

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 restricting materials (except furniture) for high speed craft

with type designation(s)
FReD 60 Minute Bulkhead/Deck

Issued to

Ayres Composite Panels
Bayswater, WA, Australia

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2019/1397**,
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

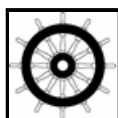
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-05-26**.

Issued at **Høvik** on **2020-05-27**

DNV GL local station:
Australia FIS/CMC

Approval Engineer:
Synnøve Bolstad Eri



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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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



LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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

"FRD 60 Minute Bulkhead/Deck"

is a fire resisting division consisting of Ayrilite 3007 composite panels and stainless steel supporting structure. When installed with a minimum air gap between the structural aluminium deck/bulkhead plate/stiffeners and the back (non-fire side) of the panels, it is approved for general use as fire restricting material.

Aluminium deck/bulkheads

Aluminium bulkhead shall consist of 6 mm shell plate with stiffeners of 100 mm x 75 mm x 9 mm every 600 mm, whereas the deckhead shall consist of 6 mm shell plate with stiffeners of 150 mm x 100 mm x 9 mm every 600 mm. Equivalent stiffness will be accepted.

Ayrilite 3007 composite panels

The Ayrilite 3007 composite panels consist of a 12.5 mm thick aluminium honeycomb core with glass fibre faces and aluminium foil backing. A layer of 7 mm thick intumescent ceramic fibre mat (density: 268 kg/m³, type: see PS 3007-D item 4.3), and a layer of 0.2 thick veneer (type: see PS 3007-D item 4.4). The panels have maximum dimensions 1184 mm x 2384 mm (W x L). Total thickness of composite panel is 20 mm.

Stainless steel framework structure deck

The framework structure with panels is suspended below the structural aluminium deck using stainless steel eye bolts, hanging rods and clips. An airgap of minimum 300 mm is maintained between the structural aluminium deck and the reverse (non fire side) of the panels and minimum 150 mm air gap is maintained between the back (non-fire side) of the panels and the aluminium stiffeners. Suspension rods are to be installed at maximum 1500 mm centres in panel length direction and 1200 mm centres in panel width direction.

Stainless steel supporting structure bulkhead

The supporting structure with panels is fixed to the structural aluminium bulkhead using stainless steel standoff brackets. An airgap of minimum 150 mm is maintained between the structural aluminium bulkhead and the reverse (non fire side) of the panels and minimum 50 mm air gap is maintained between the back (non-fire side) of the panels and the aluminium stiffeners. The standoff brackets are to be at maximum 1200 mm spacing in panel width direction and maximum 1500 mm in panel length direction.

Joints and insulation

Joints between panels consist of support channels covered with cover strips incorporating insulation, which are attached to support channels by way of M6x40mm screws at 600 mm nominal centres. Support Channels are fastened to Stand Off Brackets by 32mm x 6g screws at 1200 mm nominal centres. Each 90 degree panel intersection is supported by Stand Off Brackets and Internal Angle Sections, fastened with 4-3 steel rivets.

For further details see documentation under Type Examination documentation below.

Application/Limitation

Approved for use as a fire-restricting material in High Speed Craft.

Fire hazard shall be on the insulated side (restricted application).

Only the combined product (supporting infrastructure, composite panels, air gap and aluminium structure) is approved as a fire resisting material. Maker is to ensure that the product is manufactured and installed as tested (see Type Examination documentation), the main issues are listed below.

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

Type Examination documentation



Job Id: **344.1-010652-1**
Certificate No: **MEDB00006RR**

Test report no. RTF00034.2 R2.0 dated 25 May 2020 from Warringtonfire, Melbourne, Australia.

Design specification no. DS01 Version 2.0 "FReD Deck" dated 28 April 2020 from the manufacturer.
Design specification no. DS02 Version 2.0 "FReD Bulkhead" dated 28 April 2020 from the 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 and MED Mark of Conformity (see first page).