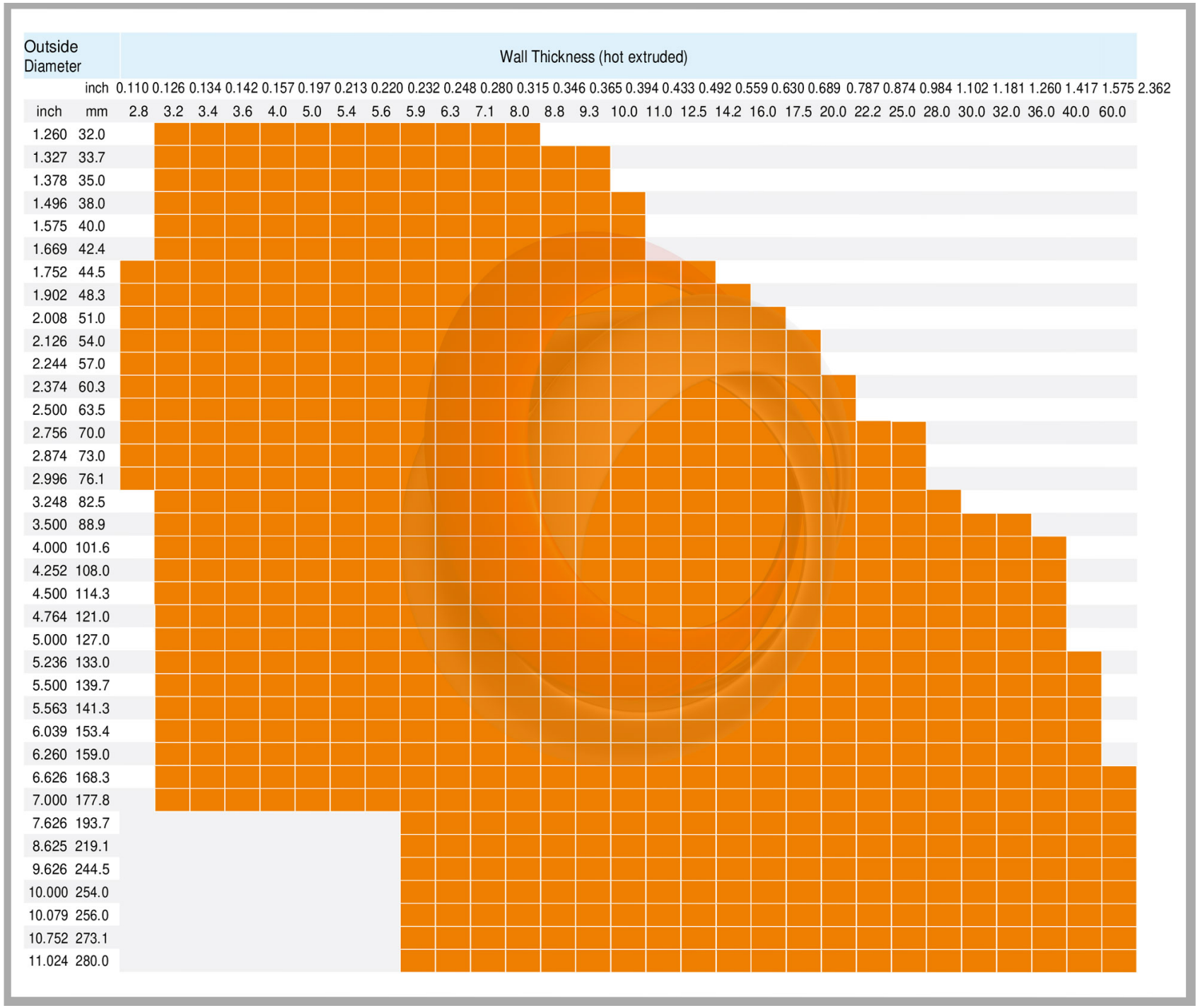
STAINLESS STEEL PIPES & TUBES- CHEMICAL COMPOSITION & MECHANICAL PROPERTIES

ASTM Specification	Grade		Scope	Production Process		Chemical Composition %								
				Steel	Tube	C	Mn	P	S	Si	Cr	Mo	Ni	Others
A 209-62T Seamless Molybdenum Alloy Steel Boiler and Superheater Tubes	T 1		Boiler and superheater tubes.	Open-hearth or electric furnace	Seamless (Hot-finished or cold drawn, as specified)	0.10~0.20	0.30~0.80	0.025~max	0.025 max	0.10~0.50	-	0.44~0.65	- -	- -
	T 1a					0.15~0.25	0.30~0.80	0.025 max	0.025 max	0.10~0.50	- -	0.44~0.65	-	-
	T 1b		Superheater tubes.			0.14 max	0.30~0.80	0.025 max	0.025 max	0.10~0.50	-	0.44~0.65	- -	- -
A 210-62T Seamless Medium Carbon Steel Boiler and Superheater Tubes			Boiler tubes and boiler flues (safe ends, arch and stay tubes and superheater tubes.	Open-hearth or electric furnace	Seamless (Hot-finished or cold drawn, as specified)	0.27 max	0.93 max	0.035 max	0.035 max	0.10 min	-	-	-	-
A 213-62T Seamless Medium And Austenitic Alloy steel Boiler, Superheater and Heat-Exchanger Tubes (1)	Ferritic steel.	T 2	Boiler and Superheater tubes and heat exchanger tubes	Electric-furnace or other processes approved by the purchaser, except that Grades. T12 and T 17 may be made by the open-hearth process	Seamless (Hot-finished or cold drawn, as specified)	0.10~0.20	0.30~0.61	0.025 max	0.025 max	0.10~0.30	0.50~0.81	0.44~0.65	-	-
		T 3b				0.15 max	0.30~0.60	0.030 max	0.030 max	0.50 max	1.65~6.00	0.44 0.65	-	-
		T 5				0.15 max	0.30~0.60	0.025 max	0.025 max	0.50 max	4.00~6.00	0.45~0.65	-	-
		T 5b				0.15 max	0.30~0.60	0.025 max	0.025 max	1.00~2.00	4.00~6.00	0.45~0.65	-	-
		T 5c				0.12 max	0.30~0.60	0.025 max	0.025 max	0.50 max	4.00~6.00	0.45~0.65	-	Ti 4 x C -0.78
		T 7				0.15 max	0.30~0.60	0.03 max	0.03 max	0.50~1.00	6.00~8.00	0.45~0.65	-	-
		T 9				0.15 max	0.30~0.60	0.025 max	0.025 max	0.25~1.00	8.00~10.00	0.90 1.10	-	-
		T 11				0.15 max	0.30~0.60	0.025 max	0.025 max	0.50~1.00	1.00~1.50	0.44~0.65	-	-
		T 12				0.15 max	0.30~0.61	0.025 max	0.025 max	0.50 nax	0.80~1.25	0.44~0.65	-	-
		T 17				0.15~0.25	0.30~0.61	0.025 max	0.025 max	0.15~0.35	0.80~1.25	-	-	Ve 0.15-min
		T 21				0.15 max	0.30~0.60	0.025 max	0.025 max	0.50 max	2.65~3.35	0.80~1.06	-	-
		TP 22				0.15 max	0.30~0.60	0.025 max	0.025 max	0.50 max	1.90~2.60	0.87~1.13	-	-
	Austenitic Steel	TP 304				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	18.0~20.0	-	8.00~11.0	
		TP 304H				0.04 0.10	2.00 max	0.040 max	0.030 max	0.75 max	18.0~20.0	-	8.00~11.0	-
		TP 304L				0.035 max	2.00 max	0.040 max	0.030 max	0.75 max	18.0~20.0	-	8.00~13.0	-
		TP 310				0.15 max	2.00 max	0.040 max	0.030 max	0.75 max	24.0~26.0	-	19.0~22.0	
		TP 316				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	16.0~18.0	2.00~3.00	11.0~14.0	-
		TP 316H				0.04~0.10	2.00 max	0.040 max	0.030 max	0.75 max	16.0~18.0	2.00~3.00	11.0~14.0	-
		TP 316L				0.035 max	2.00 max	0.040 max	0.030 max	0.75 max	16.0~18.0	2.00~3.00	10.0~15.0	-
		TP 321				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	17.0~20.0	-	9.0~13.0	Ti 5 x C -0.60
		TP 321H				0.04~0.10	2.00 max	0.040 max	0.030 max	0.75 max	17.0~20.0	-	9.0~13.0	Ti 5 x C -0.60
		TP 347				0.08 max	2.00 max	0.040 max	0.030 max	0.75 max	17.0 20.0	-	9.0~13.0	(Co+Ta) 10 XC-1.00
		TP 347H				0.04~0.10	2.00 max	0.040 max	0.030 max	0.75 max	17.0~20.0	-	9.0~13.0	(Co +Ta) 8 XC-1.00
		TP 348				0.08 max	2.00 max	0.40 max	0.030 max	0.75 max	17.0~20.0	-	9.0~13.0	(Co+Ta)10 XC-1.00 TA0.10max
		TP 348H				0.04 0.10	2.00 max	0.040 max	0.030 max	0.75 max	17.0~20.0	-	9.0~13.0	(Co+Ta)8 XC-1.00 Ta0.10max

Stancor Tubulars
PIPING SOLUTIONS

STAINLESS STEEL PIPES & TUBES- CHEMICAL COMPOSITION & MECHANICAL PROPERTIES

Tension Test						Flattening Test	Elongation Test				Flaring Test		Hardness Test		Hydrostatic Test
Tensile Strengh		Yield Point		Elongation (in 2)%									Brinell t≥0.200 in (5.0 mm)	Rockwell 0.200 in (0.0mm) ≥ t≤0.065(1.7mm)	
Psi	Kg/ mm2	Psi	Kg/ mm2	5/6 in and over in wall thickness	Standard round 2 in gauge length test speciman		D ≤3/4 in(19.0 mm)	D ≤2 1/2 in(63.5 mm)	D≤3 3/4 in(95.2 mm)	D≥3 3 3/4 in(95.2 mm)	d/D	d¹ (min)	Hot rolled tubes / Cold drawn tubes	Hot rolled tubes / Cold drawn tubes	Test Pressure psi (Kg/cm²)
55000 min 53000 min 60000 min	39 min 42 min 37 min	30000 min 28000 min 32000 min	21 min 22 min 20 min	30 min 30 min 30 min	-	$H=\frac{1.081}{0.08+1/D}$					0.9 0.8 0.7 0.6 0.5 0.4 0.3	1.21 d 1.22 d 1.25 d 1.30 d 1.39 d 1.51 d 1.68 d	137 max 143 max 137 max	B 77max B 79 max B 77 max	32000 (2250)xt/D D< t in (25.4 mm) 1000 (70) D< 11/2 in (25.4 mm) 1500 (105) D< 2 in (50.8 mm) 2000 (141) D< 3 in (76.2 mm) 2500 (176) D< 5 in (127.0 mm) 3500 (246) D< 5 in (127.0 mm) 4500 (316)
60000 min	42 min	37000 min	26 min	25 min	-	$H=\frac{1.071}{0.07+1/D}$					0.9 0.8 0.7 0.6 0.5 0.4 0.3	1.21 d 1.22 d 1.25 d 1.30 d 1.39 d 1.51 d 1.68 d	143 max	B77 max	32000 (2250)xt/D D< t in (25.4 mm) 1000 (70) D< 11/2 in (38.1 mm) 1500 (105) D< 2 in (50.8 mm) 2000 (141) D< 3 in (76.2 mm) 2500 (176) D< 5 in (127.0 mm) 3500 (246) D< 5 in (127.0 mm) 4500 (316)
											0.9 0.8 0.7 0.6 0.5 0.4 0.3	1.15d 1.17d 1.19d 1.23d 1.28d 1.38d 1.50d	163 max 163 max 163 max 163 max 179 max 163 max 179 max 179 max 163 max 163 max 163 max 163 max 163 max	8.79 max B 85 max B 85 max B 85 max B 89 max B 85 max B 89 max B 89 max B 85 max B 85 max B 85 max B 85 max B 85 max	
60000 min	42 min	30000 min	21 min	30 min	-	$H=\frac{1.081}{0.08+1/D}$									
75000 min 70000 min	53 min 49 min	30000 min 25000 min	21 min 18 min								0.9	1.21d	190 max	B 90 max	
											0.8	1.22d			
75000 min	53 min	30000 min	21 min												
70000 min	49 min	25000 min	18 min	35 min							0.7	1.25d			
						$H=\frac{1.091}{0.09=1D}$					0.6	1.30d			
75000 min	53 min	30000 min	21 min								0.5	1.39d			
											0.4	1.51d			
											0.3	1.68d			



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