Deutsches Institut für Bautechnik

DIBt

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment

ETA-16/0016 of 18 January 2016

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	"PYRO-SAFE CT Cable Tube" and "PYRO-SAFE CT ML Cable Tube"
Product family to which the construction product belongs	product for cable penetration seal
Manufacturer	svt Brandschutz Vertriebsgesellschaft mbH International Glüsinger Straße 86 21217 Seevetal DEUTSCHLAND
Manufacturing plant	Herstellwerk I
This European Technical Assessment contains	12 pages including 8 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	Guideline for European technical approval of "Fire Stopping and Fire Sealing Products", ETAG 026 Part 2: "Penetration Seals", used as European Assessment Document (EAD) according to Article 66 Paragraph 3 of Regulation (EU) No 305/2011.

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Specific part

1 Technical description of the product

The construction products consist of PVC-U half-pipes and an inlay made of an intumescent material which expands under heat exposure.

- In the case of the construction product "PYRO-SAFE CT Cable Tube", design variant 1, two half-pipes are joined by means of a click fastener to form a pipe sleeve. The inlay is bonded into the half-pipes (see Annex 2).
- In the case of the construction product "PYRO-SAFE CT Cable Tube", design variant 2, two half-pipes are joined by means of a fastener taking the shape of an H profile to form a pipe sleeve. The half-pipes are coated with the inlay (see Annex 2).
- The construction product "PYRO-SAFE CT ML Cable Tube" consists of a half-pipe. The inlay is bonded into the half-pipe. The inlay overlaps the half-pipe by about the half-pipe's diameter. This overlap is used to form the bottom (see Annex 3).

Detailed specifications (e.g. dimensions) and fire safety related performance criteria for the construction products are given in Annexes 1 to 3. Detailed information on the construction products' components are deposited with Deutsches Institut für Bautechnik.

NOTE:

The characteristics listed are suitable both for identifying the construction products as well as for performing the manufacturer's factory production control.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The construction products "PYRO-SAFE CT Cable Tube" and "PYRO-SAFE CT ML Cable Tube" shall be used as part of cable penetration seals.

Cable penetration seals are used to seal openings in fire-resistant walls or floors, which are penetrated by cables. Their aim is to preserve the walls' or floors' fire resistance in the area of the penetrations.

Within the framework of this ETA, the fire resistance was demonstrated for cable penetration seals consisting of two half-pipes of the type "PYRO-SAFE CT Cable Tube" (for floor and wall installations) and for cable penetration seals consisting of one half-pipe of the type "PYRO-SAFE CT ML Cable Tube" (for wall installations).

The cable penetration seals had a closure made of a flexible foam on both sides for "PYRO-SAFE CT Cable tube" pipe sleeves or one side for "PYRO-SAFE CT ML Cable Tube" half-pipes.

After inserting the foam into the remaining openings, this closure was sealed from the outside with an ablative fire stopping product.

In addition, the joints between the pipe sleeve or the half-pipe and the surrounding component were sealed (see table 1).

Table 1 – Components of the verified penetration seals

Product type	Trade name
Half-pipes with inlay	"PYRO-SAFE CT Cable Tube", "PYRO-SAFE CT ML Cable Tube"
Flexible foam sealing plug	"Basotect", "Basotect G"
Ablative fire stopping product	"PYRO-SAFE FLAMMOTECT-A"
Mineral fibre boards of a thickness of 50 mm	"Rockwool Hardrock 040"
Insulation wool made of mineral fibre	"Rockwool Lose Wolle RL"
System ground plate of a thickness of 32 mm	"GIFAfloor FHB"

More detailed information and data on the verified penetration seals are given in Annexes 4 to 8. The performances given in Section 3 relate exclusively to these penetration seals (e.g. with respect to the design and arrangement of the penetration seal components and the type and position of the services).

3 Performance of the product and references to the methods used for its assessment

3.1 Intended use: use in penetration seals

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Fire resistance of a penetration seal (see Annexes 4 to 8 for details) containing the product [1,2]	maximum class EI 90 or EI 120 in accordance with EN 13501-2 (see Annexes 4 to 8)

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with the Guideline for European technical approval "Fire Stopping and Fire Sealing Products", ETAG 026, Part 2: "Penetration Seals", January 2008, which is used as European Assessment Document (EAD), the following legal base shall apply: 1999/454/EC.

The system to be applied is: system 1

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 18 January 2016 by Deutsches Institut für Bautechnik

Prof. Gunter Hoppe
Head of Department

beglaubigt:
Bisemeier

1 The fire resistance depends on how the penetration seal is designed and installed and on the penetrating services. Annexes 2 to 8 include details on the penetration seals for which the fire resistance indicated was demonstrated.

2 Technical provisions of the Member States relating to the design of electrical cable systems and the admissibility of cable penetrations remain unaffected.

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The factory manufactured construction products of the type "PYRO-SAFE CT Cable Tube" and of the type "PYRO-SAFE CT ML Cable Tube" consist of PVC-U half-pipes and an inlay made of an intumescent material. They are used to seal openings in fire-resistant walls and floors.

Properties and performance criteria of the components of the construction products of the type "PYRO-SAFE CT Cable Tube" and of the type "PYRO-SAFE CT ML Cable Tube"

Component	Description
"Half-pipe" (with glued groove bar or click fastener)	Dimensions: Ø 116,4; s = 3,2 mm; l = 150 mm, 200 mm or 300 mm Material: PVC-U according to EN 1452
"Inlay" for "PYRO-SAFE CT Cable Tube", design variant 1 and "PYRO-SAFE CT ML Cable Tube"	"PYRO-SAFE DG-CR SK": Thickness = 1,5 mm (dry layer thickness) Material: intumescent material Classification of fire behavior according to EN 13501-1: E
"Inlay" for "PYRO-SAFE CT Cable Tube", design variant 2	"PYRO-SAFE DG": Thickness = 1,5 mm (dry layer thickness) Material: intumescent material Classification of fire behavior according to EN 13501-1: B-s1, d0

Description of the additional ingredients of the tested sealings

"Closure" (for closing the pipe sleeve; Material: flexible foam of the type "Basotect" der Fa. BASF AG) or "Basotect G" der Fa. BASF AG)	Thickness = 40 mm; diameter corresponding to the pipe diameter; Classification of fire behavior according to EN 13501-1: C-s1, d0
"Sealing" (Material: intumescent material "PYRO-SAFE FLAMMOTECT-A" according to ETA-14/0418)	Thickness ≥ 0,5 mm (dry layer thickness) Classification of fire behavior according to EN 13501-1: E

"PYRO-SAFE CT Cable Tube" und "PYRO-SAFE CT ML Cable Tube"	Annex 1
Description of the construction products, properties and performances	

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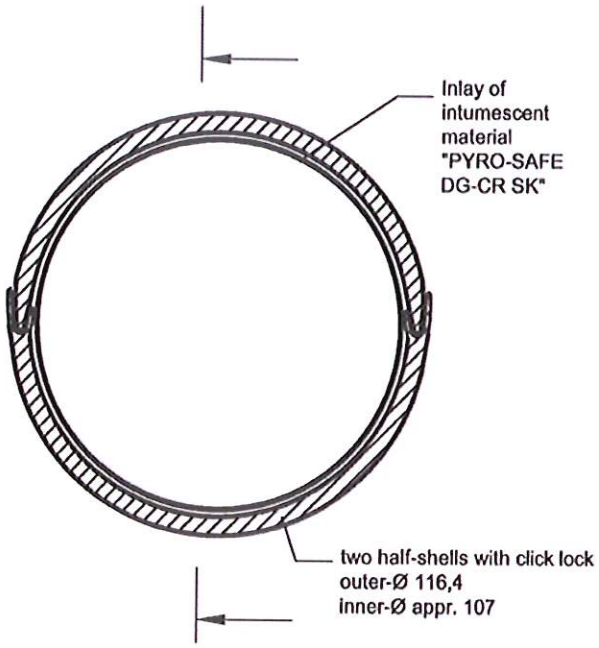
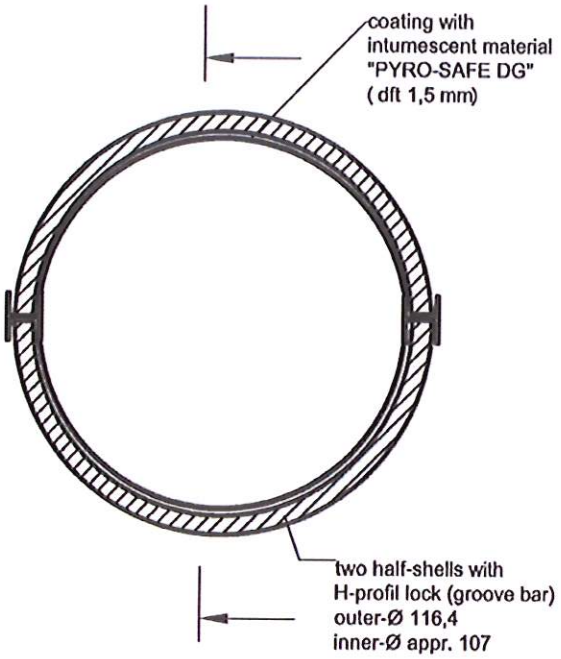
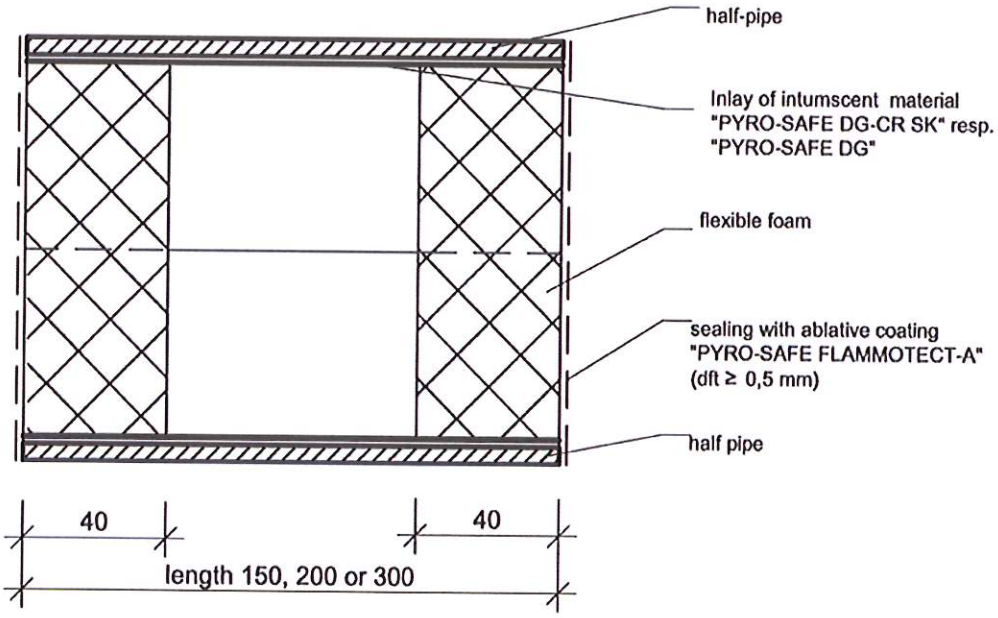
"PYRO-SAFE CT Cable Tube"

"PYRO-SAFE CT Cable Tube" version 1



"PYRO-SAFE CT Cable Tube" version 2





dimensions in mm

"PYRO-SAFE CT Cable Tube" and "PYRO-SAFE CT ML Cable Tube"	Annex 2
Construction ot pipe sleeve "PYRO-SAFE CT Cable Tube", variants 1 and 2	

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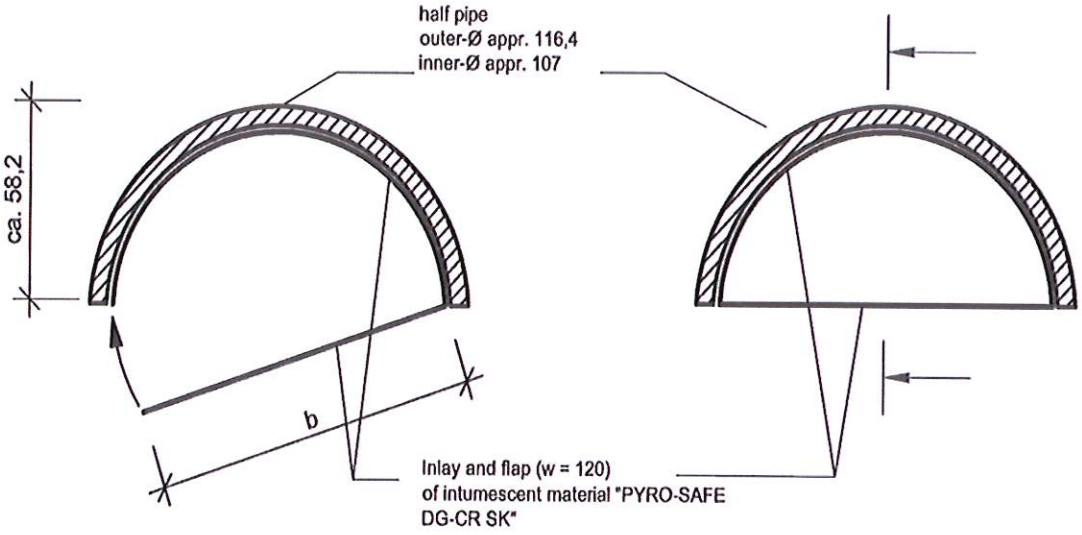
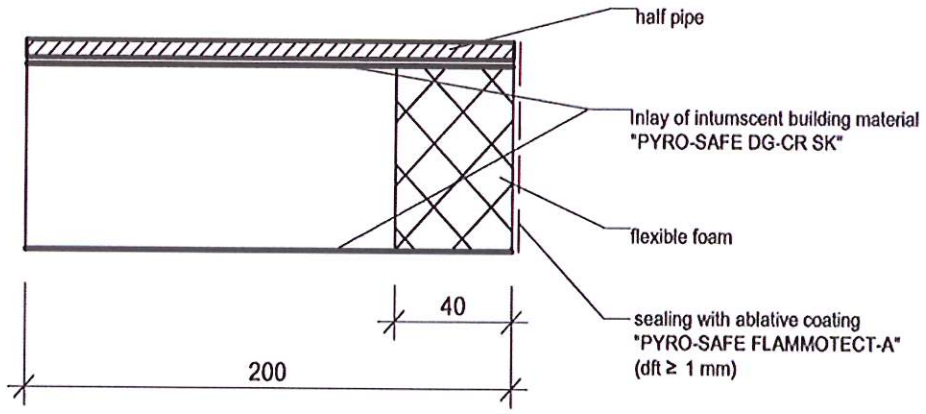
"PYRO-SAFE CT ML Cable Tube"



section view A-A (installed)



closing and sealing are needed on one side only!

dimensions in mm

"PYRO-SAFE CT Cable Tube" and "PYRO-SAFE CT ML Cable Tube"	Annex 3
Construction ot pipe sleeve "PYRO-SAFE CT Cable Tube"	

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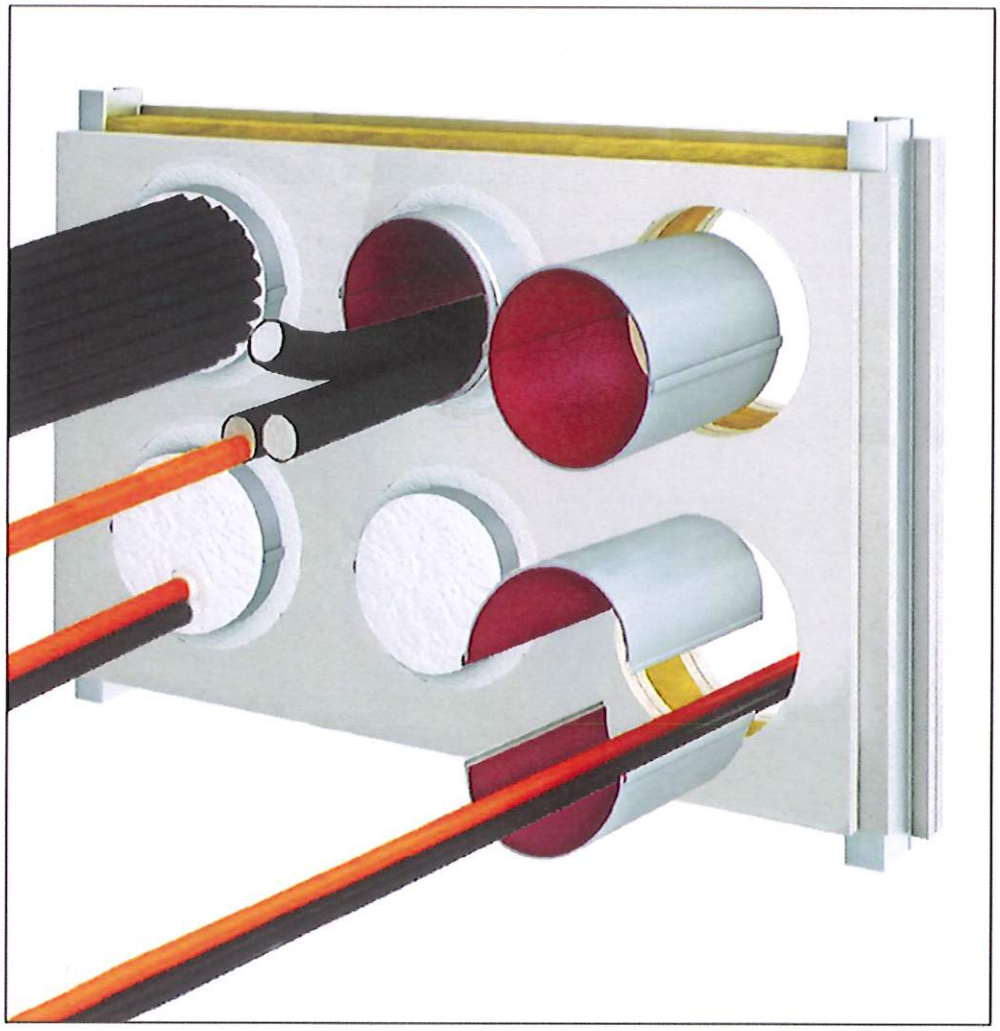
"PYRO-SAFE CT Cable Tube"



"PYRO-SAFE CT Cable Tube" and "PYRO-SAFE CT ML Cable Tube"	Annex 4
Schematic representation of the built-in pipe sleeves type "PYRO-SAFE CT Cable Tube"	

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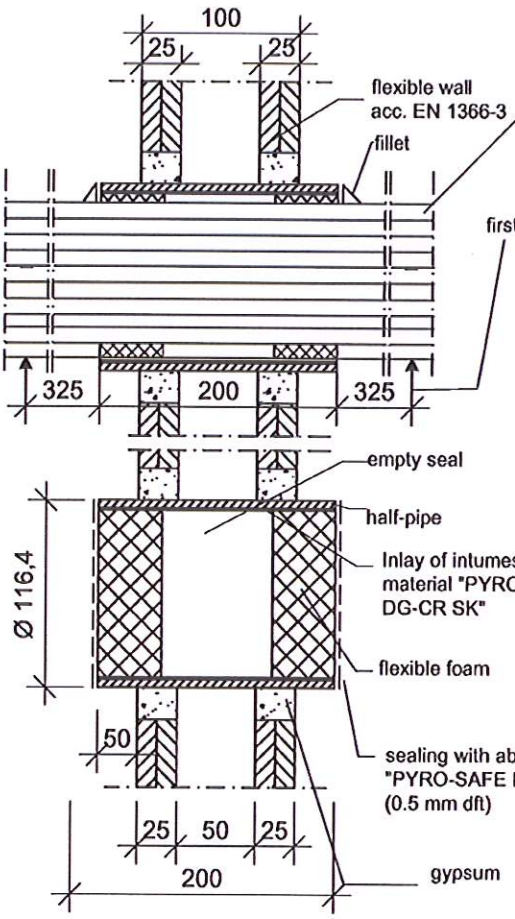
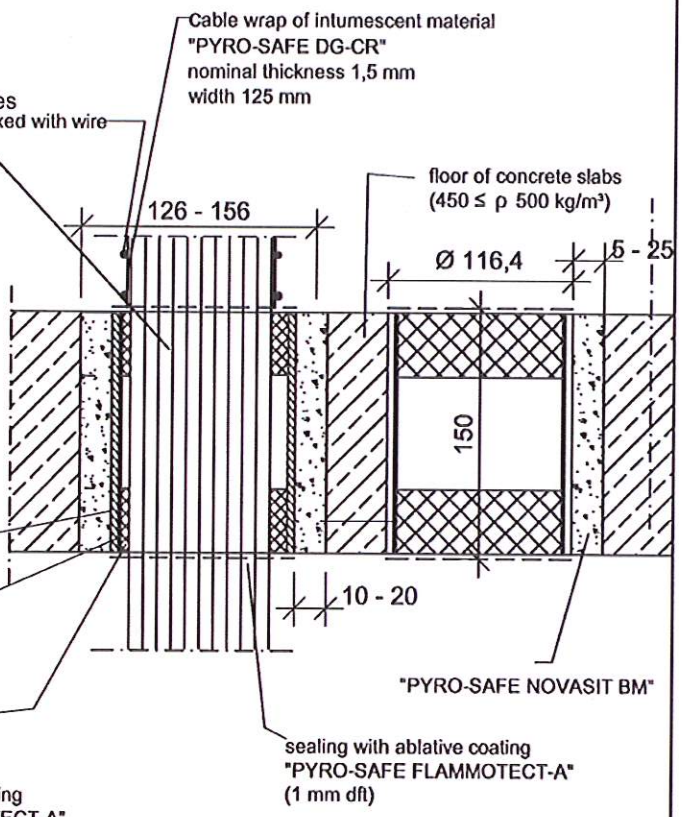
"PYRO-SAFE CT Cable Tube", version 1

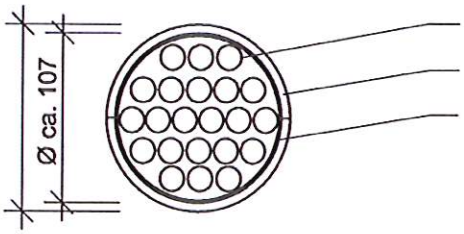
Intersection, wall construction



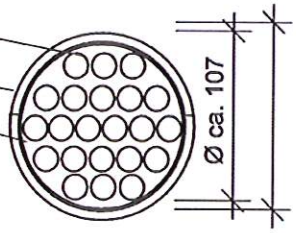
Intersection, floor construction



View, wall construction



View, floor construction



Configuration wall construction
F-telecommunication-cables, cablebundle Ø = 100 mm
100% configuration of telecommunicationcables with
PVC-insulation and copperwire
Type J-Y (St)Y 80 x 2 x 0,6 LG grey; Ø appr. 21 mm

Configuration floor construction
F-telecommunication-cables, cablebundle Ø = 107 mm
100% configuration of telecommunicationcables
20 x 2 x 0,6 mm
Type A2-Y (L) 2Y St III BD, insulation PE/PE

dimensions in mm

"PYRO-SAFE CT Cable Tube" and "PYRO-SAFE CT ML Cable Tube"	Annex 5
Example for cable seal of fire resistance class EI 90 (wall), EI 120 (floor), using the pipe sleeve "PYRO-SAFE CT Cable Tube"	

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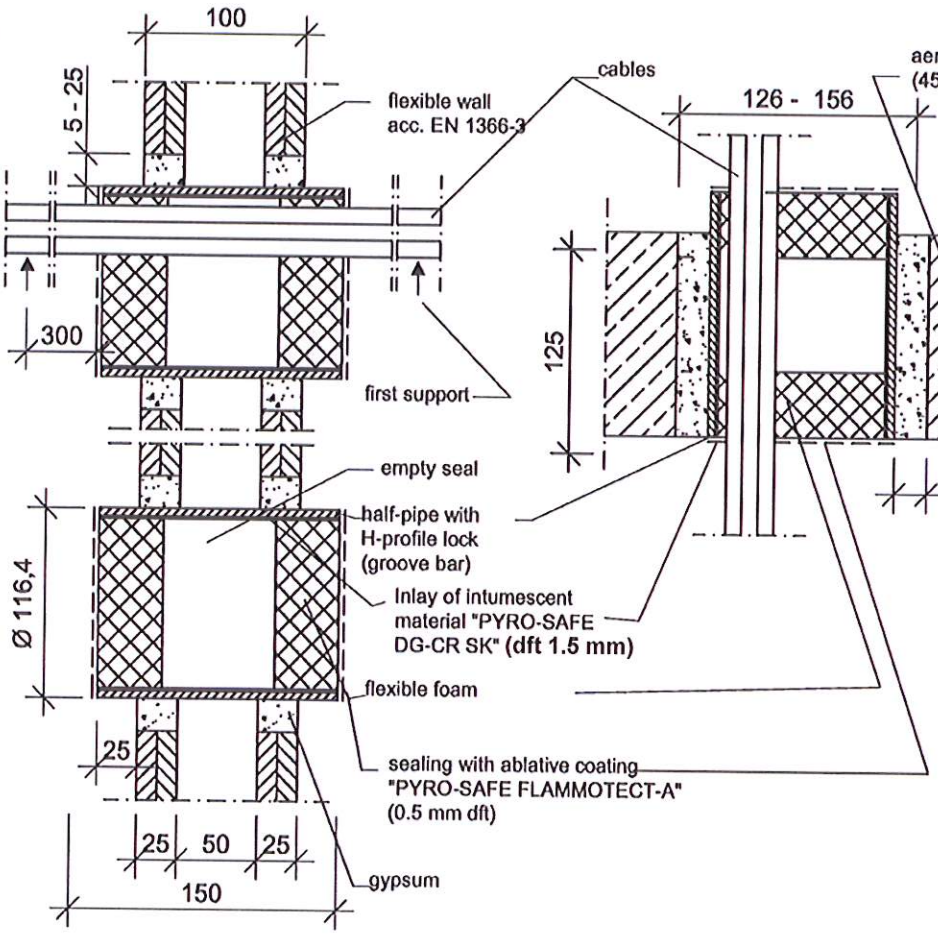
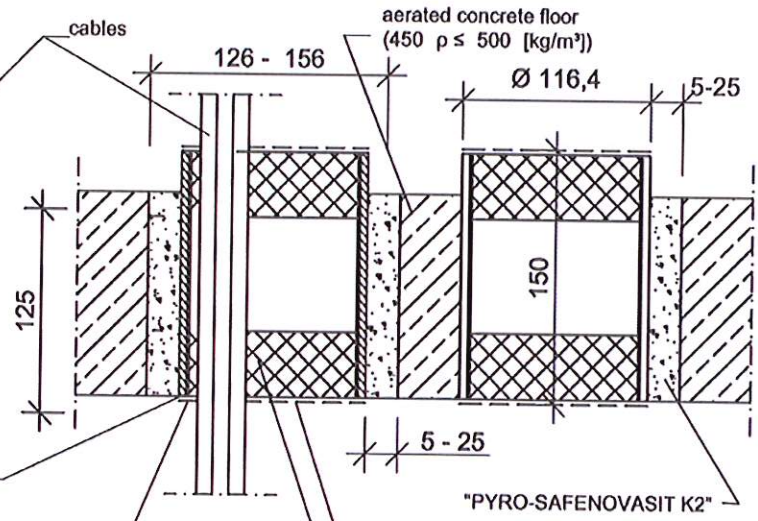
"PYRO-SAFE CT Cable Tube", version 2

Intersection, wall construction



Intersection, floor construction



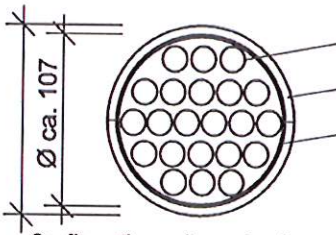
Configuration floor construction:
100% configuration

cable group 1
A1: 5 x; Ø 13 mm
A2: 5 x; Ø ~ 11.5 mm
A3: 1 x; Ø ~ 11.5 mm
B : 1 x; Ø ~ 19 mm

cable group 2
C1: 1x; Ø ~ 45 mm
C3: 1x; Ø ~ 36 mm
E : 1x; Ø ~ 24 mm

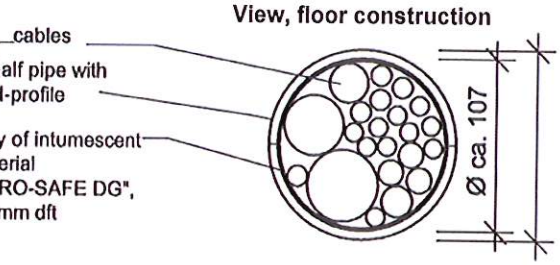
cable group 3
F: 3x; Ø ~ 15.5 mm

View, wall construction



Configuration wall construction:
Cable group 4
F-telecommunicationscables,
cable bundle Ø = 100 %;
100% configuration of
telecommunicationscables

View, floor construction



"PYRO-SAFE CT Cable Tube" and "PYRO-SAFE CT ML Cable Tube"	
Example of cable penetration seal of fire resistance class EI 90, using pipe sleeves "PYRO-SAFE CT Cable Tube"	Annex 6

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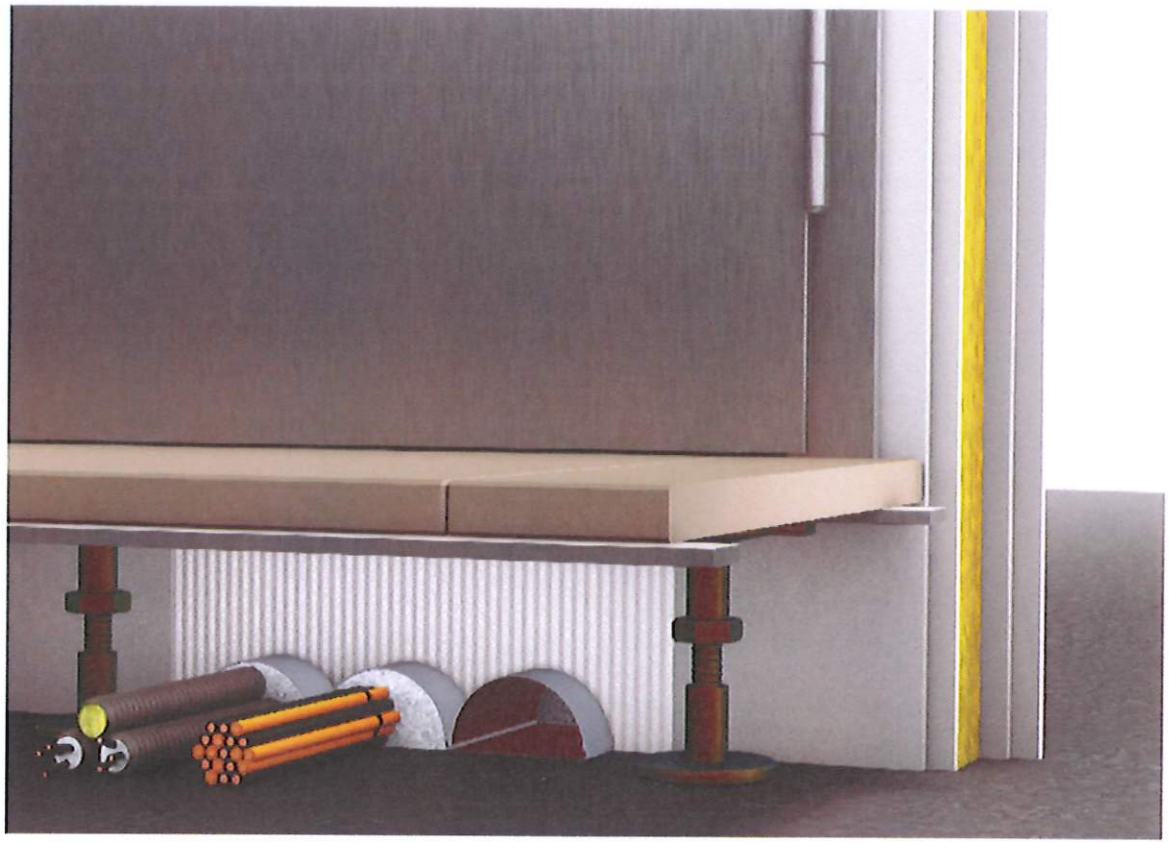
"PYRO-SAFE CT ML Cable Tube"



"PYRO-SAFE CT Cable Tube" and "PYRO-SAFE CT ML Cable Tube"	Annex 7
Schematic representation of the built-in pipe sleeves type "PYRO-SAFE CT ML Cable Tube"	

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"PYRO-SAFE CT ML Cable Tube"

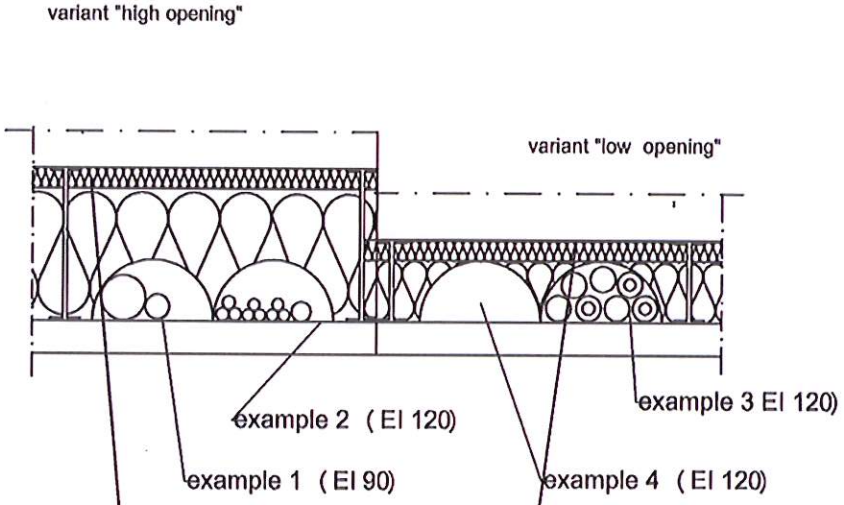
View

Example 1 (EI 90)
configuration:
1 x C2-cable 4 x 95²
1 x E-cable 1 x 185²

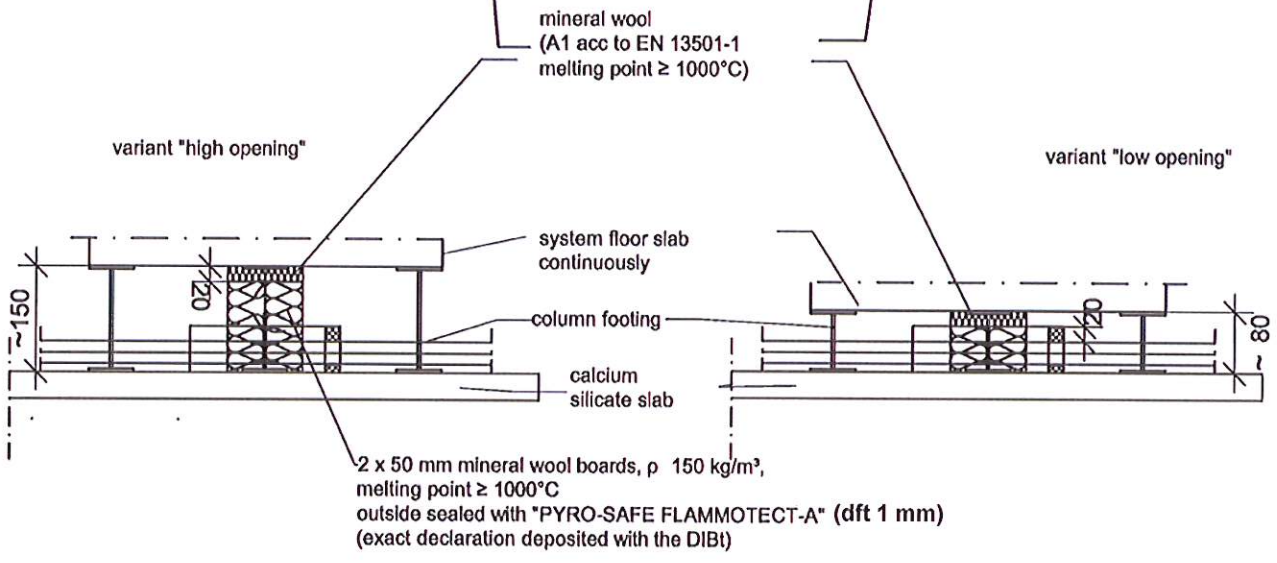
Example 2 (EI 120)
3 x A1-cable 5 x 1.5²
3 x A2-cable 5 x 1.5²
3 x A3-cable 5 x 1.5²
1 x B-cable 1 x 95²

Example 3 (EI 120)
conduit with 1 x A1-cabel 5 x 1.5²
conduit with 1 x A2-cable 5 x 1.5²
conduit with 1 x A3-cable 5 x 1.5²
conduit empty
conduit empty
(conduit one sided sealed with
"PYRO-SAFE FLAMMOTECT-A"

Example 4 (EI 120)
blank seal



section view



"PYRO-SAFE CT Cable Tube" and "PYRO-SAFE CT ML Cable Tube"	Annex 8
Cable penetration seals of fire resistance EI 90 respectivly EI 120, using the pipe sleeves "PYRO-SAFE CT ML Cable Tube"	