

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00007UK

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

This is to certify:

That the A & B Class divisions fire integrity: B class divisions.

with type designation(s)

Class B-15 Ceiling with Cabin unit, type THC-D(HCM-D) / TNHR-D(NTDR-D)

Issued to

Taicang Paien Ocean Equipment Sci-tech Co., Ltd.
Taicang, 100, China

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

Regulation (EU) 2021/1158,

item No. MED/3.11b. SOLAS 74 as amended, Regulation II-2/3.4 & II-2/9, IMO 2010 FTP Code, IMO MSC/Circ.1120 and IMO MSC.1/Circ.1581

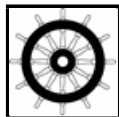
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2026-12-14**.

Issued at **Hamburg** on **2021-12-15**

DNV local station:
Shanghai

Approval Engineer:
Timo Linn



Notified Body
No.: **0098**

for **DNV SE**

Christine Mydlak-Roeder
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) 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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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 AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") 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

"Class B-15 Ceiling with Cabin unit, type THC-D(HCM-D) / TNHR-D(NTDR-D)"

B-Class ceiling (cabin ceiling) mounted with 2 recess boxes and tested together with an A-Class steel deck. The air gap between ceiling and a class structural core was 400 mm thick.

Structure of the ceiling panels:

- 0.5 mm thick folded steel sheets on the exposed side
- 2 x 25 mm ABM-SR type rock wool (density: 120 kg/m³) produced by Shanghai ABM rock wool Dafeng see Co., Ltd.

The panels are joined to each other via main runner.

The mineral wool is fixed to the steel sheets with adhesive of approved type; acc.to manufacturer's drawings.

Total thickness: 50 mm

Class B-15 Ceiling may can be fitted with:

THC-D(HCM-D) Type Cabin Unit, as specification 600 mm long x 530 mm wide x 200 mm high.

It contains of a casing, air control mechanism, air door elements, air inlet, air outlet and disc air diffuser.

The casing: made with 0.7mm thick zinc galvanized steel plate connected by stamping. 20 mm thick rock wool was laid on the face plate of the casing and glass fiber cloth was laid on the surface of rock wool.

Air control mechanism and air door elements: made up of low mechanism box, gear, rack, mechanism bracket, positioning steel ball and bracket, air door and rod and sealing gaskets.

Air inlet: An air inlet was provided at the sides of the casing, $\varnothing 158$ mm in outer diameter, made with 0.7 mm thick zinc galvanized steel plate. A 500mm long thermal preservation soft tube (of specification $\varnothing 158$) was fixed to the air inlet by a zinc galvanized steel clamp of 1.0mm in thickness.

Air outlet: An air outlet of diameter $\varnothing 200$ mm was fixed beneath the casing, which was made by 0.7mm thick zinc galvanized steel plate.

Disc air diffuser: a set of disc air diffuser was fixed beneath the air outlet, which was made by lower disc air diffuser, middle disc air diffuser, upper disc air diffuser, square tube, locating sleeve, adjusting seat, adjusting knob, cusp column, adapter sleeve, locating clip and split washer.

TNHR-D(NTDR-D) Type Cabin Unit, of Specification 650mm long x 500mm wide x 220mm high.

It contains of a casing, inner division plate, electrical heating part, electrical box, control mechanism, air door elements, air inlet, air outlet and disc air diffuser.

The casing: made with 0.7 mm thick zinc galvanized steel plate connected by stamping. 15 mm thick rock wool was laid on the face plate of the casing and glass fiber cloth was aid on the surface of rock wool.

Inner division plate: made with 0.7mm thick zinc galvanized steel plate. 15mm thick rock wool was laid on both surfaces and glass fiber cloth was laid on the surface of rock wool.

Electrical heating part made of temperature controller, electrical heating tube, junction box, and electrical box.

Air control mechanism and air door elements made up of connecting bar, guide sleeve, adjusting tube, beam, adjusting gear, adjusting box, spring, connector, connecting rod, air door lid and sealing gasket.

Air inlet: An air inlet was provided at the sides of the casing, $\varnothing 158$ mm in outer diameter, made with 0.7mm thick zinc galvanized steel plate. A 500mm long thermal preservation soft tube (of specification $\varnothing 158$) was fixed to the air inlet by a zinc galvanized steel clamp of 1.0 mm in thickness. For details, see figures 11 and 19.

Air outlet: An air outlet of diameter $\varnothing 200$ mm was fixed beneath the casing, which was made by 0.7mm thick zinc galvanized steel plate.

Disc air diffuser: a set of disc air diffuser was fixed beneath the air outlet, which was made by bellmouth and adapter tube, locating sleeve, disk, locating pin and elements of adjusting handle.

Thermal insulation soft tube: connected to air inlets of the two cabin units of specification $\varnothing 158$ mm x 500 mm in length.

For further Information please see technical documentation and test report mentioned under Type Examination documentation below.

Application/Limitation

Approved for use as a horizontal fire retarding division of class B-15.

Maximum size of panels: 3020 x 600 mm (length x width).

The insulation materials, seal 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 and maintenance.



Job Id: **344.1-011887-1**
Certificate No: **MEDB00007UK**

Type Examination documentation

Test report no. FT20391 dated 2020-11-06 issued by Far East Fire Testing Centre, Shanghai, China.
Drawing No. 20200804H06 - 20200804H18 issued by Taicang Paien Ocean Equipment Sci-tech Co.,Ltd.

Tests carried out

Tested according to IMO Res. MSC.307(88) – 2010 FTP Code Annex 1, Part 3

Marking of product

The product or packing is to be marked with name and address of manufacturer, type designation, MED Mark of Conformity and USCG approval number if applicable (see first page).