



# NIPPON KAIJI KYOKAI

## *Certificate*

Certificate No.  
04EQ35FPA(AL)

OF

APPROVAL

Item	:	A-60 class pipe penetration
Type	:	CSD sealing plugs type FRR-E
Specification	:	See Annex.
Manufacturer	:	Beele Engineering B.V. Beunckdijk 11, 7122 NZ Aalten, The Netherlands
Place of manufacture	:	CSD International B.V. Postbus 30, 6970 AA Brummen, The Netherlands
Testing standard	:	FTTP Code Annex1 / Part 3
Test report	:	
Test laboratory	:	Warrington Fire Research Center, United Kingdom
Report number	:	114525
Test report for Additional test	:	
Test laboratory	:	Beele Engineering B.V.
Report number	:	0311-020

THIS IS TO CERTIFY that the above type of products has been approved by Nippon Kaiji Kyokai with type approval No. 01FPA42DA and that products of the type will be accepted for use onboard ships classed with the Society for compliance with the relevant requirements of the Society's *Rules for the Survey and Construction of Steel Ships* and those of the *International Convention for the Safety of Life at Sea, 1974, as amended*, subject to approval of the flag Administration and conditional upon that product verification be carried out by the Society.

This certificate is valid until 28th June 2006.

Issued at Tokyo on 2nd March 2004.

NIPPON KAIJI KYOKAI

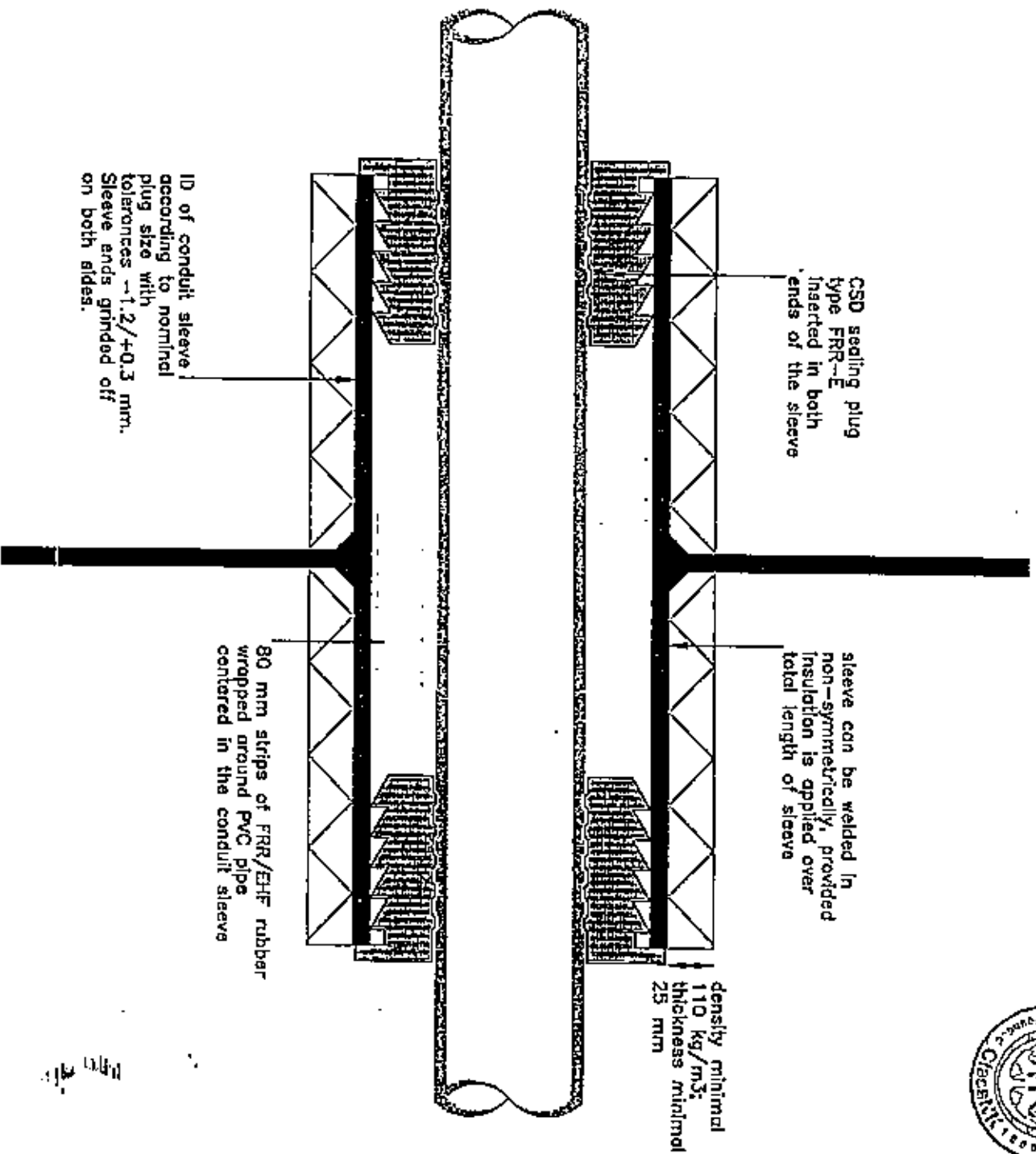


H. Kitada  
General Manager  
Material and Equipment Department

This certificate has been re-issued due to adding the approval condition.  
Initial approval date : 29th June 2001

AO class deck and bulkhead single pipe penetrations for PVC pipes up to 75 mm sealed with CSD sealing plugs type FRR-E and cavity filled with FRR/EHF rubber

Annex to the Certificate No. 04ED35FPA(A&E)



250 mm

**AO**



Description: PVC pipe penetration sealed with FRR-E plugs

Mat.: FRR-E and FRR/EHF

Réf.: JAB

Date: 03.06.00

Scale: 1:2

Rev. 1

JAB

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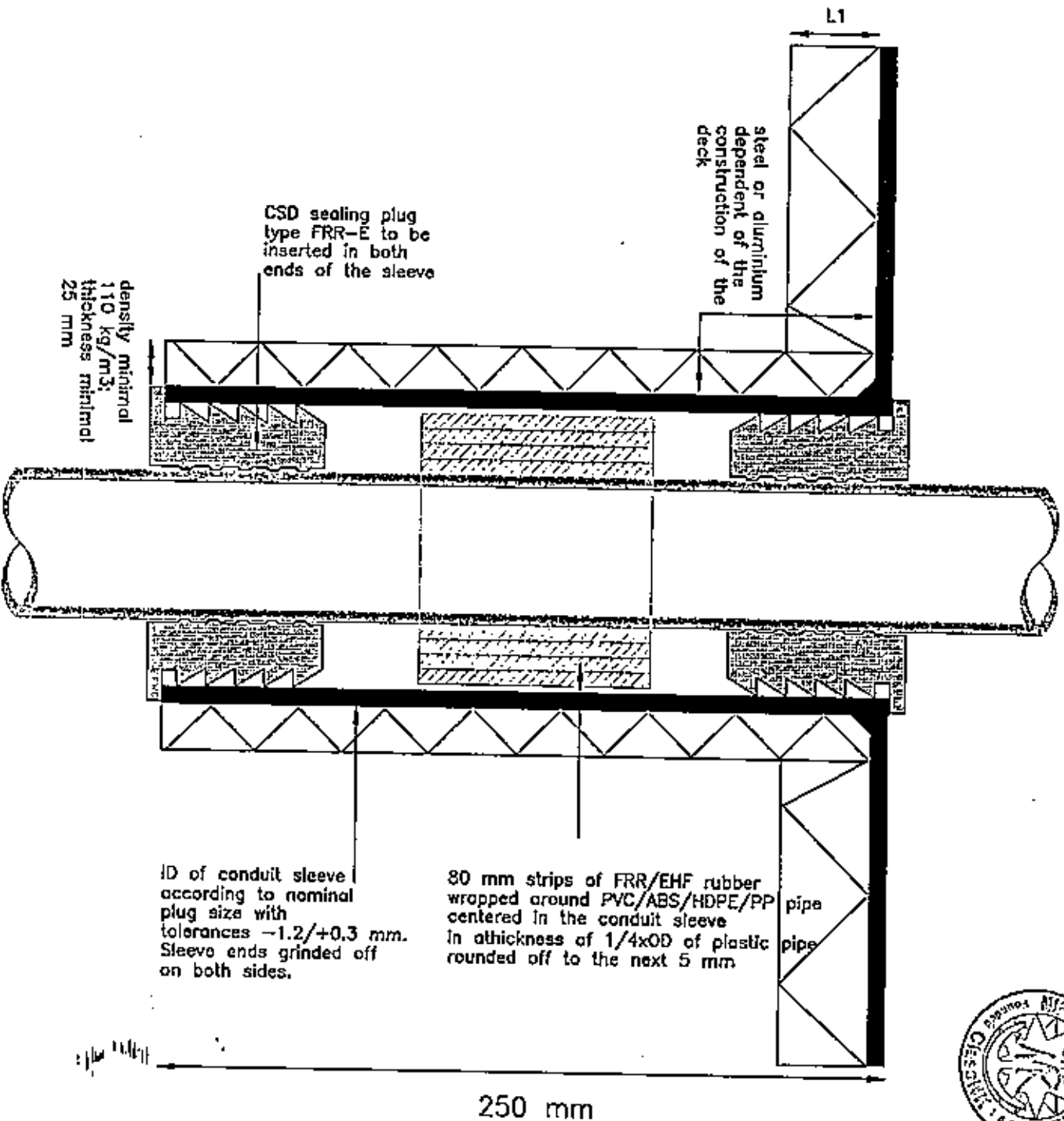
Rev. 2

JAB

**PL055E**

A0-A60 class single pipe penetrations for PVC, ABS, HDPE and PP pipes up to 160 mm sealed with CSD sealing plugs type FRR-E and cavity filled with FRR/EHF rubber

Annex to the Certificate No. 04EQ35FP A (K E)



L1 = A-60 approved deck insulation

# A0 - A60



Description: PVC/ABS/HDPE/PP pipe penetration with

Mat.: FRR-E and FRR/EHF

FRR-E plugs

Ref.: JAB

Date: 27.07.00

Scale: 1:2

Rev. 2 08.11.00

JAB

Rev. 3 22.02.01

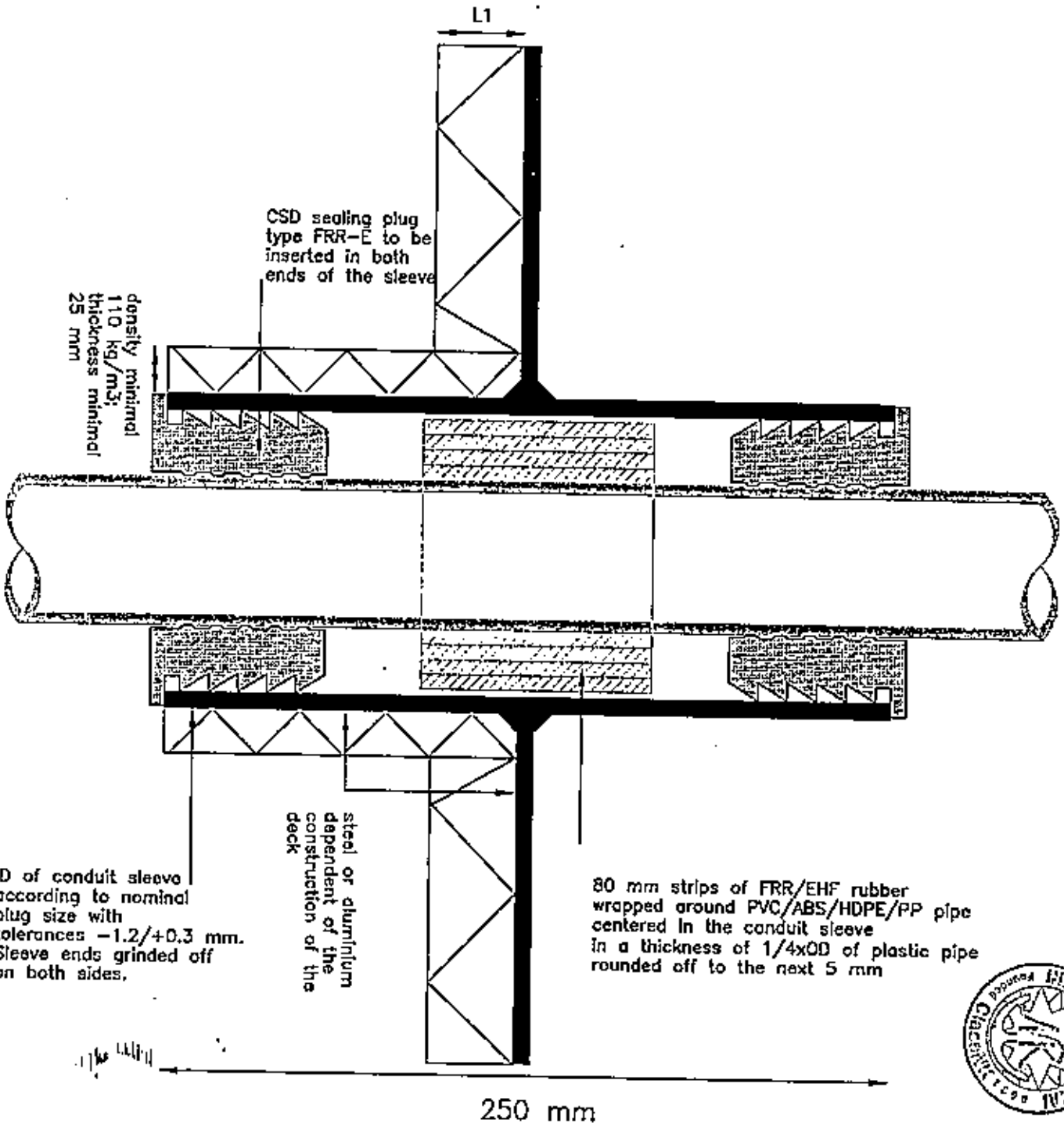
JAB

PL074E

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A0-A60 class single pipe penetrations for PVC, ABS, HDPE and PP pipes up to 160 mm sealed with CSD sealing plugs type FRR-E and cavity filled with FRR/EHF rubber

Annex to the Certificate No. 04EQ35FP A(AE)



L1 = A-60 approved deck insulation

# A0 - A60



Description: PVC/ABS/HDPE/PP pipe penetration with

Mat.: FRR-E and FRR/EHF FRR-E plugs

Ref.: JAB

Date: 27.07.00 Scale: 1:2

Rev. 2 08.11.00 JAB

Rev. 3 22.02.01 JAB

PL075E

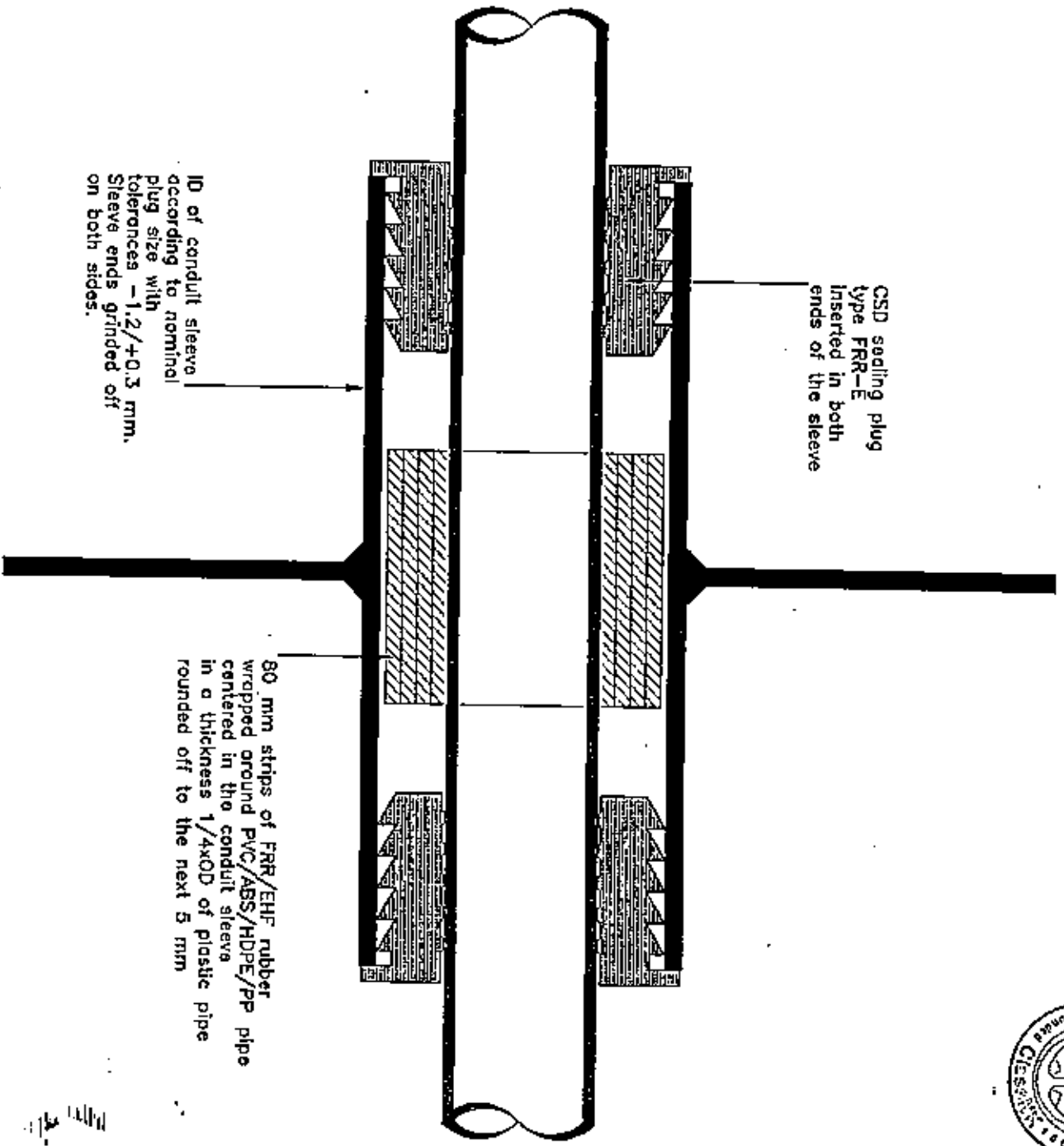
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0 class single pipe penetrations for plastic pipes  
 sealed with CSD sealing plugs type FRR-E and cavity  
 filled with FRR/EHF rubber

Annex to the Certificate No. 04EQ35PPA(A.L)



CSD sealing plug  
 type FRR-E  
 inserted in both  
 ends of the sleeve

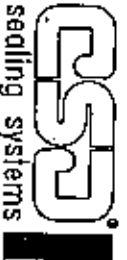


80 mm strips of FRR/EHF rubber  
 wrapped around PVC/ABS/HDPE/PP pipe  
 centered in the conduit sleeve  
 in a thickness 1/4xOD of plastic pipe  
 rounded off to the next 5 mm

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

250 mm

**AO**



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**

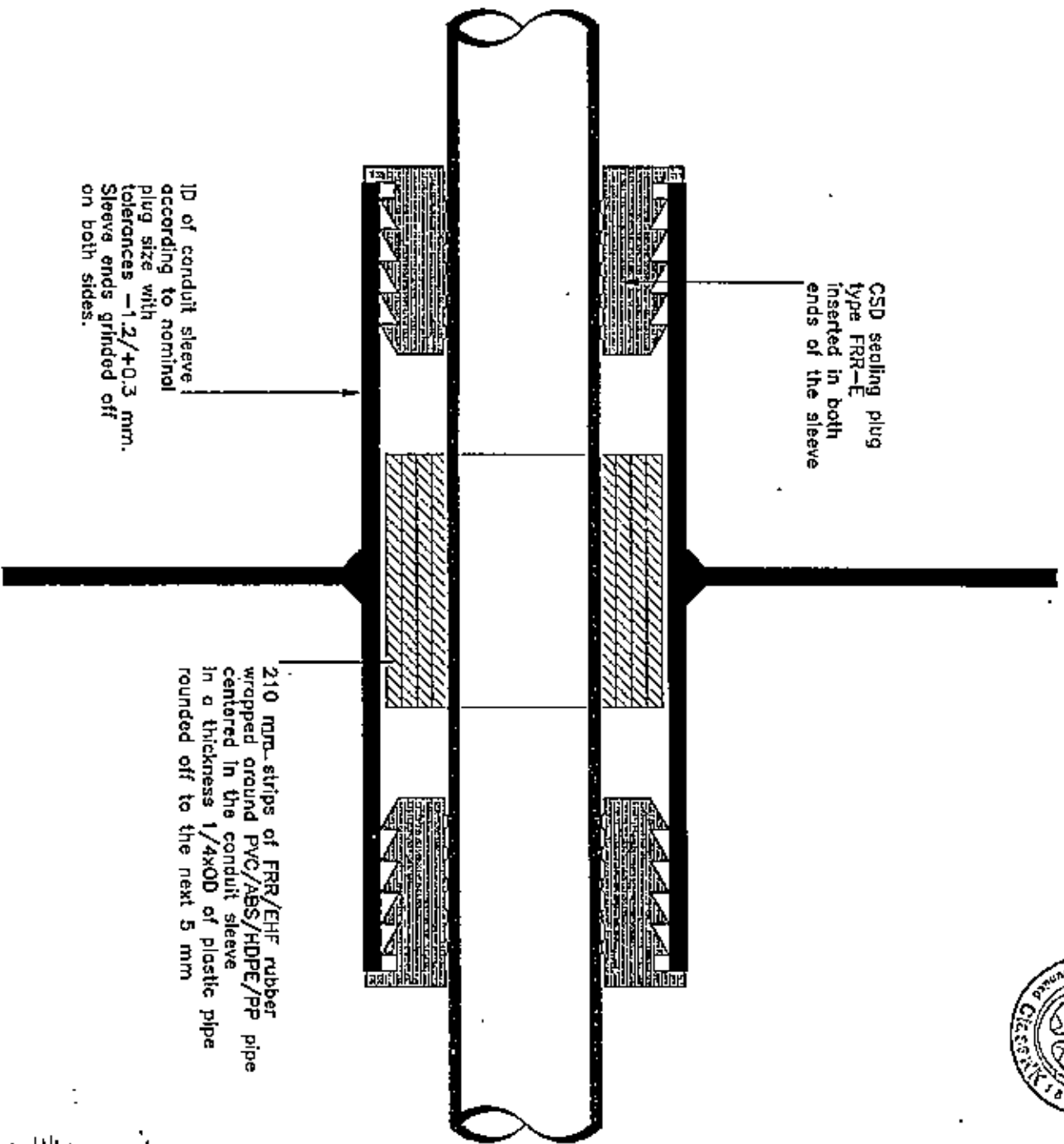
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A0 class single pipe penetrations for plastic pipes sealed with CSD sealing plugs type FRR-E and cavity filled with FRR/EHF rubber

Annex to the Certificate No. 04D035PPA(L)



CSD sealing plug  
type FRR-E  
inserted in both  
ends of the sleeve



**A0**



sealing systems

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

**PL125E**

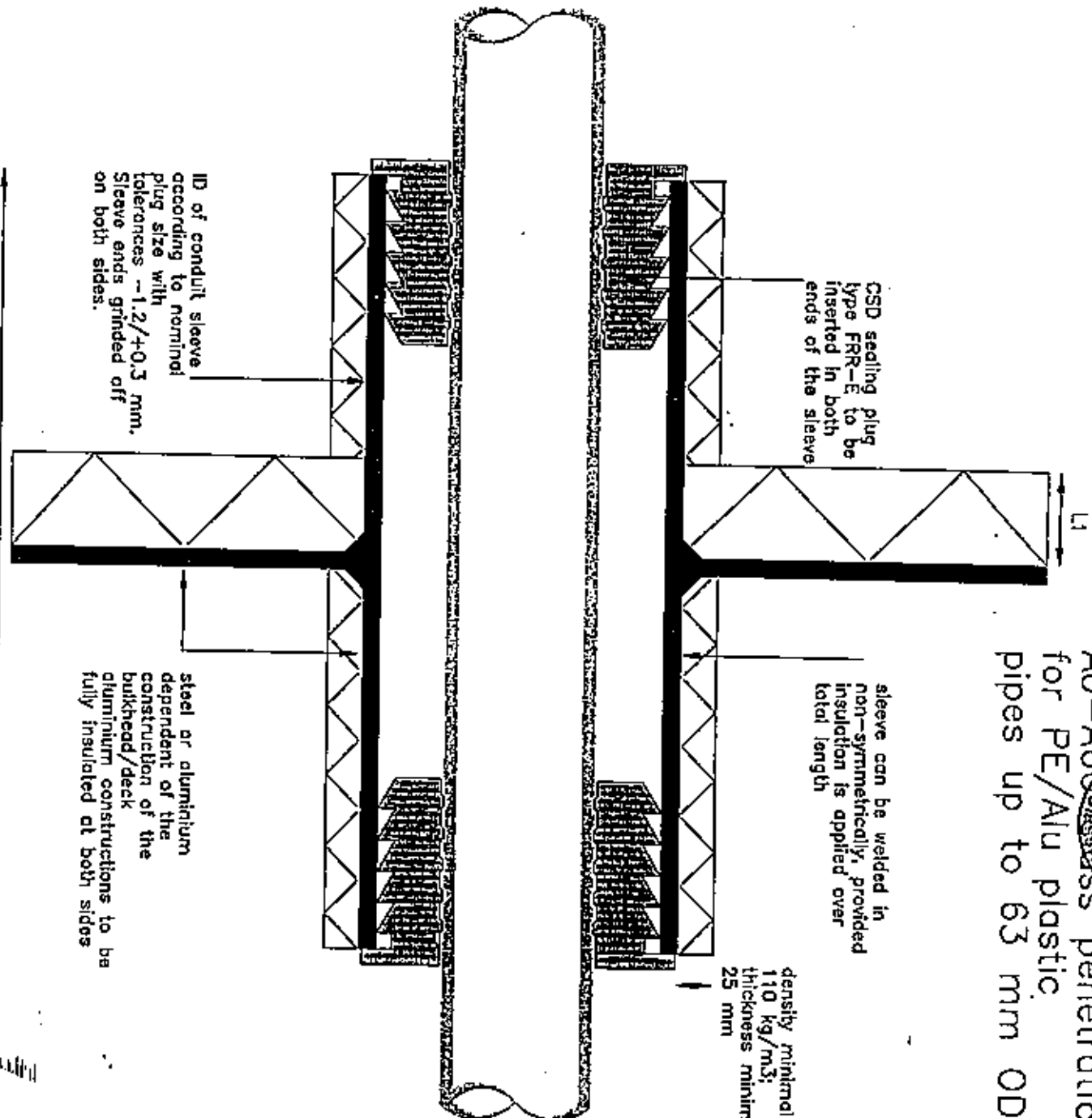


A0-A60 class penetrations  
for PE/Alu plastic  
pipes up to 63 mm OD

CSD sealing plug  
type FRR-E to be  
inserted in both  
ends of the sleeve

sleeve can be welded in  
non-symmetrically, provided  
insulation is applied over  
total length

density minimal  
110 kg/m<sup>3</sup>;  
thickness minimal  
25 mm



ID of conduit sleeve  
according to nominal  
plug size with  
tolerances  $-1.2/+0.5$  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 = 150 mm for conduit sleeves max. 2"  
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

Rev. 2 08.11.00

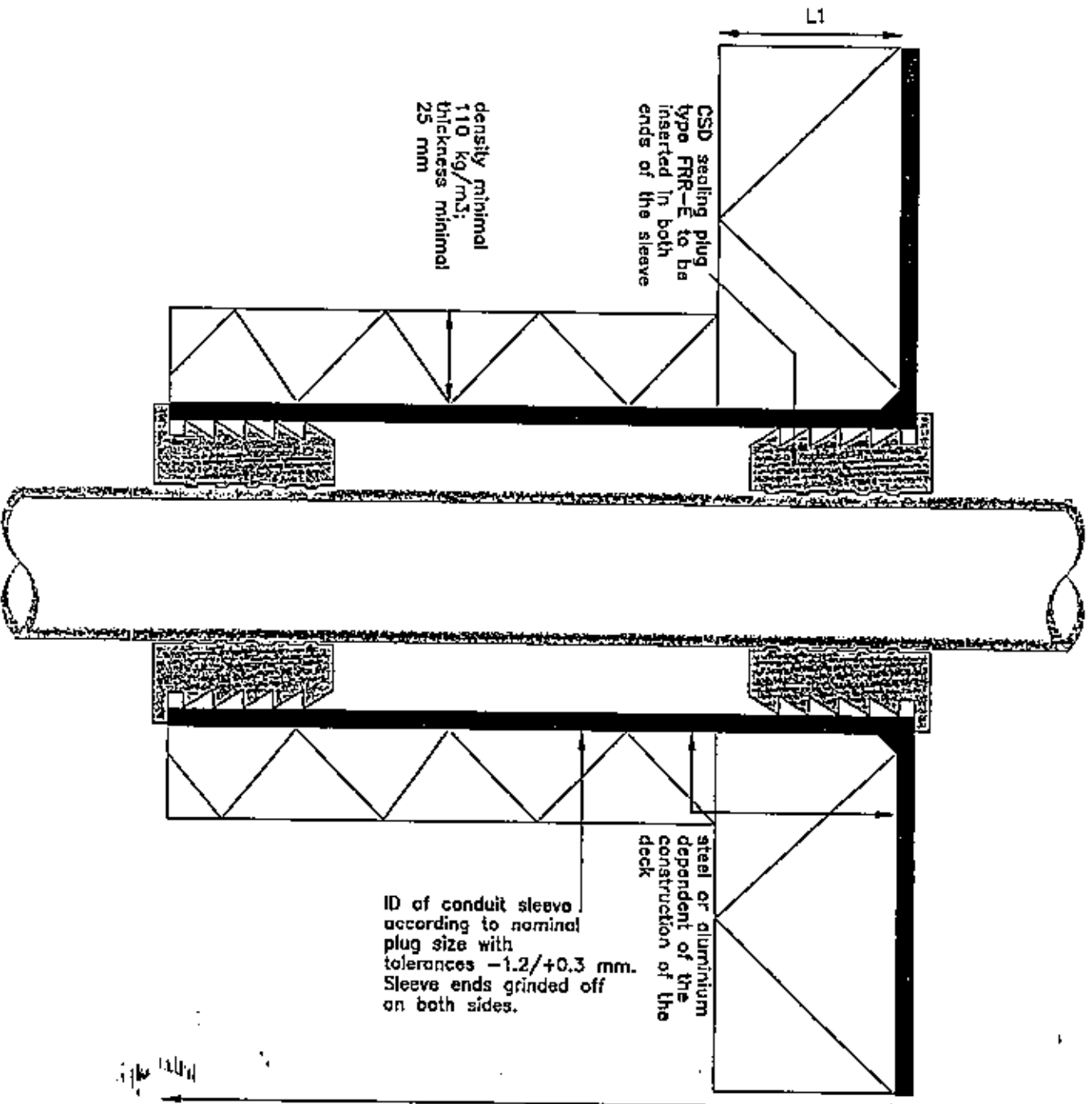
JAB

PL049E

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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

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Rev. 2 08.11.00

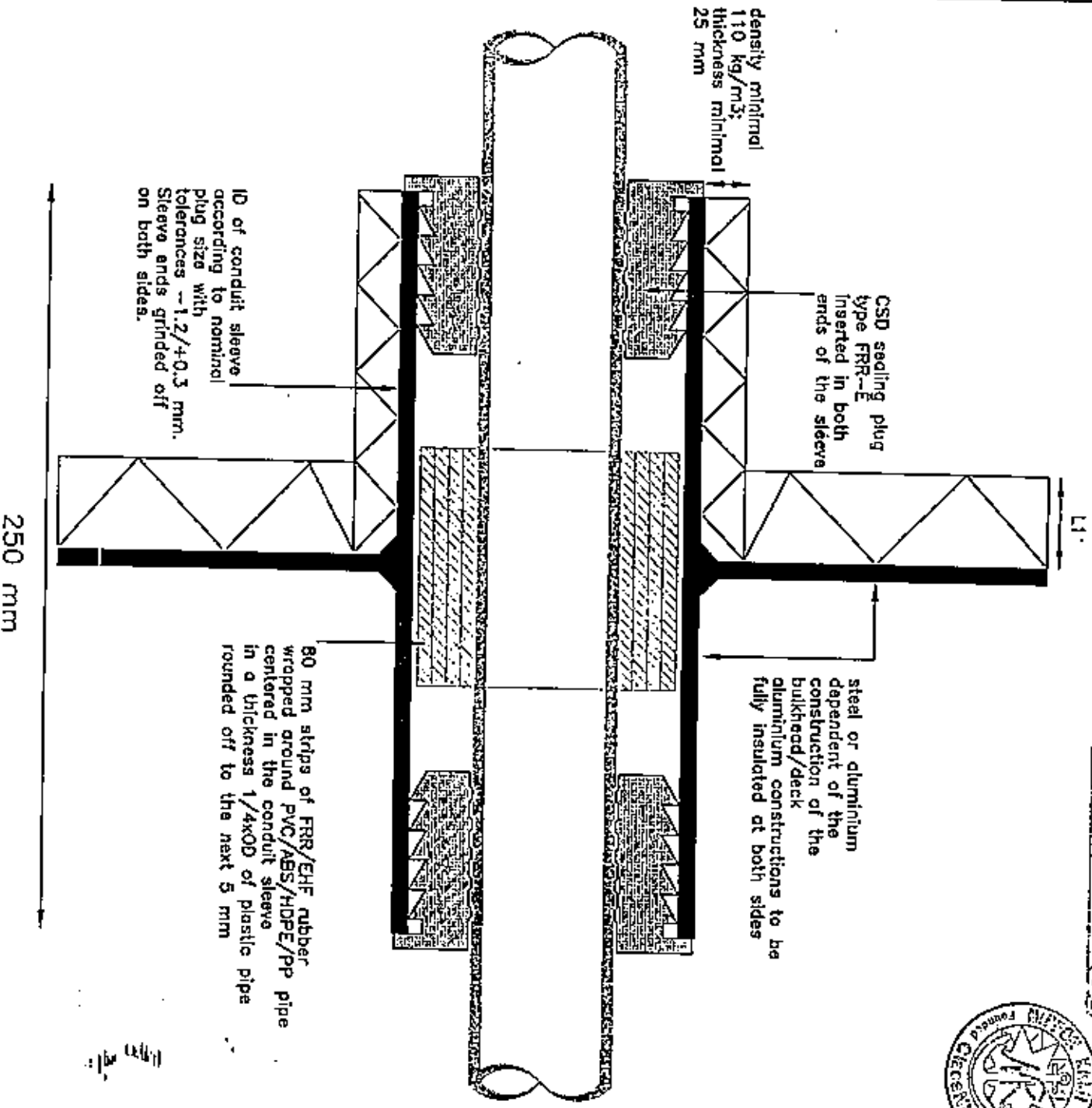
JAB

PL050E



A0-A60 class single pipe penetrations for PVC, ABS, HDPE and PP pipes up to 160 mm sealed with CSD sealing plugs type FRR-E and cavity filled with FRR/EHF rubber

Annex to the Certificate No. 04EQ35FP(A)(E)



L1 = A-60 approved bulkhead insulation

# A0 - A60



Description: PVC/ABS/HDPE/PP pipe penetration with FRR-E plugs

Mat.: FRR-E and FRR/EHF

Ref.: JAB

Date: 27.07.00

Scale: 1:2

Rev. 2 08.11.00

JAB

Rev. 3 22.02.01

JAB

PL073E

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