

# TYPE APPROVAL CERTIFICATE

**This is to certify:**

**That the Glass Fibre Products**

with type designation(s)  
**HiPer-tex W2020 Series**

Issued to

**3B-Fibreglass S.P.R.L.**  
**Battice, Belgium**

is found to comply with  
**DNV GL class programme DNVGL-CP-0082 – Type approval – Glass fibre rovings**

**Application :**

**Manufacturing of fabrics and/or fibre reinforced plastics.**

Issued at **Hamburg** on **2018-12-11**

for **DNV GL**

This Certificate is valid until **2023-12-10**.

DNV GL local station: **Hamburg Materials & Welding**

Approval Engineer: **Guido Michalek**

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**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.



## Product description

Direct R Glass Roving W 2020 for Epoxy Resin.

## Approved variants

Properties	Test Method	HiPer-tex W2020	HiPer-tex W2020	HiPer-tex W2020	HiPer-tex W2020	Unit
Density	ISO 1889	600±36	1200±72	2400±144	4800±288	TEX
Filament Diameter	ISO 1888	17±1	17±1	17±1	24±1	µm
Loss on Ignition	ISO 1887	0.55±0.12	0.55±0.12	0.55±0.12	0.55±0.12	%
Moisture Content	ISO 3344	≤0.15	≤0.15	≤0.15	≤0.15	%

## Limitation

The roving 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

- Technical Data Sheet
- Test Report No. B246/12.1; B204/12.1A; B204/12.3A1; B204/12.2A, issued by the DNV GL approved testing laboratory of IMA Dresden (Approval No. AOSS0000DGD), dated December 2012.
- Workshop Inspection Report issued by DNV GL Hamburg
- Quality Assurance Documentation

## Assessed production sites

3B-Fibreglass Norway AS  
Tollenesveien 60, Tollnes  
4795 Birkeland  
Norway

## Periodical assessment

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.

For manufacturer without a valid AoM a periodical assessment after 2.5 years and at renewal after 5 years is required.

END OF CERTIFICATE