

# 45C8 – IS 2507 : 1975– Technical Datasheet

## 1. Chemical & Mechanical Properties

Property	Value / Range
C (%)	0.40–0.48
Mn (%)	0.60–0.90
Si (%)	0.10–0.35
S max (%)	0.050
P max (%)	0.050
Tensile Strength (MPa)	850 – 1 000
Yield Strength (MPa)	≥ 700
Hardness (HB)	250 – 302
Elongation (%)	10

## 2. Equivalent / Alternative Grades

Grade	Standard	C %	Mn %	Key Alloy	S % max	P % max	Typical $\sigma_u$ / HB
<b>SAE 1045</b>	ASTM A29	0.43–0.50	0.60–0.90	Si ≤ 0.35	0.040	0.040	$\sigma_u$ 565 – 725 (normalized); HB 170 – 217
<b>JIS S45C</b>	JIS G 4051	0.42–0.48	0.60–0.90	Si ≤ 0.35	0.040	0.040	$\sigma_u$ 570 – 700; HB 180 – 220
<b>EN C45E (1.1191)</b>	EN 10083-2	0.42–0.50	0.50–0.80	Si ≤ 0.40	0.025	0.025	$\sigma_u$ 560 – 780 (QT); HB 170 – 230

## 3. Common Applications

- Leaf & coil springs under moderate stress
- Clutch springs, small flat springs

## 4. Standard Conformance

Cold-rolled spring-steel strip conforming to IS 2507 : 1975.

## 5. Disclaimer

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