

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- II Type Compound Aluminum Oxide Blanket Class A-60 Deck

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.

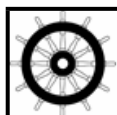
Further details of the equipment and conditions for certification are given overleaf.

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

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

DNV GL local station:
Jiangyin CMC

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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- II Type Compound Aluminum Oxide Blanket Class A-60 Deck" is composed of a structural steel deck (5mm) reinforced with stiffeners of L 100x70x8mm.

The heat insulation material was of HYHA type compound aluminum oxide blanket, $96 \pm 10 \text{ kg/m}^3$. One layer of heat insulation material with 30mm in nominal total thickness was fixed on the steel structural core and on the stiffeners. The side of insulation material (with steel plates and stiffeners) was exposed to fire.

The pins on deck structural core were distributed in width direction at intervals of 138mm, 325mm, 275mm and 250mm, and were distributed in length direction at intervals of 200mm. The number of pins on deck was about $20/\text{m}^2$ (including those on stiffeners). The pins were $\varnothing 3\text{mm}$ in diameter and the fastening washers were $\varnothing 30\text{mm}$ in diameter, both of which were made of steel.

For further details, including spacing of welded pins and pinning in connection with joints, see test report Figure 1. listed under Type Examination documentation below.

Application/Limitation

Approved for use as a horizontal 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

Test report No. FT19301 dated 7th of November 2019 from Far East Fire Testing Centre, Shanghai, China.

Tests carried out

Tested according to IMO FTPC Part 3 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, MED Mark of Conformity and USCG approval number if applicable (see page 1).