RAUNAQ
STEELS TRADING
PRIVATE LIMITED

# E250Cu – Technical Datasheet

## 1. Chemical & Mechanical Properties

### A. Chemical Composition

| Element | % Composition |
|---|---|
| **Carbon (C)** | ≤ 0.23% |
| **Manganese (Mn)** | ≤ 1.50% |
| **Sulphur (S)** | ≤ 0.045% |
| **Phosphorus (P)** | ≤ 0.045% |
| **Copper (Cu)** | ≥ 0.20% |
| **Silicon (Si)** | ≤ 0.45% |

### B. Mechanical Properties

| Property | Value |
|---|---|
| **Yield Strength (YS)** | ≥ 250 MPa |
| **Tensile Strength (TS)** | 410 – 540 MPa |
| **Elongation** | ≥ 23% |
| **Hardness** | Not specified |
| **Impact Test** | Optional at room temperature (Charpy V-Notch) |

## 2. Equivalent / Alternative Grades

### A. Chemical Composition Comparison

| Standard | Grade | C (%) | Mn (%) | P (%) | S (%) | Cu (%) |
|---|---|---|---|---|---|---|
| **IS 2062** | E250Cu | ≤ 0.23 | ≤ 1.50 | ≤ 0.045 | ≤ 0.045 | ≥ 0.20 |
| **EN 10025-2** | S235JR + Cu | ≤ 0.17 | ≤ 1.40 | ≤ 0.035 | ≤ 0.035 | - |
| **ASTM A36** | A36 | ≤ 0.26 | 0.60–0.90 | ≤ 0.04 | ≤ 0.05 | ≥ 0.20 (min) |

### B. Mechanical Properties Comparison

| Standard | Grade | Yield Strength | Tensile Strength | Elongation / |
|---|---|---|---|---|

| | | (MPa) | (MPa) | Impact |
|---|---|---|---|---|
| **IS 2062** | E250Cu | ≥ 250 | 410 – 540 | ≥ 23%, Optional Impact @ RT |
| **EN 10025-2** | S235JR + Cu | ≥ 235 | 360 – 510 | ≥ 26%, Not Specified Impact |
| **ASTM A36** | A36 | ≥ 250 | 400 – 550 | 20 – 23%, Not Specified Impact |

## 3. Common Applications

- Construction (bridges, buildings, frames)
- Structural fabrication
- Railway wagons
- Industrial sheds and roofing
- General engineering components requiring improved corrosion resistance

## 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

- Optional impact tested at room temperature (Charpy V-Notch)

## 5. Disclaimer