

voestalpine HIGH PERFORMANCE METALS

CHROME BAR / AISI 1045

DESCRIPTION

Chromium Molybdenum steel for applications requiring high tensile strength and toughness, in particular in medium and large cross sections in the quenched and tempered condition. The addition of Molybdenum prevents the steel from being susceptible to temper brittleness.

NEAREST STANDARDS

| AISI | DIN | JIS | UNS |
|------|------------------------------|------|--------|
| 1045 | 1.1191 (CK45) / 1.0501 (C45) | S45C | G10450 |

CHEMICAL ANALYSIS (MAX %)

| C | Si | Mn | Ni | Cr | Mo | S | P |
|------|------|------|----|------|----|-------|-------|
| 0.50 | 0.35 | 0.90 | - | 0.30 | - | 0.035 | 0.035 |

MECHANICAL PROPERTIES

| Tensile Strength Mpa | Yield Strength Mpa | Elongation (%) |
|----------------------|--------------------|----------------|
| 580-800 | Min 340 | Min 17 |

CASE DEPTH (INDUCTION HARDENING)

| Stock Diameter (mm) | Case Depth (mm) | Case Hardnes Before Plating (HRC) |
|---------------------|-----------------|-----------------------------------|
| 12-20 | 1.00 +/-0.5mm | 55-56 |
| 20-40 | 1.50 +/-0.5mm | 55-56 |
| 40-80 | 2.00 +/-0.5mm | 55-56 |
| 80-120 | 2.50 +/-0.5mm | 55-56 |

HARD CHROME PLATING

| Surface Hardness | Surface Finish | Surface Deposit |
|-----------------------|----------------|-----------------|
| 800-100 HV (64-69 RC) | 0.10-030um Ra | 0.025-0.050mm |

TOLERANCES

| Diameter | Straightness | Roundness | Concentricity | Bearing Ratio |
|---------------------|------------------|----------------------|---------------|------------------------|
| According to ISO F7 | <0.50mm / 2000mm | <1/2 of ISO F7 field | +/- 0.3 um | >50% (at depth 0.15um) |

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CHROME BAR / AISI 4140

STORAGE & HANDLING

The Chrome plated bars can easily be damaged, therefore they are delivered protected by packaging in cardboard or plastic tubes. It is necessary to follow several precautions while handling the product between delivery and final production

Handling:

During handling, never use steel chains, always use canvas or plastic belts, fork lift tynes must be lined with wood or plastic material.

Cutting:

Leave the bar in its protective sleeve and cut dry, cutting emulsions containing water can be absorbed in the sleeve and cause erosion. Vice jaws must be lined with plastic or wood.

Storage:

Chromed bars must be stored in dry conditions and not exposed to the sun light. Direct contact with the floor should be avoided.

PERFORMANCE IS IN OUR DNA

voestalpine High Performance Metals is the global market leader in the production of tool steels and one of the world's leading suppliers of high-speed steels, valve steels, special steels, powder metallurgy steels, and nickel-based alloys. We also manufacture die-forged components and large castings from nickel-based alloys and high, medium and low alloy steels.

Customers rely on our key brands of Bohler, Uddeholm and Villares, to set the highest standards of innovation, quality and service across a wide range of industries including automotive, aerospace, consumer electronics and oil & gas. We are fully integrated from steel production through to local customer sales, ensuring we keep our customers One Step Ahead.

EXPLORE WHAT IS POSSIBLE.



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