RAUNAQ
STEELS TRADING
PRIVATE LIMITED

E650C – Technical Datasheet

1. Chemical & Mechanical Properties

A. Chemical Composition

Element	% Composition
Carbon (C)	≤ 0.26%
Manganese (Mn)	≤ 1.75%
Phosphorus (P)	≤ 0.045%
Sulphur (S)	≤ 0.040%
Silicon (Si)	≤ 0.55%
Copper (Cu)	0.20 – 0.40%

B. Mechanical Properties

Property	Value
Yield Strength (YS)	≥ 650 MPa
Tensile Strength (TS)	720 – 870 MPa
Elongation	≥ 13%
Hardness	230 – 260 HB
Impact Test	27J min at -20°C (Charpy V-Notch)

2. Equivalent / Alternative Grades

A. Chemical Composition Comparison

Standard	Grade	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Cu (%)
IS 2062	E650C	≤ 0.26	≤ 1.75	≤ 0.045	≤ 0.040	≤ 0.55	0.20 – 0.40

EN 10025-2	S550J2+Cu	≤ 0.22	≤ 1.60	≤ 0.035	≤ 0.035	≤ 0.55	≥ 0.20
ASTM A572	Gr 80+Cu	≤ 0.23	≤ 1.35	≤ 0.040	≤ 0.050	≤ 0.40	≥ 0.20

B. Mechanical Properties Comparison

Standard	Grade	Yield Strength (MPa)	Tensile Strength (MPa)	Elongation / Impact
IS 2062	E650C	≥ 650	720 – 870	≥ 13% / 27J @ -20°C
EN 10025-2	S550J2+Cu	≥ 550	590 – 720	≥ 19% / 27J @ -20°C
ASTM A572	Gr 80+Cu	≥ 570	720 – 870	≥ 14% / 20J @ RT

3. Common Applications

- Weather resistant steel

- Bridges

- Marine structures

- Heavy machinery

- Industrial fabrication

4. Standard Conformance

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

Grade Code Meaning:

E: Killed steel; 650: Minimum yield strength in MPa; C: Copper added for corrosion resistance

5. Disclaimer

All chemical compositions, mechanical properties, dimensions and other technical data presented on this page are provided by Raunaq Steels Trading Pvt. Ltd. for **general reference only**. While we endeavour to ensure that the information is as accurate and up-to-date as possible, **no warranty, express or implied, is given** as to its completeness, correctness or fitness for any particular purpose. Raunaq Steels Trading Pvt. Ltd. **accepts no liability** for any loss or damage arising directly or indirectly from the use of, or reliance upon, the information contained herein. For **authoritative** and **legally binding** specifications, users must refer to the **official publications** of the relevant standards—such as the BIS, ASTM, EN or JIS standards—available through their respective websites or published documents