

## STRUCTURAL STEEL SOLUTIONS

Beams | Columns | Angles | Channels



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## About Jindal Steel & Power Limited

Jindal Steel and Power Limited (JSPL) is one of India's primary & integrated steel producers with a significant presence in sectors like Mining, Power Generation and Infrastructure.

With an annual turnover of over US\$ 3.6 billion, JSPL is a part of the about US\$ 18 billion diversified O. P. Jindal Group and is consistently tapping new opportunities by increasing production capacity, diversifying investments, and leveraging its core capabilities to venture into new businesses. The company has committed investments exceeding US\$ 30 billion in the future and has several business initiatives running simultaneously across continents.

From the widest flat products to a whole range of long products, JSPL today sports a product portfolio that caters to varied needs in the steel market. The company also has the distinction of producing the world's longest 121 metre rails and introducing large size parallel flange beams in India.

JSPL operates the largest coal based sponge iron plant in the world and has an installed capacity of 5.5 MTPA of steel at Raigarh in Chhattisgarh and Angul in Odisha.

The Company has an installed capacity of:

- 0.75 MTPA Rail & Universal Beam Mill at Raigarh, Chhattisgarh
- 0.6 MTPA Medium & Light Structural Mill and 1.0 MTPA Plate Mill at Raigarh, Chhattisgarh
- 1.5 MTPA Plate Mill producing Plates upto 5 meter wide at Angul, Odisha
- 0.6 MTPA Wire Rod Mill and 1.0 MTPA Rebar Mill at Patratu, Jharkhand

The company aims for a fast-paced growth so as to contribute substantially to India's long term prosperity.

An enterprising spirit and the ability to discern future trends have been the driving force behind the company's remarkable growth story. The company has scaled new heights with the combined force of innovation, adaptation of new technology and the collective skills of its 15,000 strong, committed workforce.





## JSPL, Raigarh

JSPL's Raigarh Works has many distinctions and firsts to its credits, from producing the world's longest 121 metre long rails to introducing parallel flange beams and columns in India; bringing in widest coils and plates in the country in 2007.

JSPL operates the world's largest rotary kiln based sponge iron plant and has an installed capacity of 3.0 MTPA of crude steel at Raigarh with a forward integration model comprising of BF+DRI-EAF-LRF-VD/RH-CCM route based iron making and steel making facilities. The facility has come a long way from its initial days as a small sponge iron production unit to a large steelmaking complex. Rolling facilities at JSPL Raigarh comprise of a 0.75 MTPA Rail & Universal Beam Mill, a 0.6 MTPA Medium & Light Section Mill, and a 1.0 MTPA Heavy Plate & Coil Mill (Steckle Mill). A very wide range of products ranging from continuous cast products such as Rounds/Billets/Blooms/ Beam Blanks/ Slabs, to rolled sections such as Light/Medium/Heavy Angles, Channels, Universal Beams & Columns, Crane/ Gantry Rails, Track Rails, Hot Rolled Coils and Plates are being supplied from these mills in wide range of sizes and steel grades to customers globally.

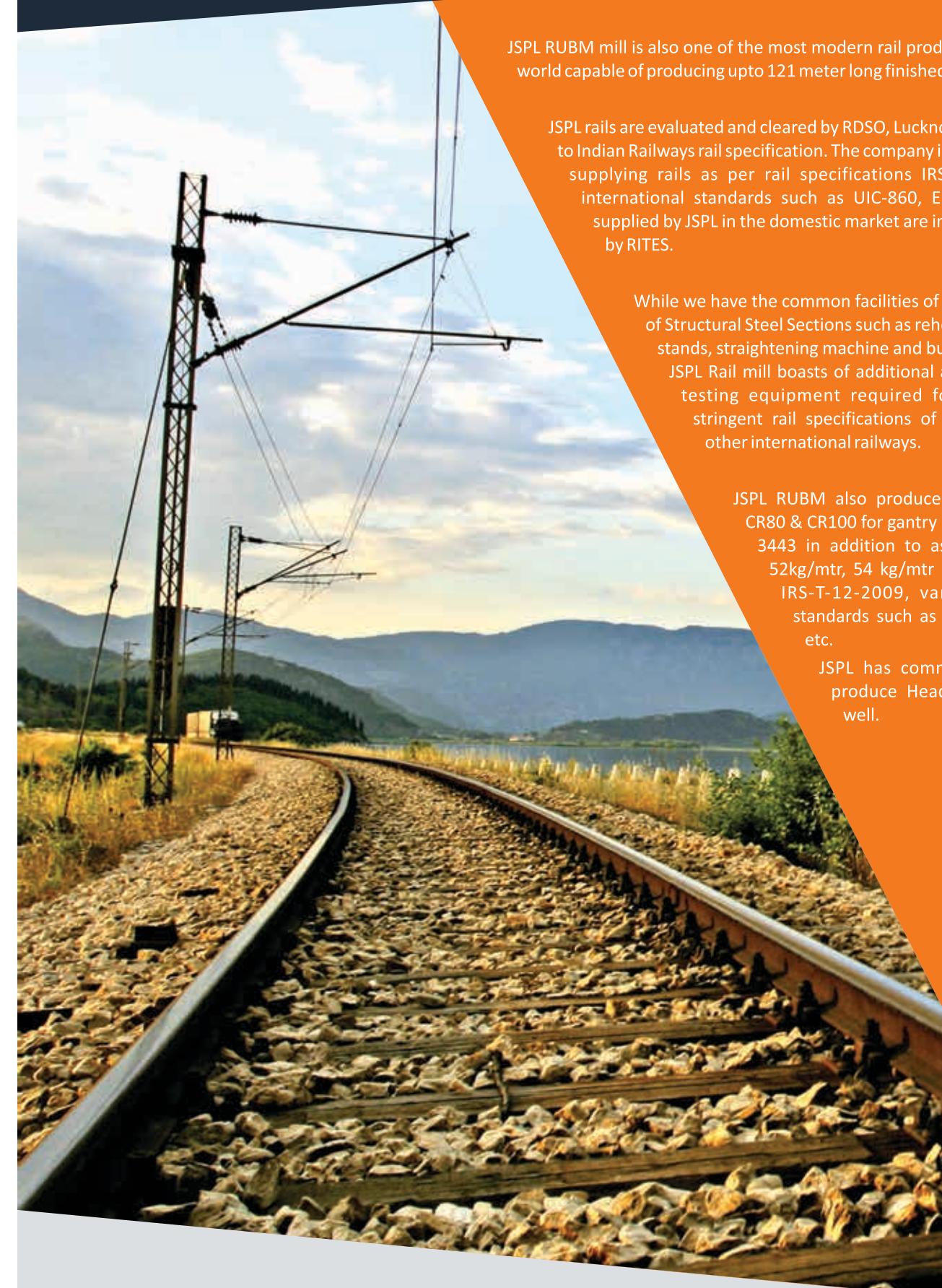


JSPL pioneered the production of Parallel Flange Sections and long Rails in India through Universal Rolling Technology from its 0.75 MTPA capacity Rail & Universal Beam Mill (RUBM) in 2003. Leveraging on the unstinted support of its valued customers, consultants, and structural designers through all these years who realized the inherent advantages and saving potential of the Parallel Flange Beams & Columns over the conventional tapered flange beams, JSPL has today carved a name for Parallel Flange Sections in every corner of the country and has also established a name for its sections in the global structural sections market.

The Mill is equipped with a walking beam type reheating furnace, high efficiency water descaling system, Breakdown Mill, a modern Universal Tandem Mill incorporating a 'Universal Rougher, Universal Edger and Universal Finishing Mill', one of the longest 123 meter long cooling bed, high capacity 9 roll vertical and 9 roll horizontal straightening machine, cutting, stacking, bundling, and marking machines. These enable production of structural steel sections with a very high degree of dimensional compliance to the specifications in desired lengths with adequate packaging and marking.

JSPL today rolls 47 different sizes/ series and over 160 different variants (unit-weights) of Parallel Flange Beams & Columns (NPB/IPE, WPB/HE, UB & UC Sections) in nominal depths ranging from 150mm to 900mm and with unit weights ranging from 23 kg/meter to 333kg/meter conforming to Indian specification (IS-12778) as well as European specifications for Standard Beams and Wide Flange Beams. Besides beams & columns, this mill also rolls Indian (ISMC) channels in size 250, 300, 400mm & angle of 250mm.

## Long Rails from JSPL



JSPL RUBM mill is also one of the most modern rail production facilities in the world capable of producing upto 121 meter long finished length Class-A rails.

JSPL rails are evaluated and cleared by RDSO, Lucknow as being compliant to Indian Railways rail specification. The company is today producing and supplying rails as per rail specifications IRS-T-12-2009, various international standards such as UIC-860, EN13674-1, etc. Rails supplied by JSPL in the domestic market are inspected and certified by RITES.

While we have the common facilities of RUBM for production of Structural Steel Sections such as reheating furnace, rolling stands, straightening machine and bundling/ stacking unit; JSPL Rail mill boasts of additional and latest finishing & testing equipment required for compliance with stringent rail specifications of Indian Railways and other international railways.

JSPL RUBM also produces crane rail sections CR80 & CR100 for gantry applications as per IS: 3443 in addition to as Track Rail sections 52kg/mtr, 54 kg/mtr and 60kg/mtr as per IRS-T-12-2009, various international standards such as UIC-860, EN13674-1, etc.

JSPL has commissioned facility to produce Head Hardened Rails as well.

## Medium and Light Structural Mill (MLSM)

Aiming to provide a complete product basket and an enhanced structural section size range to its customers, JSPL has commissioned the state-of-the-art 0.6 MTPA capacity Medium and Light Structural Mill (MLSM) at Raigarh.

With a wide range of light & medium beam & column sections, channels, & angles, the mill, along with the existing sections from RUBM, has enabled JSPL to offer the widest range of light, medium, heavy and jumbo structural steel sections from an integrated steel manufacturer in India.

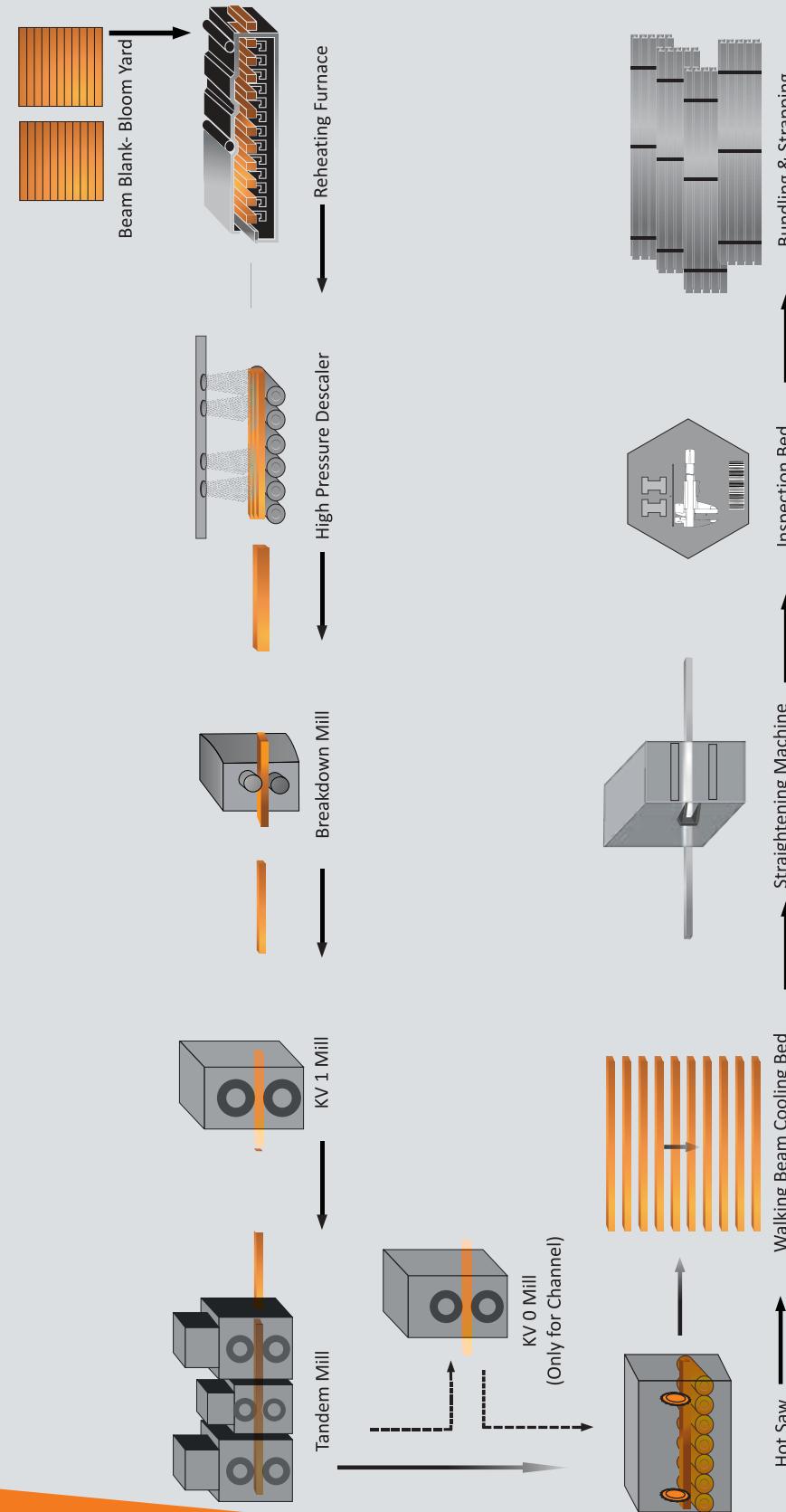
A first of its kind in India, MLSM is a 15 stand continuous mill equipped with advanced rolling mill technology and equipment from Danieli, Italy. MLSM is equipped with a walking beam type reheating furnace, besides a high efficiency water descaling system, modern universal cartridge type rolling stands, on-line profile check machine, 90 meter long cooling bed, high capacity straightening machine, on-line shearing, sawing, stacking, bundling, and marking machines. These enable production of light & medium beams, angles, and channels with a very high degree of dimensional compliance to the specifications in customers' desired lengths and sizes with high quality packaging and marking.

The mill is capable of producing Ultra Light, Light, and Medium Parallel Flange Beams & Columns in depths ranging from 100mm to 300 mm, Channels in depths 75mm to 300mm, and Angles in size 65mm to 200mm, in unit weights ranging from 5kg/mtr to 75kg/mtr. The mill can also roll flat bars in size 50mm to 300mm which is currently in developmental stage.

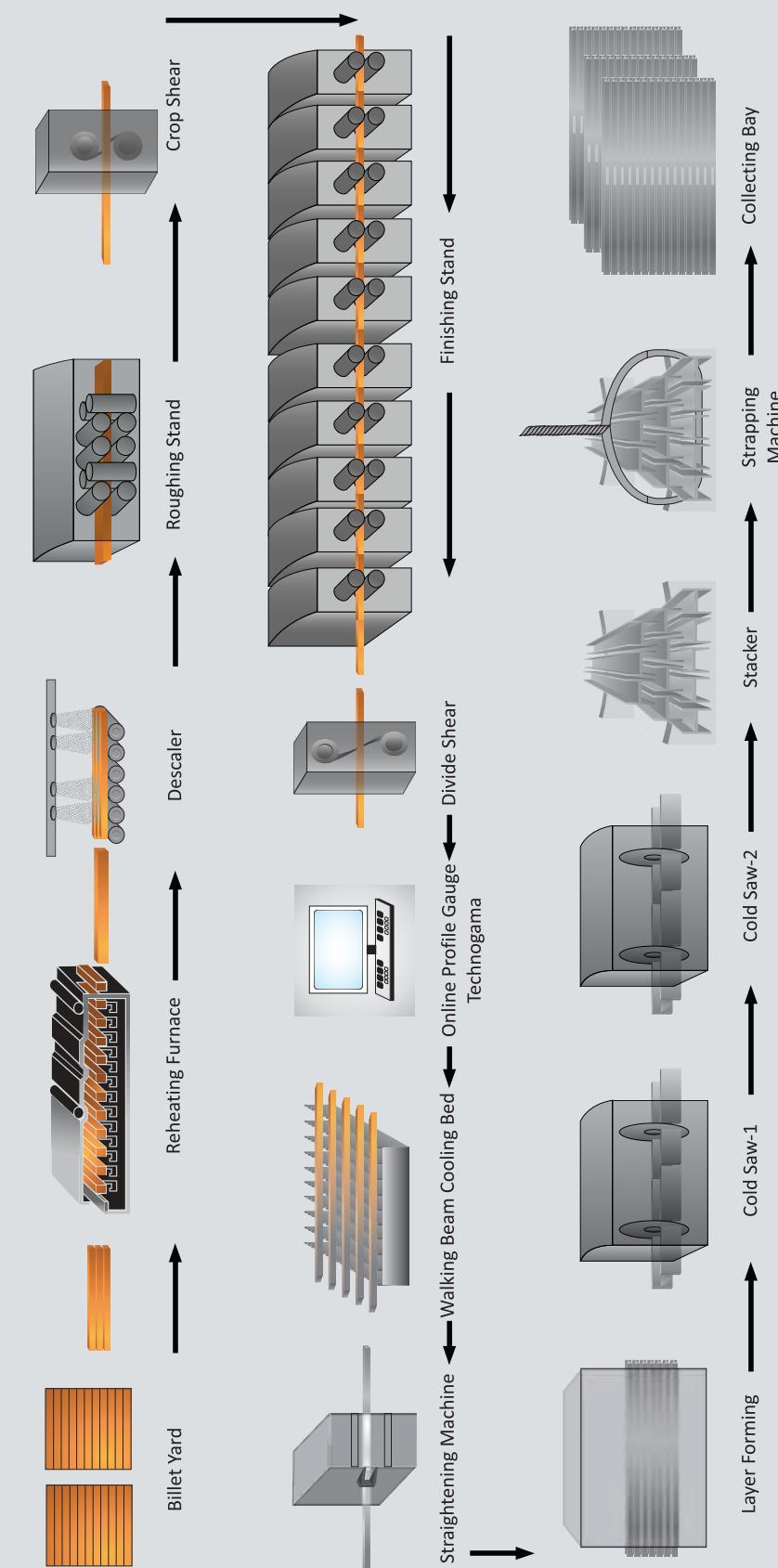


## Process Flow Chart - RUBM & MLSM

### Universal Beam Mill – Process Flow



### Medium & Light Structural Mill – Process Flow



## Parallel Flange Beams & Columns

Beams and Columns are characterized by their profile, their length, and their material. JSPL manufactures Parallel Flange Beams and columns in various configurations.

- Narrow Parallel Flange Beams
- Wide Parallel Flange Beams
- Universal Beams
- Universal Columns

### Characteristics

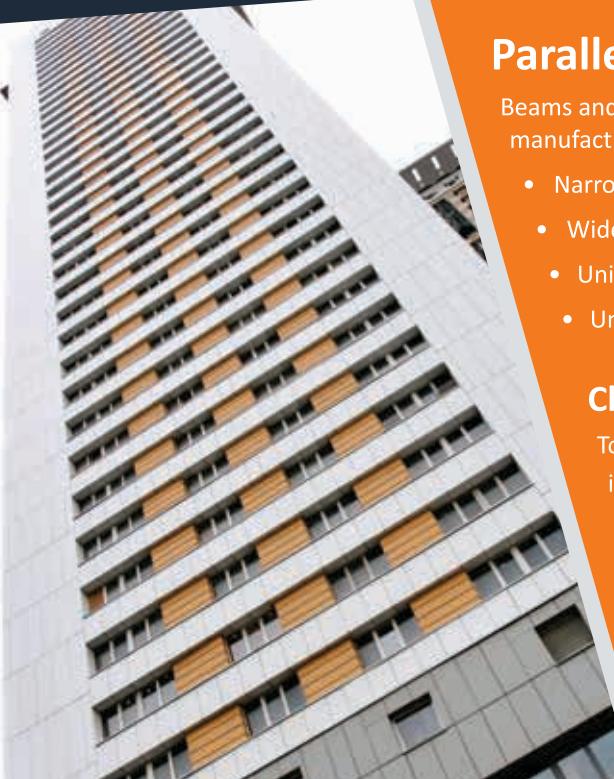
To cater to the broader market segment and comply to the different needs of various industries, JSPL offers structural sections with various characteristics in this segment.

- Wide dimensional range
- Superior Weldability
- Cost effective
- Multiple sectional weights
- High strength to weight ratio
- Atmospheric corrosion resistance
- Multiple Sectional Weights

### Dimensional Range

These are widely used in the construction industry to provide support for buildings and load-bearing walls. They are available in a variety of standard sizes and selected based on the applied load for the required application.

- NPB - Narrow Parallel Flange Beams as per IS 12778 :  
2004 (Equivalent to IPE Series-European Standard Narrow Flange Beams)
  - NPB 180x90 to NPB 600x220 (IPE 180 –IPE600)
- WPB – Wide Parallel Flange Beams as per IS 12778 :  
2004 (Equivalent to HE Series -European Wide Flange Beams)
  - WPB 320x300 to WPB 900x300 (HE 320-HE900)
- UB- Universal Beam as per BS-4 Part 1:1993
  - UB 203x133 to UB 610x229
- UC- Universal Columns per BS-4 Part 1:1993
  - UC 152x152 to UC 356x406

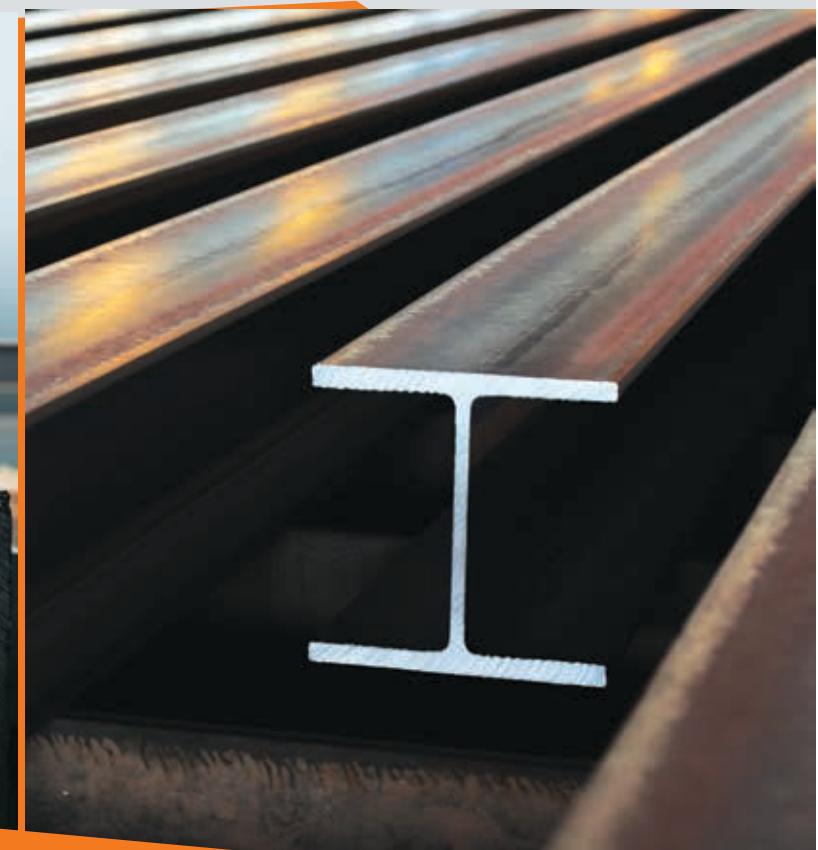


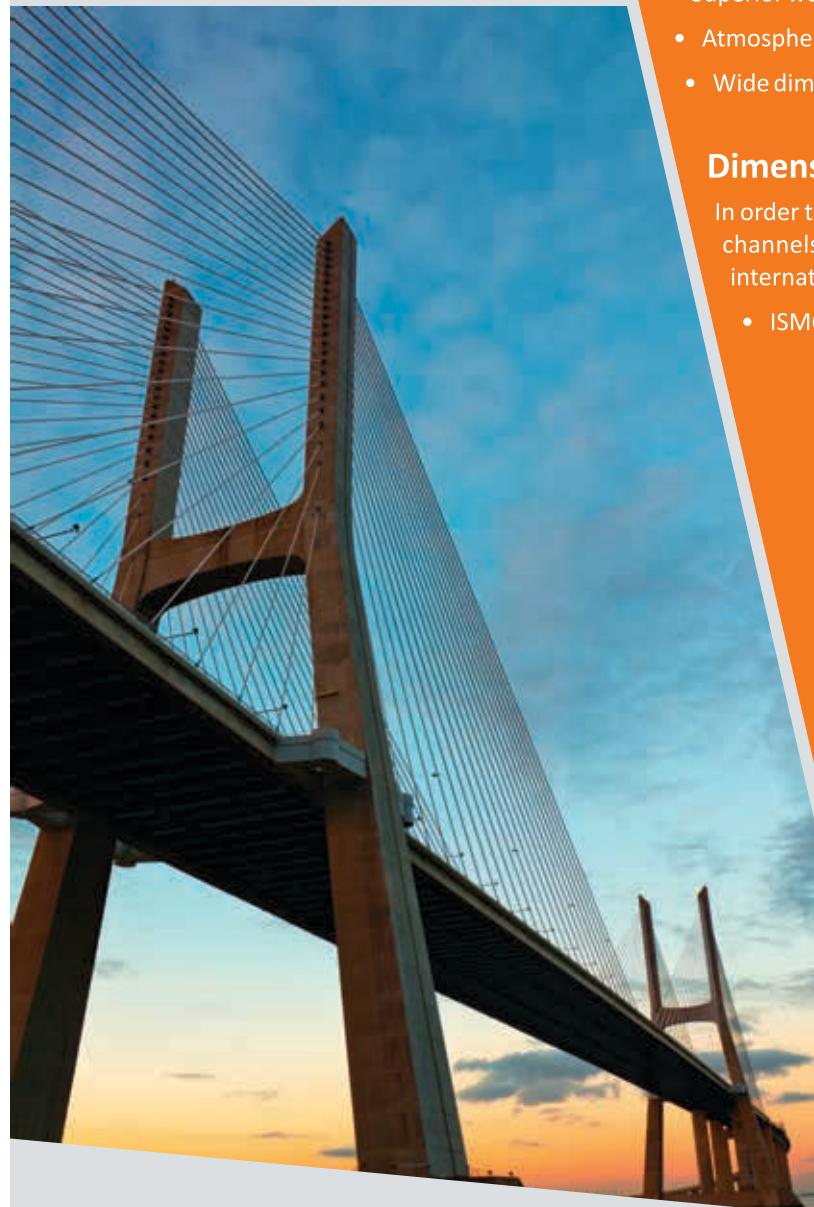
### Applications

Beams generally carry vertical gravitational forces but can also be used to carry horizontal loads (i.e., loads due to an earthquake or wind). The loads carried by a beam are transferred to columns, walls, or girders, which then transfer the force to adjacent structural compression members. Corrosion resistant grades finding application in places exposed to outside atmosphere which are prone to corrosion. Various places where beams and columns find application can be listed as follows

- Construction support beams for commercial and residential construction
- Support frames and columns for trolley ways, lifts and hoists
- Mezzanines and platforms
- Trailer and truck bed framing
- Support beams and columns in bridges
- Machine bases
- Freight cars

### Some of our Valued Customers





## Channels

One of the hot rolled structural shapes which JSPL offers is the tapered flange channel which is available in a wide range of sizes and thicknesses. The shape provides superior structural support, making it an ideal product for frames and braces used for machinery, enclosure, vehicle, building and structural support applications.

### Characteristics

JSPL channel offers various characteristics which make it suitable for use in various industrial segments and as a support structure

- Mild to High tensile strength
- Superior weldability
- Atmospheric corrosion resistance
- Wide dimensional range

### Dimensional Range

In order to meet the requirements of different segments, the tapered flange channels from JSPL are available as per Indian (IS 808) and various international standards.

- ISMC 75x40 to 400x100mm

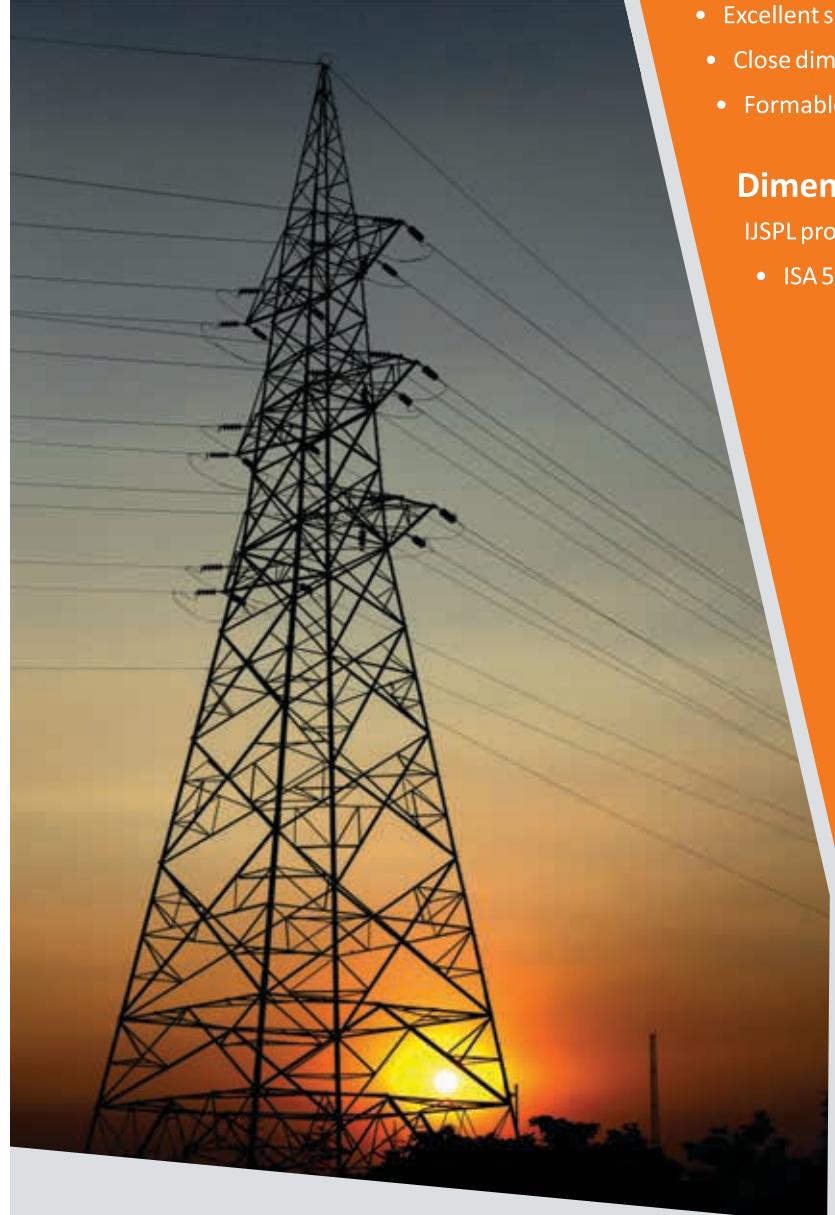
## Applications

Tapered flange channel sections from JSPL find application in a wide range of segments. The various applications of Channel sections include the following

- Truck and trailer frame supports
- Equipment and machinery frames and supports
- Building frames and other support components.
- Bridges
- Freight cars
- Poles

## Some of our Valued Customers





## Angles

JSPL is the manufacturer of hot rolled equal leg angles which are available in a variety of grades and sizes, making it ideal for structural applications, general fabrication, machining and repairs.

### Characteristics

Angles are one of the most widely used products in the construction industry. It offers various characteristic features as a low-cost material.

- Wide dimensional range
- Superior Weldability
- Excellent surface finish
- Close dimensional tolerances
- Formable, and machinable

### Dimensional Range

IJSPL produces equal leg angles with a wide dimensional range.

- ISA 50x50 to ISA 250x250mm

## Applications

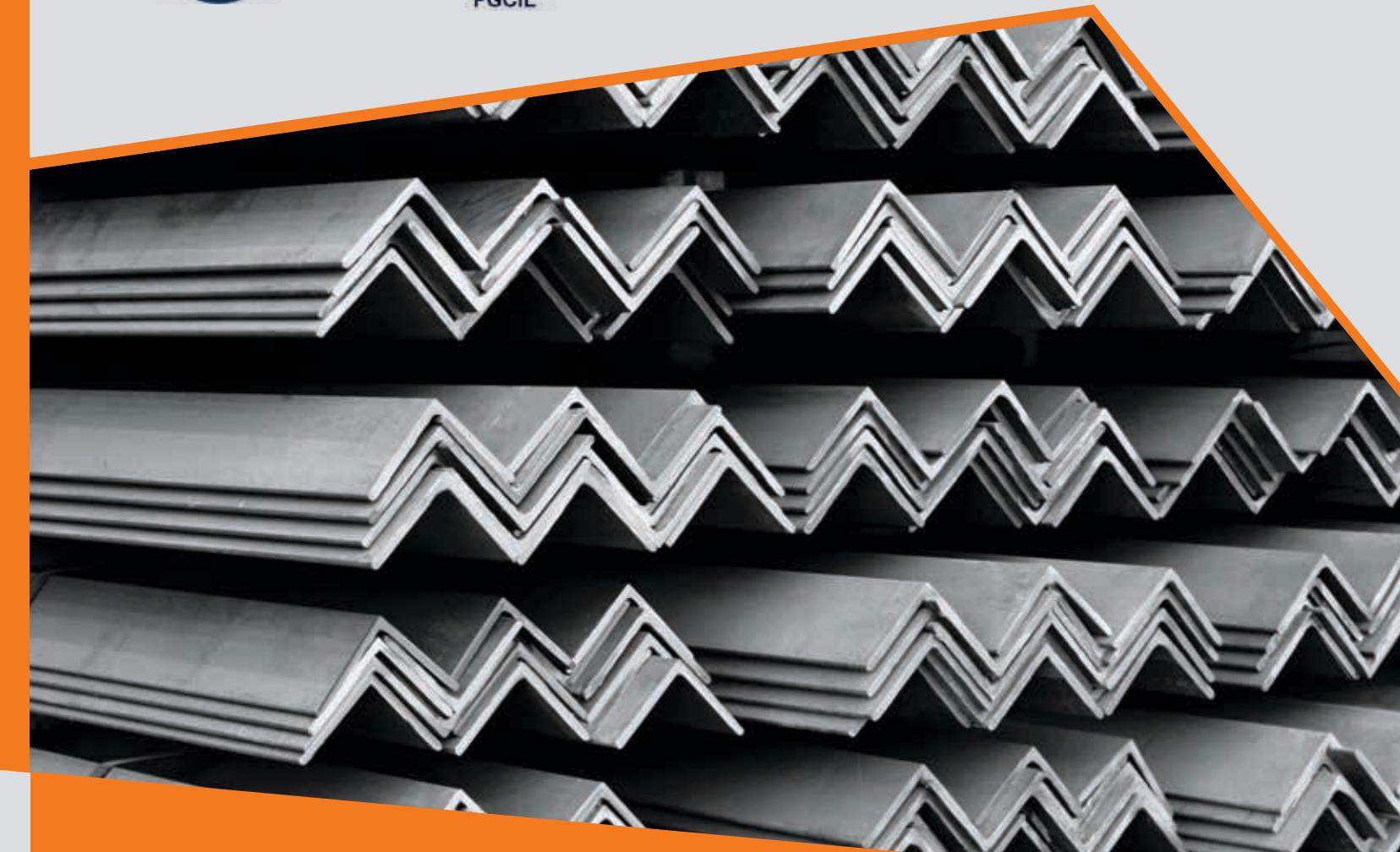
Angles are used in a range of industrial applications, including:

- Transmission towers & lines
- Buildings, bridges, and other structures for support
- General structural use in construction
- Transportation frames and corners
- Support frames that require welding, riveting or bolting on bridges and buildings
- Machinery and equipment frames, braces and corners
- Precipitators

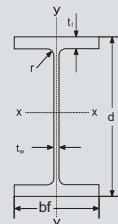
## Some of our Valued Customers



JYOTI STRUCTURES LIMITED



# Technical Specification for Structural Sections



## ANNEXURE - A

INDIAN STANDARD NARROW PARALLEL FLANGE BEAMS / EUROPEAN I-BEAMS	Indian Designation	Section Dimensions						Sectional Properties			Moment of Inertia		Sectional Modulus		Radius of gyration		Dimension for Detailing						Buckling Parameter		Torsional		Section Classification					
		Nominal Weight	Depth d	Web tw	Flange tf	Width A	Thickness mm	Area mm²	X Axis	Y Axis	X Axis	Y Axis	X Axis	Y Axis	Zpx	Zpy	Radius cm	Radius cm	Radius cm x10³mm³	Radius cm x10³mm³	Radius At Toe mm	End Clearance mm	Notch n	Surface Area Per Meter SA_m	Surface Area Per Tonne SA_t	U1	U2	Index x2	Warping Constant Cw	Torsional Constant J	Bending	Compression
									Ixx	Iyy	Zxx	Zyy	rxx	ryy	cm³	cm³	cm	cm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
IPFA 180/NPB 180x90x15.4	NPB	180x	90x	15.37	177	4.3	91	6.5	195.63	1063	81.9	120.1	18	7.37	2.05	135.32	27.96	9	4	54	16	699	45506	0.9538	0.8831	26.0	5.93	2.70	PL	PL		
IPFA 180/NPB 180x90x18.8	NPB	180x	90x	18.80	180	5.3	91	8.0	2394.63	1317	100.9	146.3	22.2	7.42	2.05	166.41	34.60	9	5	53	18	697	37095	0.9564	0.8818	21.7	7.43	4.79	PL	PL		
IPFA 180/NPB 180x90x21.3	NPB	200x	90x	21.27	182	6.0	92	9.0	2709.43	1505	117.3	165.4	25.5	7.45	2.08	189.14	39.91	9	5	53	18	700	32908	0.9583	0.8811	19.6	8.74	6.76	PL	PL		
IPFA 200/NPB 200x100x18.4	NPB	200x	100x	18.42	197	4.5	100	7.0	2346.93	1591	117.2	161.6	23.4	8.23	2.23	181.64	36.54	12	4	58	20	785	42624	0.9680	0.8861	25.7	10.53	4.11	PL	PL		
IPFA 200/NPB 200x100x22.4	NPB	200x	100x	22.36	200	5.6	100	8.5	2848.23	1943	142.4	194.3	28.5	8.26	2.24	220.62	44.61	12	5	58	22	783	35024	0.9685	0.8832	21.9	12.99	6.98	PL	PL		
IPFA 200/NPB 200x100x25.1	NPB	350x	100x	25.09	202	6.2	102	9.5	3196.03	2211	168.9	218.9	33.1	8.32	2.3	249.40	51.89	12	5	58	22	790	31484	0.9713	0.8835	20.0	1.57	9.45	PL	PL		
IPFA 360/NPB 350x170x50.2	NPB	350x	170x	50.21	357.6	6.6	170	11.5	3067.04	14520	944.3	811.8	111.1	15.06	3.84	906.69	171.85	18	5	92	30	1400	27876	0.9582	0.8904	30.4	281.99	26.51	PL	SC		
IPFA 360/NPB 350x170x57.7	NPB	350x	170x	57.09	360	8.0	170	12.7	3272.51	16270	903.6	122.8	3.79	1019.07	191.10	18	6	91	32	1397	24468	0.9529	0.8840	27.4	313.58	37.32	PL	PL				
IPFA 360/NPB 350x170x66	NPB	400x	170x	66.04	364	9.2	172	14.7	3184.83	19050	1251	1047	145.5	15.05	15.05	188.01	226.92	18	7	92	34	1402	21236	0.9554	0.8839	24.3	380.27	55.76	PL	PL		
IPFA 400/NPB 400x180x57.4	NPB	400x	180x	57.38	397	7.0	180	12.0	7309.00	20293	1170.6	1022.3	130.1	16.66	4.00	1143.79	202.07	21	6	97	34	1539	26817	0.9581	0.8888	31.6	432.22	34.79	PL	SC		
IPFA 400/NPB 400x180x63.6	NPB	400x	180x	66.30	400	8.6	180	13.5	8445.80	23128	1317.8	1156.4	146.4	16.55	3.95	1307.04	229.00	21	6	96	36	1535	23159	0.9529	0.8824	28.1	490.05	51.08	PL	PL		
IPFO 400/NPB 400x180x75.7	NPB	450x	180x	75.66	404	9.7	182	15.5	9638.10	26747	1564.2	1324.1	171.9	16.66	4.03	1502.06	269.10	21	7	97	38	1541	20371	0.9559	0.8830	25.2	587.65	73.10	PL	PL		
IPFA 450/NPB 450x190x67.2	NPB	450x	190x	67.15	447	7.6	190	13.1	8554.08	29759	1502.4	1315.1	158.1	18.65	4.19	1494.16	245.75	21	6	102	36	1673	24915	0.9480	0.8862	33.6	704.86	45.67	PL	SC		
IPFA 450/NPB 450x190x77.6	NPB	450x	190x	77.57	450	9.4	190	14.6	9881.52	33743	1675.9	1499.7	176.4	18.48	4.12	1701.67	276.38	21	7	101	36	1669	21522	0.9415	0.8877	29.9	791.01	66.87	PL	PL		
IPFO 450/NPB 450x190x92.4	NPB	450x	190x	92.36	456	11.0	192	17.6	1765.20	40923	2084.5	1794.9	217.2	18.65	4.21	2046.14	340.99	21	8	101	40	1674	18128	0.9458	0.8799	25.7	997.58	109.05	PL	PL		
IPFA 500/NPB 500x200x79.4	NPB	500x	200x	79.36	497	8.4	200	14.5	1010.20	42933	1939.2	1727.7	193.9	20.61	4.38	1945.67	301.62	21	6	106	36	1806	22756	0.9397	0.8834	34.6	1125.23	62.78	PL	SC		
IPFA 500/NPB 500x200x90.7	NPB	500x	200x	90.68	500	10.2	200	16.0	1155.61	48199	2141.7	1927.9	241.2	20.43	4.31	2193.98	335.88	21	7	105	38	1802	19875	0.9336	0.8765	31.1	1249.37	89.29	PL	PL		
IPFO 500/NPB 500x200x107.3	NPB	500x	200x	107.31	506	12.0	202	19.0	13670.00	57777	2621.7	2283.7	259.6	20.56	4.38	2612.84	408.53	21	8	105	40	1807	16836	0.9364	0.8765	26.9	1547.58	143.47	PL	PL		
IPFA 600/NPB 600x220x107.6	NPB	600x	220x	107.56	597	9.8	220	17.5	13701.31	82919	3113.6	2777.8	283.3	24.6	4.77	3140.96	442.07	24	7	116	42	2098	19502	0.9355	0.8815	35.2	2607.36	118.76	PL	SC		
IPFA 600/NPB 600x220x122.4	NPB	600x	220x	122.44	600	12.0	220	19.0	15597.71	92083	3387.3	3069.4	307.9	24.3	4.66	3512.18	485.65	24	8	114	44	2093	17095	0.92								

# Technical Specification for Structural Sections

Indian Channels	Sectional Area		Sectional Weight		Total Depth		Flange Width	Thk. of Web	Thk. of Flange	Flange Slope Max.	Root Radius	Toe Radius	Dist. Of C.G.	Moment of Inertia		Sectional Modulus		Radius of Gyration		Plastic Section Modulus		Torsional Constant	Warping Constant	Depth Bet. Root Fillets	Local Buckling Ratios	Class of Section	Remarks			
	A	w	H	B	tw	tf	r	R	r	deg.	mm	mm	cm <sup>2</sup>	Cyy	Iz	ly	Zxx	Zyy	rxx	ryy	Zpx	Zpy	It	Iw	x10 <sup>3</sup>	x10 <sup>3</sup>	b/tf	d/tw	Bending	Compression
	cm <sup>2</sup>	kg/mm	mm	mm	mm	mm	deg.	mm	mm		cm	cm <sup>2</sup>	cm <sup>4</sup>	cm <sup>4</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm	cm	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	mm	mm				
<b>SECTION PROPERTIES OF INDIAN STANDARD TAPERED FLANGE MEDIUM WEIGHT CHANNEL SECTIONS</b>																														
ISM 75x40	9.10	7.14	75.00	40.00	4.80	7.50	96.00	8.50	2.40	1.32	78.50	12.90	20.93	4.81	2.94	1.19	24.17	8.69	1.59	0.12	41.1	5.3	8.6	SC	SC					
ISM 100x50	12.18	9.56	100.00	50.00	5.00	7.70	96.00	9.00	2.40	1.54	192.00	26.70	38.40	7.72	3.97	1.48	43.83	14.30	2.26	0.46	63.8	6.5	12.8	SC	SC					
ISM 125x65	16.69	13.10	125.00	65.00	5.30	8.20	96.00	9.50	2.40	1.95	425.00	61.10	68.00	13.43	5.05	1.91	77.15	25.56	3.59	1.74	85.3	7.9	16.1	SC	SC					
ISM 150x75	21.40	16.80	150.00	75.00	5.70	9.00	96.00	10.00	2.40	2.20	788.00	103.00	105.07	19.43	6.07	2.19	119.82	37.88	5.45	4.32	106.8	8.3	18.7	SC	SC					
ISM 175x75	24.97	19.60	175.00	75.00	6.00	10.20	96.00	10.50	3.20	2.19	124.00	122.00	141.71	22.98	7.05	2.21	161.65	44.40	7.49	6.84	128.6	7.4	21.4	SC	SC					
ISM 200x75	28.41	22.30	200.00	75.00	6.20	11.40	96.00	11.00	3.20	2.20	183.00	141.00	183.00	26.60	8.03	2.23	211.26	51.07	9.90	10.12	150.3	6.6	24.2	SC	SC					
ISM 250x80	33.25	26.10	250.00	80.00	7.20	14.10	96.00	12.00	3.20	2.30	388.00	211.00	310.40	37.02	10.80	2.52	277.93	63.64	18.94	24.55	192.7	5.7	26.8	SC	SC					
ISM 250x82	38.98	30.60	250.00	82.00	9.00	14.10	96.00	12.00	3.20	2.23	408.00	244.00	326.40	40.87	10.23	2.50	356.72	73.90	22.88	26.86	192.7	5.8	21.4	SC	SC					
ISM 300x90	46.24	36.30	300.00	90.00	7.80	13.60	96.00	13.00	3.20	2.35	642.00	313.00	428.00	47.07	11.78	2.60	496.77	91.21	21.79	52.11	240.9	6.6	30.9	SC	SC					
ISM 300x92	52.80	41.50	300.00	92.00	10.00	13.60	96.00	13.00	3.20	2.26	690.00	345.00	460.00	49.80	11.40	2.56														
ISM 400x100	63.82	50.10	400.00	100.00	8.80	15.30	96.00	15.00	4.80	2.42	1520.00	508.00	760.00	67.02	15.43	2.82	891.03	127.69	36.14	153.67	333.0	6.5	37.8	SC	SC					
<b>UNIVERSAL COLUMNS AS PER BS4-1:1993</b>																														
Sectional Weight		Total Depth	Flange Width	Thickness of Web	Thickness of Flange	Root radius	Area of section		Moment of Inertia		Sectional Modulus		Radius of gyration		Remarks															
w	H	B	t <sub>w</sub>	t <sub>f</sub>	r	A	X Axis	Y Axis	X Axis	Y Axis	X Axis	Y Axis	X Axis	Y Axis																
w Kg/m	mm	mm	mm	mm	mm	mm	cm <sup>2</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>	cm <sup>3</sup>																
<b>PARALLEL FLANGE COLUMNS; UC SERIES</b>																														
UC 152 x 152 x 23	23.0	152.4	152.2	5.8	6.8	7.6	29.25	1250	399.9	164	52.55	6.54	3.70																	
UC 152 x 152 x 30	30.0	157.6	152.9	6.5	9.4	7.6	38.26	1748	560.5	221.8	73.31	6.76	3.83																	
UC 152 x 152 x 37	37.0	161.8	154.4	8	11.5	7.6	47.11	2210	706.2	273.2	91.48	6.85	3.87																	
UC 203 x 203 x 46	46.1	203.2	203.6	7.2	11	10.2	58.73	4568	1548	449.6	152.1	8.82	5.13																	
UC 203 x 203 x 52	52.0	206.2	204.3	7.9	12.5	10.2	66.28	5259	1778	510.1	174	8.91	5.18																	
UC 203 x 203 x 60	60.0	209.6	208.5	9.4	14.2	10.2	76.27	6125	2065	584.4	200.6	8.96	5.20																	
UC 203 x 203 x 71	71.0	215.8	206.4	10	17.3	10.2	90.43	7618	2537	706	245.9	9.18	5.30																	
UC 203 x 203 x 86	86.1	222.2	209.1	12.7	20.5	10.2	109.6	9449	3127	850.5	299.1	9.28	5.34																	
UC 254 x 254 x 73	73.1	254.1	254.6	8.6	14.2	12.7	93.1	11420																						



## Advantages of JSPL Parallel Flange Beams & Columns Rolled with Universal Rolling Technology

- **Wide Range:** Widest product range available in the country lending more flexibility to designers and a more cost- effective option to project owners
- **Exceptional Sectional Properties:** Better sectional properties as compared to conventional tapered flange beams leading to efficient design and lower steel usage. Availability of hi-tensile steel grades enables designers/ users to further cut on steel tonnage
- **Steel Saving:** Steel savings with parallel flange sections under bending load as well as under axial compression are appreciable when compared with tapered flange sections enabling usage of lower beam sizes
- **Higher Load carrying capacity:** Exhibits higher load-carrying capacity with Parallel Flange Beams sections under direct compression (when used as columns) owing to their higher radius of gyration values about 'y-y' axis and reduced slenderness ratio of beams, thus increasing stress-bearing limits
- **Faster Construction:** Simpler direct bolting of connections to flanges possible, as taper washers are not required. Flange-to-Flange welding possible as flanges are parallel
- **Ease in design:** Enables complex design and fabrication in high volumes because of the inherent functional advantages of Parallel Flange Beams

## Quality Assurance

Using virgin raw material from its captive iron ore mines and with an automated production facility, from the raw material stage to the final product delivered to customers, JSPL Sections assures consistent quality at every step and full compliance to desired specifications. With an automated production facility stationed with continuous checkpoints at every level, JSPL has been able to produce best quality structural sections and rails and establish an envious reputation in the country, as well as, its overseas customers. Its strong quality and control assurance systems are equipped with modern testing facilities, which conform to stringent quality standards and are manned by well-qualified personnel.

## Quality Control Facilities at JSPL

- Prestigious NABL accredited lab
- Fully equipped mechanical testing laboratory
- Universal Testing Machines [Load capacity: up to 1000KN]
- Impact Testing Machine [to carry out both Charpy as well as IZOD tests]
- Bend Testing Machine
- Brinell cum Rockwell Hardness Tester
- CNC Wirecut Machine - To cut complex notches for tests like fracture toughness etc.
- Strain Indicator - Used for measuring the residual stresses in rails
- Falling Weight Test-Unique test carried out for rails to ascertain the capacity of rails to withstand shock loading without failure.
- MTS 810 machine - The state-of-the-art testing facility for conducting fracture toughness and fatigue testing for rails.
- Profile check
- Laser straightness checking
- Eddy current testing
- Ultrasonic testing

## Packing & Delivery

**Packing:** All the sections are supplied bare and either loose and/or in mill standard packing of maximum 5MT weight, each

**Marking:** All of above sections are supplied with details of size/ length/ steel grade/ heat number marked with indelible white paint on pieces and on the bundles, with bundle number additionally appearing on the bundle. Embossing on the sections are also done as per customer requirement.



## Few Valued Customers



## Certifications & Approvals



## Key Locations & Sales Network

**Corporate Office**  
Jindal Centre,  
12, Bhikaji Cama Place,  
New Delhi - 110 066, INDIA  
Tel: +91 11 26188340-50  
Fax: +91 11 26161271

**Registered Office**  
O.P. Jindal Marg  
Hisar - 125 005,  
Haryana, INDIA  
Tel: +91 1662 222471-84  
Fax: +91 1662 220476

### Works

**Angul**  
Jindal Steel & Power Ltd.  
Chhendipada Road, SH-63,  
At/Po : Jindal Nagar, Pin-759111  
Dist : Angul (ODISHA)  
Tel: +91 6761 254191-95  
Fax: +91 6761 254144-144  
Email: jindalangul@jpsl.com

**Barbil**  
Iron Ore Pellet Plant  
Commercial Office, Plot No. 507/365,  
Barbil-Joda Highway,  
Barbil - 758035, Odisha, INDIA  
Tel: +91 6434 231045  
Fax: +91 6434 231046

**Dumka**  
Indra Palace, Nag Path,  
Shiv Pahar, Dumka - 814 101,  
Jharkhand, INDIA Tel: +91 6434 231045  
Fax: +91 6434 231046

**Patratu**  
Balkudra, Patratu,  
Distr. Ramgarh,  
Jharkhand - 829 143, INDIA  
Tel: +91 6553 275724/275726  
Fax: +91 6553 275744

**Raipur**  
13 K.M. Stone,  
G.E. Road, Mandir Hasaud,  
Raipur - 492 101, Chhattisgarh, INDIA  
Tel: +91 771 2471205-07  
Fax: +91 771 2471214, 2471120  
E-mail: jspl\_raipur@rpr.jpsl.com

**Raigarh**  
Khasia Road, Raigarh - 496 001,  
Chhattisgarh, INDIA  
Tel: +91 7762 227001-05  
Fax: +91 7762 227022-23  
E-mail: raigarh@jpsl.com

### Marketing Offices

**Head Office/International Sales Division**  
Jindal Steel & Power Limited  
Plot No-2, Sector-32,  
Near Exit-10, Gurgaon - 122 001,  
Haryana, INDIA  
Tel: +91 124 6612000 (Board)  
Fax: +91 124 6616202  
E-mail: marketing@jindalsteel.com

**Bhubaneshwar**  
Jindal Steel & Power Limited  
Sales & Marketing  
1st Floor, Plot No. 03, Forest PARK,  
Bhubaneshwar - 751002  
Tel: +91 674 2726500  
Fax: +91 674 2726889  
E-mail: omprakash.behera@bbsr.jpsl.com

**Jaipur**  
Jindal Steel & Power Limited  
501 & 504, Pashupati Akshat Heights  
Bani Park, Jaipur - 302 016  
Mob: +91 9694085333  
E-mail: siddarth.lohra@jindalsteel.com

**Kolkata**  
Jindal Steel & Power Limited  
Room No. 61 & 63, 6th Floor,  
Circular Court, 8 A.J.C. Bose Road,  
Kolkata - 700 017  
Tel: +91 33 - 40218100-20  
Fax: +91 33 - 40218116  
Mob: +91 9163878190  
E-mail: kaushikb@jpsl.com

**International Offices**  
**Oman**  
Shadeed Iron & Steel LLC  
P.O. Box: 312, A'Tareef,  
321, Sohar, Sultanate of Oman  
Tel: +96826850459  
Email: amit.gupta@jindalsteel.com

**Ahmedabad**  
Jindal Steel & Power Limited  
1208, MATRIX, Behind Divya Bhaskar Office,  
SG Road, Prahladnagar, Satellite,  
Ahmedabad - 380 051  
Tel: +91 79 65255502/3  
E-mail: subimal.sarmah@jpsl.com

**Chennai**  
Jindal Steel & Power Limited  
Flat No. A/1, Niroda Apartment,  
'L' Block, P.O. Bistupur,  
Jamsedpur - 831 002  
Mob: +91 9934010544  
E-mail: amar.gauhanu@pat.jpsl.com

**Jamshedpur**  
Jindal Steel & Power Limited  
Flat No. 113 & 114, New No. 20 & 18,  
Sir Theyagaraya Road, T. Nagar,  
Chennai - 600 017  
Tel: 044 434446950-61, 24323530  
Fax: +91 44 42132334  
E-mail: jpslchennai@airtelmail.in

**Kanpur**  
Jindal Steel & Power Limited  
Sai Square (3rd Floor)  
45, Bhargava Estate,  
Civil Lines, Kanpur - 208 001  
Mob: +91 9971667034  
Email: rajiv.mishra@jindalsteel.com

**Indonesia**  
PT. Jindal Overseas  
Deutsche Bank Building,  
Suite 1302, Jl Imam Bonjol No. 80,  
Jakarta Pusat 10310  
Indonesia  
Tel: +62 21 39831525-26  
Email: gaurav.sood@jindalsteel.com/  
yvonne@jindalindonesia.com

**Bengaluru**  
Jindal Steel & Power Limited  
N-306, 11rd Floor, Manipal Centre,  
47, Dickenson Road, Bengaluru - 560 042  
Tel: +91 80 42127132  
E-mail: ajoy.gupta@jpsl.com

**Chandigarh**  
Jindal Steel & Power Limited  
SCO - 24, Sector 26,  
Madhya Marg, Chandigarh-160 019  
Mob: +91 8427822311  
Email: anand.prakash@jpsl.com

**Kochi**  
Jindal Steel & Power Limited  
32/1577 - C2 (2nd Floor) Springs Cascades,  
Opp. Ernakulam Medical Centre,  
Bry Pass Road, Palarivattom,  
Kochi - 682 025  
Tel: +91 771 2471205-7  
Fax: +91 771 3054671/2471001  
E-mail: sbnag@rpr.jpsl.com

**Raipur**  
Jindal Steel & Power Limited  
13 K.M. Stone  
G.E. Road, Mandir Hasaud  
Raipur - 492 101  
Chhattisgarh, INDIA  
Tel: +91 771 2471205-7  
Fax: +91 771 2471214, 2471120  
E-mail: dhiren.patel@jindalsteel.com

**Bhopal**  
Jindal Steel & Power Limited  
FM-5A, 1st Floor, Block - A,  
Mansarovar Complex,  
Hoshangabad Road, Bhopal - 462 011  
Tel: +91 755 4061630  
E-mail: deepak.srivastava@jindalsteel.com

**Hyderabad**  
Jindal Steel & Power Limited  
Suite No. 102, 1st Floor  
Cyber Heights, Banjara Hills,  
Road No. 2, Hyderabad - 500 034  
Tel: +91 40 40024878  
E-mail: vadankumar@jpsl.com

**Visakhapatnam**  
Jindal Steel & Power Ltd  
2nd Floor, Pavan Commercial Complex,  
(Above Syndicate Bank)  
Main Road, Daba Gardens,  
Visakhapatnam-530020  
Andhra Pradesh

### Stockyards

**Ahmedabad**  
M/s Raghab Steel  
156/157, Mouji Eyeva, Near Hipolin Ltd.,  
Sanand Viramgam Highway  
Sanand, Ahmedabad - 382 110, INDIA  
Mob: +91 9009964648  
E-mail: hardiks@jpsl.com

**Delhi**  
M/s LMI Logistics Ltd  
Khsra No. 42/29, Bakoli,  
GT Karnal Road, New Delhi- 110009  
Mob: +91 9873973209  
E-mail: dharmendra.raj@jindalsteel.com

**Kapur**  
M/s Shree Gopal Industries  
873 A, Kalpi Road  
Gram Umran, Rania, Kapur - 209 311  
Tehsil Kamptee, Distt. Nagpur  
Maharashtra - 441 202  
Mob: +91 9923824063  
E-mail: rshukla@jpsl.com

**Nagpur**  
M/s Rita Steel  
253/K-2 16 K.M. Milestone,  
Bhandara Road, Mahila gaon  
Tehsil Kamptee, Distt. Nagpur  
Maharashtra - 441 202  
Mob: +91 9557064666  
E-mail: sharad.bajpai@jindalsteel.com

**Bhopal**  
M/s Sumer Sons Pvt Ltd  
Survey No. 234, 235, Gram Sukhi, Sevania,  
Vidish Road, Bhopal - 462 010  
Mob: +91 9827478327  
E-mail: as.yadav@jpsl.com

**Kolkata**  
M/s Balmer Lawrie & Co. Ltd.  
1, Sonapur Road,  
Near Jaintapur Petrol Pump  
Kolkata - 700 088  
Mob: +91 9999700550  
E-mail: ypkhanna@jpsl.com

**Patna**  
M/s Shri Tejasw Yadav  
March Marchi Road,  
Patna (Bihar)  
Mob: +91 9771424228  
E-mail: praveen.brar@jpsl.com

**Chandigarh**  
M/s VTC Transport Pvt Ltd  
131 Industrial Area, Phase 1  
Chandigarh - 160 101  
Mob: +91 9814492033  
E-mail: jatinder.seth@jpsl.com

**Ludhiana**  
M/s Sumer Sons Pvt Ltd  
Village Rajgarh, Tehsil Payal,  
Near Doraha, Ludhiana - 141 421  
Mob: +91 8427629955  
E-mail: sureshk@jpsl.com

**Vishakapatnam**  
M/s. Maha Maruti Logistics (P) Ltd.  
SYNO. 27/5, Seshadri Nagar,  
Chamalapalli Village Vepagunta,  
Vishakapatnam - 530 047  
Mob: +91 8008655007  
E-mail: neelakanta.rao@jpsl.com

**Chennai**  
M/s Sri Balaji Steel Agencies  
Plot No.4, Survey No. 110/2  
Kadappakkam Village,  
Near Manali New Town,  
Vichoor Road, Manali  
Chennai - 600 103,  
Mob: +91 9840237966  
E-mail: srihari@jpsl.com

**Rahuri**  
M/s Continental Carriers of India  
Gate No 44, Near Rahuri Railway Station,  
Tandulwadi, Post-Rahuri,  
Ahmednagar, Maharashtra - 413 705,  
Mob: +91 9923001951  
E-mail: dhrai.jpl@gmail.com

**Cuttack**  
M/s Baba Lingaraj Enterprises  
At Govindpur Chak  
PO: Baichuna,  
Tangi, Cuttack - 754 022  
Mob: +91 9777449396  
E-mail: rb@bbsr.jpsl.com

**Mumbai**  
M/s Jyoti Logistics Pvt Ltd  
Survey No. 72, NH-4  
Old Mumbai-Pune Highway  
Khalapur, Distt. Raigad - 410 203  
Mob: +91 9820811555  
E-mail: amitkhona@jpsl.com

**Raipur**  
M/s Kirshna Logistics  
Transport Nagar, Patrapali,  
Distt. Raipur Chhattisgarh - 496 001  
Mob: +91 9907148595  
E-mail: murari@rpr.jpsl.com

**JINDAL STEEL & POWER**