DNV·GL

Certificate No:
TAK00001J8

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Glass Fibre Products

with type designation(s)
HiMax™ Glass Multiaxials
Triaxial Fabrics; DBL (+45°/0°/-45°) (200 – 3500 g/m²), DBL (+30°/0°/-30°) (200 – 3500 g/m²), DBL (+60°/0°/-60°) (200 – 3500 g/m²) with or without F (50 – 600 g/m²), Triaxial Fabrics; DBT (+45°/90°/-45°) (200 – 3500 g/m²), DBT (+30°/90°/-30°) (200 – 3500 g/m²), DBT (+60°/90°/-60°) (200 – 3500 g/m²) with or without F (50 – 600 g/m²)

Issued to
Hexcel Reinforcements UK Ltd
Cambridge, United Kingdom

is found to comply with
DNV GL class programme DNVGL-CP-0467 – Type approval – Uni- and multi-axial multi-ply fabrics made of glass fibres
DNV GL rules for classification – High speed and light craft
DNV GL standard DNVGL-ST-0342 – Craft
Det Norske Veritas' Standards for Certification No. 2.20, Lifeboats and Rescue Boats, 2007

Application :

For use in marine vessels in accordance with stated Rules/Standards.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-02-24**
This Certificate is valid until **2024-02-23**.
DNV GL local station: **Manchester**

Approval Engineer: **Gisle Hersvik**

for **DNV GL**

Rikard Törnqvist
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Job Id: **262.1-018084-4**
Certificate No: **TAK00001J8**

Product description

HiMax™ Glass Multiaxials
Tri-axial Glass Fibre Products of +45°/0°/-45°, +30°/0°/-30°, +60°/0°/-60°, +45°/90°/-45°, +30°/90°/-30° and of +60°/90°/-60° orientations:

- E-glass tri-axial stitched cross plied roving
- DBL (+45°/0°/-45°) (200 – 3500 g/m²) with or without F (50 – 600 g/m²),
- DBL (+30°/0°/-30°) (200 – 3500 g/m²) with or without F (50 – 600 g/m²),
- DBL (+60°/0°/-60°) (200 – 3500 g/m²) with or without F (50 – 600 g/m²),
- DBT (+45°/90°/-45°) (200 – 3500 g/m²) with or without F (50 – 600 g/m²),
- DBT (+30°/90°/-30°) (200 – 3500 g/m²) with or without F (50 – 600 g/m²),
- DBT (+60°/90°/-60°) (200 – 3500 g/m²) with or without F (50 – 600 g/m²).

Legends:
DB: Double Bias
L: Longitudinal
T: Transverse
F: Fleece (Micromesh/Veil/Nonwoven)

Applications/Limitations

The approval covers the weight ranges given above.

The fabric complies with the applicable requirements of DNV GL and is compatible to the laminating resin.

Any significant changes in design and / or quality of the material will render the approval invalid.

Type Approval documentation

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

Product shall be marked with *manufacturer's name*: **Hexcel Reinforcements UK Ltd, UK** and *Type Designation/Product Code*, *Description* and *Piece Number*.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV GL Type Approval Certificate.

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical Assessment to be performed after 2 and 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

The main elements of the Periodical Assessment are to:

- Ensure that **Type Approval documentation** is available.
- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and the DNV GL Type Approval Certificate.

END OF CERTIFICATE