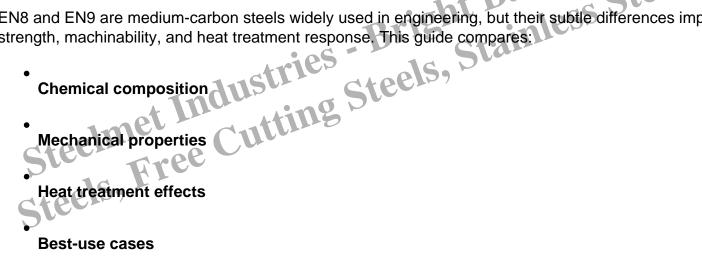


EN8 vs. EN9 Steel: Key Differences in Composition, Strength, and Uses

Description

Introduction

but their subtle with mparent EN8 and EN9 are medium-carbon steels widely used in engineering, but their subtle differences impact strength, machinability, and heat treatment response. This guide compares:



SteelMet Industries stocks EN8 and EN9 in round bars, flats, and forged blanks-tailored to your project needs.

Chemical Composition Comparison

Element (%)	EN8 Steel	EN9 Steel
Carbon (C)	0.36 - 0.44	0.50 - 0.60
Silicon (Si)	0.10 - 0.40	0.10 - 0.40
Manganese (Mn)	0.60 - 1.00	0.50 - 0.90
Phosphorus (P)	? 0.05	? 0.05

EN8 Steel EN9 Steel Element (%) Sulfur (S) ? 0.05 ? 0.05

? Key Difference: EN9 has higher carbon (0.50-0.60%) vs. EN8 (0.36-0.44%), making it harder but less ductile.

Mechanical Properties

Property EN8 EN9 Tensile Strength 700 – 850 MPa 800 – 950 MPa Hardness (BHN) 201 - 255 248 - 302Elongation (%) ~14% ~10%

? EN9 offers higher hardness and strength but lower ductility than EN8.

Key Differences & Applications

1. Machinability & Weldability

S-Bright Bars, Alloy Bright Bars, Steels Stainless Steels EN8: Better weldability and moderate machinability (lower carbon).

EN9: Superior hardness post-heat treatment but harder to machine.

2. Heat Treatment Response

- EN8: Typically used in normalized or tempered conditions.
- EN9: Excellent for quenching and tempering (achieves HRC 50+ hardness).

3. Common Uses

- EN8: Gears, axles, bolts, and general machinery parts.
- EN9: High-stress components like pins, shafts, and cutting tools.

Equivalents & Alternatives

- EN8 ? AISI 1040 (USA) | EN9 ? AISI 1060 (USA).
- For better machinability: EN1A (free-cutting steel).

Which Grade Should You Choose?

- Need strength + weldability? ? EN8
- Require extreme hardness? ? EN9 (heat-treated)

SteelMet Industries provides:

- ? EN8/EN9 round bars, flats, and custom forgings
- ? Pre-cut sizes, turned, drawn or ground finishes
- ight Bars, Alloy steels nched & temm-? Heat-treated options (annealed or normalised or guenched & tempered)
- ? Contact us for technical specs or bulk orders!

Conclusion

EN8 and EN9 serve different needs—EN8 for balanced properties, EN9 for high hardness. Understanding their differences ensures optimal material selection.

SteelMet Industries supplies both grades in ready-to-machine or heat-treated conditions-get a quote today!

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- 1. BS970 1955 EN8 Steel and variants
- 2. Posts

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Steelmet Industries - Bright Bars, Alloy Steels, Free Cutting Steels, Stainless Steels