DNV·GL

Certificate No:
MEDB00006H4

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 "A" Class divisions, fire integrity

with type designation(s)
FRS A-60 SlimLine - Roller shutter for closure of Class A-60 bulkhead

Issued to
KAEFER Schiffsausbau GmbH
Bremen, Germany

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2019/1397,**
item No. MED/3.11a. SOLAS 74 as amended, Regulation II-2/3.2 & II-2/9, IMO 2010 FTP Code, IMO MSC/Circ.1120 and IMO MSC.1/Circ.1434, IMO MSC.1/Circ.1435.

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

This Certificate is valid until **2025-06-01**.
Issued at **Hamburg** on **2020-06-02**

DNV GL local station:
Magdeburg

Approval Engineer:
John Alan Walton

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, and amended by Decision No 1/2018 dated February 18th, 2019.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.

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Product description

FRS A-60 SlimLine - Roller shutter for closure of Class A-60 bulkhead.
The main components of the roller shutter assembly consist of a steel tubular roller and its bearings mounted above the bulkhead opening enclosed with a steel sheet housing. The housing and bearing brackets are bolted to the steel bulkhead. A roller shutter is wound around the tubular roller and is directed down into the side guides. The contact and closure of the roller shutter on the deck is provided by a glass fabric gasket incorporating a contact safety bar.

The clear opening size as tested: Width of 2440mm and height of 2347 mm

The roller shutter was bolted to the bulkhead for the test and may also be fixed to the bulkhead by welding.

The roller shutter itself consists of interlocking galvanised steel slats of thickness 1mm, fire insulated on both sides. Overall thickness is 35mm. From the side on the tubular roller the roller shutter construction is a series of:

- two 6mm layers of Needle mat Iso Therm S of nominal density 152.5 Kg/m³ in strips covered with 0.6mm steel sheet profiles
- interlocking steel slats of thickness 1mm
- two 3.6 mm thick Palusol intumescing strips of nominal density 1600 Kg/m³
- one 3mm strip of Needle mat strips Iso Therm S of nominal density 100 Kg/m³ with 0.75mm thick steel profile as covering bonded together with an approved adhesive

For further details see drawing No.2x267381-2-5 Rev.A or the test reports listed under Type Examination documentation below.

Each of two side guides consists of a U and an L shaped profile (3mm thick steel plate) bolted together to form a box type construction each serving as the side guides for the roller shutter. The guides are bolted to the bulkhead and are flared at the top thus directing the roller shutter from the tubular roller down into the side guides.

The lintel sealing arrangement consists of a flanged 2mm thick steel sheet construction bolted to the bulkhead directly above and along the top edge of the bulkhead opening. The horizontal upper face of the lintel is insulated with Lolamat W25 non-combustible board. A 1.5mm thick steel C-profile with four layers of Palusol intumescing strips forming the interface to the roller shutter which will close the air gap between the roller shutter and housing in the event of a fire hazard.
For further details see drawing No. 2x267381-2-4 Rev.A, and 2x267381-2-6 Rev. A or the test reports listed under Type Examination documentation below.

Application/Limitation

The "**FRS A-60 SlimLine - Roller shutter for closure of Class A-60 bulkhead**" is approved for installation in steel bulkheads of Class A-60 and may be mounted on either side of a Class A-60 bulkhead. Installation of this product in bulkheads made of other materials (aluminium, FRP, etc.) are subject to case-by-case approval.

This roller shutter having larger dimensions up to 50% in surface area than as fire-tested may be individually assessed and accepted by the flag administration for compliance with IMO MSC.1/Circ.1319 Para 3.

In addition to fulfilling the requirements of IMO MSC.1/Circ.1319 Para 3, for a larger roller shutter exceeding 50% in surface area, a full analysis for a specific project based on SOLAS Ch.II-2 Reg.17 should be performed and accepted by the flag administration to demonstrate that the safety of the vessel is not impaired.

In both cases documented compliance with IMO MSC.1/Circ.1319 to be provided.

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 and maintenance.

Type Examination documentation

Test report Nos.2019CS011529/ 1 & 2019CS011529/2 both dated 25th November 2019 issued by RINA Services S.p.A., Genoa, Italy.
Drawing Nos. 2x267381-2-4 Rev.A, 2x267381-2-5 Rev.A and 2x267381-2-6 Rev. A

Tests carried out

IMO Res.MSC.307(88)- (IMO 2010 FTP Code) Annex 1, Part 3

Marking of product

The product is to be marked with name and address of manufacturer, type designation, fire technical rating, the MED Mark of Conformity and USCG Approval Number if applicable (see first page)."