



***Hybrid Composites***  
***RM-6001 FireWalker***  
***Polyceramic Prepreg***  
***Fire & Thermal Barrier***



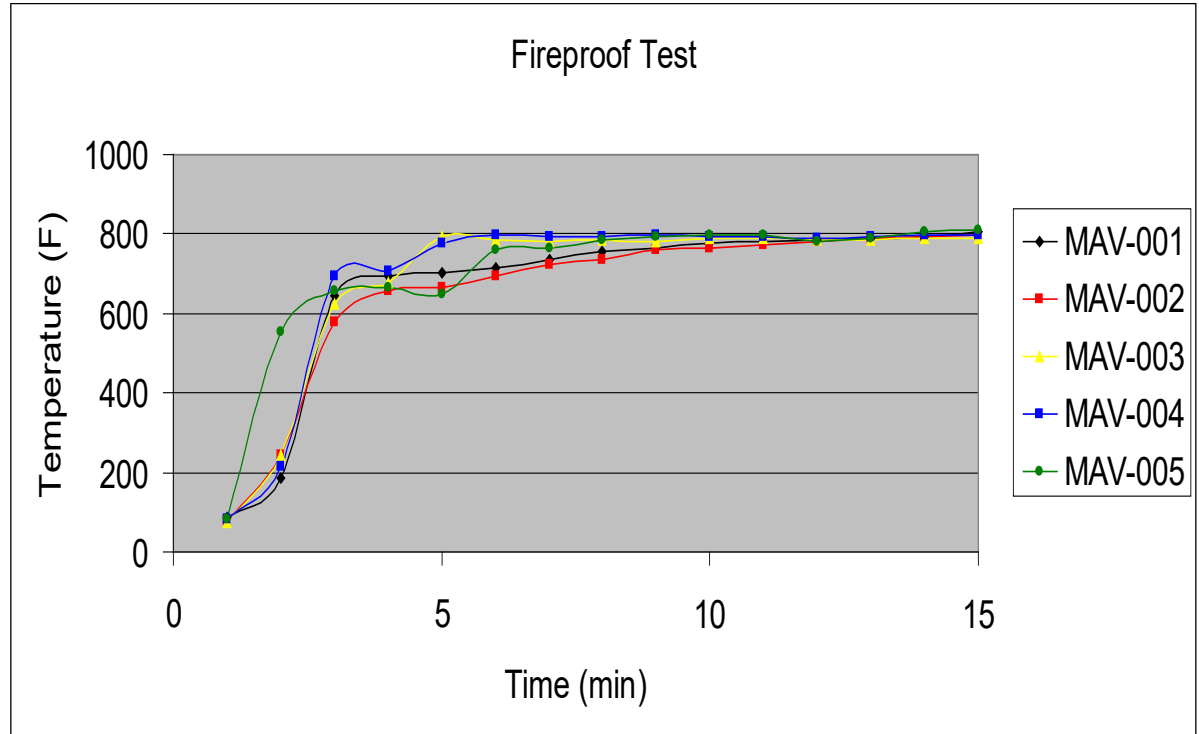
**RM-6001 “Firewalker”**  
**Polyceramic Prepreg**

- **RM-6001 FireWalker is a Polyceramic resin, supplied as prepreg using glass insulation fabric, or Quartz fabric.**
- **This prepreg is intended for use as a Light-Weight, Flame-Resistant Barrier Layer for Composite Aircraft Structures.**
- **It is applied to a pre-cured polyimide composite part, in a secondary co-cure with RM-1005 Polyimide Adhesive Film.**
- **The resulting Hybrid Composite Structure is then oven post-cured (in air).**

**RM-6001 “Firewalker”**  
**Polyceramic Prepreg**  
**Product Forms**

- **Woven Glass Fabric Prepreg, ~ 30-mil or ~60-mil thick options**
- **Style 4581 Quartz Fabric, ~ 9-mil thick**
- **Testing shows 1200°F delta from the Hot-side (poly-ceramic/glass) to the Back-side (polyimide), during FAA Flame Testing.**
- **Good tack, drape and out-time at ambient conditions.**
- **No Tg is observed using DMA/TMA, tested up to 800°F.**

**RM-6001 Polyceramic Fire Testing**



2000°F, 15 Minute Flame Test per (FAC20-135)

Tested at FAA-Approved Facility

- Thermal properties of solid RM-6001 Glass laminate are shown below:

Property	Test Method	Value
Thermal Conductivity	Calculated from Thermal Diffusivity, Heat Capacity and Density	0.2 W/mK
Thermal Diffusivity	ASTM E1461 Linseis LFA 1000 Laser Flash Apparatus using 1” discs	0.0016 cm <sup>2</sup> /s
Heat Capacity @ 70°F	DSC	0.82 J/g/°C
Coefficient of Thermal Expansion	TMA	7 ppm/°C (x,y), 36 ppm/°C (z)

### **Lay-up & Bagging Instructions:**

- Assure pre-cured polyimide part surface is clean and ready for bonding.
- Apply one ply RM-1005 Polyimide Adhesive Film
- Apply RM-6001 prepreg
- Choose bagging materials suitable for 400°F cure temperature.
- Construct a vacuum bag for a No / Low bleed process.
- Use a non-porous breather material cut oversized or to size and laid across the panel,
- Seal with tacky-tape and dams and test for leaks.

### **Autoclave Cure Cycle:**

Note: RM-6001 prepreg loses some volatile content at approximately 180°F, and begins to cure at approximately 250°F

- Apply 10-15” vacuum
- Heat 5°F/min to 235 ± 10°F, and hold for 30-minutes
- Apply 100-psi
- Heat 5°F/min to 400± 10°F, and hold for 2-hours
- Cool 10F/min

### **Oven Post Cure:**

- The hybrid structure is then oven post-cured (in air), using a slow heat-ramp rate from Room Temperature to 650°F (with RM-1100 parts) and hold at temperature for 6-8 hours.