INTU FR COAT I

Fire rated intumescent coat

TDS Technical Data Sheet

CE

.INTUSEAL®

passive fire protection manufacturer

CODE FOR A SUSTAINABLE BUILT ENVIRONMENT BREEAM

ETA

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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 in fire partition floors and walls and electric cables / cable trays in wall.

Flexible walls:
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 a thickness 12,5 mm.

Rigid walls:
The wall must be minimum thickness 150mm. Must have concrete, cellular concrete or masonry structure, with a minimum density 600kg/m^3.

Rigid floors:
The floor must be minimum thickness 150mm. Must have concrete, cellular concrete or masonry structure, with a minimum density 1700kg/m^3.

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

AVAILABILITY

Contents	Color	Packaging	Pallet	Art. No.
2,5 kg	black	pail	147	INCI25KG
10 kg		pail	48	INCI10KG

INSTALLATION METHOD

1. Prior to sealing, 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 pipe should be filled with cement mortar or mineral wool, the space around cable/cable trays should be filled mineral board **INTU FR BOARD A** (or mineral wool board density **INTU FR COAT A**) flush with the face of the partition.
4. Cover the pipe with **INTU FR COAT I** with a layer of appropriate thickness and length according to the Technical Data below.
5. Cover the hole filling (mineral wool/cement mortar) with **INTU FR COAT A** ablative paint, overlapping the surface of the partition according to the Technical Data below.

TRANSPORT AND STORAGE

Store in dry and cool conditions at temperatures between + 5°C and + 25°C. Shelf life 12 months from the production date shown on the packaging.

COMPLIANCE

- Reference standard: EN 1366-3 / ETAG 026-2 / EAD 350454-00-1104
- DoP 7/2019
- ETA 19/0038
- CoC 1488-CPR-0756/W
- BREEAM certification
- TDS
- SDS

➔ 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 ≤	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**
	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 ≤	4,0 - 14,2	L ≥ 500	≥ 2	EI 60	
	159,0 < Ø ≤	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	

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 ≤	4,0 - 14,2	L ≥ 500	≥ 2	EI 180*	
	139,7 < Ø ≤	4,0 - 14,2	L ≥ 500	≥ 2	EI 180*	
	159,0 < Ø ≤	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

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	
Pipe		Pipe painting			
Cable type	Pipe diameter (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
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	
Pipe		Pipe painting			
Cable type	Pipe diameter (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
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

Pies 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.

SOLUTION DETAILS

NON-FLAMMABLE PIPES

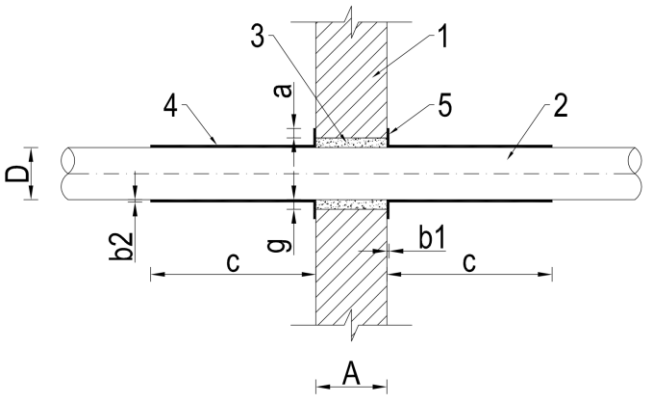
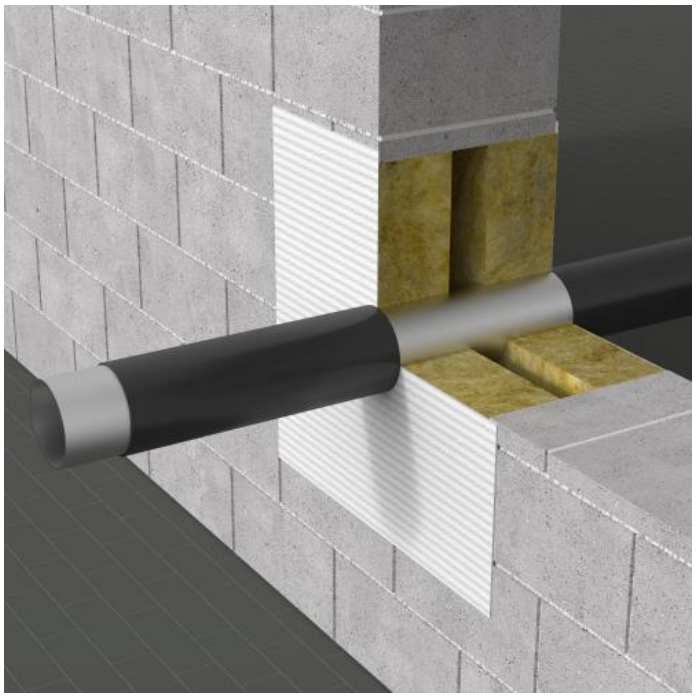


Fig. 1. Penetration with mortar filling

1 – a partition (wall or floor) with a thickness of A≥150mm
2 – non-flammable pipe
3 – concrete mortar filling g ≤ 20mm
4 – **INTU FR COAT I** intumescent paint b2≥1mm; c≥500mm;
5 – **INTU FR COAT I** intumescent paint, a≥10mm; b1≥1mm;



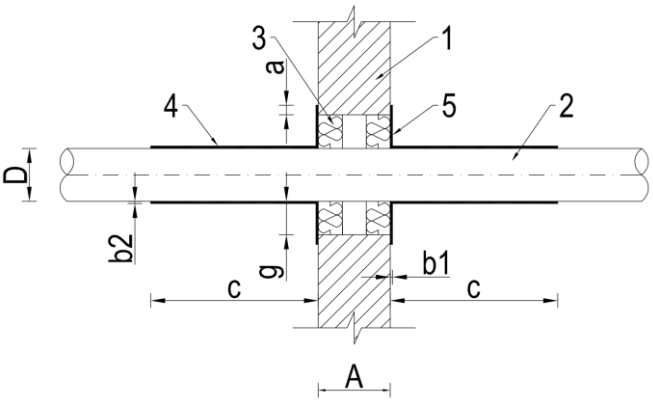


Fig. 2. Transition with mineral wool filling

1 – a partition (wall or floor) with a thickness of A≥150mm
2 – non-flammable pipe
3 – 2 x **INTU FR BOARD A** filling or 2 x mineral wool filling with a density of min. 150 kg/m³, thick. min. 60 mm, g ≤ 50mm
4 – **INTU FR COAT I** intumescent paint b2≥1mm; c≥500mm;
5 – **INTU FR COAT A** ablative paint, a≥10mm; b1≥1mm;

NON-FLAMMABLE PIPES

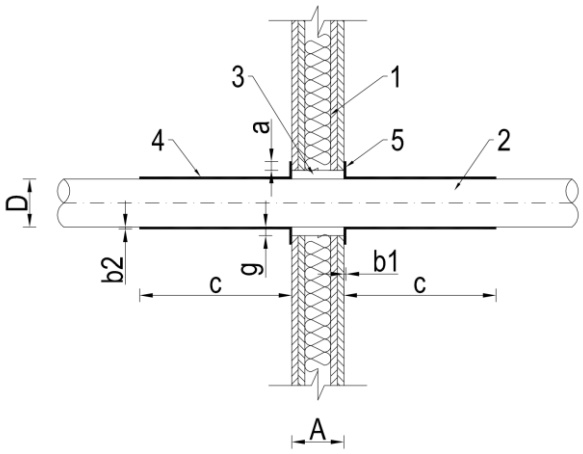
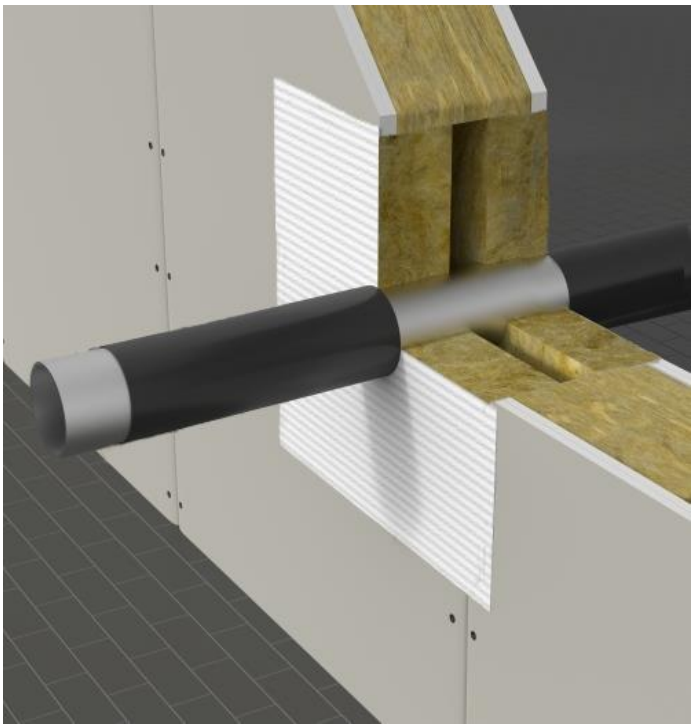


Fig. 3. Penetration with mortar filling

1 – flexible wall, thickness of A≥125mm
2 – non-flammable pipe
3 – concrete mortar filling g ≤ 20mm
4 – **INTU FR COAT I** intumescent paint b2≥1mm; c≥500mm;
5 – **INTU FR COAT I** intumescent paint,
a≥10mm; b1≥1mm;



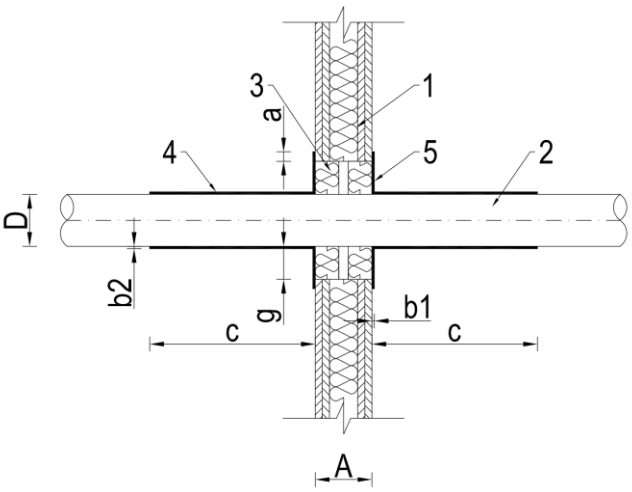
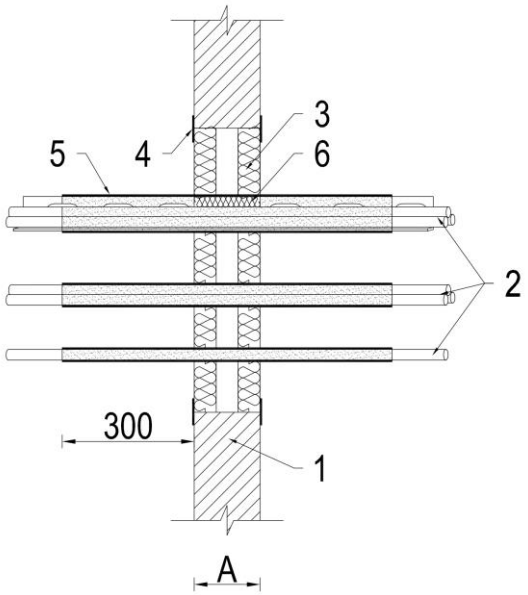


Fig. 4. Transition with mineral wool filling

1 – flexible wall. thickness A≥125mm
2 – non-flammable pipe
3 – 2 x **INTU FR BOARD A** filling or 2 x mineral wool filling with a density of min. 150 kg/m^3, thick. min. 60 mm, g ≤ 50mm;
4 – **INTU FR COAT I** intumescent paint b2≥1mm; c≥500mm;
5 – **INTU FR COAT A** ablative paint,
a≥10mm; b1≥1mm;

ELECTRIC CABLES



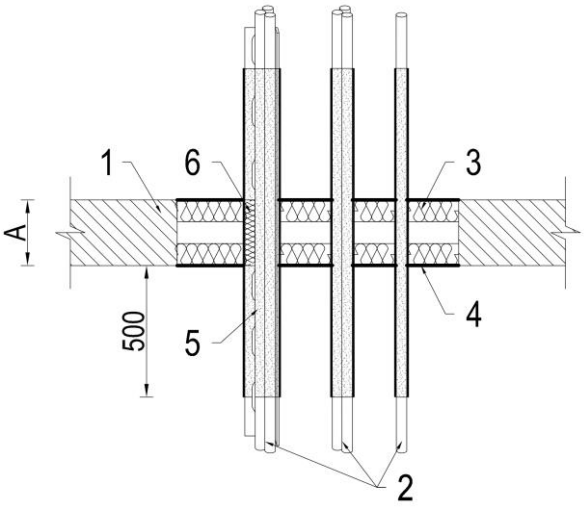


Fig. 5. Penetration seal of electric cables in wall

1 – a partition (wall) with a thickness of A≥150mm
2 – single cable / bundle of cables / cable trays
3 – mineral wool filling with a density of min. 150 kg/m³, thickness min. 60 mm, g≤50mm painted ablative paint **INTU FR COAT A** (or **INTU FR BOARD A**)
4 – **INTU FR COAT A** ablative paint on combining wool with a barrier, dry layer thickness min 1mm, overlapping the 10mm partition
5 – **INTU FR COAT I** intumescent paint on the length of min 300mm from the partition, thickness of 1mm.
6 – gaps filled with loose mineral wool and intumescent acrylic mastic **INTU FR MASTIC**

Fig. 6. Penetration seal of electric cables in floor

1 – a partition (floor) with a thickness of A≥150mm
2 – single cable / bundle of cables / cable trays
3 – mineral wool filling with a density of min. 150 kg/m³, thickness min. 60 mm, g≤50mm painted ablative paint **INTU FR COAT A** (or **INTU FR BOARD A**)
4 – **INTU FR COAT A** ablative paint on combining wool with a barrier, dry layer thickness min 1mm, overlapping the 10mm partition
5 – **INTU FR COAT I** intumescent paint on the length of min 500mm from the partition, thickness of 2mm.
6 – gaps filled with loose mineral wool and intumescent acrylic mastic **INTU FR MASTIC**