Alloy A286 Datasheet

Alloy A286 combines high strength and excellent corrosion resistance at elevated temperatures, ideal for aerospace.

Alloy / Grade	Alloy A286
Common Forms	Round Bar, Hex Bar, Wire, Sheet, Fasteners .
Key Feature	Excellent high-temperature strength at a lower cost than Nickel-base alloys.
Service Focus	Can be aged to tensile strengths above 130 ksi (896 MPa), making it the default choice for bolts holding engines together at high heat.

1. Product Overview

Alloy A286 is an iron-nickel-chromium age-hardenable superalloy. It is designed for applications requiring high strength and good corrosion resistance at temperatures up to 1300 deg F (700 deg C). It is often referred to as "Grade 660" stainless steel.

Grade	Core Description	Typical Service Focus
Alloy A286	Alloy A286 is an iron-nickel-chromium age-hardenable superalloy. It is designed for applications requiring high...	Alloy A286 bridges the gap between conventional stainless steels and expensive nickel-base superalloys...
Supply Capability	Round Bar, Hex Bar, Wire, Sheet, Fasteners .	Standard mill forms, cut-to-size material and project supply
Technical Review	Confirm final values by product form, heat treatment and material certificate	Can be aged to tensile strengths above 130 ksi (896 MPa), making it the default choice for bolts holding...

2. Key Features

- Alloy A286 bridges the gap between conventional stainless steels and expensive nickel-base superalloys (like Inconel 718). It offers significant...
- Can be aged to tensile strengths above 130 ksi (896 MPa), making it the default choice for bolts holding engines together at high heat.
- Remains ductile and non-magnetic down to -320 deg F (-196 deg C), making it excellent for cryogenic tanks and superconducting hardware.
- Maintains structural stability under load at temperatures up to 1300 deg F, where standard stainless steels would deform.

Further information under:	https://www.nickelcasting.com/nickel-alloys/alloy-a286/
Home page:	www.nickelcasting.com
Email:	ni@Nickelcasting.com

Technical Data

The following values are provided as general reference data for engineering review and procurement planning. Confirm final values against the applicable specification, product form, heat treatment condition and material certificate.

3. Chemical Composition (%)

Element	Content (%)
Nickel (Ni)	24.0 - 27.0
Chromium (Cr)	13.5 - 16.0
Titanium (Ti)	1.90 - 2.35
Molybdenum (Mo)	1.0 - 1.5
Vanadium (V)	0.10 - 0.50
Aluminum (Al)	0.35 max
Iron (Fe)	Balance

4. Standard Specifications

Product Form	Standards (AMS / ASTM)
Bars, Forgings (Sol. Treated)	AMS 5731, ASTM A638 (Grade 660 Type 1)
Bars (Sol. Treated & Aged)	AMS 5732 (Most Common), AMS 5737
Sheet, Strip, Plate	AMS 5525
Fasteners	ASTM A453 (Grade 660)

5. Mechanical Properties - Typical at Room Temperature

Property	Typical Values (Room Temp)
Tensile Strength	130 - 150 ksi (896 - 1034 MPa)
Yield Strength (0.2% Offset)	85 - 105 ksi (586 - 724 MPa)
Elongation	15 - 25 %
Hardness (Rockwell C)	24 - 35 HRC
Creep Rupture (1200 deg F)	23 hours min @ 65 ksi stress

Note: Values are typical or specification reference values. Purchase requirements should be confirmed against the required standard, drawing and material test report.

Applications and Ordering Information

Use this section to define inquiry requirements and accelerate technical confirmation for Alloy A286 products.

6. Typical Applications

Industry / Area	Typical Components
Industrial Service	High-strength bolts, screws, and studs used in jet engines and airframes.
Chemical / Process Equipment	Turbine wheels and housing components exposed to hot exhaust gases.
Oil, Gas & Marine	Downhole components and manifolds requiring moderate corrosion resistance and high strength.
High-Temperature / Power	Non-magnetic structural parts for superconducting magnets and MRI machines.
Precision Components	We stock Alloy A286 (Grade 660) in solution treated and aged conditions. Available in round bar, hex bar, and sheet.

7. Available Supply Forms

Pipe & Tube	Plate & Sheet	Bar & Rod
Pipe Fittings	Flanges	Wire & Strip
Forgings	Custom Cutting	Project Supply

8. Information to Include When Requesting a Quote

- Required grade: Alloy A286, with ASTM / ASME / AMS specification if applicable.
- Product form: pipe, tube, plate, sheet, bar, fittings, flanges, forgings or machined parts.
- Dimensions: outside diameter, wall thickness, length, width, thickness or drawing number.
- Quantity, delivery destination and required delivery schedule.
- Special requirements: cutting, machining, heat treatment, NDT, PMI, test report or material certificate.

Company Information	
Address	Shanghai, China
Email	ni@Nickelcasting.com
Home Page	www.nickelcasting.com
Product Page	https://www.nickelcasting.com/nickel-alloys/alloy-a286/

Disclaimer

This datasheet is provided for general reference only. Actual values may vary by product form, heat treatment, manufacturing condition and applicable specification. Please contact us for confirmed specifications, test reports and material certificates before ordering.