

B16 alloy steel bar is a chromium, molybdenum, vanadium alloy steel widely used for high strength industrial applications. It is commonly used in power generation turbines in high strength fastener applications such as bolt material.

Nominal Composition %

C	Carbon – 0.42 – 0.50%
Cr	Chromium – 0.80 – 1.15%
Mn	Manganese – 0.45 – 0.70%
Mo	Molybdenum – 0.45 – 0.70%
P	Phosphorous – 0.025% max (bars)
V	Vanadium – 0.25 – 0.35%
S	Sulfur – 0.025% max (bars)
Al	Aluminum – 0.015%
Si	Silicon – 0.20 – 0.35%

Percent by weight, maximum unless a range is listed.

Standard Inventory Specifications

- ASTM A193 Grade B16
- (w/ supplement of S2 charpy impact test)
- S6 stress relieving by AOD-ESR melt
- GE-B5F5
- EN 10204
- Hot worked, solution treated (annealed), then descaled

Forms Stocked

- B16 Bar Stock

Thickness Stocked

- 1.000" – 7.000" thick

Applications

- Power generation
- Bolts and fasteners



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Physical Properties

B16 alloy is typically hardened by oil quenching and tempering after the part has reached room temperature. In diameters over 7" water quenching may be used to meet Charpy impact properties.

Property	Value - Metric	Value - Imperial
Density	7.83 g/cm ³	0.283 lb/in ³

Mechanical Properties

Property	Value
Hardness	Generally, B16 alloy steel bar is supplied in the quenched and tempered condition where the hardness is normally Rc 35-43. In the annealed condition, hardness is typically 187 BHN.
Machinability	Generally supplied in the quenched and tempered condition, machinability is similar to standard AISI alloys such as 4340.