

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Carbon Fibre Products

with type designation(s)
SIGRATEX® UD (0°) - Series

Issued to

SGL Composites GmbH & Co. KG
Wackersdorf, Germany

is found to comply with
DNV GL class programme DNVGL-CP-0434 – Type approval – Uni- and multi-axial multi-ply fabrics made of carbon fibres
DNV GL rules for classification – Ships
DNV GL rules for classification – High speed and light craft

Application :

For production of FRP laminates

Issued at **Hamburg** on **2019-10-11**

This Certificate is valid until **2024-10-10**.

DNV GL local station: **Augsburg**

Approval Engineer: **Joachim Rehbein**

for **DNV GL**

Thorsten Lohmann
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.



Job Id: **262.1-029870-1**
Certificate No: **TAK00001SM**

Product description

Unidirectional carbon fibre fabric, non-crimped, stitched, with chemical binder

Approved variants

Total mass per unit area: 150 – 850 g/m²

Max. width: 3022 mm

Type of fibre: SIGRAFIL® C T50-4.4/255-E100

Type of sizing: Epoxy

Application/Limitation

Manufacture of components made of FRP. For marine vessels and rotor blades within wind energy.

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

1. Application for approval and attached TDS, 2018-09-06
2. Type approval assessment report, 2018-12-03
3. Inspection certificate for fibre, Lot no.:4-465, dated 2018-11-14
4. Declaration of Conformity by SGS Composites LLC, USA, Lot. 3-632, 2019-06-24
5. Test report 124326 by SGL carbon GmbH, Meitingen, incl. several individual reports, 2019-07-19
6. ISO 17025 certificate D-PL-20273-01-00 + Annex for SGL carbon GmbH, Meitingen, 2018-12-21
7. Example APZ 0206/2018, 2018-11-29

Marking of product

Product shall be marked with *manufacturer's name*; **SIGRATEX** and *type designation*.

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

Periodical assessments will be required after 2 years and after 3.5 years (retention surveys) and for renewal after 5 years (renewal survey).

The scope of the retention and renewal survey 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.

A production site with a valid Approval of Manufacturer (AoM) certificate for material in question is exempted from the obligation concerning retention and renewal assessments.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnvgl.com>

END OF CERTIFICATE