

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 girder, which then transfer the force to adjacent structural compression members. Corrosion resistant grades find application in places exposed top outside atmosphere which are prone to corrosion. Power plants, Refineries, Railway Bridges, Offshore platforms and Commercial Buildings, Hospitals are few applications. Various places where beams and columns find application can be listed as follows:

- ◀ Power plant and Refinery Structures
- ◀ Offshore Structures
- ◀ Support beams and columns for bridges & flyovers
- ◀ Construction support beams and columns for commercial and residential construction
- ◀ Industrial Sheds and Warehouses
- ◀ Support frames and columns for trolley ways, lifts and hoists
- ◀ Mezzanines and platforms
- ◀ Trailers and truck bed framing
- ◀ Machine bases
- ◀ Freight cars



SOME OF OUR VALUED CUSTOMERS



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PARALLEL FLANGE BEAMS & COLUMNS

Beams and Columns are characterized by their profile, their length, and their material. The grades conform to IS2062, ASTM A36, A572 Grade 50, EN10025, Canadian 44W and 50W or other equivalent. JSPL manufactures Parallel Frange Beams and Columns in various configurations.

- ◀ Narrow Parallel Flange Beams
- ◀ Wide Parallel Flange Beams
- ◀ European I Beams
- ◀ American W Section Beams
- ◀ Universal Beams
- ◀ Universal Columns
- ◀ European H Beams
- ◀ American W Section Columns

CHARACTERISTICS

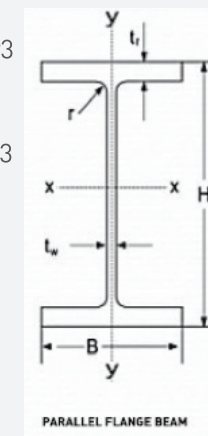
To cater to the broader market segment and comply to the different needs of various industries, JSPL offers structural sections with various characteristics in this segment.

- ◀ High strength to weight ratio
- ◀ Atmospheric corrosion resistance
- ◀ Wide dimensional range
- ◀ Superior weldability
- ◀ Cost effective
- ◀ Multiple sectional weights

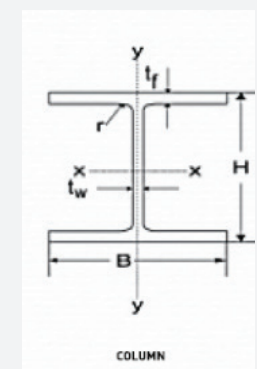
DIMENSIONAL RANGE

They are widely used in the construction industry to provide support for building 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 - NPB 180X90 to NPB 600X220
- ◀ WPB-Wide Parallel Flange Beams as per IS 12778:2004 - WPB 320X300 to WPB 900X300
- ◀ UB-Universal Beam as per BS-4 Part 1:1993 - UB 152x89 to UB 610X229
- ◀ UC-Universal Columns per BS-4 Part 1:1993 - UC 152X152 to UC 356X406
- ◀ IPE Series-European Standard Narrow Flange Beams - IPEA/IPE/ IPEO 160 to IPEA/IPE/ IPEO 600
- ◀ HE Series-European Wide Flange Beams - HEA/HEB/HEM 320 to HEA/HEB/HEM 900
- ◀ American W Sections Beams as per A6 - W8 to W24 (Inches)
- ◀ American W Sections Columns as per A6 - W6 to W14 (Inches)

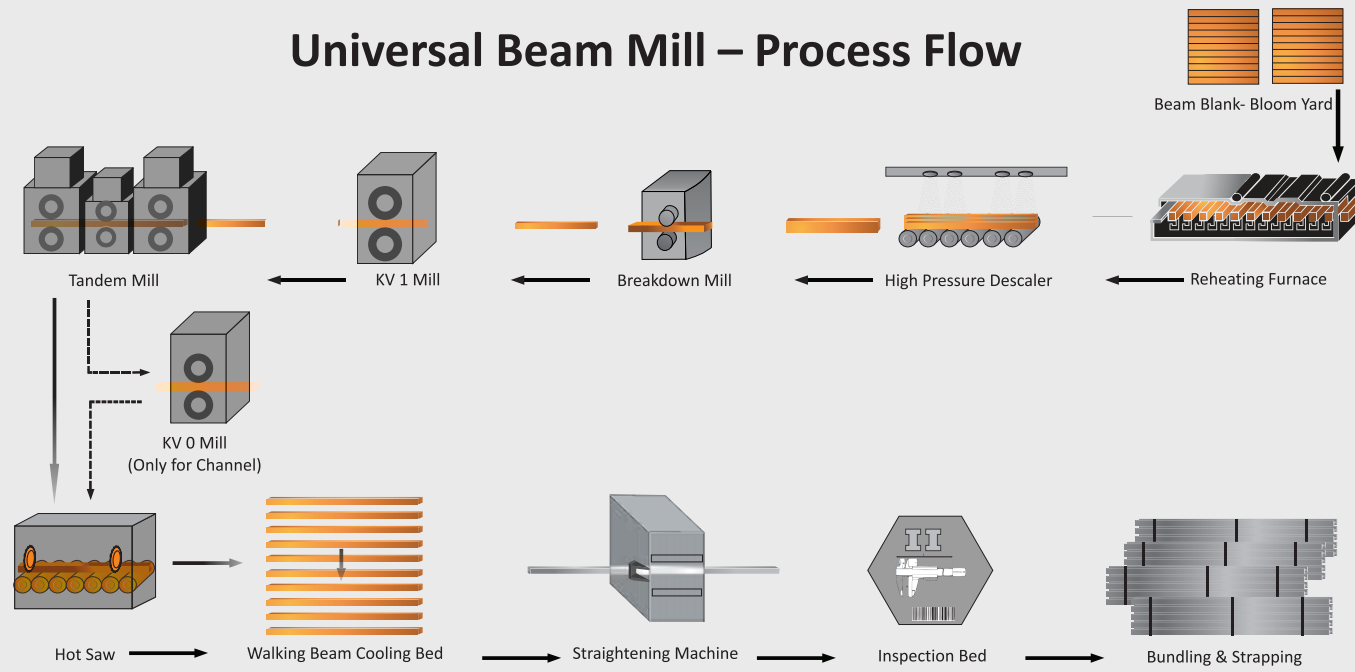


PARALLEL FLANGE BEAM

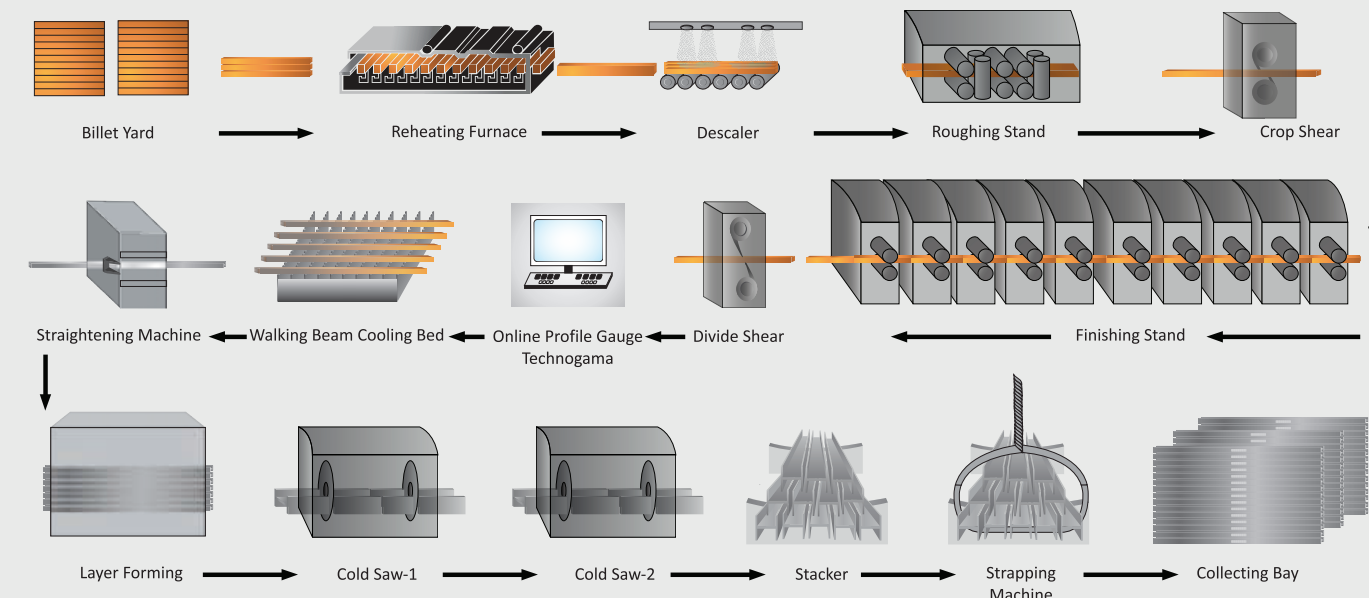


COLUMN

Universal Beam Mill – Process Flow



Medium & Light Structural Mill – Process Flow



BEAMS				COLUMN			
Universal beams (UB) EN10025-2,3,4 S275/S355/S420/S460 BS4-1:1993 (mm x mm x kg/m)	European I beams (IPE) DIN 1025/Euronorm EU 19-57 Euronorm EU 19-57 (Tol.-EN10034:93) (mm x mm x kg/m)	Narrow parallel flange beams IS2062 E250/E300/E350/E410/E450/ E550 IS 12778 (Tol. IS12779) (mm x mm x kg/m)	American W sections Beams ASTM A36/ A36M ASTM A6 (inch x inch x lbs/ft)	Universal columns (UC) EN10025-2,3,4 S275/S355/S420/S460 BS4-1:1993 (mm x mm x kg/m)	European H beams DIN 1025/Euronorm EU 19-57 Euronorm EU 19-57 (Tol.-EN10034:93) (mm x mm x kg/m)	Wide parallel flange beams IS2062 E250/E300/E350/E410/E450/E550 IS 12778 (Tol. IS12779) (mm x mm x kg/m)	American W sections Columns ASTM A36/ A36M ASTM A6 (inch x inch x lbs/ft)
UB 152x89x16	IPE 160x80x12.7 IPE 160x82x15.8 IPE 180 X 90 X 19 IPEO 180 X 90 X 21	NPB 180 X 90 X 15/19/21		UC 152X152x23/30/37/51		WPB 150 x 150 x 35	6 x 6 x 15/20/25
UB 203X133x25/30	IPEA 200 X 100 X 18 IPE 200 X 100 X 22 IPEO 200 X 100 X 25	NPB 200 X 100 X 18/22/25	8 x 5.25 x 18/21	UC 203X203x46/52/60/71/86			8 x 8 x 31/35/40/48/58
UB 254X146x31/37/43			10 x 5.75 x 22/26/30 12x6.5x30/35	UC 254X254x73/89/107/132/167			10 x 10 x 49/54/60/68/77/88/100/112
UB 356X171x45/51/57/67	IPEA 360 X 170 X 50 IPE 360 X 170 X 57 IPEO 360 X 170 X 66		14 x 6.75 x 30/34/38	UC 305X305x97/118/137/158/198/240/283	HEA 320X300X 98 HEB 320X300X 127 HEM 320X300X 245*	WPB 320X300X74/98/127/245*	12x12x65/72/79/87/96/106/120/136
UB 406X140X39/46	IPEA 400 X 180 X 57			UC 356X368x129/153/177/202	HEA 600X300X 178 HEB 600X300X 212 HEM 600X300X 285	WPB 600X300X129/178/212/285	14x14.5x90/99/109/120/132
UB 406X178x54/60/67/74	IPE 400 X 180 X 66 IPEO 400 X 180 X 76	NPB 400 X 180 X 57/66/76	16x7x36/40/45/50/57	UC 356X406x235/287	HEA 700X300x 204 HEB 700X300x 241 HEM 700X300x 301	WPB 700X300x150/204/240/301	14x16x145/176
UB 457X152x52/60/67/74/82		NPB 450 X 140 X 40	18 x6 x35/40/46		HEA 800 X 300 X 224 HEB 800 X 300 X 262 HEM 800 X 300 X 317	WPB 800 X 300 X 172/224/262/317/377	
UB 457X191x67/74/82/89/98	IPEA 450 X 190 X 67 IPE 450 X 190 X 78 IPEO 450 X 190 X 92	NPB 450 X 190 X 67/78/92	18 x 7.5x 45/50/55/60/65/71				
UB 533X210x82/92/101/109/122	IPEA 500 X 200 X 79 IPE 500 X 200 X 91 IPEO 500 X 200 X 107	NPB 500 X 150 X 52 NPB 500 X 180 X 66			HEA 900 X 300 X 252 HEB 900 X 300 X 291 HEM 900 X 300 X333	WPB 900 X 300 X 252/291/333	
UB 610X229x101/113/125/140	IPEA 600 X 220 X 108 IPE 600 X 220 X 122 IPEO 600 X 220 X 154	NPB 600 X 220 X 101/108/122/154	21x8.25x62/68/73/83/95 24 x 9 x 68/76/84/94/103				

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 to 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: Enable complex design and fabrication in high volumes because of the inherent functional advantages of Parallel Flange Beams