

# EC Type Examination (Module B) Certificate

## USCG-EU MRA

This is to certify that:

LLOYD'S REGISTER Deutschland GmbH (LRD), designated as a "notified body" based on the notification of the Federal Maritime and Hydrographic Agency of Germany, did undertake the relevant type approval procedures for the type of equipment identified below which was found to be in compliance with the requirements of Marine Equipment Directive (MED) 2014/90/EU and the valid Commission Implementing Regulation (EU) in force indicating design, construction and performance requirements and testing standards for marine equipment, subject to the conditions below and the attached Schedule which also forms part of this Certificate.

<b>Manufacturer</b>	<b>Lorowerk K.H. Vahlbrauk Gmbh &amp; Co. KG</b>
<b>Address</b>	Kriegerweg 1, 37581 Bad Gandersheim, Germany
<b>Reference</b>	Regulation (EU) 2021/1158
<b>Regulation Item (No. &amp; Item Designation)</b>	MED/3.26b Penetrations Through 'A' Class Divisions - Pipe, Duct, Trunk Etc. Penetrations
<b>Product Type</b>	PIPE PENETRATION (STANDARD FIRE TEST)
<b>Product Description</b>	Fire Resisting Single Steel Pipe, Circular Penetration System – Type: "LORO-X" for applications in steel bulkheads and decks.
<b>Specified Standard</b>	IMO Res. MSC.307(88)-(2010 FTP Code) Annex 1, Part 3 IMO MSC.1/Circ.1488
<b>Trade Name</b>	"LORO-X" Single Steel Pipe, Circular Penetration System.

The attached Design Appraisal Document (schedule) forms part of this certificate. This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

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 named on this certificate. The manufacturer should notify LRD of any modification or changes to the equipment in order to obtain a valid Certificate.

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A member of the Lloyd's Register group

**Saji Abraham**

Surveyor  
For and on behalf of Lloyd's Register  
Deutschland GmbH (0525)

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This equipment is covered by the scope of the "Agreement between the European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment" signed on 27 February 2004 and amended by Decision No.1/2018 dated 18 February 2019 according to U.S. Coast Guard approval category USCG Module B number:

164.138/EC0525

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).

Should the specified regulations or standards be amended during the period of validity of this certificate, the product is to be re-approved prior being placed on the market and on board vessels to which the amended regulations or standards apply.

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-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.

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## ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. LR21452527MB

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions and European Union legislation for the EC Type Examination of Marine Equipment for use on Merchant Ships Registered in the European Economic Area.

This Design Appraisal Document (schedule) forms part of the Certificate.

This Certificate supersedes and is a renewal of 0525-MED-DE-MED 1650256

### Approval Documentation

### Test Reports

DMT GmbH & Co. KG Test Laboratory for Fire Protection, Dortmund, Germany; Fire Test Reports No: DMT-DO-53-032, DMT-DO-53-033, DMT-DO-53-034 and DMT-DO-53-043, all dated 10.12.2015

### Conditions of Certification

1. For applications in A-60 Class steel bulkheads and decks with approved insulation arrangements (Tables 1 and 2 below describe the details of penetrations tested in A-60 Class bulkheads and decks respectively and the maximum fire rating achieved in each case). Penetrations that achieved lower fire ratings such as A-30 when tested in A-60 Class steel decks are restricted for applications in A-30 Class steel decks and they shall be fitted with at least the same as-tested A-60 Class insulation arrangements (including any insulation fitted on the penetration itself in the tests) for a minimum distance of 200mm around the penetration on the underside in decks and insulation to be extended along the steel pipes for minimum lengths identified in Table 2.
2. For applications in A-0, A-15 and A-30 Class steel bulkheads and decks, all penetrations that achieved A-60 in the A-60 Class fire tests (described in Tables 1 and 2) shall be fitted with the same as-tested A-60 Class insulation arrangements (including any insulation fitted on the penetration itself in the tests) for a minimum distance of 200mm around the penetration on both sides in bulkheads and at least on the underside in decks and insulation to be extended along the steel pipes for minimum lengths identified in Tables 1 and 2.
3. The above mentioned A-60 Class insulation arrangements should be additional to any thermal or acoustic insulation, but may include any fire rated insulation (e.g. A-15, or A-30) already fitted on the bulkhead or deck and/or on the penetration itself, such that the total fire rating is A-60.

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**Table 1: Approved arrangements in A-60 Class Steel Bulkheads**

"LORO-X" Pipe Penetration type	Maximum fire rating achieved	Approved Applications- General <sup>(a)</sup> or Restricted	Pipe Material	Pipe Inner dia x minimum wall thickness (mm)	Sealing material used at the connections between pipe and penetrations	Minimum insulation arrangements
08200.040C	A-60	General	Stainless-steel	40 x 1.6	Art.No. 00911.040X (NBR)	Penetration and pipe to be insulated using Paroc Marine Wired Mat 100 (density: 100 kg/m <sup>3</sup> ; thickness: 80 mm) or equivalent, for minimum length 500 mm on both the fire exposed side and fire unexposed side of steel bulkhead in all cases.
08200.040X	A-60	General	Galvanised steel	40 x 1.5	Art.No. 00911.040X (NBR)	
08200.050X	A-60	General	Galvanised steel	50 x 1.5	Art.No. 00911.050X (NBR)	
08200.125X	A-60	General	Galvanised steel	125 x 2.5	Art.No. 00911.125X (SBR)	
08201.040C	A-60	General	Stainless-steel	40 x 1.6	Art.No. 00911.040X (NBR)	
08201.040X	A-60	General	Galvanised steel	40 x 1.5	Art.No. 00911.040X (NBR)	
86255.050C	A-60	General	Stainless-steel	50 x 1.5	Art.No. 00911.050X (NBR)	
86255.050X <sup>(b)</sup>	A-60	General	Galvanised steel	50 x 1.5	Art.No. 00911.050X (NBR)	

- (a) General Applications refer to installation arrangements where the Plug-in sleeve or Inner pipe welded to penetration coaming (depending on the penetration type) may be fitted to any one side (fire exposed side or fire unexposed side) of the steel bulkheads
- (b) Pressure pipes used in conjunction with Type: 08200.050X bulkhead penetrations to be fitted with NK Clip (Art.No.: 08070.050X); clip to be fully concealed by the fire rated insulation

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**Table 2: Approved arrangements in A-30 or A-60 Class Steel Decks (as applicable, depending on the maximum rating achieved in the tests)**

“LORO-X” Pipe Penetration type	Maxi- mum fire rating achieved	Approved Application- General <sup>(a)</sup> or Restricted <sup>(b)</sup>	Position of Plug-in sleeve or Inner pipe welded to Penetration coaming	Pipe Material	Pipe Inner dia x minimum wall thickness (mm)	Sealing material used at the connections between pipe and penetrations	Minimum length of insulation <sup>(c)</sup> to be fitted on penetrati on and pipe
08200.040C	A-60	General	Fire exposed side or Fire unexposed side	Stainless- steel	40 x 1.6	Art.No. 00911.040X (NBR)	500
08200.040X	A-60	General	Fire exposed side or Fire unexposed side	Galvanised Steel	40 x 1.5	Art.No. 00911.040X (NBR)	500
08200.050X <sup>(d)</sup>	A-60	General	Fire exposed side or Fire unexposed side	Galvanised Steel	50 x 1.5	Art.No. 00911.050X (NBR)	500
08200.125X	A-60	General	Fire exposed side or Fire unexposed side	Galvanised Steel	125 x 1.5	Art.No. 00911.125X (SBR)	1000
08200.200C	A-60	Restricted	Fire unexposed side (topside of the deck)	Stainless- steel	200 x 3	Art.No. 00911.200X (SBR)	1000
08200.200X	A-60	Restricted	Fire unexposed side (topside of the deck)	Galvanised Steel	200 x 3	Art.No. 00911.200X (SBR)	1000
08201.040C	A-60	Restricted	Fire unexposed side (topside of the deck)	Stainless- steel	40 x 1.6	Art.No. 00911.040X (NBR)	500
08201.040X	A-60	Restricted	Fire exposed side (underside of the deck)	Galvanised steel	40 x 1.5	Art.No. 00911.040X (NBR)	500
08201.200C <sup>(d)</sup>	A-60	Restricted	Fire unexposed side (topside of the deck)	Stainless- steel	200 x 3	Art.No. 00911.200X (SBR)	1000

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**Table 2: Approved arrangements in A-30 or A-60 Class Steel Decks (as applicable, depending on the maximum rating achieved in the tests)-continued....**

“LORO-X” Pipe Penetration type	Maxi- mum fire rating achieved	Approved Application- General <sup>(a)</sup> or Restricted <sup>(b)</sup>	Position of Plug-in sleeve or Inner pipe welded to Penetration coaming	Pipe Material	Pipe Inner dia x minimum wall thickness (mm)	Sealing material used at the connections between pipe and penetrations	Minimum length of insulation <sup>(c)</sup> to be fitted on penetrati on and pipe
08201.200X <sup>(d)</sup>	A-60	Restricted	Fire unexposed side (topside of the deck)	Galvanised steel	200 x 3	Art.No. 00911.200X (SBR)	1000
86255.050C	A-60	Restricted	Fire exposed side (underside of the deck)	Stainless- steel	50 x 1.5	Art.No. 00911.050X (NBR)	500
86255.100C <sup>(d)</sup>	A-30 only	Restricted	Fire exposed side (underside of the deck)	Stainless- steel	100 x 1.5	Art.No. 00911.100X(SBR)	1000
86255.050X <sup>(d)</sup>	A-60	Restricted	Fire exposed side (underside of the deck)	Galvanised steel	50 x 1.5	Art.No. 00911.050X (NBR)	1000
86255.100X	A-60	Restricted	Fire exposed side (underside of the deck)	Galvanised steel	100 x 2	Art.No. 00911.100X (SBR)	1000

- (a) General Applications refer to installation arrangements where the plug-in sleeve or Inner pipe welded to penetration coaming (depending on the penetration type) may be fitted to any one side (fire exposed side or fire unexposed side) of the steel decks without restrictions
- (b) Restricted Applications refer to installation arrangements where the Plug-in sleeve or Inner pipe welded to Penetration coaming (depending on the penetration type) must be fitted on only one side (fire exposed side or fire unexposed side) of the steel decks as identified in Table 2 in all cases
- (c) Paroc Marine Wired Mat 100 (density: 100 kg/m<sup>3</sup>; thickness: 40 mm) or equivalent to be fitted on the pipe and penetration on the fire exposed side (underside) of deck
- (d) For deck penetration types: 08200.050X, 86255.050X, 86255.100C, 08201.200C, 08201.200X, pipe insulation is to be secured using 115mm long 2mm thick galvanised steel hooks at all joints

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4. "LORO-X" Pipe penetration consists of a steel pipe passing through a welded steel sleeve. All connections between pipes and penetration sleeves are sealed using sealing materials identified in Tables 1 and 2 and fully protected by the fire rated insulation.
5. The pipe penetration installation/welding arrangements must be as-tested, in accordance with manufacturer's specifications and to the satisfaction of the attending project surveyor. Any additional requirements specified by the project surveyors for special applications (for example, installations in high stress locations) must also be complied with.
6. Pipe penetrations are to be fitted with the as-tested insulation materials in all cases. Any alternative insulation system proposed must be acceptable to the final Project Authority as being equivalent, at least in fire performance, material properties, thickness and density as the fire tested insulation system. Final insulation arrangements onboard must be to the satisfaction of the attending project surveyor in all cases.
7. Composition, application and installation of subcomponents, including adhesives, seals and any fire retardants, to be maintained in production and used in accordance with originally tested composition formula.
8. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that items are of the same standard as the approved prototype.
9. The certificate holder is solely responsible for the products supplied under this Certificate and to ensure that their products are fully compliant with the relevant statutory regulations and designed, manufactured and installed to the same quality and specifications as the prototype tested, including components that are designed and manufactured by third parties.
10. Production items of the subject equipment are to be manufactured in accordance with either an approved Production Quality Assurance system (Module D), a Product-Quality assurance system (Module E) or a Product Verification Process (Module F). The wheelmark cannot be affixed to the product until a conformity assessment module is in place.
11. Each item, batch or lot of the equipment is to be issued with a "Declaration of Conformity" and have the "Mark of Conformity" affixed after a conformity assessment module is in place.
12. The manufacturer shall keep a copy of the EC type-examination certificate, its annexes and additions together with the technical documentation at the disposal of the national authorities for at least 10 years after the wheel mark has been affixed on the last product manufactured and in no case for a period shorter than the expected life of the marine equipment concerned.

#### **Place of Production**

Lorowerk K.H. Vahlbrauk GmbH & Co., KG  
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**LRD EC Distinguishing No. 0525**

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