EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB000097V

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as “Forskrift om Skipsutstyr” by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

that the Fire restricting materials (except furniture) for high speed craft

with type designation(s)
FIRELINER CF-ALU

issued to
XFIRE AS
FREDRIKSTAD, **Norway**

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2024/1975,**
item No. MED/3.32. SOLAS 74 as amended, Regulation X/3, 2000 HSC Code 7, IMO MSC.1/Circ.1457 and IMO 2010 FTP Code

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2029-11-27**.

Issued at **Høvik** on **2024-11-28**

DNV local unit:
East & South Norway CMC

Approval Engineer:
Helge Bjørnarå

Notified Body
No.: **0575**

for **DNV AS**

Mydlak-Röder, Christine
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005, and amended by Decision No 1/2023 dated August 21st, 2023.

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer’s Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

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.

Product description

"FIRELINER CF-ALU",
consists of an FRP structure insulated on the exposed side with panels constructed of one layer of 12.5 mm – 13.5 mm fire insulating phenolic core FIRECORE (density 170 kg/m^3 – 200 kg/m^3, manufactured by XFire) faced with 0.2 mm glass cloth with aluminium surface ALUGLAS 580 (area weight 580 g/m^2, manufactured by XFire). The facing is glued to the core by adhesive. The panels are secured by means of 0.7 mm steel profiles with screws (c-c 300 mm).

For further details, see drawing listed under Type Examination documentation.

Application/Limitation

Approved for use as a fire-restricting material in high-speed craft.

Fire hazard shall be on the insulated side.

Only the combined product (FRP structure and insulation panels) is approved as a fire resisting material. The product is to be installed as tested, with the below details considered being the main issues.

FRP structure
The insulation panels were tested on construction with the following specification:

- Laminate: carbon fibre reinforcement (800 g/m^2) in a standard non-fire-retardant vinylester resin
- Core: Divinycell H60 Grade PVC foam (density 60 kg/m^3, manufactured by Diab)

The FRP sandwich structure was assembled with a 30 mm core lined with 0.8 mm laminate on both sides.

Application of other FRP materials
The systems are in general only approved for composite cores with same materials and dimensions as tested. On a case-by-case basis, other equivalent composites may be applied when confirmed acceptable and documented by the maker and found to be acceptable by the flag administration. The following issues are to be addressed:

- The structure shall have stiffness and mechanical properties (cold conditions) equivalent to or better than that being tested.
- The materials (core, carbon fibre, resin, etc.) shall have mechanical properties at the relevant temperature range (typically 20 °C to 250 °C) equivalent to the material used in the test. The heat distortion temperature for each material, thickness of laminate and density of the core may be applied as criteria.

Any adhesive used, other than the one used during testing, has to be approved according to the Marine Equipment Directive and bear the Mark of Conformity. This requirement may also be applicable for surface materials used, if required by relevant rules and regulations.

Each product is to be supplied with its manual for installation and maintenance.

Type Examination documentation

Test report No. O100741-1237769 Rev.1 dated 12 November 2024 (5 February 2024) from RISE, Borås, Sweden.

Drawing No. 4001201-4000 Rev.A dated 31 January 2024 from manufacturer.

Tests carried out

Tested according to IMO 2010 FTP Code part 10.

Marking of product

The product is to be marked with name and address of manufacturer, type designation, fire technical rating, the MED Mark of Conformity and USCG Approval Number if applicable (see first page).