

Incoloy® A-286 alloy

UNS S66286
W. Nr 1.4980

Applicable Specifications

Strip and Foil AMS 5525, AMS 5858, GE B50T12

Description: Incoloy® alloy A-286 is an age-hardenable Iron-Nickel-Chromium alloy with high strength and corrosion resistance at elevated temperatures. These properties are maintained up to about 1300°F (700°C). The high strength and excellent fabrication characteristics of Incoloy® alloy A-286 make the alloy useful for various components of aircraft and industrial gas turbines. In the age-hardened condition, A-286 has high strength at room temperature and good creep-rupture strength during extended high-temperature exposure.

Applications include: Turbine engine components, Afterburner parts, non-magnetic cryogenic equipment, springs, oil & gas manifolds

Industries supplied include: Power Generation, Aerospace, Chemical processing, Oil & Gas

Nominal Composition

| | C | Mn | Si | S | Mo | Cr | Ni | Fe | V | Ti | Al |
|-----|------|-----|-----|-------|-----|------|------|-----|-----|------|------|
| min | - | - | - | - | 1.0 | 13.5 | 24.0 | Bal | 0.1 | 1.90 | - |
| max | 0.08 | 2.0 | 1.0 | 0.030 | 1.5 | 16.0 | 27.0 | - | 0.5 | 2.35 | 0.35 |

Physical Properties

| | At 70°F | At 20°C |
|---------------------------|------------------------------------|------------------------|
| Density | 0.287 lb/in ³ | 7.94 g/cm ³ |
| Modulus of Elasticity (E) | 28.8 x 10 ³ ksi | 199 GPa |
| Modulus of Rigidity (G) | 11.2 x 10 ³ ksi | 77 GPa |
| Coefficient of Expansion | 9.47 microinches/in.-°F (70-600°F) | 17 µm/m-°C (20-300°C) |
| Electrical Resistivity | 35.8 µohm-in | 91 µohm-cm |
| Thermal Conductivity | 88 Btu-in/ft ² hr-°F | 12.7 W/m-K |

Typical Mechanical Properties

| Condition | Heat Treatment | Tensile Strength | Suggested Operating Conditions |
|-----------|---------------------------|------------------|--------------------------------|
| Annealed | 1650-1800°F (900-980°C) | 105 ksi max | -300 to 750°F (-184 to 400°C) |
| Aged | 1325°F (718°C) for 16 hrs | 140 ksi min | -300 to 1300°F (-184 to 700°C) |

Incoloy® is a registered trademark of the Special Metals group of companies.

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