

ENGINEERING STEELS - CASE HARDENING STEELS

Application Segments

Automotive

Available Product Variants

Long Products

Product Description

BÖHLER M130 is a nickel-chromium-molybdenum alloyed case-hardening steel with high core strength and very good toughness.

Process Melting

Airmelted

Properties

- > Toughness & Ductility : high
- > Wear Resistance : high
- > Machinability : good
- > Dimensional stability : high
- > Polishability : good

Applications

- > Tool Holders (milling, drilling, turning & chucks)
- > Mechanical Engineering
- > Gears

Technical data

| Material designation | | |
|----------------------|------------|-----|
| | 1.2764 | SEL |
| | X19NiCrMo4 | EN |

Chemical composition (wt. %)

| C | Si | Mn | Cr | Mo | Ni |
|------|------|-----|------|-----|------|
| 0.19 | 0.23 | 0.3 | 1.25 | 0.2 | 4.05 |

Delivery condition

Annealed

| | |
|---------------|----------|
| Hardness (HB) | max. 250 |
|---------------|----------|

Heat treatment

Case hardening

| | | |
|-------------|---------------|---|
| Temperature | 900 to 950 °C | For case-hardening in the given temperature range, carburize and quench / oil, (water), hot bath (160-250°C [320-482°F]), air. Quenching in water generally only for large parts of simple shape. Achievable surface hardness after case-hardening: approx. 62 HRC with oil or hot bath hardening, approx. 56 HRC with air or compressed air hardening. |
|-------------|---------------|---|

Hardening and Tempering

| | | |
|-------------|---------------|--|
| Temperature | 800 to 830 °C | For hardening, heat and quench the material / oil, (water), hot bath (160-250°C [320-482°F]), air. |
| Temperature | 170 to 210 °C | Tempering treatment: Material is tempered once. |

Physical Properties

| | |
|--|-----------|
| Temperature (°C) | 20 |
| Density (kg/dm ³) | 7.85 |
| Thermal conductivity (W/(m.K)) | 34 |
| Specific heat (kJ/kg K) | 0.46 |
| Spec. electrical resistance (Ohm.mm ² /m) | 0.2 |
| Modulus of elasticity (10 ³ N/mm ²) | 210 |

Thermal Expansions between 20°C | 68°F and ...

| | | | | | | |
|--|------------|------------|------------|------------|------------|------------|
| Temperature (°C) | 100 | 200 | 300 | 400 | 500 | 600 |
| Thermal expansion (10 ⁻⁶ m/(m.K)) | 11.1 | 12.1 | 12.9 | 13.5 | 13.9 | 14.1 |

If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

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