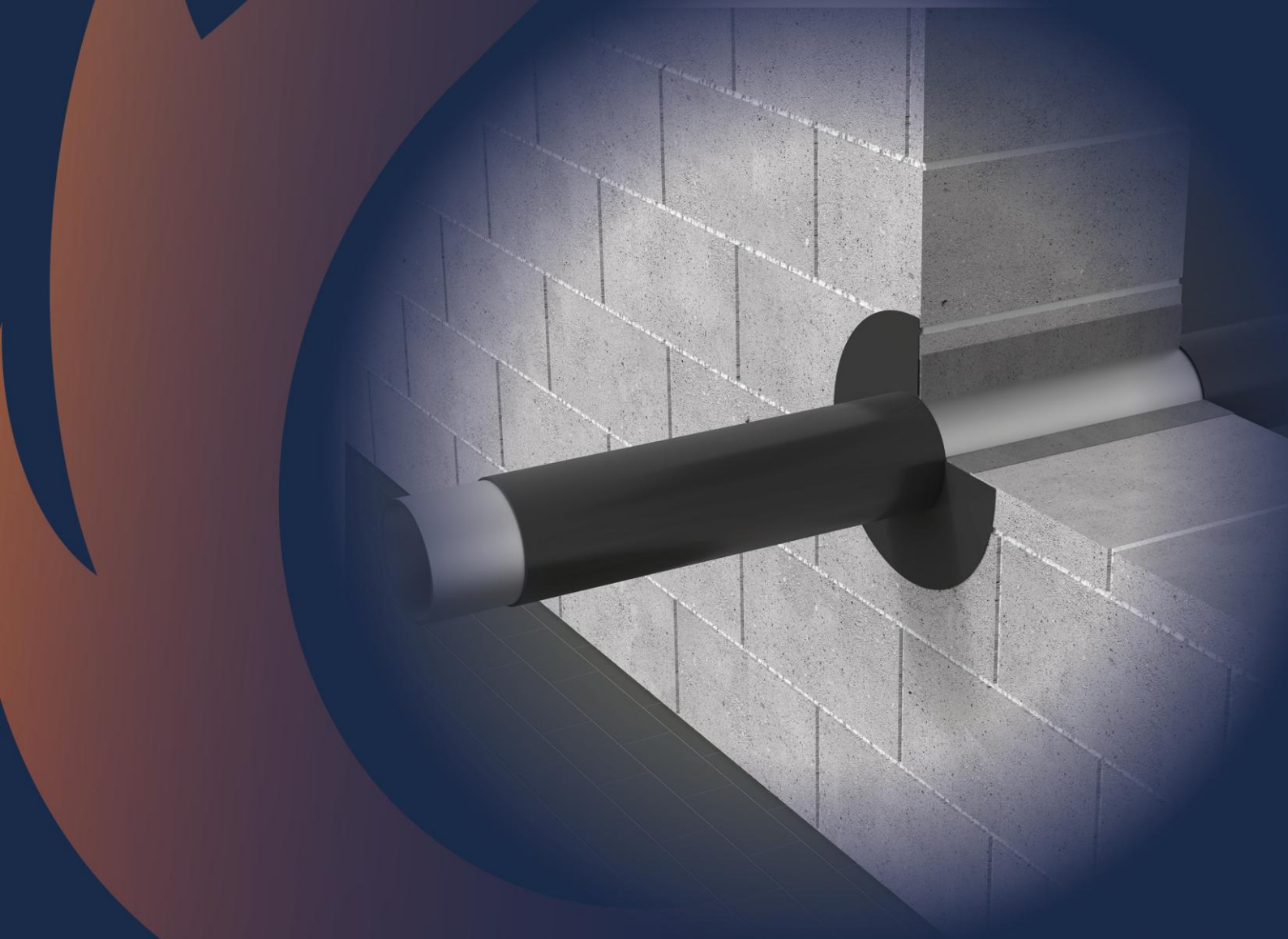
INTU FR COAT I

Fire rated intumescent coat

TDS TECHNICAL DATA SHEET



EPD

INTU FR COAT I

Fire rated intumescent coat

TDS TECHNICAL DATA SHEET

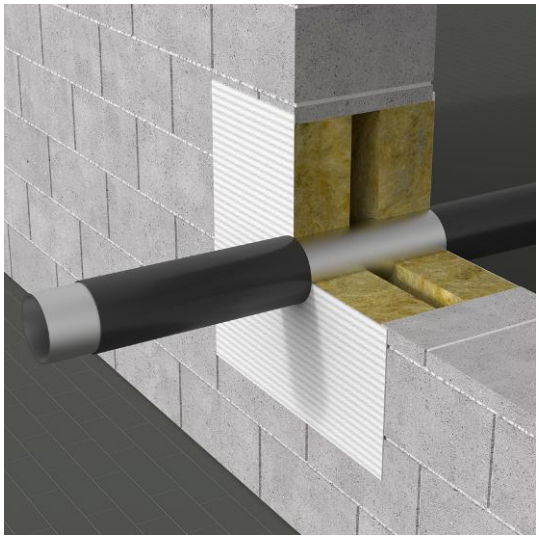
PRODUCT DESCRIPTION

The **INTU FR COAT I** is a one-component intumescent paint designed for sealing fire protection penetrations with non-flammable pipes and electric cables. The coating made with this paint swells under the influence of temperature, creating a protective layer on the protected surface. The paint protects the system elements in penetrations up to fire resistance class of **EI 240**.

APPLICATION

The **INTU FR COAT I** is intended for the protection of non-flammable pipes without insulation, electric cables, cable in trays or ladders in fire partition floors and walls.

Flexible wall:	The wall must be minimum thickness 125 mm. Must have a steel profile structure covered on both sides with minimum 2 layers of boards with minimum thickness 12,5 mm.
Rigid wall:	The wall must be minimum thickness 150 mm. Must have concrete, cellular concrete or masonry structure, with minimum density 600 kg/m^3.
Rigid floor:	The floor must be minimum thickness 150 mm. Must have concrete, cellular concrete or masonry structure, with minimum density 1700 kg/m^3.



AVAILABILITY

Contents	Color	Packaging	Pallet	Article number
6 kg	Black	Pail	70/84	INCI6KG
12,5 kg		Pail	40	INCI125KG

INSTALLATION METHOD

1. Clean the surfaces of the hole and system components from grease and other contaminants thoroughly.
2. Mix the paint well before use. The paint does not require thinning but you can add a water.
3. The space around the services should be filled with cement mortar or mineral wool board **INTU FR BOARD A**.
4. Cover the installations (pipes or cables) by **INTU FR COAT I** with layer of appropriate thickness and length.

Approximate consumption of **INTU FR COAT I** ~ 1,5 kg/m^2 – for a dry film thickness of 1,0 mm.

Drying time for coating with 1,0 mm thickness: ~40 min (dry to the touch), ~240 min (complete dry).

COMPLIANCE

- *Test standard:*
  EN 1366-3 / EAD 350454-00-1104
- *European Technical Assessment:*
  ETA 19/0038 of 28/06/2019
- *Declaration of Performance:*
  DoP 7/2019
- *Certificate of Constancy of Performance*
  1488-CPR-0756/W

CODE FOR A SUSTAINABLE BUILT ENVIRONMENT BREEAM **EPD**

TRANSPORT AND STORAGE

Store in dry and cool conditions at temperatures between + 5°C and + 35°C. Shelf life 12 months from the production date shown on the packaging.

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➔ FIRE RESISTANCE CLASSIFICATION

Table 1. Parameters for penetration seal of non-flammable pipes in RIGID WALL (partition filing: 2 x mineral wool board)

Type of penetrating element					Partition: RIGID WALL with thickness A ≥ 150 mm	
Pipe			Pipe painting			
Pipe material	Pipe diameter (mm)	Pipe wall thickness (mm)	INTU FR COAT I (on pipe) length - c (mm)	INTU FR COAT I (on pipe) thickness – b_2 (mm)	Fire resistance classification C/U and C/C	Partition filling
STEEL	Ø ≤ 42,4	2,0 – 14,2	L ≥ 500	≥ 1	EI 180	**2 x mineral wool board** density: ρ ≥ 150kg/m³ thickness ≥ 60mm coated on one side with 1 mm of **INTU FR COAT A** or **INTU FR BOARD A**
	42,4 < Ø ≤ 48,3	2,2 – 14,2	L ≥ 500	≥ 1	EI 120*	
	48,3 < Ø ≤ 60,3	2,6 – 14,2	L ≥ 500	≥ 1	EI 120*	
	60,3 < Ø ≤ 76,1	3,1 – 14,2	L ≥ 500	≥ 1	EI 120*	
	76,1 < Ø ≤ 88,9	3,5 – 14,2	L ≥ 500	≥ 1	EI 120*	
	88,9 < Ø ≤ 108,0	4,0 - 14,2	L ≥ 500	≥ 1	EI 60*	
	108,0 < Ø ≤ 159,0	4,0 - 14,2	L ≥ 500	≥ 2	EI 60*	
COPPER	Ø ≤ 6,0	≥ 0,8	L ≥ 500	≥ 1	EI 120	**2 x mineral wool board** density: ρ ≥ 150kg/m³ thickness ≥ 60mm coated on one side with 1 mm of **INTU FR COAT A** or **INTU FR BOARD A**
	6,0 < Ø ≤ 22,0	≥ 1,0	L ≥ 500	≥ 1	EI 90	
	22,0 < Ø ≤ 35,0	1,3 – 14,2	L ≥ 500	≥ 1	EI 90	
	35,0 < Ø ≤ 42,0	1,5 – 14,2	L ≥ 500	≥ 1	EI 90	
	42,0 < Ø ≤ 54,0	1,7 – 14,2	L ≥ 500	≥ 1	EI 90	

*Pipe need to be painted inside the partition

Table 2. Parameters for penetration seal of non-flammable pipes in RIGID WALL (partition filing: cement mortar)

Type of penetrating element					Partition: RIGID WALL with thickness A ≥ 150 mm	
Pipe			Pipe painting			
Pipe material	Pipe diameter (mm)	Pipe wall thickness (mm)	INTU FR COAT I (on pipe) length - c (mm)	INTU FR COAT I (on pipe) thickness – b_2 (mm)	Fire resistance classification C/U and C/C	Partition filling
STEEL	Ø ≤ 42,4	2,0 – 14,2	L ≥ 500	≥ 1	EI 240	**Cement mortar** thickness g ≤ 20 mm
	42,4 < Ø ≤ 48,3	2,2 – 14,2	L ≥ 500	≥ 1	EI 240	
	48,3 < Ø ≤ 60,3	2,6 – 14,2	L ≥ 500	≥ 1	EI 240	
	60,3 < Ø ≤ 76,1	3,1 – 14,2	L ≥ 500	≥ 1	EI 240	
	76,1 < Ø ≤ 88,9	3,5 – 14,2	L ≥ 500	≥ 1	EI 240	
	88,9 < Ø ≤ 108,0	4,0 - 14,2	L ≥ 500	≥ 1	EI 240	
	108,0 < Ø ≤ 159,0	4,0 - 14,2	L ≥ 500	≥ 2	EI 60	
	159,0 < Ø ≤ 219,0	4,5 - 14,2	L ≥ 500	≥ 2	EI 60	
COPPER	Ø ≤ 6,0	≥ 0,8	L ≥ 500	≥ 1	EI 120	**Cement mortar** thickness g ≤ 20 mm
	6,0 < Ø ≤ 22,0	≥ 1,0	L ≥ 500	≥ 1	EI 120	
	22,0 < Ø ≤ 35,0	1,3 – 14,2	L ≥ 500	≥ 1	EI 120	
	35,0 < Ø ≤ 42,0	1,5 – 14,2	L ≥ 500	≥ 1	EI 120	
	42,0 < Ø ≤ 54,0	1,7 – 14,2	L ≥ 500	≥ 1	EI 120	

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Table 3. Parameters for penetration seal of non-flammable pipes in FLEXIBLE WALL

Type of penetrating element					Partition: FLEXIBLE WALL with thickness A ≥ 125 mm	
Pipe			Pipe painting			
Pipe material	Pipe diameter (mm)	Pipe wall thickness (mm)	INTU FR COAT I (on pipe) length - c (mm)	INTU FR COAT I (on pipe) thickness – b_2 (mm)	Fire resistance classification C/U and C/C	Partition filling
STEEL	Ø ≤ 42,4	2,0 – 14,2	L ≥ 500	≥ 1	EI 120	**2 x mineral wool board** density: ρ ≥ 150kg/m³ thickness ≥ 60mm coated on one side with 1 mm of **INTU FR COAT A** or **INTU FR BOARD A**
	42,4 < Ø ≤ 48,3	2,2 – 14,2	L ≥ 500	≥ 1	EI 120*	
	48,3 < Ø ≤ 60,3	2,6 – 14,2	L ≥ 500	≥ 1	EI 120*	
	60,3 < Ø ≤ 76,1	3,1 – 14,2	L ≥ 500	≥ 1	EI 120*	
	76,1 < Ø ≤ 88,9	3,5 – 14,2	L ≥ 500	≥ 1	EI 120*	
	88,9 < Ø ≤ 108,0	4,0 - 14,2	L ≥ 500	≥ 1	EI 120*	
STEEL	Ø ≤ 42,4	2,0 – 14,2	L ≥ 500	≥ 1	EI 90	**Cement mortar** thickness g ≤ 20 mm
	42,4 < Ø ≤ 48,3	2,2 – 14,2	L ≥ 500	≥ 1	EI 60	
	48,3 < Ø ≤ 60,3	2,6 – 14,2	L ≥ 500	≥ 1	EI 60	
	60,3 < Ø ≤ 76,1	3,1 – 14,2	L ≥ 500	≥ 1	EI 60	
	76,1 < Ø ≤ 88,9	3,5 – 14,2	L ≥ 500	≥ 1	EI 60	
	88,9 < Ø ≤ 108,0	4,0 - 14,2	L ≥ 500	≥ 1	EI 60	

*Pipe need to be painted inside the partition

Table 4. Parameters for penetration seal of non-flammable pipes in RIGID FLOOR (partition filing: 2 x mineral wool board)

Type of penetrating element					Partition: RIGID FLOOR with thickness A ≥ 150 mm	
Pipe			Pipe painting			
Pipe material	Pipe diameter (mm)	Pipe wall thickness (mm)	INTU FR COAT I (on pipe) length - c (mm)	INTU FR COAT I (on pipe) thickness – b_2 (mm)	Fire resistance classification C/U and C/C	Partition filling
STEEL	Ø ≤ 42,4	2,0 – 14,2	L ≥ 500	≥ 1	EI 240	**2 x mineral wool board** density: ρ ≥ 150kg/m³ thickness ≥ 60mm coated on one side with 1 mm of **INTU FR COAT A** or **INTU FR BOARD A**
	42,4 < Ø ≤ 48,3	2,2 – 14,2	L ≥ 500	≥ 1	EI 120*	
	48,3 < Ø ≤ 60,3	2,6 – 14,2	L ≥ 500	≥ 1	EI 120*	
	60,3 < Ø ≤ 76,1	3,1 – 14,2	L ≥ 500	≥ 1	EI 120*	
	76,1 < Ø ≤ 88,9	3,5 – 14,2	L ≥ 500	≥ 1	EI 120*	
	88,9 < Ø ≤ 108,0	4,0 - 14,2	L ≥ 500	≥ 1	EI 120*	
	108,0 < Ø ≤ 139,7	4,0 - 14,2	L ≥ 500	≥ 2	EI 180*	
	139,7 < Ø ≤ 159,0	4,0 - 14,2	L ≥ 500	≥ 2	EI 180*	
	159,0 < Ø ≤ 219,0	4,5 - 14,2	L ≥ 500	≥ 2	EI 90*	
COPPER	Ø ≤ 6,0	≥ 0,8	L ≥ 500	≥ 1	EI 240	**2 x mineral wool board** density: ρ ≥ 150kg/m³ thickness ≥ 60mm coated on one side with 1 mm of **INTU FR COAT A** or **INTU FR BOARD A**
	6,0 < Ø ≤ 22,0	≥ 1,0	L ≥ 500	≥ 1	EI 240	
	22,0 < Ø ≤ 35,0	1,3 – 14,2	L ≥ 500	≥ 1	EI 240	
	35,0 < Ø ≤ 42,0	1,5 – 14,2	L ≥ 500	≥ 1	EI 240	
	42,0 < Ø ≤ 54,0	1,7 – 14,2	L ≥ 500	≥ 1	EI 240	
	54,0 < Ø ≤ 88,9	2,2 – 14,2	L ≥ 500	≥ 1	EI 180	

*Pipe need to be painted inside the partition

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Table 5 Parameters for penetration seal of non-flammable pipes in RIGID FLOOR (partition filing: cement mortar)

Type of penetrating element					Partition: RIGID FLOOR with thickness A ≥ 150 mm	
Pipe			Pipe painting			
Pipe material	Pipe diameter (mm)	Pipe wall thickness (mm)	INTU FR COAT I (on pipe) length - c (mm)	INTU FR COAT I (on pipe) thickness – b_2 (mm)	Fire resistance classification C/U and C/C	Partition filling
STEEL	Ø ≤ 42,4	2,0 – 14,2	L ≥ 500	≥ 1	EI 240	**Cement mortar** thickness g ≤ 20 mm
	42,4 < Ø ≤ 48,3	2,2 – 14,2	L ≥ 500	≥ 1	EI 180	
	48,3 < Ø ≤ 60,3	2,6 – 14,2	L ≥ 500	≥ 1	EI 180	
	60,3 < Ø ≤ 76,1	3,1 – 14,2	L ≥ 500	≥ 1	EI 180	
	76,1 < Ø ≤ 88,9	3,5 – 14,2	L ≥ 500	≥ 1	EI 180	
	88,9 < Ø ≤ 108,0	4,0 - 14,2	L ≥ 500	≥ 1	EI 180	
	108,0 < Ø ≤ 139,7	4,0 - 14,2	L ≥ 500	≥ 2	EI 120	
	139,7 < Ø ≤ 159,0	4,0 - 14,2	L ≥ 500	≥ 2	EI 120	
	159,0 < Ø ≤ 219,0	4,5 - 14,2	L ≥ 500	≥ 2	EI 90	
COPPER	Ø ≤ 6,0	≥ 0,8	L ≥ 500	≥ 1	EI 240	**Cement mortar** thickness g ≤ 20 mm
	6,0 < Ø ≤ 22,0	≥ 1,0	L ≥ 500	≥ 1	EI 180	
	22,0 < Ø ≤ 35,0	1,3 – 14,2	L ≥ 500	≥ 1	EI 180	
	35,0 < Ø ≤ 42,0	1,5 – 14,2	L ≥ 500	≥ 1	EI 180	
	42,0 < Ø ≤ 54,0	1,7 – 14,2	L ≥ 500	≥ 1	EI 180	
	54,0 < Ø ≤ 88,9	2,2 – 14,2	L ≥ 500	≥ 1	EI 120	

Table 6 Parameters for penetration seal of CABLES in RIGID WALL (partition filing: 2 x mineral wool board)

Type of penetrating element				Partition: RIGID WALL with thickness A ≥ 150 mm	
Cable		Cable painting			
Cable type	Cable diameter (mm)	INTU FR COAT I (on cable) length - c (mm)	INTU FR COAT I (on cable) thickness - b_2 (mm)	Fire resistance classification	Partition filling
Single cable	Ø ≤ 21	L ≥ 300	≥ 1	EI 120	**2 x mineral wool board** density: ρ ≥ 150kg/m³ thickness ≥ 60mm coated on one side with 1 mm of **INTU FR COAT A** or **INTU FR BOARD A**
Medium cable	Ø ≤ 50	L ≥ 300	≥ 1		
Large cable	Ø ≤ 80	L ≥ 300	≥ 1		
Cables in bundle	$Ø_{BUNDLE}$ ≤ 100 $Ø_{CABLE}$ ≤ 21	L ≥ 300	≥ 1		
Non-seathed	Wires Ø ≤ 24	L ≥ 300	≥ 1		

Table 7 Parameters for penetration seal of CABLES in RIGID FLOOR (partition filing: 2 x mineral wool board) – outside ETA

Type of penetrating element				Partition: RIGID WALL with thickness A ≥ 150 mm	
Cable		Cable painting			
Cable type	Cable diameter (mm)	INTU FR COAT I (on cable) length - c (mm)	INTU FR COAT I (on cable) thickness - b_2 (mm)	Fire resistance classification	Partition filling
Single cable	Ø ≤ 21	L ≥ 500	≥ 2	EI 120*	**2 x mineral wool board** or **INTU FR BOARD A**
Cables in bundle	$Ø_{BUNDLE}$ ≤ 100 $Ø_{CABLE}$ ≤ 21	L ≥ 500	≥ 2		

* outside ETA, the results acc. to fire test report

Maximum dimensions of mixed penetration seals described are (width x length) 600 x 600 mm, provided the total amount of cross sections of the services does not exceed 60% of the penetration area and the minimum distance between services or between service and penetration seal edge is not smaller than:

- 35 mm – in case of distance between cables or cable ladders / trays and side seal edge
- 71 mm – in case of distance between cables and upper seal edge
- 30 mm – in case of distance between cable ladders / trays
- 130 mm – in case of distance between cables and cable ladders / trays
- 60 mm – in case of distance between cables or cable ladders / trays and bottom seal edge

Pipes and cables shall be supported at maximum 400 mm away from both faces of the wall constructions and from the upper face of floor constructions.

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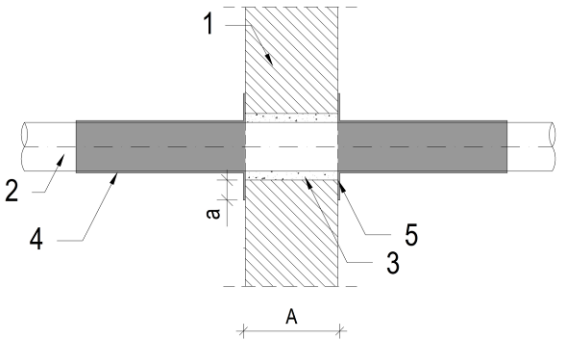
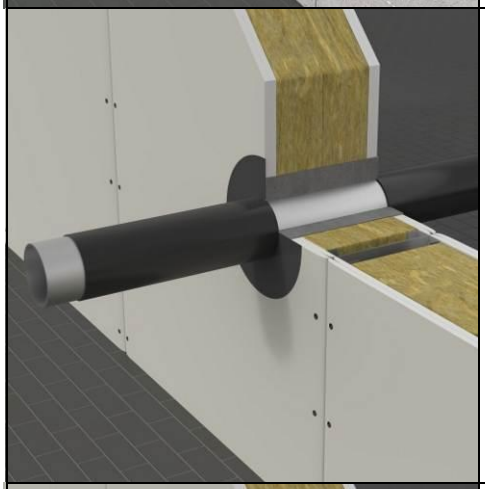
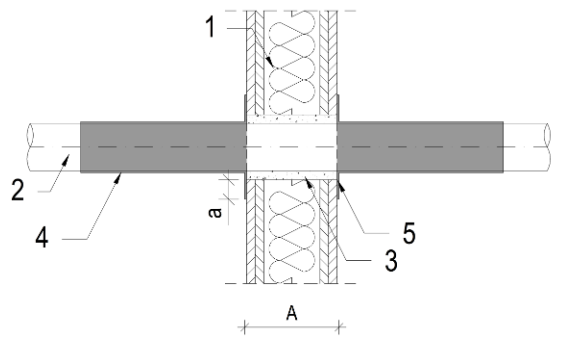
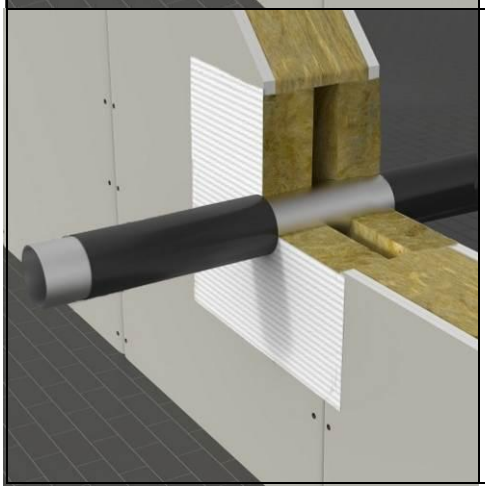
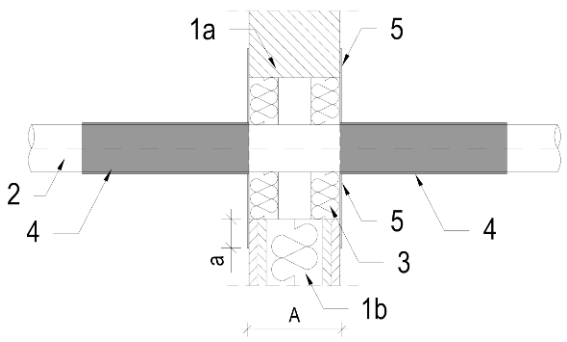
➔ SOLUTION DETAILS

NON-FLAMMABLE PIPES IN WALLS		
	Fig. 1. Penetration with mortar filling in rigid wall 	**1** – rigid wall with thickness of A ≥ 150 mm **2** – non-flammable pipe **3** – cement mortar filling **4** – **INTU FR COAT I** intumescent paint on metal pipe **5** – **INTU FR COAT I** intumescent paint, overlap on the partition length a ≥ 10 mm, dry layer thickness ≥ 1,0 mm
	Fig. 2. Penetration with mortar filling in flexible wall 	**1** – flexible wall with thickness of A ≥ 125 mm **2** – non-flammable pipe **3** – cement mortar filling **4** – **INTU FR COAT I** intumescent paint on metal pipe **5** – **INTU FR COAT I** intumescent paint, overlap on the partition length a ≥ 10 mm, dry layer thickness ≥ 1,0 mm
	Fig. 3. Penetration with mineral wool filling 	**1a** – rigid wall **1b** – flexible wall **2** – non-flammable pipe **3** – filling partition with 2 x **INTU FR BOARD A** **4** – **INTU FR COAT I** intumescent paint on metal pipe **5** – **INTU FR COAT A** ablative paint, overlap on the partition length a ≥ 10 mm, dry layer thickness ≥ 1,0 mm

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NON-FLAMMABLE PIPES IN FLOORS

Fig. 4. Filling partition with mineral wool

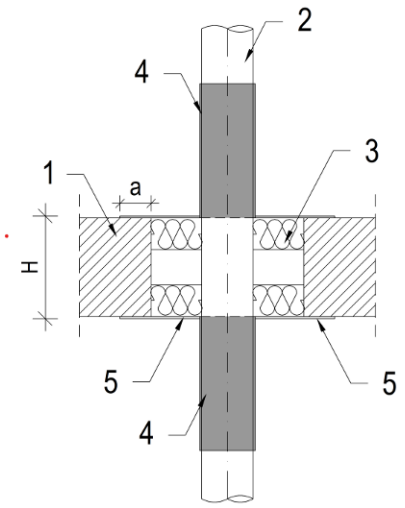
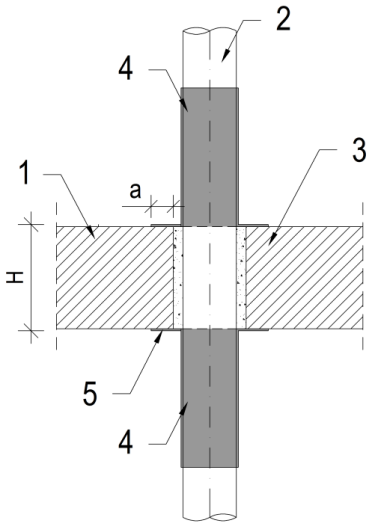
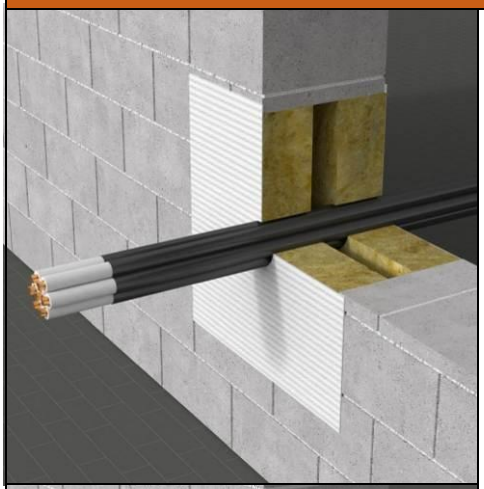


Fig. 5. Filling partition with cement mortar



1 – rigid floor, H ≥ 150 mm
2 – rura metalowa
3 – filling partition by **ALFA FR BOARD A** (Fig.4) or cement mortar (Fig. 5)
4 – **INTU FR COAT I** intumescent paint on metal pipe
5 – **INTU FR COAT A** ablative paint, overlap on the partition length a ≥ 10 mm, dry layer thickness ≥ 1,0 mm (Fig.4) or **INTU FR COAT I** intumescent paint, overlap on the partition length a ≥ 10 mm, dry layer thickness ≥ 1,0 mm (Fig.5)

CABLES IN WALLS



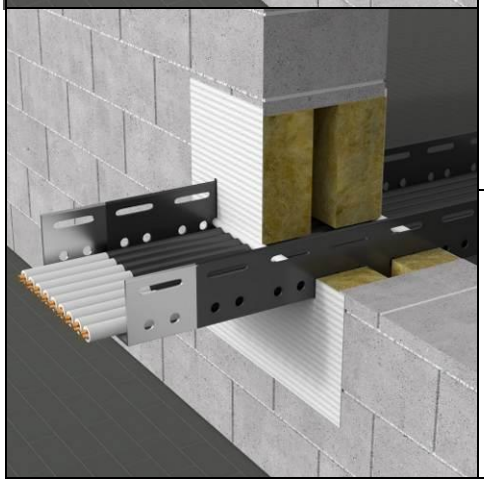
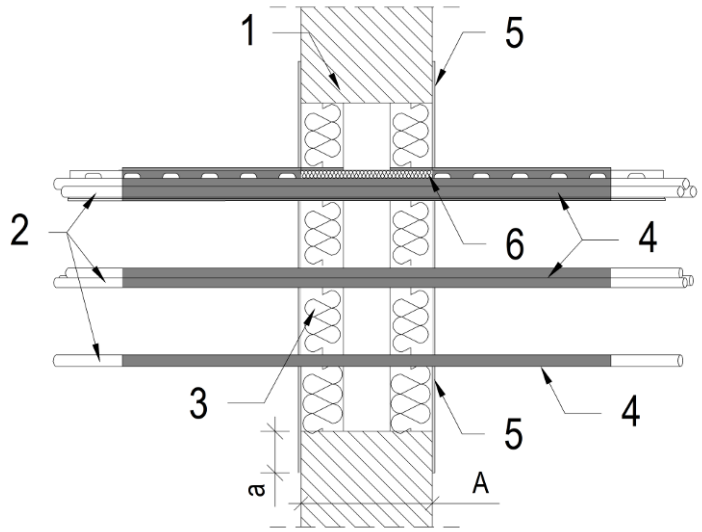


Fig. 6. Cable penetration seal with mineral wool filling



1 – rigid wall
2 – cable, cable in cable trays or cable ladders
3 – filling with 2 x **INTU FR BOARD A**
4 – **INTU FR COAT I** intumescent paint on cable, cable in cable trays or cable ladders
5 – **INTU FR COAT A** ablative paint, overlap on the partition length a ≥ 10 mm, dry layer thickness ≥ 1,0 mm
6 – gaps filling with loose mineral wool or / and **INTU FR MASTIC** mass

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