

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)

C30 - 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) 2018/773**,

item No. MED/3.11b. SOLAS 74 as amended, Regulation II-2.3.4 & II-2/9 and IMO 2010 FTP Code

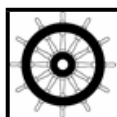
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-08-28**.

Issued at **Hamburg** on **2019-08-29**

DNV GL local station:
Hamburg

Approval Engineer:
Pavel Golyshev



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.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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



Product description

"C30 - Ceiling panel without/with fixtures"

Ceiling panels consisting of 29 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/m³ (as tested);
- SeaRox SL 445 from Rockwool International A/S with nominal density of 150 kg/m³ (acc. to Assessment no. 20140344);
- ABM-SR 150 from Shanghai ABM Rockwool Co., Ltd. with nominal density of 150 kg/m³ (acc. to Assessment no. 20151290).

Total panel thickness: 30 mm.

Following optional installations may be included according to test reports PGA10383:

Installation 1 "Loudspeaker"

A loudspeaker model LUNA DL8GH is mounted in the panel in a Ø93 mm cut-out with two spring steel clips. On the unexposed side of the panel the cut-out and the loudspeaker are covered with a cover box having external dimensions of 200 mm x 200 mm (length x width), with a height of 34 mm (excluding thickness of insulation material) as well as 25 mm outer bend along the edges for fixing to the ceiling panel with steel screws. The cable transit is sealed with Rokumarine sealing. Further details acc. to drawing No. SD-30MM+FIXTURES_FIRETEST_11.2013_05-9.

Installation 2 "Downlight Type 1"

A downlight model LightPartner DL04 is mounted in the panel in a Ø68 mm cut-out with three spring steel clips. On the unexposed side of the panel the cut-out and the downlight are covered with a cover box having external dimensions of 200 mm x 200 mm (length x width), with a height of 34 mm (excluding thickness of insulation material) as well as 25 mm outer bend along the edges for fixing to the ceiling panel with steel screws. The cable transit is sealed with Rokumarine sealing. Further details acc. to drawing No. SD-30MM+FIXTURES_FIRETEST_11.2013_06-9.

Installation 3 "Downlight Type 2"

A downlight model Glamox DLT RT(M) FR is mounted in the panel in a 579 mm x 277 mm cut-out with four steel wings from the unexposed side with the cover plate on the exposed side clipped on along the edges. On the unexposed side of the panel the cut-out and the downlight are covered with a cover box having external dimensions of 700 mm x 540 mm (length x width), with a height of 74 mm (excluding thickness of insulation material) as well as 25 mm outer bend along the edges for fixing to the ceiling panel with steel screws. The cable transit is sealed with Rokumarine sealing. Further details acc. to drawing No. SD-30MM+FIXTURES_FIRETEST_11.2013_07-9.

Cover box used in installations 1 to 3 is manufactured by 0.6 mm thick steel sheet and insulated with 6 mm thick Glasroc F Multiboard with nominal density of 1000 kg/m³ 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/m³ and thickness of 8 mm or
- "Promina®M" with density of 1000 kg/m³ and thickness of 6 mm,

both manufactured by Promat Research and Technology Centre NV.

Installation 4 "Smoke detector"

A smoke detector model Siemens SD230N is mounted in the panel in a Ø24 mm cut-out by means of an adaptor and is fixed with two screws. The hole is sealed with Rokumarine sealing. Further details acc. to drawing No. SD-30MM+FIXTURES_FIRETEST_11.2013_09-9.

Following optional installations may be included according to test reports PGA11233A:

Installation 5 "AC Unit with hatch"

The hatch with the clear opening of 494 mm x 507 mm is mounted across two panels in 550 mm x 550 mm cut-out. Both panels are mounted with a reinforcing U-profile of specification 30 mm x 28.5 mm x 30 mm made by 1.5 mm thick steel arranged at the entire length of the panels. The hatch is made by 27 mm thick Tizol-Flot (density 150 kg/m³), with 1.5 mm thick steel sheet glued on the exposed side and 0.5 mm thick steel sheet glued on the unexposed side of the hatch, and is reinforced inside with a steel framework of specification 230 mm x 230 mm x 26 mm made by 1.5 mm thick steel.

The Z-shaped steel frame of specification 35 mm x 36.5 mm x 16.5 mm made by 1.5 mm thick steel sheet is mounted in the panel opening from the exposed side of the hatch. The clamping L-profile is mounted from the unexposed side on top of the panel opening and is insulated with one layer of 11 mm thick and 35 mm wide Tizol-Flot (density 150 kg/m³) fastened to the ceiling panels with aluminium tape. The Z- and the L-profiles are fixed together with steel screws along all four sides. The hatch is attached to the frame with a piano hinge fixed to the hatch as well as to the Z-frame with steel pop rivets and is furnished with two pivot locks positioned along the opposite edge of the hatch. The hatch is manufactured with an opening of Ø198 mm at the centre for the ventilation unit.

The ventilation unit is mounted on top of the hatch on two steel L-bearings 60 mm x 30 mm x 3 mm which are mounted to a support U-profile 2.0 mm x 20 mm x 35 mm x 20 mm with two M8 x 15 steel bolt/nut. The ends of the two support U-profiles are welded to the Z-frame profile. At one end the AC-Unit is mounted with Ø80 mm pipe and Ø110 mm adaptor. The pipe is mounted to the ceiling panels by means of a steel holder fixed with steel screws to each panel. A diffuser 600 mm x 600 mm x 1.0 mm enamelled steel is fixed to the hatch with steel crews on the exposed side. For further details see drawings Nos. C30-WITH-FIXTURES_FIRETEST_05.2018_01-15, 10-15, 11-15 and 12-15.

Installation 6 "Downlight Disc lamp"

A down light model Örsjö Disc lamp is mounted in the panel in a Ø20 mm cut-out and is fixed to the ceiling panel by means of the cable and a cable sleeve type TXOI. The cut-out is filled out with sealing material SikaFiresil Marine N and the sealing is also added on top of the panel around the cable. Further details acc. to drawing No. C30-WITH-FIXTURES_FIRETEST_05.2018_8-15.

Installation 7 "Sprinkler HI-Fog DAVX"

A sprinkler model HI-FOG Davx is mounted on the exposed side of the ceiling panel in a Ø28 mm cut-out. The sprinkler is mounted with a pipe which is fixed to the ceiling panel by means of a holder with steel screws. The cut-out is filled out with sealing material SikaFiresil Marine N and the sealing is also added on top of the panel covering the union nut. Further details acc. to drawing No. C30-WITH-FIXTURES_FIRETEST_05.2018_9-15.

Installation 8 "Loudspeaker G-SPK-12"

A loudspeaker model G-SPK-12 is mounted in the ceiling panel in Ø70 mm cut-out and is fixed to the exposed side of the ceiling panel with steel screws. On the unexposed side of the panel the entire loudspeaker is covered with a cover box. The edges of the box are bent 90° outwards approx. 25 mm, and they are fixed to the ceiling panel all the way around with 50 mm wide aluminium duct tape. The dimensions of the cover box without the 25 mm bent are 150 mm x 150 mm x 90 mm. Further details acc. to drawing No. C30-WITH-FIXTURES_FIRETEST_05.2018_5-15.

Installation 9 "Loudspeaker G-SPK-11"

A loudspeaker model G-SPK-12 is mounted in the ceiling panel in Ø138 mm cut-out and is fixed to the exposed side of the ceiling panel with steel screws and additionally mounted with a cover. On the unexposed side of the panel the entire loudspeaker is covered with a cover box. The edges of the box are bent 90° outwards approx. 25 mm, and they are fixed to the ceiling panel all the way around with 50 mm wide aluminium duct tape. The dimensions of the cover box without the 25 mm bent are 285 mm x 265 mm x 135 mm. Further details acc. to drawing No. C30-WITH-FIXTURES_FIRETEST_05.2018_4-15.

Installation 10 "Downlight DL60-R92H"

A down light model DL60-R92H is mounted in the 30 mm thick ceiling panel in a Ø92 mm cut-out. The downlight is mounted in the ceiling panel by means of three suspension brackets. The suspension

brackets are a part of the light box and are resting on top of the ceiling panel. The cover plate on the exposed side is clipped on along the edges. On the unexposed side of the panel the entire downlight was covered with a cover box. The edges of the box are bent 90° outwards, 25 mm, and they are fixed to the ceiling panel all the way around with 50 mm wide aluminium duct tape. The dimensions of the cover box without the 25 mm bent are 365 mm x 220 mm x 145 mm. Further details acc. to drawing No. C30-WITH-FIXTURES_FIRETEST_05.2018_6-15.

Installation 11 "Downlight DL60-RF155"

A down light model DL60-RF155 is mounted in the 30 mm thick ceiling panel in a Ø155 mm cut-out. The downlight is mounted in the ceiling panel by means of three suspension brackets. The suspension brackets are a part of the light box and are resting on top of the ceiling panel. The cover plate on the exposed side is clipped on along the edges. On the unexposed side of the panel the entire downlight was covered with a cover box. The edges of the box are bent 90° outwards, 25 mm, and they are fixed to the ceiling panel all the way around with 50 mm wide aluminium duct tape. The dimensions of the cover box without the 25 mm bent are 480 mm x 220 mm x 145 mm. Further details acc. to drawing No. C30-WITH-FIXTURES_FIRETEST_05.2018_7-15.

The soft cover box in installations 8, 9, 10 and 11 is formed from 3 mm thick aluminium coated needle mat of type VitriBond Marine (with nominal density of 220 kg/m³ and manufactured by Culimeta Textiles-Technologie GmbH).

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.

Restricted application: fire from the 0.6 mm steel sheet side.

Maximum panel size: 1200 mm x 2430 mm (width x length).

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 reports nos. PGA10352 dated 7th of October 2013 (basic ceiling without fittings), PGA10383 dated 22nd of May 2014 and PGA11233A dated 2nd of July 2018 (ceilings with fittings) all issued by DBI - Danish Institute of Fire and Security Technology, Hvidovre, Denmark.

Assessments nos. 20150182 dated 7th of July 2015, 20140344 and 20151290 both dated 22nd of July 2019 all issued by MPA Dresden (Fire Test Laboratory) 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, fire-technical 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



Job Id: **344.1-009021-1**
Certificate No: **MEDB000050G**

"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.