

## 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)	$\geq 250$ 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	$\leq 0.50$	JR = 27J @ Room Temp (optional)
ASTM A36	A36	0.26	0.60–0.90	0.040	0.050	$\leq 0.40$	Broad commercial grade
JIS	SS400	0.21	$\leq 1.40$	0.035	0.035	—	General structural grade

#### B. Mechanical Properties Comparison

Standard	Grade	Yield Strength (MPa)	Tensile Strength (MPa)	Elongation (%)
IS 2062	E250A	$\geq 250$	410 – 540	$\geq 23\%$

<b>EN 10025-2</b>	S235JR	≥ 235	360 – 510	≥ 26%
<b>ASTM A36</b>	A36	≥ 250	400 – 550	≥ 20%
<b>JIS G3101</b>	SS400	≥ 245	400 – 510	≥ 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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