

# 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 "B" Class divisions, fire integrity**

with type designation(s)  
**C40 - Ceiling panel without/with fixtures**

Issued to  
**R & M International GmbH**  
**Hamburg, Germany**

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

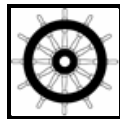
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-07-28.**

Issued at **Hamburg** on **2020-07-29**

DNV GL local station:  
**Hamburg CMC**

Approval Engineer:  
**Roland Priebe**



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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

"C40 - Ceiling panel without/with fixtures"

Ceiling panels consisting of 39 mm mineral wool covered with 0.6 mm steel sheets on the exposed side and 0.5 mm steel sheets on the unexposed side. The panels are joined to each other with tongue and groove and secured by screws. The mineral wool is fixed to the steel sheets with adhesive of approved type.

For the ceiling core insulating material, one of the following mineral wool types may be installed:  
- Tizol-Flot Lamella 150 from Tizol with nominal density of 150 kg/m<sup>3</sup> (as tested);  
- ABM-SR 150 from Shanghai ABM Rockwool Co., Ltd. with nominal density of 150 kg/m<sup>3</sup> (acc. to Assessment no. 20151290).

Total panel thickness: 40 mm.

Following optional installations may be included according to test report No. 20140019 and 20141028 from MPA Dresden:

### Installation 1: Recessed lamp "DL92"

The recessed lamp "DL92" from LightPartner Lichtsysteme GmbH is mounted in a ø 74 mm cut-out. It is held in the ceiling panel by means of fixing springs. On the unexposed side a cover of 450 x 205 x 40 mm is fixed over the recessed lamp. The edges of the cover box are bent outwards and are fixed using self-drilling screws and adhesive.

### Installation 2: Recessed lamp "DL660M"

The recessed lamp "DL660M" from LightPartner Lichtsysteme GmbH is mounted in a ø 100 mm cut-out. It is held in the ceiling panel by means of fixing springs. On the unexposed side a cover of 450 x 450 x 40 mm is fixed over the recessed lamp. The edges of the cover box are bent outwards and are fixed using self-drilling screws and adhesive.

### Installation 3: Recessed lamp "DLT RT(M) FR"

The recessed lamp "DLT RT(M) FR" from Glamox AS is mounted in a 579 x 277 mm cut-out. It is held in the ceiling panel by means of fixing brackets. On the unexposed side a cover of 700 x 450 x 80 mm is fixed over the recessed lamp. The edges of the cover box are bent outwards and are fixed using self-drilling screws and adhesive.

### Installation 4: Loudspeaker "DL8GH"

The loudspeaker "DL8GH" from FUNA Nachrichtentechnik GmbH is mounted in a ø 93 mm cut-out. It is held in the ceiling panel by means of two spring clips. On the unexposed side a cover of 200 x 200 x 40 mm is fixed over the loudspeaker. The edges of the cover box are bent outwards and are fixed using self-drilling screws and adhesive.

### Installation 5: Loudspeaker "ML16A"

The loudspeaker "ML16A" from FUNA Nachrichtentechnik GmbH is mounted in a ø 143 mm cut-out. It is held in the ceiling panel by means of six self-drilling screws. On the unexposed side a cover of 200 x 200 x 40 mm is fixed over the loudspeaker. The edges of the cover box are bent outwards and are fixed using self-drilling screws and adhesive.

Cover box used in installations 1 to 5 is manufactured by 0.6 mm thick steel sheet and insulated with 6 mm thick Glasroc F Multiboard with nominal density of 1000 kg/m<sup>3</sup> which is glued to the box with approved adhesive. For each cover box, 25 mm outer bends are arranged along all edges for fixing the box to the ceiling panel. Between the 25 mm outer bends and the ceiling panel, 6 mm thick strips (made by Glasroc F Multiboard) are fixed with approved adhesive. For insulation of the cover box the following materials may be also used (acc. to Assessment 20150182):

- "Promaxon Type A" with density of 850 kg/m<sup>3</sup> and thickness of 8 mm or
- "Promina®M" with density of 1000 kg/m<sup>3</sup> and thickness of 6 mm, both manufactured by Promat Research and Technology Centre NV.

### **Installation 6: Smoke alarm "SD230N"**

The smoke alarm "SD230N" from Siemens AG is fitted below the ceiling panel by means of two retaining screws. The supply line is fed through an opening  $\varnothing$  24 mm which is sealed with a fire-retardant material (Rokumarine) to the depth of the overall panel thickness.

### **Installation 7: Cable penetration**

The cable penetration consists of an opening of  $\varnothing$  24 mm. The supply line is routed through the opening and is sealed with a fire-retardant material (Rokumarine) to the depth of the overall panel thickness.

**Installation 8 and 9: Two ventilation units** are installed in the ceiling panels. They consist of a ventilation damper with a diffuser mounted below it and the ventilation device above the panel fastened to a rails system.

The damper unit with an outside dimension 579 x 579 mm is constructed as follows:

- Steel sheet 1.5 mm (cabin side)
- Steel sheet 0.5 mm (steel deck side)
- Inlet opening as per ventilation device ( $\varnothing$  = 198 mm (**type 1**) /  $\varnothing$  = 298 mm (**type 2**))
- Reinforcing elements: steel sheet 1.5 mm
- Insulation: 36 mm "ABM-SR 150" from Shanghai ABM Rockwool Co. Ltd.
- Adhesive: "Icema R145/31S" from H.B. Fuller
- Closing mechanism: 2 x rotary locks (Nantong Hujiang Locks, type C-J) and piano hinge
- Damper frame: outside dimension 657 x 657 mm, steel sheet 1.5 mm
- Clamping frame: outside dimension 630 x 630 mm, steel sheet 2.0 mm
- Supporting profile: steel sheet 2.0 mm

There is an additional cover frame arranged over the damper consisting of a half shell (steel sheet 0.6 mm) with 10 mm thick insulation ("Tizol Flot L 200").

The diffuser arranged on the cabin side is a half shell (steel sheet 1.0 mm) fixed with 4 screws.

The **type 1 ventilation unit** (Crew model: RS35X) is constructed as follows:

- Outside dimension: 600 x 455 x 175 mm, weight 21 kg
- Insulation: 20 mm x 25 mm Rockwool
- Mounting: steel sheet 3.0 mm
- Flange type A.1: steel sheet 1.5 mm
- Flange type A.2: steel sheet 0.7 mm
- Insulation flange type A.2: 60 mm "Ultimate UMFA 36" from Saint Gobain Isover G+H AG
- Sealing material: 2 x 4 mm "Insulfrax paper" from Unifrax Limited

The **type 2 ventilation unit** (Pax model: AIDA Hyperion Pax) is constructed as follows:

- Outside dimension: 500 x 405 x 185 mm, weight 19 kg
- Insulation: 15 mm Basotect UL
- Mounting: steel sheet 3.0 mm
- Flange type B.1: steel sheet 1.5 mm
- Flange type B.2: steel sheet 0.7 mm
- Insulation flange type B.2: 60 mm "Ultimate UMFA 36" from Saint Gobain Isover G+H AG
- Sealing material: 2 x 4 mm "Insulfrax paper" from Unifrax Limited

For further details, please see under Type Examination documentation below.

### **Application/Limitation**

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

With a minimum distance between exposed side of the ceiling and the A-Class structural steel deck of 300 mm, the whole construction may be regarded as a horizontal fire retarding division of Class A-30.

Maximum panel size: 710 mm x 3000 mm (width x length)

Job Id: **344.1-010864-1**  
Certificate No: **MEDB00006Y1**

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 nos. 2013-B-3978 dated 14<sup>th</sup> of March 2014 (basic ceiling without fittings), 20140019 dated 27<sup>th</sup> July 2014 and 20141028 dated 25<sup>th</sup> November 2014 all issued by MPA Dresden, Dresden, Germany. Assessments nos. 20150182 dated 7<sup>th</sup> of July 2015 and 20151290 rev.1 dated 22<sup>nd</sup> of July 2019 issued by MPA Dresden, Dresden, Germany.

### **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, firetechnical rating, Mark of Conformity and USCG marking if applicable (see first page).

### **USCG Approval Category (Module B) number**

This product has been assigned a U.S. Coast Guard Module B number 164.110/EC0098 to note type approval to Module B only as it pertains to obtaining US Coast Guard approval 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.