

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the "A" Class divisions, fire integrity

with type designation(s)

HYHA-I Type Compound Aluminum Oxide Blanket Class A-60 bulkhead

Issued to

**Wuxi Haiyue Ship New Material Technology Co., Ltd.
Wuxi, China**

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

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

item No. MED/3.11a. SOLAS 74 as amended, Regulation II-2/3.2 & II-2/9, IMO 2010 FTP Code, IMO MSC/Circ.1120 and IMO MSC.1/Circ.1434, IMO MSC.1/Circ.1435.

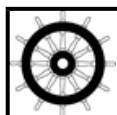
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-03-03.**

Issued at **Hamburg** on **2020-03-04**

DNV GL local station:
Jiangyin

Approval Engineer:
Timo Linn



Notified Body
No.: **0098**

for **DNV GL SE**

Gerhard Aulbert
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 European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment", signed February 27th, 2004, and amended by Decision No 1/2018 dated February 18th, 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 SE 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

"HYHA-I Type Compound Aluminum Oxide Blanket Class A-60 Bulkhead"

is composed of a structural steel bulkhead of 5mm, reinforced with stiffeners of L65x65x6mm insulated with two layers of 40mm (20mm+20mm) nominal thick. The core steel side (the side without stiffeners) was exposed to fire.

The insulation material used on bulkhead was HYHA type compound aluminum oxide blanket produced by WUXI HAIYUE SHIP NEW MATERIAL TECHNOLOGY CO., LTD. With a nominal density of $96 \pm 10 \text{ kg/m}^3$. The insulation is fixed to the bulkhead by means of steel pins $\varnothing 3 \text{ mm}$ welded to the bulkhead and steel washers $\varnothing 30 \text{ mm}$.

The pins on bulkhead structural core were distributed in width direction at intervals of 132mm, 335mm, 265mm, 270mm and 165mm, and were distributed in height direction at intervals of 200mm and 210mm. The number of pins on bulkhead was about 19/m² (including those on stiffeners).

For further details, see test report and drawing listed under Type Examination documentation below.

Application/Limitation

Approved for use as a vertical fire retarding division of class A-60.

The insulation materials and adhesives used have to 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.

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

Type Examination documentation

Fire test report No. FT 19300 dated 23rd October 2019, from Far East Fire Testing Centre, China

Tests carried out

Tested according to IMO 2010 FTP Code part 3.

Marking of product

The product or packing is to be marked with name of manufacturer, type designation, fire technical rating, the MED Mark of Conformity and USCG Approval Number if applicable (see first page).