Ulbrich Stainless Steels & Special Metals, Inc. • 153 Washington Avenue • North Haven, CT 06473 USA • 800-243-1676 • ULBRICH.com

AM 350® STAINLESS STEEL, UNS S35000

Strip, Coil, Foil, Wire, AMS 5548, ASTM A693, MILS 8840, (Type 633)

Applications

Bellows, industrial cutters, knives and a variety of vales and gas turbine componets

Description

AM 350® is a heat treatable austenitic or martensitic alloy, depending on heat treatment. It brings together the strength of heat treatable martensitic grades with the corrosion resistance of some of the chromium nickel austenitic grades. Generally used in applications under 1000 °F where a combination of strength and good corrosion resistance are required.

Chemistry Typical

Carbon: 0.07 – 0.11
Manganese: 0.50 – 1.25
Chromium: 16.00 – 17.00
Nickel: 4.00 – 5.00
Molybdenum: 2.50 – 3.25
Nitrogen: 0.07-0.13
Silicon: 0.50 max
Phosphorus: 0.040 max
Sulfur: 0.030 max

Physical Properties

Density: (annealed): 0.287 lbs/in^3 7.94 g/cm^3

Thermal Conductivity: BTU/hr/ft^2/ft/°F (W/m•K):
At 200 ºF (93 ºC): 6.0 (11.3)
At 600 °F (316 °C): 6.5 (12.2)
At 800 ºF (427 ºC): 6.8 (12.6)
At 1000 ºF (538 ºC): 6.97 (13.0)

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Mean Coefficient of Thermal Expansion: in/in/°F (µm/m•K)
70 - 200 °F (21 - 93 °C): 9.17 x 10^{-6} (16.5)
70 - 600 °F (21 - 315 °C): 9.47 x 10^{-6} (17.0)
70 - 800 °F (21 - 427 °C): 9.64 x 10^{-6} (17.4)
70 - 1000 ºF (21 - 538 ºC): 9.78 x 10^{-6} (17.6)

Modulus of Elasticity: ksi (MPa)
27.5 - 30.4 x 10^{3} (190 - 210 x 10^{3}) in tension

Forms

Coil – Strip, Foil, Ribbon
Wire – Profile, Round, Flat, Square

Mechanical Properties at Room Temperature

Annealed Typical:

Ultimate Tensile Strength: 200 KSI max (1380 MPa max)
Yield Strength: (0.2% offset) 85 KSI max (585 MPa max)
Elongation:
8% min: gauges < 0.010 inches
12% min: gauges > 0.010 inches
Hardness: Rc 30 max

Tempered:

AM 350® is not supplied tempered.

Heat Treated Properties

Typical 850°F

Ultimate Tensile Strength: 185 KSI min (1275 MPa min)
Yield Strength: (0.2% offset) 145 KSI min (1000 MPa min)
Elongation:
2% min: gauges 0.0005 – 0.0015 inches
4% min: > 0.0015 – 0.002 inches
6% min: > 0.002 – 0.010 inches
8% min: > 0.010 inches

Typical 1000°F

Ultimate Tensile Strength: 165 KSI min (1140 MPa min)
Yield Strength: (0.2% offset) 150 KSI min (1035 MPa min)
Elongation:
2% min: gauges 0.0005 – 0.0015 inches
4% min: > 0.0015 – 0.002 inches
6% min: > 0.002 – 0.010 inches
8% min: > 0.010 inches

Additional Properties

Corrosion Resistance

Alloy AM 350® has a similar corrosion as some of the austenitic stainless steels.
Refer to NACE (National Association of Corrosion Engineers) for recommendations.

Finishes

1 – Hot rolled annealed and descaled. It is available in strip, foil and ribbon. It is used for applications where a smooth decorative finish is not required.
2D – Dull finish produced by cold rolling, annealing and descaling. Used for deep drawn parts and those parts that need to retain lubricants in the forming process.
2B – Smooth finish produced by cold rolling, annealing and descaling. A light cold rolling pass is added after anneal with polished rolls giving it a brighter finish than 2D.
#BA – Bright annealed cold rolled and bright annealed
#CBA – Course bright annealed cold rolled matte finish and bright anneal
#2 – Cold Rolled
2BA – Smooth finish produced by cold rolling and bright annealing. A light pass using highly polished rolls produces a glossy finish. A 2BA finish may be used for lightly formed applications where a glossy finish is desired in the formed part.
Polished – Various grit finish for specific polish finished requirements.

** Not All Finishes are Available for All Alloys - Consult Sales for Applicable Finishes.*

Wire Finishes

XC – Extra clean bright annealed or bright annealed and cold rolled
Grease – Ultra-bright finish (for decorative applications)
Soap – Soap is not removed from tempered wire to act as a lubricant.

** Contact Ulbrich Wire with special finish requests.*

Welding

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