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Certificate N°:  
**09156/A8 EC**  
File Number : ACI 4000/041/004  
MED Item number : A.1/3.26(a)  
USCG Item number : **164.138**  
This Certificate is not valid unless presented without the full attached  
Schedule comprised of 19 sections.

**BUREAU  
VERITAS**

**EUROPEAN COUNCIL DIRECTIVE 96/98 EC on MARINE EQUIPMENT (M.E.D.)**

## **EC TYPE EXAMINATION CERTIFICATE (CERTIFICATE OF TYPE APPROVAL)**

*This is to certify that Bureau Veritas, acting within the scope of its notification, did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with the International Instruments and testing standards under the requirements of Council Directive 96/98/EC, as amended.*

**PENETRATIONS THROUGH 'A' CLASS DIVISIONS : ELECTRIC CABLE TRANSITS  
"RISE" & "RISE EXTENDED" single/multi cable and multi tube transit**

**MANUFACTURED BY:**

**BELLE ENGINEERING**  
Aalsten - NETHERLANDS

**REGULATIONS & STANDARDS in accordance with Council Directive 96/98/EC, as amended by Commission Directive 2002/75/EC ;  
SOLAS 74 Convention, as amended, Regs. II-2/9.3.1 - IMO Resolution MSC 61(67)[FTP Code] Annex 1 Part 3 and Annex 2 - IMO  
Resolution A.754 (18).**

**Expiry date: 06-12-2004**

**Local Office : BUREAU VERITAS ROTTERDAM**

**At Paris la Défense, on : 01-07-2004**



**J.BENOIT**  
*Marie Equipment Certification Manager*  
**For BUREAU VERITAS, EC Notified Body N°0062**



The Manufacturer is advised to affix the MED Conformity Mark to approved equipment and issue a Declaration of Conformity, only when the production/product assessment module referred to in the Directive 96/98/EC, is fully complied with.  
This Certificate remains valid until its date of expiry, unless cancelled or revoked, providing the conditions in the attached Schedule are complied with and the equipment remains satisfactory in service. This Certificate does not apply to equipment which has been varied or modified from the specimen tested.  
Should the specified standards be amended during the validity of this Certificate, the product(s) here to be re-approved prior to being being placed on board vessels to which the amended standards apply.  
This Certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division. Any Person not a party to the contract pursuant which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgment, such as negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any services for which it may provide.

Issued under the authority of the French Maritime Administration.

BV mod. AdE 536 July 2004



## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

**"RISE" & "RISE EXTENDED" single/multi cable and multi tube transit**

Cables in the conduit opening of the system are surrounded by a protective sleeve (split lengthways and 4 cm shorter in length than the conduit) made of FRRL/EHP (fire resistant rubber/low grade of expansion/halogen-free) rubber. The remaining space is filled with loose sleeves and the conduit is sealed at both sides with a 2 cm thick layer of firesafe FIWA putty (water resistant material necessary for all seals and joints). The conduit is insulated on the exposed side for decks and unexposed side for bulkheads with mineral wool, minimum 25 mm thick (length according to Manufacturer's drawings mentioned in § 2)

Maximum cable/multi-tube diameter: 85 mm;

Minimum conduit length: 200 mm.

**\* "RISE EXTENDED"**

Extension frame made of an overall steel casing (split in 2 parts for existing cable runs), spot welded to the bulkhead or deck or extension frame made of a part split steel casing to be forced into the existing individual transit frame.

### 2. DESIGN DRAWINGS and/or SPECIFICATIONS

2.1- To be installed according to the Manufacturer's drawings N° R0066E, R0067E (both rev.2 dated 20.01.01), R0068E rev.1 dated 08.11.00, R0069E, R0070E (both rev.1 dated 07.11.00), R0096E dated 04.07.00, R0101E, R0102E both rev.2 dated 20.01.01, R0115E, R0116E, R0117E, R0133E, R0134E, R0135E.

2.2- Manual(s) for installation, use and maintenance is/are to be stamped by the Society's Surveyor and supplied in the language prescribed by the Maritime National Administration to whom the ship is registered.

2.3- Manufacturing documentation: to be stamped by the Society's Surveyor.

### 3. TYPE TEST REPORTS/LABORATORY RECOGNITION STATUS

WARRES 106394/A	horizontal test issued on 15.06.1999
WARRES 106393/B	vertical test issued on 15.06.1999
WARRES 104226	horizontal test issued on 13.10.1998
WARRES 104228	vertical test issued on 19.10.1998
WARRES 115541/A	vertical test issued on 01.12.2000

All above mentioned test reports were issued in accordance with IMO Resolution A.754 (18) from Warrington Fire Research Centre, UK.

Additional in-house test reports N° 0007-B029 dated 07.00 and N° 0009-B030 dated 09.00 for A-0 Class divisions penetrations.

**4. MATERIALS or COMPONENTS REQUIRED TO BE TYPE APPROVED or TYPE TESTED**

Non-combustible insulating mineral wool : to be EC type approved and to bear the ☉ mark.

The fire tests were conducted with mineral wool minimum density 110 kg/m<sup>3</sup>; any alternative previously proven and approved A-class insulation giving at least an equivalent insulation performance can be used (in accordance with fax DW991203F 1 dated 03.12.1999 from Warrington Fire Research Centre, UK).

**5. OTHER MATERIALS and/or COMPONENTS**

5.1- FIWA Putty : test report N° 9094, dated 26.11.1998, in accordance with IMO A.653(16) Resolution from The University of Gent.

5.2- FRR/LEHF rubber : test report N° L18665 to L18668, dated 6-7.04.1999, from Warrington Fire Research Centre, UK, in accordance with NES 711, NES 713 and BS ISO 4589 Parts 2 and 3.

**6. APPLICATION /LIMITATION OF USE**

6.1- Approved for use as cable penetrations in A-0/A-60 class steel and aluminium (penetration coating fully insulated) divisions.

6.2- Approval valid for ships having to comply with SOLAS 74 Convention, as amended, and for units having to comply with IMO Resolution A649 (The "MODU Code").

6.3- Watertight up to 2,5 bars in accordance with in-house tests N° 9809-d009 (dated 09.1998), N° 9902-d003 (dated 02.1999) and N° 9909-D011 (dated 09.1999) from the Manufacturer (tests witnessed by Lloyd's Register and DNV).

6.4- Approved as gas tight penetrations up to a pressure of 1 bar in accordance with in-house tests N° 9903-d004 (dated 03.1999).

6.5- Approval valid for cables type CLX (corrugated aluminium sheathed cables), diameter up to 73 mm, in accordance with in-house tests N° 0212-001 (dated 17.12.02) from the Manufacturer (ABS witnessing survey report N° RO 309725 dated 17.12.02 and USCG statement letter N° 164.138/CSD dated 09.01.02).

**7. PRODUCTION SURVEY REQUIREMENTS**

7.1- Arrangements shall be made for a Society's Surveyor to carry out, on a periodic basis, visit of the Manufacturer's (BEELE ENGINEERING Works, Netherlands) premises and product audits.

7.2- The production conformity assessment module shall either be "D, production quality assurance" or "E, product quality assurance" or "F, product verification".

7.3- Each manufactured equipment is to bear the ☉ mark and number of the Notified Body undertaking surveillance module (where BV, 0062).

7.4- Each equipment or batch of equipment is to be supplied with its manual (or instruction) for installation, use and maintenance in the language required by the Ship's Flag Administration.

**8. ON BOARD INSTALLATION & MAINTENANCE REQUIREMENTS**

8.1- The Manufacturer's instruction manual should be kept on board.

8.2- The fitting aboard to be the same as used for the test.

**9. MARKING FOR IDENTIFICATION**

☉ mark and number of the Notified Body undertaking surveillance module (where BV, 0062).

- Last two digits of year mark affixed.

In pursuance of the EU/US MRA+, and in accordance with the Council Decision 2004/425/EC of 21 April 2004, the manufactured item(s) can be affixed with the USCG conformity marking, subject to the authorization of the Conformity Assessment Body undertaking surveillance module.

**14. OTHERS**

10.1- This approval is given on the understanding that the Manufacturer will accept full responsibility for informing shipbuilders or their sub-contractors of the proper methods of fitting and general maintenance of the approved equipment and the conditions of this approval.

10.2- This certificate supersedes EC Type Examination Certificate N° 09156/A7 EC issued on 2003-11-07 by the Society.

**\*\*\* Last page (End of Document) \*\*\***

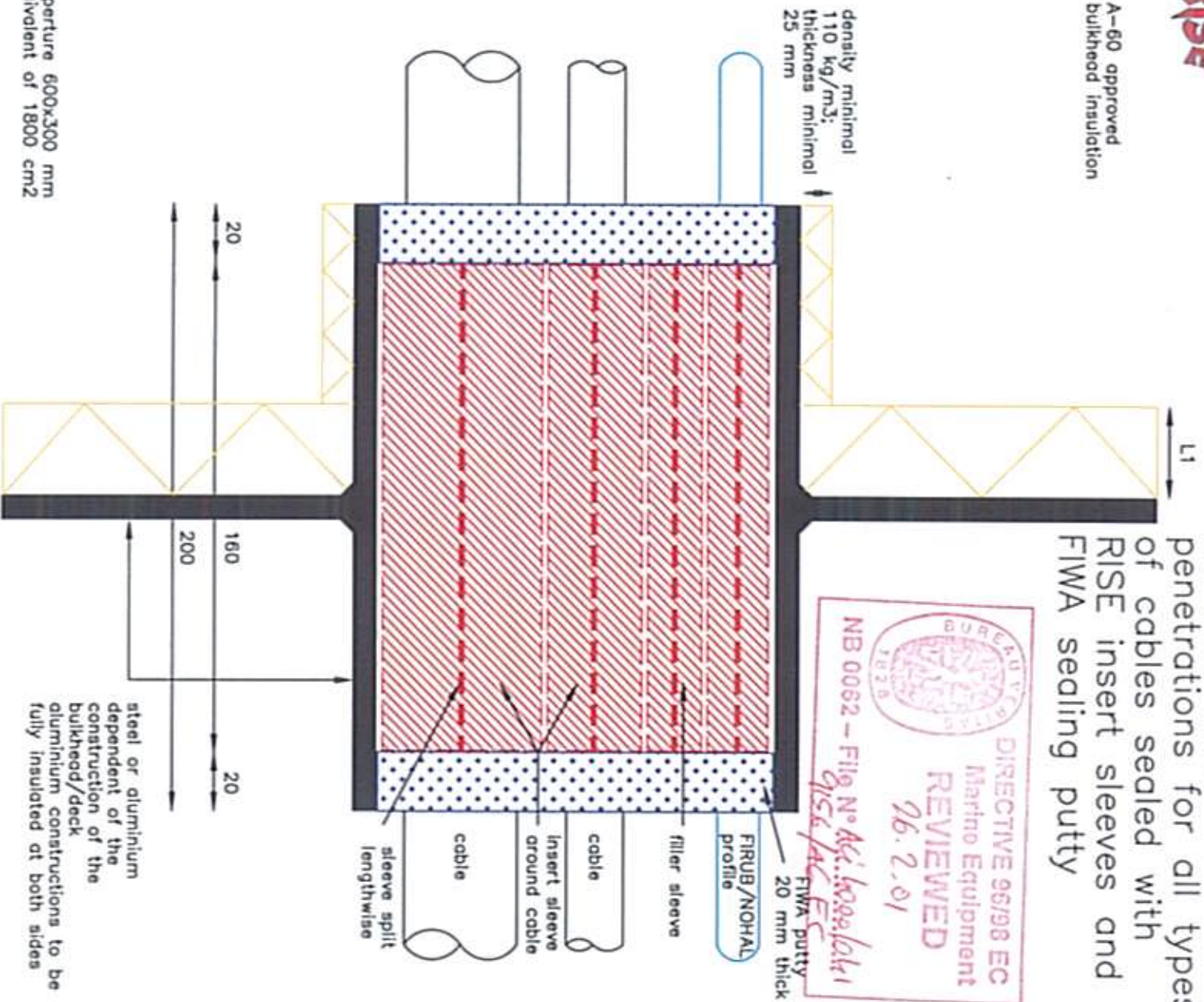
**BUREAU VERITAS ROTTERDAM**



**RISE**

L1 = A-60 approved  
bulkhead insulation

A0-A60 class  
penetrations for all types  
of cables sealed with  
RISE insert sleeves and  
FIWA sealing putty



size aperture 600x300 mm  
or equivalent of 1800 cm<sup>2</sup>

tested at full cable fill capacity  
according to IMO Res. A.754(18)

steel or aluminium  
dependent of the  
construction of the  
bulkhead/deck  
aluminium constructions to be  
fully insulated at both sides

**A0-A60**

**CABLE PENETRATION**

Description: side view RISE cable penetration in steel structure

Mat.: FRR/LEHF+FIWA putty

Ref.: JAB

Date: 03.06.00

Scale:

Rev. 1 08.11.00

JAB

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Rev. 2

JAB

**R0068E**



**RISE**

L1 = A-60 approved  
deck insulation



DIRECTIVE 96/98 EC

Marine Equipment

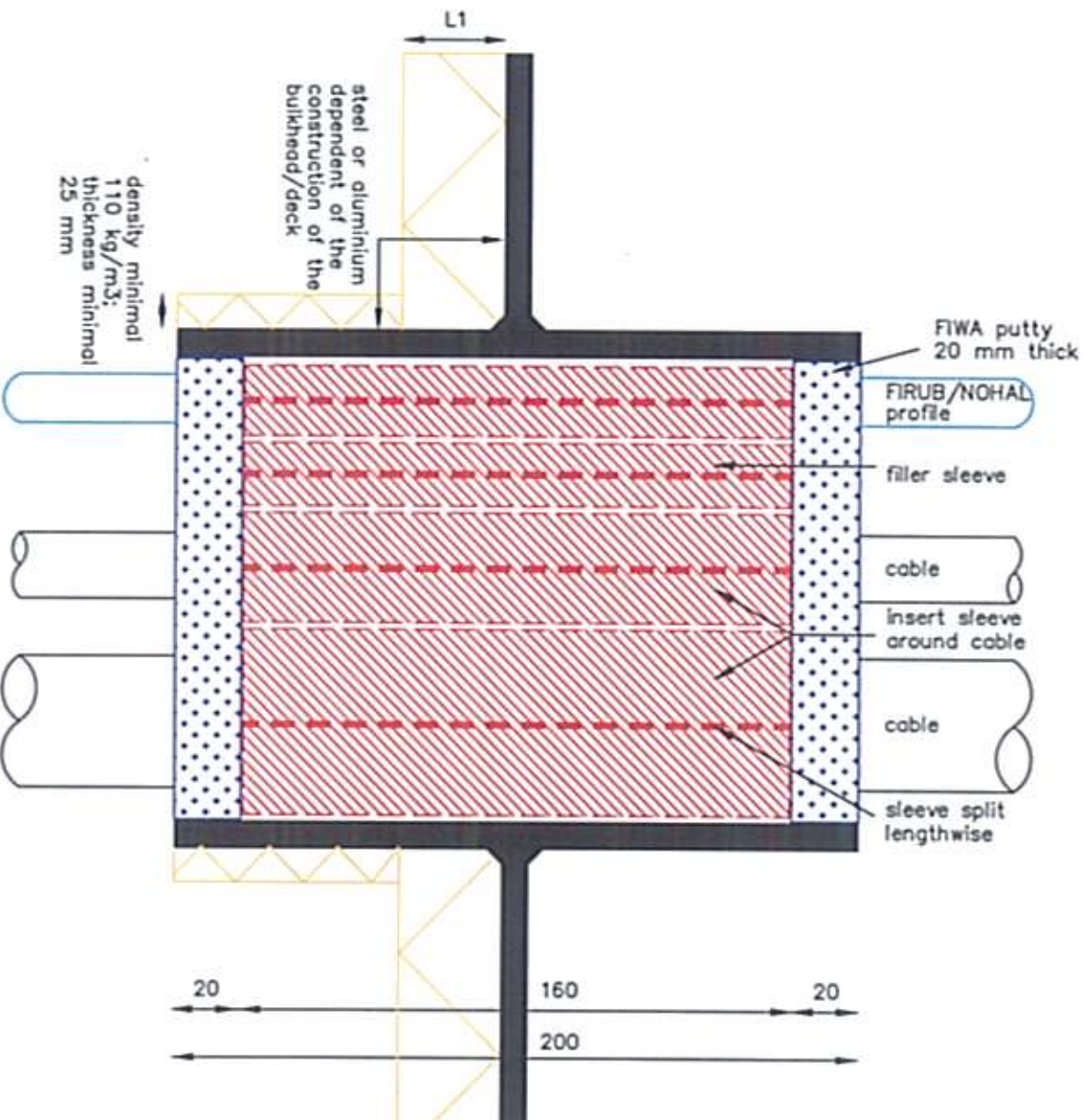
REVIEWED

21.2.01

NE 0062 - File N° A.4.4.003/41

*A156/AC Ec*

A0-A60  
penetrations for all types  
of cables sealed with  
RISE insert sleeves and  
FIWA sealing putty



size aperture 600x300 mm  
or equivalent of 1800 cm<sup>2</sup>

tested at full cable fill capacity  
according to IMO Res. A.754(18)

# A0-A60

## CABLE PENETRATION

Description: side view RISE cable penetration in steel structure

Mat.: FRR/LEHF+FIWA putty

Ref.: JAB

Date: 03.06.00

Scale:

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Rev. 1 07.11.00  
Rev. 2

JAB  
JAB

**R0069E**





**RISE**

DIRECTIVE 96/98 EC

Marine Equipment

**REVIEWED**

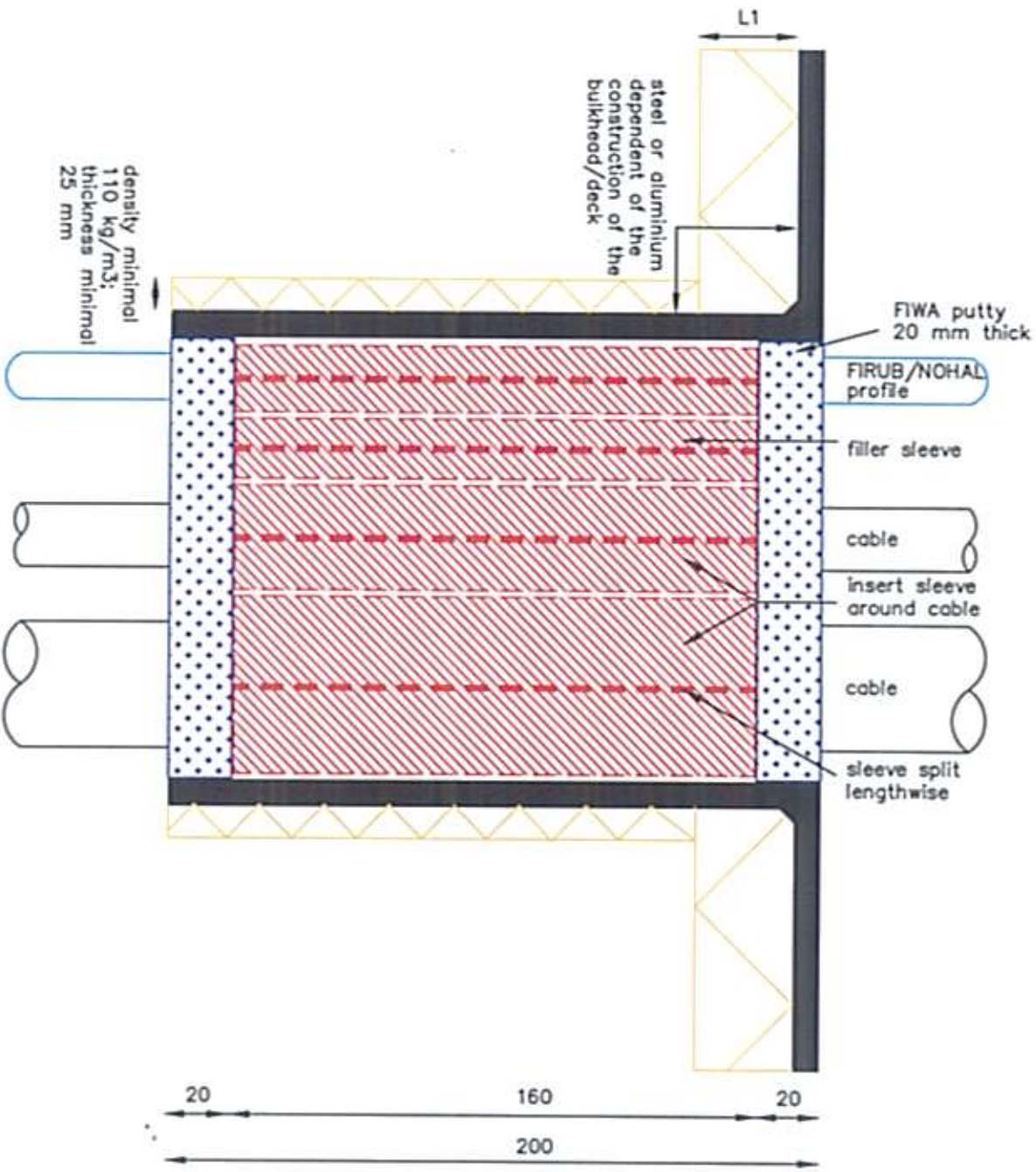
26.2.01

L1 = A-60 approved deck insulation

NB 0062 - File N° Atk: 4900/AM/

*9156/46/01*

A0-A60  
penetrations for all types  
of cables sealed with  
RISE insert sleeves and  
FIWA sealing putty



size aperture 600x300 mm  
or equivalent of 1800 cm<sup>2</sup>

tested at full cable fill capacity  
according to IMO Res. A.754(18)

**A0-A60****CABLE PENETRATION**

Description: side view RISE cable penetration in steel structure

Mat.: FRR/LEHF+FIWA putty

Ref.: JAB

Date: 03.06.00

Scale:

Rev. 1 07.11.00

JAB

Rev. 2

JAB

**R0070E**

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**RISE**



DIRECTIVE 89/38 EC  
Machinery Equipment

REVIEWED

26.2.01

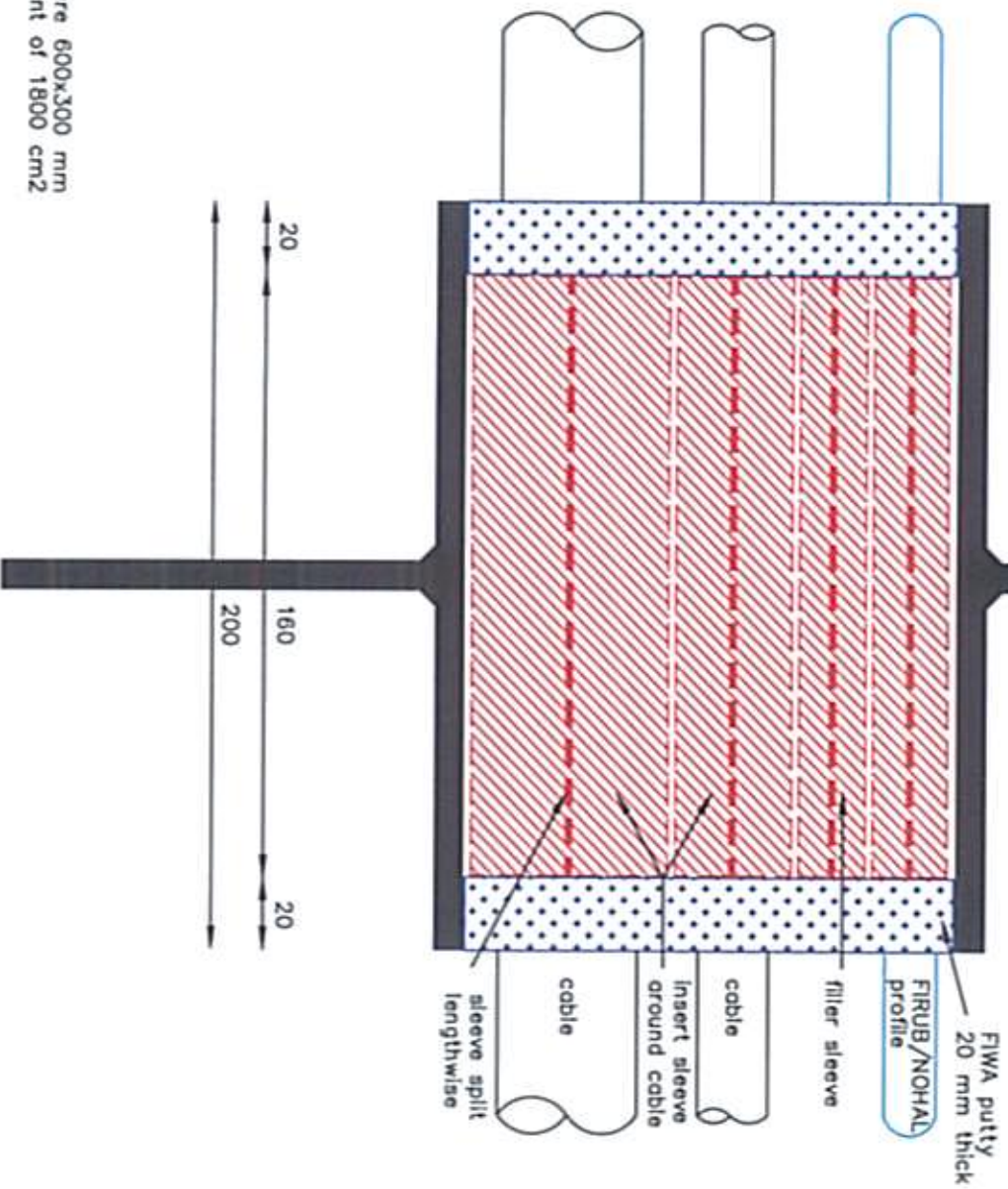
*Filio N° Ac. Scopelini  
GIS/A6/EC*

L1 - A-60 approved  
bulkhead insulation

3 0052

3 0052

A-0 class  
penetrations for all types  
of cables sealed with  
RISE insert sleeves and  
FIWA sealing putty



size aperture 600x300 mm  
or equivalent of 1800 cm<sup>2</sup>

tested at full cable fill capacity  
according to IMO Res. A.754(18)

**A-0**

**CABLE PENETRATION**



Description: side view RISE cable penetration in steel  
structure  
Mat.: FRR/LEHF+FIWA putty

Ref.: JAB

Date: 04.07.00

Scale:

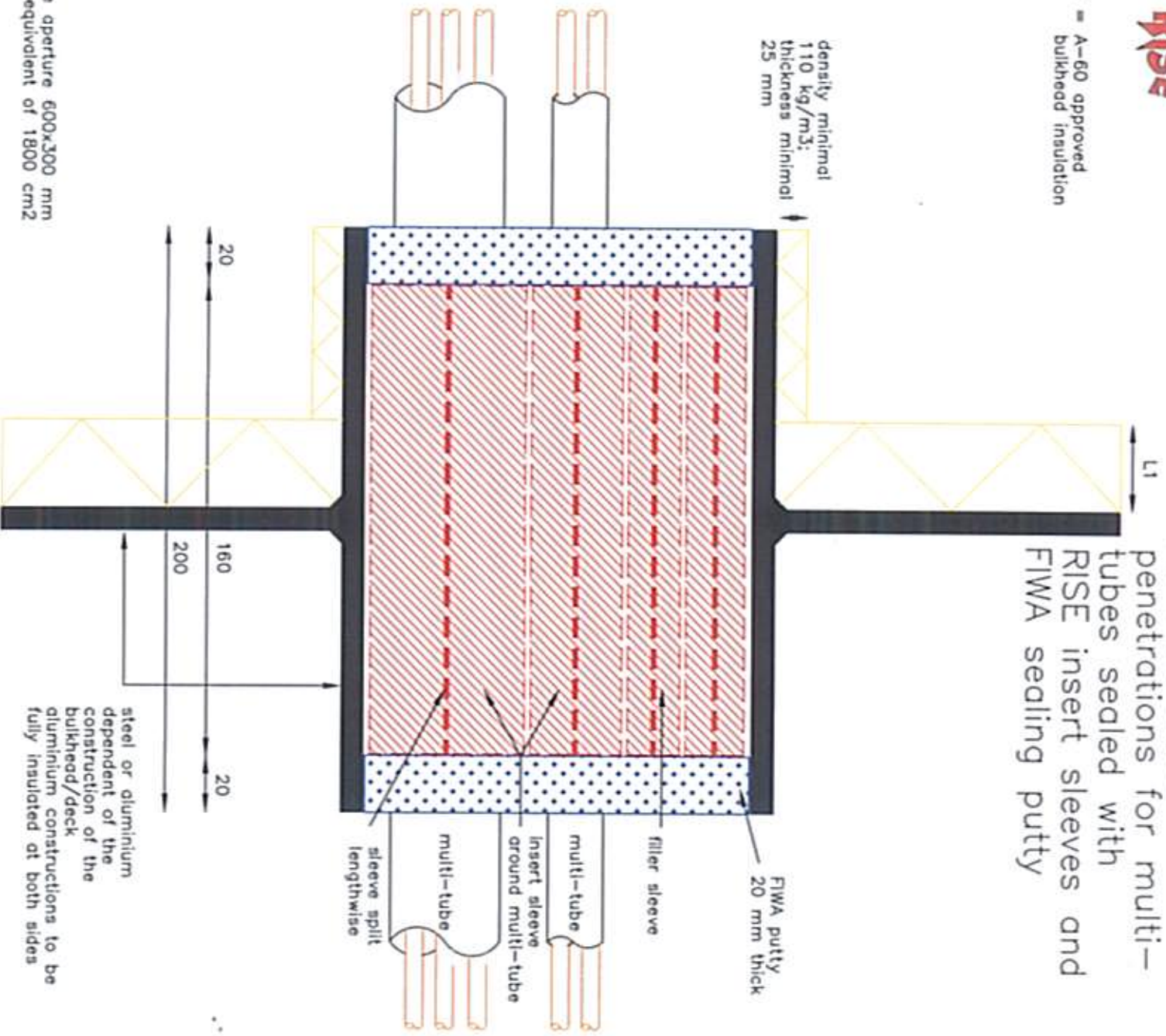
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JAB  
JAB

**R0096E**



**RISE**L1 = A-60 approved  
bulkhead insulationA0-A60 class  
penetrations for multi-  
tubes sealed with  
RISE insert sleeves and  
FIWA sealing puttysize aperture 600x300 mm  
or equivalent of 1800 cm<sup>2</sup>tested at full cable fill capacity  
according to IMO Res. A.754(18)**A0-A60****MULTI-TUBE PENETRATION**

Description: side view RISE multi-tube penetration

Mat.: FRR/LEHF+FIWA putty

Ref.: JAB

Date: 03.07.01

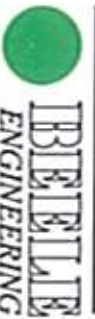
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Rev. 1

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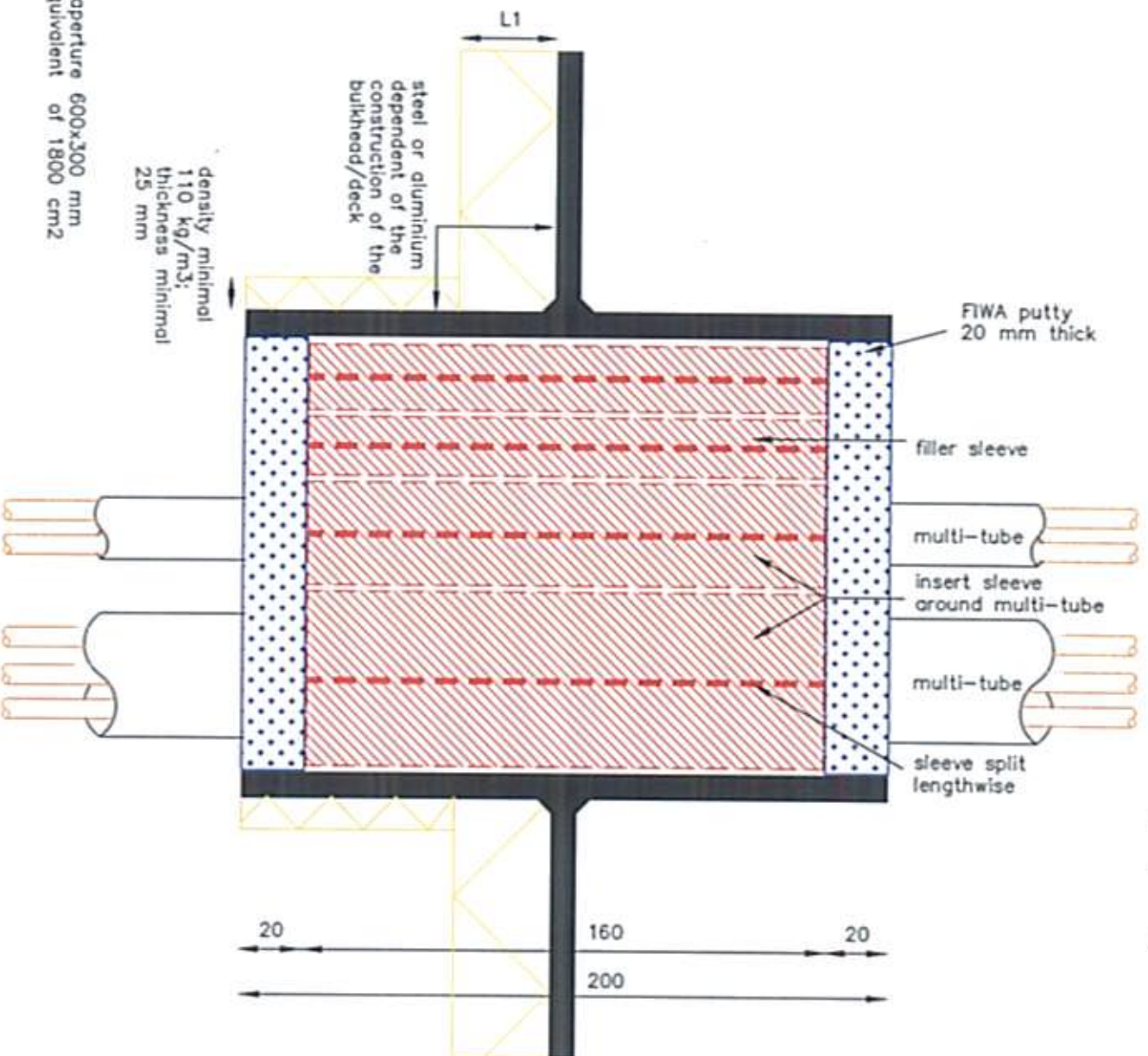
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**RISE**L1 = A-60 approved  
deck insulation

A0-A60  
penetrations for multi-  
tubes sealed with  
RISE insert sleeves and  
FIWA sealing putty

**A0-A60**

MULTI-TUBE PENETRATION

Description: side view RISE multi-tube penetration

Mat.: FRR/LEHF+FIWA putty

Ref.: JAB

Date: 03.07.01

Scale:

Rev. 1

JAB

Rev. 2

JAB

**R0116E**

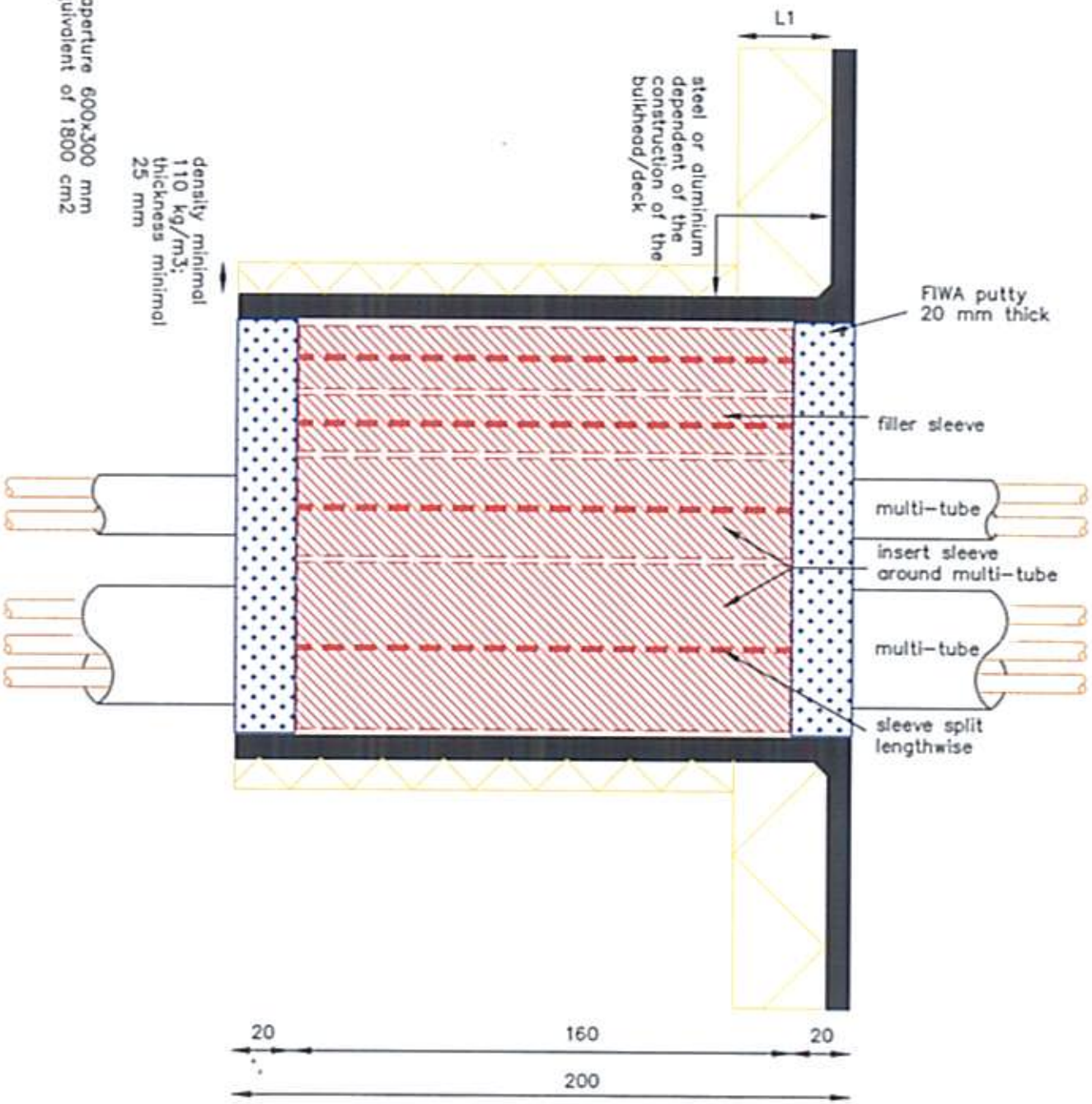
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L1 = A-60 approved deck insulation

A0-A60 penetrations for multi-tubes sealed with RISE insert sleeves and FIWA sealing putty



# A0-A60

## MULTI-TUBE PENETRATION

Description: side view RISE multi-tube penetration

Mat.: FRR/LEHF+FIWA putty

Ref.: JAB

Date: 03.07.01

Scale:

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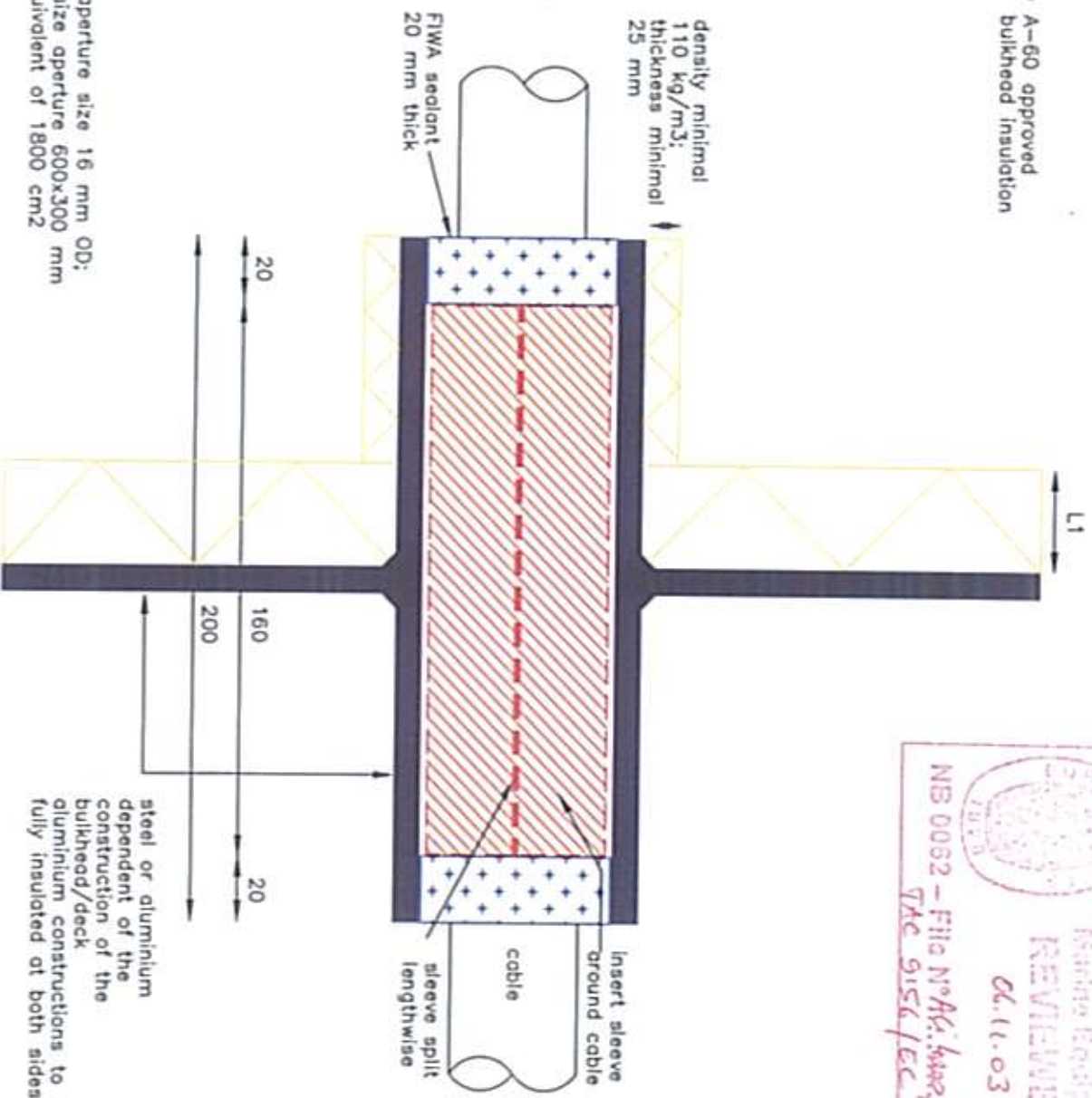
# R0117E





A0-A60 class  
penetrations for all types  
of cables from 5-85 mm

L1 = A-60 approved  
bulkhead insulation



steel or aluminium  
dependent of the  
construction of the  
bulkhead/deck  
aluminium constructions to be  
fully insulated at both sides

tested according to IMO Res. A.754(18)

## A0-A60

### CABLE PENETRATION

Description: side view RISE cable penetration

Mat.: FRR/LEHF+FIWA sealant

Ref.: JAB



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Date:	22.09.02	Scale:	JAB
Rev. 1			JAB
Rev. 2			JAB

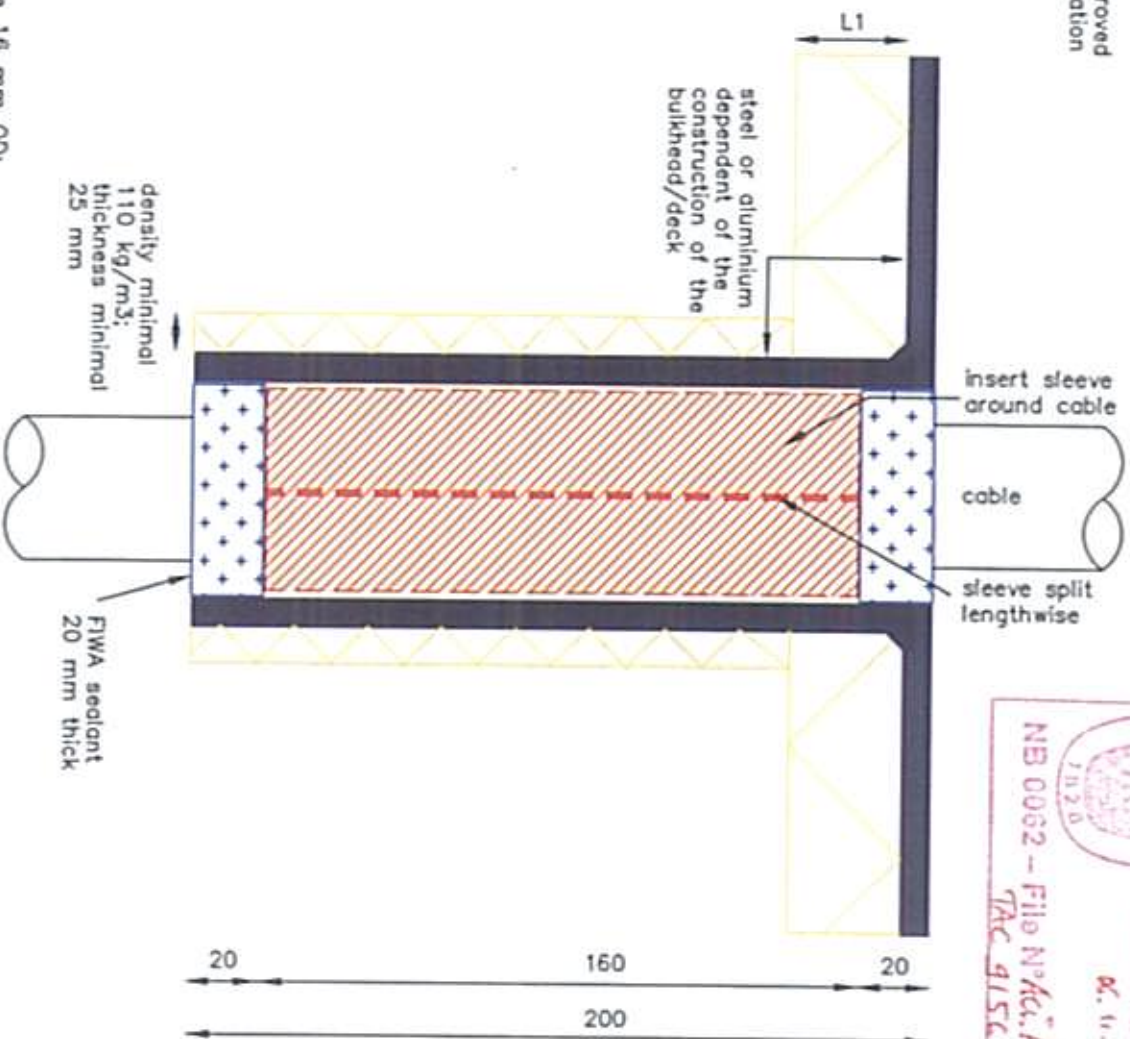
# R0133E



**RISE**

A0-A60  
penetrations for all types  
of cables 5-85 mm

L1 = A-60 approved  
deck insulation



min. size aperture 16 mm OD;  
max. size aperture 600x300 mm  
or equivalent of 1800 cm<sup>2</sup>

tested according to IMO Res. A.754(18)

**A0-A60**

**CABLE PENETRATION**

Description: side view RISE cable penetration

Mat.: FRR/LEHF+FIWA sealant

Ref.: JAB

Date: 22.09.02 Scale:

Rev. 1 JAB

Rev. 2 JAB

**R0134E**



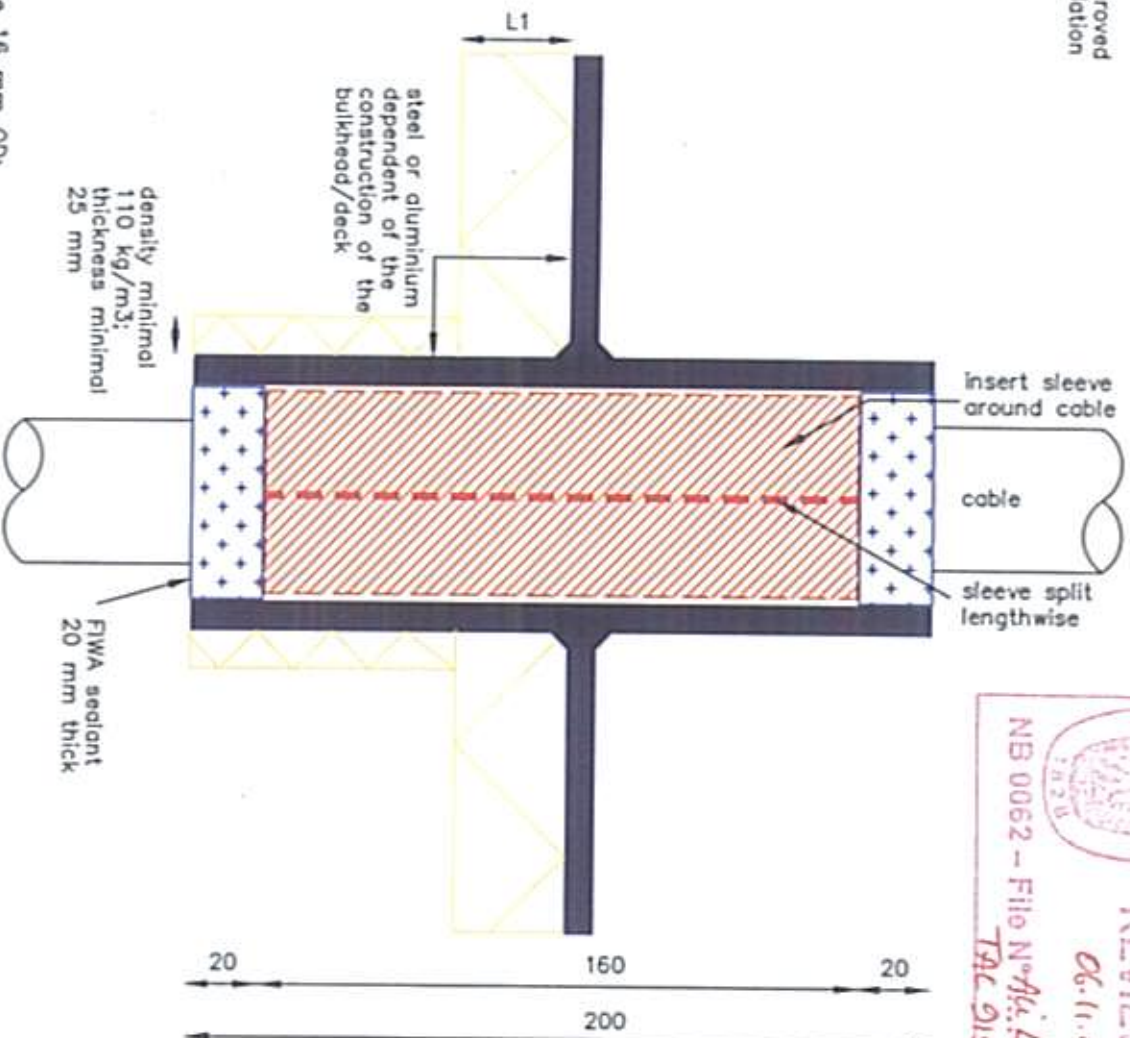
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**RISE**

A0-A60  
penetrations for all types  
of cables 5-85 mm

L1 = A-60 approved  
deck insulation



min. size aperture 16 mm OD;  
max. size aperture 600x300 mm  
or equivalent of 1800 cm<sup>2</sup>

tested according to IMO Res. A.754(18)



# A0-A60

## CABLE PENETRATION

Description: side view RISE cable penetration

Mat.: FRR/LEHF+FIWA sealant

Ref.: JAB

Date: 22.09.02 Scale:

Rev. 1  
Rev. 2

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JAB

**R0135E**



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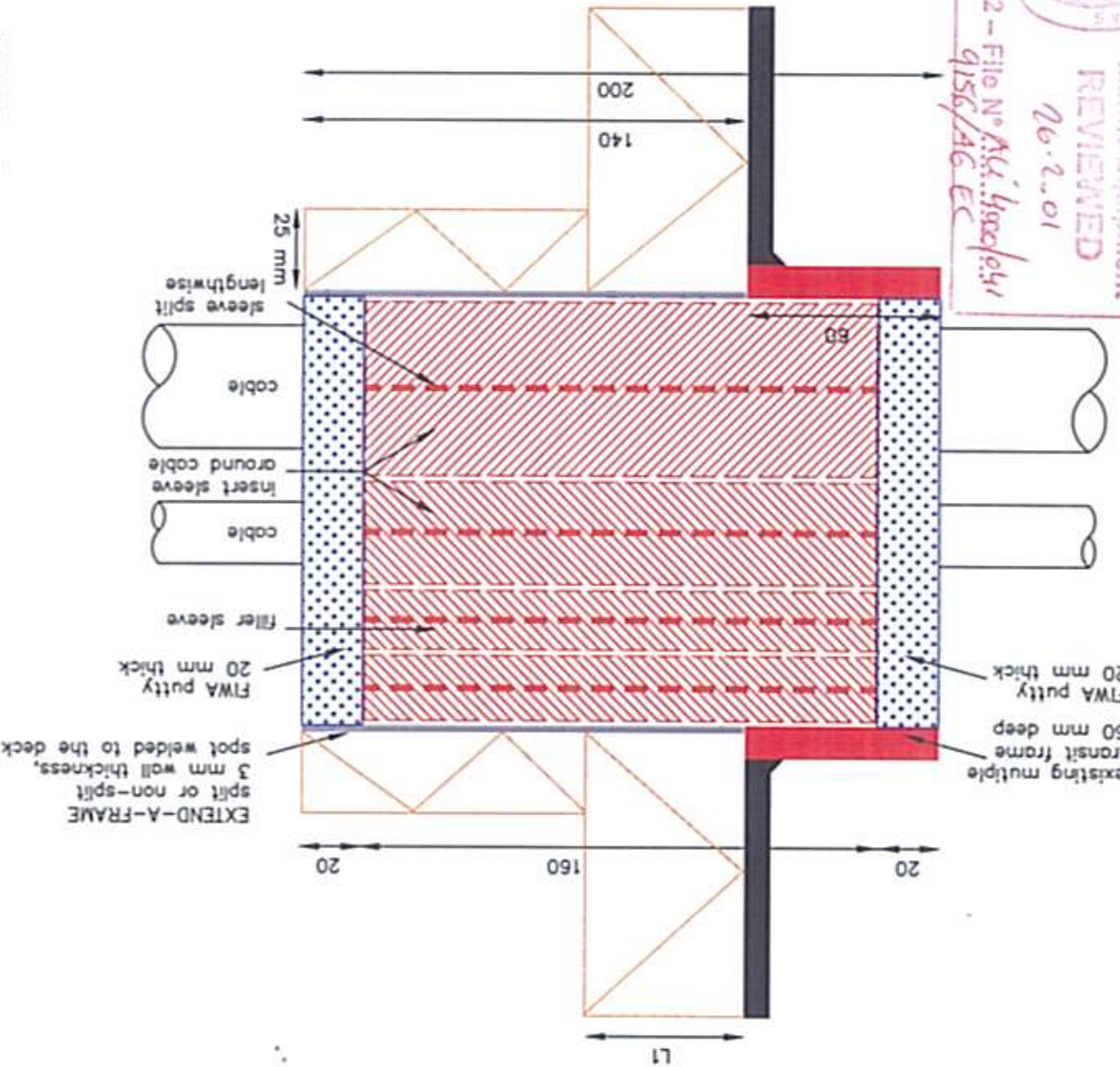


**RISE**

L1 = A-60 approved  
deck insulation



A0-A60 class  
penetrations for all types  
of cables sealed with  
RISE insert sleeves and  
FIWA sealing putty



size aperture 530x360 cm2  
or equivalent of 1908 cm2  
tested at full cable fill capacity  
according to IMO Res. A.754(18)

# A0-A60

## CABLE PENETRATION

Description: side view RISE OVERALL EXTENDED multi-cable transit

Mat.: FRR/LEHF+FIWA putty



Ref.: JAB

Date: 16.06.99 Scale:

Rev. 1 07.11.00 JAB

Rev. 2 20.01.01 JAB

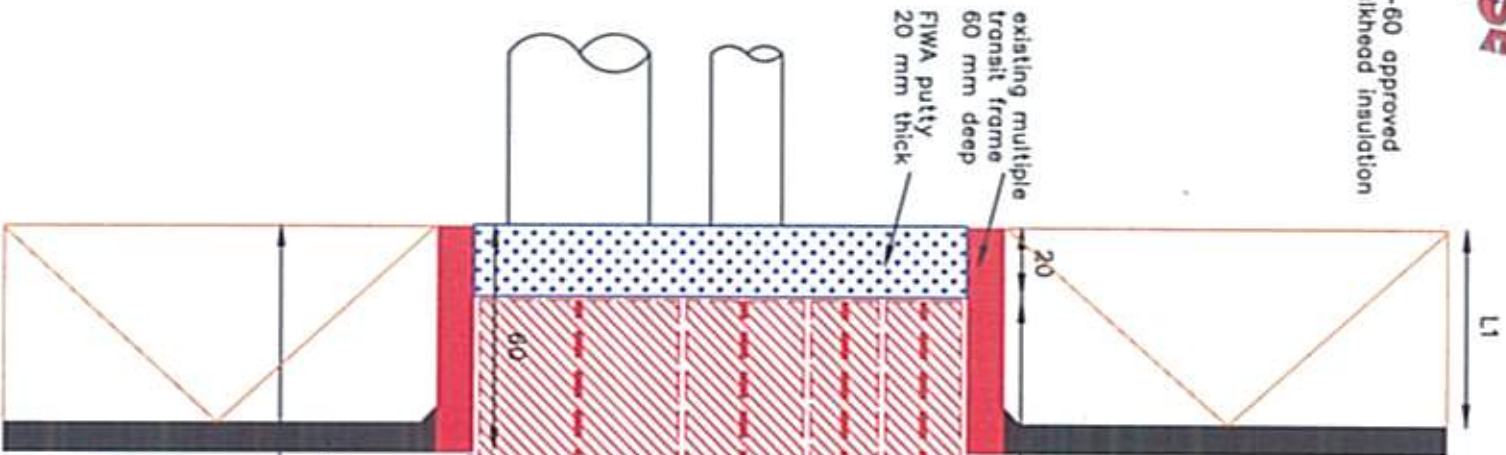
**R0066E**

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**RISE**

L1 = A-60 approved  
bulkhead insulation



A0-A60 class  
penetrations for all types  
of cables sealed with  
RISE insert sleeves and  
FIWA sealing putty



EXTEND-A-FRAME  
split or non-split  
3 mm wall thickness,  
spot welded to  
the bulkhead

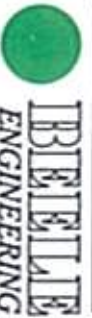
FIWA putty  
20 mm thick  
filler sleeve  
cable  
insert sleeve  
around cable  
cable  
sleeve split  
lengthwise

140  
200

size aperture 530x360 cm<sup>2</sup>  
or equivalent of 1908 cm<sup>2</sup>  
tested at full cable fill capacity  
according to IMO Res. A.754(18)

## A0-A60

CABLE PENETRATION



Description: side view RISE OVERALL EXTENDED multi-cable  
transit

Mat.: FRR/LEHF+FIWA putty

Ref.: JAB

Date: 16.06.99

Scale:

Rev. 1 07.11.00

JAB

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Rev. 2 20.01.01

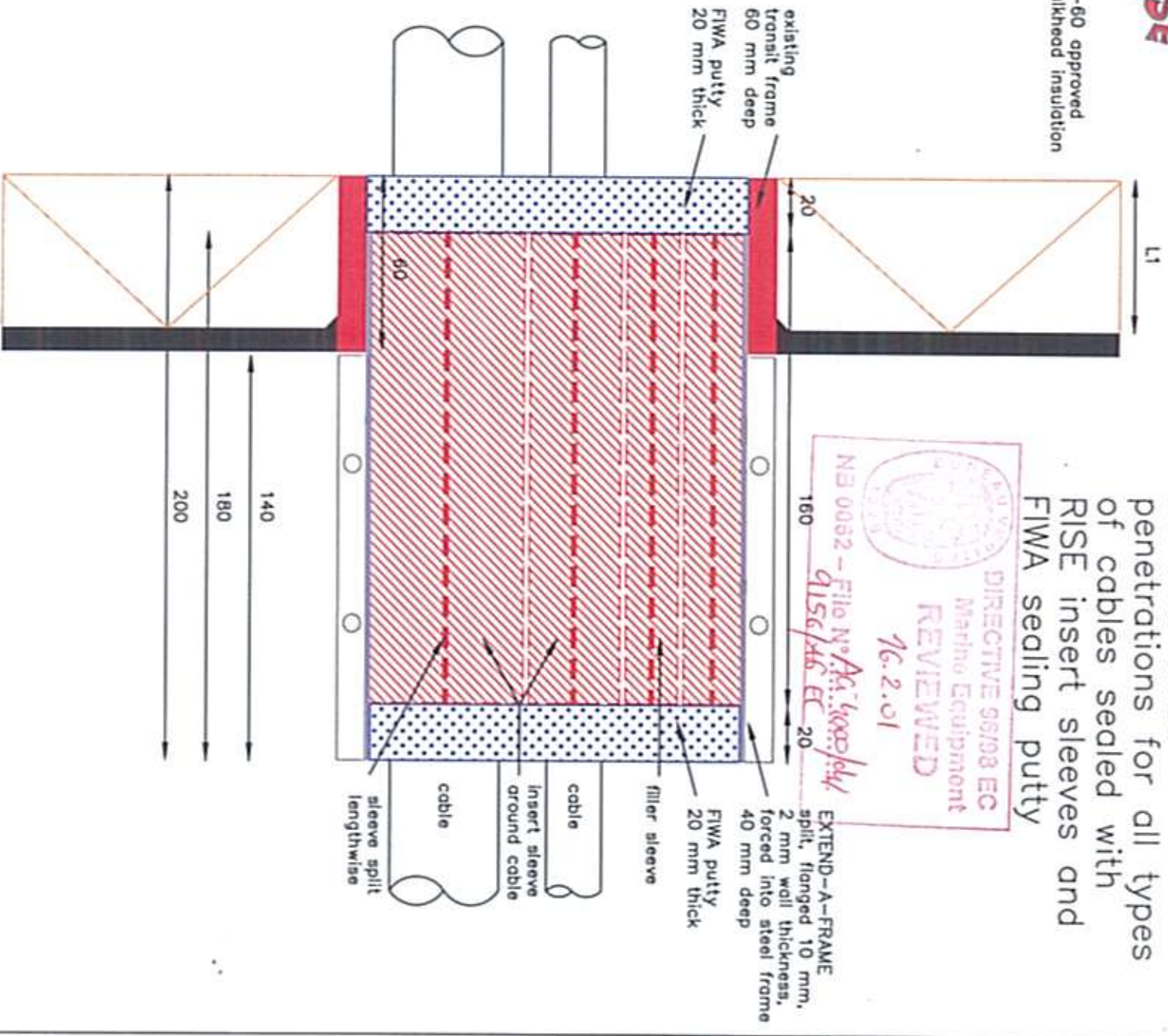
JAB

**R0067E**



# RISE

L1 = A-60 approved  
bulkhead insulation



A0-A60 class  
penetrations for all types  
of cables sealed with  
RISE insert sleeves and  
FIWA sealing putty

size of each individual aperture  
120x220 mm or equivalent of 264 cm<sup>2</sup>  
tested at full cable fill capacity  
according to IMO Res. A.754(18)

## A0-A60 CABLE PENETRATION



Description: side view RISE SINGLE EXTENDED multi-cable  
transit

Mat.: FRR/LEHF+FIWA putty

Ref.: JAB

Date: 11.09.00

Scale:

Rev. 1 20.01.01

JAB

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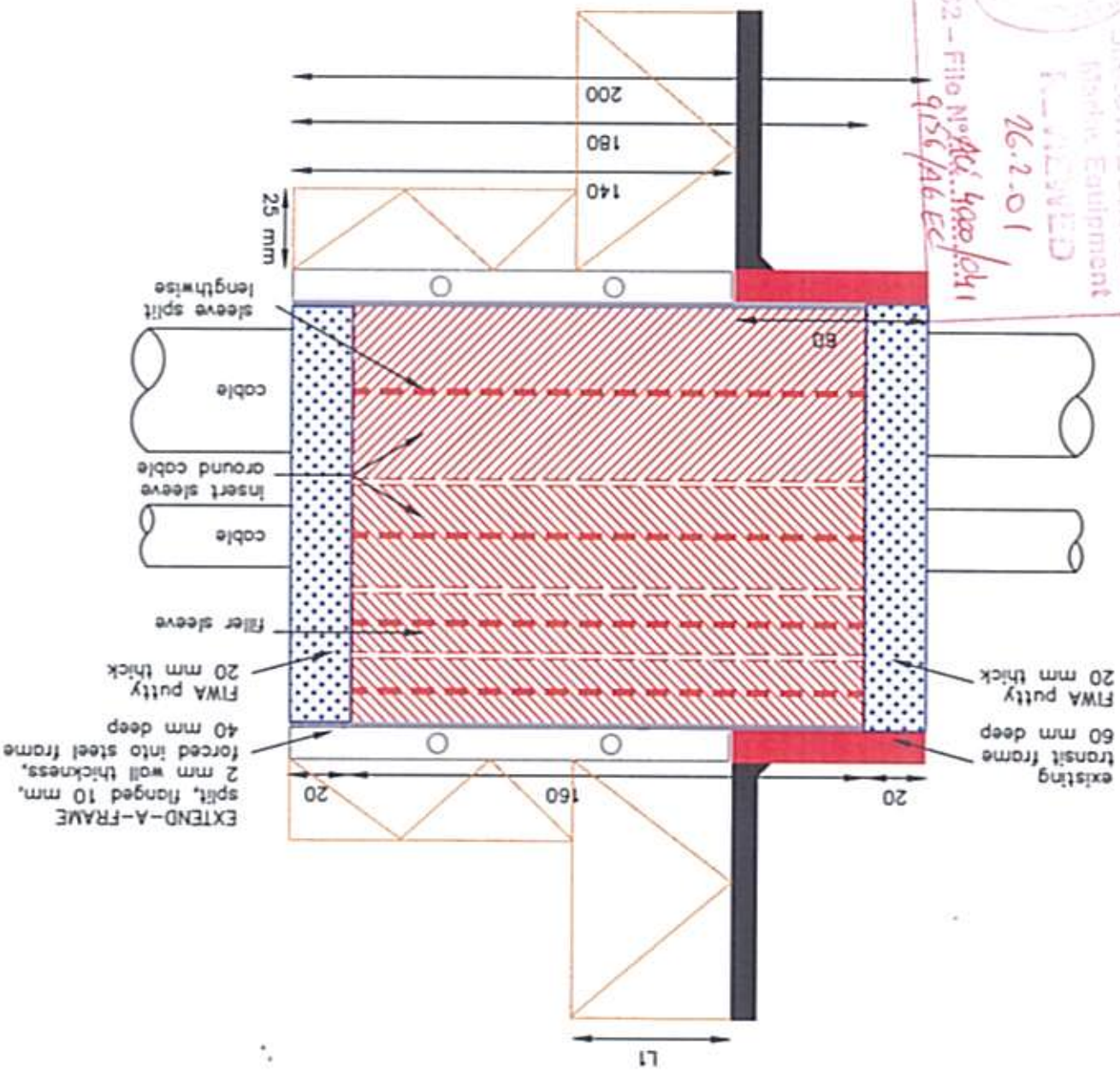
# R0101E



**RISE**

L1 = A-60 approved  
deck insulation

A0-A60 class  
penetrations for all types  
of cables sealed with  
RISE insert sleeves and  
FIWA sealing putty



size of each individual aperture  
120x220 mm or equivalent of 264 cm<sup>2</sup>  
tested at full cable fill capacity  
according to IMO Res. A.754(18)

# A0-A60

## CABLE PENETRATION

Description: side view RISE SINGLE EXTENDED multi-cable transit

Mat.: FRR/LEHF+FIWA putty



Ref.: JAB

Date: 11.09.00 Scale:

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Rev. 1 20.01.01 JAB  
Rev. 2 JAB

**R0102E**