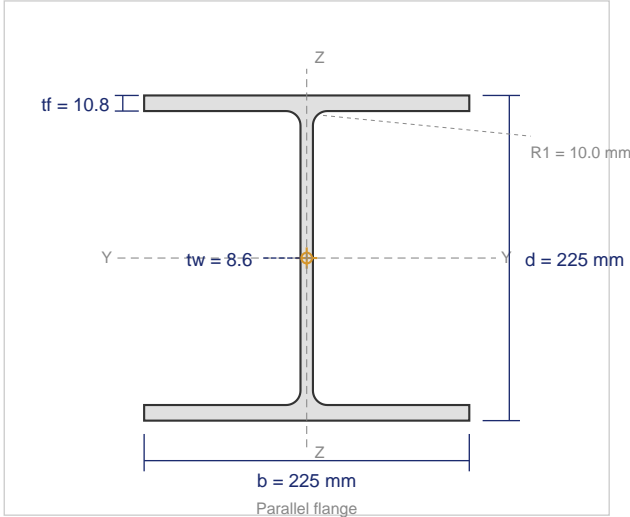


# ISHB 225

Indian Standard Heavy Beam -- IS 808 : 1989

## CROSS SECTION (Proportionally Accurate)



## DIMENSIONS

Depth (d)	225 mm
Flange Width (b)	225 mm
Web Thickness (tw)	8.6 mm
Flange Thickness (tf)	10.8 mm
Root Radius (R1)	10.0 mm
Variant	Light
Weight per Meter	43.1 kg/m
Cross-sectional Area	5494 mm <sup>2</sup>
Surface Area	1.290 m <sup>2</sup> /m

## SECTIONAL PROPERTIES

Property	About X-X Axis	About Y-Y Axis
Moment of Inertia	<b>I<sub>x</sub> = 51,067,000 mm<sup>4</sup></b>	<b>I<sub>y</sub> = 20,547,000 mm<sup>4</sup></b>
Elastic Section Modulus	<b>Z<sub>x</sub> = 453,900 mm<sup>3</sup></b>	<b>Z<sub>y</sub> = 182,600 mm<sup>3</sup></b>
Plastic Section Modulus	<b>Z<sub>px</sub> = 509,600 mm<sup>3</sup></b>	<b>Z<sub>py</sub> = 278,400 mm<sup>3</sup></b>
Radius of Gyration	<b>r<sub>x</sub> = 96.4 mm</b>	<b>r<sub>y</sub> = 61.1 mm</b>
Distance to Extreme Fibre	<b>c<sub>x</sub> = 112.5 mm</b>	<b>c<sub>y</sub> = 112.5 mm</b>
Shape Factor (Z <sub>p</sub> /Z)	<b>1.123</b>	<b>1.525</b>
Torsional Constant	<b>I<sub>t</sub> = 245,000 mm<sup>4</sup></b>	
Warping Constant	<b>I<sub>w</sub> = 238,800,000,000 mm<sup>6</sup></b>	
Shear Area	<b>A<sub>v</sub> = 1,935 mm<sup>2</sup></b>	

## FACTORED CAPACITY (per IS 800:2007, gamma\_m0 = 1.10)

Grade	Mp X-X (kN.m)	Mp Y-Y (kN.m)	Axial Pd (kN)
E 250 (Fe 410W)	115.8	63.3	1249
E 350	162.1	88.6	1748
E 410	189.9	103.8	2048
E 450	208.5	113.9	2248

## APPLICABLE STANDARDS

<b>IS 808 : 1989</b>	Dimensions for hot rolled steel beam, column, channel and angle sections
<b>IS 2062 : 2011</b>	Hot rolled medium and high tensile structural steel
<b>IS 800 : 2007</b>	General construction in steel -- Code of practice
<b>IS 1852</b>	Tolerances for hot rolled structural steel sections