

EC-Type Examination Certificate (Module B)

This is to certify that:

TÜV NORD Systems GmbH & Co.KG, notified by the Federal Maritime and Hydrographic Agency of Germany (BSH), did undertake the relevant type approval procedures for the type of equipment identified below which was found to be in compliance with the essential fire protection equipment requirements of Marine Equipment Directive (MED) 2014/90/EU, subject to any conditions in the details of appraisal attached hereto.

Recognized acc. to 2014/90/EU by the BSH
BSH-Reference No.: 0800S11/4822/005



Certificate No.: M20007

Manufacturer: Lethe GmbH
Seehafenstrasse 17
21079 Hamburg
Germany

Product Name: LL-D4-A60; LL-D4.1-A60; LL-D4.2-A60

Product Description: Single-wing swing fire doors

Regulation Item: MED/ 3.16 - Fire doors

Specified Standards SOLAS 74 as amended, Reg. II-2/9,
IMO Res. MSC.307 (88) - (2010 FTP Code) as amended
IMO MSC.1/ Circ.1319

Related Directive 2014/90/EU – in conjunction with 2019/1397/EU


The attached annex (details of appraisal) is part of this certificate.

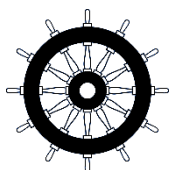
USCG Approval No.: 164.136

Date of Issue: 2020-07-17

Expiry Date: 2025-07-17

Tobias Nelke
Head of certification body SEECERT
(Notified Body No.: 0045)

The mark of conformity (wheelmark ) may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-control phase module (D, E, or F) of ANNEX II of the Directive is fully complied with and is approved with a corresponding certificate of a notified body. This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached annex (details of appraisal) are complied with. This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the notified body SEECERT. Should the specified regulations or standards be amended during the period of validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on the market and on board vessels to which the amended regulations or standards apply. An 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 the Mutual Recognition of Certificates of Conformity for Marine Equipment".



XXXX/(YY)YY

The marking of approved marine equipment must take place under Article 9, Article 10 and if applicable Article 11 in conjunction with Annex I of the Marine Equipment Directive 2014/90/EU. In addition to the marking, the identification number of the notified body performing the conformity assessment procedure and the year in which the conformity mark was affixed shall be indicated.

XXXX Number of the Notified Body responsible for quality surveillance module.
(YY)YY The year (last two or four digits) in which the mark is affixed.

DETAILS OF APPRAISAL

Appraisal Documentation:

Test report No.: DMT-DO-53-125 dated 21st of February 2020, issued by DMT GmbH & Co. KG, Germany
Fire technical assessment: LL-D4.1-A60 dated 19th of June 2020, issued by DMT GmbH & Co. KG, Germany
Fire technical assessment: LL-D4.2-A60 dated 19th of June 2020, issued by DMT GmbH & Co. KG, Germany
(TNS Ref.No.: 8118168013)

Tests carried out:

Tested according to IMO 2010 FTP Code Annex 1: Part 3 and IMO MSC.1/Circ. 1319

Technical principles:

The test specimen consisted of a steel bulkhead into which a single-wing swing door of the type "LL-D4-A60" had been installed. The construction had been mounted in a test frame according to 2010 FTP Code Part 3, Annex 1, Section 2.1. The external dimensions of the test specimen were 2420 mm x 2480 mm (W x H).

The swing door "LL-D4-A60" consists of a door leaf (1052 mm x 2112 mm x 50 mm; W x H x D) as well as a door frame made of steel profiles (clear passage: 1020 mm x 2100 mm; W x H).

Door leaf

The door leaf consisted of a 50 mm thick piece of the material "PROMATECT L300" with the external dimensions 1052 mm x 2112 mm (W x H). The intumescent material "Promaseal PL" with a thickness of 2.5 mm is applied all around the end faces. Integrated in this door leaf are an overhead door closer, a cable duct, glazing, a door contact, an automatic door seal, a hose flap and a lever handle set with recessed grip.

Overhead door closer

To accommodate the overhead door closer type "Dorma ITS96 EN 3-6" (dormakaba Deutschland GmbH), the door leaf is recessed in the head area on the hinge side over a length of 300 mm and a width of 41 mm at a depth of 66 mm. The top door closer is covered in the door frame with a cover made of 3 mm thick steel.

Cable duct

At a height of 1032 mm (measured from the lower edge of the door leaf) a Ø 14 mm hole is drilled into the door leaf at a distance of 25 mm from the surface of the door leaf. This cable duct connected the door lock with the cable transition on the hinge side. This hole opened from the side facing away from the fire side over a width of 20 mm. A cable of the type "Effeß kabel #Z09XKAB" from Assa Abloy Sicherheitstechnik GmbH is inserted into this cable duct. The cable duct covered and sealed with a 20 mm wide and 20 mm thick piece of the material "PROMATECT L300".

Cable junction

On the hinge side, a cable transition of the type "10-pin plug-in lead cover 10314-10" (Assa Abloy Sicherheitstechnik GmbH) was embedded in the door frame. The door frame had been cut out for this purpose over a length of 331 mm and a width of 26 mm. Above and below this recess a welding plate (50 mm x 30 mm x 3 mm) was welded to the door frame. The cable transition had been screwed to the welding plates with two "M4x12" steel screws. The door leaf was cut out to accommodate the cable transition over a length of 80 mm and a width of 26 mm at a depth of 40 mm.

Glazing

An opening (560 mm x 560 mm; W x H) had been made in the door leaf at a height of 1590 mm (measured between the lower edge of the door leaf and the centre of the glass). A glazing type "Promaglas 60/25" (540 mm x 540 mm x 25 mm; Etex Building Performance GmbH) had been inserted into this opening. For the installation of the glazing, 10 mm thick glazing blocks made of the material "Promatect-H" were placed underneath. The glazing was held in place on the side of the fire room as well as on the side facing away from the fire room by a 60 mm wide glass frame made of 3 mm thick stainless steel (clear opening 500 mm x 500 mm; W x H). The two glass frames were connected to each other and the door leaf by 12 "M5x50" stainless steel screws (1.4301) and sleeve nuts "M5". A seal type "ADTP-195" (GFA-Dichtungen GmbH) was inserted between the glass frame and the glazing on both sides.

Door contact

To accommodate the door contact switch "Bernstein Magnetschalter MAN-0812-B-2" with magnet "Bernstein Magnet T-62 N/S" (both: Bernstein AG), the door frame is cut out to a length of 25 mm and a width of 20 mm and the door leaf to a diameter of 26 mm and a depth of 10 mm. A cover of 1.5 mm thick sheet steel is welded onto the recess in the door frame, into which a 9.9 mm thick block of aluminum is inserted. The aluminum block is screwed to the cover with two "M3x16" screws. The magnetic switch is embedded in this aluminum block. The magnet is fixed to the door leaf with a stainless steel screw "3.5x40 mm". Afterwards the door contact switch is mounted in the door frame with a Cover made of 1.5 mm thick steel.

Automatic door seal

To accommodate the automatic door seal type "Schall-ex L15/30" (Athmer oHG), the door leaf is recessed in the floor area over a length of 866 mm and a width of 15 mm at a depth of 30 mm. The automatic floor seal is fixed in the door leaf with 2 stainless steel screws "3,5x40".

Hose flap

To accommodate the hose flap, the door leaf is cut out in the lower lock-side corner with a width of 186 mm and a height of 167 mm. A hose flap (external dimensions 183 mm x 163 mm x 50 mm; W x H x D) made of the material "PROMATECT L300" is inserted into this recess. The hose flap is connected to the door leaf by a hinge type "VN 2929/100" (Simonswerk GmbH) made of 3.5 mm thick stainless steel. The hinge is fastened to the hose flap and in the door leaf with 4 plugs type "Fischer IG Anker 8x75" (Fischer GmbH & Co. KG) and screws "M5x16" each. The intumescent material "PROMASEAL PL" with a thickness of 2.5 mm is applied all around the end faces of the hose flap. On the fire room side, a 30 mm wide profile made of 0.8 mm thick stainless steel covered the vertical and horizontal gaps between the door leaf and the hose flap. These profiles are fixed to the door leaf by means of a dowel type "Fischer IG Anker 8x75" (Fischer GmbH & Co. KG) and a screw "M5x8" in the reveal of the hose flap.

Handle set with recessed grip

A lever handle set type "FSB 1076" (Franz Schneider Brakel GmbH & Co. KG) with recessed grip in the door leaf is installed at a height of 1050 mm (handle height). To accommodate this lever handle set with recessed grip, the door leaf is recessed at a height of 182 mm and a width of 162 mm in a depth of 10 mm. An edged plate made of 1.2 mm thick stainless steel is then inserted into this recess. This plate is fixed with 4 screws "M5x8" and 4 threaded bolts "SW 8x25" M4" fixed in the door leaf.

Door frame

The two-part door frame consisted of a three-sided frame consisting of three steel profiles made of 3 mm thick folded sheet steel, mitred and welded together, and a mounting frame consisting of four folded steel profiles (side and top: 120 mm x 100 mm, bottom: 100 mm x 40 mm) made of 5 mm thick steel, mitred and welded together. The mounting frame was inserted into the opening of the bulkhead from the side facing the fire compartment and screwed to the steel bulkhead all around with 38 stainless steel screws "M8x25" and nuts "M8". Then the frame was inserted into the opening from the side facing away from the fire room and screwed to the mounting frame all around with 17 "M8x25" screws and "M8" nuts. A gasket type "Gasket SZ-617" (GFA Dichtungen GmbH) is inserted on three sides in the rebate base of the frame.

Threshold

The threshold consisted of a flat steel (70 mm x 5 mm; W x D) and a square profile (50 mm x 20 mm x 2 mm) made of steel, which are screwed to the mounting frame using 3 "M8x16" screws. Finally, a cover made of 1.5 mm thick stainless steel is placed over the square profile and a so-called "nut cage" made of 2 mm thick steel is placed over the nuts.

Door Hinges

The door leaf is connected to the door frame by three hinges type "VX7748/100" (Simonswerk GmbH). The hinges are fixed in the door leaf with 4 "M5x16" screws and Fischer IG Anker 8x75" (Fischer GmbH & Co. KG). In the door frame, the hinges are fastened by means of welded-in hinge holders "VX 7512 3D" (Simonswerk GmbH). The hinges in the door frame are covered with a hinge cover made of 1.25 mm thick sheet steel.

The door leaf also could be connected to the door frame via two hinges, type "Tectus TE 626 3D A8" (Simonswerk GmbH) (hinges: 250 mm / 1720 mm / 250 mm; from bottom to top). The hinge bracket is fastened in the active leaf with 4 screws "M5x16". On the frame side, a hinge bracket type "TE 640 3D A8 SZ" (Simonswerk GmbH) is welded into the door frame.

Interlock

The door leaf is locked by a lock type "Lock Lethe 72/65" (S & B Beschläge GmbH). To accommodate the lock, the door leaf is recess at a height of 185 mm, a width of 17 mm and a depth of 134 mm. In this lock pocket, the lock is screwed to the door leaf with 2 "M5x16" screws and "Fischer IG Anker 8x75" plugs (Fischer GmbH & Co. KG). A strike plate made of 1.5 mm thick steel is welded into the door frame.

Insulation material

"PROMATECT L300"

- Manufacturer: Etex Building Performance GmbH
- Nominal thickness: 50.0 mm
- Determined thickness: 50.0 mm
- Nominal density: 300 kg/m³
- Determined density: 297 kg/m³.
- Determined moisture content: 2.0 %.
- Determined proportion of organic components: 3.1 %.

In accordance with the requirements of the 2010 FTP Code Part 3, Appendix 1, Section 3.5, the following materials were used in the construction of the test specimen:

- "SZ-617", GFA Dichtungen GmbH,
- "Promatect-H", Etex Building Performance GmbH and
- "Promaseal PL", Etex Building Performance GmbH.

The "LL-D4-A60 bulkhead door" has been successfully tested with extended test period in compliance with IMO MSC.1/ Circ. 1319.

Variant "LL-D4.1-A60"

The "LL-D4-A60" door construction described above can also be manufactured in a "LL-D4.1-A60" product variant. The product variant "LL-D4.1-A60" can be manufactured without glazing, without a hose flap, with diagonally running cable duct and with tapes of the type "Tectus TE 626 3D A8".

The other details of the "LL-D4-A60" door construction remain unchanged.

For further technical details, see fire technical assessment: LL-D4.1-A60 dated 19th of June 2020, issued by DMT GmbH & Co. KG, Germany.

Variant "LL-D4.2-A60"

The "LL-D4-A60" door construction described above can also be manufactured in a "LL-D4.2-A60" product variant. The product variant "LL-D4.2-A60" can be manufactured with a modified window frame, without a hose flap and with enlarged dimensions (according to MSC.1 / Circ. 1319 or MSC.1 / Circ. 1273).

The other details of the "LL-D4-A60" door construction remain unchanged.

For further technical details, see Fire technical assessment: LL-D4.2-A60 dated 19th of June 2020, issued by DMT GmbH & Co. KG, Germany.

Installation:

Assembly procedure on board as per manufacturer's instruction, which has to be supplied together with the product.

Marking:

The product/ package shall be permanently marked in accordance with Article 10 of the Council Directive 2014/90/EC of 23rd of July 2014 on marine equipment, e.g. certificate (approval) number, fire rating, etc.

Remarks:

None

Limitations / Acceptance on use of the product:

See under "Technical principles"

Comment to USCG Approval:

Limited to fire doors without windows and doors with total window area of 645 cm², or less, in each door leaf. Approval limited to maximum door size tested. Doors must be used with a fire tested frame design.