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.: **M21009**

Manufacturer: **Jansen Systembau GmbH & Co. KG**
Am Wattberg 51
26903 Surwold, Germany

Product Name: **Stacking barrier for closure of A-60 bulkhead**

Product Description: **Class A-60 bulkhead**

Regulation Item: **MED/3.11a**

Specified Standards: ***SOLAS 74 as amended, Regulation II-2/3.2 & II-2/9,***
IMO Res, MSC.307 (88)-(2010 FTP Code)
IMO MSC.1/Circ. 1435
IMO MSC/Circ. 1120
IMO MSC/Circ. 1434

Related Directive: 2014/90/EU – in conjunction with 2020/1170/EU

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

USCG Approval No.: 164.105/EC0045

Date of Issue: 2021-05-07

Expiry Date: **2024-02-22**

Digital unterschrieben von Nelke Tobias
Datum: 2021.05.07 07:19:03 +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 controlled by a written inspection agreement with 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This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached annex (details of appraisal) are complied with.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.**

Certification body SEECERT • TÜV NORD Systems GmbH & Co. KG • Große Bahnstraße 31 • 22525 Hamburg • Germany

DETAILS OF APPRAISAL

Appraisal documentation:
Test report no. 20151331 dated 2016-03-14 issued by MPA Dresden GmbH, Germany, and Thermal-mechanical analysis no. 8116533572 dated 2019-01-30 issued by TÜV NORD EnSys GmbH & Co. KG, Germany,
Test report no.: DMT-DO-53-128 dated 2020-09-11 issued by DMT GmbH&Co.KG, Germany
(TNS Ref.no.: MED3_20181109.081439)

Tests carried out:
Tested according to IMO Res. MSC.307 (88)-(2010 FTP Code), Annex 1, Part 3

Technical principles:
The "stacking barrier for closure of Class A-60 bulkhead" consists of movable elements, each provided with rolling devices on their vertical closing edges that are guided in lateral vertical rails when the assembly is closed. Each element (thickness: 62mm) has a max. height of 655mm. The storage position of the elements is in the ceiling area, vertically and parallel to each other. When activating, the elements will be shifted parallel via the upper open ends of the vertical guiding rails into them to form a vertical fire retarding division of class A-60. The elements of this stacking barrier are interconnected by a chain-drive-system and stacked together by a tongue and groove principle in closed position; acc. to the appendices 1.1 – 1.16 attached to the test report, which includes further details.
Maximum clear opening size as tested: 4900mm x 3800mm (W x H).

The main components/ details of the assembly are for:
a) all stacking elements:
Each element is made of a 39mm thick mineral wool core "Conrock 15" covered by gypsum boards "Rigidur H marine 10" (one layer on both vertical wide sides and a double layer on the upper edge). This sandwich assembly is glued together by an approved adhesive ("Promat K84"). Folded galvanized steel sheets (each 0.75mm thick) are glued each to the vertical wide sides.
The closing edges of each element are provided with 1.9mm thick strips of self-taping intumescent gasket ("Promaseal PL").

b) the upper edges (only middle and bottom stacking elements):
A 1.5 mm thick, galvanized sheet steel strip (width: 60 mm) riveted to the steel sheets is located at the top edge. On this is a rectangular steel hollow profile (50 mm x 25 mm x 2 mm, filled with "Rigidur H Marine 10") mounted edgewise. Over each element´s entire length, a 12mm thick strip of gypsum board "Promatect H" (Height = 172mm) with a covering steel sheet, is screwed on the side faced to the bulkhead with an overlap (over the edge) of 87.5mm.
Underneath the bottom element, a galvanized steel sheet profile construction, which accommodates a contact strip type GE 225 TB for closure this stacking barrier on the deck, is screwed, with a 6mm thick layer of gypsum board "Promatect H" (width = 52mm) in between.

c) the lower edges (only middle and top stacking elements):
An inverted 1.5mm thick U-shaped galvanized steel sheet riveted to the cover plates is located to the lower edge to form a groove with a depth of 63.5mm. A self-taping intumescent gasket "Promaseal PL"-strip is glued within the groove. Over each element´s entire length, a 12mm thick strip of gypsum board "Promatect H" (H = 172mm) with a covering steel sheet, is screwed on the side faced away from the bulkhead with an overlap (over the edge) of 87.5mm.
On the upper edge of the top element, two layers of gypsum board "Promatect-H" (H = 102mm, each 12mm thick) are provided with a folded galvanized steel sheet in between, that forms a part of the support frame labyrinth. In additional, a strip of gypsum board "Promatect-H" (140mm x 20mm) is screwed over the element´s entire length on the upper edge at the side faced to the bulkhead.

d) the support frame:
The structural support frame, bolted to the bulkhead by screws (M10 x 25 mm), is constructed by rectangular galvanized steel profiles to form a casing for the integrated guiding rails, which are made by 3 mm thick C-shaped steel profiles. The open sides of these profiles are cladded by "Promatect-H". On the open edges, folded steel profiles are provided to form a labyrinth in closing position on the top and the sides with the corresponding profiles of the elements. The closing edges are provided with 1.9 mm thick strips of self-taping intumescent gasket ("Promaseal PL").

Larger dimensions:
A "stacking barrier for closure of Class A-60 bulkhead" having larger dimensions than fire-tested has been determined in the thermal-mechanical analysis no. 8116533572, which has been carried out acc. to IMO MSC.1/Circ. 1319 Para 3 and is part of the documentation mentioned above under "Appraisal documents". With reference to the thermal-mechanical analysis no. 8116533572 the following parameters/ limitations applies:

For a clear opening greater than 4900mm x 3800mm (W x H) but up to 10000mm x 10000mm (W x H) the covering steel sheets used for the elements of the stacking barrier have to be manufactured from steel having a specified minimum yield strength of Rp0.2% = 235 MPa. The parameters/ limitations are summarized on Page 5-6 of the thermal-mechanical analysis no. 8116533572.

A larger stacking barrier than fire-tested but not exceeding 50% in surface area may have a maximum clear opening size up to 10000mm x10000 mm (W x H).

For a larger stacking barrier exceeding 50% in surface area, a full analysis based on SOLAS Ch.II-2 Reg.17 should be performed to assess the safety of the vessel. This procedure may be individually assessed and accepted by the relevant flag administration (or recognized organization acting on its behalf) for a specific project with the same classification, provided documented compliance with IMO MSC.1/Circ.1319.

Stainless steel variant:
For the stainless steel variant the planking and the guide rails incl. guide rollers etc. are made of stainless steel, which is proven with the report: Test report No.: DMT-DO-53-128 dated 11.09.2020 issued by DMT GmbH&Co.KG.
Door leaf construction, all insulating materials and the dimensions are identical and stay unchanged.
The stainless steel variant has a maximum clear opening size as tested: 4900mm x 3800mm (W x H)

Applied materials:

Insulation: "Conrock 15" (nominal density: 160kg/m³),
manufacturer: Deutsche ROCKWOOL Mineralwoll GmbH & Co OHG; Germany,
"Rigidur H Marine 10" (nominal density: 1200kg/m³),
manufactured by Saint-Gobain Rigips GmbH, Germany,
"Promatect-H" (nominal density: 870kg/m³), manufactured by Promat AG

Adhesive: "Promat K84" (applied quantity: 550g/m²), manufactured by Promat AG

Approval is valid only on the results of tests carried out on the construction and materials as well as the thermal-mechanical analysis mentioned herein. Any additionally used surface materials have to be certified according to the Marine Equipment Directive, if required by relevant rules and regulations

Installation and product documentation:
Assembly procedure, usage and maintenance on board as per manufacturer´s instruction, which has to be supplied together with the product.

Marking:
The product 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:
Class A-60 bulkhead