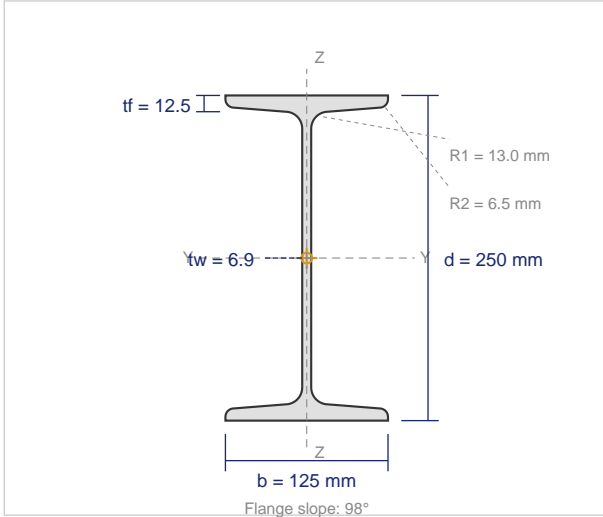


ISMB 250

Indian Standard Medium Weight Beam — IS 808 : 1989

CROSS SECTION (Proportionally Accurate — True Radii)



DIMENSIONS

| | |
|-----------------------|----------------------|
| Depth (d) | 250 mm |
| Flange Width (b) | 125 mm |
| Web Thickness (tw) | 6.9 mm |
| Flange Thickness (tf) | 12.5 mm |
| Root Radius (R1) | 13.0 mm |
| Toe Radius (R2) | 6.5 mm |
| Flange Slope | 98° |
| Weight per Meter | 37.3 kg/m |
| Cross-sectional Area | 4750 mm ² |

SECTIONAL PROPERTIES

| Property | About X-X Axis | About Y-Y Axis |
|-------------------------|--|---|
| Moment of Inertia | I_x = 51320000 mm⁴ | I_y = 3340000 mm⁴ |
| Elastic Section Modulus | Z_x = 410500 mm³ | Z_y = 53500 mm³ |
| Plastic Section Modulus | Z_{px} = 474700 mm³ | Z_{py} = 84300 mm³ |
| Radius of Gyration | r_x = 103.9 mm | r_y = 26.5 mm |
| Torsional Constant | I_t = 197000 mm⁴ | |
| Warping Constant | I_w = 7940000000 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 |