

IRSM 41-97 – Technical Datasheet

1. Chemical & Mechanical Properties

A. Chemical Composition

Element	% Composition
Carbon (C)	≤ 0.19%
Silicon (Si)	0.15 – 0.65%
Manganese (Mn)	0.70 – 1.50%
Phosphorus (P)	≤ 0.035%
Sulphur (S)	≤ 0.040%
Copper (Cu)	0.25 – 0.35%
Chromium (Cr)	0.40 – 0.60%
Nickel (Ni)	≤ 0.25%

B. Mechanical Properties

Property	Value
Yield Strength (YS)	≥ 345 MPa (t ≤ 20 mm)
Tensile Strength (TS)	470 – 630 MPa
Elongation	≥ 22 % (≤16 mm)
Impact Toughness	≥ 27 J @ -20 °C

2. Equivalent / Alternative Grades

Standard	Grade	YS (MPa)	TS (MPa)
ASTM A588	Grade B	345	485 – 630
EN 10025-5	S355J2W	355	470 – 630
JIS G3114	SMA490AW	365	490 – 610

3. Common Applications

- Coach & wagon body shells
- Trough floors and side panels
- Weather-resistant bridge components

4. Standard Conformance

Conforms to Indian Railways IRS:M-41 (1997).

Weathering structural steel with copper, chromium and nickel additions to enhance corrosion resistance.

5. Disclaimer

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