



X-750 Bar UNS N07750

AMS 5667

Nominal Composition

Nickel 71% Chromium 15% Titanium 2.5%
Columbium+Tantalum 1% Aluminum 0.7%

Description

Alloy X-750 is a nickel-chromium austenitic alloy similar to Alloy 600 but made precipitation-hardenable by additions of aluminum and titanium. It has good resistance to corrosion and oxidation along with high tensile and creep-rupture properties at temperatures to 1300°F (700°C). Its excellent relaxation resistance is useful for high-temperature springs and bolts. Alloy X-750 is used in gas turbines, rocket engines, nuclear reactors, pressure vessels, tooling, and aircraft structures.

Properties

Non-magnetic. Alloy X-750 has good elevated temperature strength properties to 1300°F (700°C) and oxidation resistance to 1800°F (983°C). Alloy X-750 is resistant to a wide variety of industrial corrosives under both oxidizing and reducing conditions. This alloy also has excellent resistance to chloride stress corrosion cracking in the fully age hardened condition.

Hardness

The hardness of Aerodyne stock is typically 200 BHN and is supplied in the 1600°F (871°C) – 24 hours equalized condition. This alloy may be hardened by aging at 1300°F (704°C) for 20 hours, which will result in optimum room and elevated temperature strength characteristics. The hardness will be in the range of 302-363 BHN after this heat treatment. Higher strength can be achieved by cold working prior to aging.

Machinability

RATING: 15% of B-1112

TYPICAL STOCK REMOVAL RATE: 80 surface feet/minute with carbide tools.

COMMENTS:

Alloy X-750 can be machined in all conditions of heat treatment, but the best machinability is in the equalized condition. Rough machining is usually done before precipitation hardening and final machining is completed after the age hardening heat treatment.

Like similar alloys, Alloy X-750 requires a rigid set-up with plenty of power, preferably using carbide or ceramic tools.

Density: 0.298 lbs/in³, 8.25 g/cm³

Standard Inventory Specifications

- AMS 5667
- Capable of meeting AMS 5668
- Line marked over 0.5 inches in diameter
- Predominantly produced by VIM-VAR melt method. Equalized, centerless ground or rough turned.
- Lengths: 10-12 feet

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