

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000001N
Revision No:
1

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 GL 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

Issued to
XFire
Fredrikstad, Norway

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773**,
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

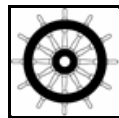
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2020-06-09**.

Issued at **Høvik** on **2018-07-25**

DNV GL local station:
Sandefjord

Approval Engineer:
Marius Mørner



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body



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 GL 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



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Product description

"FIRELINER"

The FIRELINER products consist of a FIRECORE and a surface layer. 8 different combinations of FIRECORE and surface laminate for use on bulkheads and decks are approved.

The approved product is described in detail below. The product is in general only approved for use on vessels built according to HSC Code or rules based on this Code (examples: yacht, navy ships, patrol boats, etc.).

Application/Limitation

Some product specific information is removed from the Internet version, please contact the supplier for details.

Only the combined product (insulation and FRP structure, bulkhead and ceiling) is approved as a fire restricting material. The fire hazard shall be on the insulated side. The product is to be installed as tested, with the below details considered being the main issues. See the installation manual for more details.

The FIRELINER consists of a 10-12 mm FIRECORE covered with any of the seven surfaces defined in the following table:

Product	Surface (see note a)	Fastening arrangement
Metal facing		
FIRELINER AL	Aluminium plate 0.5 –0.9 mm with paint	See note 1
FIRELINER AL-plain	Aluminium plate 0.5 –0.9 mm without paint	See note 1
FIRELINER SS	Stainless steel or galvanised steel, 0.15 –0.9 mm with or without paint	See note 1
Cloth facing or laminates		
FIRELINER FPG MKII	Phenolic / glass laminate with foils on top	See note 2
FIRELINER CF	Impregnated glass-cloth	See note 2
FIRELINER CF – colour	Glass-cloth fabric polyester-polyurethane	See note 2
FIRELINER DECO	Glass / phenolic laminate coating	See note 2
FIRELINER CF-AL	Glass cloth with aluminium foil surface	See note 2
Note, surface		
a) All combustible surfaces (paint), laminates, etc. should be identical to that tested and in compliance with the detailed specification issued by the maker.		
Note, core		
Firecore to be 10 – 12 mm thick , density 125 kg/m ³ (±20%), with panel dimensions of maximum 600 x 3000 mm.		
Notes, fastening arrangement		
1) Screws through plate and core into composite structure. 2) Screws through plate and core into composite structure (ceiling) and trough profile (bulkhead). For all systems: 0.7 mm steel joint profiles (cc 600 mm) with screws (cc 300 mm). For further details, see drawings in type approval documentation.		

The products may be used on non-combustible materials like aluminium and steel or the FRP structure complying with the below (see next page):

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FRP structure

The FIRELINER was tested on a sandwich composite structure with polymer core and fibre reinforced laminates.

The specification is as follows:

Laminate: Carbon fibres and vinylester resin, (thickness of laminate: 1.3 mm, weight 700-1000 g/m²)

Core: Divinycell 60 kg/m³ (semi-rigid PVC core)

The structure was assembled based on a 60 mm Divinycell core with the 1.3 mm laminates both sides.

Application of other FRP materials

The systems are in general only approved for composite with same exposed laminate 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.

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

Type Examination documentation

FIRELINER AL / SS

SINTEF Task no. 22N010.80 / 00 244 dated 20 October 2000

SINTEF assessment ASH/00 244 dated 19 October 2000

SINTEF Task no. 22N010.07 / 00 393 dated 11 December 2000

SINTEF Task no. 102010.90 / 01.106A dated 19 March 2001

FIRELINER FPG

SINTEF Task no. 102010.80 / 01.019 dated 19 March 2001

SINTEF assessment / task no. 102010.07 / 01.123 dated 23 March 2001

SINTEF Task no. 102010.90 / 01.106B dated 20 March 2001

FIRELINER CF, CF-Colour, DECO

SINTEF Task no. 102010.90 / 01.167A dated 15 June 2001

SINTEF assessment / task no. 102010.07 / 01.194 dated 19 June 2001

SINTEF Task no. 102010.90 / 01.167B dated 15 June 2001

SINTEF Task no. 22N010.90 / 00.364 dated 29 November 2000

FIRELINER CF-AL

Test report no F17 130009-18 rev. 2, dated 2018-03-13 by RISE Fire Research, Trondheim, Norway.

Tests carried out

Tested according to IMO FTP Code part 10 (IMO Resolution MSC.40 (64) as amended by IMO Resolution MSC.90 (71)) and in compliance with IMO 2010 FTP Code Ch. 8.

Marking of product

The product or packing is to be marked with name and address of manufacturer, type designation, fire-technical rating and MED Mark of Conformity (see first page).