

# AMS 6411, 4330 Alloy Steel

## *Typical Applications*

Aircraft landing gears

Aircraft shafts

Axels and gears



*Acclaimed for its exceptional strength and resilience, 4330 alloy steel (AMS 6411) stands as a high quality alloy steel with exceptional strength and durability. As part of the renowned nickel-chromium-molybdenum steel family, 4330 alloy steel exhibits a remarkable combination of properties that have firmly established its reputation across a wide spectrum of industries.*

At its core, 4330 is classified as a low-alloy steel, deriving its exceptional performance from a meticulously balanced blend of alloying elements. Nickel gives this material its overall toughness and resistance to impact, while chromium enhances the material's hardenability and fortifies it against corrosion. Molybdenum, on the other hand, gives strength and mitigates the risk of brittle fractures.

4330 alloy steel is also able to undergo heat treatment processes that yield extraordinary levels of hardness. The exceptional hardness attainable by 4330 alloy steel makes it an ideal material for applications that require robust wear resistance and durability, such as in the manufacturing of bearings, gears, and other critical components exposed to substantial mechanical loads.

Complementing its impressive mechanical capabilities, 4330 alloy steel possesses an outstanding resistance to severe environmental conditions. The chromium present within its carefully crafted composition bestows upon this material a robust shield against corrosion, enabling it to withstand exposure to moisture, chemicals, and atmospheric factors that would ordinarily compromise the integrity of inferior alloys.

## **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 6411

### *Specific Gravity*

7.8 g/cm<sup>3</sup>

### *Chemical Composition (WT %)*

	Min	Max
<b>C</b>	0.28	0.33
<b>Mn</b>	0.65	1.00
<b>Si</b>	0.15	0.35
<b>P</b>	-	0.015
<b>S</b>	-	0.015
<b>Cr</b>	0.75	1.00
<b>Ni</b>	1.65	2.00
<b>Mo</b>	0.35	0.50
<b>V</b>	0.05	1.10
<b>Cu</b>	-	0.35

### *Typical Mechanical Properties*

Type	Bar (Normalised and tempered, 0.5" and above)	
<b>0.2% Proof Stress</b>	MPA	1276

<b>Tensile Strength</b>	MPA	1517
<b>Elongation</b>	%	10
<b>Reduction of area</b>	%	35
<b>Hardness</b>	HBW	269

What is 4330 steel? [=](#)

4330 is the designation for a specific grade of nickel-chromium-molybdenum alloy steel. It's not a generic term, but rather a codification that denotes the precise chemical composition and quantities of alloying elements present in this steel. Alloy steels obtain these properties by adding controlled amounts of elements like nickel, chromium, and molybdenum to carbon steel.

In the case of 4330 alloy steel, the nickel provides toughness, chromium imparts hardness and corrosion resistance, while molybdenum increases strength and mitigates brittleness.

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What are the properties of 4330 Alloy steel? [=](#)

4330 alloy steel boasts an impressive combination of properties that make it highly desirable for demanding applications: exceptional strength and toughness to withstand heavy loads and impacts, superior wear resistance, corrosion



