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 it's 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/cm3

Chemical Composition (WT %)

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

Typical Mechanical Properties

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

Tensile Strength	MPA	1517
Elongation	%	10
Reduction of area	%	35
Hardness	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.

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

resistance from chromium content to combat harsh environments, heat resistance to maintain properties at elevated temperatures, and improved hardenability throughout the cross-section.

What is the difference between 4330 and 4340 steel?

The difference between 4330 and 4340 alloy steels lies in their minor variations in chemical composition. Both steels are part of the nickel-chromium-molybdenum family, but 4340 has a slightly higher carbon content (around 0.4%) compared to 4330 (around 0.3%). This higher carbon content in 4340 allows it to achieve marginally higher strength and hardness levels after heat treatment. However, 4330 offers better toughness and ductility due to its lower carbon content. The two steels share similar properties like excellent wear resistance, hardenability, and corrosion resistance, but 4340 is slightly harder and stronger, while 4330 is tougher and more ductile.

Need more information? ***Get in touch***

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