

JINDAL PIPES LIMITED

JINDAL
D.P. JINDAL GROUP

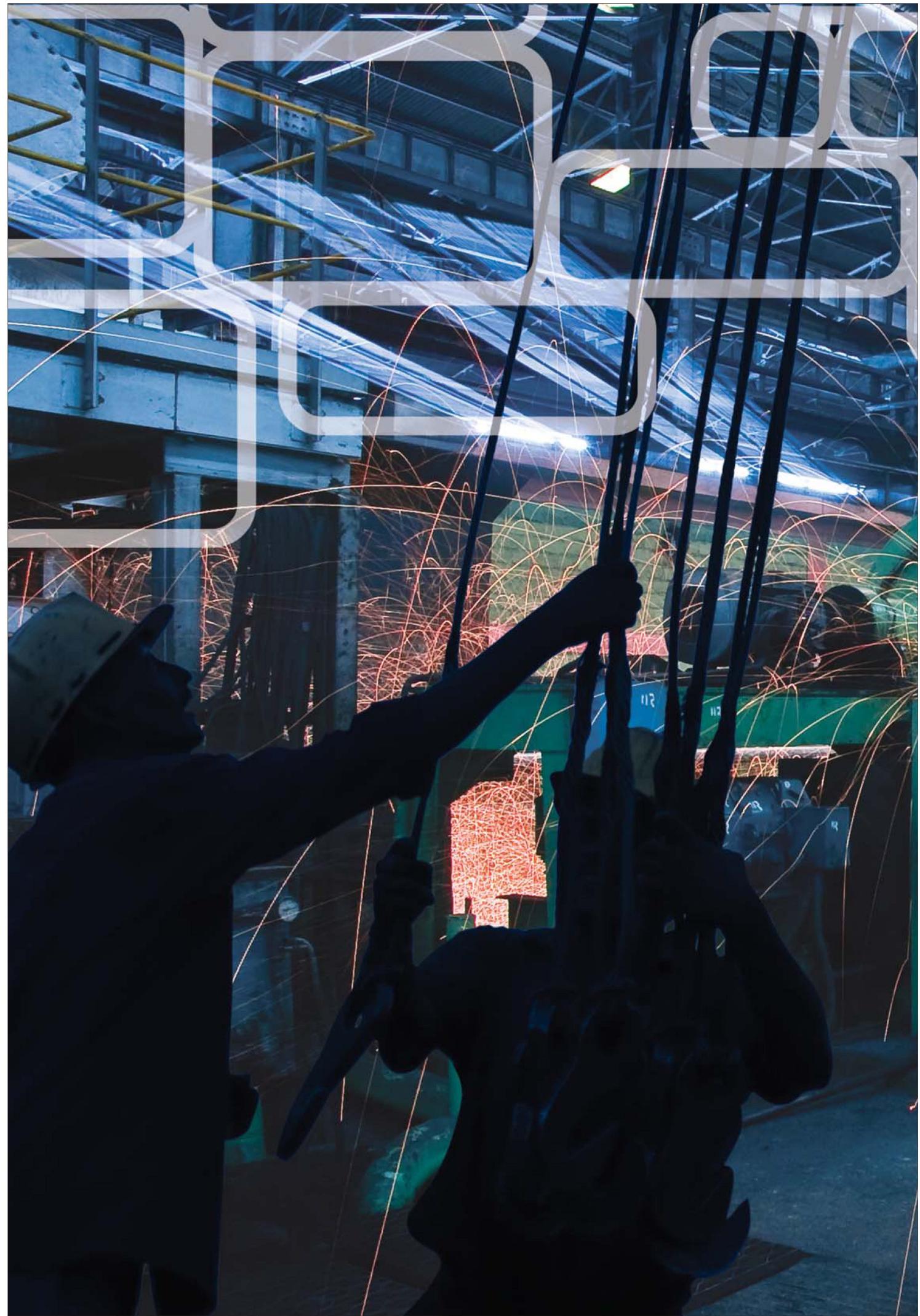
SQUARE & RECTANGULAR HOLLOW SECTION



Excluding Design

JPL.CAT.02; Issue No.1; Rev. No.:2;
Date 03.10.12

JINDAL
STAR



D.P. Jindal Group

SQUARE AND RECTANGULAR
HOLLOW SECTION

Pipes & Tubes | POWER: Wind & Thermal | Offshore Drilling

D.P. Jindal Group, synonymous with steel pipes & tubes, is the largest producer of steel pipes and tubes of both Seamless and Welded category in India.

Today, D.P. Jindal Group is a US\$ 800 million (approx) business conglomerate, with business interest spanning from manufacturing pipes, offshore drilling services, power generation to export. For more than four decade the group has been the pioneer and major contributor to the growth of the Indian tube industry and serving the core sectors like agriculture, industry, housing, infrastructure, oil & gas and many more.

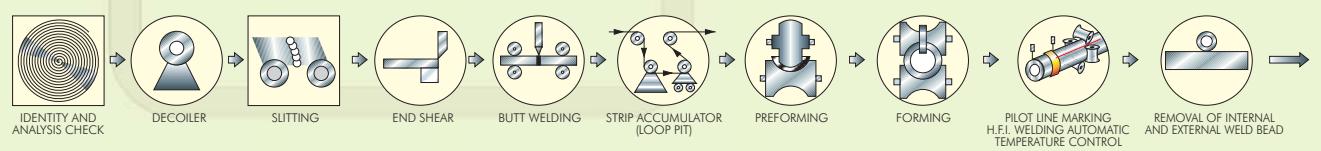
Our product range comprises of ERW Pipes & Tubes (Black & Galvanized) and Seamless Pipes & Tubes (Hot finished & Cold Drawn).

Diverse product range, large manufacturing capacities and optimum utilisation of resources are the major contributors to the growth of the Group.

Investment in latest technology and committed people have given every company under D.P. Jindal Group enough impetus to deliver superior performance, ensuring further growth and consolidate its leadership position in the industry.



MANUFACTURING AND TESTING FLOW DIAGRAM OF SECTION PIPES



JINDAL PIPES LIMITED

SQUARE AND RECTANGULAR
HOLLOW SECTION

Jindal Pipes Ltd. (JPL) was incorporated in 1970 with a production capacity of 3000 TPA to manufacture Steel Pipes & Tubes. Since then, the company has brought phenomenal development in Pipe manufacturing process through many innovative measures. Today, it has an annual turnover of approx. Rs.951 Crores. Induction of sophisticated state-of-the-art technical know-how and highly motivated & skilled workforce have made possible for the company to augment its production capacity to 2,50,000 TPA.

It is now synonymous with India's one of the best and largest

manufacturer of ERW, Black and Galvanized Steel Pipes & Tubes in different thickness from 2.00 mm to 10.00 mm having an Outer Diameter (OD) ranging from 1/2" to 14" NB conforming to various National and International Standards.

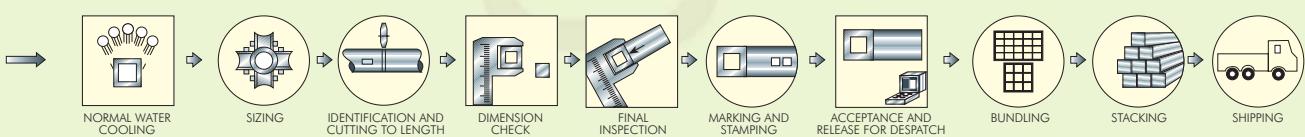
Recently the company has started manufacturing RHS & SHS Pipes of various sizes which are to be used for different applications i.e. Architectural and Industrial.

The company received 'Regional Special Shield' award for export performance for the year 1977-78 and from 1984 to 1988. It was also awarded the 'Certificate for Export

Excellence 1990-91' by the Export Engineering Promotion Council.

True to D.P. Jindal Group's way of life, quality is at the helm of affairs. Our constant endeavor is to produce pipes of highest quality and sustainability. To achieve this, we stick to strict quality standards, continuous in-house evaluations and training our work force.

Our company has been constantly executing need based and demanding orders for Pipes to meet the requirements of sectors like Agriculture, Oil, Public Health, Housing, Irrigation, Engineering etc.





True Benefits

Jindal Pipes command several techno-economic advantages over conventional Steel Section.

1. Raw material used for manufacturing these steel pipes comes from world renowned manufactures of Hot Rolled Coils.
2. Excellence distribution of material around the axis of these steel pipes allows for remarkable strength and quality, thus offers decisive advantages as regards to application technology.
3. Due to their higher torsional rigidity and compressive strength they behave more efficiently than conventional Steel Sections.
4. Their higher strength to weight ratio could result in saving of steel upto 30%.
5. The smooth, uniform profile of these sections minimizes dust accumulation and facilitate easy on-site fabrication.
6. Jindal Pipes bring about a significant enhancement in the aesthetic appeal of structures.

Quality Policy

SQUARE AND RECTANGULAR
HOLLOW SECTION

True to Jindal Group's way of life, quality is always at the helm of affairs.



Consistent with the Group's purpose, we are committed to create value for all our stakeholders by continually improving the effectiveness of Quality System and Processes through innovation, involving all our employees.

We shall constantly strive to improve the quality of life of the communities it serves through excellence in all facets of its activities.

Our objectives shall be to:

- A) Produce and deliver products as per customer expectations, conforming to National / International Standards.
- B) Enhance the knowledge and skills of employees for effective implementation of Quality Management System.

REV. NO.: 3 ; 28.9.07

RAGHAV JINDAL
(Managing Director)

Quality Credentials



D.P. Jindal Group's idea of total quality is demonstrated in its stringent controls on raw materials, production process and on the speed at which the product reaches the customer. It's '**No compromises on quality**', policy has brought it an ISO 9001: 2008, API and BIS certifications.

Jindal Pipes Ltd. has accreditation of API Q1 Systems and has been awarded ISO 9001: 208 on quality assurance. In addition to these, our products have the approval of international inspection agencies, such as Llyods, DNV, BVIS, EIL, PDIL, SGS etc.

Jindal Pipes Ltd. has in-house laboratory to undertake various testings and inspections during the various stages of manufacturing.

Reputed Customers



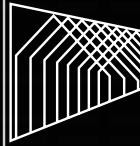
Applications

ARCHITECTURAL



- Shopping Malls
- Canopies / Atrium
- Glass Curtain Wall Frames
- Partition Frames
- Space Frames
- Guard Rails & Staircase

INDUSTRIAL



- Trusses, Columns and Purlins
- Material Storage Racks
- Mine Roof Support Systems (Cogs, Props)
- Pallets
- Pipe Racks
- Conveyor Gantry, Trestles
- Drilling Rigs

INFRASTRUCTURAL



- Airport Terminal Buildings
- Bridges
- Bus Stands
- Signage Supporting Structures
- Pedestrian Walkovers (Footbridge)
- Sports Galleries
- Railways Platforms/Foot Overbridges

GENERAL ENGINEERING



- Automobile Chassis
- Green House Structures
- Truck and Bus Body Members
- Hoarding Structures
- Amusement Park & Playground Equipment
- Exhibition Stalls
- Scaffolding
- Furniture

Attributes

- Lightweight
- Flexible and easy to form shapes
- Smooth surface finish
- Appealing aesthetics
- Contemporary

Attributes

- High Strength to weight ratio
- Cost effective
- Ease of fabrication and erection
- Lightweight

Attributes

- High Strength
- More column free space
- Larger & thicker sections
- Ease of fabrications
- Lightweight

Attributes

- Lightweight
- Ease of fabrication
- High tensile resistance
- Minimal painting area
- Appealing aesthetics

Technical Specifications and Dimensional Tolerances

STEEL SECTIONS CONFIRMING TO IS:4923

SQUARE AND RECTANGULAR
HOLLOW SECTION

We can also supply sections as per ASTM A 500 specification.

Chemical Composition

Sulphur = 0.050% max.

Phosphorus = 0.050% max.

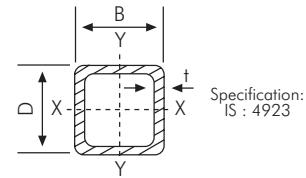
Mechanical Properties

	Grade	UTS	YST	% Elongation (min)	
		MPa, (min)	MPa, (min)	≤ 25.4 mm	> 25.4 mm
A	Yst 210	330	210	12	20
B	Yst 240	410	240	10	15
C	Yst 310	450	310	8	10

Dimensional Tolerances

A	Thickness	±10%
B	Outside Dimension	±1% (±0.5 mm min.)
C	Weight 1. On individual lengths 2. On lots of 10 tonnes	+10%, -8% ±7.5%
D	Squareness	90° ± 2°
E	Corner Radius	3t max.
F	Length	± 6mm
G	End Finish	Plain End - Mill cut finish

Square Hollow Sections

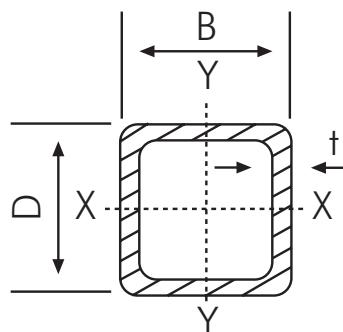


SHS B x D mm	Thick- ness mm	Sec Area A cm ²	Unit W kg/m	Moment of Inertia		Radius of Gyration		Elastic Modulus		Torsional Constants		Outer Surface Area Per mm ²
				I _{xx} cm ⁴	I _{yy} cm ⁴	r _{xx} cm	r _{yy} cm	Z _{xx} cm ³	Z _{yy} cm ³	J cm ⁴	B cm ³	
25 x 25	2.00	1.74	1.36	1.48	1.48	0.92	0.92	1.19	1.19	2.29	1.68	0.090
	2.60	2.16	1.69	1.72	1.72	0.89	0.89	1.38	1.38	2.68	1.92	0.087
	3.20	2.53	1.98	1.89	1.89	0.86	0.86	1.51	1.51	2.96	2.07	0.084
32 x 32	2.00	2.30	1.80	3.36	3.36	1.21	1.21	2.10	2.10	5.30	3.05	0.118
	2.60	2.88	2.26	4.02	4.02	1.18	1.18	2.51	2.51	6.45	3.63	0.115
	3.20	3.42	2.69	4.54	4.54	1.15	1.15	2.84	2.84	7.41	4.07	0.112
38 x 38	2.60	3.51	2.75	7.14	7.14	1.43	1.43	3.76	3.76	11.51	5.49	0.139
	3.20	4.19	3.29	8.18	8.18	1.40	1.40	4.30	4.30	13.45	6.28	0.136
	4.00	5.03	3.95	9.26	9.26	1.36	1.36	4.87	4.87	15.67	7.12	0.131
40 x 40	2.60	3.72	2.92	8.45	8.45	1.51	1.51	4.22	4.22	13.63	6.20	0.147
	3.20	4.45	3.49	9.72	9.72	1.48	1.48	4.86	4.86	16.00	7.12	0.144
	4.00	5.35	4.20	11.07	11.07	1.44	1.44	5.54	5.54	18.75	8.12	0.139
50 x 50	2.60	4.76	3.74	17.47	17.47	1.92	1.92	6.99	6.99	28.53	10.37	0.187
	2.90	5.25	4.12	18.99	18.99	1.90	1.90	7.60	7.60	31.15	11.23	0.185
	3.60	6.35	4.98	22.15	22.15	1.87	1.87	8.86	8.86	36.58	12.98	0.181
	4.50	7.67	6.02	25.50	25.50	1.82	1.82	10.20	10.20	41.99	14.68	0.177
60 x 60	2.60	5.80	4.55	31.33	31.33	2.33	2.33	10.44	10.44	50.08	15.52	0.227
	3.20	7.01	5.50	36.94	36.94	2.30	2.30	12.31	12.31	60.02	18.31	0.224
	4.00	8.55	6.71	43.55	43.55	2.26	2.26	14.52	14.52	72.41	21.62	0.219
	4.80	10.01	7.85	49.22	49.22	2.22	2.22	16.41	16.41	83.86	24.51	0.215
72 x 72	3.20	8.54	6.71	66.32	66.32	2.79	2.79	18.42	18.42	106.81	27.47	0.272
	4.00	10.47	8.22	79.03	79.03	2.75	2.75	21.95	21.95	129.85	32.78	0.267
	4.80	12.31	9.66	90.31	90.31	2.71	2.71	25.09	25.09	151.55	37.55	0.263
80 x 80	3.20	9.57	7.51	92.71	92.71	3.11	3.11	23.18	23.18	148.55	34.60	0.304
	4.00	11.75	9.22	111.04	111.04	3.07	3.07	27.76	27.76	181.22	41.49	0.299
	4.80	13.85	10.87	127.58	127.58	3.04	3.04	31.89	31.89	212.26	47.77	0.295
91.5 x 91.5	3.60	12.32	9.67	156.49	156.49	3.56	3.56	34.21	34.21	251.17	51.14	0.347
	4.50	15.14	11.88	187.57	187.57	3.52	3.52	41.00	41.00	306.78	61.40	0.343
	5.40	17.85	14.01	215.68	215.68	3.48	3.48	47.14	47.14	359.76	70.77	0.338
100 x 100	4.00	14.95	11.73	226.35	226.35	3.89	3.89	45.27	45.27	364.75	67.50	0.379
	5.00	18.36	14.41	271.10	271.10	3.84	3.84	54.22	54.22	441.84	80.54	0.374
	6.00	21.63	16.98	311.47	311.47	3.79	3.79	62.29	62.29	511.80	92.06	0.369
113.5 x 113.5	4.80	20.28	15.92	393.30	393.30	4.40	4.40	69.30	69.30	637.45	103.89	0.429
	5.40	22.60	17.74	432.58	432.58	4.38	4.38	76.23	76.23	708.69	114.41	0.426
132 x 132	4.80	23.83	18.71	634.39	634.39	5.16	5.16	96.12	96.12	1018.30	144.11	0.503
	5.40	26.60	20.88	700.11	700.11	5.13	5.13	106.08	106.08	1134.24	159.18	0.500
150 x 150	4.00	22.95	18.01	807.82	807.82	5.93	5.93	107.71	107.71	1273.46	161.38	0.579
	5.00	28.36	22.26	982.12	982.12	5.89	5.89	130.95	130.95	1569.09	196.38	0.574
	6.00	33.63	26.40	1145.91	1145.91	5.84	5.84	152.79	152.79	1856.18	229.44	0.569
	8.00	43.79	34.38	1443.00	1443.00	5.74	5.74	192.40	192.40	2405.78	290.12	0.559
180 x 180	4.00	27.75	21.78	1421.74	1421.74	7.16	7.16	157.97	157.97	2224.31	236.76	0.699
	5.00	34.36	26.97	1736.87	1736.87	7.11	7.11	192.99	192.99	2747.93	289.40	0.694
	6.00	40.83	32.05	2036.52	2036.52	7.06	7.06	226.28	226.28	3259.23	339.65	0.689
	8.00	53.39	41.91	2590.73	2590.73	6.97	6.97	287.86	287.86	4246.16	433.32	0.679
220 x 220	6.00	50.43	39.59	3813.36	3813.36	8.70	8.70	346.67	346.67	6034.53	520.18	0.849
	8.00	66.19	51.96	4894.99	4894.99	8.60	8.60	445.00	445.00	7897.48	668.99	0.839
	10.00	81.43	63.92	5887.19	5887.19	8.50	8.50	535.20	535.20	9549.15	796.48	0.829
250 x 250	6.00	57.63	45.24	5672.00	5672.00	9.92	9.92	453.76	453.96	8920.44	680.77	0.969
	8.00	75.79	59.50	7315.65	7315.65	9.82	9.82	585.25	585.25	11702.07	879.31	0.959
	10.00	93.43	73.34	8842.29	8842.29	9.73	9.73	707.38	707.38	14248.15	1054.68	0.949

Product Range



SQUARE AND RECTANGULAR
HOLLOW SECTION



Specification:
IS : 4923

Product Range: Square Hollow Sections (SHS)

	Thickness (mm) = t														
	B	D	2.0	2.6	2.9	3.2	3.6	4.0	4.5	4.8	5.0	5.4	6.0	8.0	10.0
25	25														
32	32														
38	38														
40	40														
50	50														
60	60														
72	72														
80	80														
91.5	91.5														
100	100														
113.5	113.5														
132	132														
150	150														
180	180														
220	220														
250	250														

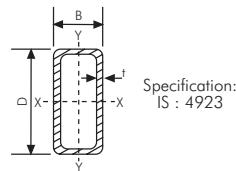


Indicates presently rolled section.



Under development, please confirm availability before adoption in design.

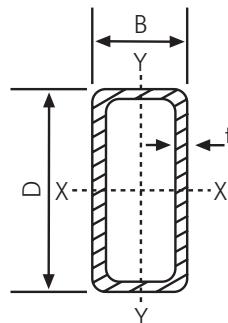
Rectangular Hollow Sections



Specification:
IS : 4923

RHS D x B mm	Thick- ness mm	Sec Area A cm ²	Unit W kg/m	Moment of Inertia		Radius of Gyration		Elastic Modulus		Torsional Constants		Outer Surface Area Per mm ²
				I _{xx} cm ⁴	I _{yy} cm ⁴	r _{xx} cm	r _{yy} cm	Z _{xx} cm ³	Z _{yy} cm ³	J cm ⁴	B cm ³	
50 x 25	2.00	2.74	2.15	8.38	2.81	1.75	1.01	3.35	2.25	6.79	3.79	0.142
	2.60	3.46	2.71	10.16	3.36	1.71	0.99	4.06	2.69	8.27	4.53	0.137
	3.20	4.13	3.24	11.63	3.80	1.68	0.96	4.65	3.04	9.52	5.12	0.134
	4.00	4.95	3.88	13.13	4.23	1.63	0.92	5.25	3.38	10.86	5.69	0.129
60 x 40	2.60	4.76	3.73	22.76	12.09	2.19	1.59	7.59	6.05	25.59	9.83	0.187
	2.90	5.25	4.12	24.74	13.11	2.17	1.58	8.25	6.56	28.02	10.66	0.185
	3.60	6.35	4.98	28.90	15.23	2.13	1.55	9.63	7.62	33.30	12.41	0.181
	4.50	7.67	6.02	33.31	17.44	2.08	1.51	11.10	8.72	39.34	14.29	0.177
66 x 33	2.60	4.70	3.69	25.15	8.43	2.31	1.34	7.62	5.11	20.75	8.71	0.185
	2.90	5.19	4.07	27.33	9.12	2.29	1.33	8.28	5.53	22.65	9.43	0.183
	3.60	6.28	4.93	31.87	10.52	2.25	1.29	9.66	6.37	26.71	10.90	0.179
	4.50	7.58	5.95	36.64	11.93	2.20	1.25	11.10	7.23	31.21	12.43	0.175
80 x 40	2.60	5.80	4.55	46.58	15.74	2.84	1.65	11.65	7.87	38.50	13.46	0.227
	3.20	7.01	5.50	54.94	18.41	2.80	1.62	13.74	9.21	45.83	15.78	0.224
	4.00	8.55	6.71	64.79	21.49	2.75	1.59	16.20	10.74	54.77	18.49	0.219
	4.80	10.01	7.85	73.22	24.03	2.71	1.55	18.30	12.02	62.81	20.79	0.215
96 x 48	3.20	8.54	6.71	98.61	33.28	3.40	1.97	20.54	13.87	82.13	23.82	0.272
	4.00	10.47	8.22	117.54	39.32	3.35	1.94	24.49	16.38	99.11	28.24	0.267
	4.80	12.31	9.66	134.35	44.55	3.30	1.90	27.99	18.56	114.80	32.14	0.263
122 x 61	3.60	12.32	9.67	232.61	78.83	4.34	2.53	38.13	25.84	193.91	44.50	0.347
	4.50	15.14	11.88	278.94	93.78	4.29	2.49	45.73	30.75	235.39	53.13	0.343
	5.40	17.85	14.01	320.83	107.03	4.24	2.45	52.60	35.09	274.29	60.89	0.338
145 x 82	4.80	20.28	15.92	555.16	228.50	5.23	3.36	76.57	55.73	534.27	94.45	0.429
	5.40	22.60	17.74	610.85	250.59	5.20	3.33	84.26	61.12	592.70	103.81	0.426
172 x 92	4.80	23.83	18.71	917.13	346.91	6.20	3.82	106.64	75.41	826.04	128.85	0.503
	5.40	26.59	20.88	1012.47	381.74	6.17	3.79	117.73	82.99	918.10	142.04	0.500
200 x 100	4.00	22.95	18.01	1199.71	410.78	7.23	4.23	119.97	82.16	991.47	141.46	0.579
	5.00	28.36	22.26	1459.25	496.94	7.17	4.19	145.93	99.39	1216.96	171.53	0.574
	6.00	33.63	26.40	1703.31	576.91	7.12	4.14	170.33	115.38	1434.03	199.68	0.569
	8.00	43.79	34.38	2146.21	719.19	7.00	4.05	214.62	143.84	1843.86	250.68	0.559
220 x 140	4.00	27.75	21.78	1892.62	947.66	8.26	5.84	172.06	135.38	2004.80	223.74	0.699
	5.00	34.36	26.97	2313.45	1155.23	8.21	5.80	210.31	165.04	2468.51	272.71	0.694
	6.00	40.83	32.05	2714.10	1351.70	8.15	5.75	246.74	193.10	2914.71	318.93	0.689
	8.00	53.39	41.91	3456.31	1712.25	8.05	5.66	314.21	244.61	3270.10	378.40	0.679
240 x 120	4.00	27.75	21.78	2110.72	725.35	8.72	5.11	175.89	120.89	1736.39	208.03	0.699
	5.00	34.36	26.97	2579.67	882.47	8.67	5.07	214.97	147.08	2138.48	253.55	0.694
	6.00	40.83	32.05	3025.91	1030.45	8.61	5.02	252.16	171.74	2528.39	296.7	0.689
	8.00	53.39	41.91	3851.84	1299.95	8.49	4.93	320.99	216.66	3272.9	376.29	0.679
260x 180	6.00	50.43	39.59	4855.87	2763.43	9.81	7.40	373.53	307.05	5619.50	501.06	0.849
	8.00	66.19	51.96	6238.69	3538.10	9.71	7.31	479.90	393.12	6821.23	620.13	0.839
	10.00	81.43	63.92	7509.51	4244.26	9.60	7.22	577.65	471.58	8972.14	760.42	0.834
300x 150	6.00	51.63	40.53	6073.51	2079.57	10.85	6.35	404.90	277.28	5034.64	478.20	0.869
	8.00	67.79	53.22	7808.95	2654.12	10.73	6.26	520.53	353.88	6559.05	612.64	0.859
	10.00	83.43	65.49	9403.90	3173.71	10.62	6.17	626.93	423.16	8011.67	736.01	0.848
300x 200	6.00	57.65	45.24	7370.23	3962.19	11.31	8.29	491.34	396.22	8186.02	650.85	0.969
	8.00	75.79	59.50	9513.66	5097.04	11.20	8.20	634.24	509.70	10722.83	839.54	0.959
	10.00	93.43	73.34	11507.24	6144.30	11.10	8.11	767.15	614.43	13169.70	1015.43	0.948

Product Range



Specification:
IS : 4923

Product Range: Rectangular Hollow Sections (RHS)

Section Size	Thickness (mm) = t														
	D	B	2.0	2.6	2.9	3.2	3.6	4.0	4.5	4.8	5.0	5.4	6.0	8.0	10.0
50	25														
60	40														
66	33														
80	40														
96	48														
122	61														
145	82														
172	92														
200	100														
220	140														
240	120														
260	180														
300	150														
300	200														



Indicates presently rolled section.



Under development, please confirm availability before adoption in design.

Note: Information provided in this catalogue is as per currently applicable specifications but since they are subject to changes, please refer relevant specification to know the current status.

JINDAL PIPES LIMITED

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