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

BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

Certificate No.: **M20008**

Manufacturer: **Lethe GmbH**
Seehafenstrasse 17
21079 Hamburg
Germany

Product Name: **LL-DL2-A60; LL-DL2.1-A60**

Product Description: **Double-leaf 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**

Digital unterschrieben von Nelke Tobias
Datum: 2020.07.17 10:30:44 +02'00'

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This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached annex (details of appraisal) are complied with.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-53-126 dated 23th of March 2020, issued by DMT GmbH & Co. KG, Germany
Fire technical assessment: LL-DL2.1-A60 dated 16th 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 consists of a steel bulkhead into which a double-leaf swing door of the "LL-DL2-A60" type had been installed. The construction was built into a test frame in accordance with 2010 FTP Code Part 3, Appendix 1, Section 2.1. The outer dimensions of the test specimen were 2420 mm x 2480 mm (W x H).
The swing door "LL-DL2-A60" consisted of an active leaf (914 mm x 2212 mm x 50 mm; W x H x D), a passive leaf (914 mm x 2212 mm x 50 mm); W x H x D) and a door frame made of steel profiles (clear passage: 1800 mm x 2200 mm; W x H).

Active leaf
The active leaf consists of a 50 mm thick piece of the material "PROMATECT L300" with the external dimensions 914 mm x 2212 mm (W x H). The intumescent material "Promaseal PL" with a thickness of 2.5 mm is applied all around the front surfaces. An upper door closer and a diagonal cable duct are integrated into this door leaf.

Overhead door closer
To accommodate the overhead door closer type "Dorma ITS96 EN 3-6" (dormakaba Deutschland GmbH), the door leaf was 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 of the active leaf is connected to the top door closer of the passive leaf via an aisle closing control. The top door closers and the aisle closing control in the door frame are covered with a cover made of 3 mm thick steel.

Cable duct
Starting from the door lock, a diagonal Ø 14 mm hole is drilled into the door leaf in the direction of the upper door hinge at a distance of 25 mm from the surfaces of the door leaf. This cable duct connects the door lock with the upper door hinge. This bore hole has been opened from the side facing away from the fire room over a width of 20 mm. A cable of the type "Effeff cabel #Z09XKAB" from Assa Abloy Sicherheitstechnik GmbH is inserted into this cable duct and closed with a 20 mm wide and 20 mm thick piece of the material "PROMATECT L300".

Interlock
The active leaf is locked to the passive leaf via a lock type "Lock Lethe 72/65" (S & B Beschläge GmbH). To accommodate the lock, the door leaf is recessed at a height of 185 mm, a width of 17 mm and a depth of 118 mm. In this lock pocket, the lock is fixed with 2 pcs. screws "M5x16" made of steel and 2 pcs. dowels "IG Anker 8 x 75" from Fischer GmbH & Co. KG were screwed to the door leaf.

Door handle set
A door handle set type "FSB 1076" (Franz Schneider Brakel GmbH & Co. KG) is fitted to the lock at a height of 1050 mm (handle height).

Door hinges
The active leaf is 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 active leaf is recessed at a height of 240 mm and a width of 36 mm for the installation of the hinges. 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. Finally, the hinge holders in the door frame were each covered with a cover made of 1.5 mm thick sheet steel.

The door leaf also could be 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.

Passive leaf

The passive leaf consists of a 50 mm thick piece of the material "PROMATECT L300" with the external dimensions 914 mm x 2212 mm (W x H). The intumescent material "Promaseal PL" is all-round on the end faces and has a thickness of 2.5 mm attached. Integrated in this door leaf is a top door closer with closing sequence control as well as a locking mechanism using driving bolt rods. In addition, a door contact is built into the door frame.

Overhead door closer with aisle lock control

To accommodate the overhead door closer type "Dorma ITS96 EN 3-6" (dormakaba Deutschland GmbH) with closing sequence control type "Dorma aisle closing control - G96 GSR silver" (dormakaba Deutschland GmbH), the door leaf was 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 attached with 2 screws "M5x16" made of steel and 2 dowels "IG Anker 8 x 75 "from Fischer GmbH & Co. KG to the door leaf. The top door closer of the active leaf is connected to the top door closer of the passive leaf via an aisle closing control. The top door closers and the aisle closing control in the door frame are covered with a cover made of 3 mm thick steel.

Interlock

The passive leaf is locked with a lock type "BKS 2390" (Gretsch-Unitas GmbH). The door leaf is recessed at a height of 185 mm, a width of 17 mm and a depth of 118 mm to accommodate the lock. In this lock pocket, the lock is screwed to the door leaf with two steel screws "M5x16" and two threaded bolts "SW 8x25M4". Two locking bar types "BKS B9006.0022" (top, length: 1385 mm) and "BKS B9006.0071" (bottom, length: 1487 mm) from Gretsch-Unitas GmbH are connected to this lock. In the head area, a switch lock type "BKS B1895.0003 RR" from Gretsch-Unitas GmbH is attached to the door leaf with 2 screws "M5x16" made of steel and 2 dowels "IG Anker 8 x 75" from Fischer GmbH & Co. KG. In the floor area, an 8 mm thick rod guide plate type "BKS B9019-0004" from Gretsch-Unitas GmbH is attached to the door leaf with 2 screws "M5x8" made of steel and 2 dowels "IG Anker 8 x 75" from Fischer GmbH & Co. KG .

Lever handle set

A lever handle set type "FSB 1076" (Franz Schneider Brakel GmbH & Co. KG) is installed at the lock at a height of 1050 mm (handle height).

Door contact

At a height of 435 mm is a door contact type "effeff cone contact with 4mtr. Cable # 10405.10R ---- 00 "installed in the door frame. A 23 mm hole is drilled in the door frame to accommodate the door contact. The door contact is fastened with 2 screws "M5x8" made of steel fastened in the door frame.

Door hinges

The door leaf is connected to the door frame via four hinges type "VX7748 / 100" (Simonswerk GmbH) (hinge distances: 250 mm / 370 mm / 1080 mm / 370 mm / 150 mm; from bottom to top). The hinges are fastened in the door leaf with 4 screws "M5x16" made of steel and 4 dowels "IG Anker 8 x 75" from Fischer GmbH & Co. KG. The hinges are fastened in the door frame via a "VX 7512 3D" tape holder (Simonswerk GmbH) welded into the door frame. The hinges are covered in the door frame with a strap cover made of 1.25 mm thick steel sheet.

Middle cuff

The middle cuff was a so-called "leaf frame" made of two profiles, each made of 0.8 mm steel, which was attached to the passive leaf with 2 screws "M4x12" and 2 dowels "IG Anker 8 x 75" from Fischer GmbH & Co. KG is attached. A strip of the intumescent material "Promaseal PL" with a thickness of 2.5 mm and a seal type "ADTP-3642C" (GFA Dichtungen GmbH) are inserted into the "leaf frame".

Door frame

The two-part door frame consists of a three-sided frame, consisting of three steel profiles made of edged sheet steel with a thickness of 3 mm, mitred and welded together, and a mounting frame consisting of 4 edged Steel profiles (side and top: 120 mm x 100 mm, bottom: 100 mm x 60 mm) made of 5 mm thick steel, mitred and welded together are. 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 "M8x25mm" steel screws and "M8" nuts. 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 28 steel screws "M8x16" and nuts "M8". A gasket type "Gasket SZ-617" (GFA-Dichtungen GmbH) is inserted into the rebate base of the frame on three sides.

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 were screwed to the mounting frame using 7 "M8x25" steel screws and "M8" nuts. Finally, a cover made of 1.5 mm thick stainless steel was placed over the square profile and a so-called "nut cage" made of 2 mm thick steel was placed over the nuts.

Properties of the materials used:
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 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 Seals Ltd,
- "ADTP-3642C", GFA Dichtungen GmbH and
- "Promaseal PL", Etex Building Performance Ltd

The “LL-DL2-A60 bulkhead door” has been successfully tested with extended test period in compliance with IMO MSC.1/ Circ. 1319.

Variant “LL-DL2.1-A60”
The “LL-DL2-A60” door construction described above can also be manufactured in a “LL-DL2.1-A60” product variant. The product variant "LL-DL2.1-A60" can be manufactured with glazing, with a hose flap, with cable duct and cable transition, and with grip shells.
The other details of the “LL-DL2-A60” door construction remain unchanged.
For further technical details, see fire technical assessment: LL-DL2.1-A60 dated 16th 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.