

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)
FReD 60 Minute Bulkhead

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/3.34. SOLAS 74, Regulation X/3, 2000 HSC Code 7, IMO MSC.1/Circ.1457 and
IMO 2010 FTP Code

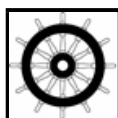
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-05-14**.

Issued at **Høvik** on **2020-05-15**

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

"FReD 60 Minute Bulkhead"

is a fire resisting division consisting of Ayr-lite 3007 composite panels and stainless steel supporting structure, mounted so that a minimum 150 mm air gap is maintained between the back (non-fire side) of the panels and the structural aluminium bulkhead, and a minimum 50 mm air gap is maintained between the back (non-fire side) of the panels and the aluminium stiffeners.

Aluminium bulkhead

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

Ayr-lite 3007 composite panels

The Ayr-lite 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 material (type: see PS 3007-D item 4.3), and a layer of 0.25 mm 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 supporting structure

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.

Inspection hatch

The bulkhead can be fitted with an inspection hatch with maximum clear opening of 760 x 760 mm (W x H), with two hinges and a three way locking system. The hatch to be installed in the middle of the Ayr-lite 3007 composite panel or at least 120 mm away from the panel joints. The hatch leaf, of dimensions 840 mm x 840 mm x 45 mm (W x H x D), is composed of 0.7 mm thick stainless steel hatch door surround with layer of intumescent seal fitted on the hatch door surround at the interface to hatch frame. A 42 mm thick Ayr-lite 3007 panel is installed inside into the hatch door surround. The hatch frame is composed of 0.7 mm thick stainless steel having overall dimensions of 914 mm x 914 mm x 45 mm (W x H x D) and is fixed to panel support structure by means of stand off brackets.

For further details see documentation under Type Examination documentation below.

Application/Limitation

The system is approved as a load bearing fire-resisting bulkhead 60.

Restricted application: Fire hazard shall be on the insulated side.

Only the combined product (composite panels, stainless steel supporting structure, air gap and aluminium structure) is approved as a fire resisting division. Maker is to ensure that the product is manufactured and installed as tested (see Type Examination documentation), the main issues are listed below. The system in general is only approved for use on vessels built according to the 2000 HSC Code or rules based on this Code.

Materials used in fire resisting divisions shall be non-combustible or fire-restricting (Ayr-lite 3007) and 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.

Vessel operators shall ensure that the structural fire protection system is maintained as per the Original Equipment Manufacturers requirements.

Job Id: **344.1-010520-1**
Certificate No: **MEDB00006JT**

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

Type Examination documentation

Test report no. FRT190423 R2.0 dated 9 January 2020 from Warringtonfire, Melbourne, Australia

Test report no. FRT190424 R2.0 dated 9 January 2020 from Warringtonfire, Melbourne, Australia

Design specification no. DS02 Version 2.0 "FReD Bulkhead" dated 28 April 2020 from the manufacturer

Material specification no. PS 3007-D dated 12 November 2019 from the manufacturer (Ayrlyte 3007)

Drawing no. FReD-60-001 rev. 1 dated 12 March 2020 from the manufacturer (System parts)

Drawing no. FReD-CSS rev. 1 dated 12 March 2020 from the manufacturer (Cover strip short)

Drawing no. FReD CSL rev. 1 dated 12 March 2020 from the manufacturer (Cover strip long)

Drawing no. FReD-CHL rev. 2 dated 12 March 2020 from the manufacturer (Support channel long)

Drawing no. FReD-CHS rev. 2 dated 12 March 2020 from the manufacturer (Support channel short)

Drawing no. FReD-CSB rev. 1 dated 12 March 2020 from the manufacturer (Corner Bracket)

Drawing no. FReD-COV rev. 1 dated 12 March 2020 from the manufacturer (Cover plate)

Drawing no. FReD-SOF-30 rev. 1 dated 12 March 2020 from the manufacturer (Stand off bracket)

Drawing no. FReD-HTC-8-8 rev. 1 dated 12 March 2020 from the manufacturer (hatch)

Tests carried out

The system is tested according to IMO 2010 FTP Code part 11.

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).