

MARINE DIVISION

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Certificate N°:

09155/A1 EC

File Number : ACI 4010/020/004

MED Item number : A.1/3.26(0)

USCG Item number : 164.138

This Certificate is not valid unless presented without the list attached
which comprises of 23 entries.



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**
CSD Sealing Plugs for single and multi pipes penetrations for PLASTIC, PE/Aluminium flexible pipes and Copper and GRP pipes

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: 27/09/2004

Local Office : BUREAU VERITAS ROTTERDAM

At Paris la Défense, on : 01/07/2004



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

J.BENOIT



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) have to be re-approved prior to 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, such or negligence committed by personnel of the Society or of its Agents in establishments 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.



THE SCHEDULE OF APPROVAL

I. PRODUCT DESCRIPTION :

1.1-CSD Sealing Plugs for PLASTIC, PE/Aluminium flexible pipes

Composed of steel penetration sleeve continuously welded to the bulkhead or deck (symmetrically or non-symmetrically as per the manufacturer's drawings). The sleeve is sealed on both ends with CSD sealing plugs (FRR-E rubber type) and insulated with minimum 25 mm thick of rockwool, wrapped around with aluminium foil and tied with steel wire mesh and wire ties.

PLASTIC pipes :

Conduit sleeve length : 250 mm

80 mm strips of FRR/EHF rubber wrapped around pipes centered in the conduit sleeve

Pipes outer diameter up to 225 mm

For plastic pipe penetrations in A-0 class steel divisions [despite § 6.1], no insulation is required on the coaming (ref in-house test report as mentioned in § 3.4)

Flexible PE/Alu pipes (Alu inner, plastic outer):

Conduit sleeve length :

L = 150 mm for conduit sleeves maximum 2"

L = 250 mm for conduit sleeves above 2"

Pipes outer diameter up to 63 mm

1.2-CSD Sealing Plugs for GRP & Copper pipes

Same description as above except that the sleeve is sealed on both ends with CSD sealing plugs (FRR or FRR/SIL rubber type).

Pipes may also have to be insulated after penetrations endings in accordance with the Manufacturer's drawings listed in § 2.

GRP pipes:

Conduit sleeve length :

L = 120 mm for conduit sleeves maximum 2"

L = 160 mm for conduit sleeves above 2"

Pipes outer diameter up to 212 mm

Copper pipes:

Conduit sleeve length :

L = 120 mm for conduit sleeves maximum 2"

L = 160 mm for conduit sleeves above 2"

Pipes outer diameter up to 104 mm

2. DESIGN DRAWINGS and/or SPECIFICATIONS

2.1- Sealing plugs are to be installed according to the Manufacturer's drawings :

PLASTIC, PE/Aluminium flexible pipes

N° PL049E, PL050E both rev.2 dated 08.11.00 and PL106E, PL107E, PL108E dated 02.10.02, PL124E dated 17.11.03;

GRP & Copper pipes

N° PL056E, PL057E, PL058E, PL059E, PL060E, PL061E, PL062E, PL063E all dated 03.06.00, PL065E rev.1

dated 15.12.01, PL066E rev.2 dated 15.12.00, PL067E, PL068E, PL069E and PL070E (all rev.1 dated 15.12.00).

- 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

All test reports are in accordance with IMO Resolution A.754 (18) :

- 3.1- N° 106394A, N° 106393B, both issued on 15.06.1999, N° 114524 issued on 26.09.2000, N° 115365 issued on 30.09.2000, N° 115541/A issued on 01.12.2000 from Warrington Fire Research Centre, UK.
- 3.2- N° 2000-CVB-R00984 and N° 2000-CVB-R00912, both issued on may 2000, and N° 2001-CVB-R02579 dated January 2001 from TNO Laboratories, The Netherlands.
- 3.3- Plastic pipes outer diameter 224 mm : in-house test N° 010706-B045, dated 06.07.2001, from the Manufacturer (tests witnessed by Lloyd's Register).
- 3.4- Plastic pipes in A-0 class steel divisions : in-house test N° 0311-020, dated 28.11.03, from the Manufacturer (tests witnessed by NKK).

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

- 4.1- 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/m³; 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).

- 4.2- Pipes to be as per IMO Resolution A753(18), EC type approved and to bear the ☉ mark.

5. OTHER MATERIALS and/or COMPONENTS

- 5.1- FRR rubber : technical report N° 34075, dated 25.05.1999, from RAPRA Technology Ltd. in accordance with NES 711 (Naval Engineering Standard), NES 713 and BS ISO 4589 Parts 2 and 3;
- 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.
- 5.3- FRR/SIL rubber : technical report N° 34738, dated 05.10.1999, from RAPRA Technology Ltd. in accordance with NES 711 (Naval Engineering Standard), 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 sleeve 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° 9910-015 to -018, dated 14.10.1999, from the Manufacturer (tests witnessed by Lloyd's Register).
- 6.4- Gastight up to 1,5 bars in accordance with in-house tests N° 0203-D056/057/058, dated 01.03.02, from the Manufacturer (tests witnessed by Lloyd's Register).

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 instructions) 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

- ~~ø~~ 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 MIRA+, 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° 09155/A10 EC issued on 2004-02-16 by the Society.

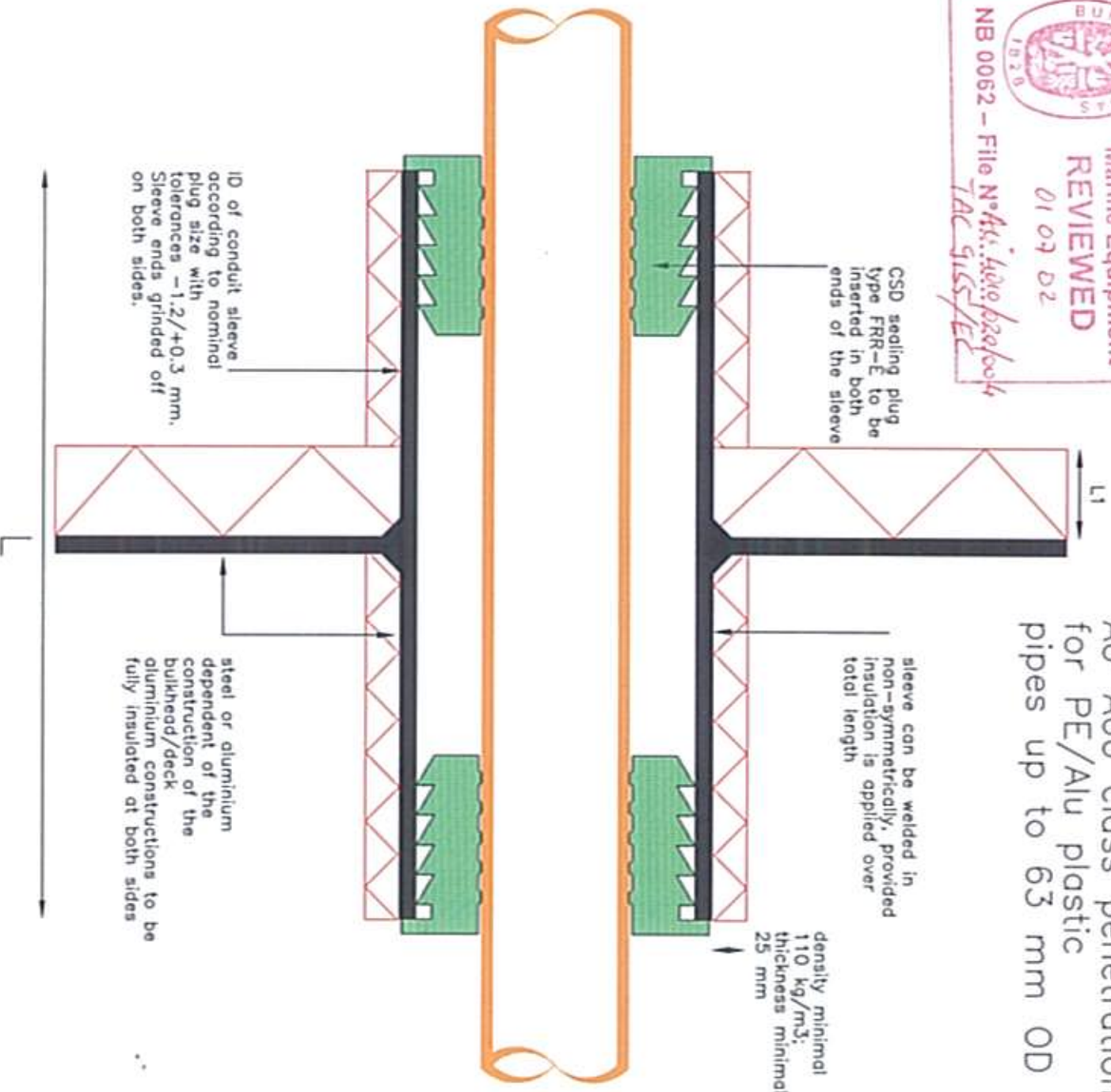
BUREAU VERITAS ROTTERDAM *** *Last page (End of Document)* ***



DIRECTIVE 96/98 EC
Marine Equipment
REVIEWED
01 09 02

NB 0062 - File N° Ats.: *4410/220/004*
TAC GISS/EE

A0-A60 class penetrations
for PE/Alu plastic
pipes up to 63 mm OD



L = 150 mm for conduit sleeves max. 2" up to 5"
250 mm for conduit sleeves above 2" up to 5"

L1 = as applied for the bulkhead insulation

A0 - A60



Description: PE/Alu pipe penetration sealed with

Mat.: FRR-E

FRR-E plugs

Ref.: JAB

Date: 27.04.00

Scale: 1:2

Rev. 1 03.06.00

JAB

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Rev. 2 08.11.00

JAB

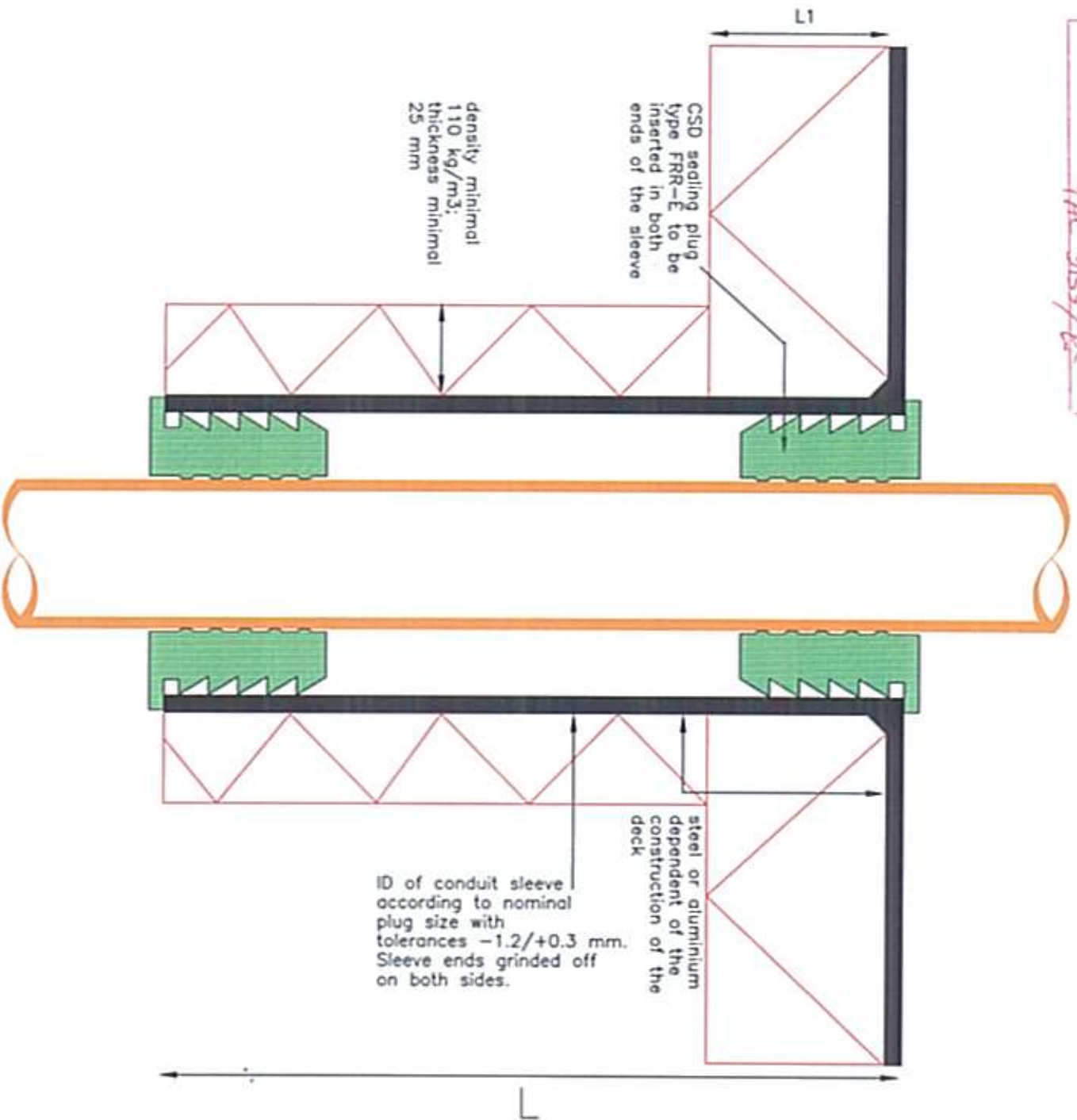
PL049E



DIRECTIVE 96/98 EC
Marine Equipment
REVIEWED
01 07 02

NB 0062 - File N° *AK: 4919/620/004*
TAC 9155/EC

A0-A60 class penetrations
for PE/Alu plastic
pipes up to 63 mm OD



L = 150 mm for conduit sleeves max. 2" up to 5"
250 mm for conduit sleeves above 2" up to 5"

L1 = as applied for the deck insulation

A0 - A60



Description: PE/Alu pipe penetration sealed with

Mat.: FRR-E

FRR-E plugs

Ref.: JAB

Date:

27.04.00

Scale: 1:2

Rev. 1

03.06.00

JAB

Rev. 2

08.11.00

JAB

PL050E

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DIRECTIVE 96/98 EC

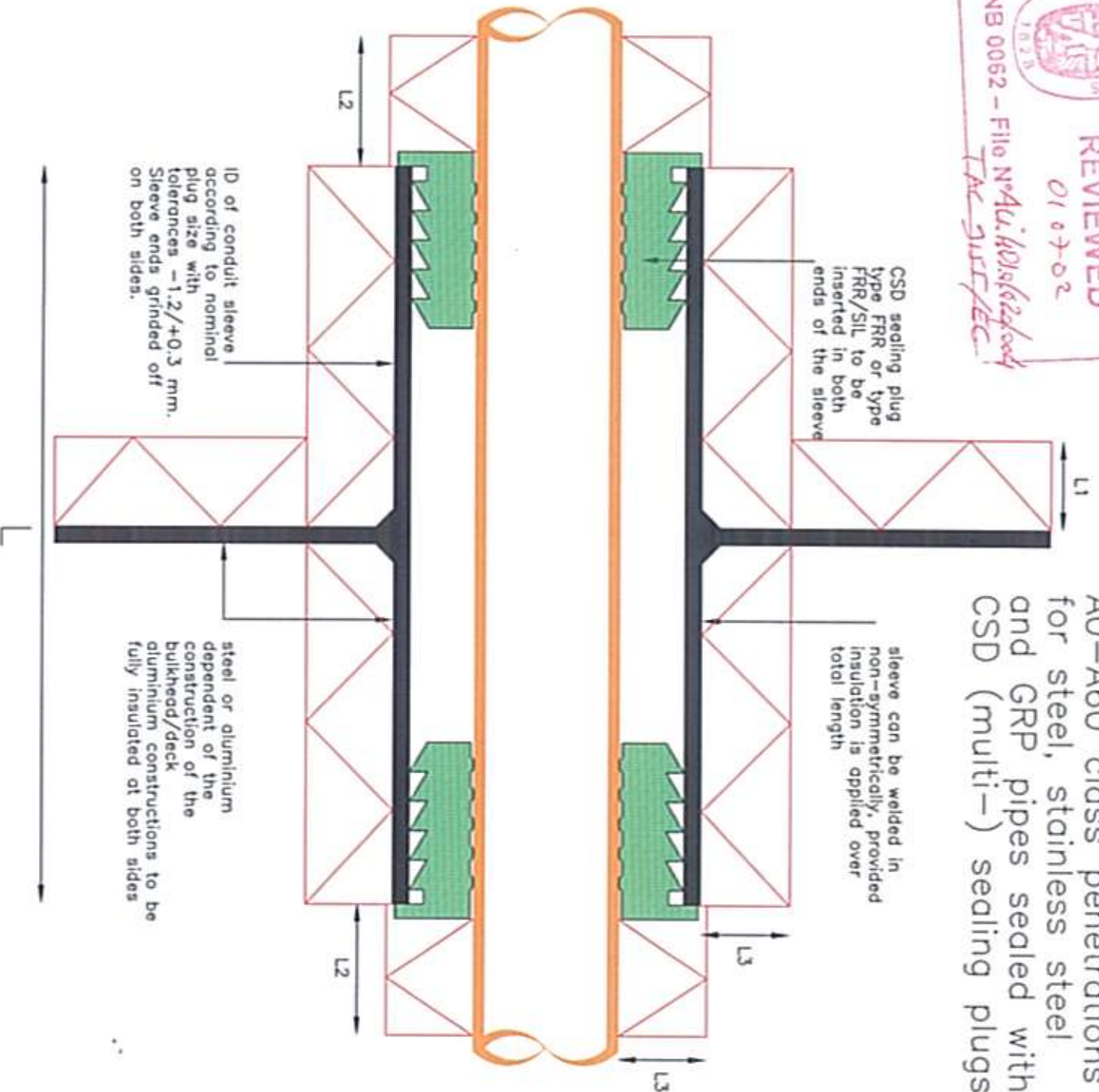
Marine Equipment

REVIEWED

010702

NB 0062 - File N°Au.40.016202
TAC SURFEC

A0-A60 class penetrations
for steel, stainless steel
and GRP pipes sealed with
CSD (multi-) sealing plugs



- L = 150 mm for conduit sleeves max. 2" / 250 mm for conduit sleeves above 2"
- L1 = approved A-60 bulkhead insulation
- L2 = none for service pipes up to 3" / 100 mm for service pipes 3" up to 6" / 200 mm for service pipes above 6"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date:

03.06.00

Scale: 1:2

Rev. 1

JAB

Rev. 2

JAB

PL056E

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DIRECTIVE 96/98 EC

Marine Equipment

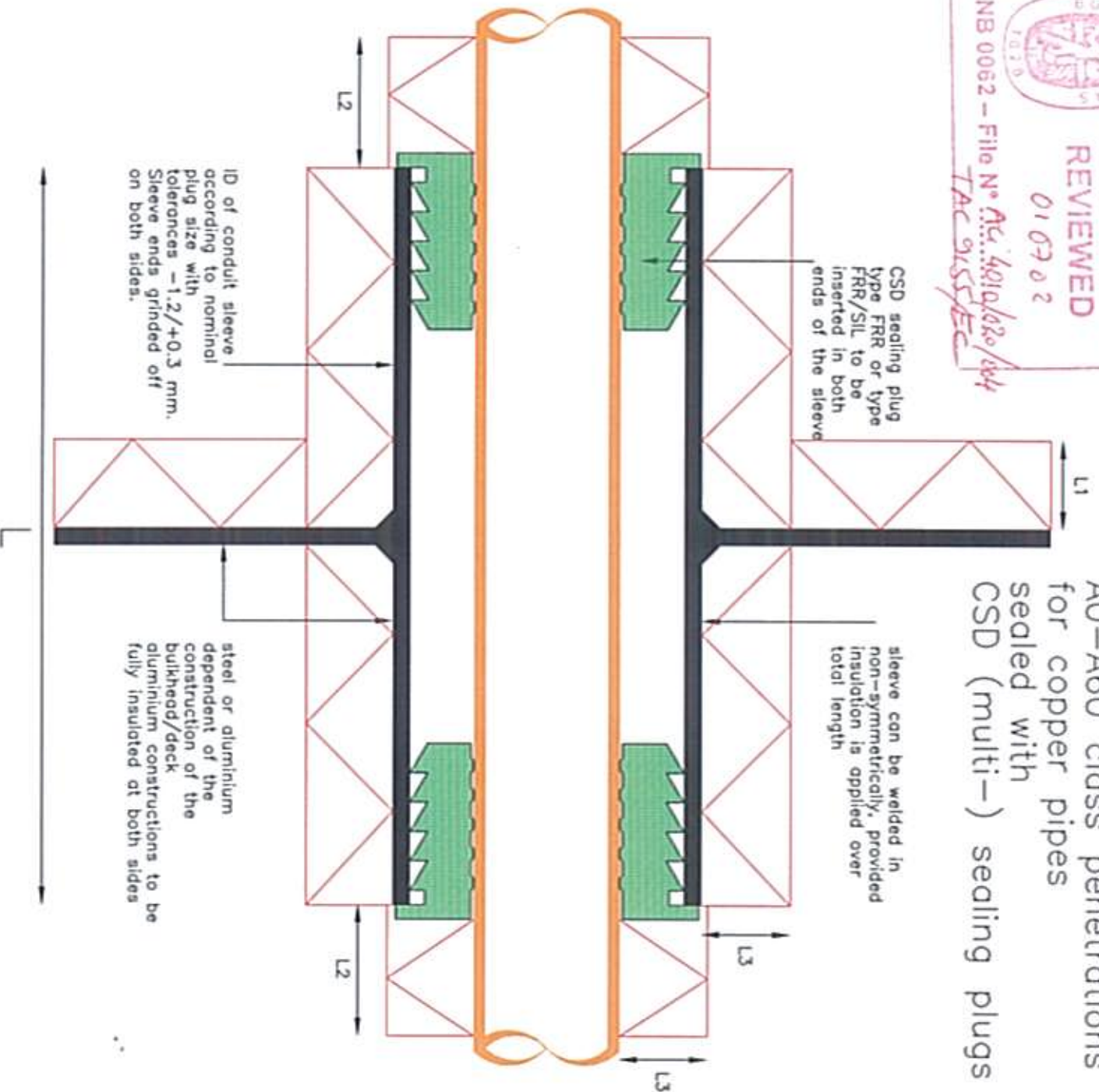
REVIEWED

01 07 02

NB 0062 - File N° Act.: 4010/020/004

TAC 9155/EC

A0-A60 class penetrations
for copper pipes
sealed with
CSD (multi-) sealing plugs



- L = 150 mm for conduit sleeves max. 2" 250 mm for conduit sleeves above 2"
- L1 = approved A-60 bulkhead insulation
- L2 = none for service pipes up to 2" 200 mm for service pipes 2" up to 4" 400 mm for service pipes above 4"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date: 03.06.00

Scale: 1:2

Rev. 1

JAB

Rev. 2

JAB

PL057E

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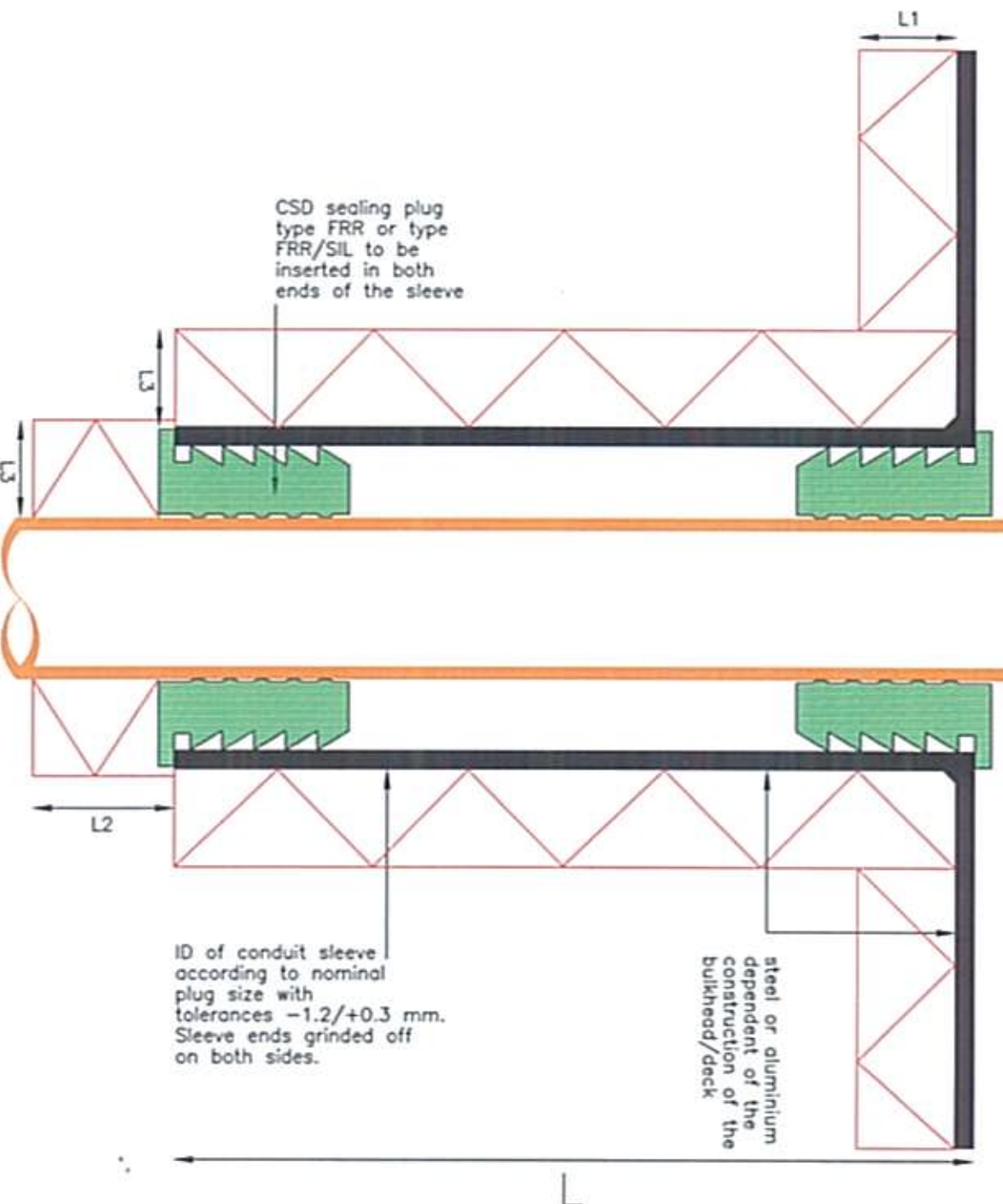
Marine Equipment

REVIEWED

010902

NB 0062 -- File N/A: 401926/boy
TAC 5155/EC

A0-A60 class penetrations
for steel, stainless steel
and GRP pipes sealed with
CSD (multi-) sealing plugs



CSD sealing plug
type FRR or type
FRR/SIL to be
inserted in both
ends of the sleeve

steel or aluminium
dependent of the
construction of the
bulkhead/deck

ID of conduit sleeve
according to nominal
plug size with
tolerances $-1.2/+0.3$ mm.
Sleeve ends grinded off
on both sides.

A0-A60

- L = 150 mm for conduit sleeves max. 2" 250 mm for conduit sleeves above 2"
- L1 = approved A-60 deck insulation
- L2 = none for service pipes up to 3" 200 mm for service pipes 3" up to 6" 400 mm for service pipes above 6"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm



Description: lay-out A60 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date: 03.06.00

Scale: 1:2

Rev. 1

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Rev. 2

JAB

PL058E

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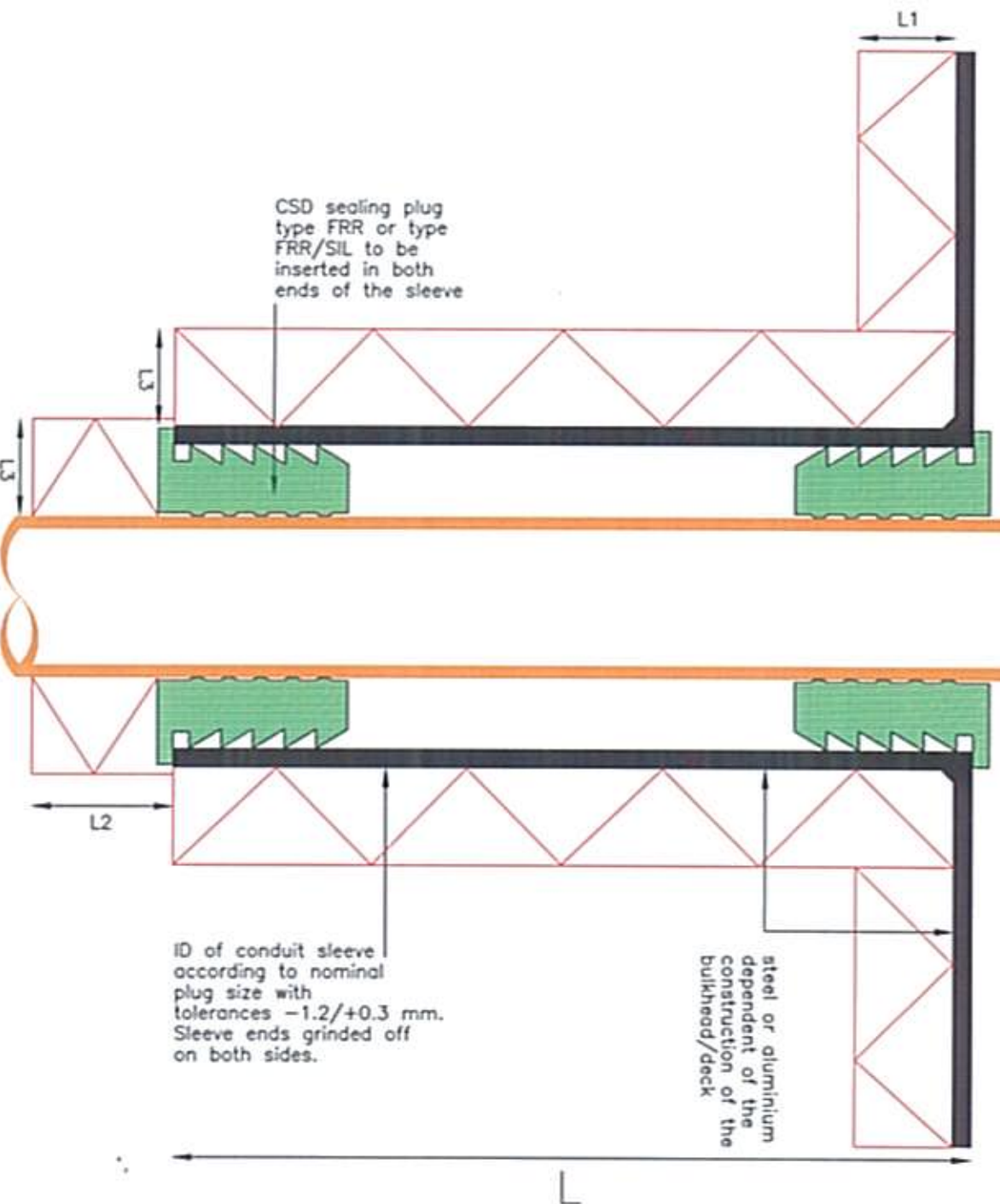
DIRECTIVE 96/98 EC
Marine Equipment

REVIEWED

010302

NB 0062 - File N° Acti: 4010/020/004
TAC g.i.s.s. rec

A0-A60 class penetrations
for copper pipes
sealed with
CSD (multi-) sealing plugs



- L = 150 mm for conduit sleeves max. 2" - 250 mm for conduit sleeves above 2"
- L1 = approved A-60 deck insulation
- L2 = none for service pipes up to 2" - 400 mm for service pipes 2" up to 4" - 800 mm for service pipes above 4"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date: 03.06.00

Scale: 1:2

Rev. 1

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PL059E



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Marine Equipment

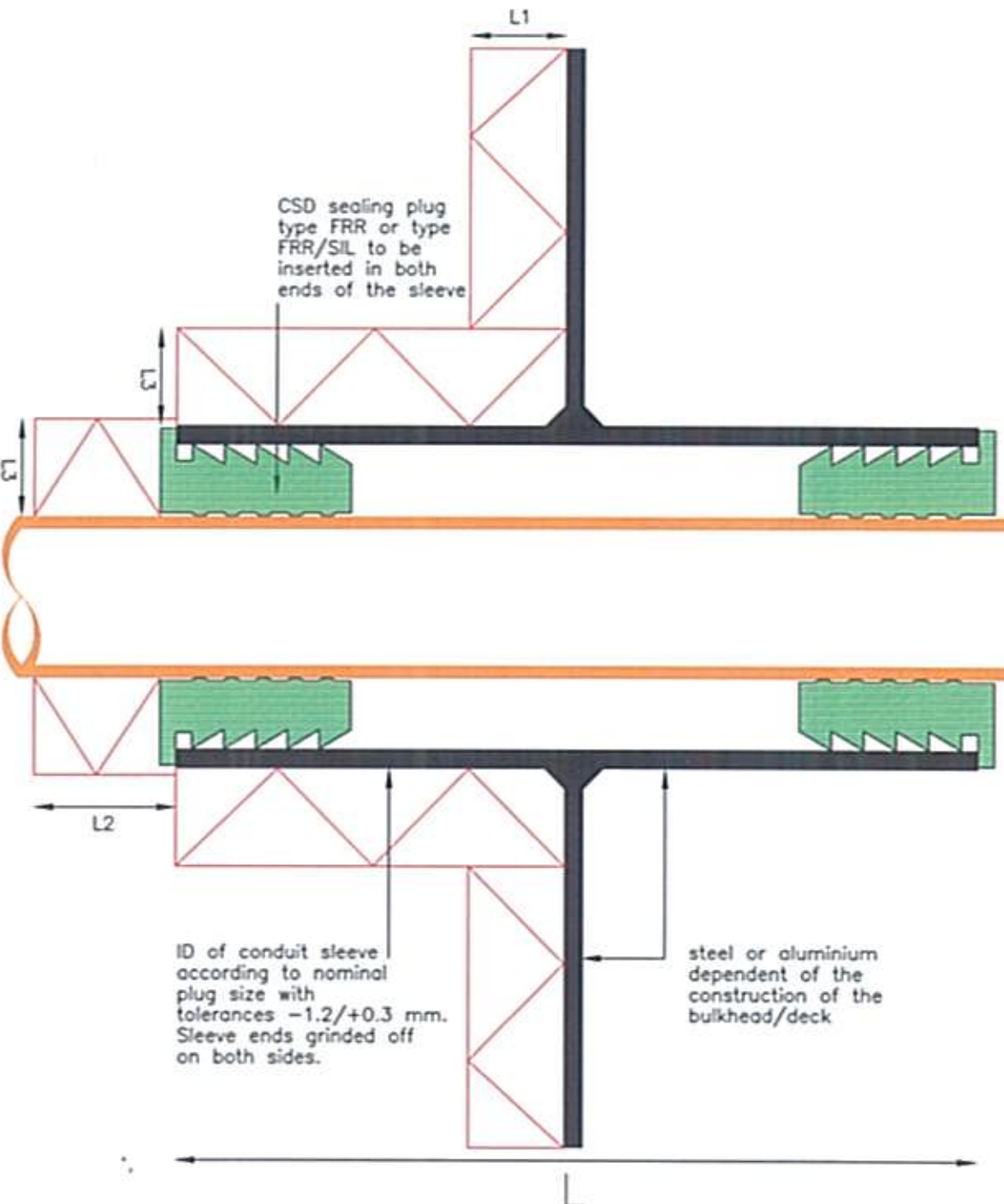
REVIEWED

0102-02

NB 0062 - File N° At: 4010/02a/004

TAC 0155/EC

A0-A60 class penetrations for steel, stainless steel and GRP pipes sealed with CSD (multi-) sealing plugs



- L = 150 mm for conduit sleeves max. 2" 250 mm for conduit sleeves above 2"
- L1 = approved A-60 deck insulation
- L2 = none for service pipes up to 3" 200 mm for service pipes 3" up to 6" 400 mm for service pipes above 6"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date: 03.06.00

Scale: 1:2

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PL060E



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Marine Equipment

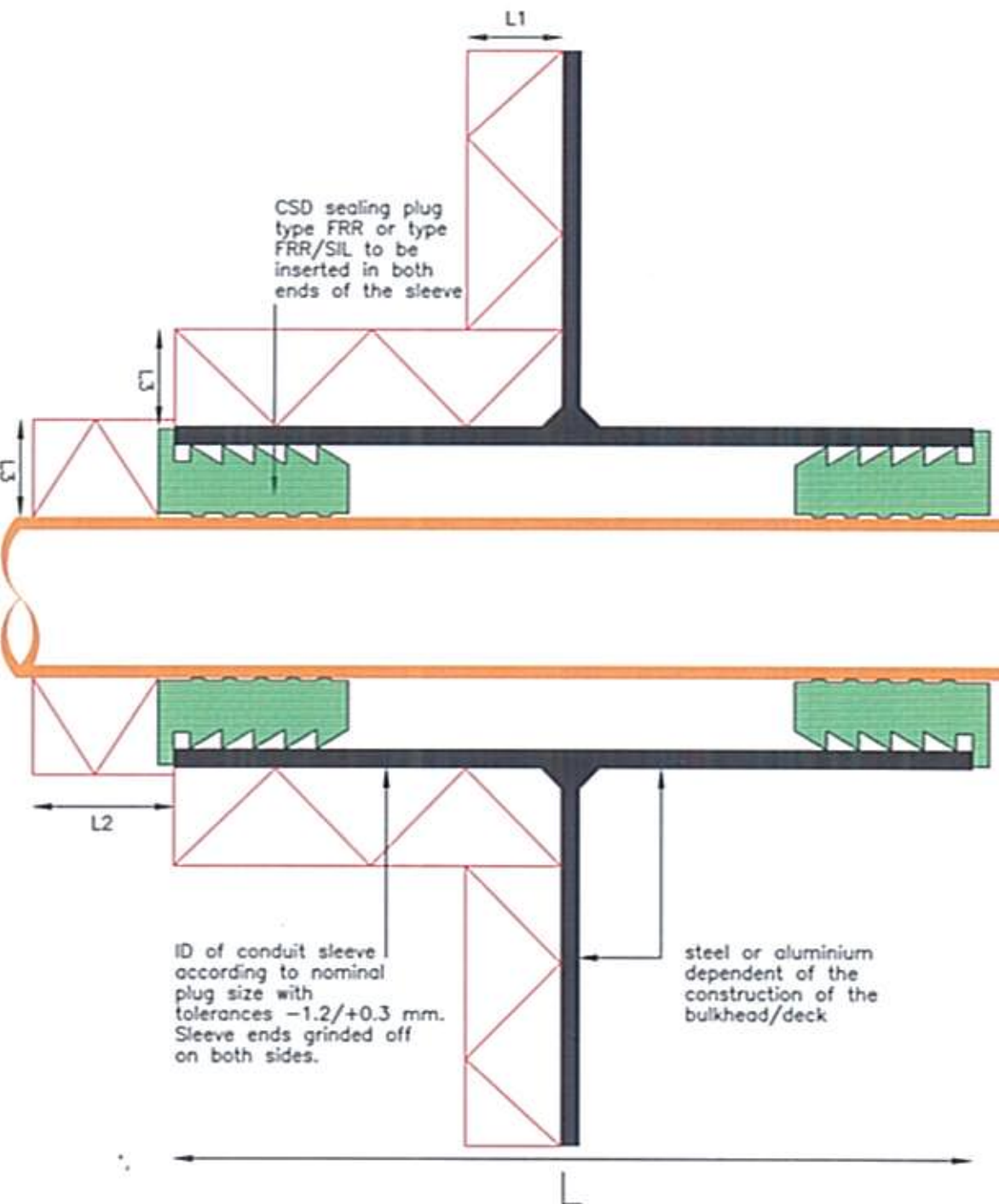
REVIEWED

6107-02

NB 0062 - File N° *Act. 4012/20/004*

TAC g.155/02

A0-A60 class penetrations
for copper pipes
sealed with
CSD (multi-) sealing plugs



- L = 150 mm for conduit sleeves max. 2" 250 mm for conduit sleeves above 2"
- L1 = approved A-60 deck insulation
- L2 = none for service pipes up to 2" 400 mm for service pipes 2" up to 4" 800 mm for service pipes above 4"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date: 03.06.00

Scale: 1:2

Rev. 1

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Rev. 2

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PL061E

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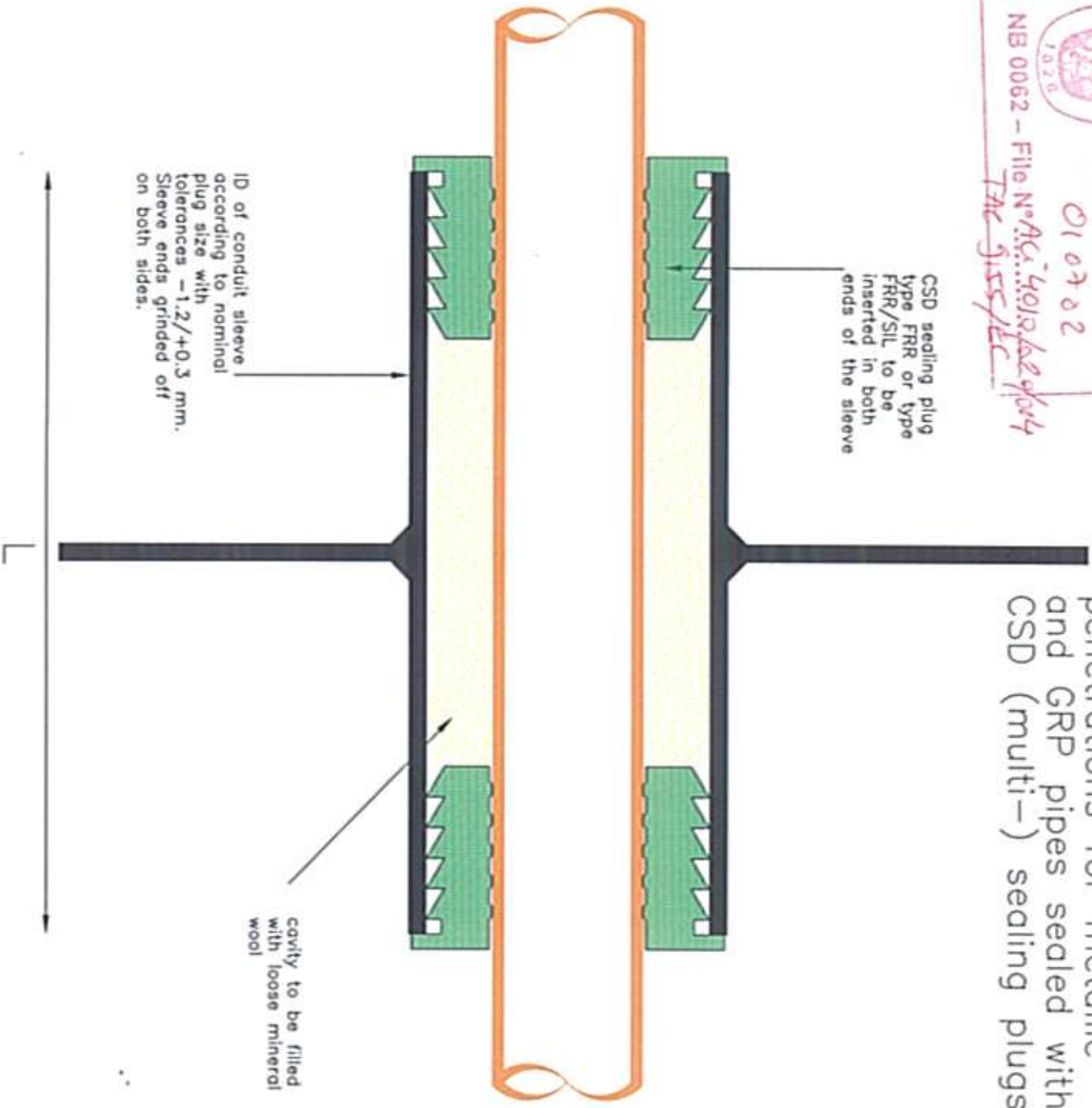
DIRECTIVE 96/98 EC
Marine Equipment
REVIEWED

010702

NB 0062 - File N° At: 4010/02/04
The Gijssels

A0 class deck and bulkhead penetrations for metallic and GRP pipes sealed with CSD (multi-) sealing plugs

CSD sealing plug type FRR or type FRR/SIL to be inserted in both ends of the sleeve



L = 150 mm for conduit sleeves max. 2"
250 mm for conduit sleeves above 2"

A0



Description: lay-out A0 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date: 03.06.00

Scale: 1:2

Rev. 1

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Rev. 2

JAB

PL062E

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Marine Equipment

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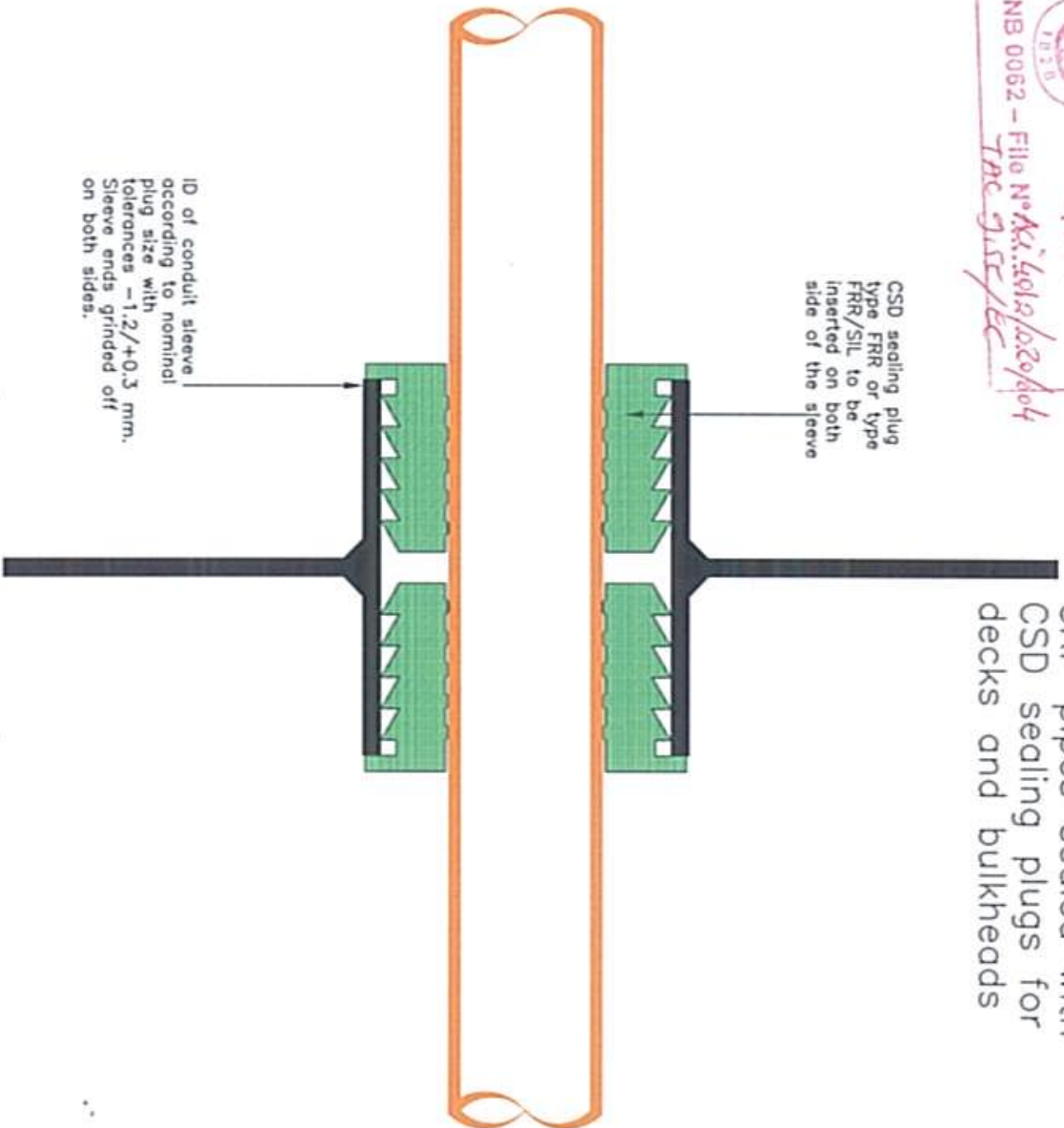
010902

NB 0062 - File No. *Ag. 4012/020/04*

The GUY/EC

A0 class penetrations
for steel, copper and
GRP pipes sealed with
CSD sealing plugs for
decks and bulkheads

CSD sealing plug
Type FRR or Type
FRR/SIL to be
inserted on both
side of the sleeve



sleeves ID up to 170 mm L=120 mm
sleeves ID above 170 mm L=160 mm

A0

STEEL/COPPER/GRP PIPES



Description: lay-out A0 class pipe penetrations

Mat.: FRR-FRR/SIL Type: CSD

Scale: 1:2

Ref.: JAB Date: 03.06.00

Project:

Rev. 1 JAB

Rev. 2 JAB

PL063E

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Marine Equipment

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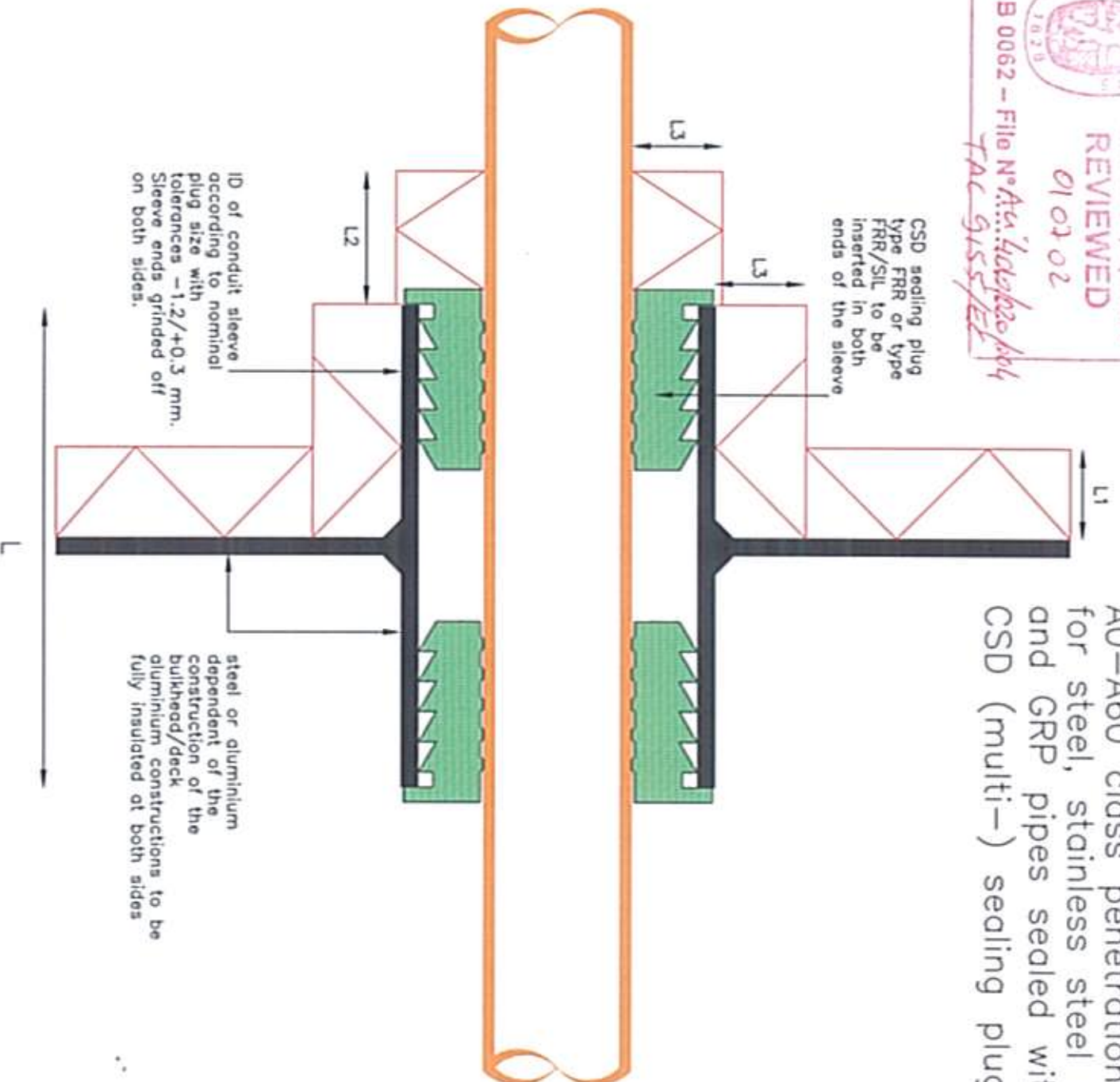
01 03 02

NB 0062 - File N° Act. *Lichtpols 104*

TAC GISS/TEL

A0-A60 class penetrations
for steel, stainless steel
and GRP pipes sealed with
CSD (multi-) sealing plugs

CSD sealing plug
type FRR or type
FRR/SIL to be
inserted in both
ends of the sleeve



ID of conduit sleeve
according to nominal
plug size with
tolerances $-1.2/+0.3$ mm.
Sleeve ends grinded off
on both sides.

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

- L = 120 mm for sleeves up to 2" and 160 mm above 2"
- L1 = approved A-60 bulkhead insulation
- L2 = none for service pipes up to 1"
200 mm for service pipes 1" up to 3"
300 mm for service pipes 3" up to 6"
400 mm for service pipes above 6"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mat.: FRR

Ref.: JAB

Date: 27.07.00

Scale: 1:2

Rev. 1 15.12.00

JAB

Rev. 2

JAB

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Marine Equipment

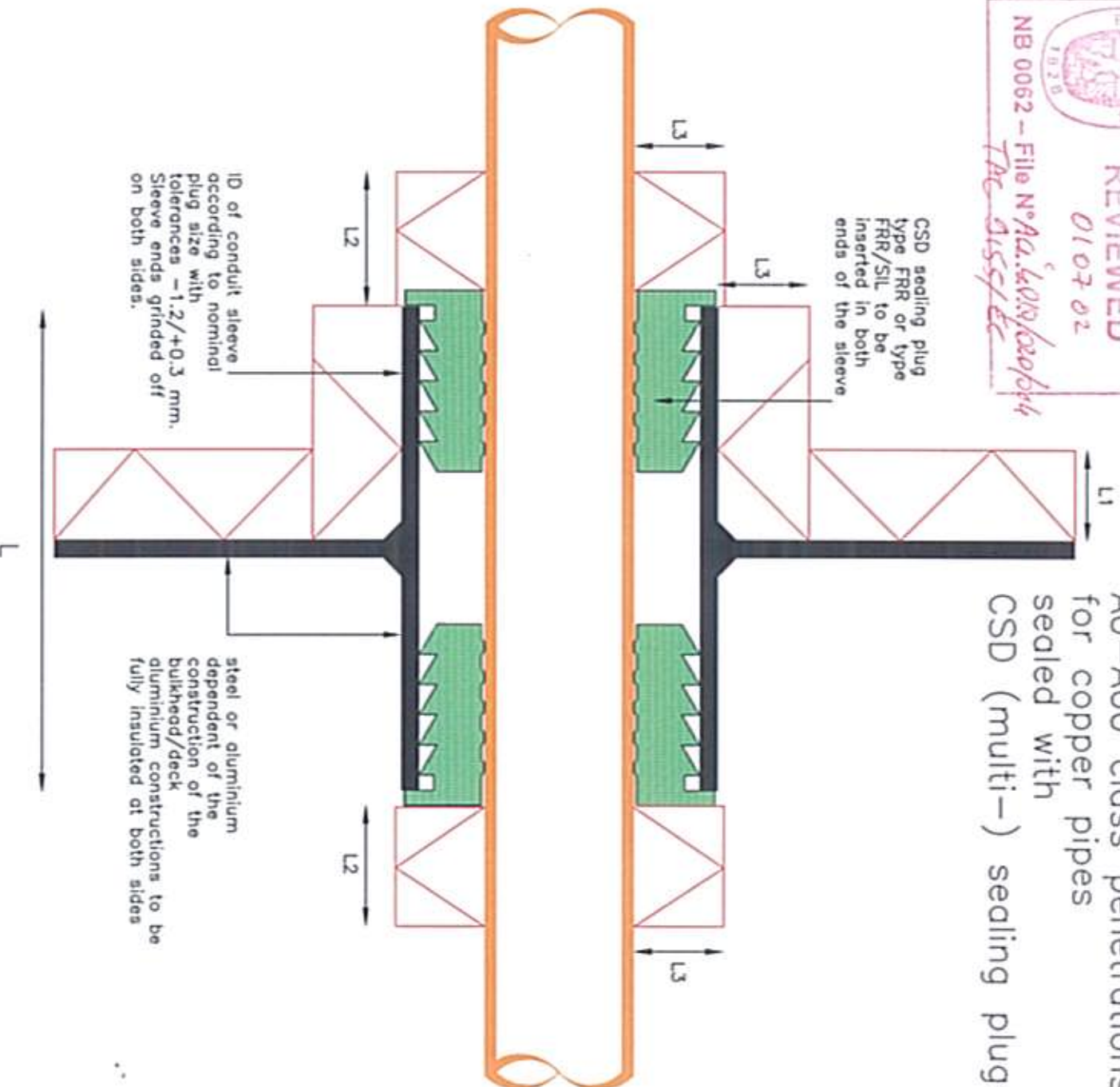
REVIEWED

010702

NB 0062 - File N° Aa.kon/loop/bw
The Asselt

A0-A60 class penetrations
for copper pipes
sealed with
CSD (multi-) sealing plugs

CSD sealing plug
type FRR or type
FRR/SIL to be
inserted in both
ends of the sleeve



- L = 120 mm for sleeves up to 2" and 160 mm above 2"
- L1 = approved A-60 bulkhead insulation
- L2 = 200 mm for service pipes up to 2" at the insulated side only
200 mm for service pipes 2" up to 4" at both sides
400 mm for service pipes above 4" at both sides
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date: 27.07.00

Scale: 1:2

Rev. 1 12.11.00

JAB

Rev. 2 15.12.00

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PL066E

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DIRECTIVE 96/98 EC

Marine Equipment

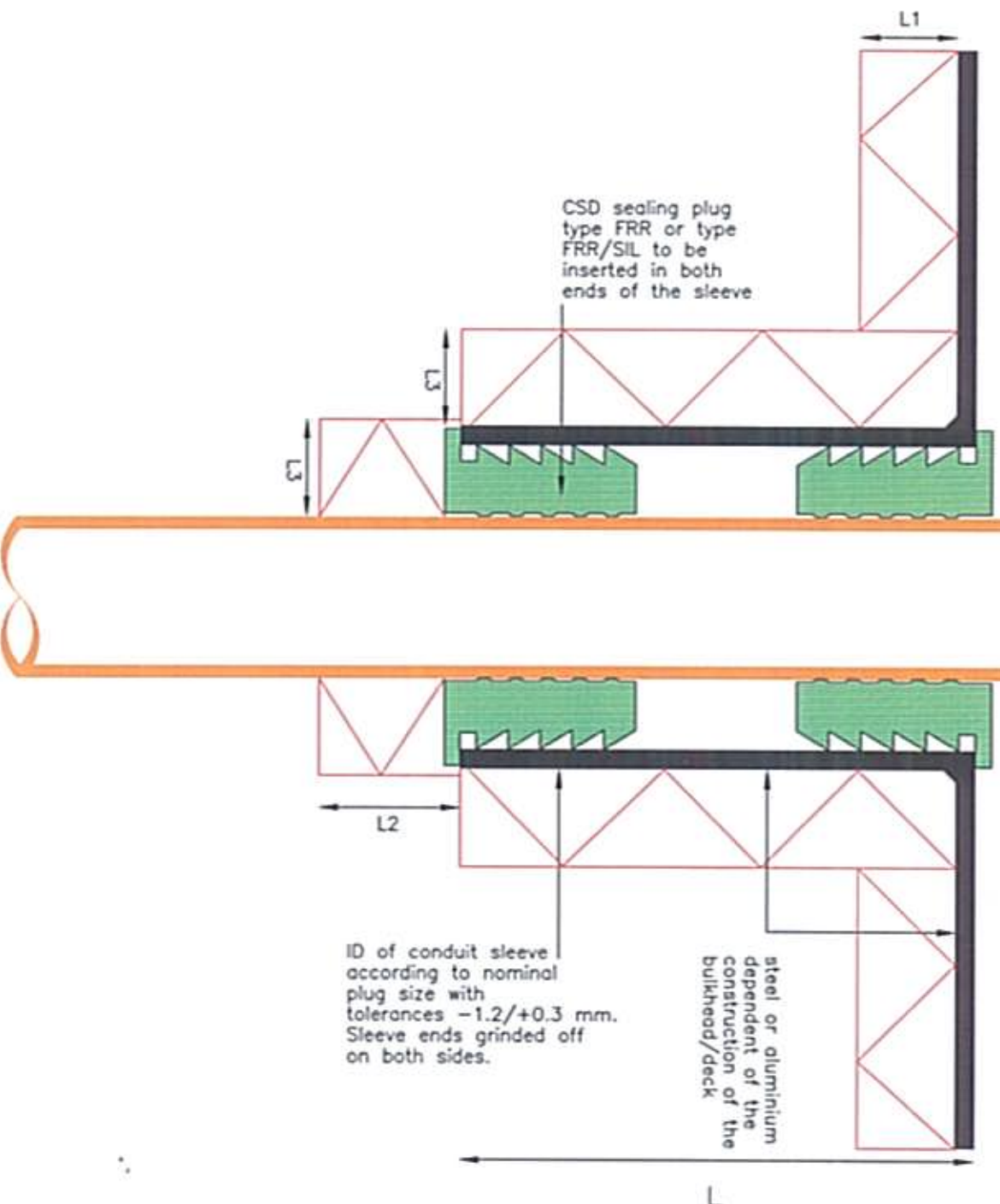
REVIEWED

01 07 02

NB 0062 - File N° A60-1110/02e/005

TAC 9157/EC

A0-A60 class penetrations
for steel, stainless steel
and GRP pipes sealed with
CSD (multi-) sealing plugs



- L = 120 mm for sleeves up to 2" and 160 mm above 2"
- L1 = approved A-60 deck insulation
- L2 = none for service pipes up to 1"
200 mm for service pipes 1" up to 3"
300 mm for service pipes 3" up to 6"
400 mm for service pipes above 6"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date:

27.07.00

Scale: 1:2

Rev. 1

15.12.00

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Rev. 2

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PL067E



DIRECTIVE 96/98 EC

Marine Equipment

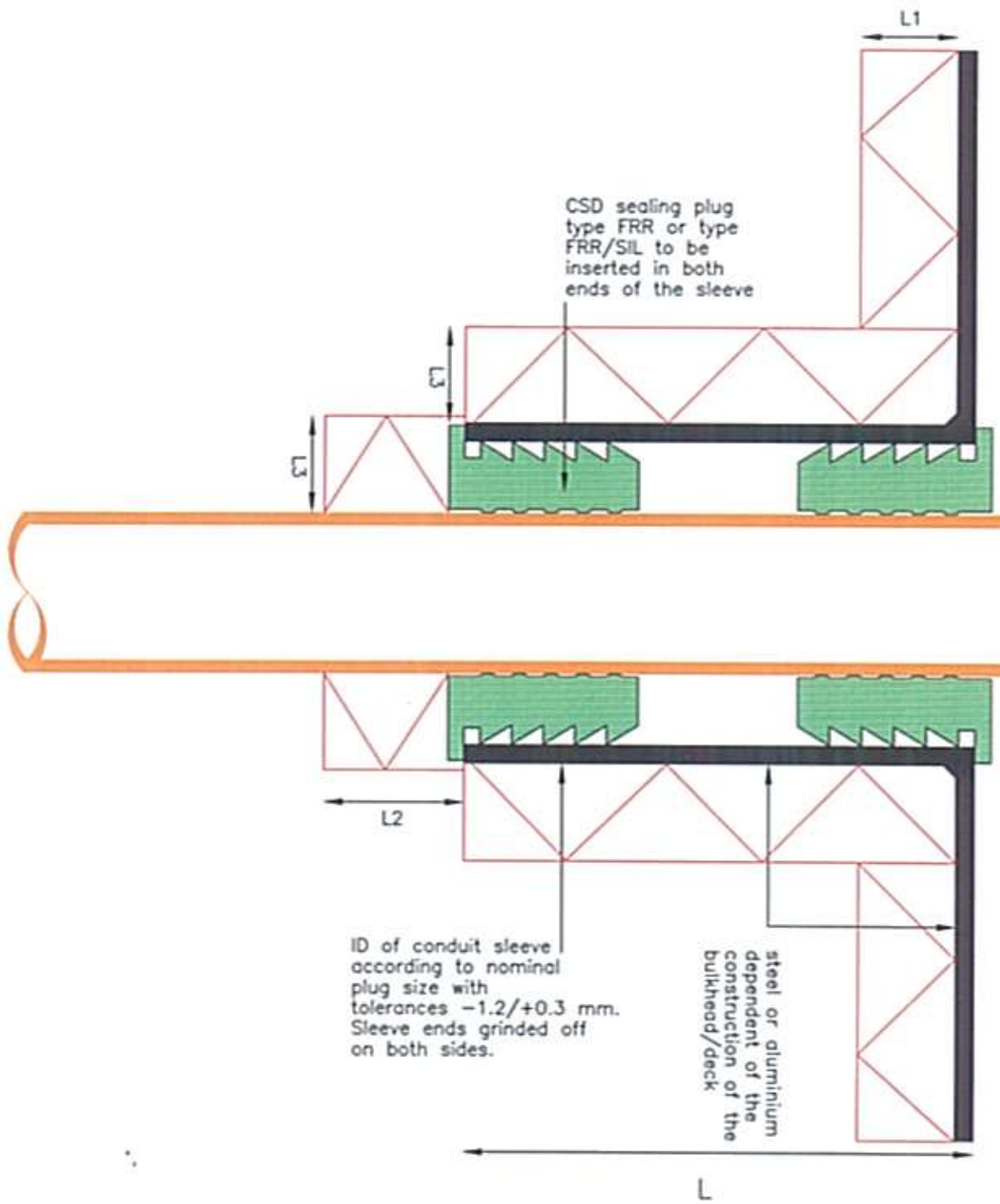
REVIEWED

610202

NB 0062 - File N° Act.: *KATA20/004*

TAL giss/rel

A0-A60 class penetrations
for copper pipes
sealed with
CSD (multi-) sealing plugs



- L = 120 mm for sleeves up to 2" and 160 mm above 2"
- L1 = approved A-60 deck insulation
- L2 = 200 mm for service pipes up to 4"
- 400 mm for service pipes 2" up to 4"
- 800 mm for service pipes above 4"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date:

27.07.00

Scale: 1:2

Rev. 1

15.12.00

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Rev. 2

JAB

PL068E

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Marine Equipment

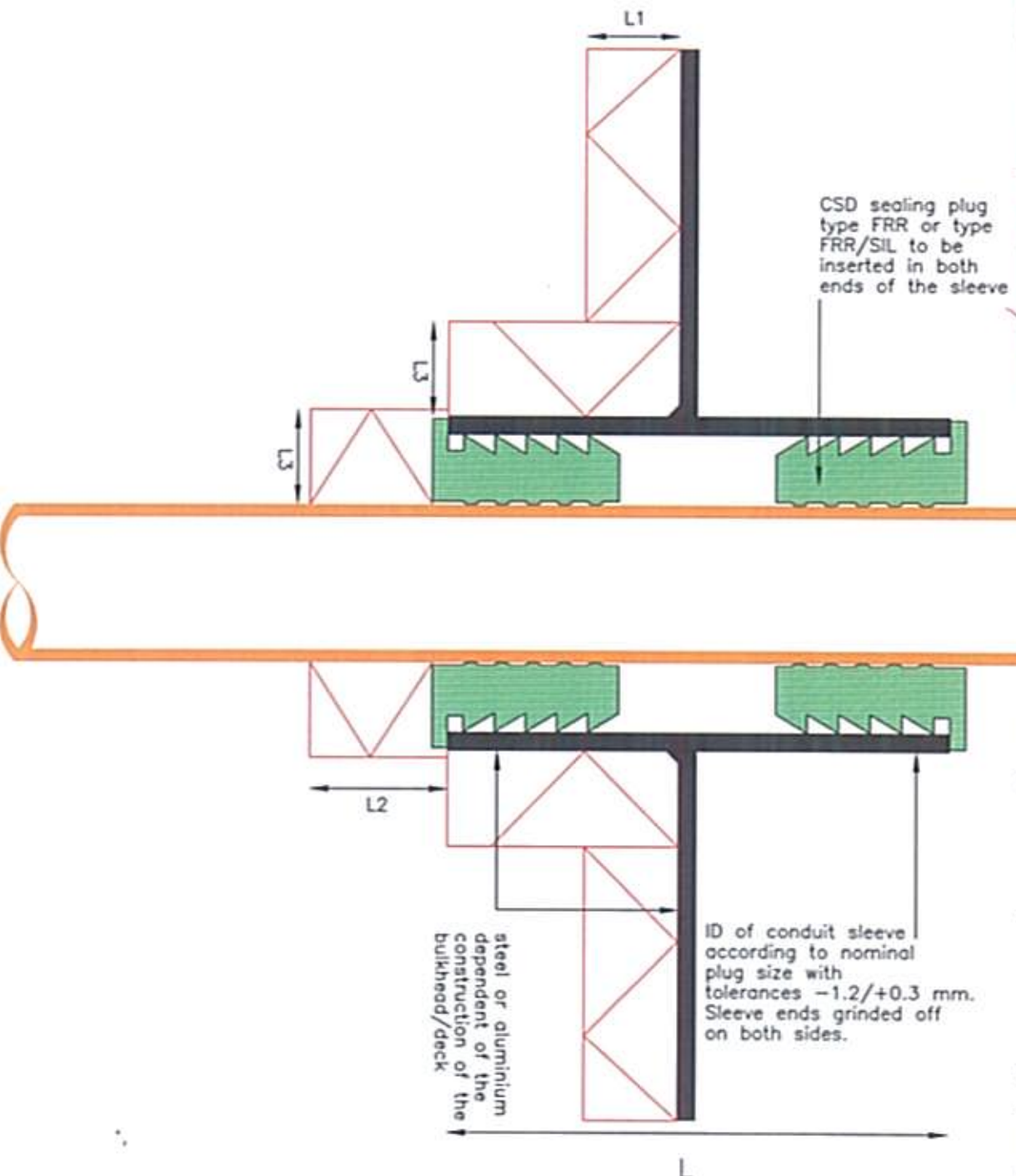
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01 03 02

NB 0062 - File N°: *Ar:4010/004*

Tac 1155/et

A0-A60 class penetrations
for steel, stainless steel
and GRP pipes sealed with
CSD (multi-) sealing plugs



- L = 120 mm for sleeves up to 2" and 160 mm above 2"
- L1 = approved A-60 deck insulation
- L2 = 100 mm for service pipes up to 1"
300 mm for service pipes 1" up to 3"
400 mm for service pipes 3" up to 6"
500 mm for service pipes above 6"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mat.: FRR-FRR/SIL

Ref.: JAB

Date:

27.07.00

Scale: 1:2

Rev. 1

15.12.00

JAB

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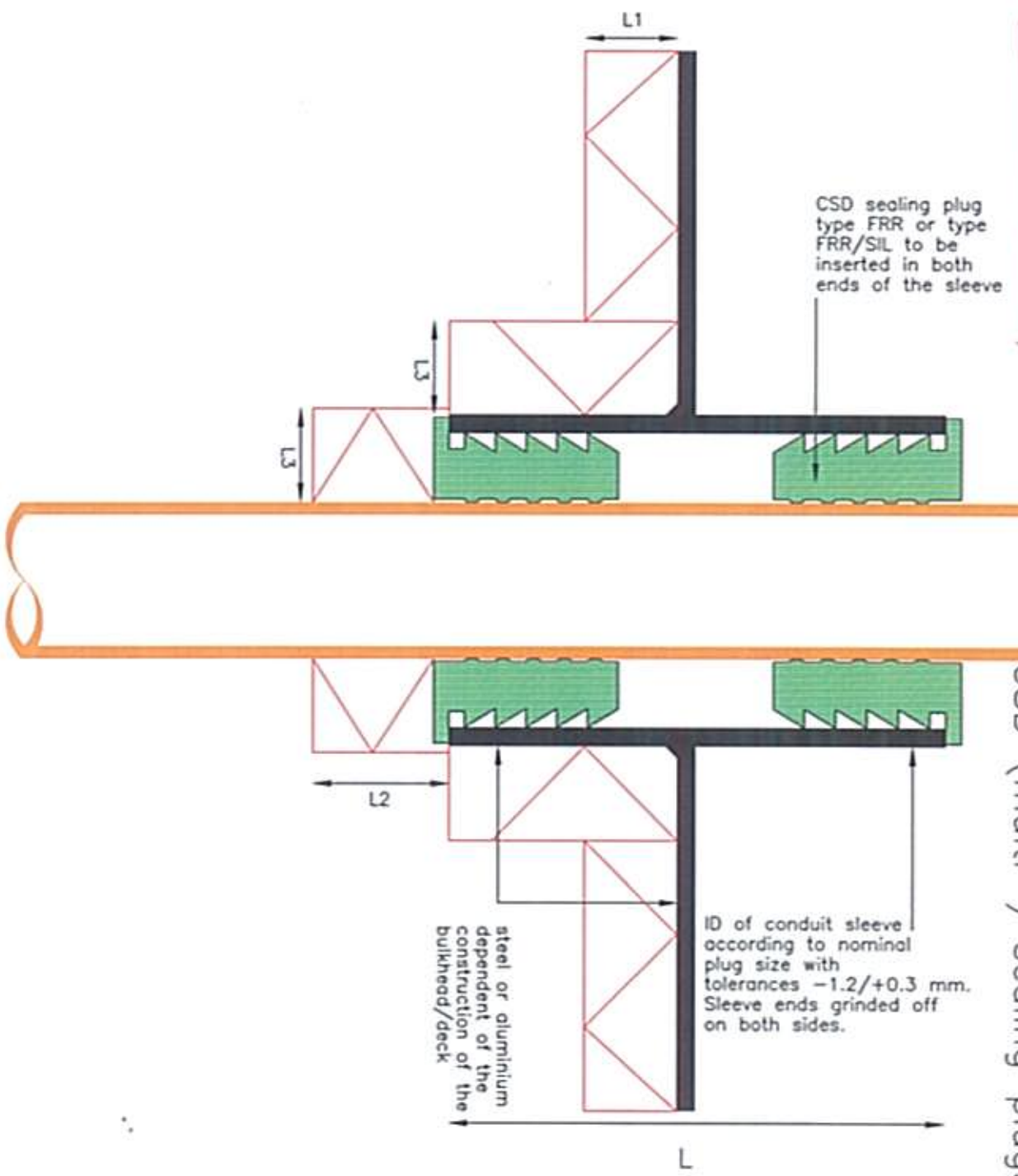
Rev. 2

JAB

PL069E


 DIRECTIVE 96/98 EC
 Marine Equipment
REVIEWED
 01 07 02
 NB 0062 - File N° Act.: 4.010/420/004
 TAC GISS/EE

A0-A60 class penetrations
 for copper pipes
 sealed with
 CSD (multi-) sealing plugs



- L = 120 mm for sleeves up to 2" and 160 mm above 2"
- L1 = approved A-60 deck insulation
- L2 = 200 mm for service pipes up to 2" 400 mm for service pipes 2" up to 4" 800 mm for service pipes above 4"
- L3 = density minimal 110 kg/m³; thickness minimal 25 mm

A0-A60



Description: lay-out A60 class pipe penetrations

Mot.: FRR-FRR/SIL

Ref.: JAB

Date: 27.07.00

Scale: 1:2

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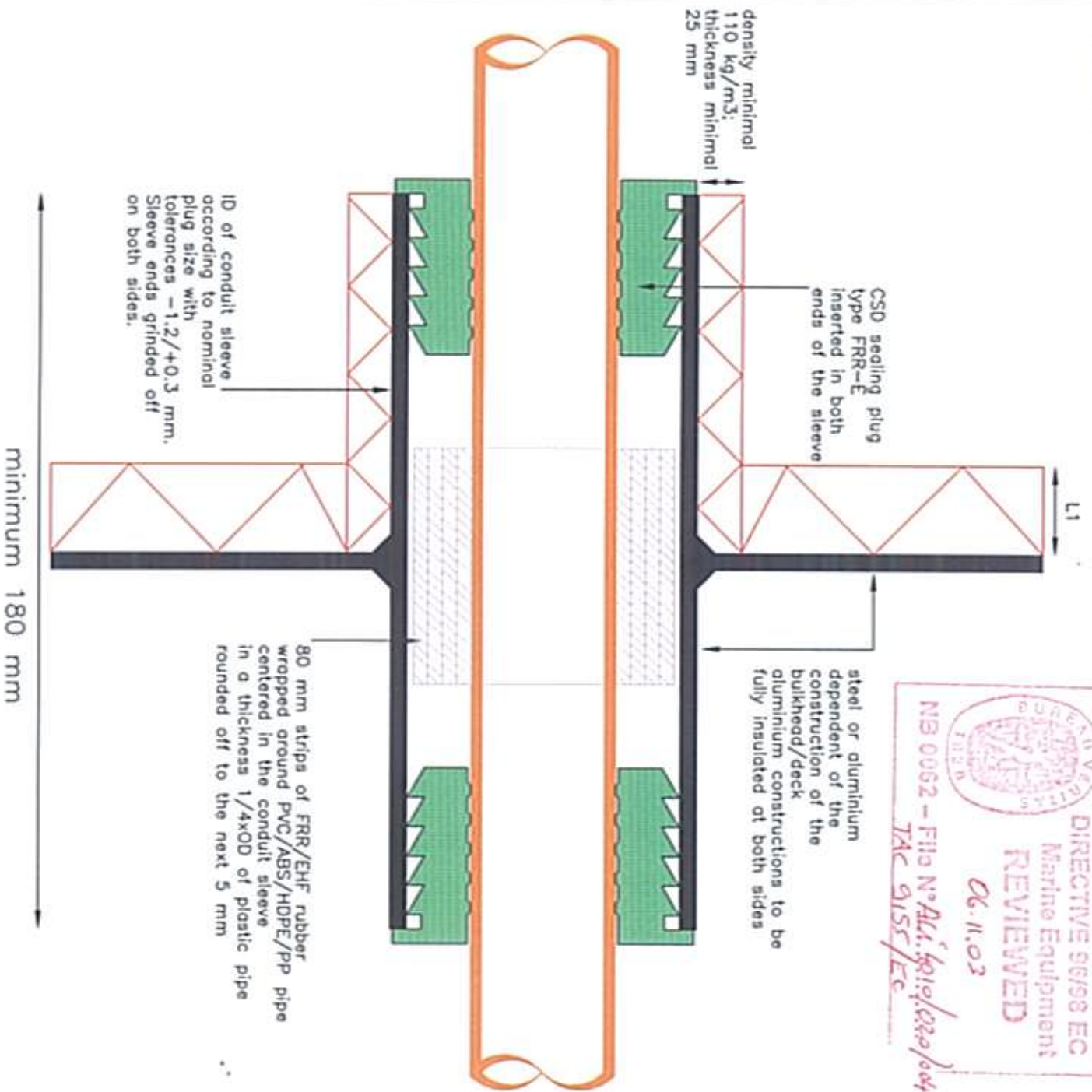
Rev. 1 15.12.00

JAB

PL070E

A0-A60 class single pipe penetrations for plastic pipes ranging from 16 mm up to 225 mm sealed with CSD sealing plugs type FRR-E and cavity filled with FRR/EHF rubber

DIRECTIVE 96/98 EC
 Marine Equipment
 REVIEWED
 06.11.03
 NB 0062 - File N° ALI.4010/020/004
 TAC 9155/Ec



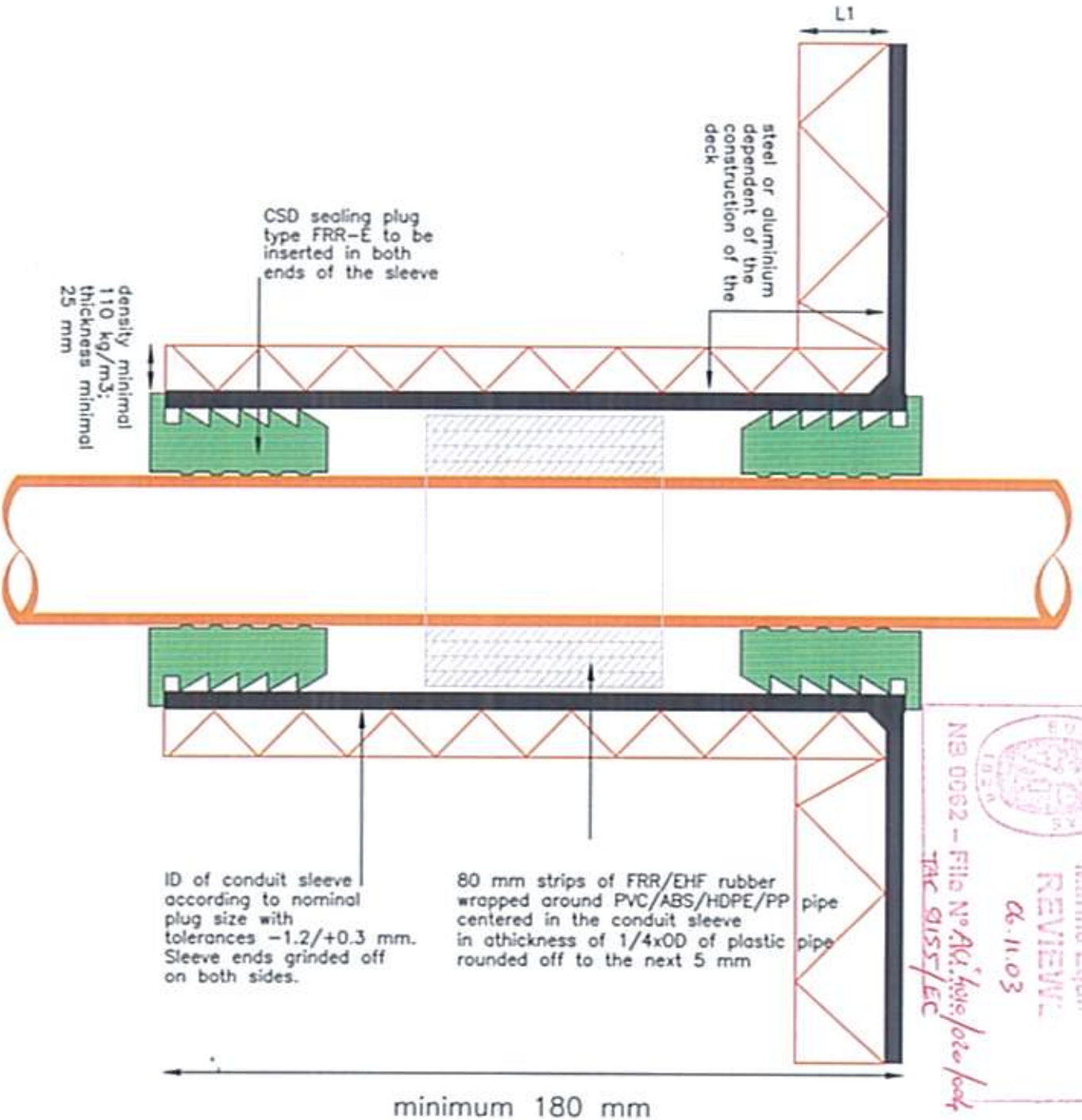
L1 = A-60 approved bulkhead insulation

A0 - A60

	Description: plastic pipe penetration with FRR-E plugs and FRR/EHF rubber	
	Mat.: FRR-E and FRR/EHF	
Ref.: JAB	Date: 02.10.02	Scale: 1:2
	Rev. 1	JAB
	Rev. 2	JAB
		PL106E

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A0-A60 class single pipe penetrations for plastic pipes ranging from 16 mm up to 225 mm sealed with CSD sealing plugs type FRR-E and cavity filled with FRR/EHF rubber



DIRECTIVE 96/95
 Marino Equi
 REVIEW:
 06.11.03
 NB 0062 - File No. A0-A60/020/007
 TAC GISS/EC

A0 - A60

L1 = A-60 approved deck insulation

Description: plastic pipe penetration with FRR-E plugs and FRR/EHF rubber

Mat.: FRR-E and FRR/EHF

Ref.: JAB

Date: 02.10.02

Scale: 1:2

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Rev. 1
Rev. 2

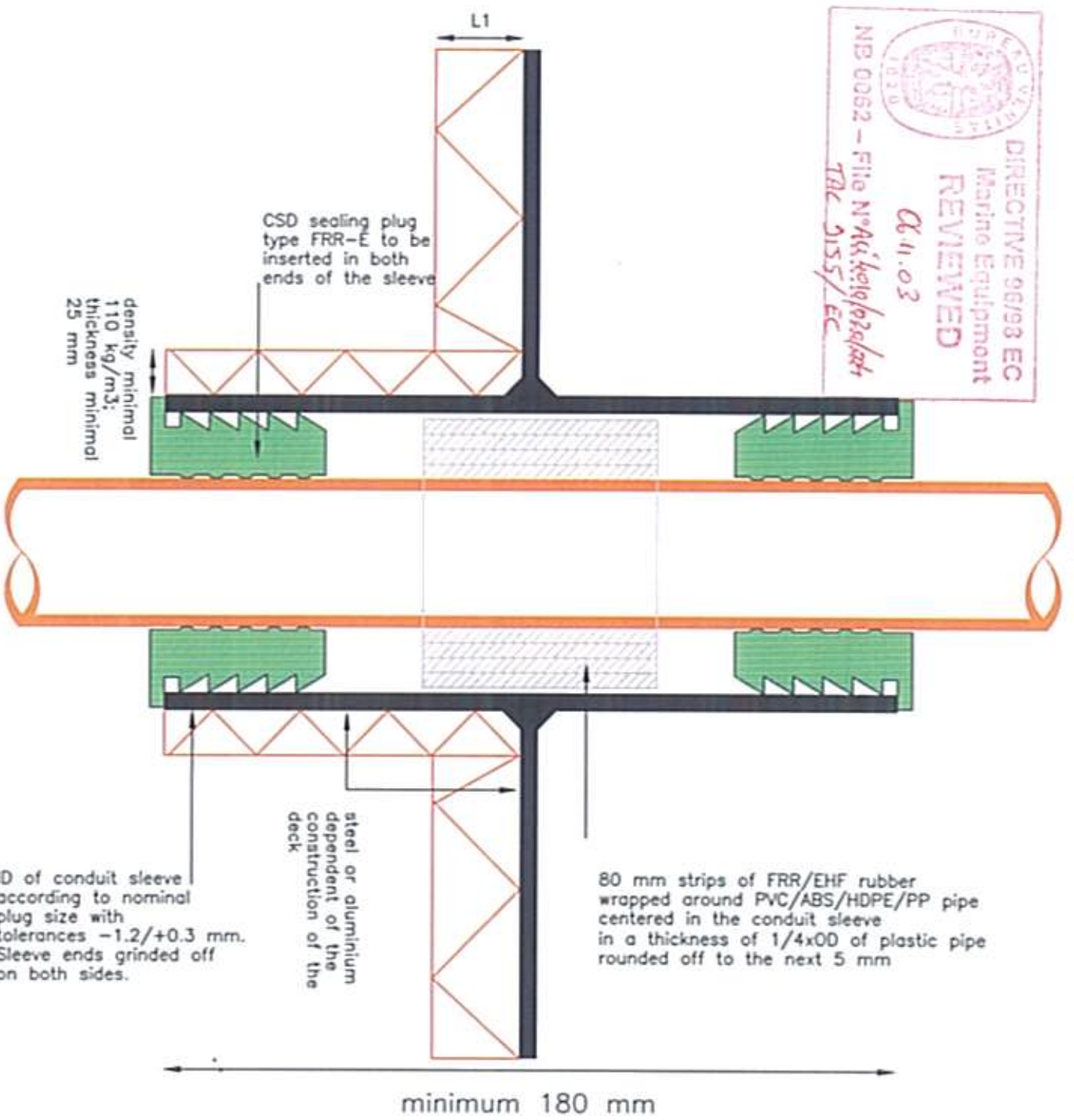
JAB
JAB

PL107E



A0-A60 class single pipe penetrations for plastic pipes ranging from 16 mm up to 225 mm sealed with CSD sealing plugs type FRR-E and cavity filled with FRR/EHF rubber


 DIRECTIVE 98/93 EC
 Marine Equipment
 REVIEWED
 06.11.03
 NB 0062 - File N° A4440101020204
 TAC 2155/EC



L1 = A-60 approved deck insulation

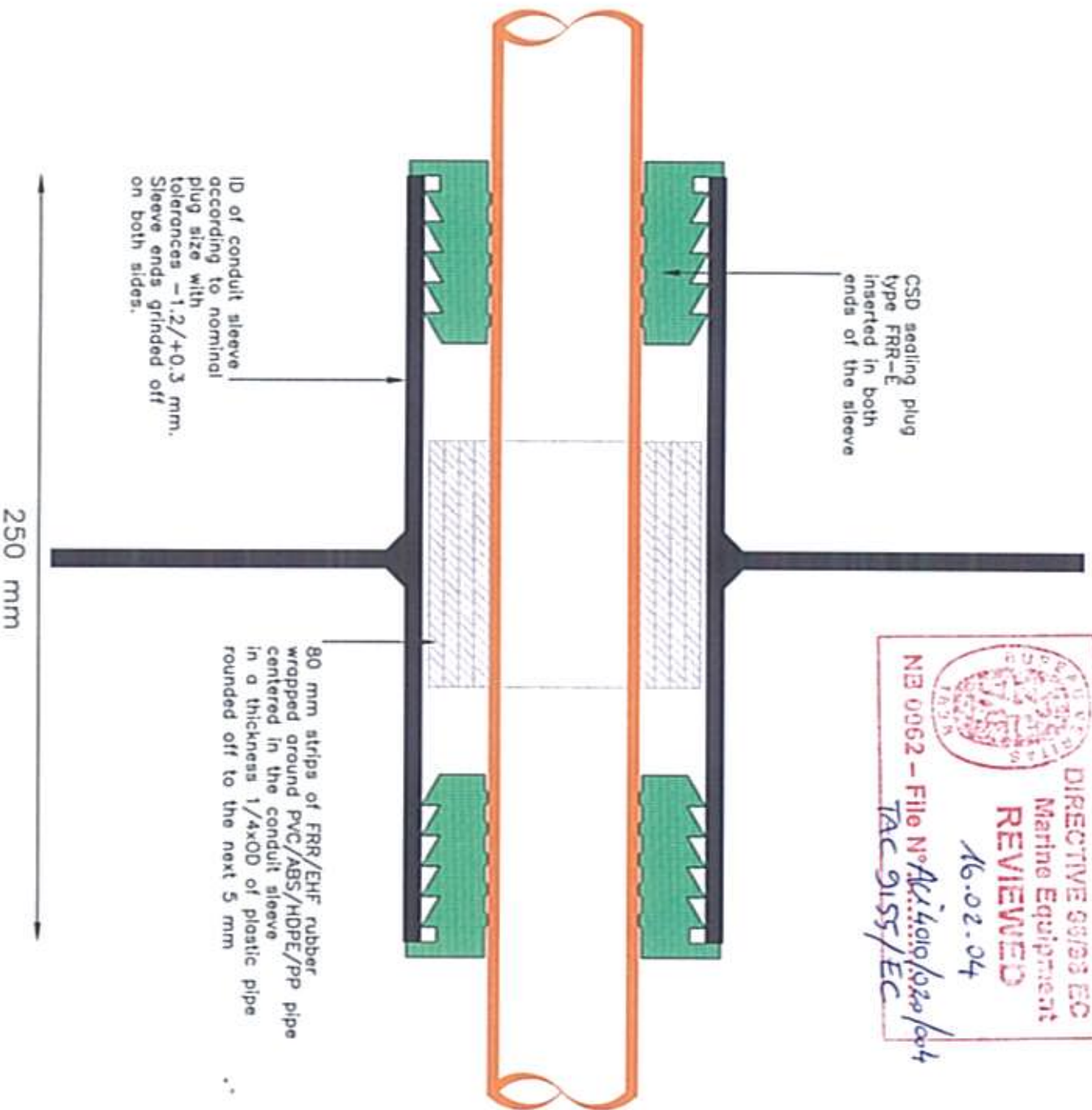
A0 - A60



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Description: plastic pipe penetration with FRR-E plugs and FRR/EHF rubber		Date: 02.10.02		Scale: 1:2	
Mat.: FRR-E and FRR/EHF		Rev. 1		JAB	PL108E
Ref.: JAB		Rev. 2		JAB	

A0 class single pipe penetrations for plastic pipes sealed with CSD sealing plugs type FRR-E and cavity filled with FRR/EHF rubber



A0



Description: plastic pipe penetration with FRR-E plugs and FRR/EHF rubber

Mat.: FRR-E and FRR/EHF

Ref.: JAB

Date: 17.11.03

Scale: 1:2

Rev. 1

JAB

Rev. 2

JAB

PL124E

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