

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/cm³

Chemical Composition (WT %)

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

Typical Mechanical Properties

		Round Bar
0.2% Yield Strength	MPA	427
Tensile Strength	MPA	651
Elongation	%	27

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