MARINE DIVISION
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Certificate N°:
10035/A6 EC
File Number : ACI 4010/020/006
MED item number : **A.1/3.26(b)**
USCG item number : **164.138**
This Certificate is not valid where presented without the full attached Schedule,composed of 10 sections

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 : PIPE, DUCT,TRUNK, etc PENETRATIONS

"RISE" single & multi pipes penetrations for steel, stainless steel, copper and GRP pipes

MANUFACTURED BY:

BEELE ENGINEERING
Aalten - 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: 03/05/2005

Local Office : BUREAU VERITAS ROTTERDAM

At Paris la Défense, on : 01/07/2004

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

The Manufacturer is allowed 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) is/are to be re-approved prior to it/they 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, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

Issued under the authority of the French Maritime Administration.

BUREAU VERITAS
MARINE DIVISION

File Number : ACI 4010/020/006

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

"RISE" single & multi pipes penetrations for steel, stainless steel, copper and GRP pipes

Pipes (at both ends of the conduit) are wrapped around with layers of FRR/EHF rubber sheets over 80 mm (thickness and number of layers depending on the pipe diameter). The remaining space is filled with sleeves of FRR/LEHF (fire resistant rubber/low grade of expansion/halogen-free) rubber 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 pipe diameter: 273 mm (outside diameter);
Minimum conduit length: 250 mm.

For steel pipes only :
Maximum pipe diameter: 408 mm (outside diameter);
Minimum conduit length: 200 mm.

2. DESIGN DRAWINGS and/or SPECIFICATIONS

2.1-To be installed according to the Manufacturer's drawings N° R0071E, R0072E, R0073E, R0074E, R0075E, R0124E, R0125E, R0140E, R0141E, R0142E.
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

3.1 :

WARRES 104226	horizontal test issued on 13.10.1998
WARRES 104228	vertical test issued on 19.10.1998

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

3.2- Steel pipes outer diameter 408 mm / conduit 200 mm : in-house test N° 0303-010, dated 21.03.03, from the Manufacturer (tests witnessed by ABS and DNV).

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^3; 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 pipe penetrations in A-0/A-60 class steel and aluminium (penetration coaming 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-d010 (dated 09.1998), N° 9909-D012 (dated 09.1999), N° 9909-D013 (dated 09.1999), N° 9909-D014 (dated 09.1999), N° 003-D022, N° 003-D024 and N° 003-D026 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).

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 ⊛ conformity 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

- ⊛ conformity 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.

10. 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° 10035/A5 EC issued on2004-02-16 by the Society.

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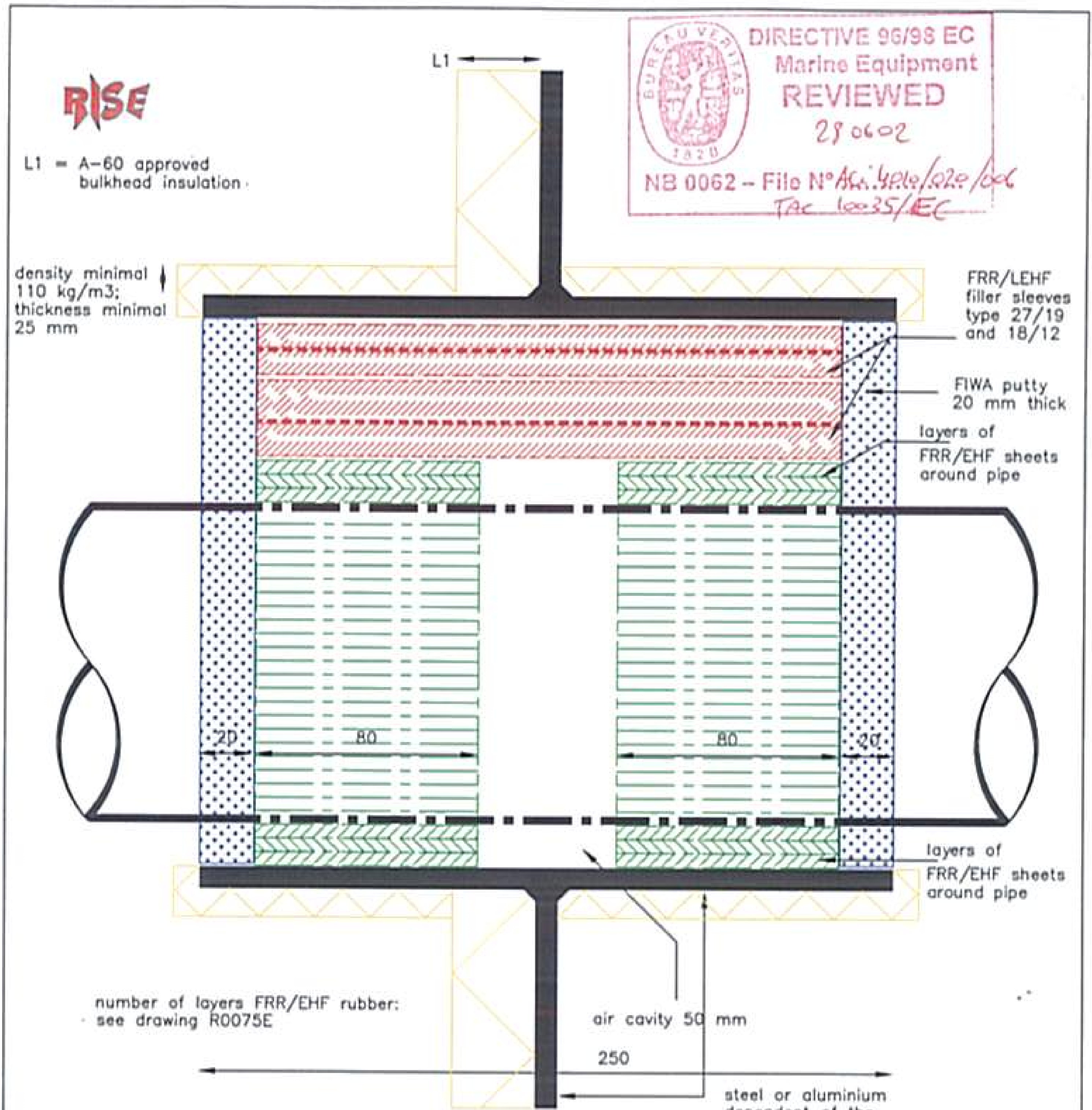
BUREAU VERITAS ROTTERDAM



insulation of service pipes on both sides of the penetration:

	A60	A0
steel & ss pipes:		
up to 3"	none	none
3" up to 6"	100 mm	none
above 6"	200 mm	none
copper pipes:		
up to 6"	200 mm	none
above 6"	500 mm	none
GRPpipes:		
up to 12"	100 mm	none
above 12"	500 mm	none

A0-A60

PIPE PENETRATION

BEELE ENGINEERING

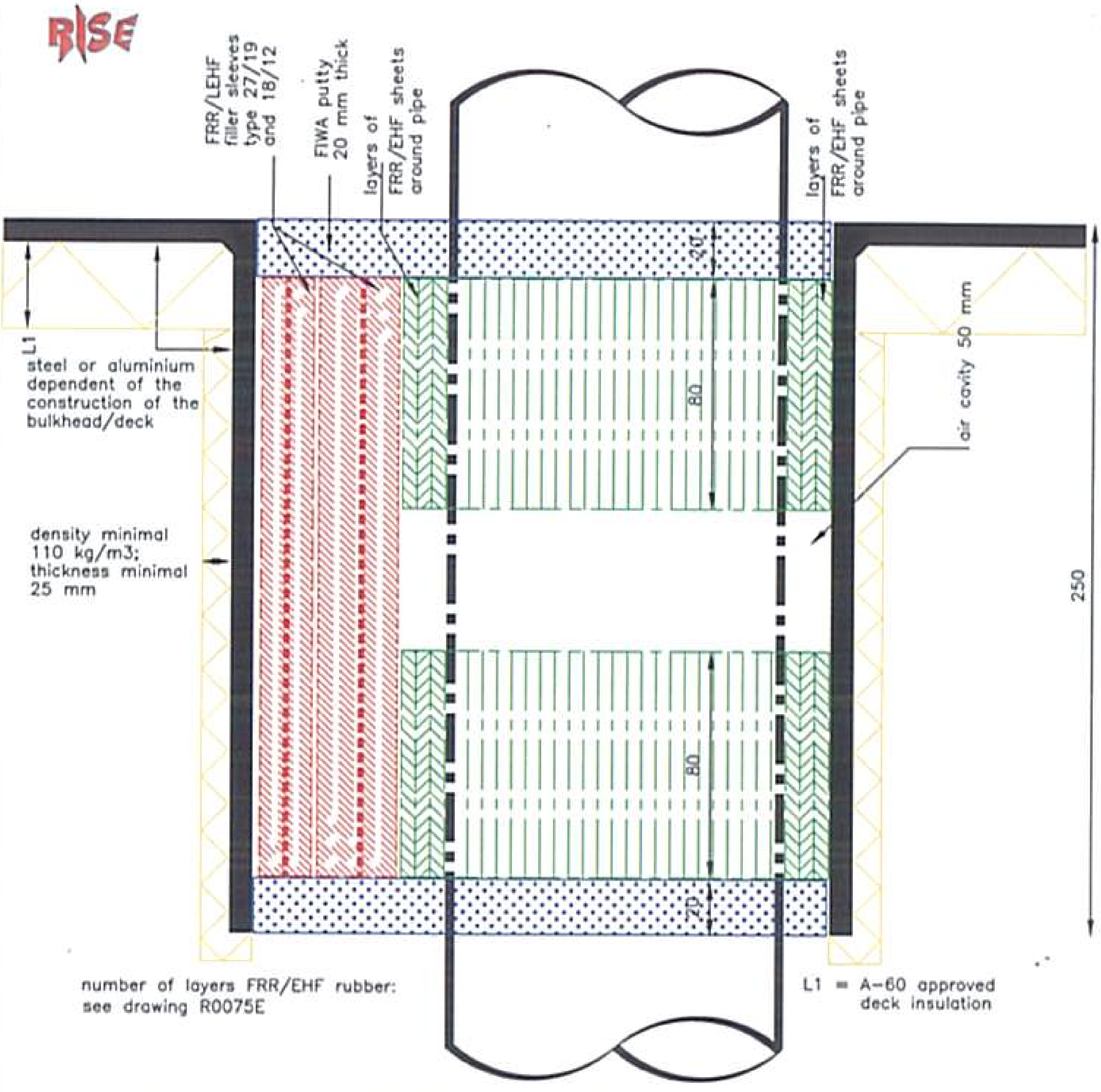
Description: side view RISE pipe penetration in steel structure

Mat.: FRR/LEHF+FIWA putty

Ref.: JAB | Date: 03.06.00 | Scale:

Rev. 1		JAB
Rev. 2		JAB

R007IE



insulation of service pipes on both sides of the penetration:

	A60	A0
steel & ss pipes:		
up to 3"	none	none
3" up to 6"	100 mm	none
above 6"	200 mm	none
copper pipes:		
up to 6"	200 mm	none
above 6"	500 mm	none
GRPpipes:		
up to 12"	100 mm	none
above 12"	500 mm	none

DIRECTIVE 96/98 EC
Marine Equipment
REVIEWED
280602
NB 0062 – File N° Ai 4010/010/006
TAC 10035/EC

A0-A60
PIPE PENETRATION

BEELE ENGINEERING	Description: side view RISE pipe penetration in steel structure				
	Mat.: FRR/LEHF+FIWA putty				
	Ref.: JAB	Date:	03.06.00	Scale:	
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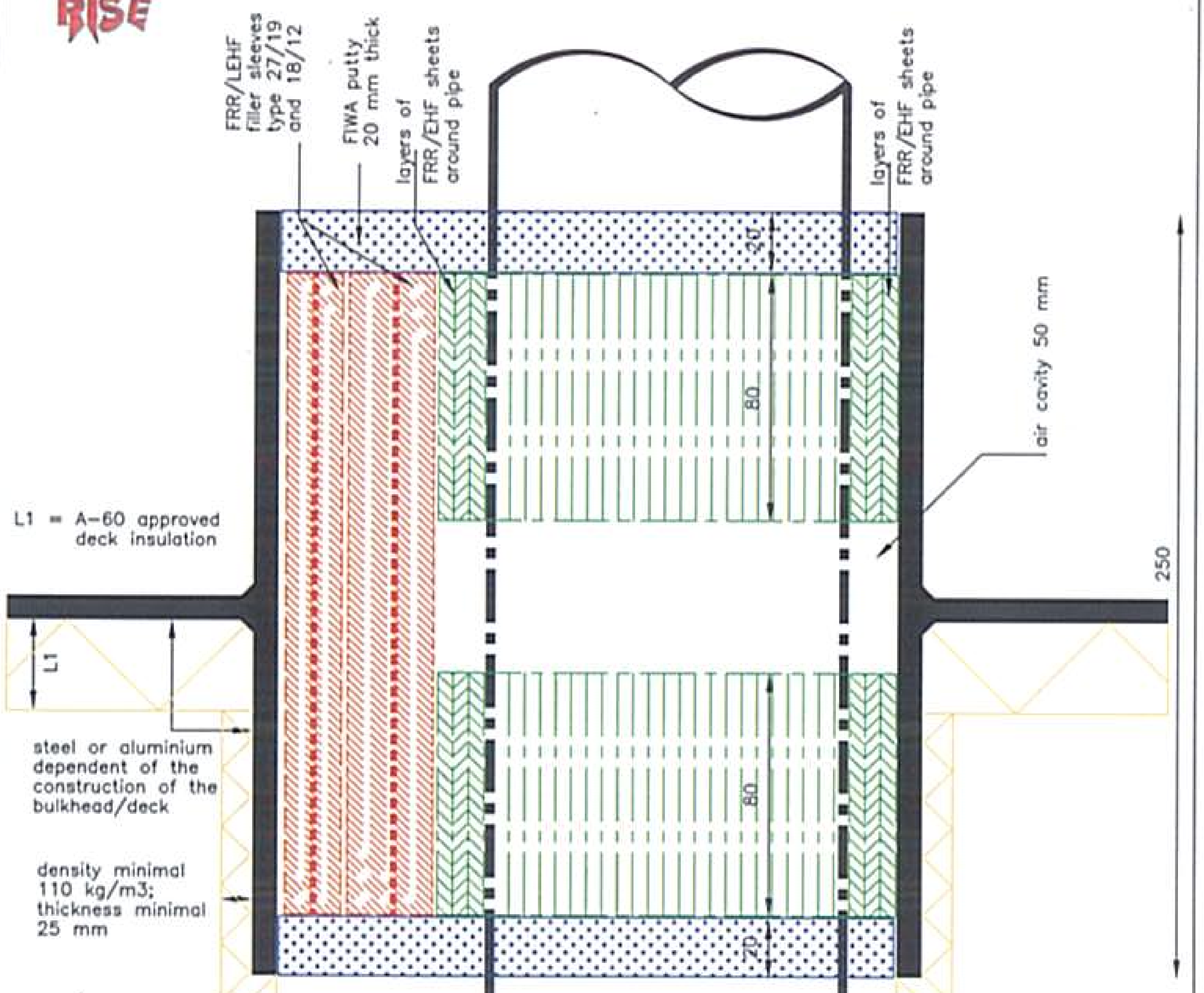
		Rev. 2		JAB	



number of layers FRR/EHF rubber: see drawing R0075E

insulation of service pipes on both sides of the penetration:

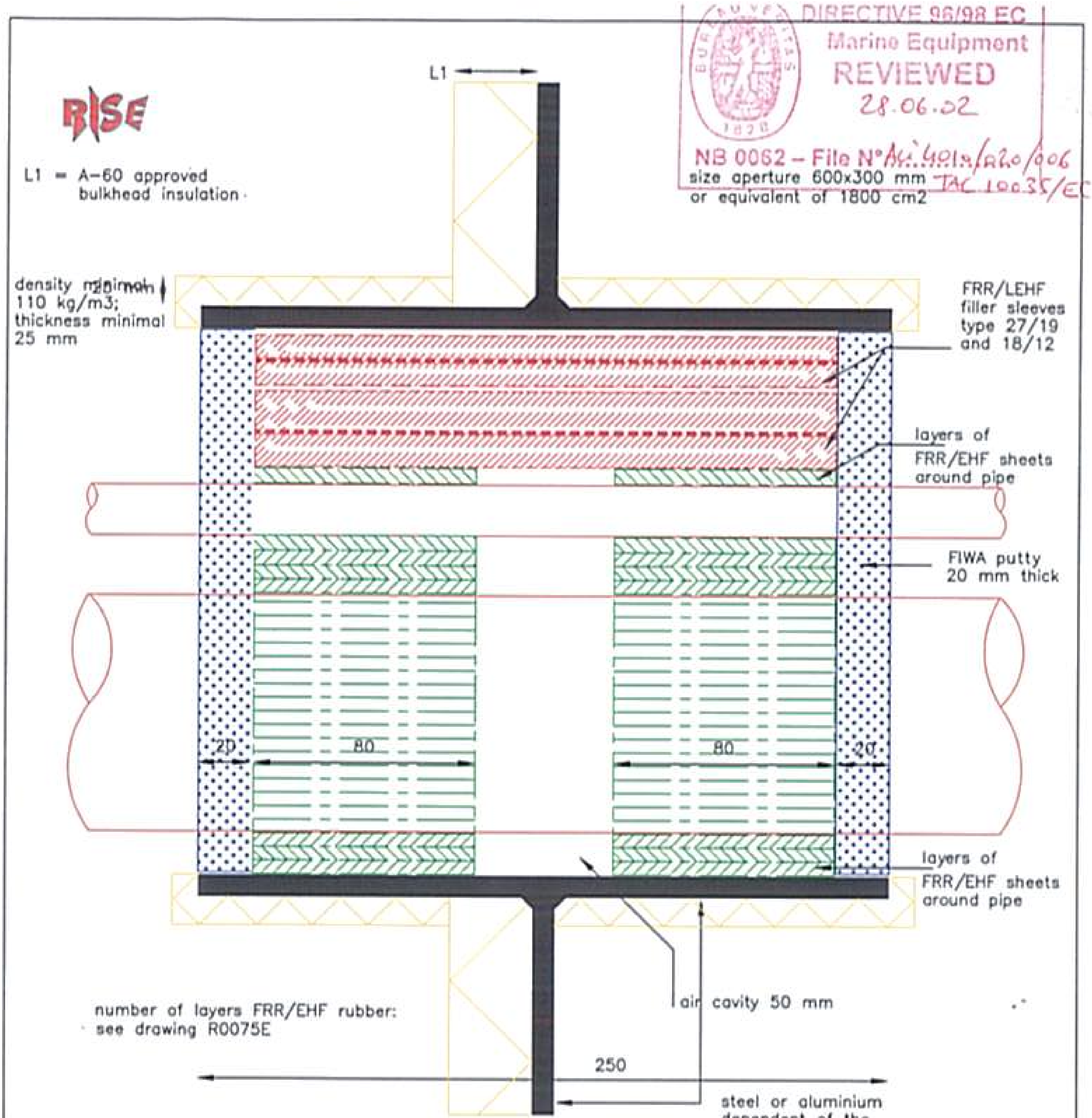
	A60	A0
steel & ss pipes:		
up to 3"	none	none
3" up to 6"	100 mm	none
above 6"	200 mm	none
copper pipes:		
up to 6"	200 mm	none
above 6"	500 mm	none
GRPpipes:		
up to 12"	100 mm	none
above 12"	500 mm	none

DIRECTIVE 96/98 EC
Marine Equipment
REVIEWED
28 06 02
NB 0062 – File N° Ai/401/0/02/.../...
TAC 10035/EC

A0-A60
PIPE PENETRATION

BEELE ENGINEERING

Description: side view RISE pipe penetration in steel structure			
Mat.: FRR/LEHF+FIWA putty			
Ref.: JAB	Date:	16.05.02	Scale:
Rev. 1		JAB	R0124E
Rev. 2		JAB	



insulation of service pipes on both sides of the penetration:

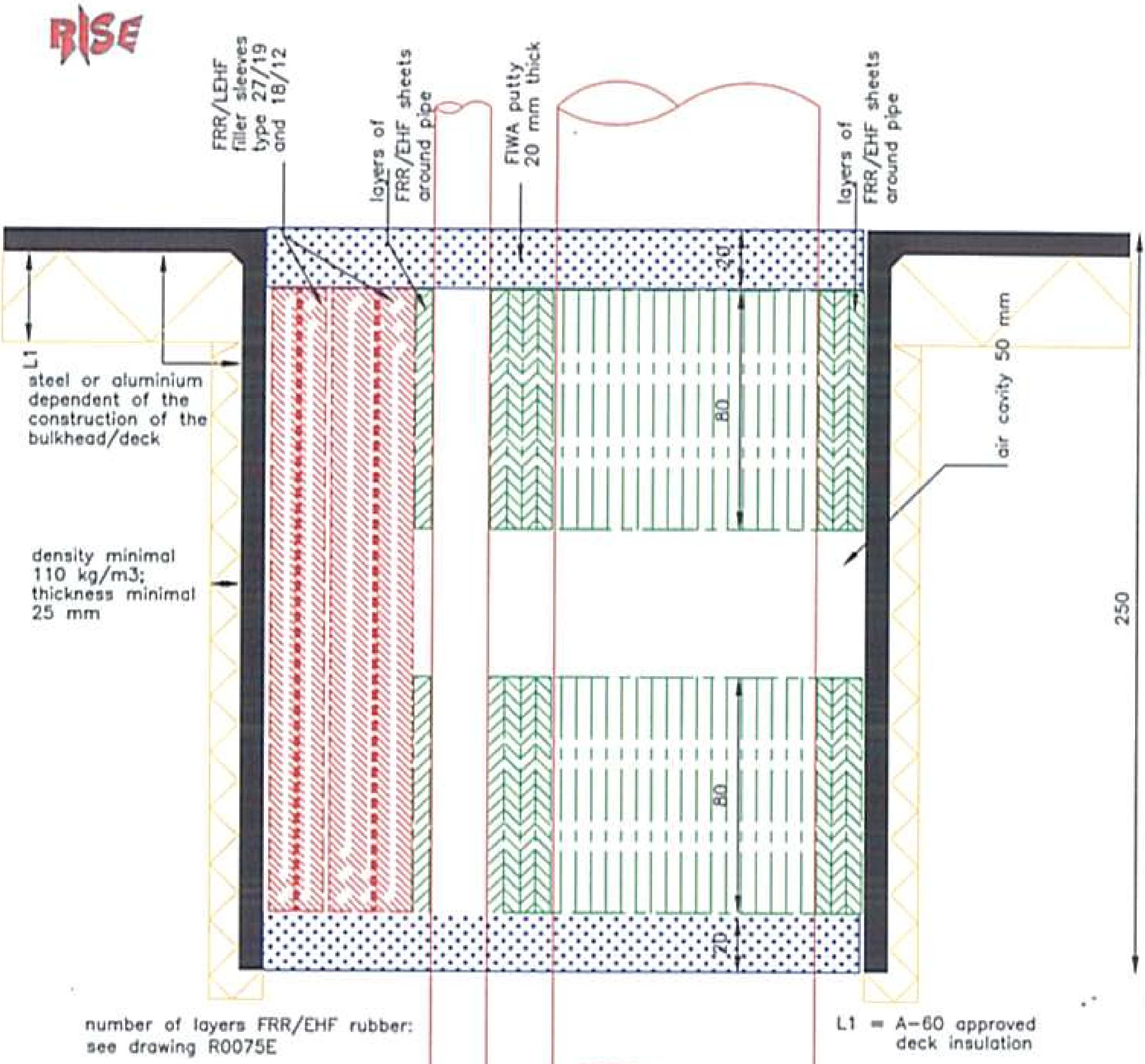
	A60	A0
steel & ss pipes:		
up to 3"	none	none
3" up to 6"	100 mm	none
above 6"	200 mm	none
copper pipes:		
up to 6"	200 mm	none
above 6"	500 mm	none
GRPpipes:		
up to 12"	100 mm	none
above 12"	500 mm	none

A0-A60

MULTI-PIPE PENETRATION

BEELE ENGINEERING

Description: side view RISE multi-pipe penetration in steel structure				
Mat.: FRR/LEHF+FIWA putty				
Ref.: JAB	Date:	03.06.00	Scale:	
	Rev. 1		JAB	R0073E
	Rev. 2		JAB	



insulation of service pipes on both sides of the penetration:

	A60	A0
steel & ss pipes:		
up to 3"	none	none
3" up to 6"	100 mm	none
above 6"	200 mm	none
copper pipes:		
up to 6"	200 mm	none
above 6"	500 mm	none
GRPpipes:		
up to 12"	100 mm	none
above 12"	500 mm	none

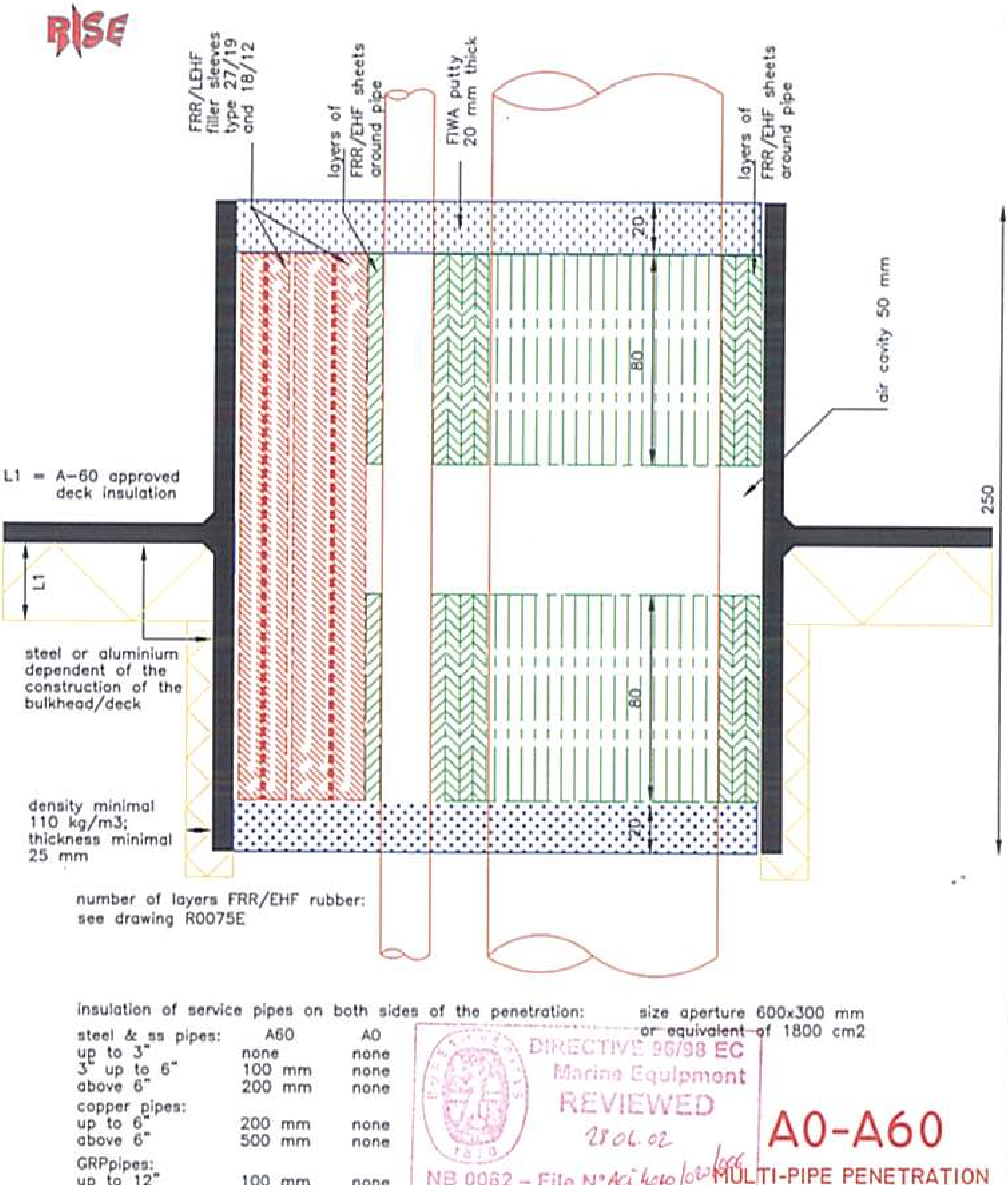
size aperture 600x300 mm or equivalent of 1800 cm2

DIRECTIVE 96/98 EC
Marine Equipment
REVIEWED
28 06 02
NB 0062 – File N° 96.4015.020.(?)
TAC 10035/EC

A0-A60
MULTI-PIPE PENETRATION

BEELE ENGINEERING

Description: side view RISE multi-pipe penetration in steel structure				
Mat.: FRR/LEHF+FIWA putty				
Ref.: JAB	Date:	03.06.00	Scale:	
	Rev. 1		JAB	R0074E
	Rev. 2		JAB	



insulation of service pipes on both sides of the penetration:

size aperture 600x300 mm or equivalent of 1800 cm2

	A60	A0
steel & ss pipes:		
up to 3"	none	none
3" up to 6"	100 mm	none
above 6"	200 mm	none
copper pipes:		
up to 6"	200 mm	none
above 6"	500 mm	none
GRPpipes:		
up to 12"	100 mm	none
above 12"	500 mm	none

DIRECTIVE 96/98 EC
Marine Equipment
REVIEWED
28.06.02
NB 0062 – File N° ACI 4010/02-1006
TAC 10035/EC

A0-A60
MULTI-PIPE PENETRATION

BEELE ENGINEERING

Description: side view RISE multi-pipe penetration in steel structure			
Mat.: FRR/LEHF+FIWA putty			
Ref.: JAB	Date:	16.05.02	Scale:
Rev. 1		JAB	R0125E
Rev. 2		JAB	

RISE

DIRECTIVE 96/98 EC
Marine Equipment
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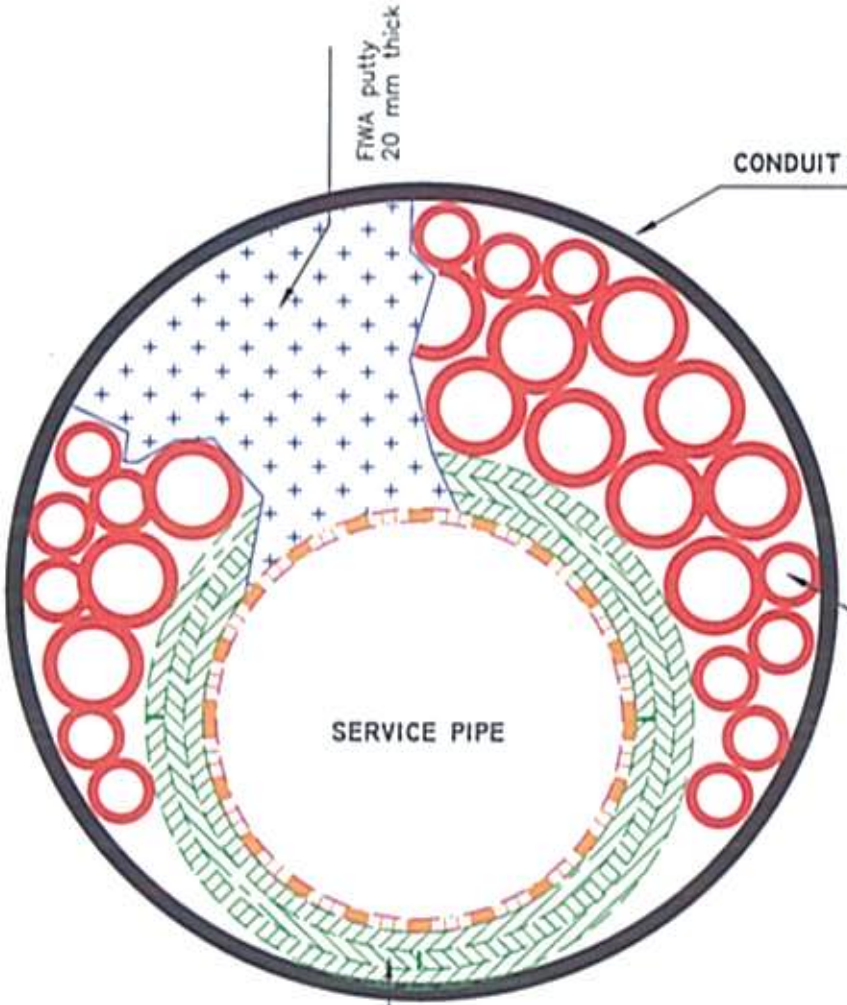
28 06 02
NB 0062 – File N° AG.4010/020/00C
TAC 10035/EC

NB: for length of sleeve and insulation
see drawing R0071E, R0072E, R0073E and R0074E

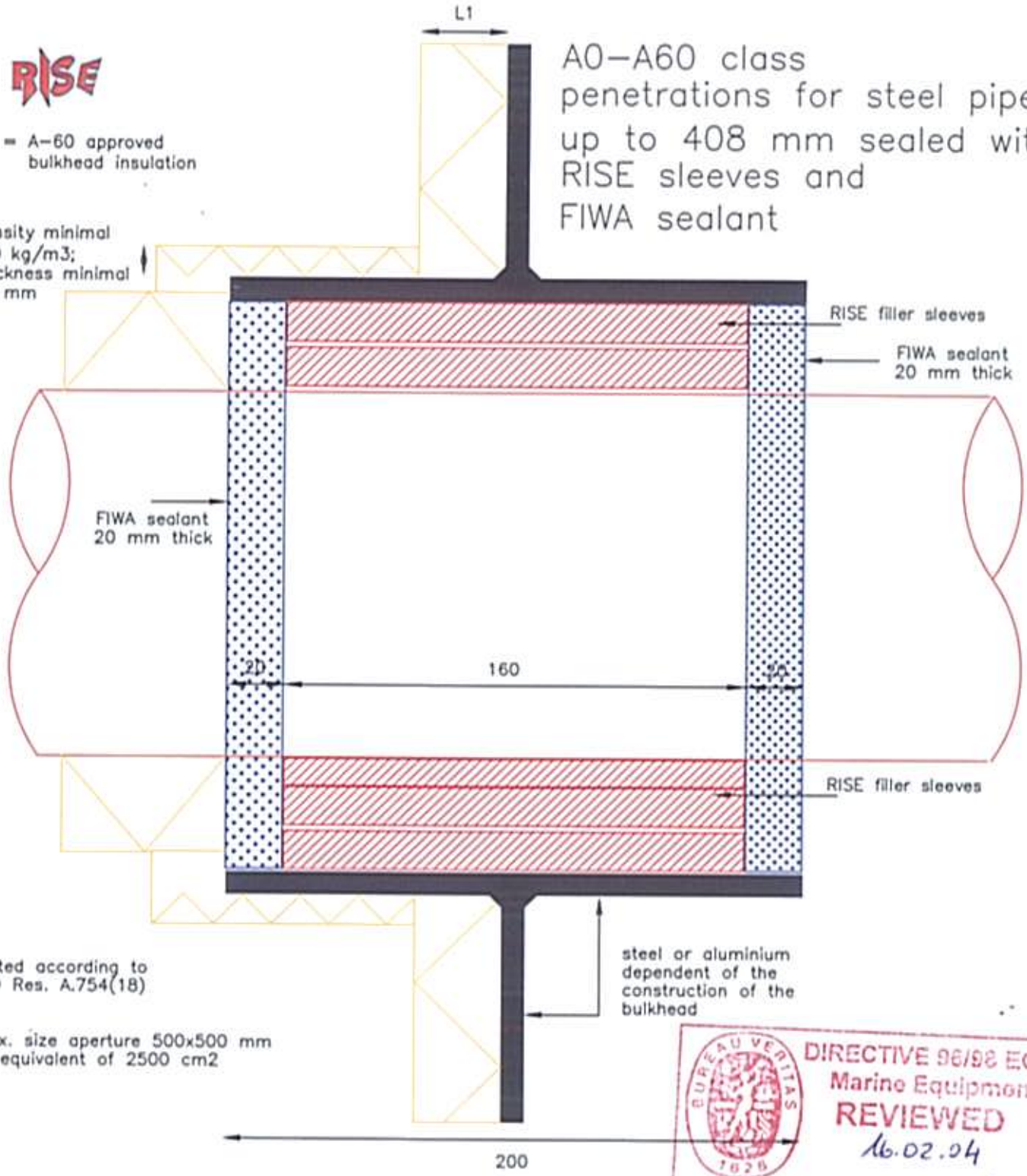


pipes up to 100 mm to be wrapped in 10 mm rubber, (two layers of 5 mm each); pipes from 100 up to 219 mm in 15 mm (3 layers of 5 mm each); pipes from 219 mm up to 400 mm in 20 mm (4 layers of 5 mm each), and pipes above 400 mm in 25 mm (5 layers of 5 mm each)

- minimum distance between conduit sleeve and service pipe = thickness of layers of FRR/EHF rubber to be applied.

BEELE ENGINEERING	Description: side view RISE pipe penetration in steel structure			
	Mat.: FRR/LEHF+FIWA putty			
	Ref.: JAB	Date:	03.06.00	Scale:
	Rev. 1		JAB	R0075E
	Rev. 2		JAB	

A0–A60 class penetrations for steel pipes up to 408 mm sealed with RISE sleeves and FIWA sealant



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

max. size aperture 500x500 mm or equivalent of 2500 cm2

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Marine Equipment
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16.02.04
NB 0062 – File N° AV 490/020/06
TAE 10035/EC

insulation of service pipes on the unexposed side:

steel pipes:	A60
up to 3"	none
3" up to 6"	150 mm
6" up to 10"	350 mm
10" up to 14"	550 mm
14" up to 16"	750 mm

A0-A60

STEEL PIPE PENETRATION BULKHEAD

IBEELE ENGINEERING

Description: side view RISE steel pipe penetration

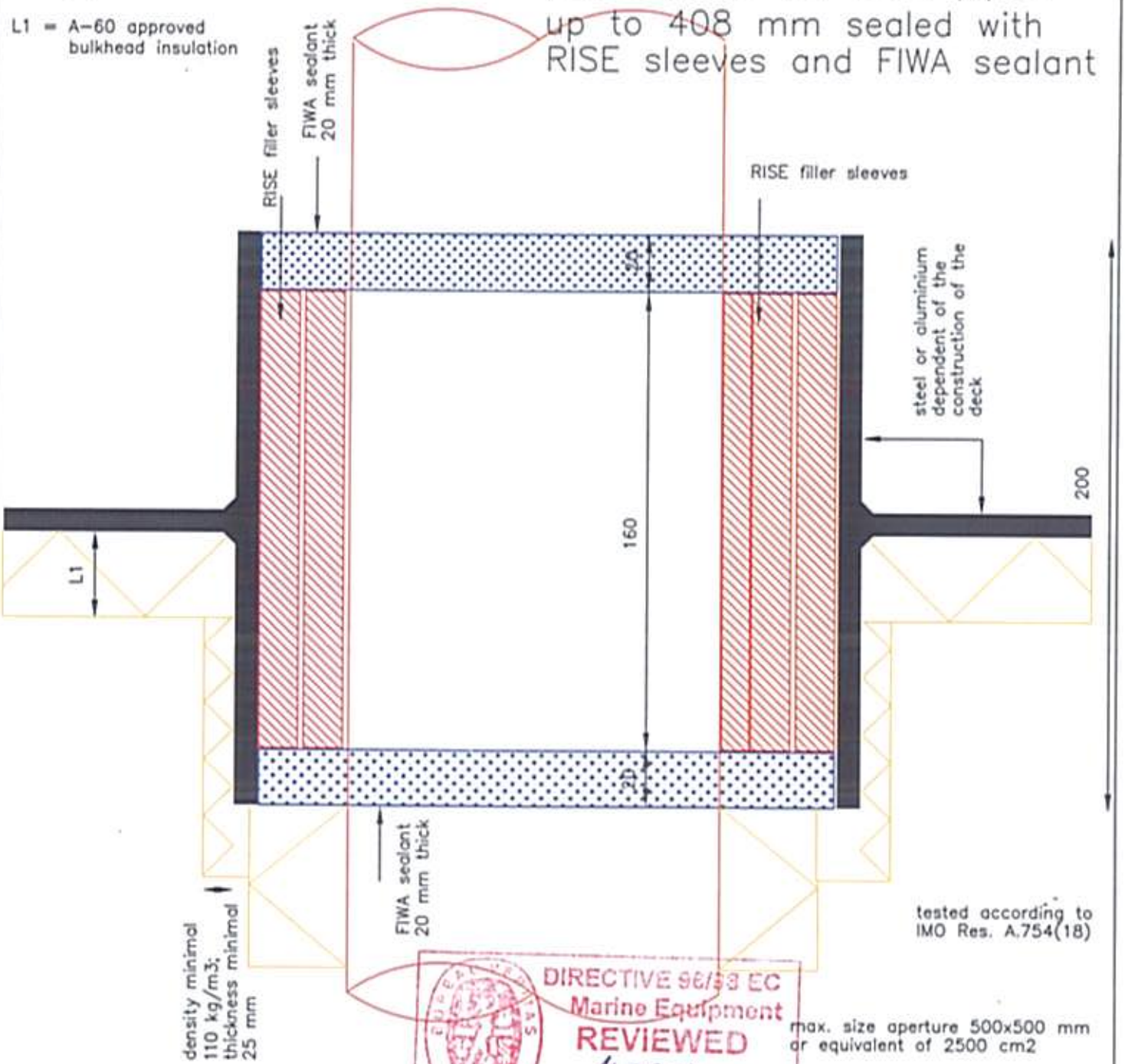
Mat.: FRR/LEHF+FIWA sealant

Ref.: JAB | Date: 20.03.03 | Scale:

Rev. 1	05.04.03	JAB	R0140E
Rev. 2		JAB	

A0–A60 class penetrations for steel pipes up to 408 mm sealed with RISE sleeves and FIWA sealant

L1 = A–60 approved bulkhead insulation



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

max. size aperture 500x500 mm or equivalent of 2500 cm2

insulation of service pipes on the unexposed sides

steel pipes:	A60
up to 3"	none
3" up to 6"	150 mm
6" up to 10"	350 mm
10" up to 14"	550 mm
14" up to 16"	750 mm

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Marine Equipment
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160204
NB 0062 – File N° AÜ 4.01a/020/006
TAC 10035/EC

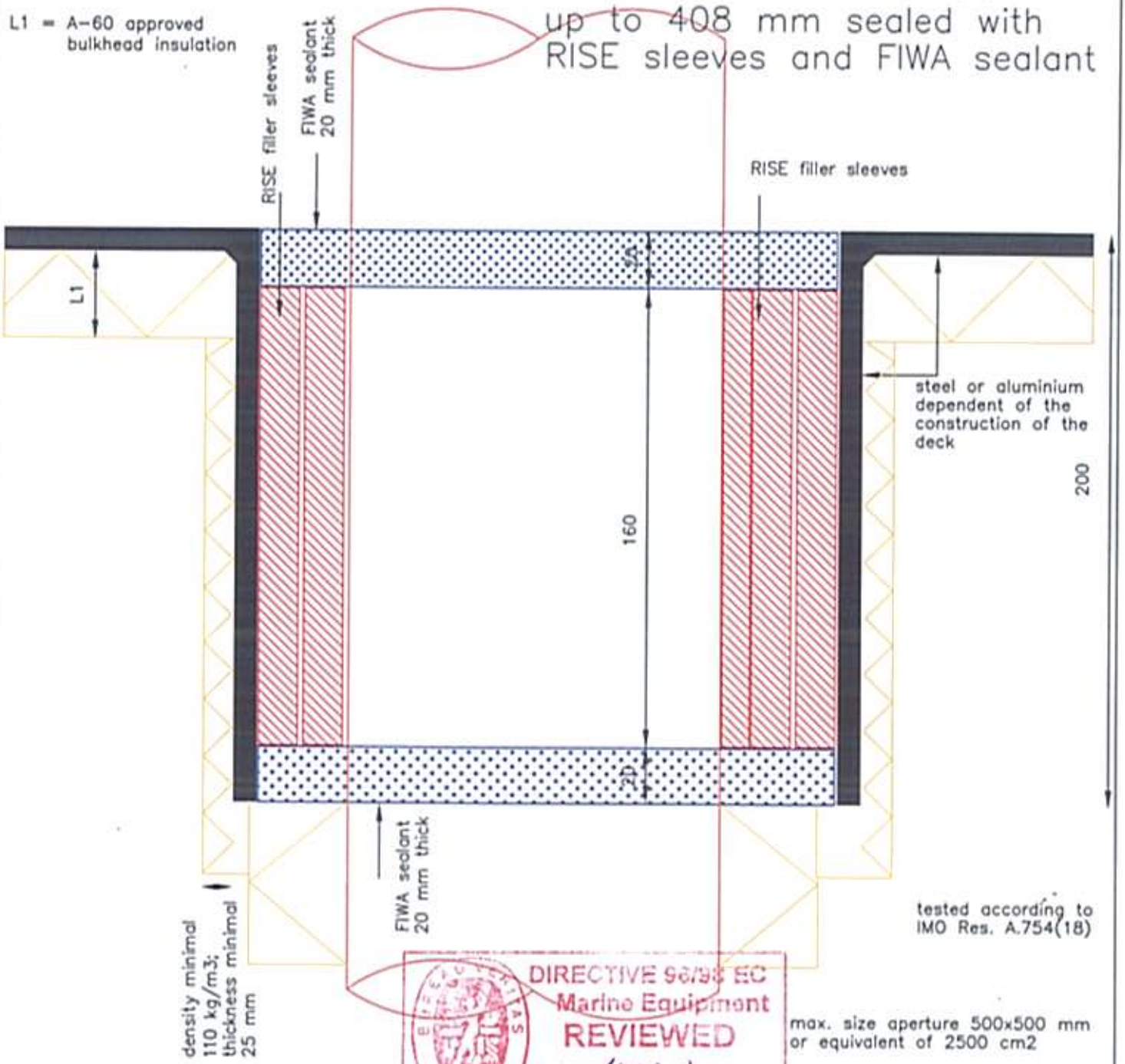
A0-A60

STEEL PIPE PENETRATION DECK

BEELE ENGINEERING	Description: side view RISE steel pipe penetration			
	Mat.: FRR/LEHF+FIWA sealant			
	Ref.: JAB	Date:	20.03.03	Scale:
		Rev. 1	05.04.03 JAB	R0141E
		Rev. 2	JAB	

A0–A60 class penetrations for steel pipes up to 408 mm sealed with RISE sleeves and FIWA sealant

L1 = A–60 approved bulkhead insulation



DIRECTIVE 96/98 EC
Marine Equipment
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140204
NB 0062 – File N° AU 4010/020/006
TAC 6035/EC

insulation of service pipes on the unexposed side

steel pipes:	A60
up to 3"	none
3" up to 6"	150 mm
6" up to 10"	350 mm
10" up to 14"	550 mm
14" up to 16"	750 mm

A0-A60

STEEL PIPE PENETRATION DECK

BEELE ENGINEERING

Description: side view RISE steel pipe penetration

Mat.: FRR/LEHF+FIWA sealant

Ref.: JAB | Date: 20.03.03 | Scale:

Rev. 1	05.04.03	JAB	R0142E
Rev. 2		JAB	