



Certificate No:
TAK000029S

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Gelcoats and Topcoats

with type designation(s)
BÜFA®-Gelcoat-ISO-3000-S/H

Issued to
BÜFA Composite Systems GmbH & Co. KG
RASTEDE, Germany

is found to comply with
DNV class programme DNV-CP-0083 – Type approval – Polyester resin, vinylester resin, gelcoat and topcoat

Application :

Sealing of laminates made of fibre reinforced plastics

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

Issued at **Hamburg** on **2023-08-31**

This Certificate is valid until **2028-08-30**.

for **DNV**

DNV local unit: **Hamburg – CMC North/East**

Approval Engineer: **Joachim Rehbein**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2022-12

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Product description

BÜFA®-Gelcoat-ISO-3000-S/H: Unsaturated polyester resin with filler

Approved variants

BÜFA®-Gelcoat-ISO-3000-S (Spray application)

BÜFA®-Gelcoat-ISO-3000-H (Hand/Brush application)

The following properties have been established by type testing of cured resin.

Property	Test Method	Value *	
Tensile strength	ISO 527-2	71,8	MPa
Tensile modulus	ISO 527-2	3553	MPa
Elongation at break	ISO 527-2	4,0	%
Barcol hardness	ASTM D2583	44,1	-
Heat deflection temperature (HDT)	DIN EN ISO 75-2	60	°C
Water absorption ¹	DIN EN ISO 62	97,5	mg
Density	DIN EN ISO 2811-1	1,22	g/cm³
Curing procedure	24h at 23°C + post curing 16h at 50°C		
* mean values			
Note:			
1: Value above requirement for Grade 1 resin and to be considered for application			

Application/Limitation

The resin complies with the applicable requirements of DNV and is compatible to the fibres, adhesives and core materials.

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 according to **Type Approval documentation**.

Marking of product

Product shall be marked with *manufacturer's name* 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 Type Approval Certificate.

Assessed production site(s)

BÜFA Composite Systems GmbH & Co. KG
 Hohe Looge 2-8
 26180 Rastede
 Germany

Periodical assessment

Periodical assessments for type approvals with a validity period of five years will be required after 2 years and after 3.5 years (Certificate Retention) and at renewal after 5 years (Certificate Renewal).

If an approval of manufacturer certificate is available valid for at least one year, an exemption from the obligation concerning retention and renewal surveys listed in the class programme will apply.

END OF CERTIFICATE