



European Technical Assessment

**ETA-15/0293
of 14 January 2026**

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Trade name of the construction product

Product family
to which the construction product belongs

Manufacturer

Manufacturing plant

This European Technical Assessment
contains

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

This version replaces

Deutsches Institut für Bautechnik

PYROMENT-IK90 BD

Service ducts and shafts

G+H Isolierung GmbH
Leuschner Straße 2
97084 Würzburg
DEUTSCHLAND

1

27 pages including 22 annexes which form an integral
part of this assessment

EAD 350003-01-1109

ETA-15/0293 issued on 4 June 2015

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Specific Part

1 Technical description of the product

This European Technical Approval (ETA) covers the "PYROMENT-IK90 BD" kit.

The kit is used to assemble the fire resistant "PYROMENT-IK90 BD" service duct.

The kit mainly consists of

- pre-fabricated connecting pieces in different variants
- pre-fabricated accessories such as angles
- accessories such as cable glands, sealing products, etc.

For details on the components and further product properties see Annex A.

Details on the materials used for the special connecting pieces are deposited with Deutsches Institut für Bautechnik.

The kit is individually pre-assembled depending on the requirements for each project and is put on the market as a packing unit.

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

The "PYROMENT-IK 90BD" service duct is intended to be used as a fire resistant service duct for inside use. In case of fire exposure from inside or outside, fire resistant service ducts prevent, when installed, the spread of fire from one fire compartment to another.

The performances given in Section 3 are only valid if the fire resistant service duct is used in compliance with

- the specifications and conditions given in Annexes A and B and
- the manufacturer's instructions as stated in section 5.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the fire resistant "PYROMENT-IK90BD" service duct of at least 10 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

The connecting pieces in end use conditions are suitable for use in use category Z₂ specified in TR024 with no essential changes in their fire protective properties to be expected.

Therefore, fire resistant service ducts may be exposed to use category Z₂ (internal use).

Durability is only ensured if the specifications of intended use as given in Annexes A and B and the manufacturer's instructions in section 5 are taken into account.

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

3.1 Safety in case of fire (BWR 2)

No.	Essential characteristic	Performance
1	Reaction to fire of the components	See Annex A
2	Propensity to undergo continuous smouldering of kit components	No performance assessed (NPA)
3	Fire resistance of the service duct	Four-sided service duct Class EI 30($v_e h_o$ i↔o) to EI 120($v_e h_o$ i↔o) in accordance with EN 13501-2 Three-sided or two-sided service duct Class EI 30($v_e h_o$ i↔o) to EI 90($v_e h_o$ i↔o) in accordance with EN 13501-2 See Annex B
4	Durability of the service duct	
4.1	Fire protective performance	NPA
4.2	Resistance to the effects of higher temperatures	NPA
4.3	Resistance to the effects of direct contact with metals and plastics (rigid PVC, PE) ¹	NPA
4.4	Adhesion between the intumescent material and the substrate	NPA
4.5	Resistance to the effects of constant low temperatures (permanent frost)	NPA
4.6	Heat insulation efficiency (ablative component)	NPA ¹

¹ not applicable to the kit

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content and/or release of dangerous substances	
Substances classified as Carc. 1A/1B ^a	
Substances classified as Muta. 1A/1B ^a	
Substances classified as Acute Tox. 1, 2, 3; Repr. 1A/1B; STOT SE 1 and STOT RE 1 ^a	The product does not contain any of these dangerous substances that are actively used. ^b
SVOC and VOC	NPA
Release scenarios regarding BWR 3 in accordance with EOTA TR 034: IA1, IA2	

a) In accordance with Regulation (EC) No. 1272/2008.

b) The assessment was based on the manufacturer's declaration substantiated by detailed information on the product composition.

3.3 Sustainable use of natural resources (BWR 7)

If required, individual connecting pieces or entire sections of the service duct may be replaced by unfastening the connection to adjacent connecting pieces or building components and by replacing the connecting pieces with new ones.

If parts of the service duct are replaced, see Annex B.

If connecting pieces are dismantled and disposed, the steel used for the production of the connecting pieces can be recycled after the coating with the intumescent material of the sheet metal components has been burnt and the sheet metal components have been subjected to a melting process (at least 1450 °C).

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

According to Decision of the Commission of 22 June 1999 (1999/454/EC) (OJ L 178/52 of 14.7.1999, p. 3), as amended by Decision of the Commission of 8 January 2001 (2001/596/EC) (OJ L 209/33 of 2.8.2001, p. 2), the system of assessment and verification of constancy of performance (see Annex V and Article 65 Paragraph 2 to Regulation (EU) No 305/2011) given in the following table applies.

Product	Intended use	Level or class (resistance to fire)	System of assessment and verification of constancy of performance
"PYROMENT-IK90 BD"	Fire resistant service duct	any	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.

The manufacturer shall provide installation instructions on every construction product as laid down in this ETA containing at least the following information:

- type, properties (minimum thickness, density, design of partitions) and fire resistance of the building components with a fire separating function in which the "PYROMENT-IK90 BD" service duct may be installed
- description or graphic presentation of the proper installation of the service duct in accordance with Annexes A and B
- instructions on how to change the services of the service duct (retrofitting) and on how to replace the connecting pieces

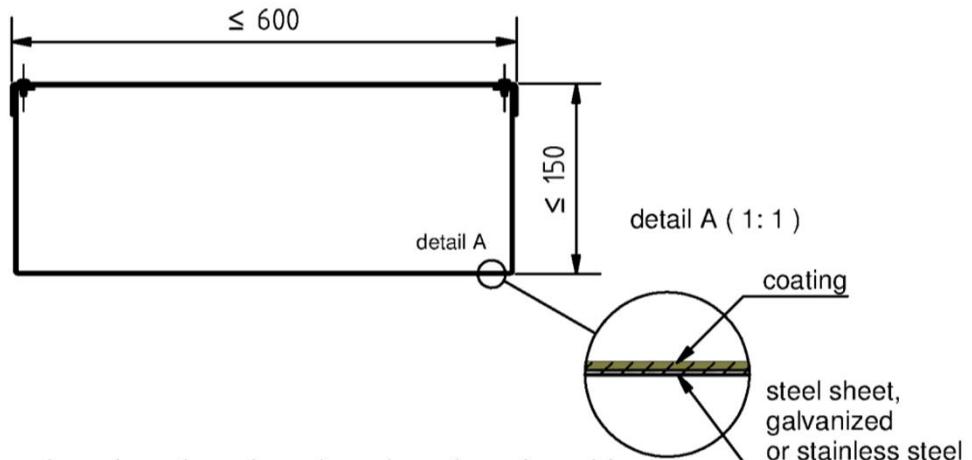
The manufacturer shall provide instructions on processing, packaging, transport, storage and use, maintenance and repair of the construction product.

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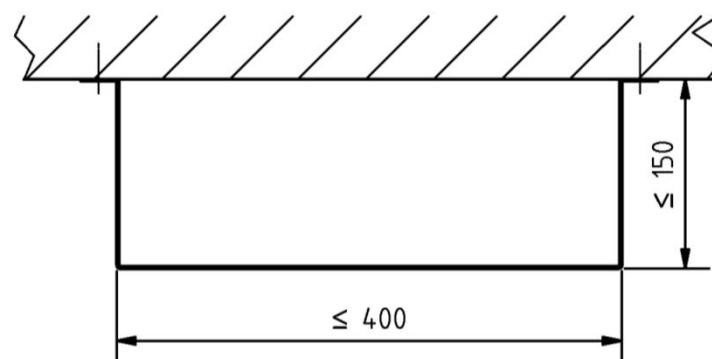
Ev Amelung-Sökezoğlu
Head of Section

beglaubigt:
Kopp

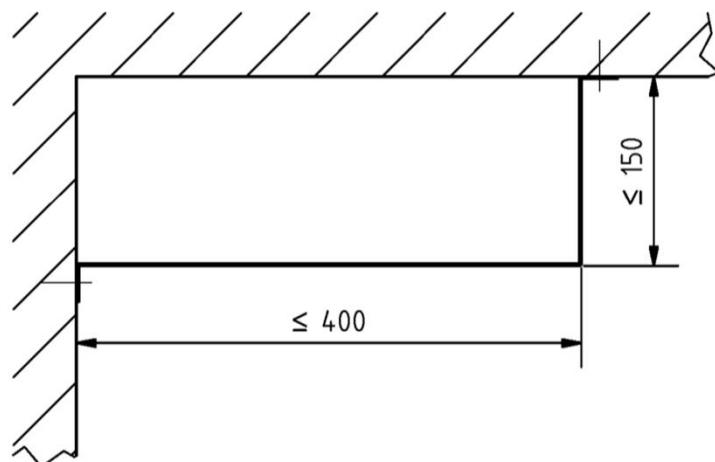
four-sided
service duct



three-sided
service duct



two-sided
service duct

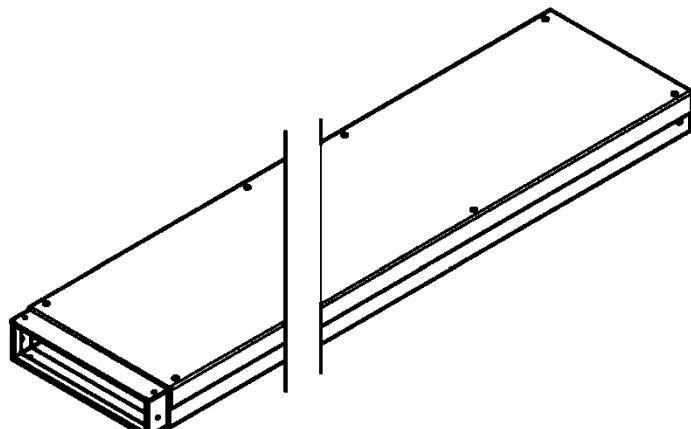


PYROMENT-IK90 BD

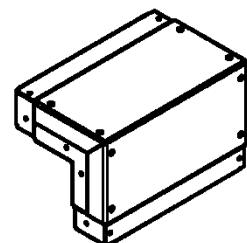
Properties and performance of the components of the kit
- Overview of the types of the service duct -

Annex A 1

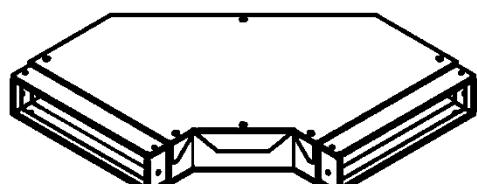
Connecting pieces standard, four-sided



duct, straight 1000 - 2000 mm

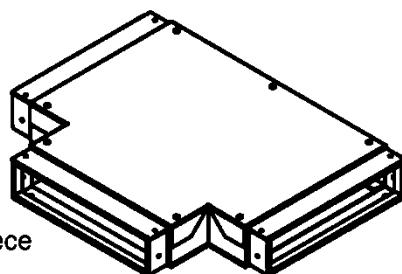


external corner 30° - 90°

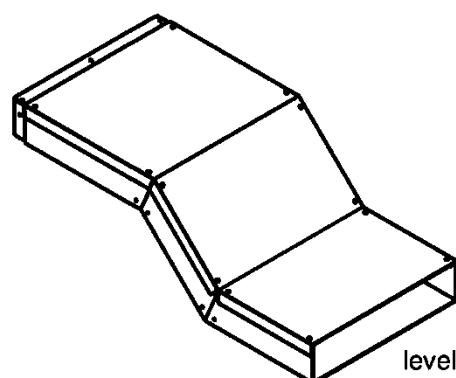


internal corner 30° - 90°

low angle 30° - 90°

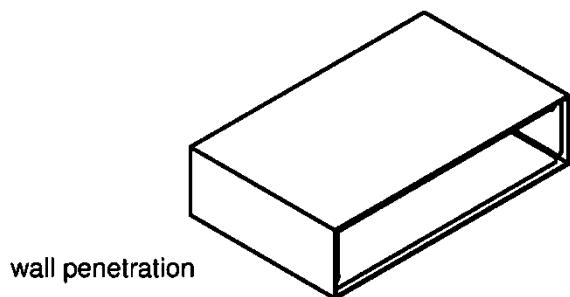


T-piece

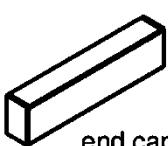


level 2x45°

special connecting pieces



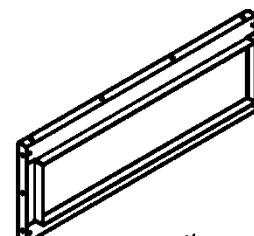
wall penetration



end cap



connecting pieces
for inlet or outlet
of services



connection collar

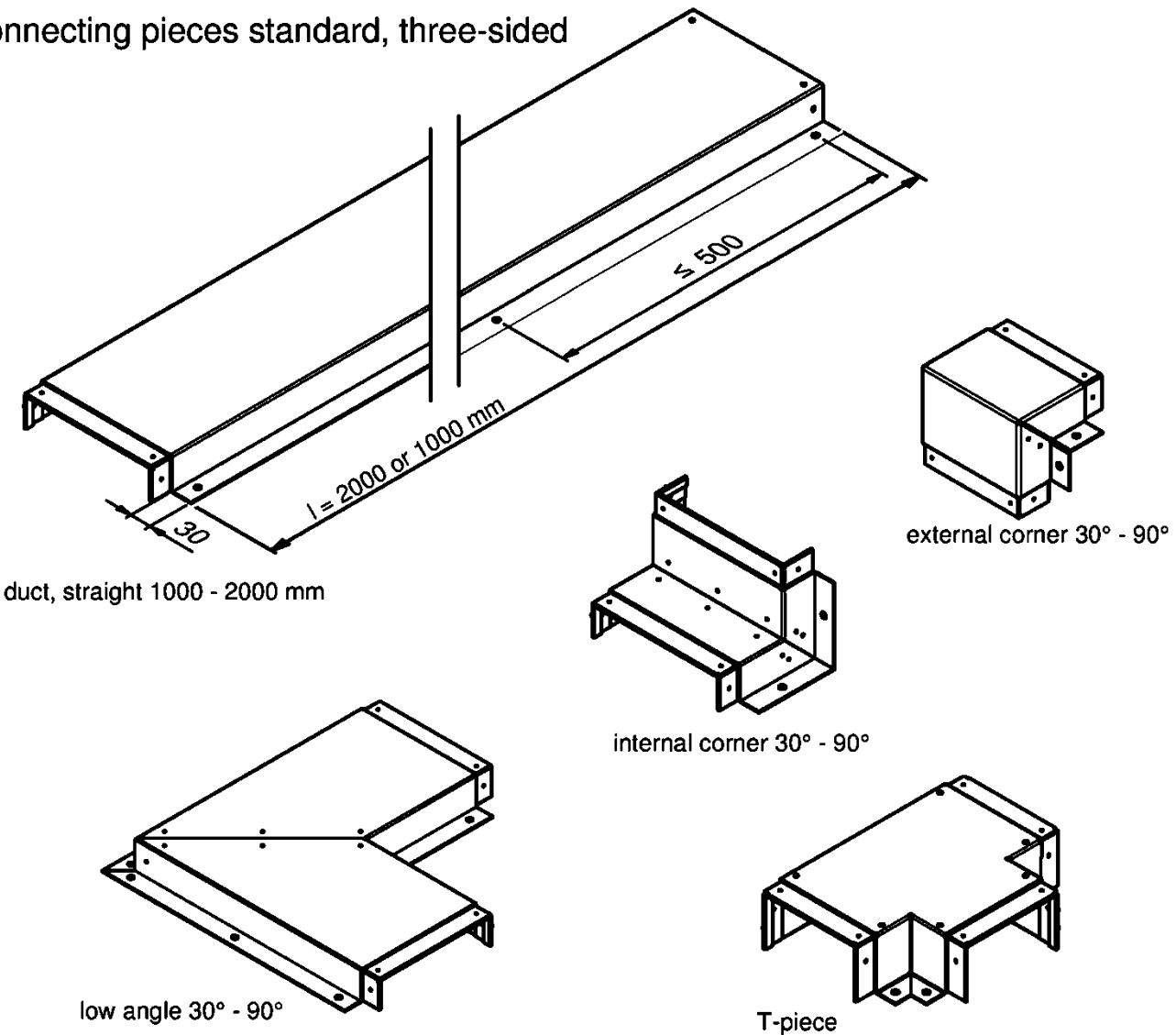
PYROMENT-IK90 BD

Properties and performance of the components of the kit

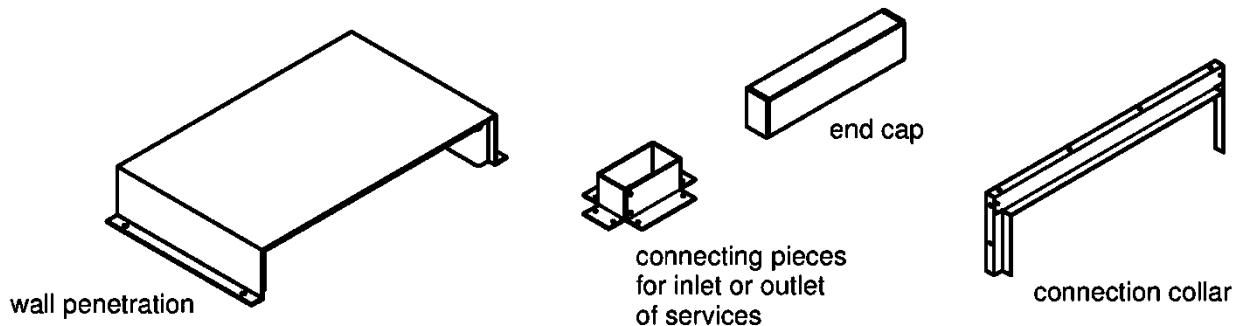
- Overview of the connecting pieces of the four-sided duct -

Annex A 2

Connecting pieces standard, three-sided



special connecting pieces

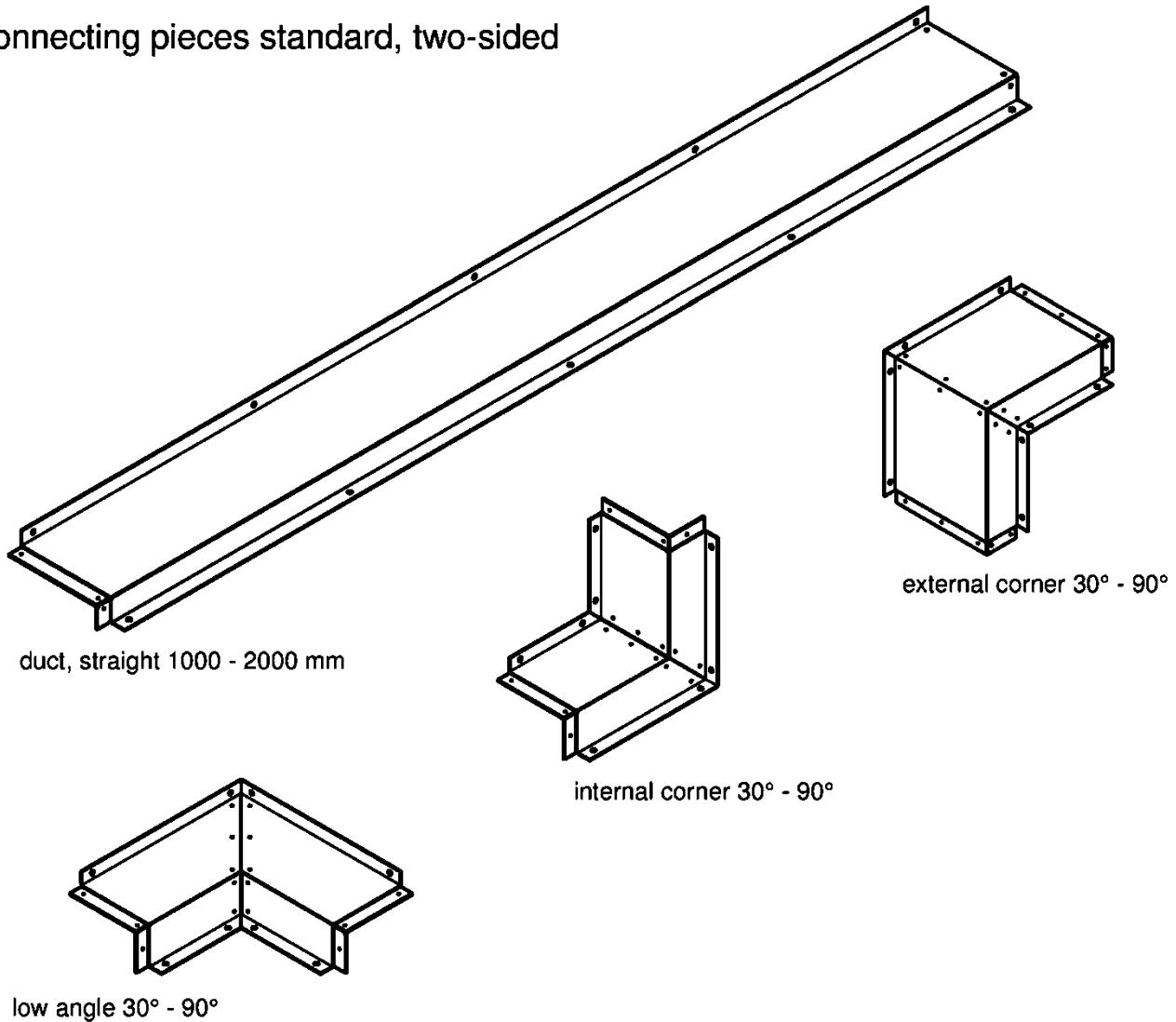


PYROMENT-IK90 BD

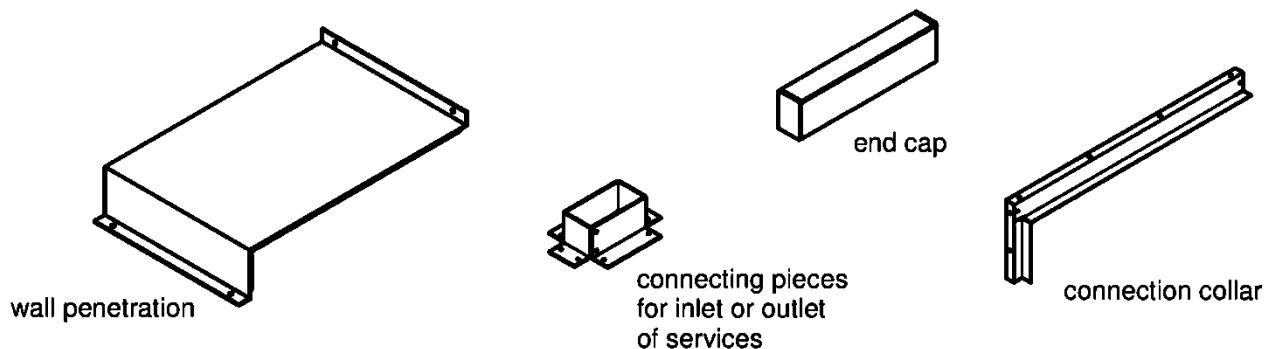
Properties and performance of the components of the kit
- Overview of the connecting pieces of the three-sided duct -

Annex A 3

Connecting pieces standard, two-sided



special connecting pieces



PYROMENT-IK90 BD

Properties and performance of the components of the kit
- Overview of the connecting pieces of the two-sided duct -

Annex A 4

Table 1 Description and reaction to fire of the components of the connecting pieces/accessories

No.	Connecting piece	Description
1	<u>Standard</u> In different designs, e. g. T-piece, corner piece (see Annexes A 2 to A 4) Dimensions: Width: \leq 600 mm (four-sided) or \leq 400 mm (two/three-sided) Height: \leq 150 mm Length: 1000 or 2000 mm Optional enlargement of the connecting sheet up to a width \leq 100 mm (expansion compensation) see Annexes A 2 to A 4 and A 8 to A 10	Galvanised steel sheet, steel grade DX51D in accordance with EN 10346, material number 1.0226, or stainless steel sheet in accordance with EN 10088-2, material number 1.4301, Thickness \geq 0.6 mm Reaction to fire class A1 in accordance with EN 13501-1 Intumescent building material and primer in accordance with ETA, deposited with DIBt Thickness \geq 1.0 mm Optional: corresponding top coat Reaction to fire class B-s2,d0 in accordance with EN 13501-1 Tapping screw in accordance with EN ISO 7049 \varnothing 4.2 mm, Length 9.5 mm Reaction to fire class A1 in accordance with EN 13501-1 Blind rivet in accordance with EN ISO 15977 \varnothing 3.2 mm, Length 6.0 mm Reaction to fire class A1 in accordance with EN 13501-1
	Optional: Separating bar	Galvanised steel sheet, steel grade DX51D in accordance with EN 10346, material number 1.0226, Thickness \geq 0.6 mm Reaction to fire class A1 in accordance with EN 13501-1
2	<u>Wall penetration</u> Dimensions compatible to the inside dimensions of the connecting piece "Standard" Length 270 mm	Wichmann-Kabelbox in accordance with ETA-13/0902 without foam stoppers or plastic caps Reaction to fire classification of the components, see ETA
3	<u>End cap</u> Dimensions compatible to the connecting piece "Standard"	Galvanised steel sheet, steel grade DX51D in accordance with EN 10346, material number 1.0226 or stainless steel sheet in accordance with EN 10088-2, material number 1.4301, Thickness \geq 0.6 mm Reaction to fire class A1 in accordance with EN 13501-1
4	<u>Connection collar</u> and <u>connection rail</u> Dimensions compatible to the connecting pieces "Standard" / "Wall penetration"	Galvanised steel sheet, steel grade DX51D in accordance with EN 10346, material number 1.0226, or stainless steel sheet in accordance with EN 10088-2, material number 1.4301, Thickness \geq 0.6 mm Reaction to fire class A1 in accordance with EN 13501-1

PYROMENT-IK90 BD

Properties and performance of the components of the kit

- Description and reaction to fire of the components of the connecting pieces -

Annex A 5

No.	Connecting piece	Description
5	<u>Inlet or outlet of services</u> Dimensions (height x length) 50 x 50 50 x 100 Width 50 mm see Annexes A 11 and A 12	Galvanised steel sheet, steel grade DX51D in accordance with EN 10346, material number 1.0226, or stainless steel sheet in accordance with EN 10088-2, material number 1.4301, Thickness \geq 0.6 mm Reaction to fire class A1 in accordance with EN 13501-1
	Filling variant 1	Filling with mineral fibre boards in accordance with EN 13162 - "Dachdämmplatte Hardrock 040" or - "Rockwool RPB-15" or - "Protect BSP 150-3 Brandschutzplatte" or - "Heralan-DDP" Density \geq 150 kg/m ³ , melting point $>$ 1000°C, Thickness \geq 50 mm Reaction to fire class A1 in accordance with EN 13501-1
		Coating of the mineral fibre boards, thickness \geq 1.0 mm, and sealing of the remaining gaps between the cables with a) "Hilti Brandschutzbeschichtung CFS-CT" in accordance with ETA-11/0428 or ETA-11/0429 Reaction to fire class D-s2,d0 in accordance with EN 13501-1 b) "HENSONASTIK 5 KS", "HENSONASTIK 5 KS viskos" oder "HENSONASTIK 5 KS SP" in accordance with ETA-11/0209 Reaction to fire class E in accordance with EN 13501-1 (background is the mineral fibre board mentioned above)
	Filling variant 2	Filling with a) "Hilti CFS-BL" in accordance with ETA-13/0099, thickness 50 mm, sealing of the remaining gaps between the cables with "CFS-FIL" in accordance with ETA-13/0099 b) "ZZ-Stein 200 NE", thickness 50 mm, and sealing of the remaining gaps between the cables with "ZZ-Masse NE" in accordance with ETA-10/0431 Reaction to fire class E in accordance with EN 13501-1 each

PYROMENT-IK90 BD

Properties and performance of the components of the kit

- Description and reaction to fire of the components of the connecting pieces -

Annex A 6

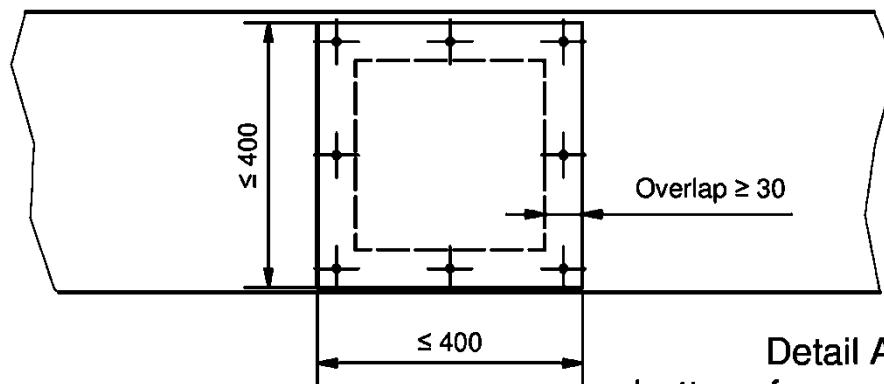
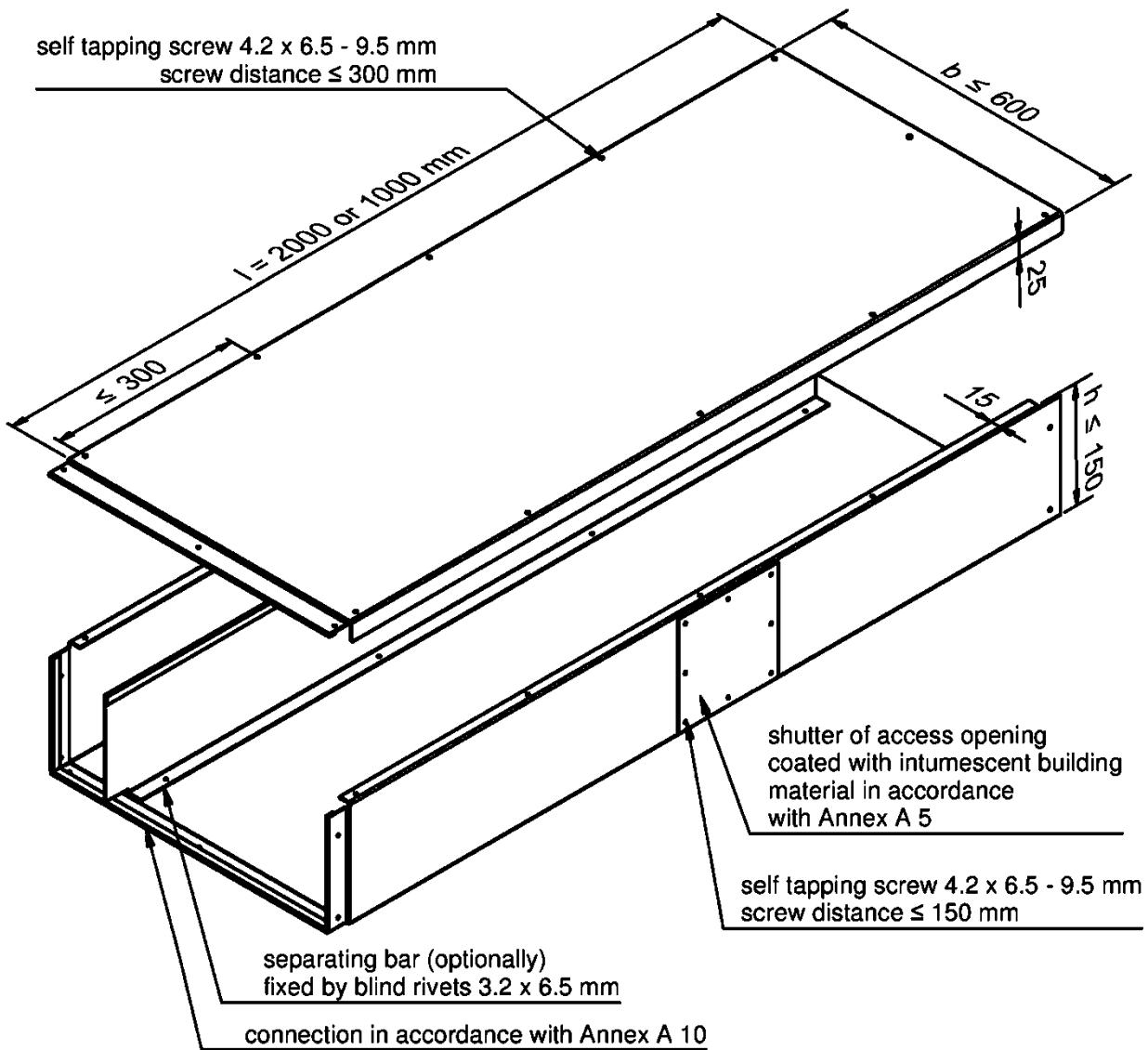
No.	Accessories	Description	Manufacturer
6	Angle bracket, precoated	Angle, galvanised, 50 x 30 galvanised steel sheet, steel grade DX51D in accordance with EN 10346, material number 1.0226, Thickness \geq 0.6 mm Reaction to fire class A1 in accordance with EN 13501-1	G+H Isolierung GmbH Leuschner Straße 2 97084 Würzburg DEUTSCHLAND
		Intumescent building material in accordance with ETA, deposited with DIBt Thickness 1.0 mm Reaction to fire class E in accordance with EN 13501-1	
7	Cable gland in accordance with EN 60423 $\varnothing \leq 55$ mm	Brass or polyamide Reaction to fire classification of at least class E in accordance with EN 13501-1	Adolf Würth GmbH & Co. KG Reinhold-Würth-Straße 12-17 74653 Künzelsau-Gaisbach DEUTSCHLAND o.glw.
8	Sealing tape VITOLEN 111-G TWB B1	Reaction to fire classification of at least class E in accordance with EN 13501-1	Vito Irmen GmbH & Co. KG Mittelstraße 74-80 53424 Remagen DEUTSCHLAND
9	Sealing tape NORSEAL V540	Reaction to fire classification of at least class E in accordance with EN 13501-1	SAINT-GOBAIN Performance Plastics S.A. Avenue du Parc 18 4650 Chaineux BELGIEN
10	Litaflex SM 30 + AF	Reaction to fire classification of at least class E in accordance with EN 13501-1	Rex Industrie-Produkte Graf von Rex GmbH Großaltdorfer Straße 59 74541 Vellberg DEUTSCHLAND
11	Silicone	In accordance with an ETA Reaction to fire classification of at least class E in accordance with EN 13501-1	any

PYROMENT-IK90 BD

Properties and performance of the components of the kit

- Description and reaction to fire of the components of the accessories -

Annex A 7

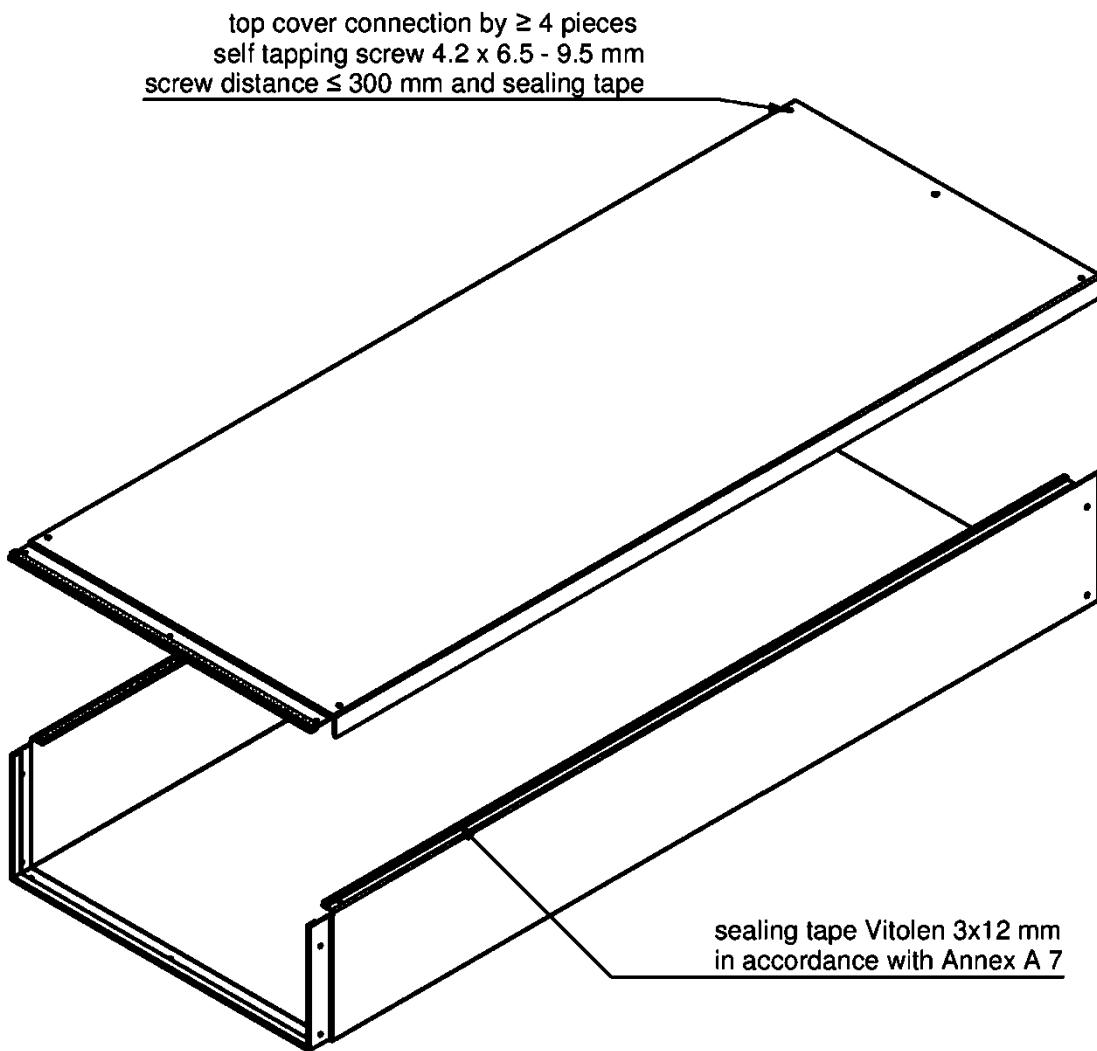


PYROMENT-IK90 BD

Properties and performance of the components of the kit

- Design connecting piece Standard –
(Description connecting piece see Annex A 5)

Annex A 8



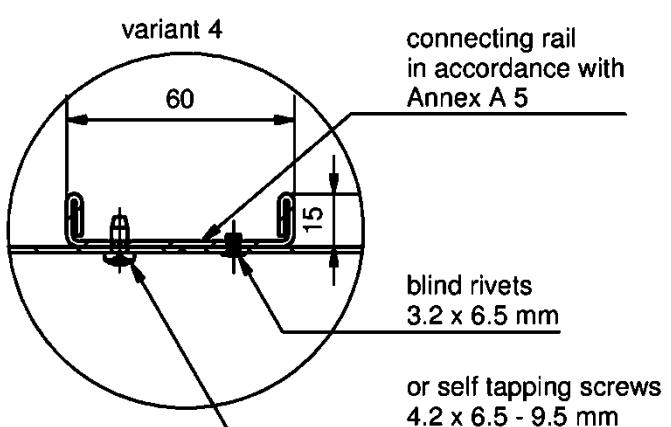
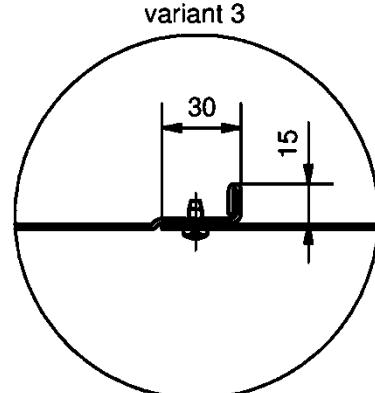
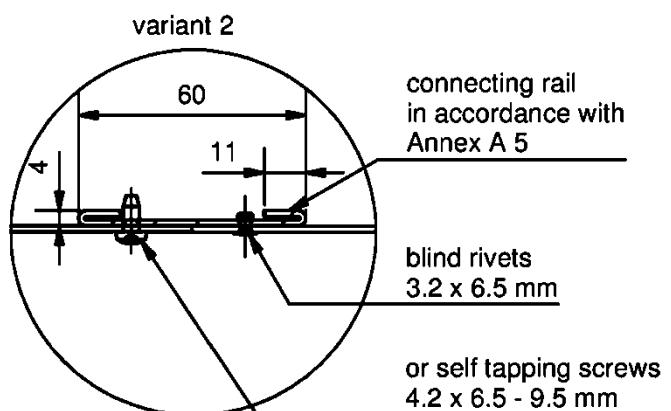
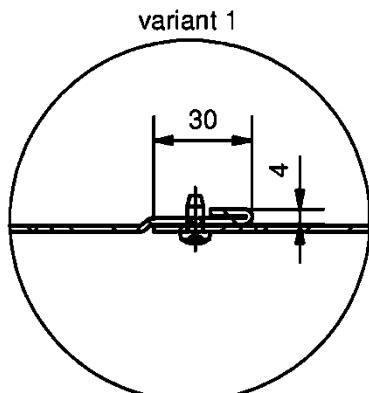
PYROMENT-IK90 BD

Properties and performance of the components of the kit

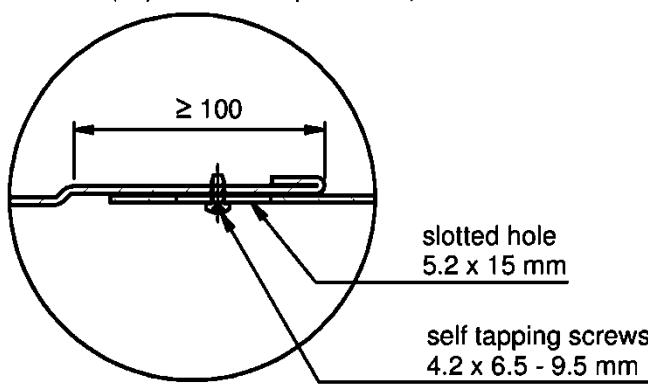
- Design connecting piece Standard variant –
(Description connecting piece see Annex A 5)

Annex A 9

Connection variants



variant 5 (expansion compensation)

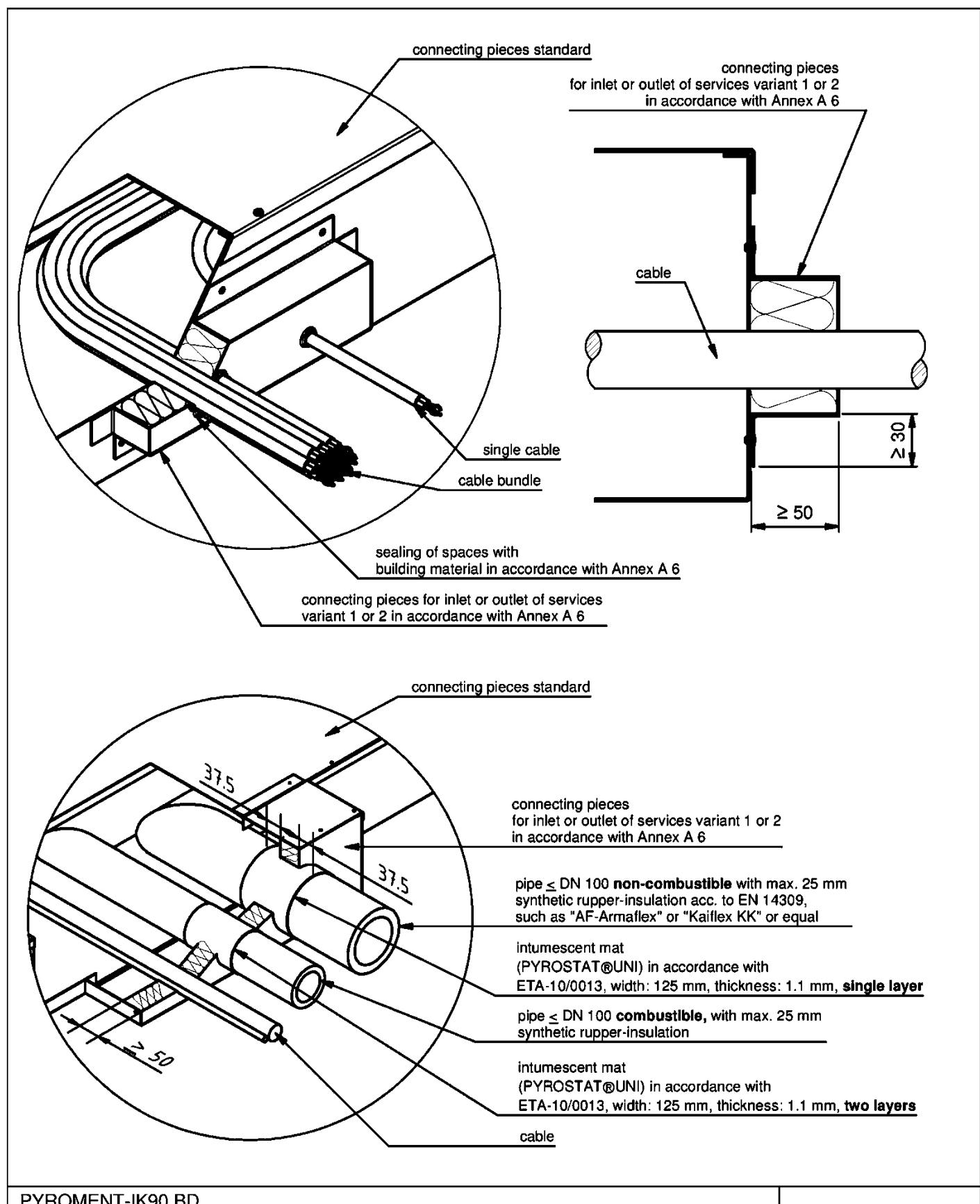


PYROMENT-IK90 BD

Properties and performance of the components of the kit

- Connection of the connecting pieces Standard –
(Description connecting piece and connection rail see Annex A 5)

Annex A 10

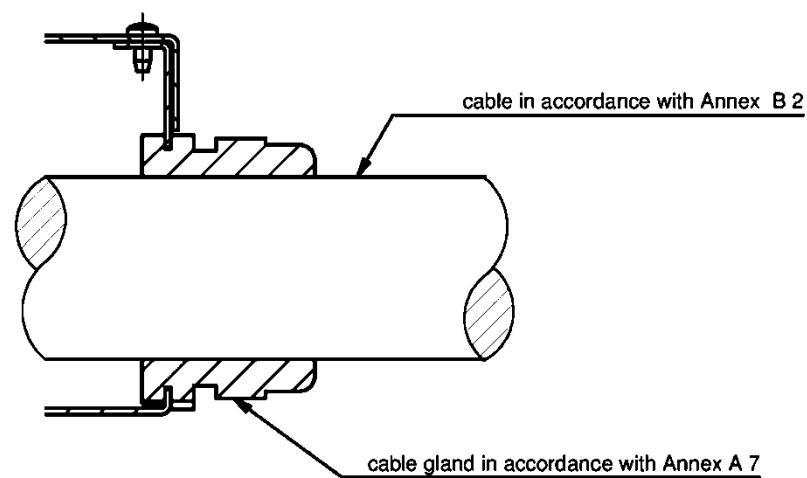
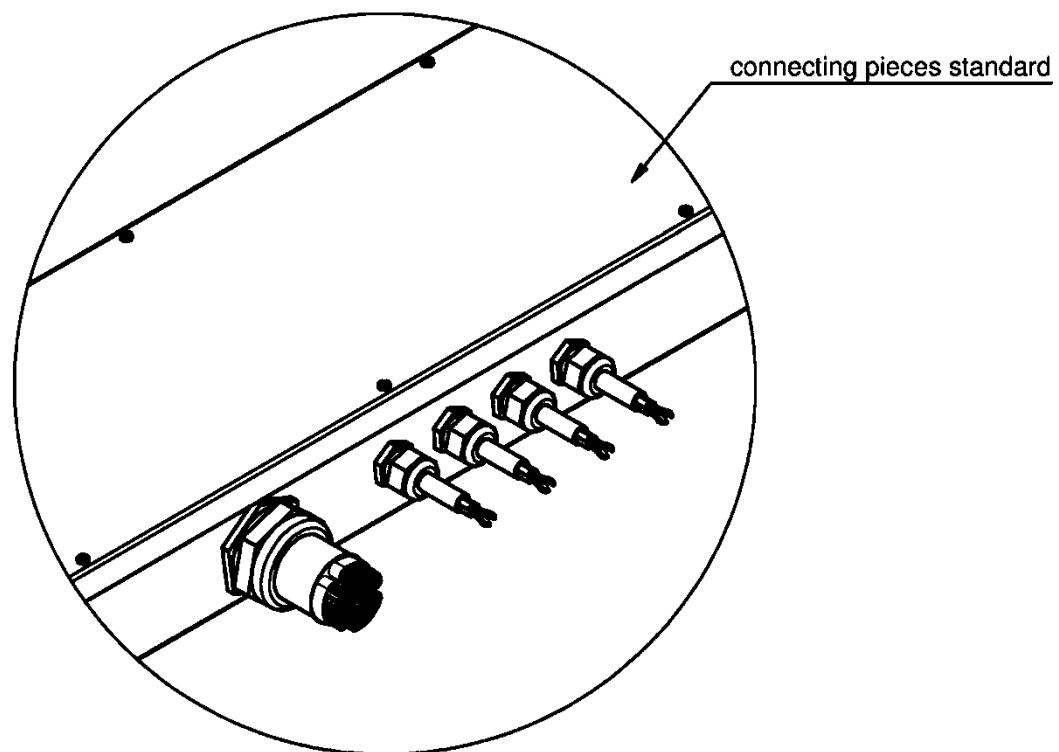


PYROMENT-IK90 BD

Properties and performance of the components of the kit

- Design connecting piece inlet or outlet of services –
(Description connecting piece see Annex A 6)

Annex A 11



PYROMENT-IK90 BD

Properties and performance of the components of the kit

- Cable gland single cable -
- (Description see Annex A 7)

Annex A 12

2 Fire resistance

2.1 Classification in accordance with EN 13501-2

The designs in the Annexes A 8 to A 12 and B 3 to B 9 fulfil the requirements of class

- EI 30 to EI 120 for four-sided service ducts
- EI 30 to EI 90 for three-sided or two-sided service ducts

if the requirements set out in the following sections are met.

Within the framework of this ETA, the installation of the service duct in walls has been verified concerning resistance to fire. When services pass through ceilings, the service duct shall be split and shall be fastened at the bottom and/or the top of the ceiling. The ceiling opening shall be closed with a suitable European classified penetration system in accordance with EN 13501-2 for the respectively required fire resistance period EI 30, EI 60, EI 90 or EI 120.

2.2 Building components with a fire separating function

2.2.1 The fire resistant service duct may be suspended from

a) Rigid floors/ceilings

- made of concrete, reinforced concrete or aerated concrete, density $\geq 350 \text{ kg/m}^3$
- thickness in accordance with the structural requirements and depending on the resistance to fire required

2.2.2 The fire resistant service duct may be installed in

b) Rigid walls

- made of masonry, concrete, reinforced concrete or aerated concrete, density $\geq 350 \text{ kg/m}^3$
- thickness $\geq 100 \text{ mm}$

c) Partitions

- thickness $\geq 100 \text{ mm}$
- design type 1), 2) or 3)

1) Partitions with a steel stud substructure and

- a lining on both sides made from at least two layers of $\geq 12.5 \text{ mm}$ thick cement or gypsum bounded building slabs, reaction to fire class A1 or A2 in accordance with EN 13501-1
- an internal insulation made of mineral fibre boards in accordance with EN 13501-2, thickness 40 mm, density 100 kg/m^3 , reaction to fire class A1 in accordance with EN 13501-1, melting point $> 1000 \text{ }^\circ\text{C}$

2) Partitions like 1), but without insulation or with an insulation deviating from 1)

3) Partitions with a wood stud substructure and

- a lining on both sides like 1)
- with or without insulation
- The distance between the opening the service duct is passing through and the wood stud substructure shall be $\geq 100 \text{ mm}$. The cavities between the lining of the wall, the wood substructure and the opening reveal shall be tightly filled in a depth of at least 100 mm with mineral wool, reaction to fire class A1 or A2 in accordance with EN 13501-1.

For partitions type 2) or 3) the opening reveal shall be fitted with a surrounding reveal made from $\geq 12.5 \text{ mm}$ thick cement or gypsum bounded building slabs, reaction to fire class A1 or A2 in accordance with EN 13501-1.

2.2.3 The ceilings and walls shall meet at least the fire resistance of the service duct and shall be classified in accordance with EN 13501-2 (EI 30, EI 60, EI 90 or EI 120).

PYROMENT-IK90 BD

Performance of the service duct

Fire resistance

- Classification and information about the building components -

Annex B 1

2.3 Configuration (services)

The installation duct may be loaded with usual building services such as cables or plastic or metal pipes with a nominal diameter ≤ 100 mm.

The configuration of the service duct can be modified at any time by opening the top part of the connecting pieces (four-sided service duct) or by unfastening the fastening of the connecting pieces to the building component (three-sided or two-sided service duct) and by adding or removing services.

The services may be

- arranged on service support constructions or directly on the bottom of the service duct or
- fastened directly to the rigid floor or the rigid wall.

For the service support constructions perforated or unperforated cable trays, profiles with bolt clamps and cable ladders each made from steel, reaction to fire class at least A2 in accordance with EN 13501-1 shall be used. The service support constructions shall be sized depending on the services.

If the services and/or service support constructions are arranged directly on the bottom of the service duct, the service duct shall be supported by using suspension devices in accordance with section 2.4 (e. g. mounting rails suspended from the adjacent rigid ceilings or suspension brackets fastened at the adjacent rigid walls). The permitted weight of the configuration (services plus service support constructions) is limited to 32 kg/m.

If the services and/or service support constructions are fastened to the adjacent rigid building components there is no need for a suspension of the service duct. The service duct is fastened directly to the rigid building component. The weight of the configuration (services plus service support constructions) is not limited.

For inlets or outlets of services into or out of the service duct see Annexes A 6 and A 11.

2.4 Fastening of the service ducts

The fire resistant service duct may be

- fastened directly at the rigid building components or
- fastened at the rigid building components using suspension devices (e. g. threaded rods $\geq M8$ or equivalent and suitable mounting rails or suspension brackets).

The suspension devices shall be made of steel and shall be sized such that the calculated stresses do not exceed the values given in EN 1366-5, Table 5. Suspended service ducts shall have a maximum suspension length of 1.50 m. With regard to the elongation of the suspension devices see EN 1366-5, section 13.4.2.

The service ducts shall be fastened by means of anchors with steel screws suitable for the intended use in accordance with a European Technical Approval or Assessment and the structural requirements.

The spacing shall be in accordance with the stability requirements but shall at least comply with the specifications given in Table 2.

Table 2 Spacing of suspension/fastening

Type of the fastening	
Mounting rails or suspension brackets of suspended service ducts	≤ 1500 mm
First suspension on both sides of the wall penetration	≤ 425 mm
Fastening of service ducts fastened directly at the building components	≤ 500 mm
First suspension of services before/after inlets or outlets of services	≤ 100 mm

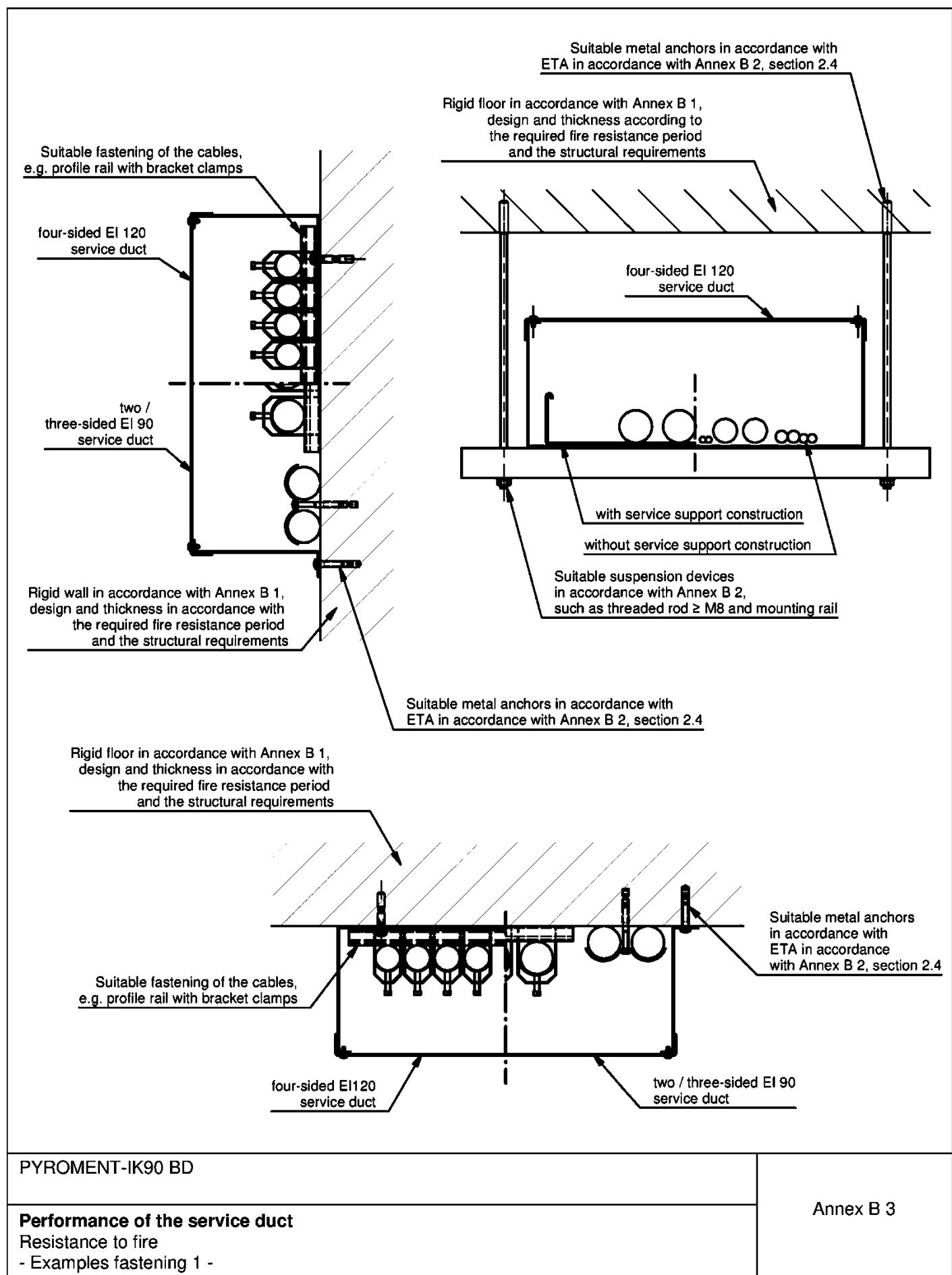
PYROMENT-IK90 BD

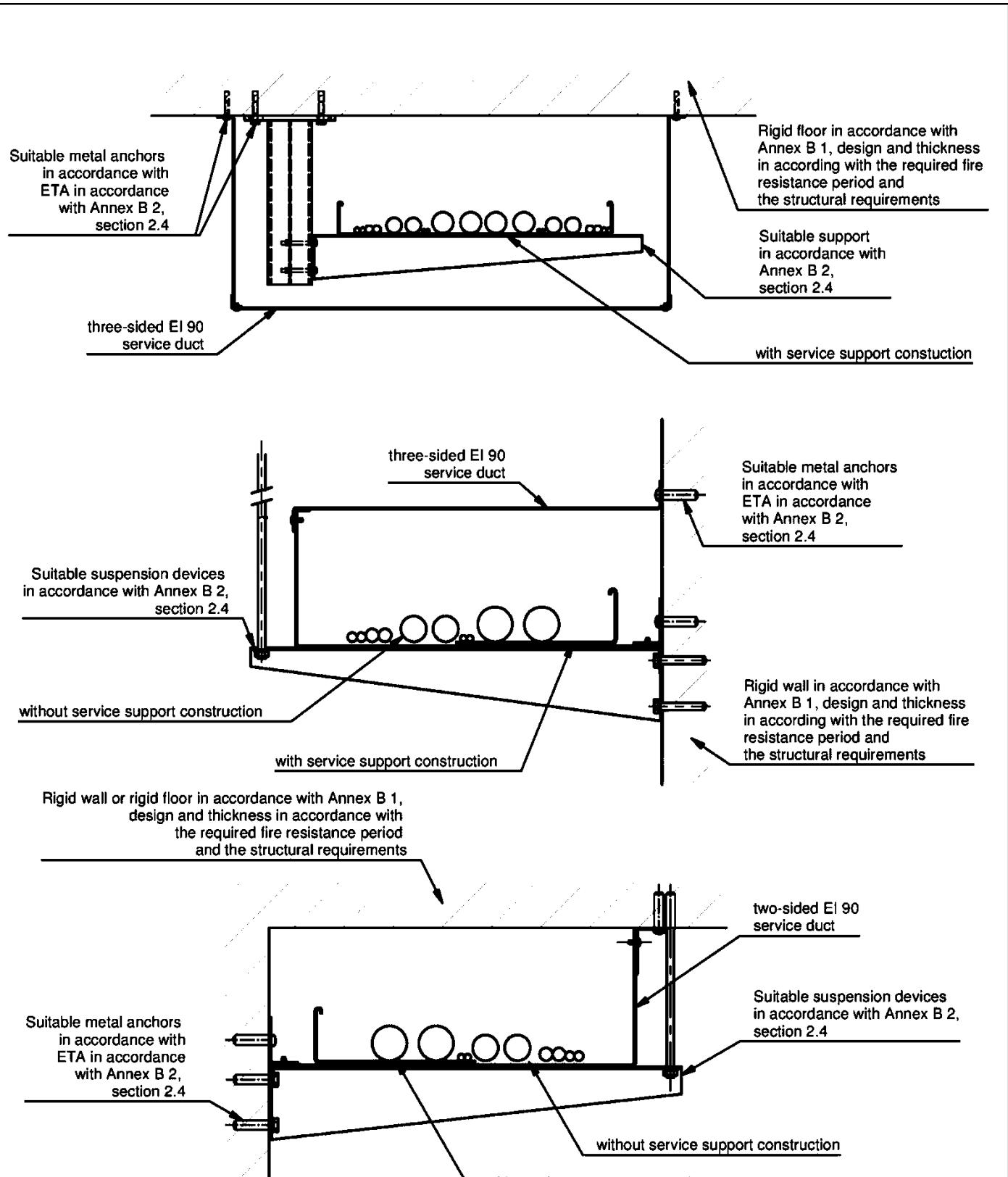
Performance of the service duct

Fire resistance

- Configuration and fastening -

Annex B 2





PYROMENT-IK90 BD

Performance of the service duct

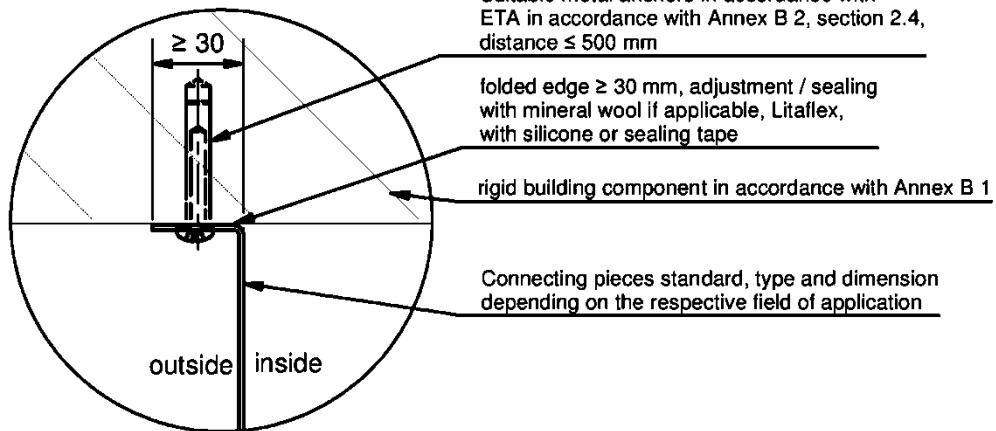
Resistance to fire

- Examples fastening 2 -

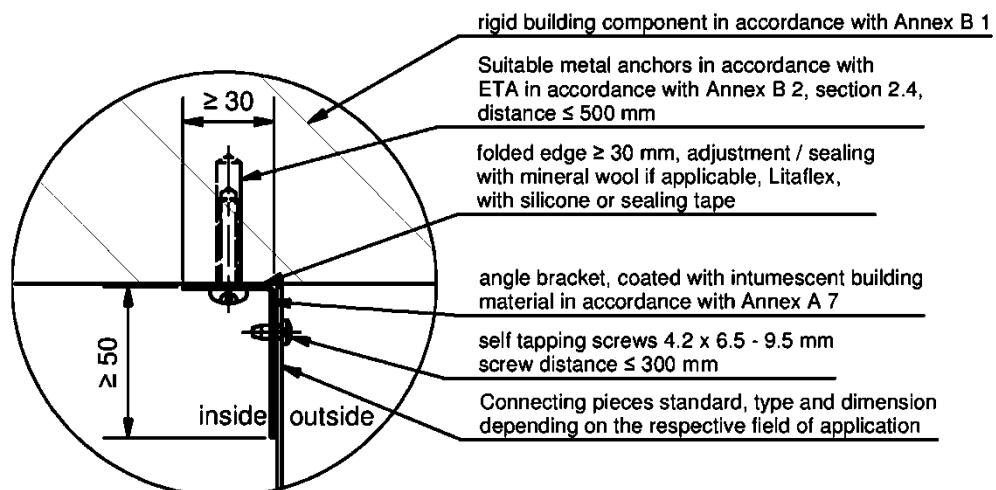
Annex B 4

Connecting pieces, two-sided or three-sided

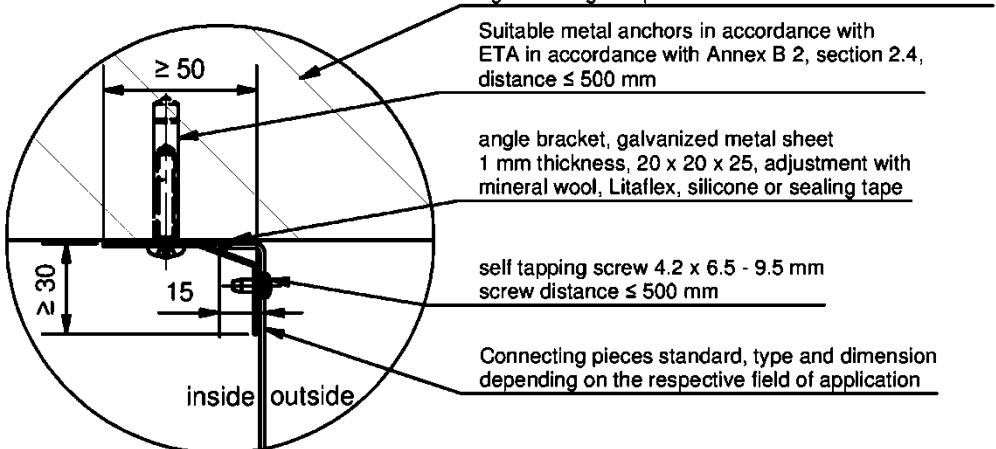
variant 1



variant 2



variant 3



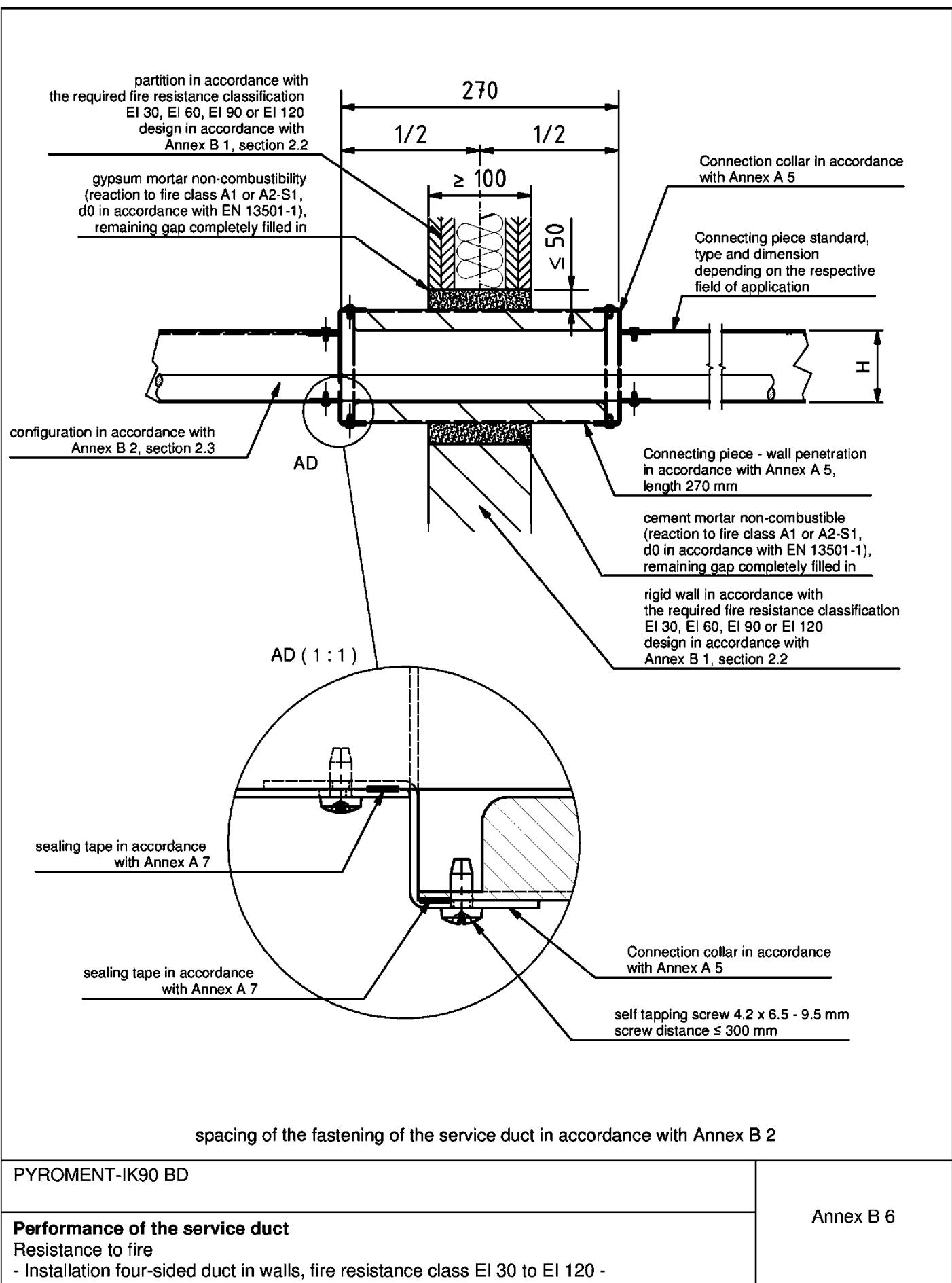
PYROMENT-IK90 BD

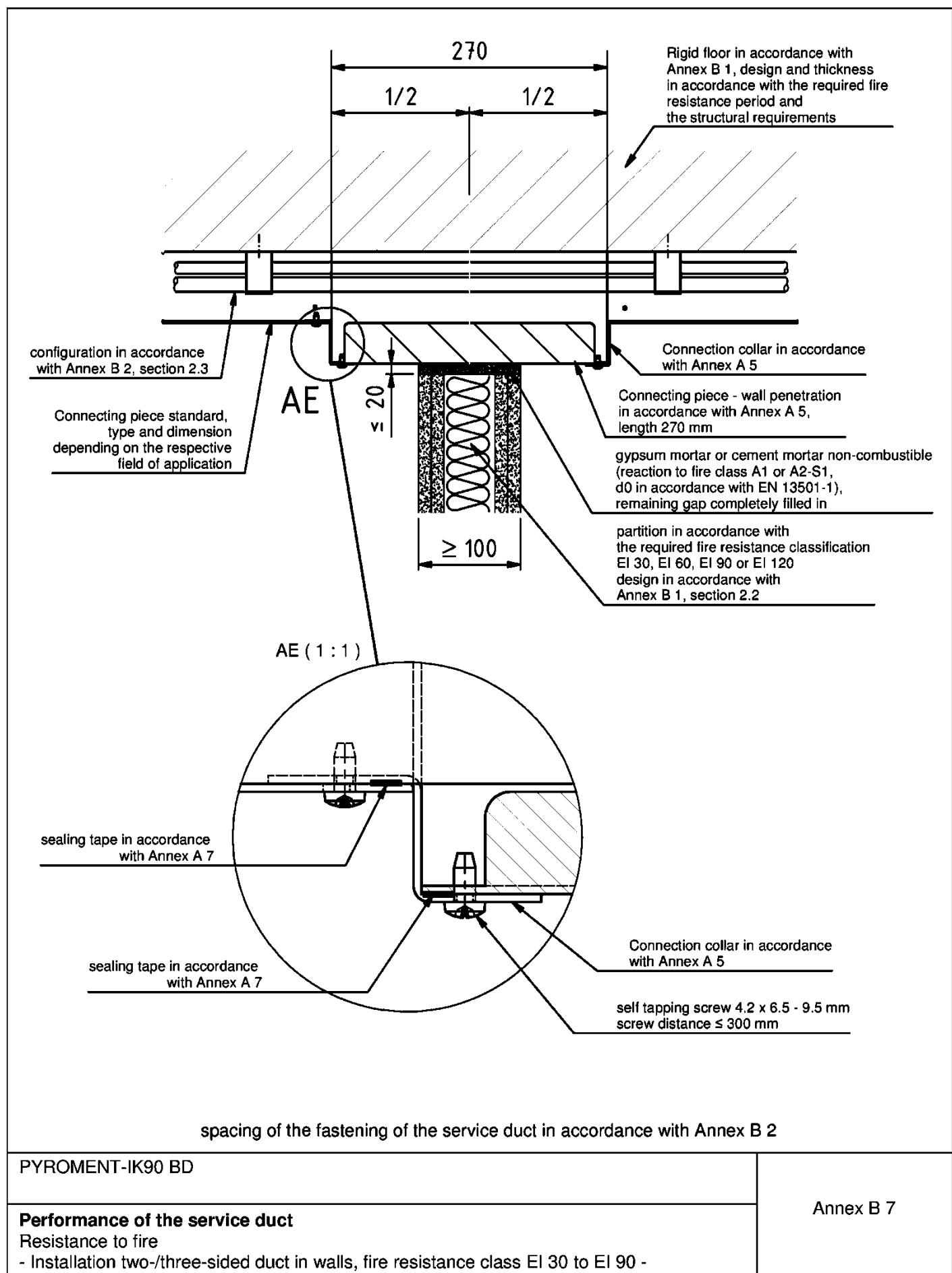
Performance of the service duct

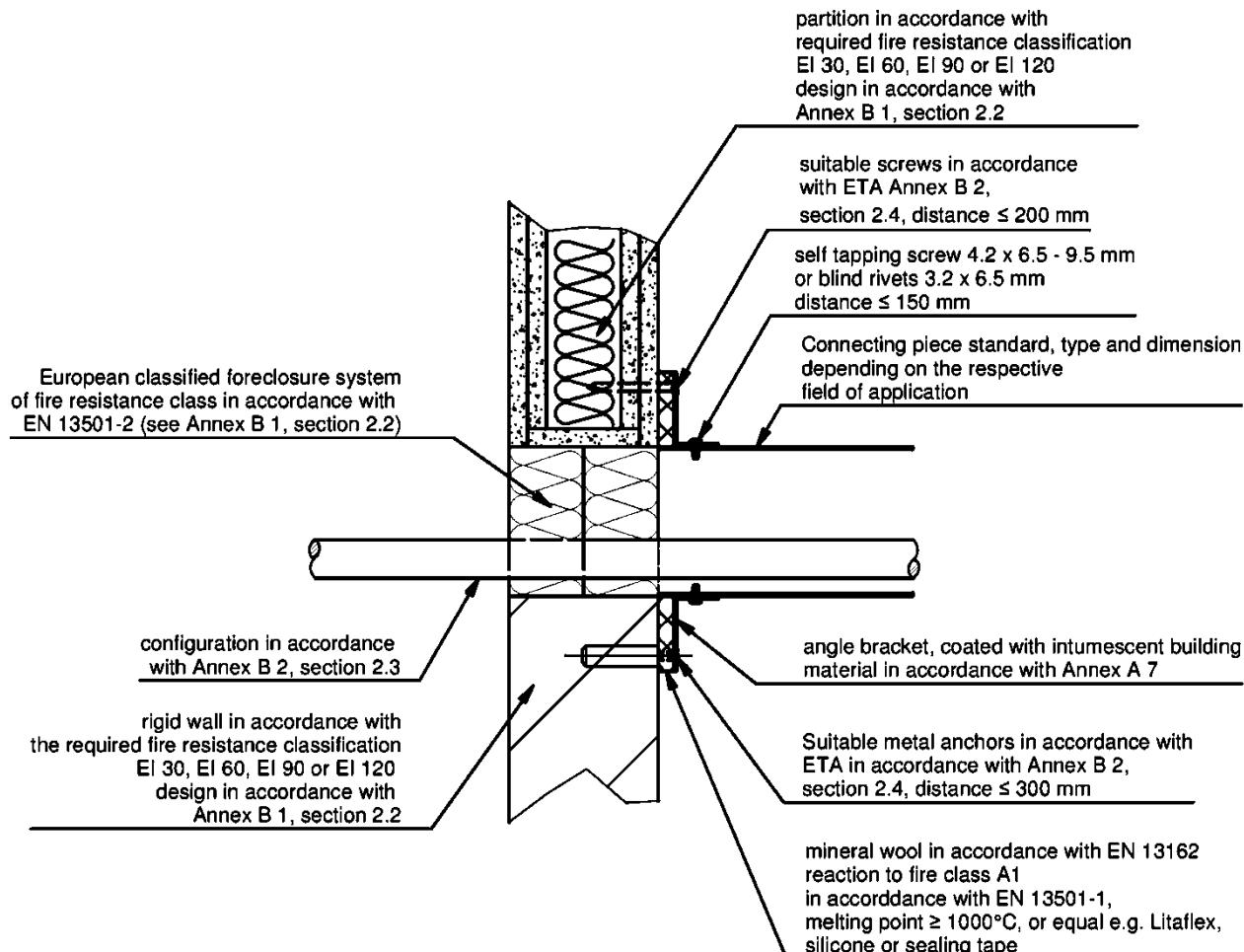
Resistance to fire

- Example fastening directly to the building component -

Annex B 5







spacing of the fastening of the service duct in accordance with Annex B 2

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Annex B 8

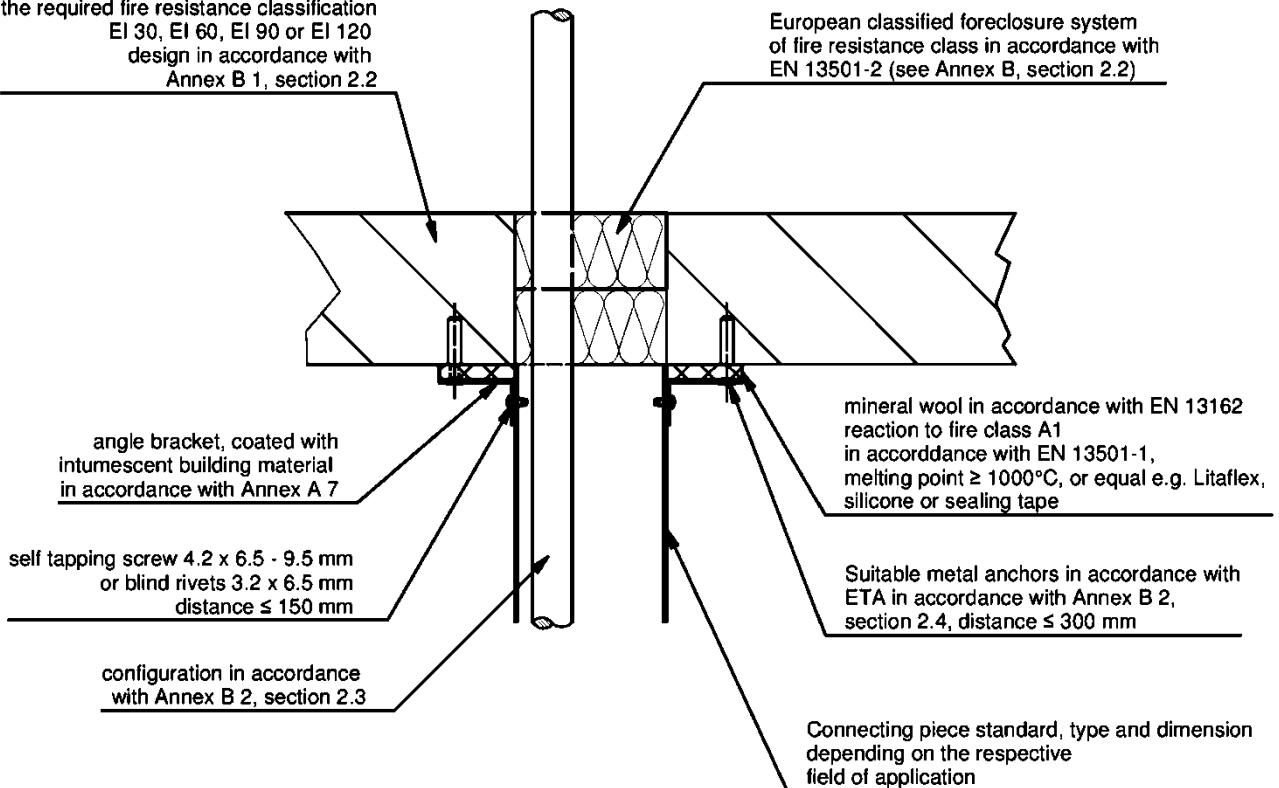
Performance of the service duct

Resistance to fire

- Connection to walls -

rigid floor in accordance with
the required fire resistance classification
EI 30, EI 60, EI 90 or EI 120
design in accordance with
Annex B 1, section 2.2

European classified foreclosure system
of fire resistance class in accordance with
EN 13501-2 (see Annex B, section 2.2)



spacing of the fastening of the service duct in accordance with Annex B 2

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Performance of the service duct

Resistance to fire

- Connection to floors/ceilings -

Annex B 9

Standards

EN 13501-1 Fire classification of construction products and building elements, part 1: Classification using data from reaction to fire tests

EN 13501-2 Fire classification of construction products and building elements, part 2: Classification using data from fire resistance tests, excluding ventilation services

EN 1363-1 Fire resistance tests – Part 1: General requirements

EN 1366-5 Fire resistance tests for service installations – Part 5: Service ducts and shafts

EN 10088-2 Stainless steels – Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes

EN 10346 Continuously hot-dip coated steel flat products - Technical delivery conditions

EN 13162 Thermal insulation products for buildings - Factory made mineral wool (MW) products - Specification

EN 14309 Thermal insulation products for building equipment and industrial installations - Factory made products of expanded polystyrene (EPS) - Specification

EN ISO 7049 Cross-recessed pan head tapping screws

EN ISO 15977 Open end blind rivets with break pull mandrel and protruding head - AIA/St

DIN 4102-2 Fire behaviour of Building Materials and Building Components; Building Components; Definitions, Requirements and Tests

DIN 4102-11 Fire behaviour of building materials and building components; pipe encasements, pipe bushings, service shafts and ducts, and barriers across inspection openings; terminology, requirements and testing

Other documents

EAD 350003-00-1109 Kit for fire resistant service ducts consisting of pre-fabricated connecting pieces (made of mechanically pre-coated steel sheet) and according accessories

ETAG 026-2 Fire Stopping and Fire Sealing Products - Part 2: Penetration Seals

EOTA TR 024 Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products

EOTA TR 034 General ER 3 Checklist for ETAGs/CUAPs/ETAs- Content and/or release of dangerous substances in products/kits

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List of documents referred to

Annex C