



20MnCr5 Steel | Properties, Equivalents, Applications | Steelmet Industries

Description net In

20MnCr5 is a low-alloy case hardening steel known for its excellent wear resistance, core strength, and fatigue resistance. It is one of the most preferred grades for manufacturing components that need a custom profiles, with the state of the state tough core and hard, wear-resistant surface. At Steelmet Industries, we supply 20MnCr5 steel bars in various forms including hot rolled bars, bright bars, and custom profiles, with complete traceability and consistent quality.

8??? Chemical Composition of 20MnCr5 Steel

Element Composition (%) 0.17 a?? 0.22 Carbon (C) Manganese (Mn) 1.10 â?? 1.40 Chromium (Cr) 1.00 â?? 1.30 Silicon (Si) 0.10 a?? 0.40 Sulphur (S) â?¤ 0.035 Phosphorus (P) â?¤ 0.035

8 Nechanical Properties (Typical Values After Case Hardening)

Property Value

Core Tensile Strength 750 â?? 1000 MPa

Case Hardness 58 â?? 62 HRC Core Hardness ~30â??35 HRC

10 â?? 14% Elongation

Impact Resistance Good (especially at the core)



Final properties depend on heat treatment and case depth.

ð??• Equivalent Grades of 20MnCr5

Standard Equivalent Grade

AISI / SAE 5120 DIN / EN 1.7147

IS (India) 20MnCr5 (IS 4432 / IS 5517)

JIS SCM420H (similar) BS 805A20 (similar)

â??ï.• Applications of 20MnCr5 Steel

Application of the control of the co 20MnCr5 is used in critical parts that require a hard, wear-resistant surface and a tough core:

- Steering components
- · Pins, bushings, and rollers
- · Agricultural machinery parts
- Automotive and industrial equipment

It is ideal for carburizing and case hardening applications due to its structure and alloying elements.

ð??§ Machinability, Weldability & Heat Treatment

• Machinability: Good in normalized or annealed condition.



- Weldability: Moderate â?? Preheating and post-weld stress relieving recommended.
- Heat Treatment:
 - Carburizing: 870â??950°C
 - Hardening: Oil quench at 780â??820°C after carburizing
 - Tempering: 150â??200°C to reduce stresses without affecting case hardness

20MnCr5 is well-suited for deep case hardening applications with excellent wear resistance on the surface and toughness in the core.

ð?§± 20MnCr5 Steel Bars from Steelmet Indus.

Steelmet Industries supplies 20MnCr5 steel bars in the following forms:

Aloy

Final Ground

• Hot Rolled Bars: Rounds, Squares, Flats

- Custom Profiles: Round-corner squares, hex bars, D-shaped bars, and more
- Available Sizes:

o Rounds: 12 mm to 90 mm

Custom shapes: As per customer drawings

• Tolerances: ISO H9, H10, H11 or customer-specified

• Supply Condition: As rolled, normalized, annealed, or case-hardened

Every bar is produced with tight tolerances, smooth surface finish, and full traceability.



ð?• Why Choose Steelmet Industries for 20MnCr5?

- Consistent quality from VD route steel (on request)
- Small batch or bulk availability
- Custom sizes, lengths, and shapes as per drawing
- Support for **OEMs**, **machinists**, and **exporters**
- In-house QC and NABL-certified lab tie-ups
- Competitive pricing and reliable delivery schedules

- ?? Certifications & Compliance

 Supplied with Test Certificate (TC) indicating heat number and analysis

 Steels
- Complies with IS 4432, IS 5517, EN 10084, and customer-specific requirements
- Optional: Third-party inspections (TPI), UT reports, NABL-certified test reports

ð??? Enquire Now

Looking for high-quality 20MnCr5 steel bars with tight tolerances and full compliance?

ð??? Website: https://www.steelmet.in

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