

PRELIMINARY PRODUCT INFORMATION

Product Description:

VTF261 surfacing materials are based on ACG's "ZPREG®" selective impregnation surfacing technology and are recommended for use with ACG's VTM®260 series of rapid lay-up Prepregs and ZPREG® materials achieving high quality cosmetic finish or paint ready surfaces direct from the mould.

In common with all VTM260 series materials, VTF261 can be cured under vacuum bag pressure at temperatures between 65°C and 120°C (149°F and 248°F). The maximum end-use service temperature is 100°C (212°F) after postcure.

Differentially coated prepreg formats are recommended for relatively thin components where a clear cosmetic finish is required. ZPREG formats are recommended for large or thick components where flaw free paintable surfaces may be achieved from standard tooling.

Features:

- 65°C (149°F) minimum initial cure.
- Flexible cure between 65°C and 120°C
- Maximum dry service temperature of 100°C (212°F) following suitable post cure
- High quality surface finishes achieved after vacuum only cure.
- Good tack and drape for easy lay-up of large structures, vertical surfaces and complex shapes
- Compatible with all ACG VTM260 and ZPREG260 series materials

Standard Formats:

System	Reinforcement	Product Designation	Fabric Weight
VTF261	Carbon	VTF261/CF3200-40%RW-DC	245
VTF261 (in ZPREG format)	Carbon	VTF261/GF1200/CF0300	48/200
	Glass	VTF261/GF1200/GFM001	48/165

Instructions for Use:

The VTF®261 system should be applied tacky side to the mould. De-bulking is usually unnecessary as no air is trapped under the partially impregnated ZPREG® surface ply but If the part is of complex shape then a short vacuum de-bulk with a perforated release film may be advisable.

The surface ply can then be backed up with the desired structural laminate. This can consist of fully impregnated or partially impregnated ZPREG plies.

It is essential that air paths be maintained into the breather pack during the curing process. This is achieved by extending the surface ply (>10mm) beyond the subsequent laminate plies around the perimeter of the part.

A perforated P3 release film must be used to ensure continuity of the air paths into the breather layer during the cure process.

Position the vacuum disposables stack and apply full vacuum at room temperature, a minimum of 28 in Hg (0.94bar) vacuum pressure is required. A vacuum leak test should be performed to ensure there are no leaks in the bagging membrane.

Initial cure data:

Cure Temperature/°C	Recommended Cure time	Maximum Service Temperature
65 (149°F)	16 hours	60°C (140°F)
80 (176°F)	5 hours	80°C (176°F)
100 (212°F)	2 hours	100°C (212°F)
120 (248°F)	1 hour	100°C (212°F)

For differentially coated (DC) prepregs:

For cure temperatures greater than 65°C (149°F) it is recommended that a 60minute dwell at 65°C (149°F) is included in the cure cycle.

For ZPREG dual fabric formats:

At cure temperatures greater than 80°C (176°F) it is recommended that a 30minute dwell at 80°C (176°F) is included in the cure cycle

Oven ramp rate in all cases should be 2°C (3.6°F)/minute.

Outlife and Storage Data:

Storage at -18°C (0°F) (for both materials)	>12 months
Outlife of VTF261 at 21°C (70°F)	21 days

On the roll, VTF261 System should be supported through the cardboard core or by standing on end. If left unsupported the material will self-impregnate and this will be detrimental to the handling and final surface quality.

When not in use, all VTF261 materials should be stored in a freezer. When material is removed from the freezer, it is essential that the roll be allowed to thaw and reach room temperature before the polythene bag is opened. For example, the thaw time for a 20 lm roll taken from -18°C (0°F) storage into a 21°C (70°F) room is typically between 4 – 6 hours. Unless the material is fully thawed, condensation may form on the surface. Moisture within a curing laminate may be detrimental to final part quality and appearance. When materials are returned to the freezer they must be resealed to prevent ingress of moisture.

Exotherm

Note: You are advised to read this section before proceeding with initial cure.

VTF261 is a reactive formulation, which can undergo severe exothermic heat build up during the initial curing process if incorrect curing procedures are followed.

Great care must be taken to ensure that safe heating rates; dwell temperatures and lay-up/bagging procedures are adhered to, especially when moulding solid laminates in excess of 10mm (0.4in) thickness. The risk of exotherm increases with lay-up thickness and increasing temperature. It is strongly recommended that the user carry out representative trials of all the relevant circumstances to allow a safe cure cycle to be specified. It is also important to recognise that the model or tool material and its thermal mass, combined with the insulating effect of breather/bagging materials can affect the risk of exotherm in particular cases. Please contact Advanced Composites Group Technical department for further information on exotherm behaviour of these systems.

Health and Safety

VTF261 contains epoxy resin, which can cause allergic reactions by skin contact. Avoid prolonged or repeated skin contact. Gloves and protective clothing must be worn.

Wash the skin thoroughly with soap and water or resin removing cream after handling. Do not use solvents for cleaning the skin.

Use mechanical exhaust ventilation when heat curing the resin system.

In the uncured state, ZPREG® materials contain dry fibres. Small amounts of these fibres may be released during cutting and handling of the materials. Skin contact with these fibres should be minimised, as should dispersal of the fibres into the workplace. Particular care should be taken using carbon fibre materials around electrical products – such equipment should be made intrinsically safe.

For further information consult ACG Material Safety Data Sheet 457.