

# M50 Steel Bar - AMS 6490, AMS 6491

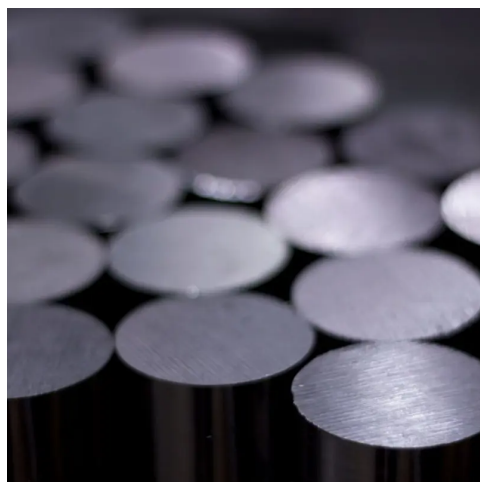
## *Typical Applications*

Aircraft Engine Bearings

Helicopter Rotor Bearings

Gas Turbines

High Performance Racing Engines



*Alloy Steel M50 (AMS 6491, AMS 6490) is a high-performance bearing steel. M50 alloy steel possesses a high degree of hardness, excellent resistance to wear and abrasion, and is capable of retaining its strength properties at elevated temperatures. Primarily composed of iron alloyed with substantial amounts of chromium, molybdenum, and vanadium, this versatile steel exhibits truly outstanding properties.*

Its standout quality is the remarkable hardness it can achieve after proper heat treatment, ranging up to 248 HB on the Brinell hardness scale. This ultra-high hardness means that it has superb resistance against abrasive wear and superior durability under heavy bearing loads. Components made from M50 alloy steel can withstand punishing conditions that would rapidly degrade softer bearing materials.

In terms of the composition, the chromium forms hard carbide particles dispersed throughout the steel matrix, enhancing wear resistance. The molybdenum increases overall hardness and toughness. Vanadium promotes a fine-grained microstructure for greater strength.

Potential applications that capitalize on M50's exceptional properties include bearings for aircraft turbine engines, high-speed machine tool spindles, offshore oil equipment, and anywhere ultra-hard, wear-resistant bearing components are required to operate under high temperatures and loading.

## **Related Products**

**15Cdv6 Bar Sheet Tube**

**300M**

**4130 Bar And Tube**

**4130 Sheet And Plate**

**4340**

**52100**

**S99**

**EN24**

**Hy Tuf**

**S156**

**T45**

**M50 Steel Bar**

**4330 Alloy Steel**

**BS S106**

## **Technical specification**

### *Related Specifications*

**AMS 6490**

**AMS 6491**

**1.3551**

**1.3552**

**AIR 9160C**

## Specific Gravity

7.84 g/cm<sup>3</sup>

## Chemical Composition (WT %)

	Min	Max
<b>C</b>	0.8	0.85
<b>Mn</b>	0.15	0.35
<b>Si</b>	-	0.25
<b>P</b>	-	0.015
<b>S</b>	-	0.08
<b>Cr</b>	4	4.25
<b>Mo</b>	4	4.5
<b>V</b>	0.9	1.1
<b>Ni</b>	-	0.15
<b>Co</b>	-	0.25
<b>W</b>	-	0.25
<b>Cu</b>	-	0.1
<b>Fe</b>	Bal	-

## Typical Mechanical Properties



T: +44 (0)1525 217 556

## **Conversion Centre**

Suite 2 Meadowhall Riverside  
Meadowhall Road  
Sheffield  
South Yorkshire  
S9 1BW

T: +44 (0)1143 030 320

## **Useful Links**

[Privacy Policy](#)

[Sitemap](#)

