

# MAXFLOW Multiaxials

## Multiaxial reinforcements that have been adapted for faster resin flow

MAXFLOW fabrics are engineered multiaxials that have been adapted by a patented process to allow up to 2 x speed of infusion compared to standard multiaxial reinforcements, whilst retaining the same basic architecture and properties of their equivalent standard fabrics.

### How does it work?

The process works by the addition of trace amounts of special flow-promoting fibres. This procedure helps to improve the infusion moulding process for large parts (train roofs, boat hulls and decks,) that experience high mechanical strain.

### What are the advantages?

Being able to offer a like-for-like reinforcement with a very fast impregnation speed is a major advantage, but perhaps of greater advantage in a real production environment is having a reinforcement that gives a **more 'robust' manufacturing process**. Knowing that the MAXFLOW properties enable a difficult area of the laminate to fully impregnate time after time is what a manufacturer really needs.

### Which reinforcements can be treated with MAXFLOW?

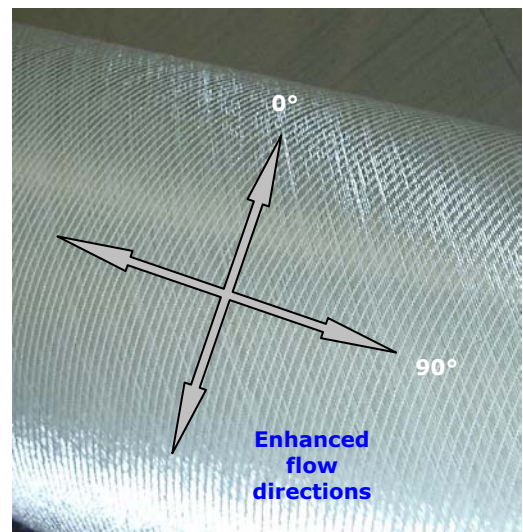
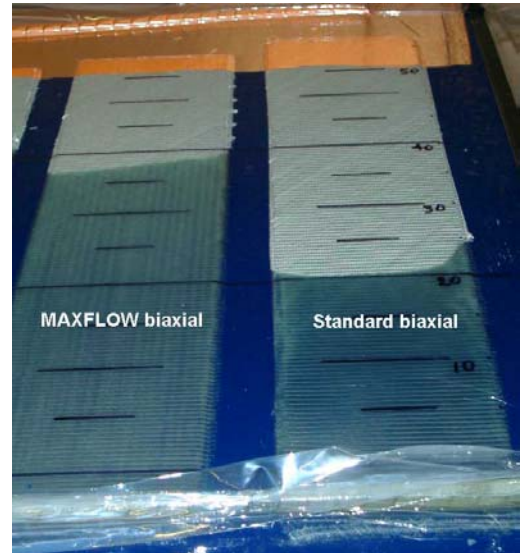
Any SGTF  $\pm 45^\circ$  biaxial fabric can be treated with MAXFLOW, with the extra flow controllable in the  $0^\circ$  and/or  $90^\circ$  directions. There are also options for triaxials, which are outlined overleaf.

### How does MAXFLOW effect the structural properties?

The addition of even trace amounts of different fibres will have some effect on properties. In tests on comparative flexural laminate properties, there was no discernable difference in strength or modulus.

### Does MAXFLOW effect surface finish?

Exhaustive testing has shown that the MAXFLOW flow-promoting fibres **do not show through a gel-coat**, unlike other solutions of promoting faster flow that involve creating 'gappy' or 'open' fabrics. These 'gappy' fabrics can then create new problems with print-through. MAXFLOW fabrics retain the same tex of fibres, and the same length of stitch as their standard versions, so can be used in the same surface-conscious environments.



# MAXFLOW (con'd)

## Who should use MAXFLOW?

In any closed mould application, the normal method of speeding up resin flow is to add a permeable bleeder layer such as Unifilo® CFM, which will considerably enhance resin flow. However, adding resin-rich layers will also lower the overall Vf (fibre volume fraction) and therefore the laminate properties.

### Resin-rich layers (eg CFM) = Fast flow but low fibre volume

When infusing an engineered composite, where Vf and laminate properties are critical, then MAXFLOW provides the solution. The optimal properties provided by Multiaxials can still be achieved, along with the fast resin flow that permeable resin-rich layers can offer.

### MAXFLOW = Fast flow and high fibre volume

Only MAXFLOW can offer this unique combination enhancing both the processing and final properties of the composite.

## What specific products are available?

SGTF offer both standard and custom MAXFLOW products

### Standard product

EBX 936 MF90 – biaxial  $\pm 45^\circ$  936 g/m<sup>2</sup> with MAXFLOW in 90° direction

### Custom product options

- Any SGTF biaxial  $\pm 45^\circ$  with MAXFLOW in 90° - **MF90**
- Any SGTF biaxial  $\pm 45^\circ$  with MAXFLOW in 0° - **MFO**
- Any SGTF biaxial  $\pm 45^\circ$  with MAXFLOW in 0° & 90° - **MF090**
- Any SGTF triaxial 0°  $\pm 45^\circ$  with MAXFLOW in 90° - **MF090**
- Any SGTF triaxial -45°/90°/+45° with MAXFLOW in 0° - **MFO**

## NOTES

1. For Custom Products, there are minimum order quantities. Please check with the Customer Service team.
2. We recommend MAXFLOW on heavier fabrics with weights 800 g/m<sup>2</sup> and over, which also have the most efficient deposition rates for infusion dry-fabric lay-up.

## Do MAXFLOW fabrics cost a lot more?

There is a small extra cost for the manufacture of a MAXFLOW product, that is reflected in the small extra premium charged over standard product prices. This small extra cost will be more than offset by the advantages it offers:

- reduced moulding cycle time
- more consistency in resin reaching difficult areas
- reduction in re-work time
- less scrap
- reduced need to add non-contributing layers of flow-medium and therefore extra resin
- overall, a more reliable and robust manufacturing process

Without liability! 03/06

  
SAINT-GOBAIN  
TECHNICAL FABRICS

SGTF Composites Europe  
Drukkerijstraat 9  
B-9240 Zele  
Belgium

T+32 (0) 52 45 76 11  
F+32 (0) 52 44 95 02  
sales.eu.sgafc@saint-gobain.com