EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB00008TU

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)
StD-lock

issued to
Stengel GmbH
Ellwangen Jagst, Baden-Württemberg, Germany

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2023/1667,**
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 **2029-05-20**.

Issued at **Hamburg** on **2024-05-21**

DNV local unit:
Augsburg

Approval Engineer:
Roland Priebe

Notified Body
No.: **0098**

for **DNV SE**

Mydlak-Röder, Christine
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 1/2023 dated May 26th, 2023.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

StD-lock is a Class B-15 ceiling with built-in components.

The ceiling panels consisting of one 0.7 mm thick folded steel plate on the unexposed side and one 1.0 mm thick folded steel plate on the exposed side with an insulation made of 23 mm thick “Rockwool RPI 17” (density 170 kg/m³, organic content 3,97%) in between. The insulation is glued to the steel plates by the approved “SikaForce 7710 L35” or “Körapur 672”.
The Panels are connected to each other with tongue and groove on two levels and rivets. At the end of each connection there is a lock system with a hook profile on one side and a counter profile on the other side. The system is locked with a steel screw (M6 x 70 mm) from the panel side. The panel connetion is fitted with an intumescent strip “Promaseal LW”. The joint gap is covered half-way with a 6 mm thick steel plate. The covering steel plate is fixed on one side of the ceiling panel by screws.

Max panel size: 2980 mm x 1451 mm
Total thickness: 25 mm

A deck protected by this ceiling (distance 300 mm) may be regarded as a Class A-30 deck.

Ceiling with following optional fittings (see test report 20630438b-V6 for further details):

Detail 1, “PL Downlight (glued)” type "SLV Signe Elektronik PL Downlight 18w x 2" is inserted in a drilled hole (Ø143 mm), secured to the ceiling with 6 screws and covered from the unexposed side with a box (550 mm x 330 mm x 65 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is fixed to the ceiling with “EMFIMASTIC PU 50”.

Detail 2, “PL Downlight (screwed)” type "SLV Signe Elektronik PL Downlight 18w x 2" is fixed with 6 screws in a drilled hole (Ø143 mm) from the exposed side. The thickness of the ceiling insulation is reduced in this area to 17mm. This inbuilt is covered from the unexposed side with a box (550 mm x 330 mm x 65 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is fixed to the ceiling with 4 screws.

Detail 3, “Loudspeaker (screwed)” type "Visaton DL8" is fixed in a drilled hole (Ø93 mm) and covered from the unexposed side with a box (200 mm x 200 mm x 65 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is fixed to the ceiling with screws.

Detail 4, “Loudspeaker (glued)” type "Visaton DL8" is fixed in a drilled hole (Ø93 mm) and covered from the unexposed side with a box (200 mm x 200 mm x 65 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is fixed to the ceiling with “EMFIMASTIC PU 50”.

Detail 5, “Spotlight (glued)” type LightPartner DL90S is fixed in a drilled hole (Ø74 mm) and covered from the unexposed side with a box (200 mm x 200 mm x 40 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is fixed to the ceiling with “EMFIMASTIC PU 50”.

Detail 6, “Spotlight (screwed)” type LightPartner DL90S is fixed in a drilled hole (Ø66 mm) and covered from the unexposed side with a box (200 mm x 200 mm x 40 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is fixed to the ceiling with 4 screws.

Detail 7, “Cable penetration” the cable will be inserted into a drilled hole (Ø 14 mm) and sealed with “EMFIMASTIC PU 50”.

Detail 8, “Water pipe penetration (screwed)” type "SanFix wall penetration with SC-Contur" In the ceiling there is a hole (Ø30 mm) and around the hole on the unexposed side there is a recess (Ø72 mm and 10 mm deep) to take the adapter plate which is secured with 4 screws. Then the pipe penetration with the pipe is placed on the adapter plate and secured with 2 screws to the ceiling. The compound tube “Saniflex” (Ø15 mm) which is around the pipe will now be squeezed to close the penetration. This inbuilt is covered from the unexposed side with a box (200 mm x 2000 mm x 40 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is fixed to the ceiling with 4 screws.

Detail 9, “URH valve with insulated duct” type "Halton URH/A 125, Novenco RDFUIN 125 100" is inserted into a two-stage hole (Ø 158 mm / Ø 130 mm) from the unexposed side. On the air passage an insulated reducer (Ø130 mm to Ø100 mm) is fitted with “Rockwool Marine Lamella Mat 32-45”. At the reducer a 600 mm long piece of a flexible ventilation duct is fixed. The connection pipes as well as the reducer are insulated with „Isosleeve 25”.

Detail 10, “Highfog” type "Minimax Minifox FX" The base body is set from the unexposed side in a drilled hole Ø36 mm. Two round metal plates with a hexagonal hole are pushed over the base body and are fixed with two screws to prevent the base body from distortion. The covering rosette is pushed from the exposed side over the main body and

clamped to the nozzle which is screwed into the main body. On unexposed side drilling hole is sealed with "EMFIMASTIC PU 50".

Ceiling with following optional fittings (see also test report 0670487-5 for further details):

Detail 11, "Downlight Lightpartner DL100 (screwed)" is mounted from the side exposed to fire in a tapered opening (Ø84 mm – Ø120 mm) with spring clamps. From the side unexposed to fire, connected with a Ø8 mm cable and covered with "ISO-hood" mineral wool box (external dimensions: 200 mm x 200 mm x 45 mm) of "PAROC Marine Slab 220" and glue "Isolemfi Mono 3104". The box is screwed to the ceiling.

Detail 12, "Downlight Lightpartner DL100 (glued)" is mounted from the side exposed to fire in a tapered opening (Ø84 mm – Ø120 mm) with spring clamps. From the side unexposed to fire, connected with a Ø8 mm cable and covered with "ISO-hood" mineral wool box (external dimensions: 200 mm x 200 mm x 45 mm) of "PAROC Marine Slab 220" and glue "Isolemfi Mono 3104". The box is glued with the ceiling with "EMFIMASTIC PU 50".

Detail 13, "Downlight Lightpartner DL170 (with connector box)" is fixed from the side exposed to fire in an opening (Ø70 mm through the steel sheet on the side exposed to fire and Ø95 mm further through the insulation and the steel sheet on the unexposed side) with three steel screws. From the side unexposed to fire, connected with a Ø10 mm cable and covered with "ISO-hood" mineral wool box (external dimensions: 200 mm x 200 mm x 45 mm) of "PAROC Marine Slab 220" and glue "Isolemfi Mono 3104". The box is screwed to the ceiling.

Detail 14, "Cable penetration with cable bushing" A Ø10 mm cable is led through a cable bushing of type "HEISTA ½" made of PVC, inserted from the side unexposed to fire into the ceiling opening (Ø16 mm).

Detail 15, "URH valve with insulated duct" The exhaust air valve "KU-160" with mounting ring is placed in a cut-out of Ø164 mm in the ceiling panel (from the side exposed to fire) and fixed with steel screws to the panel. Around the cut-out opening, small insulation strip is removed from the side unexposed to fire and an insulated reducer 160/125 mm of type "RMN 162-125" is attached to that cut-out with its wider diameter side. Further, a 600 mm long and insulated flexible circular duct of type "FRI 125" is connected to the reducer from the unexposed side and sealed with aluminum tape. The insulation of the reducer ("ISOVER-marine felt ULTIMATE U SeaProtect Roll 24", density: 24 kg/m³) extends up to the steel sheet of the ceiling panel from the side exposed to fire.

Detail 16, "Climate channel - Isover SP/M 150 t=10mm with closing sheet" An insert for a climate channel, made by 0.7 mm thick steel sheets, is placed in a cut-out of 104 mm x 704 mm (breadth x length) and screwed with eight steel screws to the ceiling panel from the side exposed to fire. From the upper side, climate channel made by 0.7 mm thick steel sheet is placed over the opening, fixed to the ceiling panel by 30 steel screws and insulated from the opening side with one layer of 10 mm thick "Isover SP/M 150" insulation (density: 150 kg/m³, glued to the steel sheet). In the area of the opening another 0.7 mm thick steel sheet of 713 mm x 160 mm is glued on the insulation (used adhesive: "Körapur 928".

Detail 17, "Smoke and heat detector Sawilco" is fixed in a Ø27 mm opening from the side exposed to fire with two steel screws. Two Ø8 mm cables are connected to the detector and are led through cable bushings of type "HEISTA 1" made of PVC, inserted from each side of the ceiling opening and sealed with "EMFIMASTIC PU 50".

Detail 18, "HIFOG Nozzle Minimax WM01-K2,6-57° / WM02-K3,5-57°" A sprinkler head is inserted from the exposed side in a Ø35 mm opening and fixed with three steel screws to the ceiling panel. A pipe of Ø12 mm is connected to the sprinkler head and the penetration is sealed with "EMFIMASTIC PU 50".

Detail 19, "Cable penetration and cable tull sealed with EMFIMASTIC PU50" Two cables each Ø8 mm are led through cable bushings of type "HEISTA 1" made of PVC and are inserted, one from each side of the ceiling opening (Ø27 mm), and sealed with "EMFIMASTIC PU 50".

Detail 20, "Cable penetration sealed with Kömmerling Körapur 940" A Ø8 mm cable is led through the ceiling opening (Ø14 mm) and sealed with sealing material "Körapur 940".

Ceiling with following optional fittings (see also test report 8115791475-3 for further details):

Detail 21, "Orluna adjustable downlight "BK40132" with ISO-hood" is mounted from the side exposed to fire in a tapered opening (Ø73 mm – Ø85 mm) with spring clamps. From the side unexposed to fire, connected with a Ø8 mm cable and covered with "ISO-hood" mineral wool box (external dimensions: 240 mm x 240 mm x 45 mm) of "PAROC Marine Slab 220" and glue "Isolemfi Mono 3104". The box is screwed to the ceiling.

Detail 22, "Orluna adjustable downlight twin "BK40133" flat ISO-hood" is mounted from the side exposed to fire in a tapered opening (breadth x length: 73 mm x 153 mm – 85 mm x 165 mm) with spring clamps. From the side unexposed to fire, connected with a Ø8 mm cable and covered with "ISO-hood" mineral wool box (external dimensions:

275 mm x 275 mmx 45 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is screwed to the ceiling.

Detail 23, “Orluna adjustable downlight twin “BK40133” high ISO-hood” is mounted from the side exposed to fire in a tapered opening (breadth x length: 73 mm x 153 mm – 85 mm x 165 mm) with spring clamps. From the side unexposed to fire, connected with a cable and covered with “ISO-hood” mineral wool box (external dimensions: 275 mm x 275 mmx 65 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is screwed to the ceiling.

Detail 24, “Switch Lightning D-Lightz Tilt “SL111T-60-27P-W” small ISO-hood” is mounted from the side exposed to fire in an opening (Ø84 mm) with spring clamps. From the side unexposed to fire, connected with a cable and covered with “ISO-hood” mineral wool box (external dimensions: 200 mm x 200 mm x 45 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is screwed to the ceiling.

Detail 25, “Switch Lightning D-Lightz Tilt “SL111T-60-27P-W” with ISO-hood” is mounted from the side exposed to fire in an opening (Ø92 mm) with spring clamps. From the side unexposed to fire, connected with a cable and covered with “ISO-hood” mineral wool box (external dimensions: 240 mm x 240 mm x 45 mm height) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is screwed to the ceiling.

Detail 26, “Downlight Lightpartner DL100 with insulation plate” is mounted from the side exposed to fire in a tapered opening (Ø84 mm - Ø120 mm) with spring clamps. From the side unexposed to fire, connected with a cable and covered with an insulation plate (external dimensions: 180 mm x 180 mm x 23 mm), made by RPI 15 insulation (density: 160 kg/m³) and glued to ceiling panel with “EMFIMASTIC PU 50”.

Detail 27, “Downlight Lightpartner DL170 with connector box” is fixed from the side exposed to fire in an opening (Ø70 mm through the steel sheet on the side exposed to fire and Ø95 mm further through the insulation and the steel sheet on the unexposed side) with three steel screws. On the side unexposed to fire the downlight is connected with a cable.

Detail 28, “Cable penetration” A bundle of three cables of type “5 x 1.5 mm²” (Ø10 mm) provided with PVC cable bushings of type “HEISTA 1,5” are led through the ceiling opening (Ø42 mm) and sealed with “EMFIMASTIC PU 50”.

Detail 29, “Cable penetration with insulation plate” A bundle of three cables of type “5 x 1.5 mm²” (Ø10 mm) provided with PVC cable bushings of type “HEISTA 1,5” are led through the ceiling opening (Ø42 mm) and sealed with “EMFIMASTIC PU 50”. From the side unexposed to fire an insulating plate (Ø50 mm x 10 mm) made of “PAROC Marine Slab 220” with density of 220 kg/m³) is fixed with “EMFIMASTIC PU 50” on the cable bundle.

Detail 30, “Cable penetration with ISO-hood” A bundle of three cables of type “5 x 1.5 mm²” (Ø10 mm) provided with PVC cable bushings of type “HEISTA 1,5” are led through the ceiling opening (Ø42 mm) and sealed with “EMFIMASTIC PU 50”. The cable penetration is covered from the side unexposed to fire with an “ISO-hood” mineral wool box (external dimensions: 160 mm x 160 mm x 45 mm height) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is screwed to the ceiling.

Detail 31, “Cable penetration with Armaflex protect” A bundle of three cables of type “5 x 1.5 mm²” (Ø10 mm) are led through the ceiling opening (Ø52 mm). The cables are bound with one sealing element consisting of a 35 mm long “Armaflex Protect PRO-AX-19x15” material (Ø53 mm).

Detail 32, “URH 125 with ISO-hood adapter” An exhaust air intake “KU-125” with mounting ring is fitted from the side exposed to fire into a tapered opening (Ø130 mm – Ø160 mm) and fixed with steel screws to the ceiling panel. From the side unexposed to fire the “ISO-hood adapter” (external dimensions: 370 mm x 220 mm x 85 mm) is mounted over the exhaust air intake. The “ISO-hood adapter” is made of 0.7 mm thick steel sheet insulated with “PAROC Marine Slab 150” (density: 150 kg/m³). “EMFIMASTIC PU 50” is used as glue. A flexible circular duct of type “FRI 100” made of aluminum is connected to the “ISO-hood adapter” by means of aluminum tape. This duct is insulated with “ISOVER-marine felt ULTIMATE U SeaProtect Roll 24” (density: 24 kg/m³).

Class B-15 ceiling with following optional fittings (see also test report 8118142808-30-1 for further details):

Detail 33, “Grohe Headshower Rainshower Cosmo 310 Eco 9,5” with ISO-hood consisting of head shower of type “Grohe Headshower Rainshower Cosmo 310 Eco 9,5” as well as pipe penetration of type “Viega Sanfix 310561” (with 600 mm long copper pipe fixed from the side exposed to fire), each placed in a ceiling opening of Ø32 mm. On the side unexposed to fire, the head shower and the pipe penetration are connected each with a pipe of type “Viega Sanfix Fosta 406400, Ø16mm”. The whole arrangement is covered on the unexposed side with an “ISO-hood” mineral wool box (external dimensions: 600 mm x 250 mm x 45 mm) of “PAROC Marine Slab 220” and glue “Isolemfi Mono 3104”. The box is screwed to the ceiling.

Detail 34, "Wärtsilä ceiling speaker LS01I with ISO-hood" The speaker LS01I is mounted from the side exposed to fire in a tapered opening (Ø93 mm – Ø133 mm) with spring clamps. From the side unexposed to fire it is connected with a Ø8 mm cable and covered with "ISO-hood" mineral wool box (external dimensions of 240 mm x 240 mm x 65 mm) of "PAROC Marine Slab 220" and glue "Isolemfi Mono 3104". The box is screwed to the ceiling.

Detail 35, "LightPartner DL04 with ISO-hood" The downlight "DL04" is mounted from the side exposed to fire in a tapered opening (Ø68 mm – Ø100 mm) with spring clamps. From the side unexposed to fire the downlight is connected with a Ø8 mm cable and covered with "ISO-hood" mineral wool box (external dimensions of 240 mm x 240 mm x 65 mm) of "PAROC Marine Slab 220" and glue "Isolemfi Mono 3104". The box is screwed to the ceiling.

Detail 36, "Orluna Curve Lopro with ISO-hood" The downlight "Orluna Curve Lopro" is mounted from the side exposed to fire in a tapered opening (Ø86 mm – Ø126 mm) with spring clamps. From the side unexposed to fire it is connected with a Ø8 mm cable and covered with "ISO-hood" mineral wool box (external dimensions of 240 mm x 240 mm x 65 mm) of "PAROC Marine Slab 220" and glue "Isolemfi Mono 3104". The box is screwed to the ceiling.

Class B-15 ceiling with following optional fittings (see also test report 8119643188-50 R3 for further details):

Detail 37, "HANSGROHE Raindance 260x260 AIR 26472000 with ISO-hood and extended piping"
In the ceiling panel, an opening (77 mm x 70 mm in P-shape) is made in the steel sheet of the unexposed side of fire and an opening (236 mm x 236 mm) is made to the exposed side to fire. In this opening a 10 mm thick plate (also P-shaped) of the material Skamol with an "assembling cover" of stainless steel (also P-shaped) is fixed with 8 pieces of rivets of stainless steel. On the unexposed side of fire 4 pieces of "support plate" (60 x 100 x 1.25 mm) with a pressed-in threaded sleeve are fixed with galvanized screws.
A shower head type "HANSGROHE Raindance 260 x 260 AIR 26472000" is fixed with 4 pcs. M4 stainless steel screws to threaded sleeves on the side exposed to the fire. To the shower head a 500 mm long flexible hose type "Schell flexible hose ½" x 500", a "Viega extension 150 mm ½", a "Viega Sanfix P adapter ½"" and a 600 mm long water pipe of the type "Viega Sanfix Fosta" (ø 16 mm) are connected.
An "ISO-hood" (410 mm x 380 mm x 50 mm; L x W x H), consisting of elements of the insulating material "Paroc Marine Slab 220" was placed over the installation on the unexposed side of fire. The "ISO-hood" was fastened with steel screws to the ceiling panel.

Detail 38, "HANSGROHE Raindance 260x260 AIR 26472000 with ISO-hood" In the ceiling panel, an opening (77 mm x 70 mm in P-shape) is made in the steel sheet of the unexposed side of fire and an opening (236 mm x 236 mm) is made to the exposed side to fire. In this opening a 10 mm thick plate (also P-shaped) of the material Skamol with an "assembling cover" of stainless steel (also P-shaped) is fixed with 8 pieces of rivets of stainless steel. On the unexposed side of fire 4 pieces of "support plate" (60 x 100 x 1.25 mm) with a pressed-in threaded sleeve are fixed with galvanized screws.
A shower head type "HANSGROHE Raindance 260 x 260 AIR 26472000" is fixed with 4 pcs. M4 stainless steel screws to threaded sleeves on the side exposed to the fire. To the shower head a 500 mm long flexible hose type "Schell flexible hose ½" x 500", a "Viega Sanfix P adapter ½"" and a 600 mm long water pipe of the type "Viega Sanfix Fosta" (ø 16 mm) are connected.
An "ISO-hood" (410 mm x 380 mm x 50 mm; L x W x H), consisting of elements of the insulating material "Paroc Marine Slab 220" was placed over the installation on the unexposed side of fire. The "ISO-hood" was fastened with steel screws to the ceiling panel.

Class B-15 ceiling with following optional fittings (see also test report 8119643188-40 for further details):

Detail 39, IALUX Perfetto In 80 fixed 2700 K 9W 44° IP 66 20 incl electronic driver IALUX Minijolly 20-1…10V & push with adjustable ISO-Hood An opening (ø 75 mm) was made in the ceiling panel. A downlight type "IALUX Perfetto-In IALUX Perfetto-In 80" downlight was inserted into this opening from the exposed side to fire and fixed to the ceiling with spring clips. On the unexposed side the "electronic driver IALUX Minijolly" transformer was placed and covered with, a so-called "adjustable ISO-hood" (275 mm x 275 mm x 90 mm; L x W x H), consisting of elements of the insulating material "Paroc Marine Slab 220", is placed over the installation. The "adjustable ISO-hood" was fastened with a total of four 4.8 x 65" steel screws to the ceiling panel.
A cable "3 x 1.5 mm²" (ø 8 mm) was connected to the downlight. The length of the cable was 600 mm (measured from the outlet of the "adjustable ISO-hood").

Detail 40, Loudspeaker Visaton DL 8 with ISO-hood The opening in the sheet metal (fire room side) is 93 mm. The cut-out of the wool and the sheet metal on the side facing away from the firebox is 93 x 136.5 mm. A loudspeaker was inserted into this opening Visaton DL 8" loudspeaker was inserted into this opening from the side facing the fire room and fixed to the ceiling with staples.
Subsequently, from the side facing away from the fire room, a so-called "ISO-hood" (275 mm x 275 mm) was inserted. (275 mm x 275 mm x 45 mm; L x W x H), consisting of elements of the insulating material "Paroc Marine Slab 220" over the installation. The "ISO-hood" was fastened with a total of four 4.8 x 65" steel screws to the ceiling panel.

A cable "3 x 1.5 mm²" (ø 8 mm) was connected to the speaker. The length of the cable was 600 mm (measured from the exit of the "ISO-hood").

Detail 41, IALUX Perfetto-In 80 fixed 2700K 9W 44° IP66 20 incl. electronic driver IALUX Minijolly 20-1…10V & push with ISO-hood glued. An opening (ø 75 mm) was made in the ceiling panel. A downlight type "IALUX Perfetto-In IALUX Perfetto-In 80" downlight was inserted into this opening from the exposed side to fire and fixed to the ceiling with spring clips. On the side facing away from the fire the "electronic driver IALUX Minijolly" transformer was placed. Then, from the compartment unexposed to fire, a so-called "ISO-hood" (275 mm x 275 mm x 90 mm; L x W x H), consisting of elements of the insulating material "Paroc Marine Slab 220" were placed over the installation. The "ISO-hood" was bonded with the adhesive "Emfimastic MS60 Industrie" to the ceiling panel. A cable "3 x 1.5 mm² " (ø 8 mm) was connected.

Detail 42, IALUX Perfetto-In 80 fixed 2700K 9W 44° IP66 20 incl. electronic driver IALUX Minijolly 20-1…10V & push with ISO-hood screwed. An opening (ø 75 mm) was made in the ceiling panel. A downlight type "IALUX Perfetto-In IALUX Perfetto-In 80" downlight was inserted into this opening from the exposed side to fire and fixed to the ceiling with spring clips. On the unexposed side to fire the "electronic driver IALUX Minijolly" transformer was placed. Then, from the compartment unexposed to fire, a so-called "ISO-hood" (275 mm x 275 mm x 90 mm; L x W x H), consisting of elements of the insulating material "Paroc Marine Slab 220" were placed over the installation. The "ISO-hood" was screwed to the ceiling panel. A cable "3 x 1.5 mm² " (ø 8 mm) was connected.

Application/Limitation

Approved for use as a horizontal fire retarding division of class B-15.
The ceiling combined with the fittings (details) listed above fulfils the requirements for a Class B-15 ceiling.

The minimum distance between the outer edges of the fittings shall not be less than as tested.

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: 1451 mm x 2980 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 and assessments all issued by DMT GmbH & Co. KG, Dortmund, Germany:

Basic fire test reports:

- 20630438a - V4, dated 23rd April 2021
- 8120330321-40 V3.0, dated 21st Appril 2023

Test report nos.:

- 20630438b - V6, dated 18th October 2023
- 20670487-5, dated 9th July 2021
- 8115791475-3 dated 9th July 2021
- 8119643188-50 R3, dated 18th October 2023
- 8119643188-40, dated 18th August 2023
- 8118142808-30-1, dated 9th July 2021

Assessments report nos.:

- 8115493738-10-1, dated 9th July 2021. (Replacement of an adhesive in ceiling constructions)
- 8121666292-10, dated 23rd October 2023 (Transferability of 42 fittings into a different ceiling system)

Tests carried out

Tested according to IMO 2010 FTP Code Annex 1 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, fire technical rating, Mark of Conformity and USCG marking if applicable (see first page).

USCG Approval Category (Module B) number

The 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, and amended by decision No 1/2023 dated May 26th, 2023.