



E250A – Technical Datasheet

1. Chemical & Mechanical Properties

A. Chemical Composition

Element	Max % Composition
Carbon (C)	0.23%
Manganese (Mn)	1.50%
Sulphur (S)	0.050%
Phosphorus (P)	0.050%
Silicon (Si)	0.45% (typical)
Copper (Cu)	Not specified ($\leq 0.30\%$ typical for residual)

B. Mechanical Properties

Property	Value
Yield Strength (YS)	≥ 250 MPa
Tensile Strength (TS)	410 – 540 MPa
Elongation	$\geq 23\%$ (for <20 mm thickness)
Hardness	Approx. 120 – 150 HB
Impact Test	Not applicable (No impact requirement for 'A' grade)

2. Equivalent / Alternative Grades

A. Chemical Composition Comparison

Standard	Grade	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Notes
IS 2062	E250A	0.23	1.50	0.050	0.050	~ 0.45	No impact requirement
EN 10025-2	S235JR	0.17	1.40	0.035	0.035	≤ 0.50	JR = 27J @ Room Temp (optional)
ASTM A36	A36	0.26	0.60–0.90	0.040	0.050	≤ 0.40	Broad commercial grade

JIS	SS400	0.21	≤ 1.40	0.035	0.035	—	General structural grade
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B. Mechanical Properties Comparison

Standard	Grade	Yield Strength (MPa)	Tensile Strength (MPa)	Elongation (%)
IS 2062	E250A	≥ 250	410 – 540	$\geq 23\%$
EN 10025-2	S235JR	≥ 235	360 – 510	$\geq 26\%$
ASTM A36	A36	≥ 250	400 – 550	$\geq 20\%$
JIS G3101	SS400	≥ 245	400 – 510	$\geq 21\%$

3. Common Applications

- Fabrication of general structural components
- Construction (beams, channels, angles)
- Agricultural and mining equipment
- Frames, brackets, base plates
- Light-weight machinery
- Civil and industrial infrastructure

4. Standard Conformance

IS 2062:2011 – Indian Standard for Hot Rolled Medium and High Tensile Structural Steel.

Grade Code Meaning:

- E: Killed steel (deoxidized)
- 250: Minimum yield strength in MPa
- A: No impact test requirement (base grade, lowest notch toughness requirement)

5. Disclaimer

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