

# IS\_2041\_R355 – Technical Datasheet

## 1. Chemical & Mechanical Properties

### A. Chemical Composition

Element	% Composition
Carbon (C)	≤ 0.22%
Manganese (Mn)	≤ 1.50%
Phosphorus (P)	≤ 0.045%
Sulphur (S)	≤ 0.045%
Silicon (Si)	0.15 – 0.40%

### B. Mechanical Properties

Property	Value
Yield Strength (YS)	≥ 355 MPa
Tensile Strength (TS)	470 – 630 MPa
Elongation	≥ 22%
Hardness	150 – 180 HB (typical)
Impact Test	Optional or application dependent

## 2. Equivalent / Alternative Grades

### A. Chemical Composition Comparison

Standard	Grade	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Cu (%)
IS 2041	R355	≤ 0.22	≤ 1.50	≤ 0.045	≤ 0.045	0.15 – 0.40	-
EN 10025-2	S355JR	≤ 0.22	≤ 1.60	≤ 0.035	≤ 0.035	≤ 0.55	-

<b>ASTM A572</b>	Gr 50	≤ 0.23	≤ 1.35	≤ 0.040	≤ 0.050	≤ 0.40	-
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### B. Mechanical Properties Comparison

<b>Standard</b>	<b>Grade</b>	<b>Yield Strength (MPa)</b>	<b>Tensile Strength (MPa)</b>	<b>Elongation / Impact</b>
<b>IS 2041</b>	R355	≥ 355	470 – 630	≥ 22% / Optional
<b>EN 10025-2</b>	S355JR	≥ 355	470 – 630	≥ 22% / 27J @ 20°C
<b>ASTM A572</b>	Gr 50	≥ 345	450 – 620	≥ 21% / 20J @ RT

### 3. Common Applications

- Structural steel for bridges, buildings, and construction
- Heavy machinery and fabrication parts
- Automotive and shipbuilding components

### 4. Standard Conformance

IS 2041: Specification for Hot Rolled Steel Bars, Rods and Sections – Medium Carbon Steel Grades.

Grade Code Meaning:

R: Rolled steel product; 355: Minimum yield strength in MPa

## 5. Disclaimer

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