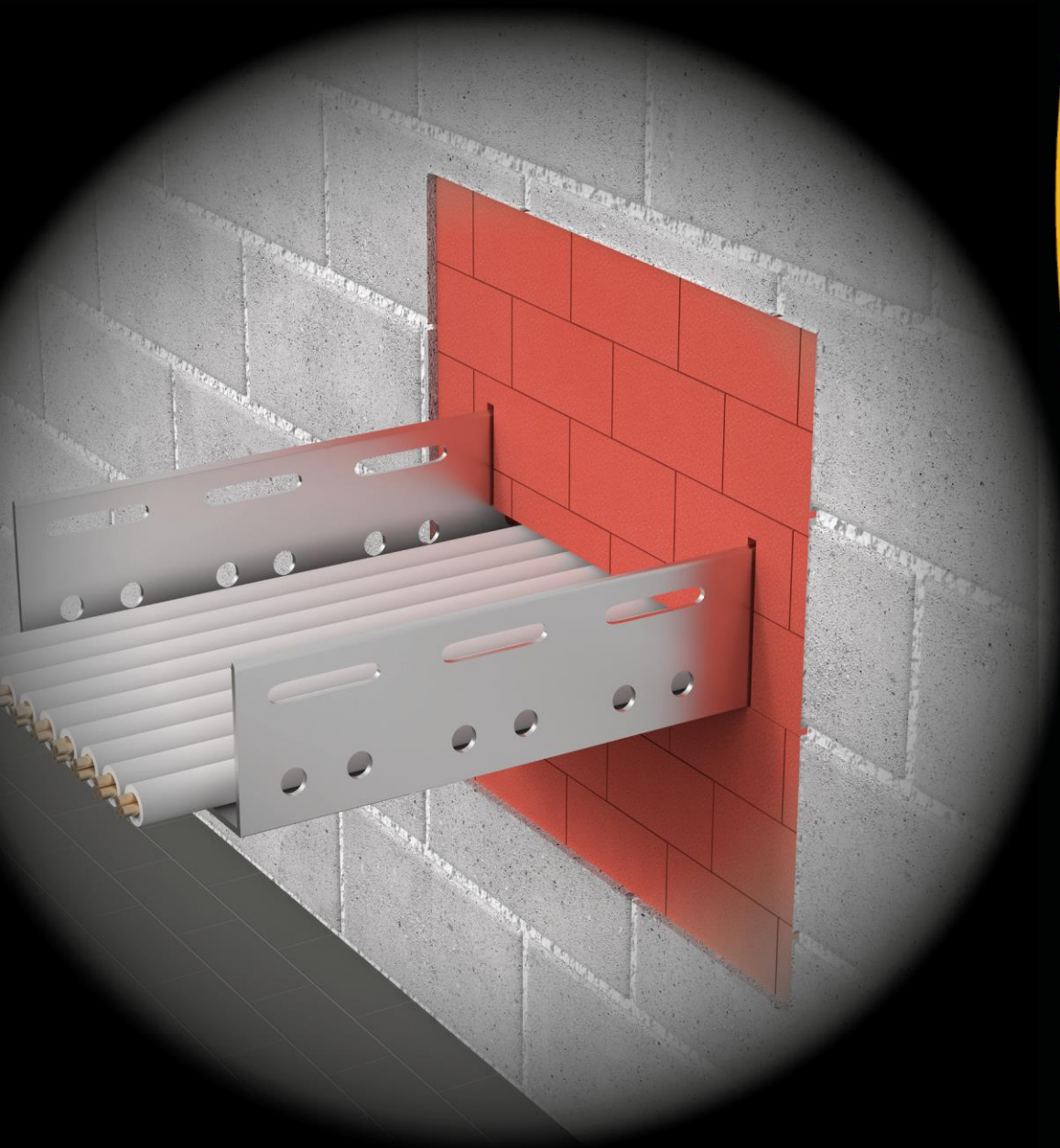


# INTU FR BRICK

*Intumescent fire stop brick*

TDS Technical Data Sheet



**.INTUSEAL<sup>®</sup>**  
*passive fire protection manufacturer*

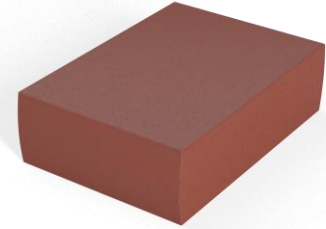


[www.intuseal.com](http://www.intuseal.com)

## → PRODUCT DESCRIPTION

Fire protection block **INTU FR BRICK** is made of intumescent polyurethane foam with halogen-free fire safety additives. Intumescent foam close the hole during fire, preventing the spread of fire and smoke.

- fire resistance class up to **EI 120**
- mixed penetration seal
- to medium-sized and large fire protection penetration seals
- penetration seals with frequently changing pass-through installations
- for use in walls and floors



## → APPLICATION

The **INTU FR BRICK** intumescent fire stop brick is intended to be used as mixed penetration seal to temporarily or permanently reinstate the fire resistance performance of flexible wall, rigid wall and rigid floor construction where they have been provided, with apertures which are penetrated by various cables, waveguides, conduits / tubes, metal pipes, plastic pipes and cable support constructions (perforated or non-perforated steel cable trays and steel ladders).

### Rigid walls:

The wall must be 100 mm minimum thickness. Must have concrete, aerated concrete, cellular concrete, reinforced concrete or masonry structure, with min. density  $\rho \geq 450 \text{ kg/m}^3$ .

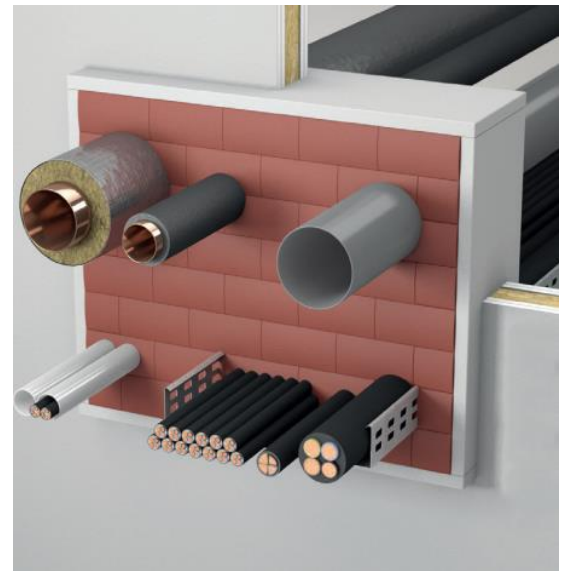
### Rigid floors:

The floor must be 150 mm minimum thickness. Must have concrete, aerated concrete, cellular concrete, reinforced concrete or masonry structure, with min. density  $\rho \geq 450 \text{ kg/m}^3$ .

### Flexible walls:

The wall must be minimum thickness 94 mm. Must have steel or timbers profile structure covered on both sides with minimum 2 layers of boards with minimum thickness 12,5 mm or minimum one layer of boards (minimum thickness 25 mm) with classification.

- For timber stud walls there shall be a minimum distance of 100 mm of the penetration seal to any timber stud. This cavity between the penetration seal and the timber stud has to be closed with insulation.



## → TRANSPORT AND STORAGE

Store in dry and cool conditions at temperatures between + 5°C and + 25°C.

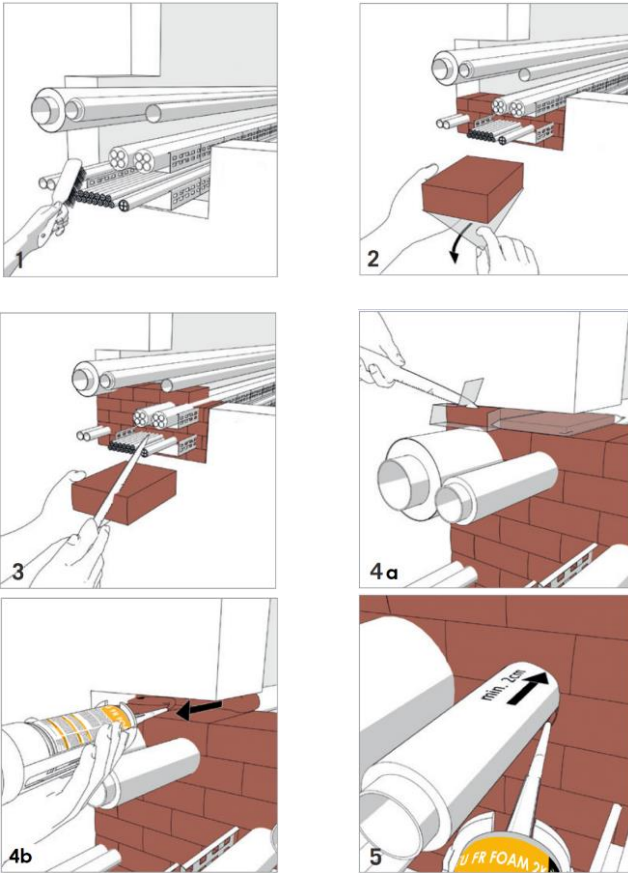
## → COMPLIANCE

- ETA-10/0431, OIB
- ETA-11/0206, OIB
- EC Certificate of Conformity 0761-CPD-0187
- EC Certificate of Conformity 0761-CPD-0208
- DoPZZ230-20180701
- TDS
- SDS

## → AVAILABILITY

Product	Type	Unit	Pallet (pcs)	Article number
INTU FR BRICK	200x144x60 mm	BOX (18pcs)	450 (25xBOX)	INFBRK

## → INSTALLATION METHOD



1. Clean the component opening.
2. Remove the protective foil of the **INTU FR BRICK** and install them in layers (like in a brick bond in masonry, i.e. layer-by-layer offset of the vertical butt joints) so that they fit tightly in the component opening.
3. In the area of penetrating elements, cut the **INTU FR BRICK** to the required size.

Narrow residual openings can be sealed with:

- **4a.** The **INTU FR BRICK** vacuum packed. Place the **INTU FR BRICK** vacuum packed unopened in the opening. After cutting open the foil the **INTU FR BRICK** expands to the standard size. The foil can remain inside the penetration seal, however it must be removed on both sides so that it is flush with the surface of the penetration seal.
- **4b.** The **INTU FR FOAM 2K**. The fill depth must equal the minimum seal thickness. The maximum area that may be filled with **INTU FR FOAM 2K** is 450 mm x 500 mm (width x height).

5. Interstices between cables and open joints must be filled with fire protection sealant e.g. **INTU FR MASTIC** 20 mm deep on both sides. Butt joints and horizontal joints between **INTU FR BRICK** and

## → TECHNICAL DATA

Table 1 Properties of the **INTU FR BRICK** fire protection block

<b>Colour</b>	Red / brown*
<b>Shelf life</b>	12 months in unopened packaging at a temperature between 5°C and 30°C
<b>Transportation storage temp.</b>	+5 °C to +30 °C (store dry and dustfree in the original packaging)
<b>Application temperature</b>	+15 °C to +30 °C (optimally +20 °C tot +25 °C)
<b>Temperature resistance</b>	-20 °C to +80 °C
<b>Cuttability</b>	Direct
<b>VOC</b>	< 2 µg/m³
<b>Density</b>	$\rho = 240 \text{ kg/m}^3 - 300 \text{ kg/m}^3$
<b>Thermal conductivity (<math>\lambda</math>)</b>	0,103 W/(m*K)
<b>Expansion pressure</b>	No expansion pressure measurable
<b>Expansion factor <sup>1)</sup></b>	from 1.6 x to 4.5 x
<b>Category of use <sup>2)</sup></b>	Type Z <sub>1</sub> in accordance with EAD 350454-00-1104
<b>Recoatable <sup>3)</sup></b>	Yes
<b>Air permeability</b>	<ul style="list-style-type: none"> <li>• <math>Q_{50} \leq 0.82 \text{ m}^3/(\text{h} \cdot \text{m}^2) / Q_{600} = 6.61 \text{ m}^3/(\text{h} \cdot \text{m}^2)</math> (Tested measurement: 550 x 355 x 200 mm tested without penetrations)</li> <li>• <math>Q_{50} = 1.12 \text{ m}^3/(\text{h} \cdot \text{m}^2) / Q_{600} = 7.65 \text{ m}^3/(\text{h} \cdot \text{m}^2)</math></li> </ul>

Table 2 The opening size of fire penetration seal

Partition		Penetration seal parameters		
Class minutes		EI 60	EI 120	Height H [mm]
Type	Thick. [mm]	Width W [mm]		
		For seal thick. b=144mm	For seal thick. b=200mm	
Rigid wall	b ≥ 100	600		1000
		1000		600
Partition		Penetration seal parameters		
Rigid floor	b ≥ 150	unlimited	unlimited	≤ 375
		6000	unlimited	400
		2250	4800	450
		1000	1300	600
		---	1000	700
Partition		Penetration seal parameters		
Flexible wall	b ≥ 94	600		1000
		1000		600



	(Tested measurement: 560 x 360 x 144 mm tested without penetrations) in accordance with test standard EN 1026
<b>Resistance to static pressure differences</b>	<ul style="list-style-type: none"> <li>P<sub>max</sub> = 3700 Pa (Test part dimensions 550 x 355 x 200 mm, tested without penetration)</li> <li>P<sub>max</sub> = 2100 Pa (Test part dimensions 560 x 360 x 144 mm, tested without penetration) in accordance with test standard EN 12211</li> </ul>
<b>Acoustic properties</b>	RW 45 dB (test dimension 350 x 350 x 144 mm) RW 49 dB (test dimension 360 x 360 x 200 mm)
<b>Fire class</b>	E in accordance with EN 13501-1
<b>Approvals</b>	ETA-10/0431 and ETA-11/0206
<b>Function retention</b>	10 years

<sup>1)</sup> Expansion factor tested on samples at 450 °C for 25 minutes with overload. The expansion factor is a laboratory characteristic value.

The expansion factor in an installed state depends on the existing preconditions.

<sup>2)</sup> Permissible environmental conditions. Conduit seal for use in conditions with ≥ 85% RH, protected from temperatures below 0 °C,

and without exposure to rain and/or UV.

<sup>3)</sup> Influence of finishing materials and chemicals the following paints and occasional brief influences from chemicals will not change the fire protection properties:

Coating materials : Dispersion paint, alkyd paint, polyurethane acrylic paint, epoxy resin paint, silicone

Solvent/oil : Butyl acetate, butanol, trichloroethylene, xylene, acetone, turpentine

Gaseous chemicals : Brief storage with concentrated ammonium hydroxide solution

\*Environmental conditions with high humidity levels and/or some coating materials and chemicals may change the color or limit colour changes.

## → FIRE RESISTANCE CLASSIFICATION

Table 3 Fire resistance classification for flexible walls / rigid walls / rigid floors for INTU FR BRICK

Type of penetrating element		Fire resistance classification		
<b>CONDUITS / TUBES</b>		<b>Pipe wall thickness</b>	<b>Foam injection depth b ≥ 144 mm</b>	<b>Foam injection depth b ≥ 200 mm</b>
Steel conduits tubes up to a max. outer diameter (with / without cables):	∅ ≤ 16 mm	≥ 1,5 mm	Ei 60 – U/C E60 – U/C	wall: Ei 90 – U/C; E120 – U/C floor: Ei 90 – U/C; 90 – U/C
Plastic conduits up to:	∅ ≤ 63 mm	1,0 – 3,0 mm		Ei 120 – U/C; E 120 – U/C
Bundles consisting of plastic conduits with / without cables:	∅ <sub>BUNDLE</sub> ≤ 80 mm ∅ <sub>CONDUIT</sub> ≤ 40 mm			Ei 120 – U/C E 120 – U/C
	∅ <sub>BUNDLE</sub> ≤ 100 mm ∅ <sub>PIPE</sub> ≤ 63 mm	wall: Ei 90 – U/C; E 120 – U/C floor: Ei 90 – U/C; 90 – U/C		
Speed•pipe® up to:	∅ ≤ 12 mm	0,75 - 2,0 mm		wall: Ei 90 – U/C; E 120 – U/C floor: Ei 90 – U/C; 90 – U/C
Bundles consisting of speed•pipe® with / without optical fibre cables:	∅ <sub>BUNDLE</sub> ≤ 80 mm ∅ <sub>PIPE</sub> ≤ 12 mm		wall: Ei 90 – U/C; E 120 – U/C floor: Ei 90 – U/C; 90 – U/C	
<b>NON-INSULATED METAL PIPES</b>		<b>Pipe wall thickness</b>	<b>Foam injection depth b ≥ 144 mm</b>	<b>Foam injection depth b ≥ 200 mm</b>
Copper pipes up to a max. outer diameter:	∅ ≤ 18 mm	1,0 – 14,2 mm	Ei 60 – C/U E60 – C/U	Ei 60 – C/U E 120 – C/U
Steel pipes up to a max. outer diameter:	∅ ≤ 35 mm	1,0 – 14,2 mm		wall: Ei 90 – C/U; E 120 – C/U floor: Ei 90 – C/U; E 90 – C/U
<b>PLASTIC PIPES / TUBES</b>		<b>Pipe wall thickness</b>	<b>Foam injection depth b ≥ 144 mm</b>	<b>Foam injection depth b ≥ 200 mm</b>
Plastic pipes up to a max. outer diameter:	∅ ≤ 50 mm	1,8 – 5,6 mm	Ei 60 – U/C E 60 – U/C	Ei 120 – U/C E120 – U/C

Type of penetrating element	Fire resistance classification
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CABLES		Foam injection depth $b \geq 144$	Foam injection depth $b \geq 200$ mm
Sheathed electrical/ telecommunication/ optical fiber cables up to a max. outer diameter:	$\varnothing \leq 21$ mm	EI 60 / E 60	EI 90 / EI 120 <sup>(1)</sup> / E 120
	$\varnothing \leq 50$ mm	EI 60 / E 60	wall: EI 90 / EI 120 <sup>(1)</sup> floor: EI 90 / EI 120 <sup>(1)</sup> E 120
	$\varnothing \leq 80$ mm	EI 60 / E 60	EI 120 <sup>(1)</sup> / E 120
Tied bundles containing sheathed electrical / telecommunication / optical fibre cables up to a max. outer diameter:	$\varnothing_{\text{BUNDLE}} \leq 100$ mm $\varnothing_{\text{CABLE}} \leq 21$ mm	EI 60 / E 60	EI 90 / EI 120 <sup>(1)</sup> / E 120
Non-sheathed cables up to a max. outer diameter:	$\varnothing_{\text{CABLE}} \leq 24$ mm	wall: EI 45 / E60 floor: EI 60 / E60	EI 60 / E 120
Waveguides:	CELLFLEX@:	$\varnothing \leq 59,9$ mm	EI 120 – U/C E 120 – U/C
	CELLFLEX@ Lite:	$\varnothing \leq 50,2$ mm	
	RADIAFLEX@:	$\varnothing \leq 48,2$ mm	
	HELIAX@:	$\varnothing \leq 51,1$ mm	
	RADIAX@:	$\varnothing \leq 49,8$ mm	

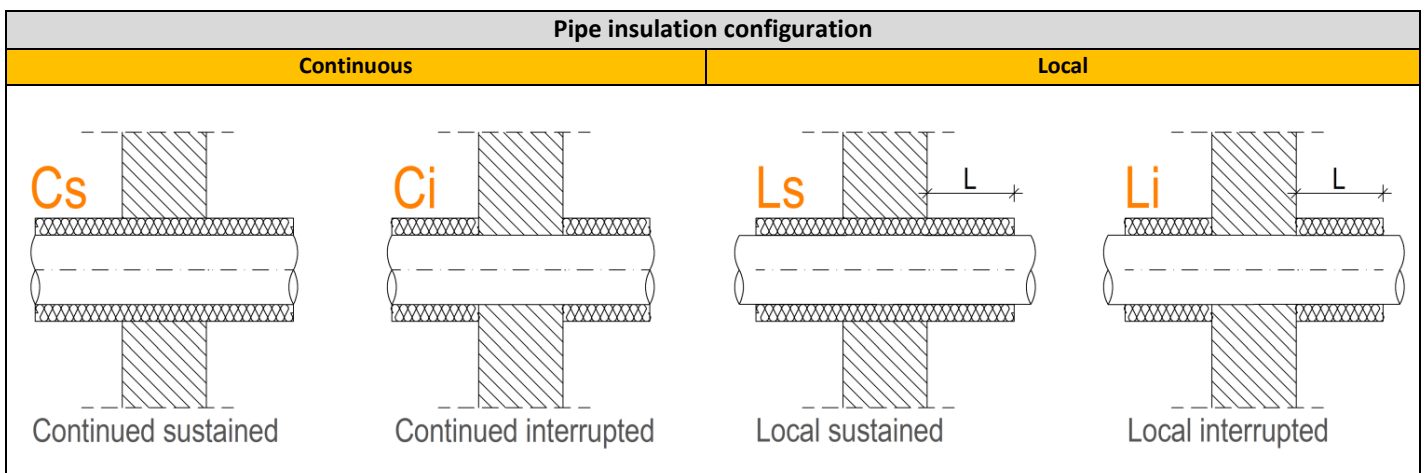
<sup>(1)</sup> The INTU FR BANDAGE must be applied on both surfaces of wall or floor

Type of penetrating element						Fire resistance
PRE-INSULATED METAL PIPES			Insulation type	Insulation thickness (mm)	Additional precaution: INTU FR BANDAGE	Foam injection depth $b \geq 200$ mm
Type of pipe	Outer diameter of pipe (mm)	Pipe wall				
WICU@Eco	12,0	1,0	PUR	11,0	Wall: one layer on both sides of the penetration seal (length* $\geq 150$ mm, nominal thickness 3 mm)  Floor: one layer on the top side of the	EI 90 – C/U E 90 – C/U
	15,0			11,5		
	18,0			12,0		
	22,0			12,5		
	28,0	1,5		17,5		
	35,0			18,0		
	42,0			24,0		
	54,0			27,5		
WICU@Flex	12,0; 15,0; 18,0; 22,0	1,0	PE	6,0	Floor: one layer on the top side of the penetration seal (length* $\geq 150$ mm, nom. thickness 3 mm)	wall: EI 90 – C/U; E 120 – C/U floor: EI 90 – C/U; E 120 – C/U
WICU@Frio	6,0; 10,0; 12,0; 15,0; 18,0; 22,0	1,0	PE	8,0; 10,0		wall: EI 120 – C/U; E 120 – C/U floor: EI 120 – C/U; E 120 – C/U
WICU@Clim	6,35	0,762	PE	6,0	No additional precaution	EI 120 – C/U E 120 – C/U
	9,52	0,813		8,0		
	12,70	0,813		10,0		
	15,87	0,889				
	19,05	0,889				
	22,22	0,889				
Tubolit@ Split /Tubolit@ DuoSplit	6,35; 9,52; 12,70	0,8	PE	9,0	No additional precaution	EI 120 – C/U E 120 – C/U
	15,88; 19,05;	1,0				

\*Measured from the surface of the penetration seal

Type of penetrating element	Fire resistance classification
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MINERAL WOOL INSULATED METAL PIPES Density of mineral wool $\rho \geq 90 \text{ kg / m}^3$		Pipe wall thickness (mm)	Insulation* length (mm)	Insulation thickness [mm]	Foam inj. depth $b \geq 144 \text{ mm}$	Foam injection depth $b \geq 200 \text{ mm}$
Mineral wool insulated metal pipes up to a max. outer diameter:	$\varnothing \leq 35,0 \text{ mm}$	1,0 – 14,2	(insulation configuration: Ls, Cs, Li, Ci): $L \geq 428$	$\geq 30$	EI 60 – C/U E 60 – C/U	wall: EI 90 – C/U; E 120 – C/U floor: EI 120 – C/U; E 120 – C/U
	$\varnothing \leq 54,0 \text{ mm}$			$\geq 30$		
	$\varnothing \leq 88,9 \text{ mm}$		(Ls, Cs, Li, Ci) $\geq 528$	$\geq 50$		
Mineral wool insulated metal pipes up to a max. outer diameter:	$\varnothing \leq 168,3 \text{ mm}$		(Ls, Cs, Li, Ci) $\geq 596$			
AF/Armaflex INSULATED METAL PIPES		Pipe wall thickness (mm)	Insulation length (mm)	Insulation thickness [mm]	Foam inj. depth $b \geq 144 \text{ mm}$	Foam injection depth $b \geq 200 \text{ mm}$
AF/Armaflex insulated metal pipes up to a max. outer diameter:	$\varnothing \leq 35,0 \text{ mm}$	1,0 – 14,2	(insulation config. Ls, Cs): $\geq 500$	9,0 – 35,0	EI 60 – C/U E 60 – C/U	EI 90 – C/U E 120 – C/U
	$\varnothing \leq 42,0 \text{ mm}$	1,5 – 14,2		9,0 – 36,5		
	$\varnothing \leq 54,0 \text{ mm}$	2,0 – 14,2		9,0 – 38,0		
	$\varnothing \leq 88,9 \text{ mm}$			41,5		
Foamglas® - PSH		Pipe wall thickness (mm)	Insulation length (mm)	Insulation thickness [mm]	Foam inj. depth $b \geq 144 \text{ mm}$	Foam injection depth $b \geq 200 \text{ mm}$
Foamglas® - PSH insulated metal pipes up to a max. outer diameter:	$\varnothing \leq 28,0 \text{ mm}$	1,0 – 14,2	(insulation config. Ls, Cs) $\geq 500$	25,0 – 50,0	-	EI 120 – C/U; E 120 – C/U
	$\varnothing \leq 54,0 \text{ mm}$			25,0 – 50,0		wall: EI 90 – C/U; E 120 – C/U floor: EI 120 – C/U; E 120 – C/U
				50,0		wall: EI 120 – C/U; E 120 – C/U floor: EI 120 – C/U; E 120 – C/U
	$\varnothing \leq 88,9 \text{ mm}$	1,0 – 14,2	(insulation config. Cs) continuous	40,0		wall: EI 120 – C/U; E 120 – C/U floor: EI 90 – C/U; E 120 – C/U
	$\varnothing \leq 108,0 \text{ mm}$			40,0		wall: EI 90 – C/U; E 120 – C/U floor: EI 120 – C/U; E 120 – C/U



## → SOLUTION DETAILS

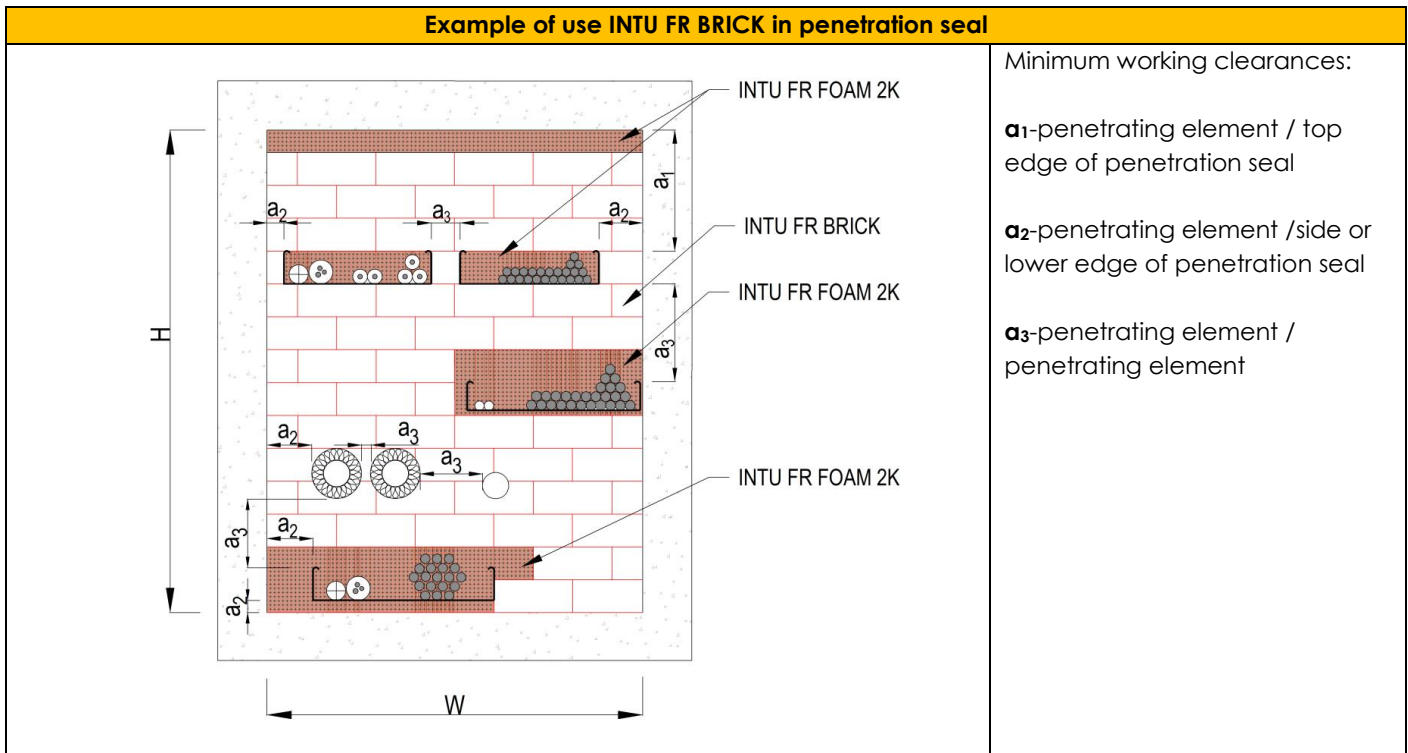
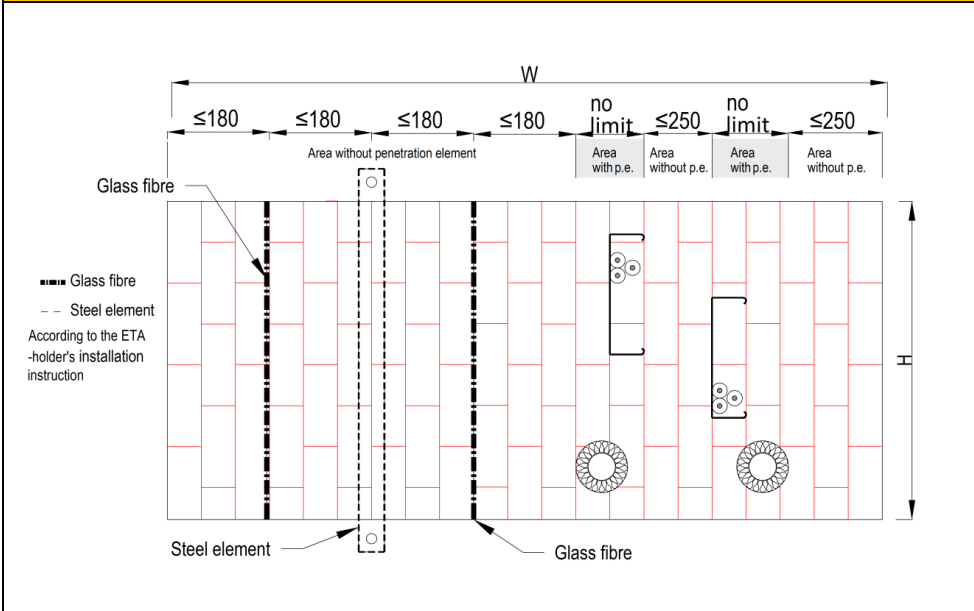


Table 4 Minimum working clearance depending on penetrating element

Minimum working clearance				
Penetrating element	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	
Cables/Waveguides/Cable trays/Conduits (incl. speed•pipe®)	50 mm	0 mm	<ul style="list-style-type: none"> <li>Cables/Waveguides/Cable trays/Conduits</li> <li>Cable trays (vertical)</li> <li>Non-insulated metal pipes</li> <li>Other penetrating elements</li> </ul>	0 mm 50 mm 60 mm 50 mm
Mineral wool	0 mm	0 mm	<ul style="list-style-type: none"> <li>Mineral wool insulated metal pipes</li> <li>Plastic pipes with pipe collar</li> <li>Non-insulated metal pipes</li> <li>Other penetrating elements</li> </ul>	0 mm 0 mm 60 mm 50 mm
Foamglas®-PSH insulated metal pipes	0 mm	0 mm	<ul style="list-style-type: none"> <li>Foamglas®-PSH insulated metal pipes</li> <li>Non-insulated metal pipes</li> <li>Other penetrating elements</li> </ul>	0 mm 60 mm 50 mm
AF/Armaflex insulated metal pipes	35 mm	35 mm	<ul style="list-style-type: none"> <li>AF/Armaflex (thickness &gt; 9 mm) insulated metal pipes</li> <li>AF/Armaflex (thickness = 9 mm) insulated metal pipes</li> <li>Non-insulated metal pipes</li> <li>Other penetrating elements</li> </ul>	35 mm 50 mm 60 mm 50 mm
Non-insulated metal pipes	35 mm	35 mm	<ul style="list-style-type: none"> <li>Non-insulated metal pipes</li> <li>Other penetrating elements</li> </ul>	60 mm 60 mm
Pre-insulated metal pipes	0 mm	0 mm	<ul style="list-style-type: none"> <li>Pre-insulated metal pipes</li> <li>Non-insulated metal pipes</li> <li>Other penetrating elements</li> </ul>	0 mm 60 mm 50 mm
Plastic pipes (without pipe collar)	50 mm	50 mm	<ul style="list-style-type: none"> <li>Plastic pipes (without pipe collar)</li> <li>Non-insulated metal pipes</li> <li>Other penetrating elements</li> </ul>	50 mm 60 mm 50 mm
Plastic pipes (with pipe collar)	50 mm*	50 mm*	<ul style="list-style-type: none"> <li>Plastic pipes (with pipe collar)</li> <li>Mineral wool insulated metal pipes</li> <li>Non-insulated metal pipes</li> <li>Other penetrating elements</li> </ul>	0 mm 0 mm 60 mm 50 mm

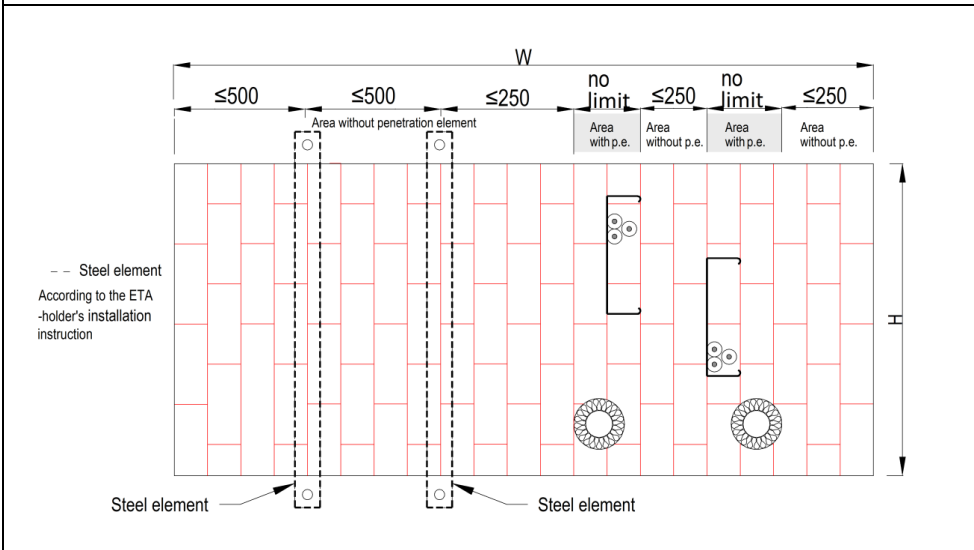
\*Measured from the surface of the pipe

**Support for penetrations through Rigid Floors  $\geq 150$  mm**



Top view:  
 Installation of glass fibre or steel element for **b = 144 mm**

In case of installation in floor openings free areas (without any elements penetrating the penetration seal) have to be supported with steel element (minimum width of 40 mm and minimum thickness of 2 mm) on the bottom side of the floor. Alternatively it is possible to install a glass fabric according to the ETA-holder's installation instruction every 180 mm between INTU FR BRICK (width of glass fabric  $\geq b$ ).



Top view:  
 Installation of steel elements for **b = 200 mm**

In case of installation in floor openings free areas (without any elements penetrating the penetration seal) have to be supported with steel element (minimum width of 40 mm and minimum thickness of 2 mm) on the bottom side of the floor. Alternatively it is possible to install a glass fabric according to the ETA-holder's installation instruction every 180 mm between INTU FR BRICK (width of glass fabric  $\geq b$ ).