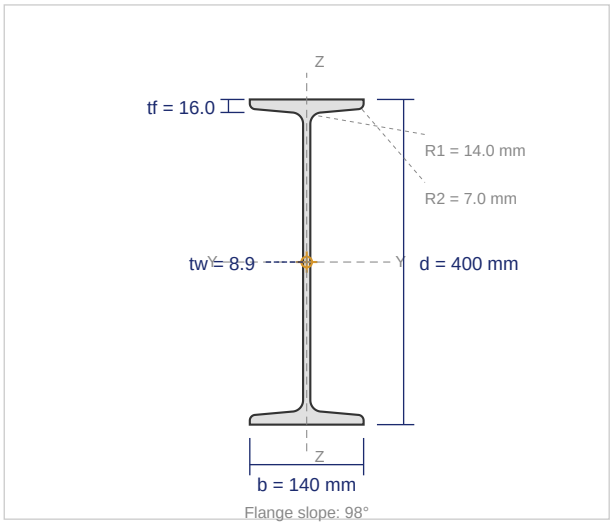
ISMB 400

Indian Standard Medium Weight Beam — IS 808 : 1989

CROSS SECTION (Proportionally Accurate — True Radii)



DIMENSIONS

Depth (d)	**400 mm**
Flange Width (b)	**140 mm**
Web Thickness (tw)	**8.9 mm**
Flange Thickness (tf)	**16.0 mm**
Root Radius (R1)	**14.0 mm**
Toe Radius (R2)	**7.0 mm**
Flange Slope	**98°**
Weight per Meter	**61.5 kg/m**
Cross-sectional Area	**7840 mm2**

SECTIONAL PROPERTIES

Property	About X-X Axis	About Y-Y Axis
Moment of Inertia	**Ix = 204580000 mm4**	**Iy = 6220000 mm4**
Elastic Section Modulus	**Zx = 1022900 mm3**	**Zy = 88900 mm3**
Plastic Section Modulus	**Zpx = 1192000 mm3**	**Zpy = 141200 mm3**
Radius of Gyration	**rx = 161.5 mm**	**ry = 28.2 mm**
Torsional Constant	**It = 388000 mm4**	
Warping Constant	**Iw = 274000000000 mm6**	

AVAILABLE GRADES (IS 2062 : 2011)

Grade	Yield (MPa)	UTS (MPa)	Elongation	Application
E250 (Fe 410W)	250	410	23%	General construction
E275 (Fe 440)	275	440	22%	Commercial buildings
E300	300	440	22%	Industrial structures
E350 (Fe 490)	350	490	22%	Heavy industrial, bridges
E410 (Fe 540)	410	540	20%	Heavy structural, offshore
E450 (Fe 570)	450	570	20%	Bridges, towers

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 1852	Tolerances for hot rolled structural steel sections