

Alcoa 2324-T39 Aluminum Plate

Category : Metal , Nonferrous Metal , Aluminum Alloy , 2000 Series Aluminum Alloy

Material Notes:

Alloy 2324-T39 is a higher strength version of alloy 2024-T351 and is a purity controlled composition variant of alloy 2024. It was developed for tension-dominated, fatigue and fracture critical plate applications. The T39 temper, developed through special fabricating practices, improves both strength and fracture toughness properties over alloy 2024 plate. Alloy 2324-T39 plate is being used successfully on lower wing skin and center wing box components of commercial aircraft. Information provided by Alcoa.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Alcoa-2324-T39-Aluminum-Plate.php

Physical Properties	Metric	English	Comments
Density	2.77 g/cc	0.100 lb/in ³	per Aluminum Association

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	>= 475 MPa	>= 68900 psi	Guaranteed minimum; long transverse
Tensile Strength, Yield	>= 370 MPa	>= 53700 psi	Guaranteed minimum; long transverse
Elongation at Break	>= 8.0 %	>= 8.0 %	Guaranteed minimum; long transverse
Modulus of Elasticity	72.4 GPa	10500 ksi	AA2024
Poissons Ratio	0.33	0.33	AA2024
Shear Modulus	27.0 GPa	3920 ksi	AA2024

Thermal Properties	Metric	English	Comments
CTE, linear	23.2 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	12.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	AA2024
	@Temperature 20.0 $^\circ\text{C}$	@Temperature 68.0 $^\circ\text{F}$	
	24.7 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	13.7 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	average; AA2024
	@Temperature 20.0 - 300 $^\circ\text{C}$	@Temperature 68.0 - 572 $^\circ\text{F}$	
Specific Heat Capacity	0.875 J/g- $^\circ\text{C}$	0.209 BTU/lb- $^\circ\text{F}$	AA2024
Thermal Conductivity	151 W/m-K	1050 BTU-in/hr-ft ² - $^\circ\text{F}$	AA2024

Component Elements Properties	Metric	English	Comments
Aluminum, Al	92 - 94.7 %	92 - 94.7 %	As Remainder
Chromium, Cr	<= 0.10 %	<= 0.10 %	

Component Elements Properties	Metric	English	Comments
Copper, Cu	3.0 - 4.4 %	3.0 - 4.4 %	
Iron, Fe	<= 0.12 %	<= 0.12 %	
Magnesium, Mg	1.2 - 1.8 %	1.2 - 1.8 %	
Manganese, Mn	0.30 - 0.90 %	0.30 - 0.90 %	
Other, each	<= 0.050 %	<= 0.050 %	
Other, total	<= 0.15 %	<= 0.15 %	
Silicon, Si	<= 0.10 %	<= 0.10 %	
Titanium, Ti	<= 0.15 %	<= 0.15 %	
Zinc, Zn	<= 0.25 %	<= 0.25 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000449 ohm-cm	0.00000449 ohm-cm	AA2024

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