

Touchstone MetPreg™ Fiber Reinforced Aluminum

Category : Metal , Metal Matrix Composite , Nonferrous Metal , Aluminum Alloy

Material Notes:

MetPreg™ is a unique Fiber Reinforced Aluminum (FRA) material, a true metal matrix composite (MMC), that makes use of all traditional composite processing techniques. MetPreg has all the advantages of metals and composites and works well with adhesives, soldering, brazing and welding. Touchstone's MetPreg™ material system consists of FRA in "prepreg" form made from commercially available high strength/stiffness aluminum oxide fiber (such as Nextel 610) and an aluminum matrix. The FRA prepreg is in the form of a continuous thin tape that can be applied to a rotating mandrel in prescribed patterns using tape placement equipment and consolidated in situ via laser (thermal) brazing. This "cure-on-the fly" manufacturing process eliminates costly and time-consuming autoclaving and conventional thermal curing processes found in PMC manufacture. This technology presents an opportunity to manufacture large MMC components through the use of production processes that are analogous to PMC processes while maintaining beneficial MMC materials properties. Components fabricated using this technique are affordable and sustain strength and stiffness at high temperatures. They are also easy to repair and to maintain. Tabular data is typical for 50% fiber volume. Information provided by Touchstone Research Laboratory.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Touchstone-MetPreg-Fiber-Reinforced-Aluminum.php

Physical Properties	Metric	English	Comments
Density	3.32 g/cc	0.120 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1450 MPa	210000 psi	
Elongation at Break	0.70 %	0.70 %	
Tensile Modulus	207 GPa	30000 ksi	
Compressive Strength	2070 MPa	300000 psi	

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	371 °C	700 °F	Tensile strength at 85% of RT

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