# PHG600-68-50

- Fiber reinforced thermosetting preimpregnated materials for aircraft interior parts.
- Woven fabric of E-glass filament yarn Style 7781, 296 g/m$^2$, 8H satin, preimpregnated with 53% phenolic resin PH600.
- Self-adhesive resin system for sandwich panel application
- Non-halogenated resin formulation
- Excellent FST behaviour
- Outstanding adhesion to core materials
- Adjustable tackiness and retarded flow during curing
- Long shelf and shop life

## Description

PHG600-68-50 consists of a E-glass fabric Style 7781, impregnated with the phenolic resin PH600. This resin is a halogen-free and self-adhesive phenolic system designed for wide variety of manufacturing processes, retarded flow during curing, excellent heat-release and smoke-density properties and outstanding adhesion to cores and metallic substrates.

The prepreg is very suitable for the manufacturing of light-weight composite sandwich structures for aircraft interior with high interlaminar shear strength and oustanding adhesion to honeycomb cores. Its tackiness is adjustable between dry and tacky to meet the fabrication requirements for press cured flat parts as well as vacuum or autoclave cured complex parts.

Both monolithic and sandwich structures can be easily manufactured with this prepreg. The curing can be performed by press, vacuum and autoclave moulding with a pressure of at least 0.07 MPa.

This prepreg meets the following AIRBUS material performance specification:

- ABS5047-08
- AIMS 05-10-002 (certification)

Cured laminates fulfil the flame-retardant specifications:

- FAR 25.853 (self-extinguishing)
- ABD 0031

The prepreg material is suitable for:

- Aviation and aerospace industries
- Marine and automotive applications

## Prepreg Properties

| | Test method | Value |
|---|---|---|
| **Resin** | | Phenolic |
| **Prepreg Weight** | EN 2329 | 620 ±30 g/m² |
| **Volatile** | EN 2330 (180°C / 10 min) | < 8.0 % |
| **Resin Flow** | EN 2332 (4 plies, 140°C, 10 min, 4 bar) | > 15 % |
| **Tackiness** | | adjustable tack |
| **Fiber Material** | | E-glass |
| **Fabric Weight** | EN 2331 | 296 g/m² ± 5% |
| **Weave Style** | | 8H satin |
| **Service Temperature (Cured State)** | | -55°C up to +90°C |
| **Resin Content** | EN2331 | 53.0 ± 3% |

## Delivery Form and Storage

| | | |
|---|---|---|
| **Prepreg sizes** | Roll length / Roll width | 50 / 1.0 m |
| **Storage Life (from delivery date)** | Days at RT / Months at -5°C | 60 / 6 |

## Curing Conditions

| | Cycle |
|---|---|
| **Temperature** | 125/135/155°C |
| **Cure Time** | 120/75/30 min |
| **Spec. Pressure** | 0.07 MPa |
| **Heat-up** | 3 K/min from 60°C (max) |
| **Cool-down** | 4 k/min to 60°C |
| **Remove material at** | at least 60°C |
| **Recommended curing process** | Press, Autoclave, Vacuum-bag |

## Mechanical Properties (Typical Values)

| | Temp. (°C) | Standard | Results | |
|---|---|---|---|---|
| Flexural Strength (warp) | RT<br>80 | ISO 178 | 330<br>290 | MPa |
| Flexural Modulus (warp) | RT<br>80 | ISO 178 | 16<br>14 | GPa |
| Tensile Strength (warp) | RT<br>80 | ISO 527-4 | 270<br>230 | MPa |
| Tensile Modulus (warp) | RT | ISO 527-4 | | GPa |
| Interlaminar Tensile Shear Strength (warp) | RT<br>80 | AITM 1.0019 | 13<br>12 | MPa |
| Climbing Drum Peel [1] | RT<br>80 | EN 2243-3 | 130<br>110 | N/75 mm |
| Bending Load (4-P.) [1] | RT<br>80 | AITM 1.0018 | 970<br>620 | N |
| Tg (TMA) | | | 140 | °C |

1) Sandwich 2 plies/side; core: 3.2-48 kg/m³ 9.4 mm (honeycomb)

## Burning Behavior [2]

| | | Test methods | max. mean values | |
|---|---|---|---|---|
| Flammability vertical, 60s flaming | burn length after flame time<br>after flame time of drips | AITM 2.0002A | < 100<br>0<br>0 | mm<br>s<br>s |
| Max. specific optical smoke density within 4 min | flaming mode | AITM 2.0007A | < 5 | Ds |
| Heat release | | AITIM 2.0006 | < 35 | $\frac{kW}{m^2}$ |
| Heat release rate | | AITIM 2.0006 | < 65 | $\frac{kW - min}{m^2}$ |

2) Laminate 1 ply cured

## Notice

The data have been obtained from representative sample specimens. Because the properties depend strongly on the fabrication and testing conditions, Gurit cannot guarantee that the data listed above will be achieved with other processes and equipment.

**Gurit (Zullwil) AG**
Fabrikweg 54
CH-4234 Zullwil
Switzerland

**T** +41 (0) 61 795 06 01
**F** +41 (0) 61 795 06 04

**Gurit (Kassel) GmbH**
Otto-Hahn-Str. 5
D-34123 Kassel
Germany

**T** +49 (0) 561 99 85 63 0
**F** +49 (0) 561 99 85 63 22

**E** info@gurit.com
**W** www.gurit.com