E250CuC – Technical Datasheet

1. Chemical & Mechanical Properties

A. Chemical Composition

Element	% Composition
Carbon (C)	≤ 0.22%
Manganese (Mn)	≤ 1.35%
Phosphorus (P)	≤ 0.045%
Sulphur (S)	≤ 0.040%
Copper (Cu)	0.20 – 0.35%
Silicon (Si)	≤ 0.45%

B. Mechanical Properties

Property	Value
Yield Strength (YS)	≥ 250 MPa
Tensile Strength (TS)	410 – 540 MPa
Elongation	≥ 22%
Hardness	130 – 170 HB
Impact Test	27J min at -10°C (Charpy V-Notch)

2. Equivalent / Alternative Grades

A. Equivalent Grades Summary

Standard	Grade	Chemical & Mechanical Summary
IS 2062	E250CuC	YS ≥ 250 MPa, TS 410-540 MPa, Cu 0.20-0.35%, impact tested
EN 10025-2	S275J0 + Cu	Similar YS & TS, copper added, impact tested at 0°C
ASTM A36 + Cu	Custom Cu-added A36	Lower tensile strength, similar yield, copper for corrosion resistance

3. Common Applications

- Structural steel in general fabrication and construction
- Bridges and buildings where moderate strength is required
- Weather-resistant steel applications due to copper addition
- Automotive parts and chassis components
- Light to medium machinery parts and fabrication

4. Standard Conformance

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

- Grade Code Meaning:
- E: Killed steel
- 250: Minimum yield strength in MPa
- Cu: Copper added for corrosion resistance
- C: Impact tested at sub-zero temperature (Charpy V-Notch)

5. Disclaimer