

E450BR – Technical Datasheet

1. Chemical & Mechanical Properties

Property	Value
C	≤ 0.22%
Mn	≤ 1.70%
P	≤ 0.045%
S	≤ 0.040%
Si	≤ 0.50%
Cu	≤ 0.25%
Yield Strength (YS)	≥ 450 MPa
Tensile Strength (TS)	570 – 720 MPa
Elongation	≥ 18%
Hardness	210 – 240 HB
Impact Test	27J min at 20°C (Charpy V-Notch)

2. Equivalent / Alternative Grades

Standard	Grade	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Cu (%)	Yield Strength (MPa)	Tensile Strength (MPa)	Elongation / Impact
IS 2062	E450BR	≤ 0.22	≤ 1.70	≤ 0.045	≤ 0.040	≤ 0.50	≤ 0.25	≥ 450	570 – 720	≥ 18% / 27J @ 20°C
EN 10025-2	S420JR	≤ 0.22	≤ 1.60	≤ 0.035	≤ 0.035	≤ 0.55	-	≥ 420	490 – 630	≥ 22% / 27J @ 20°C
ASTM A572	Gr 65	≤ 0.26	≤ 1.35	≤ 0.040	≤ 0.050	≤ 0.40	-	≥ 450	620 – 750	≥ 17% / 20J @ RT

3. Common Applications

- Heavy machinery
- Automotive chassis
- Shipbuilding
- Bridges

- Construction equipment

4. Standard Conformance

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

Grade Code Meaning:

E: Killed steel; 450: Minimum yield strength in MPa; BR: Thermo-mechanically rolled grade

5. Disclaimer

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