Ecopreg Glass/PFA

Ecopreg Glass/PFA 840g/m² 8H Satin

Fire-retardant prepreg with low environmental impact

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Ecopreg PFA prepregs are a range of fire-retardant, pre-impregnated composite materials based on a PFA (Polyfurfuryl Alcohol) bioresin. PFA is a thermosetting bioresin derived from crop waste and is similar to a phenolic resin but with lower formaldehyde and VOC emissions. In addition to its environmental credentials, PFA has fire retardant properties equivalent to phenolics, plus excellent temperature and chemical resistance.

The prepregs can be supplied with a range of reinforcement fibres and fabric constructions. They can be consolidated by vacuum bagging, autoclave or press moulding and are designed for a range of applications in mass transport, aerospace, furniture and construction.

This particular grade uses an 840g/m^2 8 harness satin woven glass fabric with 40% resin content by weight and is typically used for rail, offshore and industrial applications, including in sandwich panels.

Prepreg Specifications

Reinforcement	E-glass 840g/m^2 8H satin	
Resin Content (by weight)	40%	Others on request
Tack Level	Medium	Others on request
Width	1520 mm	Others on request
Ply Thickness (cured)	0.6 mm	
Density (cured)	1.78 g/cm^3	
Max. Service Temperature (cured)	>200°C	

Processing

Ecopreg PFA prepregs can be processed using standard techniques including vacuum bagging, autoclave and press moulding. Typical curing cycle 140°C for 30 minutes. More details available on request.

Mechanical Properties

Typical mechanical properties of press moulded laminates

Tensile Modulus	28 GPa	ISO 527-4
Tensile Strength	370 MPa	ISO 527-4
Flexural Modulus	22 GPa	ISO 14125
Flexural Strength	410 MPa	ISO 14125

Fire Performance

Typical fire performance for press moulded laminates

UL94 Flammability*	V-0
Euroclass Fire Rating (predicted)**	A2/B
BS476 Part 7 Surface Flame Spread (indicative)***	Class 1

* From laminates made with Ecopreg Glass/PFA 300g/m^2 2x2 twill
** Predicted from cone calorimeter ISO 5560. From laminates made with Ecopreg Glass/PFA 300g/m^2 2x2 twill
*** Indicative test on 1 specimen only. From laminates made with Ecopreg Glass/PFA 300g/m^2 7781 style

Storage

As with other prepreg materials, Ecopreg PFA should ideally be stored in a freezer (e.g. -18°C), although it does have a shelf life of approximately 1 month at ambient temperature (20°C).

Safety

Ecopreg PFA prepregs are based on renewable biomass and have fewer health and safety concerns than many conventional alternative materials. However, typical precautions should be taken when handling the material including using appropriate PPE and adequate ventilation.

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Composites Evolution is a supplier of innovative, sustainable materials to the composites industry. Our products include fibres, resins and intermediates based on natural, bio-derived, recycled and recyclable materials, which enable customers to meet cost, weight and environmental targets.

- **Biotex Jute:** Low cost, lightweight alternative to glass fibre reinforcement
- **Biotex Flax:** High performance, lightweight alternative to glass and carbon fibres
- **Biotex Flax/PP:** Commingled reinforcement for rapid processing and reduced weight
- **Biotex Flax/PLA:** 100% bio-derived commingled reinforcement
- **Ecopreg PFA:** Fire-retardant prepreg with low environmental impact

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