

## TIMET 10-2-3 Titanium Alloy (Ti-10V-2Fe-3Al), Aged Billet/Bar per ASTM 4986

Category : Metal , Nonferrous Metal , Titanium Alloy , Beta Titanium Alloy

### Material Notes:

High-Strength Forging Alloy. Industry Specifications: USA Aerospace: AMS 4986. Features: A readily forgeable alloy that offers excellent combinations of strength, ductility, fracture toughness and high cycle fatigue strength. Typically used for critical aircraft structures, such as landing gear. Typical heat treatment for this alloy: Solution heat treat: 28-56°C below beta transus for a minimum for 30 mins, then water quench. Aging heat treatment: 482-593°C for 8 hrs, air cool. Data provided by TIMET.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_TIMET-10-2-3-Titanium-Alloy-Ti-10V-2Fe-3Al-Aged-BilletBar-per-ASTM-4986.php](http://www.lookpolymers.com/polymer_TIMET-10-2-3-Titanium-Alloy-Ti-10V-2Fe-3Al-Aged-BilletBar-per-ASTM-4986.php)

Physical Properties	Metric	English	Comments
Density	4.65 g/cc	0.168 lb/in <sup>3</sup>	Typical

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1170 MPa	170000 psi	Typical
Tensile Strength, Yield	1070 MPa @Strain 0.200 %	155000 psi @Strain 0.200 %	Typical
Elongation at Break	12 %	12 %	Typical
Reduction of Area	10 %	10 %	
Modulus of Elasticity	108 GPa	15700 ksi	Typical
Compressive Yield Strength	>= 1034 MPa	>= 150000 psi	
Ultimate Bearing Strength	>= 1446 MPa	>= 209700 psi	e/D = 1.5
	>= 1807 MPa	>= 262100 psi	e/D = 2.0
Bearing Yield Strength	>= 1420 MPa	>= 206000 psi	e/D = 1.5
	>= 1627 MPa	>= 236000 psi	e/D = 2.0
Poissons Ratio	0.32	0.32	
Fatigue Strength	880 MPa	128000 psi	Limit; test specifics not reported
Fracture Toughness	>= 60.0 MPa-m <sup>1/2</sup>	>= 54.6 ksi-in <sup>1/2</sup>	ST then Aged 8 hrs
Shear Modulus	42.1 GPa	6110 ksi	
Shear Strength	>= 620 MPa	>= 89900 psi	

Thermal Properties	Metric	English	Comments
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Thermal Properties CTE, linear	Metric 0.20 mm/m-°C	English 5.20 in/in-°F	Comments
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Beta Transus	800 °C	1470 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	2.6 - 3.4 %	2.6 - 3.4 %	
Carbon, C	<= 0.050 %	<= 0.050 %	
Hydrogen, H	<= 0.015 %	<= 0.015 %	
Iron, Fe	1.6 - 2.2 %	1.6 - 2.2 %	
Nitrogen, N	<= 0.050 %	<= 0.050 %	
Oxygen, O	<= 0.13 %	<= 0.13 %	
Titanium, Ti	83 - 86.8 %	83 - 86.8 %	Calculated as remainder
Vanadium, V	9.0 - 11 %	9.0 - 11 %	

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