

EC-TYPE EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2013/52/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

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

with type designation(s)
XFire FIRELINER

Issued to
XFire
FREDRIKSTAD, Norway

is found to comply with the requirements in the following Regulations/Standards:
Annex A.1, item No. A.1/3.32 and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation X/3, 2000 HSC Code 7 and IMO 2010 FTP Code

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

Høvik, 2015-06-24
for **DNV GL AS**



This Certificate is valid until
2020-06-09

Petter Langnes

Petter Langnes
Head of Department

Notified Body No.: **0575**

DNV GL local office:
Sandefjord

Øyvind Hoff

Øyvind Hoff
Surveyor



The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

Product description

"XFire FIRELINER"

The FIRELINER products consist of a FIRECORE and a surface layer. Seven 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
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):

Job Id: **344.1-002619-2**
Certificate No: **MEDB000001N**

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-Color, 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

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 of manufacturer, type designation, fire-technical rating and MED Mark of Conformity (see below).

Mark of Conformity

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

Module D: The quality system for production and testing shall be approved by the Notified Body.

Module E: The quality system for inspection and testing shall be approved by the Notified Body.

Module F: Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity.



DNV

QS - CERTIFICATE OF ASSESSMENT - EC

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2013/52/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Quality System for the Fire restricting materials (except furniture) for high speed craft

with type designation(s) as specified in the Appendix to this Certificate

Issued to

XFire
FREDRIKSTAD, Norway

is found to comply with the requirements applicable to it.
The quality system for the product, defined in Annex A.1, Item No.**A.1/3.32**, has been assessed with respect to the procedure of conformity assessment described in Annex B, Module D in the directive.

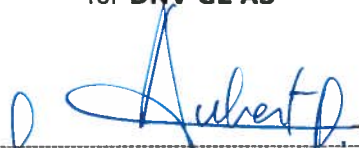
Limitations:

Modifications made to the Quality System shall immediately be reported to DNV GL AS in order to examine whether this Certificate remains valid. Annual periodical audits will be held to verify the validity of the Certificate.

Høvik, 2015-06-24
for DNV GL AS



This Certificate is valid until
2020-06-09



Petter Langnes
Head of Department

Notified Body No.: **0575**

DNV GL local office:
Sandefjord



Øyvind Hoff
Surveyor



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Handwritten mark

Job Id: **344.1-002255-7**
Certificate No: **MEDD000000F**

APPENDIX, REV. NO. 0

QS - Certificate of Assessment – EC, Certificate no. MEDD000000F

Type designation	EC Type-Examination Certificate No.	Expiry date
XFire FIRELINER	MEDB000001N	2020-06-09

The product is manufactured at Artboard AB, Timrå, Sweden.

The manufacturer complies with the Council Directive 96/98/EC on Marine Equipment and is allowed to affix the Mark of Conformity followed by the DNV GL AS identification number 0575 and the two last digits of the number of the year in which the product is produced.

Example:  0575/15

The manufacturer shall issue a Declaration of Conformity for each product with reference to the EC Type-Examination Certificate and this QS - Certificate of Assessment – EC.

Place: **Høvik** Date: **2015-06-24**

for **DNV GL AS**



Surveyor
Øyvind Hoff

