



## EN19 Steel | Properties, Equivalents, Applications | Steelmet Industries

### Description

**EN19 steel**, also known as **AISI 4140**, is a high-quality alloy steel grade with excellent mechanical properties, making it one of the most widely used engineering steels for demanding applications. At **Steelmet Industries**, we supply EN19 steel bars in **hot rolled**, **bright bar**, **peeled**, and **custom-shaped** forms, offering high dimensional accuracy and complete traceability.

### Chemical Composition of EN19 Steel

Element	Composition (%)
Carbon (C)	0.36 – 0.44
Manganese (Mn)	0.60 – 0.90
Silicon (Si)	0.10 – 0.40
Chromium (Cr)	0.90 – 1.50
Molybdenum (Mo)	0.15 – 0.30
Sulphur (S)	≤ 0.035
Phosphorus (P)	≤ 0.035

### Mechanical Properties (Typical Values)

Property	Value
Tensile Strength	850 – 1000 MPa
Yield Strength	680 – 800 MPa
Elongation	16 – 18%
Hardness	248 – 302 BHN
Impact Strength	High (suitable for shock loading)

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Note: Values vary depending on heat treatment and section size.

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## • Equivalent Grades of EN19

### Standard Equivalent Grade

AISI/SAE	4140
DIN/EN	42CrMo4
IS (India)	40Cr4Mo3
JIS	SCM440
BS	708M40

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## • Applications of EN19 Steel

EN19 is a versatile alloy steel used in:

- Transmission shafts
- Gears and gear shafts
- Axles
- Spindles
- Bolts and studs
- Connecting rods
- High-stress machine parts
- Automotive and agricultural equipment
- Powertrain components

Its strength, toughness, and wear resistance make it ideal for **forging, machining, and heat treatment**

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## EN19 Machinability, Weldability & Heat Treatment

- **Machinability:** EN19 offers good machinability in normalized and tempered condition.
- **Weldability:** Fair. Preheating and post-weld heat treatment are recommended.
- **Heat Treatment:**
  - Hardening: Oil quenching at ~850°C
  - Tempering: ~500-650°C depending on strength/toughness requirements
  - Can be induction or flame hardened

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## EN19 Steel Bars from Steelmet Industries

At Steelmet Industries, we offer EN19 steel in various forms:

- **Bright Bars:** Drawn, Peeled, Ground
- **Hot Rolled Bars:** Rounds, Squares, Flats
- **Custom Shapes:** Round-corner squares, special flats, D-bars, hexes, and more
- **Size Range:**
  - Rounds: 12 mm to 90 mm
  - Flats/Squares/Hex: As per customer requirement
- **Tolerances:** ISO H9/H10/H11 as needed

Our EN19 bars are supplied in **heat-treated, normalised, or as rolled** conditions with **tight dimensional accuracy** and **NABL-certified testing support**.

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## Why Choose Steelmet Industries for EN19?

- Trusted source of **graded alloy steels** with full traceability
- Custom lengths, profiles, and finishes available
- Reliable deliveries and consistent quality
- **Vacuum Degassed (VD) Route** options available for critical applications
- Experienced in fulfilling OEM, forging, machining, and export orders

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## Certifications & Compliance

All EN19 bars are supplied with:

- **Test Certificates (TC)**
- Dimensional reports on request
- Optional third-party inspection
- Conformance to **IS, EN, SAE** and **DIN** standards
- Support from NABL-accredited laboratories for chemical and mechanical testing

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## Get in Touch

Looking for reliable EN19 steel bars with consistent quality?

Contact **Steelmet Industries** today for pricing, delivery timelines, or bulk orders.

Visit: <https://www.steelmet.in>

Or send your enquiry through our website contact form.

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## Author

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