E550BO – Technical Datasheet

1. Chemical & Mechanical Properties

A. Chemical Composition

Element	% Composition
Carbon (C)	≤ 0.22%
Manganese (Mn)	≤ 1.60%
Phosphorus (P)	≤ 0.045%
Sulphur (S)	≤ 0.040%
Silicon (Si)	≤ 0.45%
Copper (Cu)	-

B. Mechanical Properties

Property	Value
Yield Strength (YS)	≥ 550 MPa
Tensile Strength (TS)	640 – 790 MPa
Elongation	≥ 15%
Hardness	200 – 230 HB
Impact Test	27J min at 0°C (Charpy V-Notch)

2. Equivalent / Alternative Grades

A. Chemical Composition Comparison

Standard	Grade	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Cu (%)
IS 2062	E550BO	≤ 0.22	≤ 1.60	≤ 0.045	≤ 0.040	≤ 0.45	-

EN 10025-2	S460JR	≤ 0.22	≤ 1.60	≤ 0.035	≤ 0.035	≤ 0.55	-
ASTM A572	Gr 70	≤ 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	E550BO	≥ 550	640 – 790	≥ 15% / 27J @ 0°C
EN 10025-2	S460JR	≥ 460	510 – 680	≥ 22% / 27J @ 20°C
ASTM A572	Gr 70	≥ 480	620 – 780	≥ 15% / 20J @ RT

3. Common Applications

- Structural steel

- Construction and fabrication

- Machinery parts

- Bridges

- Automotive industry

4. Standard Conformance

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

Grade Code Meaning:

E: Killed steel; 550: Minimum yield strength in MPa; BO: Thermo-mechanically rolled grade

5. Disclaimer

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