



EC TYPE EXAMINATION (MODULE B) CERTIFICATE

This is to certify that:

LLOYD'S REGISTER VERIFICATION LIMITED (LRV), designated as a "notified body" under the terms of the Merchant Shipping (Marine Equipment) Regulations 2016) did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with the essential Fire protection requirements of Marine Equipment Directive (MED) 2014/90/EU subject to any conditions in the Design Appraisal Document attached hereto.

Manufacturer	Lorowerk K.H Vahlbrauk GmbH & Co. KG
Address	37581 Bad Gandersheim Kriegerweg 1 Germany
Annex A1 Item	A.1/3.26 - PENETRATIONS THROUGH 'A' CLASS DIVISIONS - (b): PIPE, DUCT, TRUNK ETC PENETRATIONS
USCG Category Number	164.138 - PENETRATIONS THROUGH 'A' CLASS DIVISIONS BY ELECTRIC CABLES, PIPES, TRUNKS, DUCTS ETC.
Product Type	PIPE PENETRATION (STANDARD FIRE TEST)
Product Description	Fire Resisting Single Steel Pipe Penetration System – Type: "LORO-X" for applications in steel bulkheads and decks
Specified Standard	IMO Res. MSC.307(88)-(2010 FTP Code) Annex 1, Part 3

The attached Design Appraisal Document (schedule) forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

Date of issue	18 October 2016	Expiry date	17 October 2021
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Certificate No.	MED 1650256	Signed	
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Sheet No	1 of 4	Name	S. Abraham For and on behalf of Lloyd's Register Verification LRV EC Distinguishing No. 0038
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Note:

This certificate is issued under the authority of the MCA.

This certificate is not valid for equipment; the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify the notified body named on this certificate of any modification or changes to the equipment in order to obtain a valid Certificate.

USCG-EU MRA - This product has been assigned a U.S. Coast Guard Module B number: USCG Module B number: 164.138/EC0038 to note type approval to Module B only as it pertains to obtaining U. S. Coast Guard approval as allowed by the "Corrigendum to Council Decision 2004/425/EC of 21 April 2004 on the conclusion of an Agreement between the European Community and the United States of America on the mutual recognition of certificates of conformity for marine equipment."

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Issue number 1

DESIGN APPRAISAL DOCUMENT

Date 17 October 2016	Quote this reference on all future communications SOUTSO/SFS/TA/SA/WP2556212
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ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1650256

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.

APPROVAL DOCUMENTATION

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

- 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
- 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
- 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

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

"LORO-X" Pipe Penetration type	Maximum fire rating achieved	Approved Applications -General ^(a) 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	Mild 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 ³ ; 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	Mild 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	Mild steel	50 x 1.5	Art.No. 00911.050X (NBR)	
86255.050X ^(b)	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-60 Class Steel Decks

"LORO-X" Pipe Penetration type	Maxi-mum fire rating achieved	Approv ed Applica tion- Genera l ^(a) or Restrict ed ^(b)	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 ^(c) to be fitted on penetration and pipe
08200.040C	A-60	Gener al	Fire exposed side or Fire unexposed side	Mild Steel	40 x 1.6	Art.No. 00911.040X (NBR)	500
08200.040X	A-60	Gener al	Fire exposed side or Fire unexposed side	Galvanised Steel	40 x 1.5	Art.No. 00911.040X (NBR)	500
08200.050X ^(d)	A-60	Gener al	Fire exposed side or Fire unexposed side	Galvanised Steel	50 x 1.5	Art.No. 00911.050X (NBR)	500
08200.125X	A-60	Gener al	Fire exposed side or Fire unexposed side	Galvanised Steel	125 x 1.5	Art.No. 00911.125X (SBR)	1000
08200.200C	A-60	Restrict ed	Fire unexposed side (topside of the deck)	Mild Steel	200 x 3	Art.No. 00911.200X (SBR)	1000
08200.200X	A-60	Restrict ed	Fire unexposed side (topside of the deck)	Galvanised Steel	200 x 3	Art.No. 00911.200X (SBR)	1000
08201.040C	A-60	Restrict ed	Fire unexposed side (topside of the deck)	Mild steel	40 x 1.6	Art.No. 00911.040X (NBR)	500
08201.040X	A-60	Restrict ed	Fire exposed side (underside of the deck)	Galvanised steel	40 x 1.5	Art.No. 00911.040X (NBR)	500
08201.200C ^(d)	A-60	Restrict ed	Fire unexposed side (topside of the deck)	Mild Steel	200 x 3	Art.No. 00911.200X (SBR)	1000
08201.200X ^(d)	A-60	Restrict ed	Fire unexposed side (topside of the deck)	Galvanised steel	200 x 3	Art.No. 00911.200X (SBR)	1000
86255.050C	A-60	Restrict ed	Fire exposed side (underside of the deck)	Mild steel	50 x 1.5	Art.No. 00911.050X (NBR)	500
86255.100C ^(d)	A-30 only	Restrict ed	Fire exposed side (underside of the deck)	Mild steel	100 x 1.5	Art.No. 00911.100X(SBR)	1000
86255.050X ^(d)	A-60	Restrict ed	Fire exposed side (underside of the deck)	Galvanised steel	50 x 1.5	Art.No. 00911.050X (NBR)	1000
86255.100X	A-60	Restrict ed	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/m³; 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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- "LORO-X" Pipe penetration consists of: pipe penetration system with a steel pipe passing through a welded steel sleeve. All connections between pipes and penetrations are sealed using sealing materials identified in Tables 1 and 2 and fully protected by the fire rated insulation
- 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
- This product has been assigned a **U.S. Coast Guard Module B number USCG Approval Category 164.138/EC0038** to note type approval to Module B only as it pertains to obtaining U. S. Coast Guard approval as allowed by the "Corrigendum to Council Decision 2004/425/EC of 21 April 2004 on the conclusion of an Agreement between the European Community and the United States of America on the mutual recognition of certificates of conformity for marine equipment"

in those instances where the Notified Body conducting the conformity assessment in accordance with either Module D, E or F of the Marine Equipment Directive is not Lloyd's Register Verification Ltd., such Notified Body would use the above U.S. Coast Guard Module B number to provide the manufacturer with the U.S. Coast Guard approval number by noting it on the Certificate of Conformity, thereby authorizing the manufacturer to mark the product accordingly

Note: For products placed on board U.S. flagged ships there is no declaration of conformity required to meet U.S. Coast Guard requirements
- 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

PLACE OF PRODUCTION

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Saji Abraham
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For and on behalf of Lloyd's Register Verification
LRV EC Distinguishing No. 0038

**NOTIFIED BODY CERTIFICATE
TRANSFER OF RESPONSIBILITY**



Certificate No: 0525-MED-DE-MED 1650256

This certificate transfers Lloyd's Register Verification Ltd. (0038)
Certificate No: MED 1650256
Issued on: 18 October 2016
to the responsibility of EU Notified Body No. 0525
(Lloyd's Register Deutschland GmbH)

Date of Original Certificate: 18 October 2016
Date of Current Certificate: 31 December 2020
Date of Certificate Expiry: 17 October 2021

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