



A286 Stainless Steel, UNS S66286

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated
AMS 5525, AMS 5731, AMS 5732, AMS 5734, AMS 5737, AMS 5804,
AMS 5858, ASTA453, ASTM A638

A286 Alloy Description



Alloy A286 is an iron base, age-hardenable 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 alloy is also used for low temperature applications requiring a ductile, non-magnetic high strength material at temperatures ranging from above room temperature down to at least -320°F (-196°C).

Applications

- Seal rings
- Retaining rings
- Jet engine components
- Power generation components

Chemistry Typical

- Carbon: 0.080 max
- Manganese: 2.00 max
- Silicon: 1.00 max
- Chromium: 13.50-16.00
- Nickel: 24.00-27.00
- Titanium: 1.90-2.35
- Molybdenum: 1.00-1.50

Vanadium: 0.10-0.50

Boron: 0.003-0.010

Cobalt: 1.00 max

Aluminum: 0.35 max

Phosphorus: 0.02 max

Sulfur: 0.025 max.

Iron: Balance

Physical Properties

Density: 0.286 lbs/in³, 7.92 g/cm³

Thermal Conductivity: BTU/hr/ft²/ft/°F (W/m•K)

At 302°F (150°C): 8.7 (15.1)

At 572°F (300°C): 10.3 (17.8)

At 932°F (500°C): 12.6 (21.8)

At 1112°F (600°C): 13.8 (23.9)

Mean Coefficient of Thermal Expansion: in/in/°F (μm/m•K)

70- 200°F (21- 93°C): 9.17×10^{-6} (16.5)

70- 600°F (21-315°C): 9.47×10^{-6} (17.0)

70-800°F (21-427°C): 9.64×10^{-6} (17.4)

70-1000°F(21-538°C): 9.78×10^{-6} (17.6)

Modulus of Elasticity: KSI (MPa)

29.1×10^3 (201×10^3) in tension

Mechanical Properties at Room Temperature

Properties: Annealed

Ultimate Tensile Strength: 105 KSI max (724 MPa max)

Elongation:

10% min: Gauge: 0.001-0.0015

12% min: Gauge >0.0015-0.002

20% min: Gauge >0.002-0.004

25% min: Gauge > 0.004

Hardness: Rb 90 max

Properties: Stress Rupture (Typical)

A stress of 67.5 KSI min for no less than 23 hours

Heat Treat Capabilities: Typical

Ultimate Tensile Strength:

125 KSI min (862 MPA min): Gauges: 0.001-.0015

130 KSI min (896 MPA min): Gauges: >0.0015-.002

135 KSI min (931 MPA min): Gauges: >0.002-.004

140 KSI min (965 MPA min): Gauges: >0.004

Elongation:

4% min: Gauges: 0.001-0.0015

8% min: Gauges: >0.0015-0.002

10% min: Gauges: >0.002-0.004

15% min: Gauges: >0.004

Additional Properties

Corrosion Resistance

Refer to NACE (National Association of Corrosion Engineers) for recommendations.

Standard Wire Finishes

Extra Clean: (XC) Extra clean is also referred to as “bright annealed” or “bright annealed and cold rolled”

Grease (round wire only): Drawn in a heavy grease produces an “Ultra bright” finish for decorative applications

Soap (round wire only): Soap is used as a lubricant in the drawing process and is not removed. It acts as a lubricant during customer part forming operation. A soap finish is available in tempered products.

Plated: Many plating options are available.

*Special finishes are available: Contact Ulbrich Wire Sales with special finish and plating requests.

Forms

Continuous Coils

Cut to lengths

Precision cutting

Welding

For best results refer to: SSINA's "Welding of Stainless Steels and Other Joining Methods"

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