

CHROME PLATED BAR – AISI 1045 – INDUCTION HARDENED

AISI 1045 Medium Carbon Steel, with a tensile strength range of 600 – 800 Mpa, an induction hardened case of HRC55-60, and a hard chrome plated surface of over 900 HV, offering medium strength, high resistance to surface indentation, excellent surface wear resistance, and good corrosion resistance.

Typical Applications:

Hydraulic and pneumatic cylinders with high surface impact resistance for mining, earth moving, machine tools, waste disposal transport, car jacks, food processing, mechanical tools, hoists and compressors etc.

Induction Hardened Case Depth:

18 – 40mm Ø 1.00 – 2.00mm
 40 – 80mm Ø 1.25 – 2.50mm
 80 – 125mm Ø 2.00 – 3.00mm

Packaging: Each bar supplied in a cardboard tube.

Machinability: Requires ceramic tipped tools and special cutting blades due to induction hardened case.

Welding: not recommended due to induction hardened case

Typical Mechanical Properties: Base Metal – for guidance only

| Finish | Yield Strength MPa | Tensile Strength MPa | Elongation % | Hardness HB |
|--------|-----------------------|-------------------------|-----------------|----------------|
| Drawn | 600 | 800 | 9 | 230 |
| Turned | 400 | 670 | 20 | 200 |

Typical Analysis: Base Metal

| | |
|------------|------------|
| Carbon | 0.45% |
| Silicon | 0.25% |
| Manganese | 0.75% |
| Phosphorus | 0.040% max |
| Sulphur | 0.040% max |

Related specifications: Base Metal

| | |
|----------------|-------------|
| AS 1443-1994 | 1045 |
| EN10083-1-1991 | 1.1191 C45E |
| JIS G 4051 | S45C |

Typical Hard Chrome Plating:

Hardness: 900 -1100 HV
 Roughness: 0.10 - 0.30 Ra microns
 Thickness: 15 - 30 microns
 100-150mm unplated at bar ends.

Typical Dimensional Tolerance:

Diameter: to ISO f7
 Straightness: 0.2 mm / 1000 mm

Typical Bar Lengths:

Up to 18mm Ø 2000 – 3600mm
 Over 18mm Ø 4000 – 7500mm