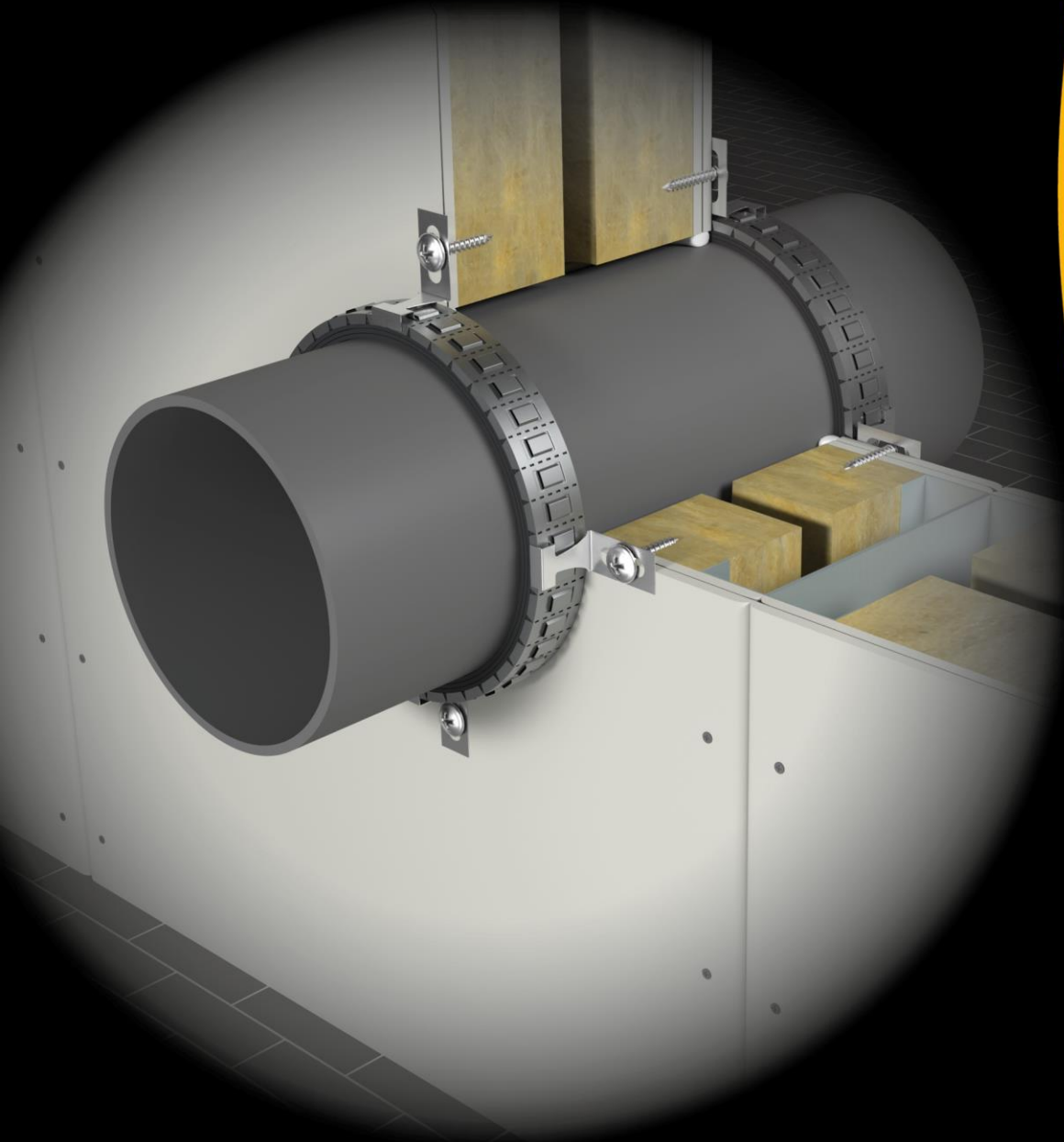


INTU FR COLLAR L SLIM

Intumescent pipe collar roll
TDS Technical Data Sheet



INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TDS Technical Data Sheet

INTUSEAL[®]
passive fire protection manufacturer

→ PRODUCT DESCRIPTION

Expandable INTU FR COLLAR L SLIM fireproofing collar is universal fireproofing collar with a height 30mm, consisting outer casing made of stainless steel and an intumescent insert made of graphite with adhesive tape. Under the high temperature (about 140 °C), the mass swells and closes the opening, preventing the spread of fire. Steel flange housing equipped with mounting brackets (segments). In order to obtain the desired diameter of the flange, the segments can be easily separated.

- fire resistance up to **EI120**
- protection of combustible pipes $\varnothing \leq 315$ mm
- protection of non-flammable pipes in FEF insulation $\varnothing \leq 168,3$ mm
- SPLIT harness protection (air conditioning installation)

→ APPLICATION

The **INTU FR COLLAR L SLIM** collar is use for fire protection of passages of metal pipes in synthetic rubber insulation (FEF), combustible pipes without insulation and bundles of copper pipes for air conditioning in PE or FEF insulation passing through fire separation partitions. Protection of installations routed perpendicular to the partition or at an angle.

Flexible walls:

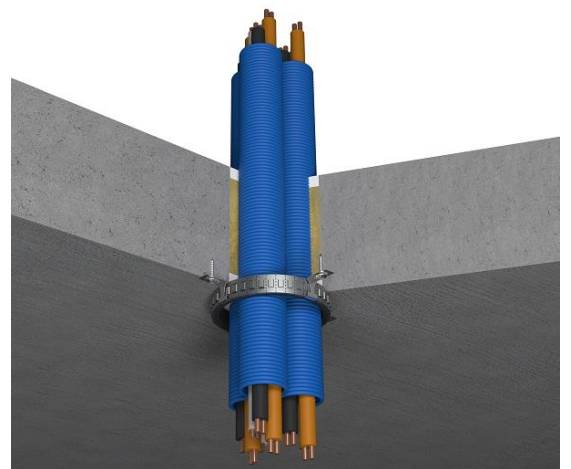
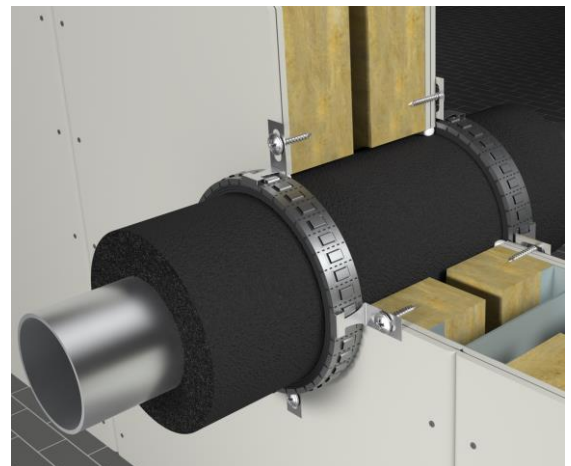
The wall must be minimum thickness 100 mm. Must have frame structure of steel or wooden sections covered on both sides with minimum 2 layers of panels with minimum thickness 12,5 mm.

Rigid walls:

The wall must be minimum thickness 100 mm. Must be made of concrete, reinforced concrete, concrete blocks, cellular concrete, ceramic brick (solid, hollow or lattice) or silicate brick (solid or hollow) with minimum density 600 kg/m³.

Rigid floors:

The floor must be minimum thickness 150 mm. Must be made of concrete, reinforced concrete or cellular concrete with minimum density 550 kg/m³.



→ AVAILABILITY

Product	Contents	Packaging	Pallet	Article number
INTU FR COLLAR L SLIM	steel casing 2,52 m	1 box	375	INCOLS
	intumescent wrap 12 m			
	short fixings type S - 20 pcs.			
CLIP S	20 pcs.	1 foil	N/A	INCOLSCS
CLIP L	20 pcs.	1 foil	N/A	INCOLSCL

→ TRANSPORT AND STORAGE

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

→ COMPLIANCE

Reference standard:

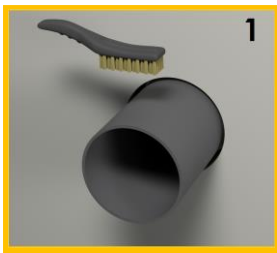
- EN 1366-3 / EAD 350454-00-1104
- TDS

INTU FR COLLAR L SLIM

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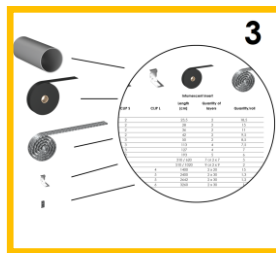
→ INSTALLATION METHOD



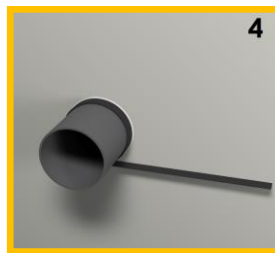
1 Clean the installations from dust, dirt and grease.



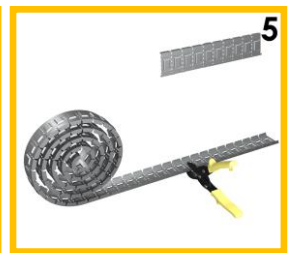
2 Fill the gaps between the installation and the partition with **INTU FR MASTIC** fireproofing mass.



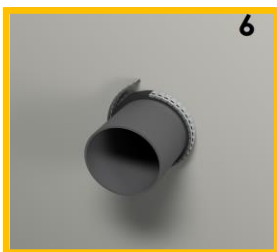
3 See the table below. Select and cut the appropriate length of the intumescent insert.



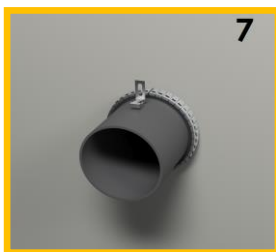
4 Wrap the intumescent insert on the pipe.



5 Select and cut the appropriate length of steel casing for the type of installation to be protected.



6 Put the casing on the intumescent insert.



7 Choose the appropriate clips with table below.



8 Attach the collar to the partition with steel screws.



9 Complete declaration and paste it next to the penetration.

→ APPROXIMATE CONSUMPTION of INTU FR COLLAR L SLIM



Intumescent insert



Max pipe diameter Ø [mm]	Quantity of segments	CLIP S	CLIP L	Length [cm]	Quantity of layers	Quantity/roll
32	9	2		23,5	2	18,5
40	11	2		28	2	15
50	15	2		36	2	11
63	17	2		42	2	9,5
75	19	3		50	2	8,5
82	22	3		113	4	7,5
90	23	3		127	4	7
110	28	3		193	5	6
125	33 or 2 x 33	4		310 / 620	7 or 2 x 7	5
160	42 or 2 x 42	4		510 / 1020	9 or 2 x 9	2
200	2 x 52	1	4	1400	2 x 20	15
225	2 x 61	1	5	2400	2 x 30	1,3
250	2 x 66	1	5	2642	2 x 30	1,2
315	2 x 80	1	6	3260	2 x 30	1

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

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➔ FIRE CLASSIFICATION in FLEXIBLE/RIGID WALLS

COMBUSTIBLE pipe in in FLEXIBLE/RIGID WALLS with min. thickness of 100mm							
pipe type	configuration	diameter Ø (mm)	pipe wall thickness (mm)		thickness of intumescent	EI class	
PP	U/C	50	1,8	8,3	4	120	120
	U/U	50	1,8	8,3	4	120	120
	U/C	75	1,9	12,5	4	120	120
	U/C	110	2,7	18,3	10	120	120
	U/U	110	2,7	3,8	10	120	60
	U/C	160	4,0	14,6	2 x 18	120	120
PP-HT	U/C	50	1,8		4	120	
	U/C	75	1,9		4	120	
	U/C	110	2,7		10	60	
	U/C	160	3,9		1x18*	60	
PVC-U	U/C	50	1,2	5,6	4	120	120
	U/U	50	1,2	5,6	4	120	120
	U/C	75	1,8	5,6	4	120	120
	U/C	110	2,0	8,1	10	120	120
	U/U	110	2,0	8,1	10	30	60
	U/C	160	3,2	9,5	1 x 18*	90	90
	U/C	160	3,2	9,5	2 x 18	120	120
HDPE	U/C	200	7,7		2 x 20	120	
	U/C	32	2,0		4	120	
	U/C	50	2,4	4,6	4	120	120
	U/U	50	2,4	4,6	4	120	120
	U/C	75	3,0	6,8	4	120	120
	U/C	110	4,2	10	10	120	120
	U/U	110	4,2	10	10	60	15
	U/C	160	4,9	9,5	1 x 18*	120	120
	U/C	160	4,9	9,5	2 x 18	120	120
PP-R	U/C	200	11,9		2 x 20	90	
	U/C	20	2,3	3,4	2	120	120
	U/C	75	6,8	12,5	4	120	120
	U/C	110	10,0	18,3	10	120	120
PP-R/Al/PP-R	U/C	20	2,8	3,4	4	120	120
	U/C	75	8,4	12,5	4	120	120
	U/C	110	12,3	18,3	10	120	120
PP-R/PP-RGF/PP-R	U/C	20	2,8	3,4	4	120	120
	U/C	75	10,3	12,5	4	120	120
	U/C	110	15,1	18,3	10	120	120
PE-X / Al / PE-X	U/C	20	2,0		4	120	
	U/C	63	6,0		4	EI 30, E120	
PE-RT/Al/PE-RT	U/C	20	2,0		4	120	
	U/C	63	6,0		4	EI 30, E120	
	U/C	75	7,5		4	EI 30, E120	
PE-Xa	U/C	20	2,0		4	120	
	U/C	63	5,8		4	120	
PE-Xb/Al/PE-Xb	U/C	20	2,0		4	EI 90, E120	
	U/C	26	3,0		4	EI 90, E120	

* flange height 30mm (one row)

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

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COMBUSTIBLE PIPE at an angle of 45° in FLEXIBLE*/RIGID WALLS					
in RIGID WALLS minimum thickness 100 mm					
pipe type	test config.	diameter Ø (mm)	pipe wall thickness (mm)	thickness of intumescent insert (mm)	EI class
PVC-U	U/C	110	3,2	10	120
PP	U/C	110	2,7	10	30*
HDPE	U/C	110	4,2	10	60

COMBUSTIBLE PIPE WITH ELBOW in FLEXIBLE*/RIGID WALLS					
in RIGID WALLS minimum thickness 100 mm					
pipe type	test config.	diam. Ø (mm)	pipe wall thick. (mm)	thick. of intumescent insert (mm)	EI class
PVC-U	U/C	110	3,2	10	120
PP	U/C	110	2,7	10	90*

LOW-NOISE pipe penetration seals in FLEXIBLE/RIGID WALLS of min 100mm thickness					
pipe type	configuration	diameter Ø (mm)	pipe wall thickness (mm)	thickness of intumescent insert (mm)	EI class
Geberit Silent DB 20	U/C	63	3,2	4	120
	U/C	75	3,6	4	120
	U/C	110	6,0	10	120
	U/C	160	7,0	2 x 18	120
Wavin SiTech+	U/C	50	1,8	4	120
	U/C	75	2,6	4	120
	U/C	110	3,4	10	90
	U/C	160	4,9	2 x 18	120
Magnaplast Ultra dB	U/C	50	2,0	4	120
	U/C	75	2,3	4	120
	U/C	110	3,4	10	120

STEEL/CAST IRON pipes in FEF penetration seals in FLEXIBLE/RIGID WALLS of min 100 mm thickness									
pipe type	test config.	diameter Ø (mm)	pipe wall thickness (mm)	FEF insulation thickness (mm)/ thickness of intumescent insert (mm)			EI class		
steel / cast iron	C/U	≤ 18	1,2 ÷ 14,2	9/4	25/6	-	120	120	-
	C/U	≤ 28	1,5 ÷ 14,2	9/4	25/6	-	120	120	-
	C/U	≤ 66,7	1,5 ÷ 14,2	9/4	32/6	-	90	120	-
	C/U	≤ 108	2,0 ÷ 14,2	-	32/6	50/8	-	90, E120	60, E120
	C/U	≤ 114,3	3,6 ÷ 14,2	-	32/6	50/8	-	90, E120	90, E120
	C/U	≤ 168,3	4 ÷ 14,2	-	32/6	50/8	-	60, E120	60, E120

COPPER pipes / bundles of copper pipes in FLEXIBLE/RIGID WALLS min. thickness 100 mm			
copper pipes / air conditioning pipes bundle	insulation	thickness of intumescent insert (mm)	EI class
Cu Ø12,7 x 0,8mm and Ø22,23 x 1mm, PVC Ø25mm + cable 4 x 1,5mm ²	FEF 9mm	4	60, E120
Cu Ø12,7 x 0,8mm and Ø22,23 x 1mm, PVC Ø25mm + cable 4 x 1,5mm ²	PE 9mm	4	60, E120

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→ FIRE CLASSIFICATION in LIGHTWEIGHT FLOORS

Fire classification for combustible pipes in lightweight floors of min 150mm thickness							
pipe type	configuration	diam. Ø (mm)	pipe wall thickness (mm)		intumescent insert thick. (mm)	EI class	
PP	U/C	50	1,8	8,3	4	120	120
	U/U	50	1,8	8,3	4	120	120
	U/C	75	1,9	12,5	4	120	120
	U/C	110	2,7	18,3	10	120	120
	U/U	110	2,7	18,3	10	x	120
	U/C	160	3,9	9,5	2 x 18	120	120
	U/C	200		7,7	2 x 18		90
PP-HT	U/C	50	1,8		4	120	
	U/U	50	1,8		4	120	
	U/C	75	1,9		4	120	
	U/C	110	2,7		10	120	
	U/C	160	3,9		2 x 18	120	
PVC-U	U/C	50	1,2	5,6	4	120	120
	U/U	50	1,2	5,6	4	120	120
	U/C	75	1,8	5,6	4	120	120
	U/C	110	2,0	8,1	10	120	120
	U/U	110	2,0	8,1	10	30	30
	U/C	160	3,2	9,5	2 x 18	120	120
	U/C	200		7,7	2 x 20	120	
	U/C	315		7,7	2 x 30	30	
HDPE	U/C	32	1,9		4	120	
	U/U	32	2,0		4	120	
	U/C	50	2,4	4,6	4	120	120
	U/U	50	2,4	4,6	4	120	120
	U/C	75	3,0	6,8	4	120	120
	U/C	110	4,2	10,0	10	120	120
	U/U	110	4,2	10,0	10	30	60
	U/C	160	4,9	9,5	2 x 18	120	120
PP-R	U/C	20	2,3	3,4	2	120	120
	U/C	75	6,8	12,5	4	120	120
	U/C	110	10,0	18,3	10	120	120
PP-R/AI/PP-R	U/C	20	2,8	3,4	4	120	120
	U/C	75	8,4	12,5	4	120	120
	U/C	110	12,3	18,3	10	120	120
PP-R/PP-RGF/PP-R	U/C	20	2,8	3,4	4	120	120
	U/C	75	10,3	12,5	4	120	120
	U/C	110	15,1	18,3	10	120	120
PE-X / AI / PE-X	U/C	20	2,0		4	120	
	U/C	63	6,0		4	120	
PE-RT/AI/PE-RT	U/C	20	2,0		4	120	
	U/C	63	6,0		4	120	
	U/C	75	7,5		4	120	
PE-Xα	U/C	20	2,0		4	120	
	U/C	63	5,8		4	120	
PE-Xb/AI/PE-Xb	U/C	32	3,0		4	120	
	U/C	63	4,5		4	120	
PP-ML TRIPLUS	U/C	110	3,4		10	120	
	U/C	160	4,9		2 x 18	120	
PP-MF SILERE	U/C	58	4,0		4	120	
	U/C	110	5,4		10	120	
	U/C	135	5,6		2 x 14	120	

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CORNER OF WALLS min. thickness 100 mm					
COMBUSTIBLE pipe in lightweight FLOOR min. thickness 150 mm					
pipe type	test config.	diam. (mm)	pipe wall thickness (mm)	thickness of intumescent insert (mm)	EI class
PVC-U	U/C	Ø110	3,2	10	120
PP	U/C	Ø110	2,7	10	120
HDPE	U/C	Ø110	4,2	10	120

COMBUSTIBLE PIPE WITH ELBOW					
COMBUSTIBLE pipe in lightweight FLOOR min. thickness 150 mm					
pipe type	test config.	diam. (mm)	pipe wall thickness (mm)	thickness of intumescent insert (mm)	EI class
PVC-U	U/C	Ø110	3,2	10	120
PP	U/C	Ø110	2,7	10	30
HDPE	U/C	Ø110	4,2	10	120

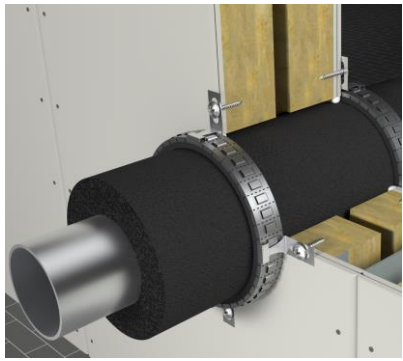
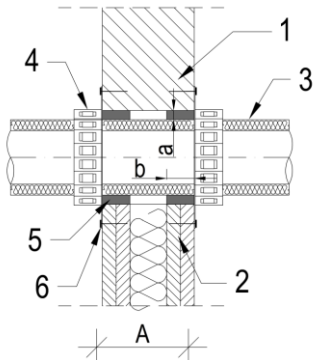
LOW-NOISE pipes in lightweight FLOORS minimum thickness 150 mm					
pipe type	configuration	diameter (mm)	pipe wall	thickness of intumescent	EI class
Geberit Silent DB 20	U/C	Ø160	7	1 x 18*	60
Raupiano Plus	U/C	Ø50	1,8	4	120
	U/C	Ø75	1,9	4	120
	U/C	Ø110	2,7	10	120
	U/C	Ø160	4	1 x 18*	30
	U/C	Ø160	4	2 x 18	120
Magnaplast Ultra dB	U/C	Ø50	2	4	120
	U/C	Ø75	2,3	4	120
	U/C	Ø110	3,4	10	120
	U/C	Ø160	4,9	1 x 18*	30
	U/C	Ø160	4,9	2 x 18	120

* flange height 30mm (one row)

STEEL/CAST IRON pipes in FEF penetration seals in lightweight FLOOR min thickness 150 mm									
pipe type	test config.	diameter Ø (mm)	pipe wall thickness (mm)	FEF insulation thickness (mm)/ thickness of intumescent insert (mm)			EI class		
steel / cast iron	C/U	≤ 18	1,2 ÷ 14,2	9/4	25/6	-	120	120	-
steel / cast iron	C/U	≤ 28	1,5 ÷ 14,2	9/4	25/6	-	120	120	-
steel / cast iron	C/U	≤ 66,7	1,5 ÷ 14,2	9/4	32/6	-	120	120	-
steel / cast iron	C/U	≤ 108	2,0 ÷ 14,2	-	32/6	50/8	-	120	90
steel / cast iron	C/U	≤ 114,3	3,6 ÷ 14,2	-	32/6	50/8	-	120	120
steel / cast iron	C/U	≤ 168,3	4 ÷ 14,2	-	32/6	50/8	-	120	120

COPPER pipes / bundles of copper pipes in lightweight FLOORS min. thickness 150mm			
copper pipes / air conditioning pipes bundle	insulation	thickness of intumescent insert (mm)	EI class
Cu Ø12,7 x 0,8mm and Ø22,23 x 1mm, PVC Ø25mm + cable 4 x 1,5mm ²	FEF 9mm	4	120
Cu Ø12,7 x 0,8mm and Ø22,23 x 1mm, PVC Ø25mm + cable 4 x 1,5mm ²	PE 9mm	4	120

➔ SOLUTION DETAILS

NON-COMBUSTIBLE PIPE pipe penetration seal in FLEXIBLE/RIGID WALLS	
	<div style="text-align: center;">  </div> <p>Fig. 1 Penetration seal in wall</p> <p>1 – rigid wall with thickness $A \geq 100$ mm</p> <p>2 – flexible wall with thick. $A \geq 100$ mm</p> <p>3 – steel or cast iron pipe $\varnothing \leq 168,3$mm in FEF insulation of $9 \div 50$mm thickness</p> <p>4 – INTU FR COLLAR L SLIM fire protection collar installed on both sides of the wall</p> <p>5 – gap around pipe edge filled with INTU FR MASTIC intumescent acrylic mass: width $0 \leq a \leq 20$ mm, depth $b = 25$ mm</p> <p>6 - screw $\varnothing 6 \times 50$ mm</p>

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

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COMBUSTIBLE PIPE penetration seal in FLEXIBLE/RIGID WALLS

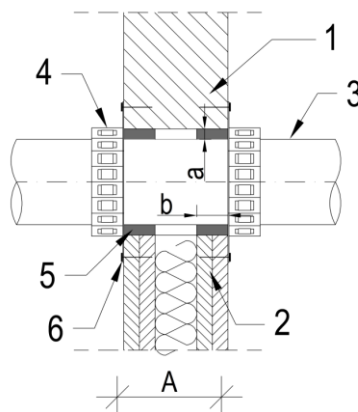
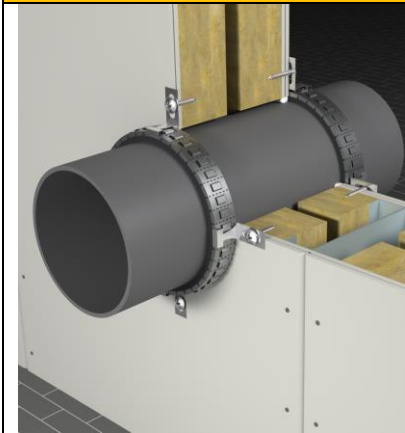


Fig.2a Penetration seal in wall (single collar)

- 1 – rigid wall with thickness $A \geq 100$ mm
- 2 – flexible wall with thick. $A \geq 100$ mm
- 3 – combustibile pipe $\varnothing \leq 110$ mm
- 4 – **INTU FR COLLAR L SLIM**
single fire protection collar installed on both sides of the wall
- 5 – gap around pipe edge filled with **INTU FR MASTIC** intumescent acrylic mass: width $0 \leq a \leq 20$ mm, depth $b = 25$ mm
- 6 – screw $\varnothing 6 \times 50$ mm

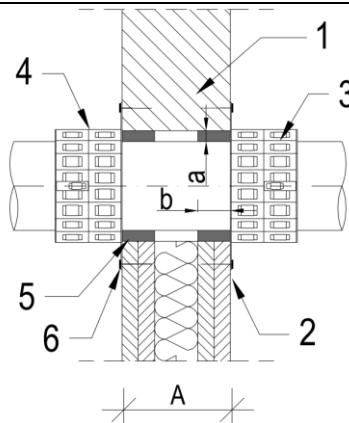
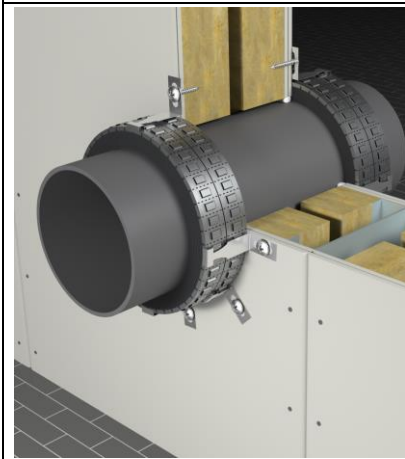


Fig.2b Penetration seal in wall (double collar)

- 1 – rigid wall with thickness $A \geq 100$ mm
- 2 – flexible wall with thick. $A \geq 100$ mm
- 3 – combustibile pipe $\varnothing \leq 110$ mm
- 4 – **INTU FR COLLAR L SLIM**
double (2 rows) fire protection collar installed on both sides of the wall
- 5 – gap around pipe edge filled with **INTU FR MASTIC** intumescent acrylic mass: width $0 \leq a \leq 20$ mm, depth $b = 25$ mm
- 6 – screw $\varnothing 6 \times 50$ mm

COMBUSTIBLE PIPE WITH ELBOW penetration seal in FLEXIBLE/RIGID WALLS

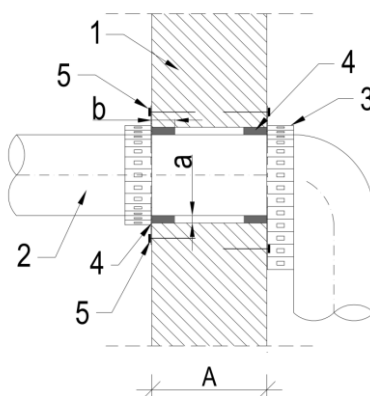
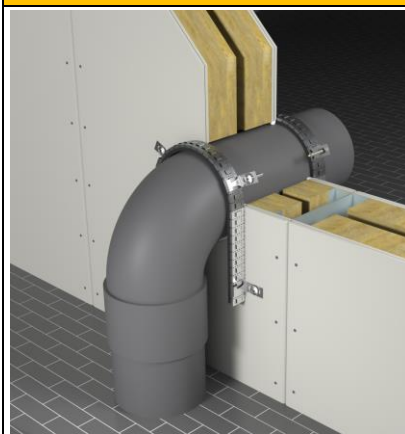


Fig. 3a Penetration seal in wall

- 1 – rigid wall $A \geq 100$ mm
- 2 – combustibile pipe $\varnothing \leq 110$ mm
- 3 – **INTU FR COLLAR L SLIM** fire protection collar installed on both sides of the wall
- 4 – gap around pipe edge filled with **INTU FR MASTIC** intumescent acrylic mass: width $0 \leq a \leq 20$ mm depth $b = 25$ mm
- 5 – screw $\varnothing 6 \times 50$ mm

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

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COMBUSTIBLE PIPE at an angle of 45° penetration seal in FLEXIBLE/RIGID WALLS

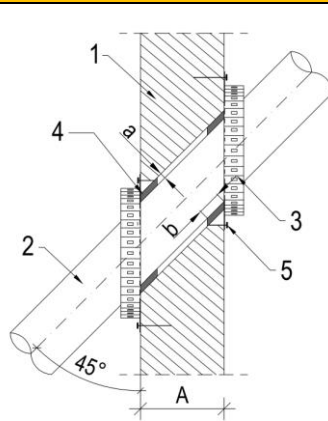
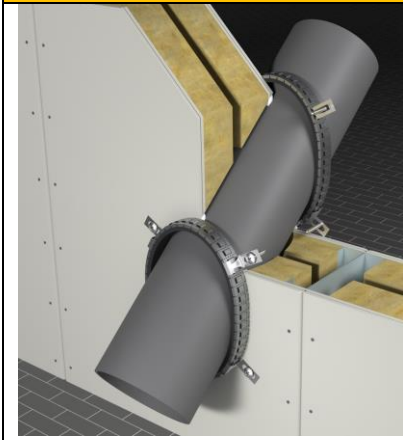


Fig. 3b Penetration seal in wall

- 1 – rigid wall $A \geq 100$ mm
- 2 – combustible pipe $\varnothing \leq 110$ mm
- 3 – **INTU FR COLLAR L SLIM** fire protection collar installed on both sides of the wall
- 4 – gap around pipe edge filled with **INTU FR MASTIC** intumescent acrylic mass: width $0 \leq a \leq 20$ mm depth $b = 25$ mm
- 5 – screw $\varnothing 6 \times 50$ mm

COMBUSTIBLE PIPE penetration seal in FLEXIBLE/RIGID WALLS with use 2 x UNIBOARD

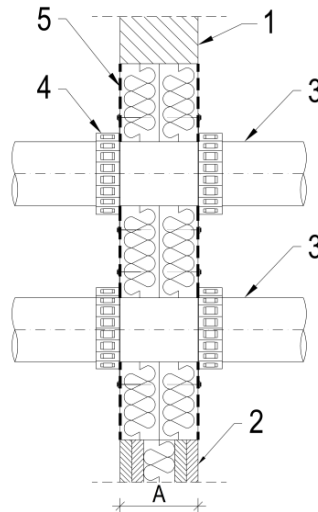
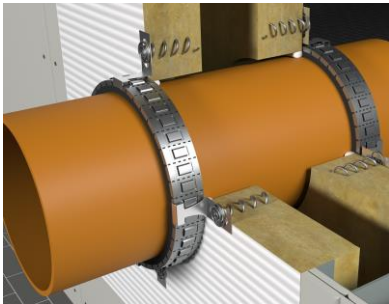


Fig. 4 Penetration seal in wall (2 x INTU FR UNIBOARD 1-S)

- 1 – rigid wall with thickness $A \geq 100$ mm
- 2 – flexible wall with thickness $A \geq 100$ mm
- 3 – combustible pipe
- 4 – **INTU FR COLLAR L SLIM** fire protection collar installed on both sides of the wall (by wires to mineral wool)
- 5 – **INTU FR UNIBOARD 1-S** thickness of 2×50 mm or mineral wool with density min. 150 kg/m^3 , thickness min. 2×50 mm coated with **INTU FR UNICOAT P** paint with a dry film minimum thickness $0,5$ mm

Fill the gaps with fireproof **INTU FR MASTIC** acrylic mass

COMBUSTIBLE PIPE penetration seal in RIGID FLOOR

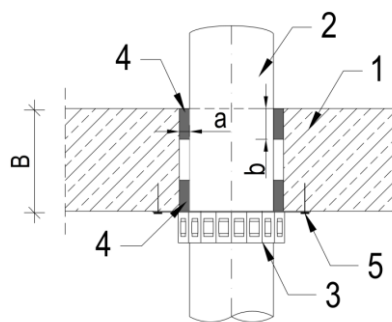
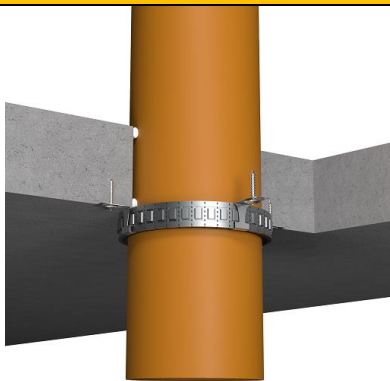


Fig.5a Penetration seal in floor (single collar)

- 1 – rigid wall $A \geq 100$ mm
- 2 – combustible pipe $\varnothing \leq 110$ mm
- 3 – **INTU FR COLLAR L SLIM** fire protection collar installed on both sides of the wall
- 4 – gap around pipe edge filled with **INTU FR MASTIC** intumescent acrylic mass: width $0 \leq a \leq 20$ mm depth $b = 25$ mm
- 5 – screw $\varnothing 6 \times 50$ mm

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TDS Technical Data Sheet

COMBUSTIBLE PIPE penetration seal in RIGID FLOOR

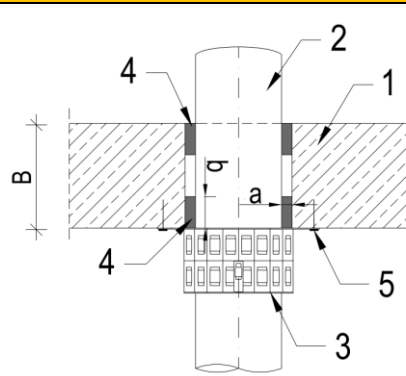
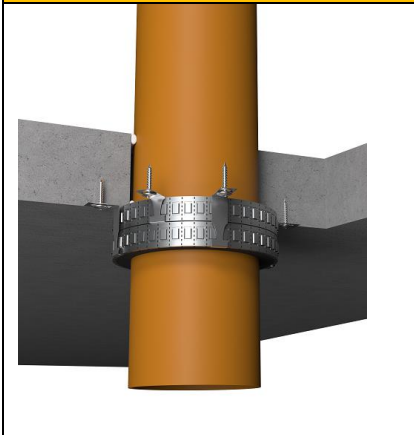


Fig.5b Penetration seal in floor (double collar)

- 1 – rigid floor $B \geq 150$ mm
- 2 – combustible pipe $\varnothing \leq 315$ mm
- 3 – **INTU FR COLLAR L SLIM** double (2 rows) fire protection collar installed from below the floor
- 4 – gap around pipe edge filled with **INTU FR MASTIC** acrylic mass: width $0 \leq a \leq 20$ mm, depth $b = 25$ mm
- 5 – screw $\varnothing 6 \times 50$ mm

COMBUSTIBLE PIPE pipe penetration seals in RIGID FLOOR

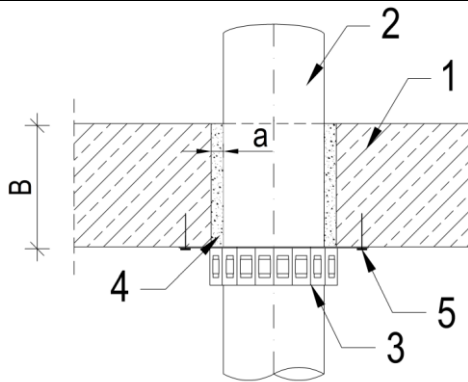


Fig.6 Penetration seal in floor (single collar) with cement mortar

- 1 – rigid floor $B \geq 150$ mm
- 2 – combustible pipe $\varnothing \leq 110$ mm
- 3 – **INTU FR COLLAR L SLIM** fire protection collar installed from below the floor
- 4 – gap around pipe edge filled with **cement mortar**: width $0 \leq a \leq 30$ mm
- 5 – screw $\varnothing 6 \times 50$ mm

NON-COMBUSTIBLE PIPE pipe penetration seals in RIGID FLOOR

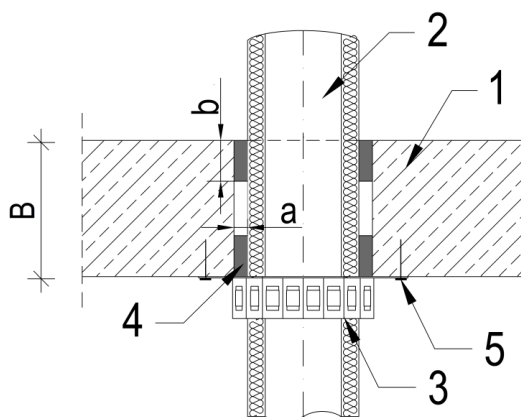


Fig.7 Penetration seal in floor

- 1 – rigid floor $B \geq 150$ mm
- 2 – steel / cast iron pipe in FEF insulated
- 3 – **INTU FR COLLAR L SLIM** fire protection collar installed from below the floor
- 4 – gap around pipe edge filled with **INTU FR MASTIC** acrylic mass: width $0 \leq a \leq 20$ mm, depth $b = 25$ mm
- 5 – screw $\varnothing 6 \times 50$ mm

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TDS Technical Data Sheet

COMBUSTIBLE / NON-COMBUSTIBLE PIPE penetration seal in RIGID FLOOR (wool filing)

Fig.8a Combustible pipe penetration seal in floor

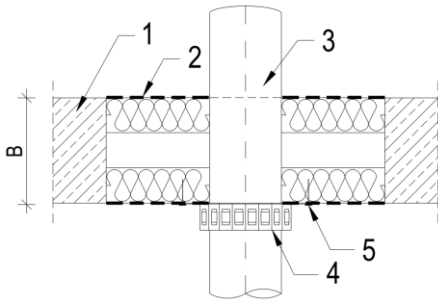
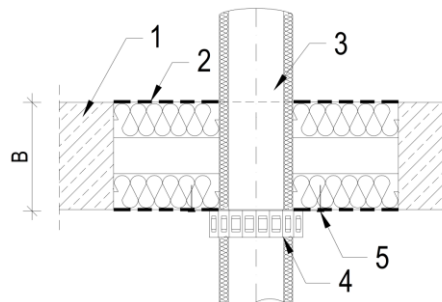


Fig.8b Non-combustible pipe penetration seal in floor



- 1 – rigid floor $B \geq 150$ mm
- 2 – INTU FR UNIBOARD 1-S thickness of 2×50 mm or mineral wool with density min. 150 kg/m^3 , thickness min. 2×50 mm coated with INTU FR UNICOAT P paint with dry film min. thickness $0,5$ mm
- 3 – combustible pipe or steel / cast iron pipe in FEF insulated
- 4 – INTU FR COLLAR L SLIM
- 5 - screw $\text{Ø}6 \times 50$ mm (wires to mineral wool)

For combustible pipe $\text{Ø} \leq 200$ install single INTU FR COLLAR L SLIM from below the floor

For steel / cast iron pipe in FEF insulation use single INTU FR COLLAR L SLIM from below the floor

COMBUSTIBLE PIPE pipe penetration seal in RIGID FLOOR

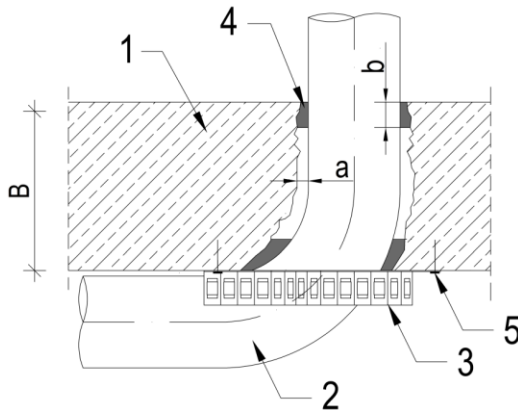


Fig. 9 Combustible pipe with elbow penetration seal in wall

- 1 – rigid floor $B \geq 150$ mm
- 2 – combustible pipe $\text{Ø} \leq 110$ mm
- 3 – INTU FR COLLAR L SLIM fire protection collar installed from below the floor
- 4 – gap around pipe edge filled with INTU FR MASTIC acrylic mass: width $0 \leq a \leq 20$ mm, depth $b = 25$ mm
- 5 - screw $\text{Ø}6 \times 50$ mm

COMBUSTIBLE PIPE pipe penetration seal in RIGID FLOOR

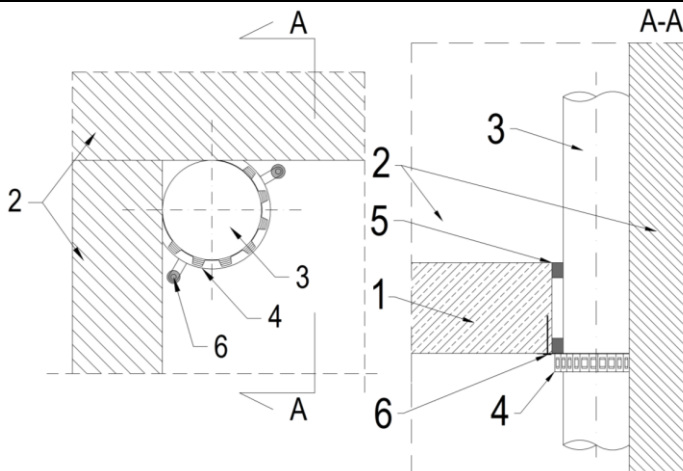


Fig. 10 Combustible pipe with elbow penetration seal in wall

- 1 – rigid floor $B \geq 150$ mm
- 2 – flexible / rigid wall with thickness $A \geq 100$ mm
- 3 – combustible pipe $\text{Ø} \leq 110$ mm
- 4 – INTU FR COLLAR L SLIM fire protection collar installed from below the floor
- 5 – gap around pipe edge filled with INTU FR MASTIC acrylic mass: width $0 \leq a \leq 20$ mm, depth $b = 25$ mm
- 6 - screw $\text{Ø}6 \times 50$ mm