



## A-286 Bar (solution treated) UNS S66286

## AMS 5731 (formerly AMS 5736)

### Nominal Composition

Iron 50% Nickel 25% Chromium 15%  
Titanium 2% Molybdenum 1.3%  
Aluminum 0.2% Vanadium 0.3%

### Description

A-286 is an iron-base superalloy useful for applications requiring high strength and corrosion resistance up to 1300°F (704°C) and for lower stress applications at higher temperatures. The mechanical properties of this alloy are developed by suitable solution annealing and precipitation hardening treatments. A-286 is used in many moderate temperature and stress applications in jet engines, such as low pressure turbines, compressors, shafts and afterburner parts.

### Properties

Non-magnetic. An austenitic alloy in an annealed condition, it has moderate strength and rupture characteristics up to 1300°F (704°C). A-286 has good oxidation resistance for continuous service up to 1500°F (816°C) and intermittent service up to 1800°F (982°C). The 1800°F (982°C) solution treatment is designed to maximize creep and stress rupture properties, with some reduction in strength. The strength of A-286 is substantially increased by aging the solution treated material at 1325°F (718°C). A-286 can attain high strength levels when aged after cold work, and has wide application as high temperature fasteners and springs.

### Hardness

Hardness of Aerodyne stock is typically 180 BHN. Supplied in the solution heat treated condition - 1800°F (982°C). To attain design strength and rupture properties, an aging treatment of 1325°F (718°C) for 16 hours is required. For an even higher aged strength, solution treated material may be cold worked prior to the aging treatment.

### Machinability

RATING: 35% of B-1112

TYPICAL STOCK REMOVAL RATE: 58 surface feet/minute with high speed tools. 150 surface feet/minute with carbide.

### COMMENTS:

The same techniques and equipment are used for machining A-286 as for austenitic stainless steels. In

the solution treated condition, it is one of the easiest high temperature alloys to cold head.

**Density:** 0.286 lbs/in<sup>3</sup>, 7.92 g/cm<sup>3</sup>

### Standard Inventory Specifications

- AMS 5731 (formerly AMS 5736)
- Line marked over 0.5 inches in diameter
- Predominantly produced by VIM-VAR or VIM-ESR melt method. Hot rolled, 1800°F (982°C) solution heat treated, then centerless ground.
- Lengths: 10-12 feet

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