RAUNAQ
STEELS TRADING
PRIVATE LIMITED

E650A – Technical Datasheet

1. Chemical & Mechanical Properties

A. Chemical Composition

Element	% Composition
Carbon (C)	≤ 0.26%
Manganese (Mn)	≤ 1.85%
Phosphorus (P)	≤ 0.045%
Sulphur (S)	≤ 0.040%
Silicon (Si)	≤ 0.55%
Copper (Cu)	0.10 – 0.35%

B. Mechanical Properties

Property	Value
Yield Strength (YS)	≥ 650 MPa
Tensile Strength (TS)	720 – 870 MPa
Elongation	≥ 14%
Hardness	220 – 250 HB
Impact Test	Optional / Not Required

2. Equivalent / Alternative Grades

A. Chemical Composition Comparison

Standard	Grade	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Cu (%)
IS 2062	E650A	≤ 0.26	≤ 1.85	≤ 0.045	≤ 0.040	≤ 0.55	0.10 – 0.35
EN 10025-2	S550JR	≤ 0.22	≤ 1.60	≤ 0.035	≤ 0.035	≤ 0.55	-
ASTM A572	Gr 80	≤ 0.26	≤ 1.35	≤ 0.040	≤ 0.050	≤ 0.40	-

B. Mechanical Properties Comparison

Standard	Grade	Yield Strength (MPa)	Tensile Strength (MPa)	Elongation / Impact
IS 2062	E650A	≥ 650	720 – 870	≥ 14% / Optional
EN 10025-2	S550JR	≥ 550	590 – 720	≥ 19% / 27J @ 20°C
ASTM A572	Gr 80	≥ 570	720 – 870	≥ 14% / 20J @ RT

3. Common Applications

- Heavy structural steel

- Bridges and construction

- Machinery

- Automotive components

- Building frameworks

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; A: Grade variant

5. Disclaimer