



Prepreg fabric data sheet

Code # C330Upp

Prepreg Properties

General Characteristics			
		Nominal	Tolerance
Mass unit per area	(g/m ²)	540	±5%
Dry fabric areal weight	(g/m ²)	324	±5%
Weave		Unidirectional	
Thickness	(mm)	0.31*	±5%

Warp - Weft ratio			
		Warp	Weft
Fiber description		HS Carbon Fiber HTS 45 E23 - 12K	Textile E Glass EC9 - 68tex
Thread count	(ends/cm)	3,80	3,00
Dry fabric weight distribution	(g/m ²)	304	20
Dry fabric weight distribution	(%)	93.33	6.67
Epoxy content by weight	(%)	40 (±3)	

(*) Theoretical thickness of compressed epoxy laminate with 40% of reinforcement in volume.

Note: Technical information furnished is based on laboratory findings and believed to be correct. No warranties of any kind are made except that the materials supplied are of standard quality. All risk and liabilities arising from handling, storage and use of products, as well as compliance with applicable legal restrictions, rests with the user.

Resin properties

Description

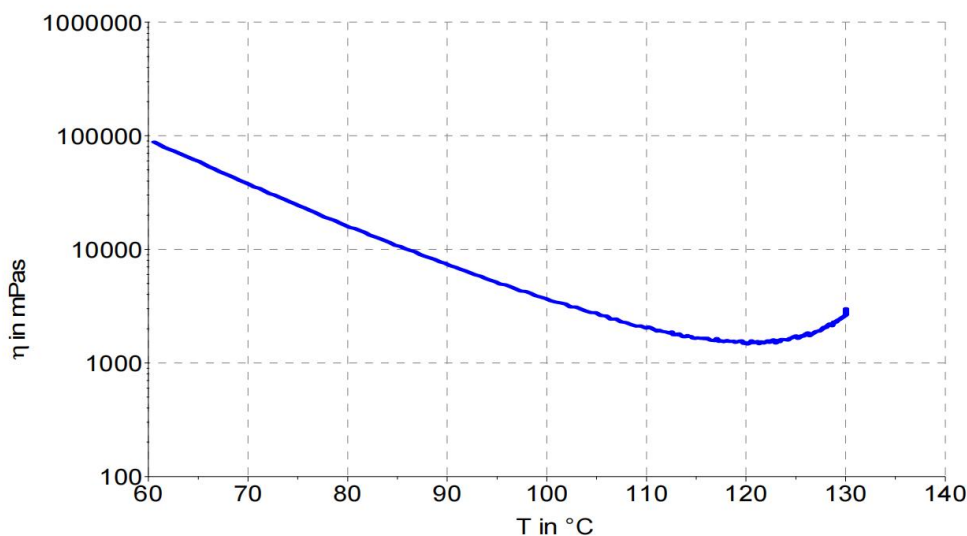
R625 is a toughened epoxy resin suitable for impregnating a wide range of carbon/glass and aramid fabrics. It exhibits high transparency and is suitable for "carbon look" composite parts where cosmetic requirements are needed. R625 can be used with composite or metal moulds, and with all standard hot processing technologies.

Benefits

- ◆ Fields of application: automotive, sporting goods, marine, industrial
- ◆ Different curing cycles possible
- ◆ Good mechanical properties
- ◆ Improved UV resistance

General Characteristics		
		Value
Cured resin density	(g/m ³)	1,
Gel Time at 125 °C (257 °F)	(min)	6'-9'
Gel Time at 110 °C (221 °F)	(min)	20' ÷ 26'
Resin VOC on prepreg	(%)	< 1
Tg fully cured DMA	(°C (°F))	120 (248)
Shelf life at room temperature @ 23 °C	(weeks)	5
Shelf Life @ -18°C	(months)	18

Viscosity VS Temperature behaviour



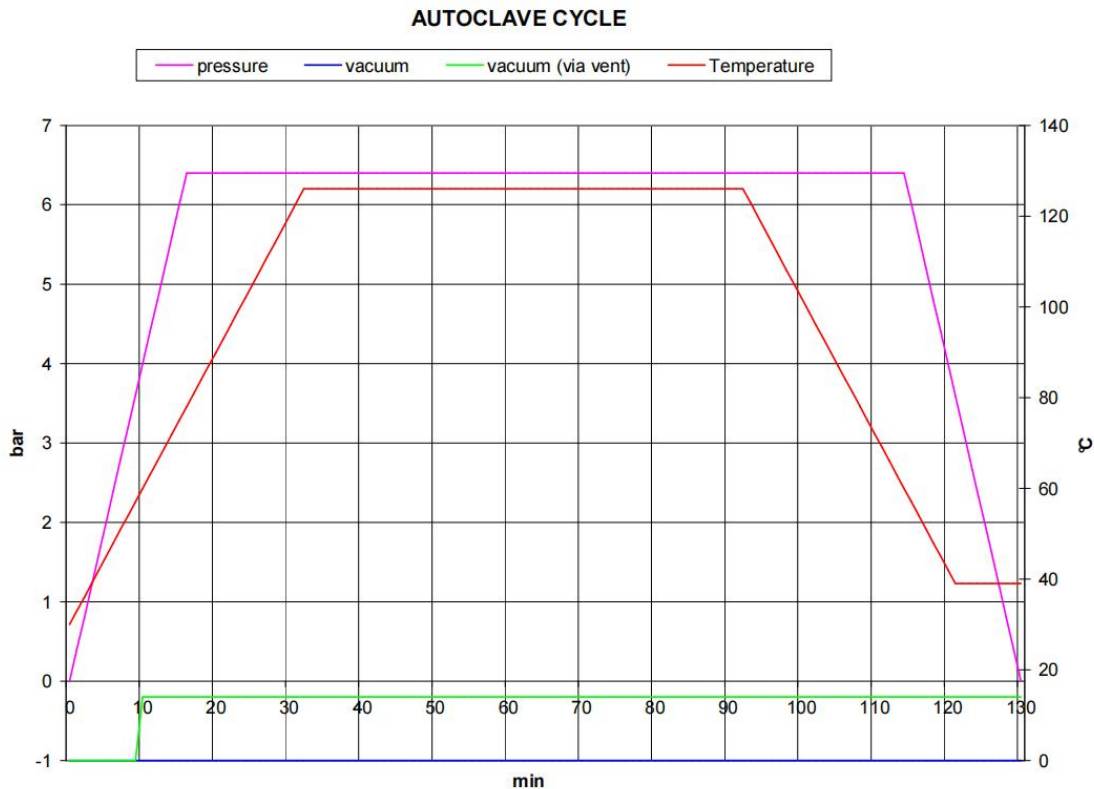
Minimum curing cycles suggested

Curing Cycles		
Temperature	Time	Tg (°C)
110	2h	120-125
125	1h	120-125

Process description

Autoclave: 125°C cycle

1. After sealing the bag apply -0.9 ÷ -1.0 bar vacuum.
2. Heat up to 125°C at 1-3°C / min rate
3. Apply air pressure at a high rate, in order to reach the maximum possible value (e.g. 4 ÷ 7 bar) before 80°C. After process pressure is reached, it could be possible to reduce the vacuum value to -0.2 bar (via vent), depending on judgement of the autoclave operator.
4. When 125°C temperature is reached hold the pressure for at least 1h
5. Cool to 60°C and after this, release the pressure.
6. Pull the part out of the autoclave and demold at room temperature.



Hot Press: 125°C cycle

1. Place the prepreg material into the mould at room temperature and close the mould at 1 bar pressure
2. Heat to 125°C at a 1-3°C/min (3-5°C/min for small parts if possible).
3. When 100-110°C is reached apply 2-3 bars or more if flow could be controlled
4. When 125°C temperature is reached hold the pressure for at least 1h
5. Cool to 40-50°C under pressure
6. Demold

R625 is a highly reactive epoxy formulation. A high heat up rate and/or high temperature ramp up can result to an exotherm reaction inside the stack lay up when thick laminates are processed (thickness over 1 cm).

These autoclave and hot press cycles are suggestions based on Fibremax tools and experience. Different curing cycle conditions may apply to different processing equipment.

Typical mechanical properties

The mechanical data below were performed on laminate cured by hot press technology at 125°C curing cycle (see above).

Flexural strength (Mpa): 1150
 Flexural modulus (Gpa): 115
 G1c mod. (J/m²): 700
 ILSS - Short Beam Shear (Mpa): 73

The values are to be understood as the average of the experimental values observed.

Storage life

Prepregs should be stored in original packing, at a cool dry place or in a refrigerator. Storage life is:

- ◆ 12 months at -18 °C
- ◆ 5 weeks at +23 °C

Precautions for use

We recommend that customers observe established precautions for handling resin and fine fibrous materials.

Operators working with this product should wear clean, impervious gloves to reduce possibility of skin contact and prevent contamination of the material.

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