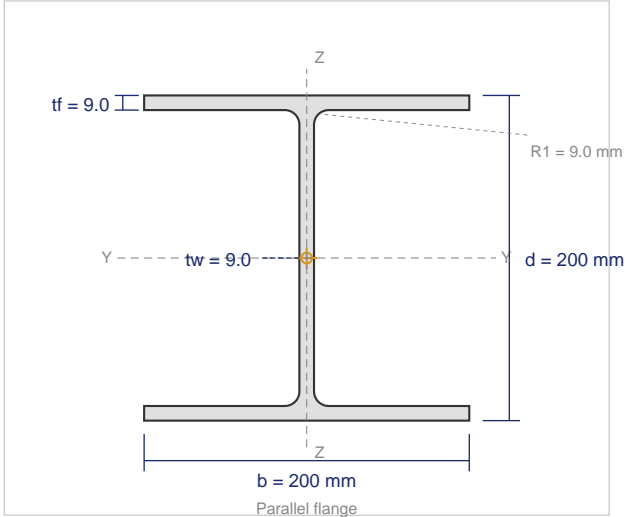


ISHB 200 H

Indian Standard Heavy Beam -- IS 808 : 1989

CROSS SECTION (Proportionally Accurate)



DIMENSIONS

Depth (d)	200 mm
Flange Width (b)	200 mm
Web Thickness (tw)	9.0 mm
Flange Thickness (tf)	9.0 mm
Root Radius (R1)	9.0 mm
Variant	Heavy
Weight per Meter	40.0 kg/m
Cross-sectional Area	5094 mm ²
Surface Area	1.149 m ² /m

SECTIONAL PROPERTIES

Property	About X-X Axis	About Y-Y Axis
Moment of Inertia	$I_x = 35,026,000 \text{ mm}^4$	$I_y = 12,007,000 \text{ mm}^4$
Elastic Section Modulus	$Z_x = 350,300 \text{ mm}^3$	$Z_y = 120,100 \text{ mm}^3$
Plastic Section Modulus	$Z_{px} = 396,000 \text{ mm}^3$	$Z_{py} = 183,400 \text{ mm}^3$
Radius of Gyration	$r_x = 82.9 \text{ mm}$	$r_y = 48.5 \text{ mm}$
Distance to Extreme Fibre	$c_x = 100.0 \text{ mm}$	$c_y = 100.0 \text{ mm}$
Shape Factor (Z_p/Z)	1.130	1.527
Torsional Constant	$I_t = 196,500 \text{ mm}^4$	
Warping Constant	$I_w = 110,260,000,000 \text{ mm}^6$	
Shear Area	$A_v = 1,800 \text{ mm}^2$	

FACTORED CAPACITY (per IS 800:2007, $\gamma_{m0} = 1.10$)

Grade	$M_p \text{ X-X (kN.m)}$	$M_p \text{ Y-Y (kN.m)}$	Axial Pd (kN)
E 250 (Fe 410W)	90.0	41.7	1158
E 350	126.0	58.4	1621
E 410	147.6	68.4	1899
E 450	162.0	75.0	2084

APPLICABLE STANDARDS

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