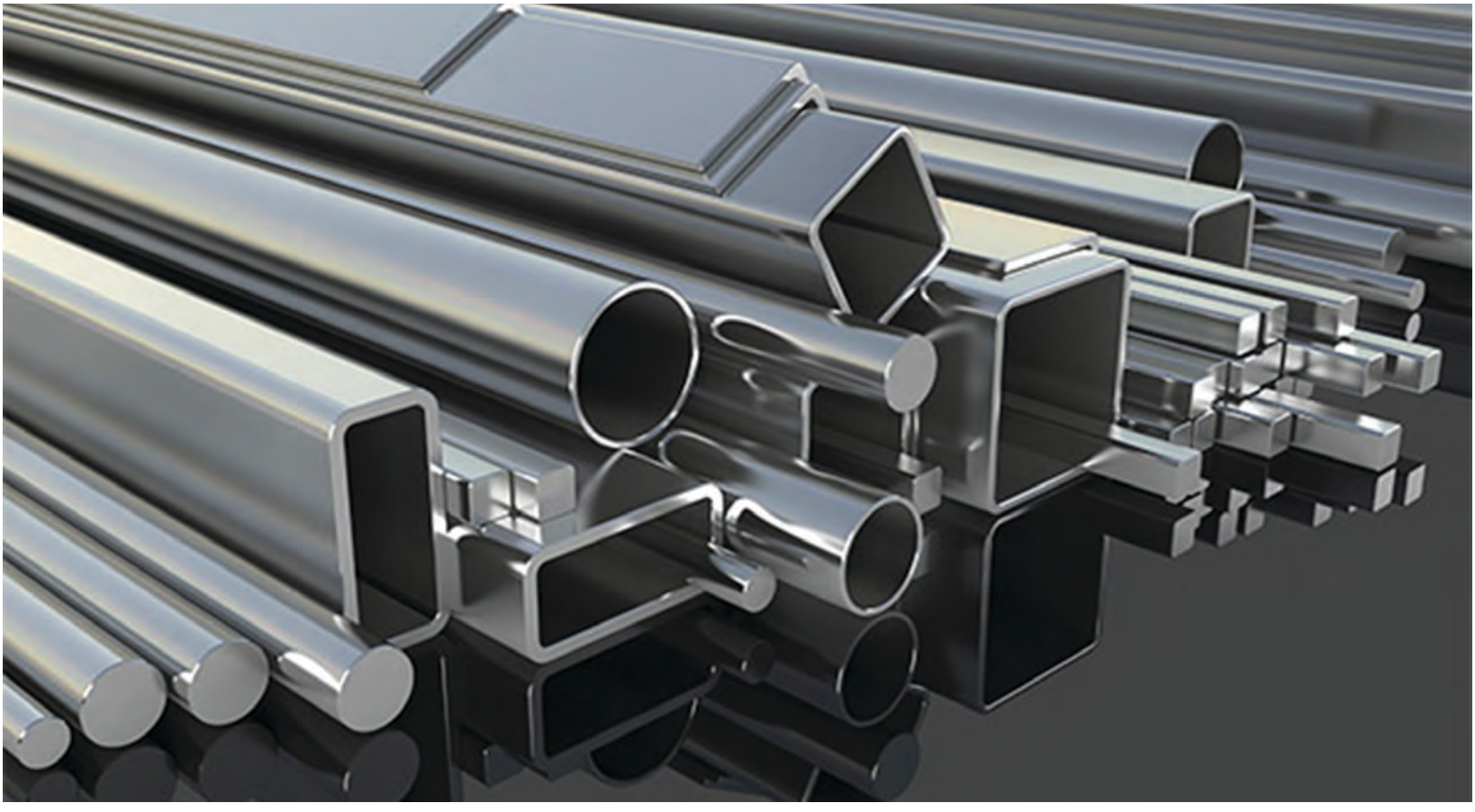
JSL
JINDAL STAINLESS
Shaping a Stainless World

PSSR
GROUP OF COMPANIES



ISO 9001 : 2015
Registered QMS

NSIC-CRISIL
SE 2B

Committed to Innovation Quality and Service

Chairman's Message

Dear Industry Colleagues,

In the era of technology, the demand and expectations of the customers are at par level, and not only the business units but also the traders want to give best out the best Products to the customer.

We at PSSR, Continuously serving our peers the best material of world-class furnish of Stainless Steel products with competitive prices and with timely logistics practices.

We at PSSR are always committed to Innovation; Quality & Services & That is the most important factors in the current era of technology.

Our services are not only associated with the financial goal but also to make awareness about Stainless Steel. The material of our group is of the quality which is of world class furnish and used by biggest manufacturers across the globe.

We take this opportunity to serve you as leading manufacturer of Stainless Steel Pipes & tubes.

We are looking forward to making our group on top of the sky in the field of Stainless Steel and assured to provide the best product to the end customer.

Raj Kumar Gupta

Introduction

PSSR Group Of Companies is an industrial tycoon with a leading presence in the stainless steel pipe industry. The group produces economical and efficient stainless steel pipe through modern and efficient technology. Our business operations are on pan India basis and on a global scale.

Our growth has been backed by the excellence of our people, value driven business operations, customer centricity, adoption of one of the best safety practices in the stainless steel industry and a commitment for social responsibility.

VISION

Mr. Rajkumar Gupta, Our Chairman, who understood that there are major factors that influences the business growth, these are Innovative ideas to do business, services towards customers & last but not least the quality of Products/services as our tagline indicates.

INFRASTRUCTURE

The Group takes pride in our robust infrastructure and considers it our backbone. We have an enormous manufacturing unit. It is outfitted with the latest and most advanced machinery that helps us to give the best material for our customers with the tag of international standards. We have a wide range of best machinery that produces best quality finished products for end user.

CLIENTELES

PSSR have grown into a highly established brand and serve a long list of customers from domestic as well as international markets. Our clients come from different industrial backgrounds, which include:

- Automobile Ancillaries
- Heat Exchanger Manufacture
- Rail Coach Ancillaries
- Industrial Equipments Manufacture Pipe and Tube Manufacture Hardware Manufacture

- Decorative Furniture and Railing Manufacture
- General Engineering Manufacture

QUALITY ASSURANCE

We are committed to elevate the standards of our products and services to offer customer satisfaction through excellence in quality.

At PSSR the best international practices are followed and bench marking against these to have systems in Quality, which are comparable to the best in the world.

The quality checks are done on the parent material to check its worth and also on finished tubes to ensure that the product is up to the mark.

ISO 9001-2015 COMPANY

Because of our excellent services and quality provided all these years to our customers, we have the privilege of being recognized as an ISO 9001-2015 certified company for QUALITY MANAGEMENT SYSTEM STANDARD.

CRISIL RATED COMPANY

PSSR Group has habit to follow international practice that why. Our company is rated by world renowned rating agency. CRISIL has been awarded PS RAJ STEEL PRIVATE LIMITED a rating of SE-2B.This rating indicates “High Performance Capability and Moderate Financial Strength”

NSIC REGISTERED COMPANY

PS RAJ STEEL PRIVATE LIMITED is registered under “THE NATIONAL SMALL INDUSTRIES CORPORATION LIMITED”. Our manufacturing unit has the privilege of being recognized as at par with those who registered directly with DGS & D.

APPROVED VENDOR OF RAILWAYS & DEFENSE

Apart from getting certification, we are also registered at railway & defense factories.

Infrastructure

Research and Development

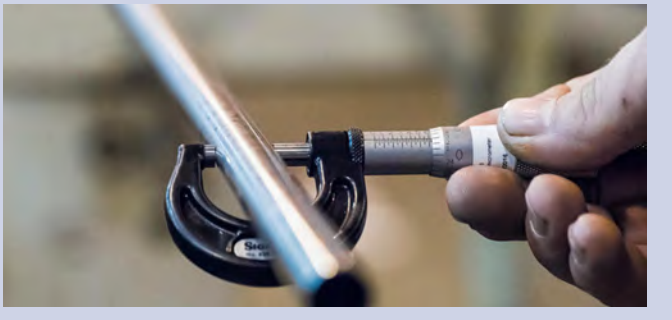
The R & D division plays a pivotal role in retaining and consolidating the company's leadership position in the Stainless Steel industry. This is achieved through continuous up-gradation of quality, processes, and services and through product innovation to develop new products at competitive costs.

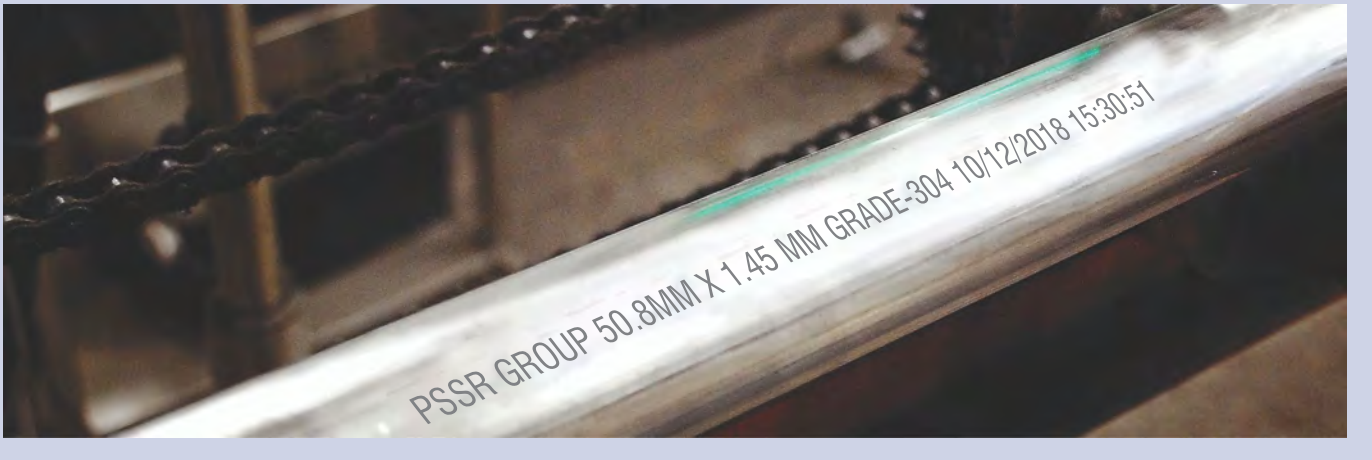
We have a separate Research and development team to ensure the best quality products as per customer's requirement.

WHY US??

We have a range of following factors that makes our brand on the top of the stainless steel Pipe manufacturing Industry.

- Best Quality Raw material
- Upgraded machinery with latest technology
- International Quality Standards
- Best Logistics Practices

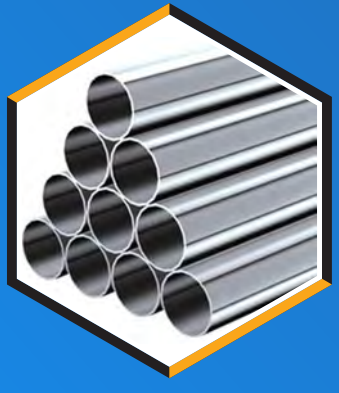




Product Range

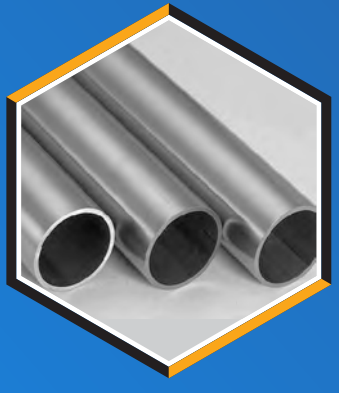
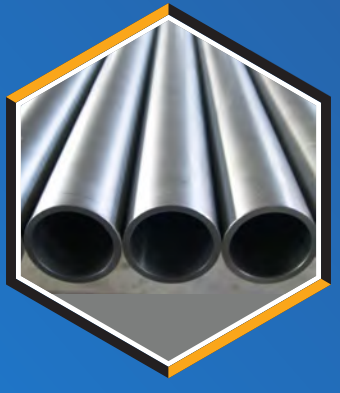
Stainless Steel (OD Pipes)

Size	:	½" OD to 5" OD
Thickness	:	0.80 mm to 4.0 mm
Grade	:	JT, J4, 304, 304 L, 316, 316 L
Finish	:	2B, Matt, Mirror

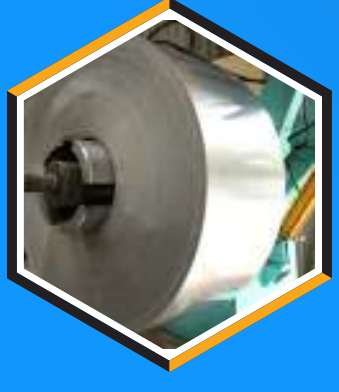
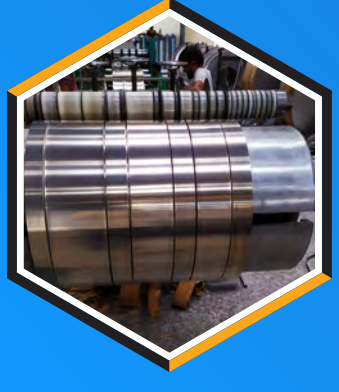
Stainless Steel (NB Pipes)

Size	:	½" NB to 14" NB
Thickness	:	1.2 mm to 5.0 mm
Grade	:	JT, J4, 304, 304 L, 316, 316 L
Finish	:	2B, No.1, Matt, Mirror

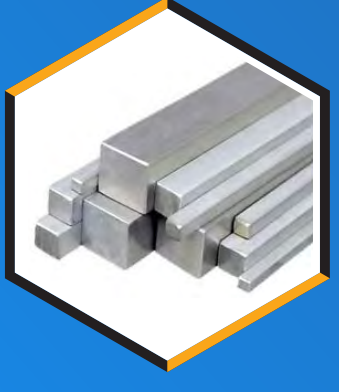
Stainless Steel Coils & Strips

Size	:	25.00 mm to 1500 mm
Thickness	:	0.50 mm to 5.0 mm
Grade	:	JT, J4, 304, 316
Finish	:	2B, No.1, No.4 (PVC), No.8 (PVC)

Stainless Steel Round/Square Bar

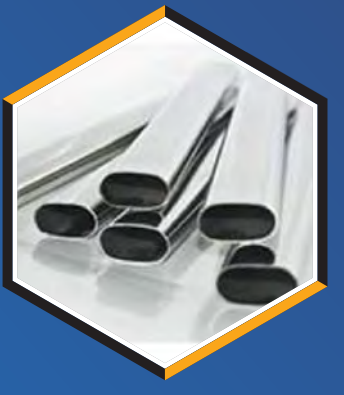
Round	:	5.0 mm to 150.00 mm
Square	:	5.00 mm to 50.00 mm
Grade	:	201, 304, 316
Finish	:	Black, Polish Bright, Export Bright

PSSR
GROUP OF COMPANIES

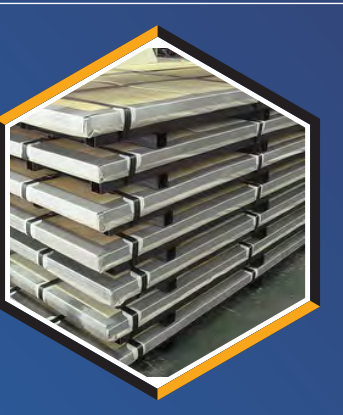
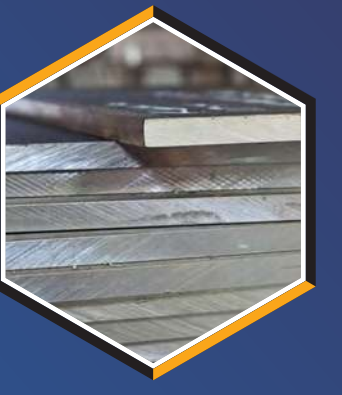
Stainless Steel (Section Pipes)

Shape	:	Square, Rectangular, Oval, D Shape
Thickness	:	0.80 mm to 4.0 mm
Grade	:	JT, J4, 304, 304 L, 316, 316 L
Finish	:	2B, Matt, Mirror

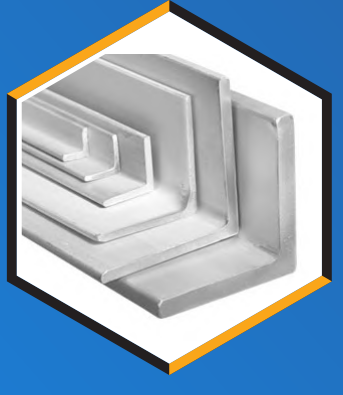
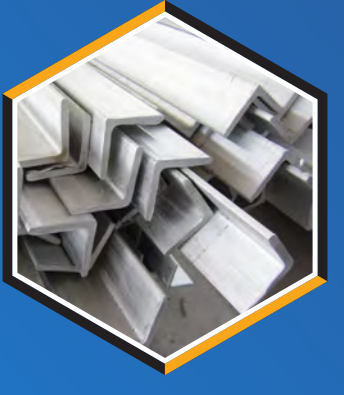
Stainless Steel Sheets & Plates

Size	:	1000 mm to 1500 mm
Thickness	:	0.80 mm to 12.0 mm
Grade	:	JT, J4, 304, 304 L, 316, 316 L
Finish	:	2B, No.1, No.4 (PVC), No.8 (PVC)

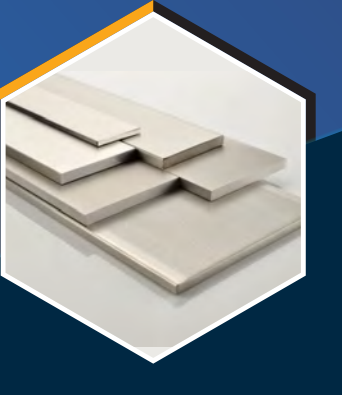
Stainless Steel Angles

Size	:	20 mm x 20 mm to 100 mm x100 mm
Thickness	:	3.00 mm to 8.00 mm
Grade	:	201, 304, 316
Finish	:	No.1

Stainless Steel Flat

Size	:	12 mm to 150.00 mm
Thickness	:	3.00 mm to 12.00 mm
Grade	:	201, 304
Finish	:	2B, No.1

Applications

Decorative Furnishing

General Engineering

Food & Dairy Processing

Architectural Application

Automobile

Water Treatment

Sugar Industry

Hardware Industry

Power Plant

Stainless Steel Furniture

General Pipe Fitting

Structural SS Work

Specifications

PSSR GROUP OF COMPANIES

ASTM SPECIFICATION FOR STAINLESS STEEL TUBES / PIPES

Specification	Allowable Outside Diameters Variations in mm			Allowable Wall Thickness Tolerances in mm		Exact Length		Testing
	Diameters	Over	Under	Over	Under	Over	Under	
ASTM A-213 Seamless Boiler, Super heater and Heat Exchanger tubes	upto 25.4 25.4 to 38.1 incl. 38.1 to 50.8 excl. 50.8 to 63.5 excl. 63.5 to 76.2 excl. 76.2 to 101.6 incl.	0.10 0.15 0.20 0.25 0.30 0.38	0.10 0.15 0.20 0.25 0.30 0.38	+20 +20 +22 +22 +22 +22	-0 -0 -0 -0 -0 -0	3.17 3.17 3.17 3.76 4.76 4.76	0 0 0 0 0 0	Tension Test Flattening Test Flare Test Hardness Test 100% Hydrostatic Test Refer to ASTM A-450
ASTM A-249 Welded Boiler Super heater heat Exchanger and Condenser Tubes	upto 25.4 25.4 to 38.1 incl. 38.1 to 50.8 excl. 50.8 to 63.5 excl. 63.5 to 76.2 excl. 76.2 to 101.6 incl.	0.10 0.15 0.20 0.25 0.30 0.38	0.10 0.15 0.20 0.25 0.30 0.38	+10 +10 +10 +10 +10 +10	-10 -10 -10 -10 -10 -10 Minimum Wall +18% -0 available on request	3.17 3.17 3.17 4.76 4.76 4.76	0 0 0 0 0 0	Tension Test Flattening Test Flange Test Reverse Bend Test Hardness Test 100% Hydrostatic Test Refer to ASTM A-450 when ever applicable
ASTM A-269 Seamless & Welded Tubes General Services	upto 12.7 12.7 to 38.1 excl. 38.1 to 88.9 excl. 88.9 to 139.7 excl.	0.13 0.13 0.25 0.38	0.13 0.13 0.25 0.38	+15 +10 +10 +10	-15 -10 -10 -10	3.2 3.2 4.8 4.8	0 0 0 0	Flare Test (Seamless only) Flange Test (Welded only) Reverse Flattening Test (Welded only) Hardness Test 100% Hydrostatic Test
ASTM A-270 Seamless and Welded Austenitic Stainless Steel Sanitary Tubing	25.4 38.1 50.8 63.5 76.2 101.6	0.05 0.05 0.05 0.05 0.08 0.08	0.20 0.20 0.28 0.28 0.30 0.38	+12.5 +12.5 +12.5 +12.5 +12.5 +12.5	-12.5 -12.5 -12.5 -12.5 -12.5 -12.5	3.2 3.2 3.2 3.2 3.2 3.2	0 0 0 0 0 0	Reverse Flattening test 100% Hydrostatic Test External Polish on all tubes Refer to ASTM A-270
ASTM A-312 Seamless & Welded pipes	13.7 to 48.3 incl. 48.3 to 114.3 incl. 114.3 to 220 incl.	0.40 0.79 1.60	0.79 0.79 0.79	Minimum Wall 12.5% under normal wall Specified		6.4 6.4 6.4	0 0 0 (Normally Random Lengths Ordered)	Tension Test Flattening Test 100% Hydrostatic Test Refer to ASTM A-530

FORMULA	
1.	Weight of SS Sheet, Plate Length × Width × Thickness × .000008 = Weight in Kg.
2.	Weight of SS Pipes & Tubes (in Kg) OD - Thick × Thick × .00756 = Weight Per Ft.
3.	Weight of SS Round (in Kg.) Diameter × Diameter × .0019 = Weight per ft.
4.	Weight of SS Hex (in Kg.) Diameter × Diameter × .0021 = Weight per ft.
5.	Weight of SS Square (in Kg.) Diameter × Diameter × .0025 = Weight per ft.
6.	Weight of SS Circle (in Kg.) Diameter × Diameter × Thickness + 3 = Weight per nos.
7.	Weight of SS Flat (in kg.) Width × Thickness × .0024 = Weight per ft.

PSSR
GROUP OF COMPANIES

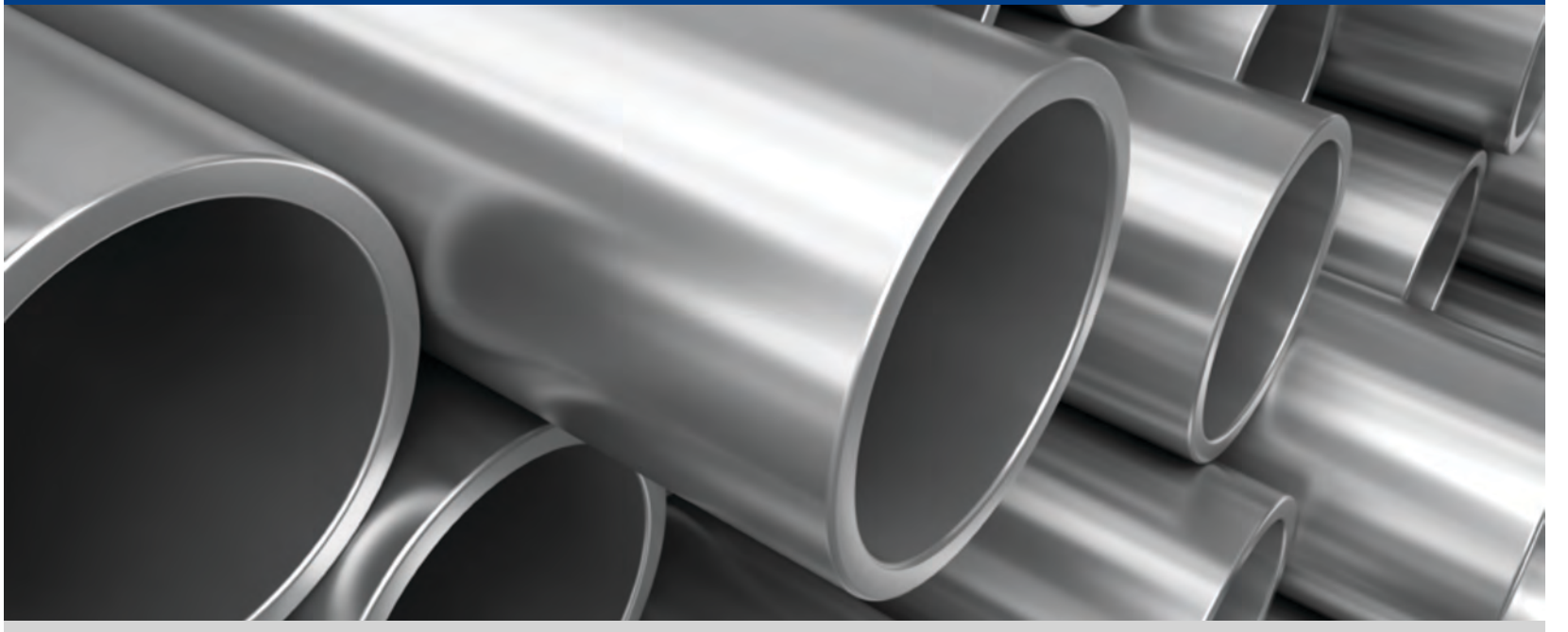
Mechnical Properties						Comparison of Indian / Prop. (JSL) Grades with Various International Standards					
Grade	Tensile Strength Mpa (Min.)	Yeild Strength Mpa (Min.)	% Elongation (Min.)	Hardness BHN (Max.)	Hardness RB (Max.)	INDIA / IS Letter Symbol	INDIA / IS Numerical Symbol (ISS)	UNS Designation	Germany / DIN	JAPAN / JIS	USSR / GOST
Austenitic											
301	515	205	40	217	95	X10Cr17Ni7	301	S30100	X12CrNi177	SUS301	
304	515	205	40	201	92	X04Cr19Ni9	304SI	S30400	X5CrNi1810	304	08Ch18N10
						X04Cr19Ni10	/304S2				
304H	515	205	40	201	92			S30409			
304L	485	170	40	201	92			S30403	X2CrNi1911	SUS304L	03Ch18N11
									G-X2CrNiN189	SCS19	
304LN	515	205	40	201	92			S30453	X2CrNiN1810	SUS304LN	
309	515	205	40	217	95	X15Cr24Ni13	309		X15CrNiSi2012	SUH309	20Ch20NS2
309S	515	205	40	217	95			S30908	X7CrNi2314	SUS309S	
310	515	205	40	217	95	X20Cr25Ni20	310		X15CrNiSi2520	SUH310	20Ch25N20S2
310S	515	205	40	217	95			S31008	X12CrNi2521	SUS310S	20Ch23N18
316	515	205	40	217	95	X04Cr17Ni12Mo2	316	S31600	X5CrNiMo17122	SUS316	
316L	485	170	40	217	95	X02Cr17Ni12Mo2	316L	S31603	X2CrNiMO18143	SUS316L	3Ch17N14M3
										SCS16	3Ch16N15M3
316LN	515	205	40	217	95			S31653	X2CrNiMoN17133	SUS316LN	
316Ti	515	205	40	217	95	X04Cr17Ni12Mo2Ti	S31635	S316Ti	X6CrNiMoTi17122		10Ch17N13M2T
317	515	205	40	217	95		S31700		X5CrNiMo17133	SUS317	
317L	515	205	40	217	95		S31703		X2CrNiMo18164	SUS317L	
317LN	550	240	40	217	95		S31753				
321	515	205	40	217	95	X04Cr18Ni10Ti	321	S32100	X6CrNiTi1810	SUS321	08Ch18N10T
347	515	205	40	201	92	X04Cr18Ni10Nb	347	S34700	X6CrNiNb1810	SUS347	08Ch18N12B
Ferritic + Martensitic											
409	380	205	20	179	88			S40900	X6CrTi12		
409RC	350	170	30	179	88						
409M**	450	275	20	187	90						
410	450	205	20	217	96	X12Cr12	410	S41000	X10Cr13	SUS410	
410S	415	205	22	183	89			S41008			
Ferritic											
405	415	170	20	179	88	X04Cr12	405	S40500	X6CrAl13	SUS405	
430	415	205	22	183	89	x07cr17	430	S43000	X6Cr17	SUS430	
430Ti	360	175	27	179	88	X6CrTi17		SUS430LX			
436	450	240	22	89				S43600			
Martensitic											
420	690		15	217	96	X20Cr13	420 S1	S42000	X20Cr13	SUS420JI	
						X30Cr13	420 S2				
						X40Cr13	420 S3				
JBS											
Low Nickel Austenitic											
JSL	550	205	40	217	95						
J3	600	250	40	217	95						
J4	700	350	40	217	95						

Chemical Properties												
Grade	USA-Canada/ AISI-ASTM-ASME	% C (Max)	% Mn (Max)	% P (Max)	% S (Max)	% Si (Max)	% Cr	% Ni	% Mo	% N (Max)	% Cu (Max)	
AUSTENITIC												
301	301	0.15	2.00	0.045	0.030	1.00	16.00 - 18.00	6.00 - 8.00	-	0.10	-	-
304	304	0.08	2.00	0.045	0.030	0.75	18.00 - 20.00	8.00 - 10.50	-	0.10	-	-
304H	304H	0.04 - 0.10	2.00	0.045	0.030	0.75	18.00 - 20.00	8.00 - 10.50	-	-	-	-
304L	304L	0.03	2.00	0.045	0.030	0.75	18.00 - 20.00	8.00 - 12.00	-	0.10	-	-
304LN	304LN	0.03	2.00	0.045	0.030	0.75	18.00 - 20.00	8.00 - 12.00	-	0.10 - 0.16	-	-
309	309	0.2	2.00	0.045	0.030	0.75	22.00 - 24.00	12.00 - 15.00	-	-	-	-
309S	309S	0.08	2.00	0.045	0.030	0.75	22.00 - 24.00	12.00 - 15.00	-	-	-	-
310	310	0.25	2.00	0.045	0.030	0.75	24.00 - 26.00	19.00 - 22.00	-	-	-	-
310S	310S	0.08	2.00	0.045	0.030	0.75	24.00 - 26.00	19.00 - 22.00	-	-	-	-
316	316	0.08	2.00	0.045	0.030	0.75	16.00 - 18.00	10.00 - 14.00	2.00 - 3.00	0.10	-	-
316L	316L	0.03	2.00	0.045	0.030	0.75	16.00 - 18.00	10.00 - 14.00	2.00 - 3.00	0.10	-	-
316LN	316LN	0.03	2.00	0.045	0.030	0.75	16.00 - 18.00	10.00 - 14.00	2.00 - 3.00	0.10 - 0.16	-	-
316Ti	316Ti	0.08	2.00	0.045	0.030	0.75	16.00 - 18.00	10.00 - 14.00	2.00 - 3.00	0.10	-	Ti 5X(C+N) Min., 0.70 Max.
317	317	0.08	2.00	0.045	0.030	0.75	18.00 - 20.00	11.00 - 15.00	3.00 - 4.00	0.10	-	-
317L	317L	0.03	2.00	0.045	0.030	0.75	18.00 - 20.00	11.00 - 15.00	3.00 - 4.00	0.10	-	-
317LN	317LN	0.03	2.00	0.045	0.030	0.75	18.00 - 20.00	11.00 - 15.00	3.00 - 4.00	0.10 - 0.22	-	-
321	321	0.08	2.00	0.045	0.030	0.75	17.00 - 19.00	9.00 - 12.00	-	0.10	-	Ti 5X(C+N) Min., 0.70 Max.
347	347	0.08	2.00	0.045	0.030	0.75	17.00 - 19.00	9.00 - 13.00	-	-	-	Cb = 10XC Min., 1.00 Max.
FERRITIC + MARTENSITIC												
409	409	0.080	1.00	0.040	0.020	1.00	10.50 - 11.75	0.50 max.	-	0.030	-	Ti = 6X(C+N) Min., 0.75 Max.
409RC	-	0.02	1.00	0.040	0.030	1.00	10.50 - 11.75	0.50 max.	-	0.020	-	Ti = 5X C Min., 0.75 Max.
409M	-	0.03	0.8 - 1.5	0.03	0.030	1.00	10.80 - 12.50	1.50 max.	-	0.030	-	Ti = 0.75 Min.
410	410	0.15	1.00	0.040	0.030	1.00	11.50 - 13.50	0.75 max.	-	-	-	-
410S	410S	0.08	1.00	0.040	0.030	1.00	11.50 - 13.50	0.60 max.	-	-	-	-
FERRITIC												
405	405	0.80	1.00	0.04	0.030	1.00	11.50 - 14.50	0.60	-	-	-	Al = 0.10 - 0.30
430	430	0.12	1.00	0.04	0.030	1.00	16.00 - 18.00	0.75 max.	-	-	-	-
430 Ti	430	0.030	1.00	0.04	0.030	1.00	16.00 - 19.00	-	-	-	-	Ti = 0.10 - 1.0
		0.12	1.00	0.040	0.030	1.00	16.00 - 18.00	-	0.75-1.25	-	-	Cb = 5X C Min., 0.80 max.
MARTENSITIC												
420	420	0.15 min.	1.00	0.040	0.030	1.00	12.00 - 14.00	0.75 max.	-	-	-	Mo = 0.50 Max.
JBS	-	0.6 - 0.75	1.00	0.04	0.030	0.75	12.00 - 14.00	-	0.75 max.	-	-	-
LOW NICKLE AUSTENITIC												
JSLAUS (J1)	-	0.08	7.00 - 8.00	0.075	0.030	0.75	15.00 - 17.00	4.00 - 5.00	-	0.10	1.5	-
J3	-	0.08	9.00 - 10.50	0.075	0.030	0.75	14.00 - 16.00	2.00 - 3.00	-	0.15	2.0	-
J4	-	0.10	8.50 - 10.00	0.090	0.030	0.75	15.00 - 16.00	1.2 (max.)	-	0.20	2.0	-

CALCULATED WEIGHTS - STANDARD TUBINGS											
B X L (mm) \ Wall Thickness (mm)	0.71	0.91	1.00	1.20	1.50	1.60	2.00	2.64	3.00	3.25	3.60
	WEIGHT KG. / MTR.										
6.00	0.094	0.116	0.125	0.144							
9.52	0.156	0.196	0.213	0.301	0.317						
12.70	0.213	0.268	0.293	0.345	0.420	0.444	0.535	0.664			
15.87	0.269	0.340	0.372	0.440	0.539	0.571	0.694	0.873			
19.05	0.326	0.413	0.451	0.536	0.658	0.698	0.853	1.083	1.204	1.2	
22.22	0.382	0.485	0.531	0.631	0.778	0.826	1.012	1.294	1.443	1.543	
25.40	0.438	0.557	0.610	0.726	0.896	0.925	1.170	1.502	1.680	1.800	1.062
28.60	0.496	0.631	0.691	0.823	1.017	1.081	1.332	1.715	1.922	2.061	2.253
31.75			0.769	0.917	1.134	1.206	1.488	1.921	2.156	2.316	2.534
35.00			0.851	1.015	1.258	1.338	1.652	2.138	2.403	2.583	2.829
38.10				1.107	1.373	1.460	1.805	2.340	2.633	2.832	3.105
41.27				1.202	1.491	1.587	1.964	2.550	2.870	3.089	3.390
44.45				1.298	1.611	1.714	2.123	2.759	3.109	3.348	3.677
45.00				1.314	1.631	1.736	2.150	2.796	3.150	3.392	3.726
50.00				1.464	1.819	1.936	2.400	3.126	3.525	3.798	4.176
50.80				1.488	1.849	1.968	2.440	3.179	3.585	3.863	4.248
63.50				1.871	2.325	2.476	3.075	4.017	4.538	4.895	5.391
76.20				2.253	2.801	2.984	3.710	4.855	5.490	5.927	6.541
101.60				3.016	3.758	4.000	4.980	6.539	7.395	8.000	8.820

STAINLESS SEEL PIPE SERIES (ANSI B 36.10; B 36.19)										
Nominal	Nominal Pipe Size	Outside Diameter	Wall Thickness and Weight							
			Sch. 5 S		Sch. 10 S		Sch. 40 S		Sch. 80 S	
Inches	mm	mm	mm	kg/m	mm	kg/m	mm	kg/m	mm	kg/m
1/8	6	10.29	-	-	1.24	0.281	1.73	0.370	2.041	0.475
1/4	8	13.72	-	-	1.65	0.498	2.24	0.643	3.02	0.808
3/8	10	17.15	-	-	1.65	0.639	2.31	0.857	3.20	1.116
1/2	15	21.34	1.65	0.812	2.11	1.014	2.77	1.286	3.73	1.642
3/4	20	26.67	1.65	1.032	2.11	1.296	2.87	1.708	3.91	2.225
1	25	33.40	1.65	1.310	2.77	2.121	3.38	2.537	4.55	3.282
1.1/4	32	42.16	1.65	1.671	2.77	2.728	3.56	3.435	4.85	4.524
1.1/2	40	48.26	1.65	1.923	2.77	3.150	3.68	4.101	5.08	5.484
2	50	60.33	1.65	2.421	2.77	3.986	3.91	5.515	5.54	7.588
2.1/2	65	73.03	2.11	3.741	3.05	5.336	5.16	8.755	7.01	11.570
3	80	88.90	2.11	4.578	3.05	6.546	5.49	11.448	7.62	15.484
3.1/2	90	101.60	2.11	5.248	3.05	7.514	5.74	13.756	8.08	18.891
4	100	114.30	2.11	5.918	3.05	8.483	6.02	16.296	8.56	22.628
5	125	141.30	2.77	9.593	3.40	11.722	6.55	22.065	9.52	31.364
6	150	168.28	2.77	11.462	3.40	14.015	7.11	28.648	10.97	43.142
8	200	219.08	2.77	14.979	3.76	20.240	8.18	43.129	12.70	65.526
10	250	273.05	3.40	22.920	4.19	28.163	9.27	61.131	12.70	82.661
12	300	323.85	3.96	31.669	4.57	36.478	9.52	78.811	12.70	98.790
14	350	355.60	3.96	34.812	4.78	41.923	9.53	82.451	12.70	108.871
16	400	406.40	4.19	42.131	4.78	47.994	9.53	94.554	12.7	125.000
18	450	457.20	4.19	47.453	4.78	54.064	9.53	106.657	12.7	141.129
20	500	508.00	4.78	60.135	5.54	69.591	9.53	118.760	12.7	157.258
22	550	558.8	4.78	66.205	5.54	76.627	9.53	130.864	12.7	173.387
24	600	609.6	5.54	83.662	6.35	95.766	9.53	142.967	12.7	189.516

PSSR
GROUP OF COMPANIES



Head Office

Plot No. 51, Industrial Development Colony,
Behind ESI Dispensary, Industrial Area,
Delhi Road, Hisar-125 005, Haryana (INDIA)
Phone : +91-1662-223116
Fax : +91-1662-223130

E-mail : info@psrajsteels.com

Works

NH-65, Hisar- Sayadhwa Road,
Talwandirukka, Hisar-125 001,
Haryana (INDIA)
Phone : +91-1662-282017
Fax : +91-1662-282019

E-mail : purchase@psrajsteels.com

Visit us : www.pssrgroup.com