

TIMET 10-2-3 Titanium Alloy (Ti-10V-2Fe-3Al), Aged Billet/Bar per ASTM 4987

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

Material Notes:

High-Strength Forging Alloy. Industry Specifications: USA Aerospace: AMS 4987. 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-4987.php

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

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1040 MPa	151000 psi	Typical
Tensile Strength, Yield	970 MPa @Strain 0.200 %	141000 psi @Strain 0.200 %	Typical
Elongation at Break	15 %	15 %	Typical
Reduction of Area	20 %	20 %	
Modulus of Elasticity	103 GPa	14900 ksi	Typical
Compressive Yield Strength	>= 924 MPa	>= 134000 psi	
Ultimate Bearing Strength	>= 1303 MPa	>= 189000 psi	e/D = 1.5
	>= 1579 MPa	>= 229000 psi	e/D = 2.0
Bearing Yield Strength	>= 1269 MPa	>= 184100 psi	e/D = 1.5
	>= 1462 MPa	>= 212000 psi	e/D = 2.0
Poissons Ratio	0.32	0.32	
Fatigue Strength	780 MPa	113000 psi	Limit; test specifics not reported
Fracture Toughness	>= 88.0 MPa-m ^{1/2}	>= 80.1 ksi-in ^{1/2}	ST then Aged 8 hrs
Shear Modulus	42.1 GPa	6110 ksi	
Shear Strength	>= 538 MPa	>= 78000 psi	

Thermal Properties	Metric	English	Comments
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Thermal Properties <i>CTE, linear</i>	Metric <i>0.20 in/m-°C</i>	English <i>0.20 in/in-°F</i>	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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