

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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 resisting divisions for high speed craft

with type designation(s)

Brødrene Aa 30 minute load-bearing composite deck

Issued to

Brødrene AA AS
HYEN, Norway

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2019/1397,**

item No. MED/3.34. SOLAS 74, Regulation X/3, 2000 HSC Code 7, IMO MSC.1/Circ.1457 and IMO 2010 FTP Code

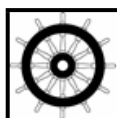
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-01-02.**

Issued at **Høvik** on **2020-01-03**

DNV GL local station:
Norway Newbuilding

Approval Engineer:
Helge Bjørnarå



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
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 1/2019 dated February 22nd, 2019.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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



Product description

Brødrene Aa 30 minute load-bearing composite deck, consists of a fire reinforced polymer (FRP) sandwich insulated on the exposed side (underside of deck) with 2 layers on the plate and stiffeners with SeaRox secured with washers and steel pins/screws.

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.).

The fire insulation is manufactured by Rockwool International A/S, Denmark (or by other Rockwool factories defined by the MEDD certificates in question).

Application/Limitation

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

Only the combined product (insulation and FRP structure) is approved as a fire resisting division. 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.

Insulation, foil and pins

The insulation shall be applied on the underside of the structural FRP deck plate as follows (listed with layers close to FRP first):

- 1 x 50 mm SeaRox SL 320 (60 kg/m³) covered with aluminium foil
- 1 x 30 mm SeaRox SL 620 (100 kg/m³)

The inner insulation layer and the perforated plates / bands between the insulation layers shall be secured with screws fitter to the structure. The outer insulation layer is secured with screws fitted to the perforated plates / bands. The pins are to be installed with a nominal spacing of 300 x 400 mm with approximately 50 mm distance to joints.

Stiffeners shall be insulated as follows:

- 1 x 50 mm SeaRox SL 640 (130 kg/m³)
- 1 x 30 mm SeaRox SL 620 (100 kg/m³)

The two inner insulation layer and the perforated plates / bands between the insulation layers shall be secured with screws. The outer insulation layer is secured with screws fitted into to the perforated plates/bands. The screws are to be installed along the stiffeners with a nominal spacing of 300 mm.

FRP structure

The insulation was tested on a sandwich composite deck structure with polymer core and carbon fibre reinforced laminates

Application of other FRP materials

The systems are in general only approved for composite 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.

Other documents

The insulation materials and surface materials used have to be approved according to the Marine Equipment Directive and bear the Mark of Conformity.

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

Type Examination documentation

Test Report No. P902757B dated June 2009 from SP, Sweden (30 minutes fire test).

Drawing No. 850-510-4392-T-4 modied 16 December 2019 by maker.



Job Id: **344.1-002279-3**
Certificate No: **MEDB00006AX**

Brødrene Aa Product Manual dated 21 January 2010.

Tests carried out

Tested according IMO FTP Code part 11 (IMO MSC.45(65) and IMO Res. A.754(18)) and in compliance with IMO 2010 FTP Code Ch. 8.

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).