

A-286 alloy is an age-hardenable iron base superalloy for applications requiring high strength from -320°F up to 1000°F long time, 1300-1500°F short time. Oxidation resistance is high for continuous service to 1500°F, intermittent to 1800°F. Aqueous corrosion resistance is comparable to 316/316L stainless. Heat treatment according to AMS 5525 requires a solution anneal at 1800°F, air cool. Age at 1325°F for 16 hours and then air cool.

**Specifications**

UNS: S66286 W. Nr./EN: 1.4980 AMS: 5525, 5732, 5737, 5804 GE: B50T1181, B50T12, B50T81

ASTM A 453	AMS	Anneal	Aging Treatment	Yield Strength, Min	Tensile Strength, Min
Grade 660 Class B	5732	1800°F	1300-1400°F, 16 hours	85 ksi	130 ksi
Grade 660 Class A	5737	1650°F	1300-1400°F, 16 hours	95 ksi	140 ksi

**Chemical Composition, %**

	Cr	Ni	Mo	Co	V	Al	Ti	B	C	Fe	Mn	Si	P	S
MIN	13.5	24.0	1.0	—	0.1	—	1.9	0.003	—	—	—	—	—	—
MAX	16.0	27.0	1.5	1.0	0.5	0.35	2.35	0.01	0.08	balance	2.0	1.0	0.025	0.025

**Features**

- High strength to 1000°F
- Oxidation resistant to 1500°F

**Applications**

- Jet engine components
- High temperature fasteners, springs
- Non-magnetic cryogenic equipment

**Physical Properties**

Density: 0.303 lb/in<sup>3</sup> Melting Range: 2350-2460°F

Temperature, °F	200	800	1000	1200	1400
Coefficient* of Thermal Expansion, in/in°F x 10 <sup>-6</sup>	9.2	9.6	9.8	9.9	10.3
Thermal Conductivity Btu • ft/ft <sup>2</sup> • hr • °F	8.0	9.8	13.0	14.1	—
Modulus of Elasticity Dynamic, psi x 10 <sup>6</sup>	—	—	24	22	23

\* 70°F to indicated temperature.

**Mechanical Properties**

Representative Tensile Properties, Sheet AMS 5732, 1800°F/1325°F Heat Treat

Temperature, °F	70 *	70	400	800	1000	1200	1400
Ultimate Tensile Strength, ksi	95 *	145	143	138	131	103	64
0.2% Yield Strength, ksi	50 *	95	93	93	87	88	62
Elongation, %	40 *	24	21	18	18	13	18

\* Annealed

Typical Stress-Rupture Strength AMS 5732, 1800°F/1325°F Heat Treat

Temperature, °F	1000	1100	1200
100 Hours, ksi	99	81	61
1,000 Hours, ksi	88	71	46



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**CLAUDIO CZARNOBAI**  
COMMERCIAL MANAGER  
ClaudioCzarnobai@intwinds.com

**F** +55 11 3825 2966

**C** +55 11 99112 2703

