

# 52100 Alloy Steel - AMS 6444

## Typical Applications

Bearings

Fasteners



*52100 alloy steel is a type of bearing steel prized for its exceptional hardness and wear resistance. 52100 is a carefully crafted high carbon, chromium alloy steel that has been engineered to deliver exceptional durability and robust strength.*

When properly heat treated, 52100 steel can achieve incredibly high hardness values, up to 66 Rockwell C. This hardness allows components made from 52100 to better withstand intense mechanical stresses, abrasive wear, and surface fatigue over extended periods of use. It has excellent corrosion resistance due to the high chromium content.

While its hardness makes 52100 incredibly tough and long lasting, it also means the steel is quite brittle compared to other steel grades. While incredibly hard and resilient, the alloy does sacrifice some malleability and resistance to impact forces. Care must be taken during machining and fabrication to avoid introducing microscopic cracks and defects that could lead to catastrophic failures down the line.

For this reason, 52100 is an alloy utilised primarily for parts and components that experience punishing conditions but require little deformation during operation. You'll find it used in a variety of harsh industrial settings like bearings, bushings, cams, shafts, and other high-load, high-wear applications where tremendous hardness and resilience is paramount.

When sourced from a trusted supplier and properly processed through controlled heat treatment, 52100 delivers unparalleled longevity making it the premier steel for ultra-demanding use cases.

## 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 6440**

**AMS 6444**

**SA5589**

**AIR 9160C**

### *Specific Gravity*

7.81 g/cm<sup>3</sup>

*Chemical Composition (WT %)*

	Min	Max
<b>C</b>	0.93	1.05
<b>Mn</b>	0.25	0.45
<b>Si</b>	0.15	0.35
<b>P</b>	-	0.015
<b>S</b>	-	0.015
<b>Cr</b>	1.35	1.60
<b>Ni</b>	-	0.25
<b>Mo</b>	-	0.1
<b>Cu</b>	-	0.3
<b>Al</b>	-	0.05
<b>O</b>	-	0.015

*Typical Mechanical Properties*

		Round Bar
<b>0.2% Yield Strength</b>	MPA	427
<b>Tensile Strength</b>	MPA	651
<b>Elongation</b>	%	27



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