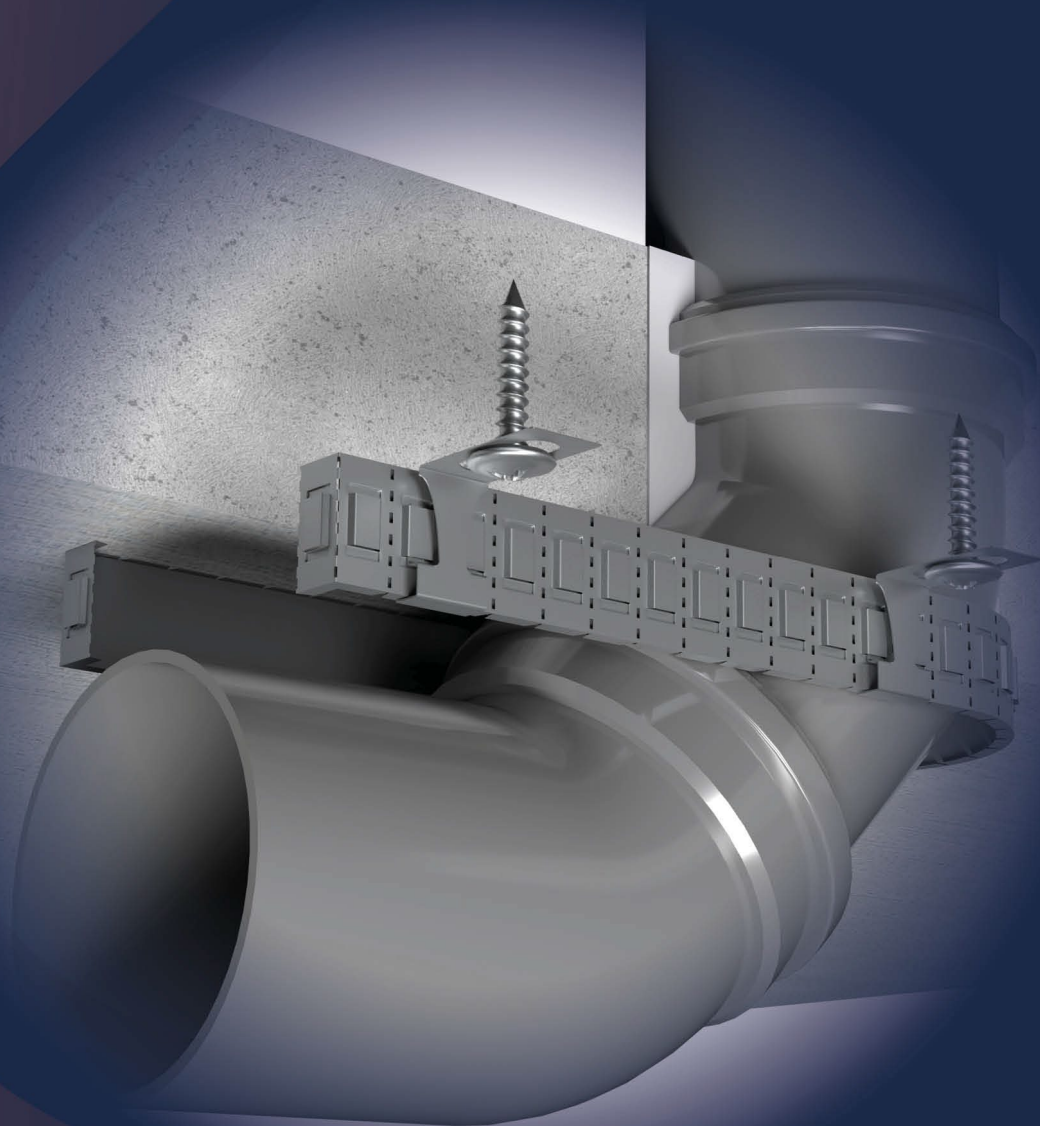


INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET



INTU FR COLLAR L SLIM

Intumescent pipe collar roll

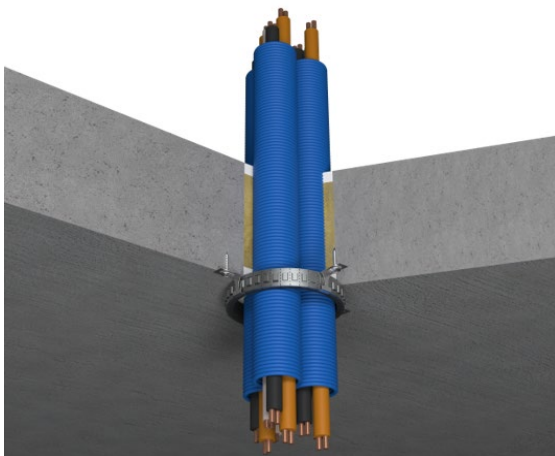
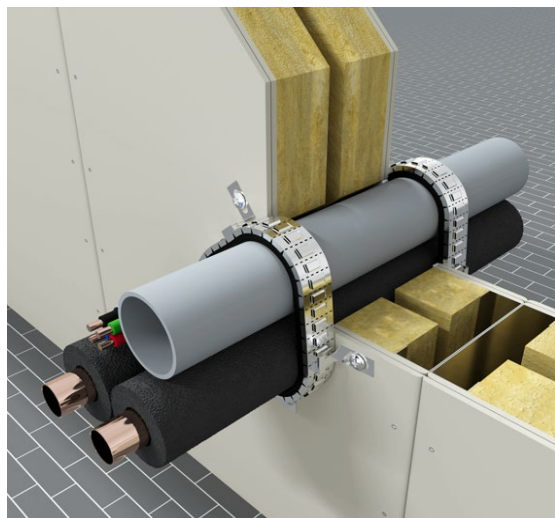
PRODUCT DESCRIPTION

The **INTU FR COLLAR L SLIM** collar consists of at least two layers of graphite-based intumescent material with a nominal thickness of 2.0 mm and a width of 30 mm, placed in a steel casing made of stainless steel with a thickness of 0.5 mm. The casing is equipped with mounting brackets, which are used to attach the collar to the partition.

APPLICATION

The **INTU FR COLLAR L SLIM** product is a universal collar used for sealing pipe, cable and cable pipe penetrations, single or in bundles, through walls and ceilings.

Flexible wall:	The wall should be at least 100 mm thick. It should be made of double-sided cladding consisting of at least two plasterboard panels (total cladding thickness on one side of the wall not less than 25 mm).
Rigid wall:	The wall should be at least 100 mm thick. It should be made of concrete or masonry elements with a density of not less than 450 kg/m ³ .
Rigid ceiling:	The ceiling should be at least 150 mm thick. It should be made of concrete, reinforced concrete or aerated concrete with a density of at least 550 kg/m ³ .



AVAILABILITY

Product	Contents of the set	Delivery form	Article number
INTU FR COLLAR L SLIM	Steel enclosure 2,52 m	1 set.	1603005250
	Swelling batch 12 m		
	Short mounting bracket, „S”		

Product	Contents of the set	Delivery form	Article number
Short mounting bracket, „S”	10 pcs.	1 set	1610200000
Long L-shaped mounting bracket	10 pcs	1 set	1620200000
SPRING-W screw for wool	20 pcs	1 set	9010400000

COMPLIANCE

European Technical Assessment:

ETA-24/0497

Declaration of performance:

DoP 2/2024

Certificate of constancy of performance:

1488-CPR-1130/W

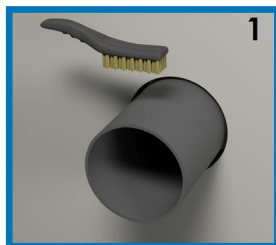
TRANSPORT AND STORAGE

Transport and store in a dry and cool place at a temperature between +5°C and +35°C.

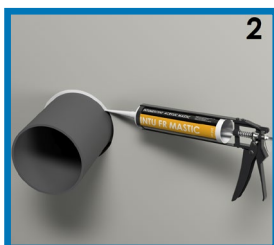
INTU FR COLLAR L SLIM

Intumescent pipe collar roll

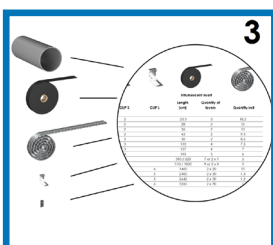
ASSEMBLY



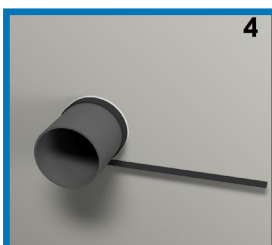
Clean the installations of dust, dirt and grease.



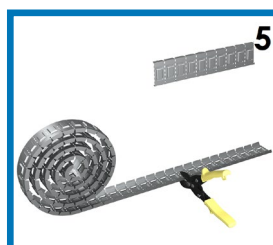
Fill the gaps with **ALFA FR MASTIC**.



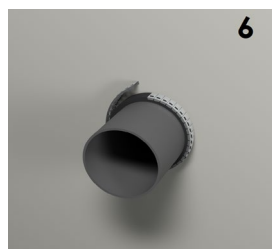
Select the appropriate length of the swelling load based on the table below.



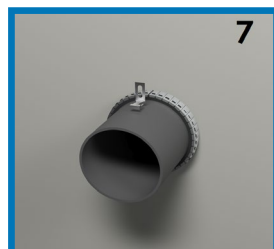
Wrap the installations with intumescent tape.



Select and cut the steel housing to the appropriate length.



Place the steel casing over the expanding charge.



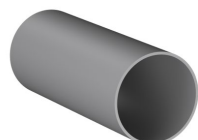
Select the appropriate type of fasteners according to the table below.



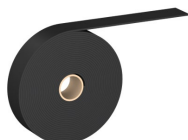
Secure the flange to the partition using steel fasteners.



Place the completed sticker next to the passage.



Maximum outer diameter of the pipe Ø [mm]



Swelling batch
Number of wraps
Length [cm]



Steel enclosure
Number of segments
Length [cm]



Mounting brackets
„S”
„L”



Flange height [mm]

Maximum outer diameter of the pipe Ø [mm]	Number of wraps	Length [cm]	Number of segments	Length [cm]	„S”	„L”	Flange height [mm]
32	2	23,5	9	13,5	2		30
40	2	28	11	16,5	2		30
50	2	36	15	22,5	2		30
63	2	42	17	25,5	3		30
75	2	50	19	28,5	3		30
82	4	113	22	33,0	3		30
90	4	127	23	34,5	3		30
110	5	193	28	42,0	3		30
125	1 x 7	310	1 x 33	49,5	4	-	30
	2 x 7	620	2 x 33	99,0	1	4	2 x 30
160	1 x 9	510	1 x 42	63,0	4	-	30
	2 x 9	1020	2 x 42	126,0	1	4	2 x 30
200	2 x 10	1400	2 x 52	159,0	1	4	2 x 30
225	2 x 15	2400	2 x 61	183,0	1	5	2 x 30
250	2 x 15	2642	2 x 66	198,0	1	5	2 x 30
315	2 x 15	3260	2 x 80	240,0	1	6	2 x 30

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA

Calculation example for INTU FR COLLAR L SLIM consumption

- Pipe with a diameter of Ø50 mm without insulation
- Single flange always for inSteellations with a diameter of $\varnothing \leq 110$ mm

Outer pipe diameter Ø [mm]	Swelling batch		Steel enclosure		Mounting brackets
	Number of wraps	Length [cm]	Number of segments	Length [cm]	„S”
50	2	36	15	22,5	2

$$L_{TAPE} = \pi \cdot \varnothing \cdot (\text{number of wraps}) \cdot (1.1-1.15)$$

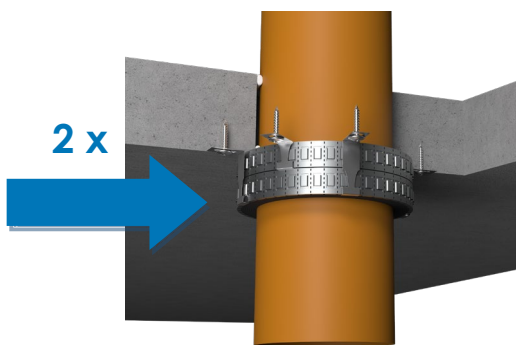
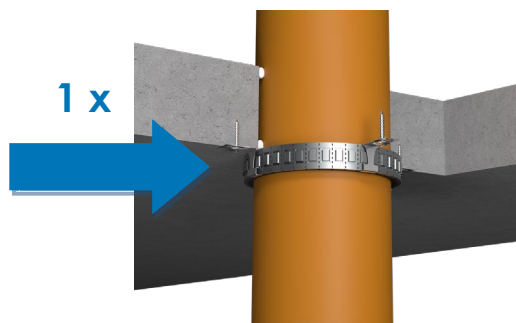
- For a diameter of Ø50: $L_{TAPE} = \pi \cdot 50 \cdot 2 \cdot 1.15 = \sim 36$ cm

- Ø250 mm pipe without insulation
- Double flange always for inSteellations with a diameter of $\varnothing > 110$ mm

Outer pipe diameter Ø [mm]	Swelling batch		Steel enclosure		Mounting brackets	
	Number of wraps	Length [cm]	Number of segments	Length [cm]	„S”	„L”
250	2 x 15	2642	2 x 66	198	1	5

$$L_{TAPE} = \pi \cdot \varnothing_{PIPE} \cdot (\text{number of wraps}) \cdot (1.1-1.15)$$

- For a diameter of Ø250: $L_{TAPE} = \pi \cdot 250 \cdot 2 \cdot 15 \cdot 1.15 = \sim 2642$ cm



FIRE CLASSIFICATION

• FLAME-PROOF PIPES WITHOUT INSULATION

Pipe type	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILINGS		
		• flange on both sides of the partition			• flange at the bottom of the ceiling		
		Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
PP	Ø ≤ 32	1,8 – 12,5	2 x 2	EI 120	1,8 – 12,5	1 x 2	EI 120
	32 < Ø ≤ 50						
	50 < Ø ≤ 63	1,9 – 12,5			1,9 – 12,5		
	63 < Ø ≤ 75						
	75 < Ø ≤ 90	2,2 – 15,0	2 x 4		2,2 – 15,0	1 x 4	
	90 < Ø ≤ 110	2,7 – 18,3	2 x 5		2,7 – 18,3	1 x 5	
	110 < Ø ≤ 125	3,1 – 17,2	4 x 7		3,1 – 15,7	2 x 7	
	135 < Ø ≤ 160	4,0 – 14,6	4 x 9		3,9 – 9,5	2 x 9	
	160 < Ø ≤ 180	5,9 – 11,2	4 x 10	EI 60	5,8 – 8,6	2 x 10	EI 90
	160 < Ø ≤ 200	7,7			7,7		

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET

Pipe type	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILING		
		• flange on both sides of the partition			• flange at the bottom of the ceiling		
		Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
PP-R	Ø ≤ 20	≥ 2,3	2 x 2	EI 120	≥ 2,3	1 x 2	EI 120
	20 < Ø ≤ 25	≥ 2,5			≥ 2,5		
	25 < Ø ≤ 32	3,3 – 12,5			3,3 – 12,5		
	32 < Ø ≤ 40	3,9 – 12,5			3,9 – 12,5		
	40 < Ø ≤ 50	4,8 – 12,5			4,8 – 12,5		
	50 < Ø ≤ 63	5,8 – 12,5			5,8 – 12,5		
	63 < Ø ≤ 75	6,8 – 12,5			6,8 – 12,5		
	75 < Ø ≤ 90	8,2 – 15,0	2 x 4		8,2 – 15,0	1 x 4	
	90 < Ø ≤ 110	10,0 – 18,3	2 x 5		10,0 – 18,3	1 x 5	
PE-Xa	Ø ≤ 20	2,0	2 x 2	EI 120	2,0	1 x 2	EI 120
	20 < Ø ≤ 25	2,3			2,3		
	25 < Ø ≤ 32	3,0			3,0		
	32 < Ø ≤ 40	3,7			3,7		
	40 < Ø ≤ 50	4,6			4,6		
	50 < Ø ≤ 63	5,8			5,8		
PP-R/AL/PP-R	Ø ≤ 20	≥ 2,8	2 x 2	EI 120	≥ 2,8	1 x 2	EI 120
	20 < Ø ≤ 25	≥ 3,3			≥ 3,3		
	25 < Ø ≤ 32	4,0 – 12,5			4,0 – 12,5		
	32 < Ø ≤ 40	4,8 – 12,5			4,8 – 12,5		
	40 < Ø ≤ 50	5,9 – 12,5			5,9 – 12,5		
	50 < Ø ≤ 63	7,2 – 12,5			7,2 – 12,5		
	63 < Ø ≤ 75	8,4 – 12,5			8,4 – 12,5		
	75 < Ø ≤ 90	10,1 – 15,0	2 x 4		10,1 – 15,0	1 x 4	
	90 < Ø ≤ 110	12,3 – 18,3	2 x 5		12,3 – 18,3	1 x 5	
PE-X/AL/ PE-X	Ø ≤ 20	2,0	2 x 2	EI 120	2,0	1 x 2	EI 120
	20 < Ø ≤ 25	2,5		EI 45	2,5		
	25 < Ø ≤ 32	3,0			3,0		
	32 < Ø ≤ 40	4,0			4,0		
	40 < Ø ≤ 50	4,8			4,8		
	50 < Ø ≤ 63	6,0			6,0		
PE-RT/AL/ PE-RT	Ø ≤ 20	2,0	2 x 2	EI 120	2,0	1 x 2	EI 120
	20 < Ø ≤ 25	2,5		EI 45	2,5		
	25 < Ø ≤ 32	3,0			3,0		
	32 < Ø ≤ 40	4,0			4,0		
	40 < Ø ≤ 50	4,8			4,8		
	50 < Ø ≤ 63	6,0			6,0		
	63 < Ø ≤ 75	7,5			7,5		
PE-Xb/AL/ PE-Xb	Ø ≤ 20	2,0	2 x 2	EI 90	3,0	1 x 2	EI 120
	20 < Ø ≤ 26	3,0					
	25 < Ø ≤ 32				3,5		
	32 < Ø ≤ 40				4,5		
	40 < Ø ≤ 50						
		15,1 – 18,3		EI 120			

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET

Pipe type	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILINGS				
		• flange on both sides of the partition			• flange at the bottom of the ceiling				
		Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class		
PE-HD PE PE-X ABS SAN + PVC	Ø ≤ 32	2,0 – 6,8	2 x 2	EI 120	1,9 – 6,8	1 x 2	EI 120		
	32 < Ø ≤ 50	2,4 – 6,8			2,4 – 6,8				
	50 < Ø ≤ 63	2,7 – 6,8			2,7 – 6,8				
	63 < Ø ≤ 75	3,0 – 6,8			3,0 – 6,8				
	75 < Ø ≤ 90	3,5 – 8,2	2 x 4		3,5 – 8,2	1 x 4			
	90 < Ø ≤ 110	4,2 – 10,0	2 x 5		4,2 – 10,0	1 x 5			
	110 < Ø ≤ 125	4,4 – 9,9	4 x 7		4,4 – 9,9	2 x 7			
	135 < Ø ≤ 160	4,9 – 9,5	4 x 9		4,9 – 9,5	2 x 9			
	160 < Ø ≤ 180	8,4 – 10,7	4 x 10	EI 90	8,1 – 10,4	2 x 10			
	160 < Ø ≤ 200	11,9			11,3				
PP-R/PP-R-GF/PP-R	Ø ≤ 20	≥ 2,8	2 x 2	EI 120	≥ 2,8	1 x 2	EI 120		
	20 < Ø ≤ 25	≥ 3,3			≥ 3,3				
	25 < Ø ≤ 32	4,4 – 12,5			4,4 – 12,5				
	32 < Ø ≤ 40	5,5 – 12,5			5,5 – 12,5				
	40 < Ø ≤ 50	6,9 – 12,5			6,9 – 12,5				
	50 < Ø ≤ 63	8,7 – 12,5			8,7 – 12,5				
	63 < Ø ≤ 75	10,3 – 12,5			10,3 – 12,5				
	75 < Ø ≤ 90	11,2 – 12,3	2 x 4	EI 90	12,4 – 15,0	1 x 4			
		12,4 – 15,0		EI 120					
	90 < Ø ≤ 110	12,3 – 15,0	2 x 5	EI 90	15,1 – 18,3	1 x 5			
	15,1 – 18,3	EI 120							
PVC	Ø ≤ 32	1,2 – 5,6	2 x 2	EI 120	1,2 – 5,6	1 x 2	EI 120		
	32 < Ø ≤ 50								
	50 < Ø ≤ 63				1,4 – 6,1			1,4 – 6,1	
	63 < Ø ≤ 75				1,5 – 6,6			1,5 – 6,6	
	75 < Ø ≤ 90	1,7 – 7,3	2 x 4		1,7 – 7,3	1 x 4			
	90 < Ø ≤ 110	2,0 – 8,1	2 x 5		2,0 – 8,1	1 x 5			
	110 < Ø ≤ 125	2,4 – 8,5	4 x 7		2,4 – 8,5	2 x 7			
	135 < Ø ≤ 160	3,2 – 9,5	4 x 9		3,2 – 9,5	2 x 9			
	160 < Ø ≤ 180	4,4 – 5,4	4 x 11	EI 60	3,6 – 6,7	2 x 10		EI 30	
		5,5 – 8,6	4 x 10	EI 120					
		8,7 – 9,3	4 x 11	EI 60					
	180 < Ø ≤ 200	5,6 – 7,6	4 x 12	EI 60	3,9		2 x 11		EI 120
		7,7	4 x 10	EI 120					
			7,8 – 9,1	4 x 12	EI 60	4,0 – 9,0			
	200 < Ø ≤ 250	8,6	4 x 15	5,8 – 8,5		2 x 13	EI 30		
	250 < Ø ≤ 315				7,7	2 x 15	EI 60		
PE – RT Geberit Mepla	Ø ≤ 20	2,5	2 x 2	EI 120	2,5	1 x 2	EI 120		
	20 < Ø ≤ 25	3,0			3,0				
	25 < Ø ≤ 32	3,0			3,0				
	32 < Ø ≤ 40	3,5		EI 90	3,5		EI 90		
	40 < Ø ≤ 50	4,5		EI 45	4,5		EI 45		
	50 < Ø ≤ 63	4,5			4,5				

INTU FR COLLAR L SLIM

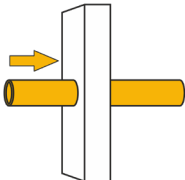
Intumescent pipe collar roll

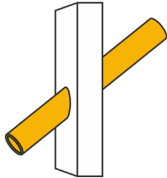
TECHNICAL DATA SHEET

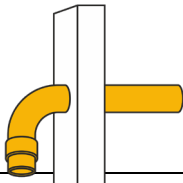
Pipe type	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILING		
		• flange on both sides of the partition			• flange at the bottom of the ceiling		
		Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
PP-HT	Ø ≤ 50	1,8	2 x 2	EI 120	1,8	1 x 2	EI 120
	50 < Ø ≤ 75	1,9			1,9		
	75 < Ø ≤ 90	2,2	2 x 4		2,2	1 x 4	
	90 < Ø ≤ 110	2,7	2 x 5		2,7	1 x 5	
	110 < Ø ≤ 125	3,1	2 x 7	EI 60			
	125 < Ø ≤ 160	3,9	2 x 9				
PP-MF SILERE	Ø ≤ 58				4,0	1 x 2	EI 120
	58 < Ø ≤ 78				4,5	1 x 4	
	78 < Ø ≤ 90				4,9		
	90 < Ø ≤ 110				5,4	1 x 5	
	110 < Ø ≤ 135				5,6	2 x 7	
PP-ML TRIPLUS	Ø ≤ 50				1,8	1 x 2	EI 120
	50 < Ø ≤ 75				2,6		
	75 < Ø ≤ 90				3,1	1 x 4	
	90 < Ø ≤ 110				3,4	1 x 5	
	110 < Ø ≤ 125				3,9	2 x 7	
	125 < Ø ≤ 160				4,9	2 x 9	

• UNUSUAL CASES

INSULATED FIRE PIPES

	Pipe type	Outer pipe diameter Ø [mm]	RIGID WALLS		
			• flange on one side of the partition		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
	PP	Ø ≤ 50	1,8	1 x 2	EI 120
		50 < Ø ≤ 63	2,0	1 x 3	EI 60
		63 < Ø ≤ 75	2,2	1 x 4	
75 < Ø ≤ 90		2,4			
90 < Ø ≤ 110		2,7	1 x 5		

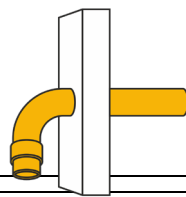
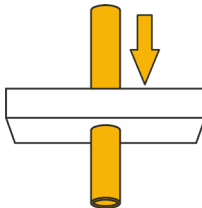
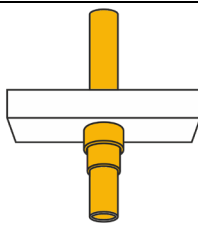
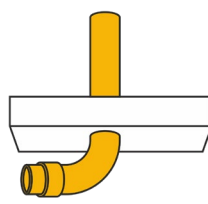
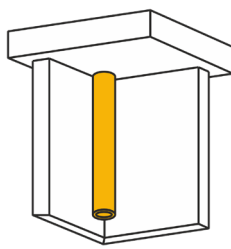
	Pipe type	Outer pipe diameter Ø [mm]	RIGID WALLS		
			• angled pipe 45° / flange on both sides of the partition		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
	PVC	Ø ≤ 110	3,2	2 x 5	EI 120

	Pipe type	Outer pipe diameter Ø [mm]	RIGID WALLS / PODATNE		
			• knee / flange on both sides of the partition		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
	PVC	Ø ≤ 110	3,2	2 x 5	EI 120

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET

	Pipe type	Outer pipe diameter Ø [mm]	RIGID WALLS / PODATNE		
	PP		• knee / flange on both sides of the partition		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
			2,7		EI 90
	Pipe type	Outer pipe diameter Ø [mm]	CEILINGS		
	PP	Ø ≤ 110	• flange from the top of the ceiling		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
			8,1	1 x 5	EI 120
	Pipe type	Outer pipe diameter Ø [mm]	CEILINGS		
	PP	Ø ≤ 110	• cup connection / flange at the bottom of the ceiling		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
			3,9	2 x 5	EI 120
	Pipe type	Outer pipe diameter Ø [mm]	CEILINGS		
	PE-HD / PE / PE-X / ABS / SAN + PVC	Ø ≤ 110	• knee / flange at the bottom of the ceiling		
	PP				
	PVC				
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
			6,6	1 x 5	EI 120
			2,7		EI 90
			3,2		EI 120
	Pipe type	Outer pipe diameter Ø [mm]	CEILINGS		
	PE-HD / PE / PE-X / ABS / SAN + PVC	Ø ≤ 110	• in the corner of the wall / flange at the bottom of the		
	PP				
	PVC				
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
			4,2	1 x 5	EI 120
			3,9		
			3,2		

• LOW-NOISE PIPES

Pipe type	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILINGS		
		• flange on both sides of the partition			• flange at the bottom of the ceiling		
		Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
Magnaplast Ultra dB	Ø ≤ 50	2,0	2 x 2	EI 120	2,0	1 x 2	EI 120
	50 < Ø ≤ 75	2,3			2,3		
	75 < Ø ≤ 110	3,4	2 x 5	EI 90	3,4	1 x 5	

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET

Pipe type	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILING		
		• flange on both sides of the partition			• flange at the bottom of the ceiling		
		Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
	110 < Ø ≤ 125				3,9	1 x 9	EI 30
						2 x 9	EI 120
	125 < Ø ≤ 160				4,9	1 x 9	EI 30
						2 x 9	EI 120

Pipe type	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILINGS		
		• flange on both sides of the partition			• flange at the bottom of the ceiling		
		Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
Geberit Silent dB20	Ø ≤ 56	3,2	2 x 2	EI 120	7,0	1 x 9	EI 60
	56 < Ø ≤ 63						
	63 < Ø ≤ 75	3,6					
	75 < Ø ≤ 90	4,6	2 x 4				
	90 < Ø ≤ 110	6,0	2 x 5				
	110 < Ø ≤ 135	6,5	4 x 7				
	135 < Ø ≤ 160	7,0	4 x 9				
Geberit Silent PP	Ø ≤ 50				1,8	1 x 2	EI 120
	50 < Ø ≤ 75				2,6		
	75 < Ø ≤ 90				3,1	1 x 4	
	90 < Ø ≤ 110				3,6	1 x 5	
	110 < Ø ≤ 125				4,2	2 x 7	
	125 < Ø ≤ 160				4,5	2 x 9	
					Wavin SiTech+	Ø ≤ 50	
50 < Ø ≤ 75	2,6						
75 < Ø ≤ 90	3,1	2 x 4					
90 < Ø ≤ 110	3,4	2 x 5					
110 < Ø ≤ 125	3,9	4 x 7					
125 < Ø ≤ 160	4,9	4 x 9					
Raupiano Plus PP/PP-MF/PP	Ø ≤ 50				1,8	1 x 2	EI 120
	50 < Ø ≤ 75				1,9		
	75 < Ø ≤ 90				2,2	1 x 4	
	90 < Ø ≤ 110				2,7	1 x 5	
	110 < Ø ≤ 125				3,1	2 x 7	
	125 < Ø ≤ 160				4,0	2 x 9	

• PRE-INSULATED PIPES

Pipe type	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILINGS		
		• flange on both sides of the partition			• flange at the bottom of the ceiling		
		Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET

Pipe type	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILING		
		• flange on both sides of the partition			• flange at the bottom of the ceiling		
		Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
COOL-FIT	Ø = 75 / 125	6,8 / 3,8	4 x 7	EI 120	8,2 / 4,0	2 x 7	EI 120
	Ø = 90 / 140	8,2 / 4,0					

COOL-FIT - PE-100 pipe, pre-insulated with GF-HE foam with a PE protective jacket

• INSULATED FIRE PIPES

Pipe type	Outer pipe diameter Ø [mm]	Max. insulation thickness FEF [mm]	CEILING		
			• flange at the bottom of the ceiling		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
Geberit Silent dB20	Ø ≤ 110	13	6,0	2 x 7	EI 90

Pipe type	Outer pipe diameter Ø [mm]	Max. insulation thickness FEF [mm]	CEILING		
			• flange at the bottom of the ceiling		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
PE - HD	Ø ≤ 110	13	4,2	2 x 7	EI 120
PP	Ø ≤ 110	9 x 100	2,7	1 x 6	EI 90

• NON-FLAMMABLE PIPES IN INSULATION

Pipe type	Outer pipe diameter Ø [mm]	Insulation thickness [mm]	FLEXIBLE / RIGID WALLS			CEILINGS			
			• flange on both sides of the partition			• flange at the bottom of the ceiling			
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	
Copper	Ø ≤ 12,7	9	≥ 0,8	2 x 2	EI 60				
	12,7 < Ø ≤ 22,23		≥ 0,9						
Steel	Ø ≤ 18,0	9	≥ 1,2	2 x 2	EI 120	≥ 1,2	1 x 2	EI 120	
		10 - 25	≥ 1,2	2 x 3		≥ 1,2	1 x 3		
	18,0 < Ø ≤ 28,0	9	1,2 – 1,4	2 x 2	EI 45	1,5 – 1,9	1 x 2		EI 90
		10 – 32				1,5 – 1,9	1 x 3		
		9	1,5 – 1,9	2 x 2	EI 120	2,0 – 3,9	1 x 2		
		10 – 32		2 x 3			1 x 3		
		33 - 50					1 x 4		
		9	≥ 2,0	2 x 2	EI 120	≥ 4,0	1 x 2	EI 120	
		10 – 32		2 x 3			1 x 3		
		33 - 50		2 x 4			EI 90		
	28,0 < Ø ≤ 42,4	9	1,2 – 1,4	2 x 2	EI 45	1,5 – 1,9	1 x 2		
		10 – 32					1 x 3		
		9	1,5 – 1,9	2 x 2	EI 90	2,0 – 3,9	1 x 2		
		10 – 31		2 x 3			1 x 3		
		32			EI 120		1 x 3		

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET

Pipe type	Outer pipe diameter Ø [mm]	Insulation thickness [mm]	FLEXIBLE / RIGID WALLS			CEILING		
			• flange on both sides of the partition			• flange at the bottom of the ceiling		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
		33 - 50	≥ 2,0	2 x 2	EI 90	≥ 4,0	1 x 4	EI 90
		9					1 x 2	EI 120
		10 - 31					1 x 3	
		32					1 x 4	
		33 - 50					1 x 4	
		50					1 x 4	
	42,4 < Ø ≤ 66,7	9	1,2 - 1,4	2 x 2	EI 45	1,5 - 1,9	1 x 2	
		10 - 32	1,5 - 1,9	2 x 2	EI 90	2,0 - 3,9	1 x 3	
		9					1 x 2	
		32					1 x 3	
		33 - 50					1 x 4	EI 90
		9	≥ 2,0	2 x 2	EI 90	≥ 4,0	1 x 2	EI 120
		10 - 31		2 x 3	EI 120		1 x 3	
		32		2 x 4	EI 90		1 x 4	
		33 - 50		2 x 4	EI 90		1 x 4	

Pipe type	Outer pipe diameter Ø [mm]	Insulation thickness [mm]	FLEXIBLE / RIGID WALLS			CEILING		
			• flange on both sides of the partition			• flange at the bottom of the ceiling		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
Steel	42,4 < Ø ≤ 66,7	9	1,2 - 1,4	2 x 2	EI 45	1,5 - 1,9	1 x 2	
		10 - 32	1,5 - 1,9	2 x 2	EI 90	2,0 - 3,9	1 x 3	
		9					1 x 2	
		10 - 31					1 x 3	
		32					1 x 4	EI 90
		33 - 50	≥ 2,0	2 x 2	EI 90	≥ 4,0	1 x 2	EI 120
	66,7 < Ø ≤ 108,0	10 - 31		2 x 3	EI 120		1 x 3	
		32		2 x 4	EI 90		1 x 4	
		33 - 50		2 x 3	EI 90	2,0 - 3,9	1 x 3	
		33 - 50		2 x 4	EI 90		1 x 4	
		33 - 50		2 x 4	EI 90		1 x 4	EI 90
		33 - 50		2 x 4	EI 90		1 x 4	EI 120
	108,0 < Ø ≤ 114,3	32	≥ 3,6	2 x 3	EI 90	≥ 3,6	1 x 3	
		33 - 50		2 x 4	EI 90		1 x 4	
	114,3 < Ø ≤ 168,3	32	≥ 4,0	2 x 3	EI 60	≥ 4,0	1 x 3	
		33 - 49		2 x 4	EI 90		1 x 4	
		50		2 x 4	EI 90		1 x 4	

• BUNDLES

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET

FIRE PIPE BUNDLES

Maximum in one bundle	External diameter of the pipe Ø [mm]	FLEXIBLE / RIGID WALLS		
		• flange on both sides of the partition		
		Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
PVC	Ø ≤ 110	1,5	2 x 5	EI 120
PP-R		8,3		
PP-R		6,9		

FREON BUNDLES

Maximum in one bundle	External diameter of the pipe Ø [mm] / Cable size	Max. insulation thickness FEF [mm]	FLEXIBLE / RIGID WALLS			CEILINGS		
			• flange on both sides of the partition			• flange at the bottom of the ceiling		
			Wall thickness of the pipe [mm]	Number of flanges x number of tape wraps	Fire resistance class	Wall thickness of the pipe [mm]	Number of flanges x number of tape wraps	Fire resistance class
Copper pipe no. 1	Ø ≤ 12,7	9	≥ 0,8	2 x 2	EI 60	≥ 0,8	1 x 2	EI 120
Copper pipe no. 2	Ø ≤ 22,23	9	≥ 1,0			≥ 1,0		
PVC	Ø ≤ 25	-	1,5			1,5		
Cable	4 x 1,5	-	-			-		

Maximum in one bundle	External diameter of the pipe Ø [mm] / Cable size	Max. insulation thickness FEF [mm]	FLEXIBLE / RIGID WALLS			CEILINGS		
			• flange on both sides of the partition			• flange at the bottom of the ceiling		
			Wall thickness of the pipe [mm]	Number of flanges x number of tape wraps	Fire resistance class	Wall thickness of the pipe [mm]	Number of flanges x number of tape wraps	Fire resistance class
Copper pipe no. 1	Ø ≤ 12,7	9	≥ 0,8	2 x 2	EI 60	≥ 0,8	1 x 2	EI 120
Copper pipe no. 2	Ø ≤ 22,23	9	≥ 1,0			≥ 1,0		
PVC	Ø ≤ 25	-	1,5			1,5		
Cable	4 x 1,5	-	-			-		

AROT TYPE TUBE BUNDLES

Max in a single bundle 4 cable tubes	Outer pipe diameter Ø [mm]	Installations inside the casing pipe	FLEXIBLE / RIGID WALLS			CEILINGS		
			• flange on both sides of the partition			• flange at the bottom of the ceiling		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
AROT 1	Ø ≤ 50	none	3,0	2 x 5	EI 120	3,0	1 x 5	EI 120
AROT 2		cables ≤ 21 mm						
AROT 3		cable harness < 50 mm						
AROT 4								

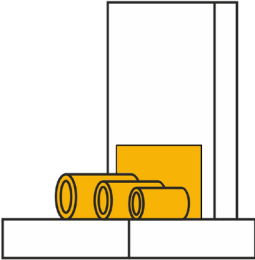
INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET

SYSTEM COMPATIBLE WITH INTU FR UNIBOARD

• FLAME-PROOF PIPES WITHOUT INSULATION

	Pipe type	Partition filling	Outer pipe diameter Ø [mm]	Max. insulation thickness PE [mm]	RIGID WALLS		
					• pipes on the floor / combustible pipes in insulation		
					Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
	PP - R	2 x INTU FR UNIBOARD 1S	Ø ≤ 20	9	2,3	2 x 5	EI 120
				25	6,9		EI 90
				25	7,0 – 12,5		EI 120
			20 < Ø ≤ 50	25	6,9		EI 90
				25	7,0 – 12,5		
			50 < Ø ≤ 75	25	12,5		
Bundle: 2 x PP-R	2 x INTU FR UNIBOARD 1S		1) Ø ≤ 20	9	2,3	2 x 5	EI 120
			2) Ø ≤ 50	9	6,9		

Pipe type	Partition filling	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILINGs		
			• flange on both sides of the partition			• flange at the bottom of the ceiling		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
PP	2 x INTU FR UNIBOARD 1S	Ø ≤ 75	1,9 – 12,5	2 x 2	EI 120	1,9 – 12,5	1 x 2	EI 120
		75 < Ø ≤ 90	2,2 – 15,0	2 x 4		2,2 – 15,0	1 x 4	
		90 < Ø ≤ 110	2,7 – 18,3	2 x 5		2,7 – 18,3	1 x 5	
		110 < Ø ≤ 125				3,1 – 14,0	2 x 7	
		125 < Ø ≤ 160				3,9	2 x 9	
PP-R	2 x INTU FR UNIBOARD 1S	Ø ≤ 25	≥ 2,3	2 x 2	EI 120	≥ 2,3	1 x 2	EI 120
		20 < Ø ≤ 25	≥ 2,7			≥ 2,7		
		25 < Ø ≤ 32	3,3 – 12,5			3,3 – 12,5		
		32 < Ø ≤ 40	3,9 – 12,5			3,9 – 12,5		
		40 < Ø ≤ 50	4,8 – 12,5			4,8 – 12,5		
		50 < Ø ≤ 63	5,8 – 12,5			5,8 – 12,5		
		63 < Ø ≤ 75	6,8 – 12,5			6,8 – 12,5		
		75 < Ø ≤ 90	8,2 – 15,0	2 x 4		8,2 – 15,0	1 x 4	
		90 < Ø ≤ 110	10,0 – 18,3	2 x 5		10,0 – 18,3	1x 5	
PVC-U / PVC-C	2 x INTU FR UNIBOARD 1S	Ø ≤ 75	1,8 – 5,6	2 x 2	EI 120	1,8 – 5,6	1 x 2	EI 120
		75 < Ø ≤ 90	1,9 – 6,7	2 x 4		1,9 – 6,7	1 x 4	
		90 < Ø ≤ 110	2,0 – 8,1	2 x 5		2,0 – 8,1	1 x 5	
PE-HD	2 x INTU FR	63 < Ø ≤ 75	3,0 – 6,8	2 x 2	EI 120	3,0 – 6,8	1 x 2	EI 120

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET

Pipe type	Partition filling	Outer pipe diameter Ø [mm]	FLEXIBLE / RIGID WALLS			CEILINGS		
			• flange on both sides of the partition			• flange at the bottom of the ceiling		
			Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class	Pipe wall thickness [mm]	Number of flanges x number of tape wraps	Fire resistance class
PE PE-X ABS SAN + PVC	UNIBOARD 1S	75 < Ø ≤ 90	3,5 – 8,2	2 x 4		3,5 – 8,2	1 x 4	
		90 < Ø ≤ 110	4,2 – 10,0	2 x 5		4,2 – 10,0	1 x 5	
		110 < Ø ≤ 125				5,8 – 9,9	1 x 7	
		125 < Ø ≤ 160				9,5	1 x 9	
	1 x INTU FR UNIBOARD 2S	Ø ≤ 75	3,0 – 6,8	2 x 2	EI 60	3,0 – 6,8	1 x 2	EI 90
		75 < Ø ≤ 90	3,5 – 8,2	2 x 4		3,5 – 8,2	1 x 4	
		90 < Ø ≤ 110	4,2 – 10,0	2 x 5		4,2 – 10,0	1 x 5	

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

SOLUTION DETAILS

Fig.1-3

Sealing combustible pipe penetrations in walls

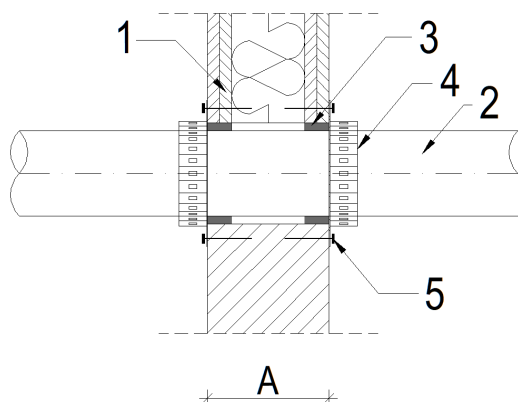
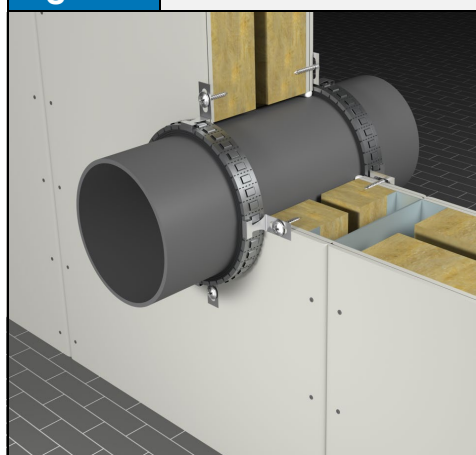


Fig. 1 Fire pipe in wall, single flange on both sides of the partition

- 1 – flexible/rigid wall
 $A \geq 100$ mm
- 2 – combustible pipe $\varnothing \leq 110$ mm
- 3 – free space filled with **ALFA FR MASTIC** compound to a minimum depth of ≥ 25 mm / or cement mortar
- 4 – **INTU FR COLLAR L SLIM** mounted on both sides of the wall

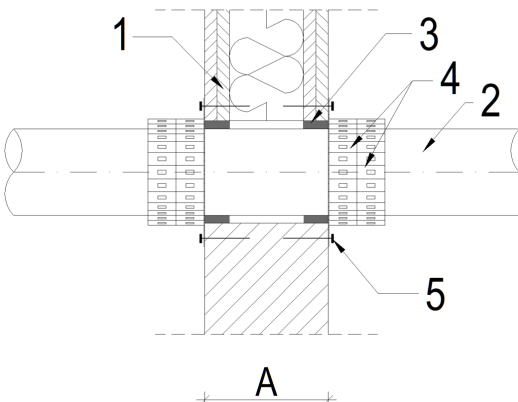
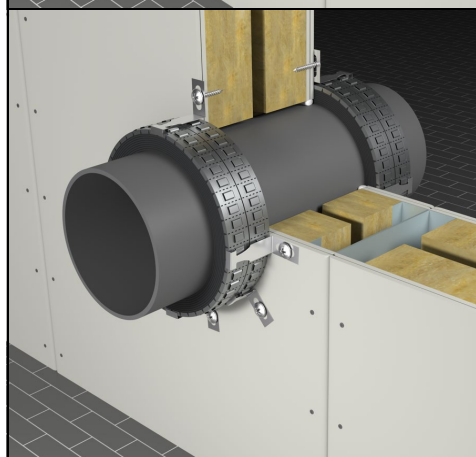


Fig. 2 Fire pipe in the wall, double flange on both sides of the partition

- 1 – flexible/rigid wall
 $A \geq 100$ mm
- 2 – combustible pipe $\varnothing > 110$ mm
- 3 – free space filled with **ALFA FR MASTIC** compound to a minimum depth of ≥ 25 mm / or cement mortar
- 4 – **INTU FR COLLAR L SLIM** installed in two rows

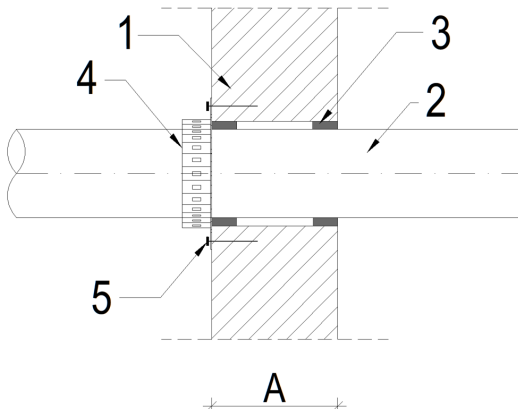
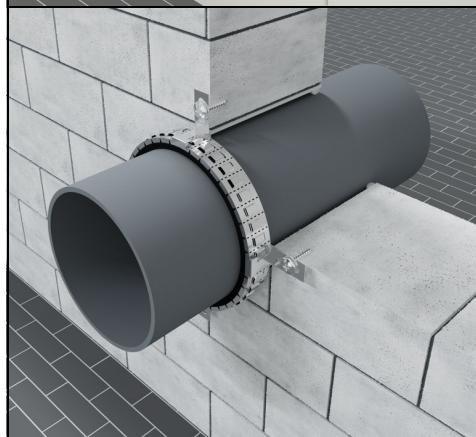


Fig. 3 Fire pipe in wall, one flange on either side of the partition

- 1 – rigid wall $A \geq 150$ mm
- 2 – fire pipe $\varnothing \leq 110$ mm
- 3 – free space filled with **ALFA FR MASTIC** compound to a minimum depth of ≥ 25 mm / or cement mortar
- 4 – **INTU FR COLLAR L SLIM** mounted on either side of the wall
- 5 – Steel screws min. $\varnothing 6 \times 50$ mm

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

Fig.4-6

Sealing of combustible pipe / freon bundle penetrations in walls

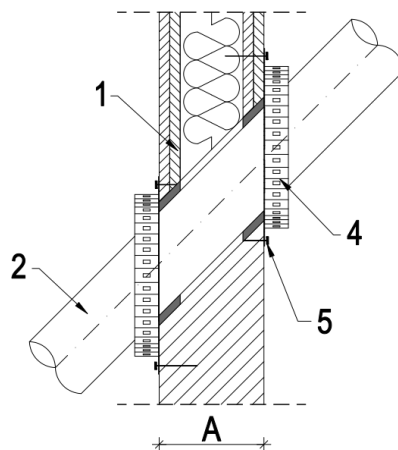
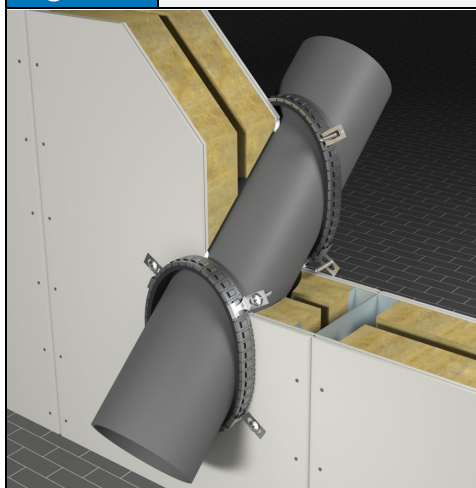


Fig. 4 Angled flue pipe in wall

- 1 – flexible/rigid wall
 $A \geq 100$ mm
- 2 – combustible pipe at an angle
- 3 – free space filled with
ALFA FR MASTIC compound to
a minimum depth of ≥ 25 mm
/ or cement mortar
- 4 – **INTU FR COLLAR L SLIM**
mounted on both sides of the wall

Note: for $\varnothing 110$ pipe
1 (number of flanges) x 5 (number of
tape wraps)
Length of steel casing for angled pipe:
28 segments

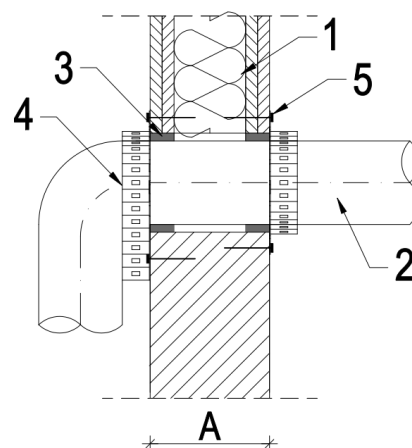
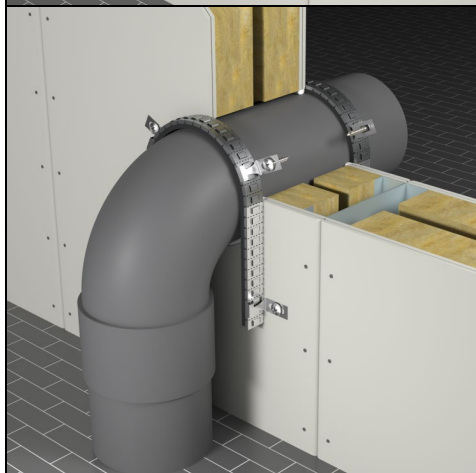


Fig. 5 Flue pipe with elbow in wall

- 1 – flexible/rigid wall
 $A \geq 100$ mm
- 2 – combustible pipe with elbow
- 3 – free space filled with
ALFA FR MASTIC compound to
a minimum depth of ≥ 25 mm
/ or cement mortar
- 4 – **INTU FR COLLAR L SLIM**
mounted on both sides of the wall

Note: for $\varnothing 110$ pipe
1 (number of flanges) x 5 (number of
tape wraps)
Length of steel casing for elbow: 28
segments

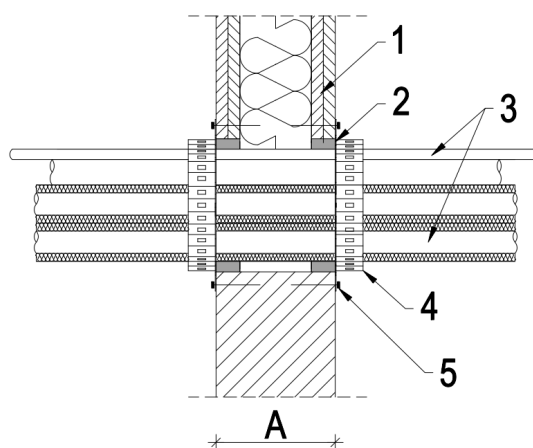
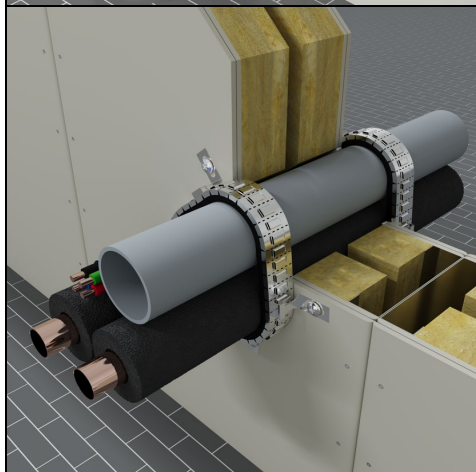


Fig. 6 Mixed bundle in wall

- 1 – flexible/rigid wall
 $A \geq 100$ mm
- 2 – pipe and cable bundle
- 3 – free space filled with
ALFA FR MASTIC compound to
a minimum depth of ≥ 25 mm
/ or cement mortar
- 4 – **INTU FR COLLAR L SLIM**
mounted on both sides of the wall
- 5 – Steel screws min. $\varnothing 6 \times 50$ mm

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

Fig.7-9

Sealing of combustible pipe penetrations in the ceiling

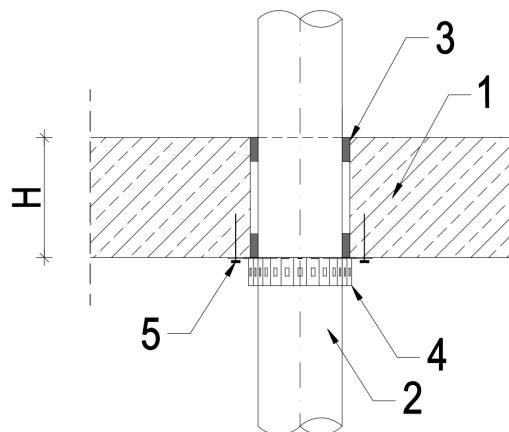
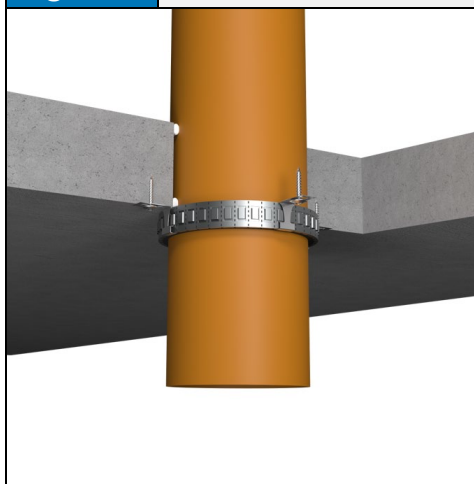


Fig. 7 Fire tube in the ceiling, single flange on the underside of the partition

- 1 – rigid ceiling $H \geq 150$ mm
- 2 – combustible pipe $\varnothing \leq 110$ mm
- 3 – free space filled with **ALFA FR MASTIC** compound to a minimum depth of ≥ 25 mm / or cement mortar
- 4 – **INTU FR COLLAR L SLIM** mounted from the underside of the ceiling
- 5 – Steel screws min. $\varnothing 6 \times 50$ mm

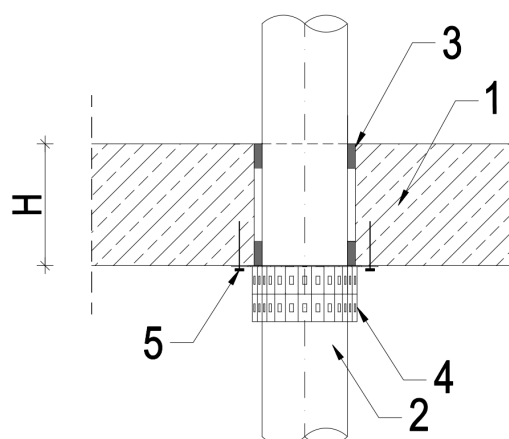
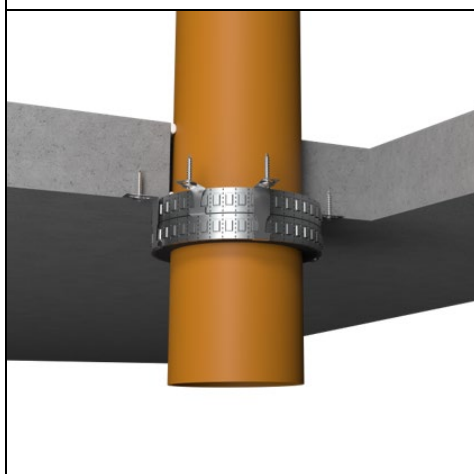


Fig. 8 Fire tube in the ceiling, double flange on the underside of the partition

- 1 – rigid ceiling $H \geq 150$ mm
- 2 – combustible pipe $\varnothing > 110$ mm
- 3 – free space filled with **ALFA FR MASTIC** compound to a minimum depth of ≥ 25 mm / or cement mortar
- 4 – **INTU FR COLLAR L SLIM** installed in two rows from the bottom of the ceiling
- 5 – Steel screws min. $\varnothing 6 \times 50$ mm

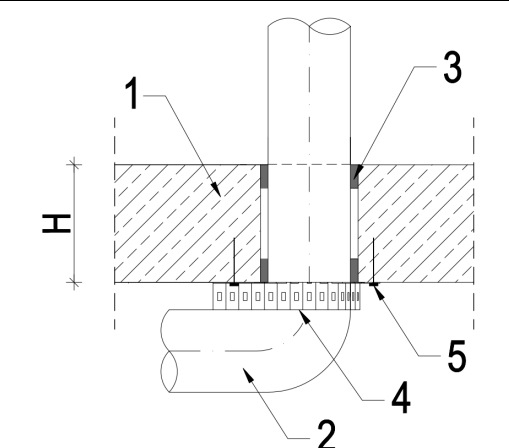
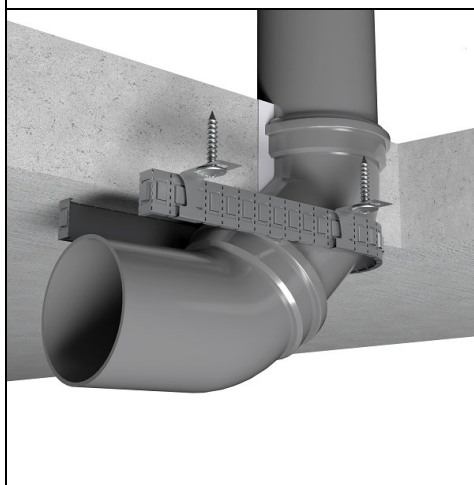


Fig. 9 Flame pipe with elbow in ceiling

- 1 – rigid ceiling $H \geq 150$ mm
- 2 – combustible pipe with elbow
- 3 – free space filled with **ALFA FR MASTIC** compound to a minimum depth of ≥ 25 mm / or cement mortar
- 4 – **INTU FR COLLAR L SLIM** mounted from the underside of the ceiling
- 5 – Steel screws, min. $\varnothing 6 \times 50$ mm

Note: for $\varnothing 110$ pipe
1 (number of flanges) x 5 (number of tape wraps) Length of steel casing for elbow: 28 segments

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

Fig.10-12

Sealing of non-combustible pipe penetrations and AROT pipes

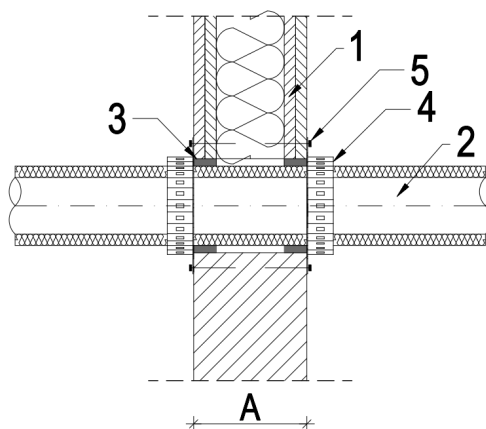
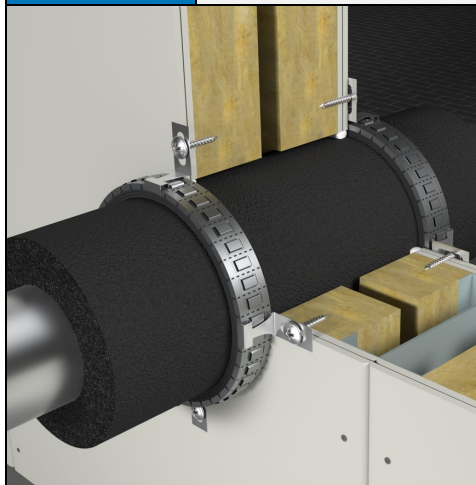


Fig. 10 Insulated metal pipe, wall penetration, single flange on both sides of the partition

- 1 – flexible/rigid wall
 $A \geq 100 \text{ mm}$
- 2 – combustible pipe $\varnothing \leq 110 \text{ mm}$
- 3 – free space filled with
ALFA FR MASTIC compound to
a minimum depth of $\geq 25 \text{ mm}$
/ or cement mortar
- 4 – **INTU FR COLLAR L SLIM**
mounted on both sides of the wall
- 5 – Steel screws min. $\varnothing 6 \times 50 \text{ mm}$

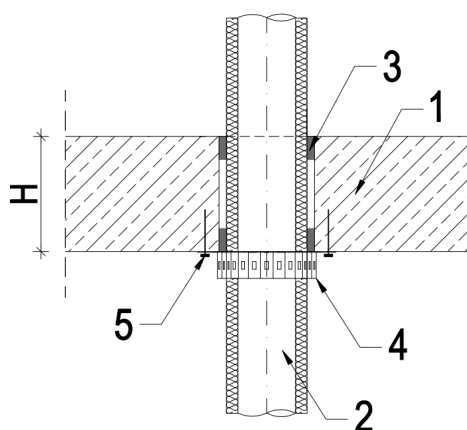


Fig. 11 Insulated metal pipe, ceiling penetration, single flange at the bottom of the ceiling

- 1 – rigid ceiling $H \geq 150 \text{ mm}$
- 2 – non-combustible pipe in
insulation
- 3 – free space filled with
ALFA FR MASTIC compound to
a minimum depth of $\geq 25 \text{ mm}$
/ or cement mortar
- 4 – **INTU FR COLLAR L SLIM**
mounted from the underside of
the ceiling
on the pipe insulation
- 5 – Steel screws min. $\varnothing 6 \times 50 \text{ mm}$

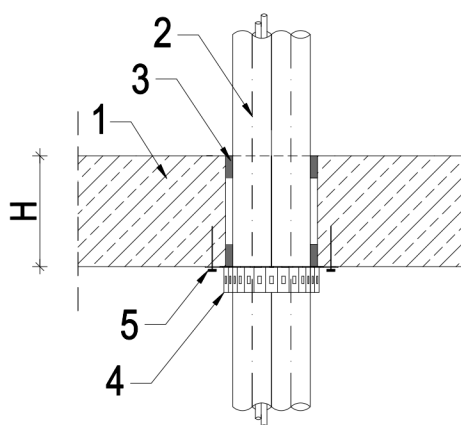
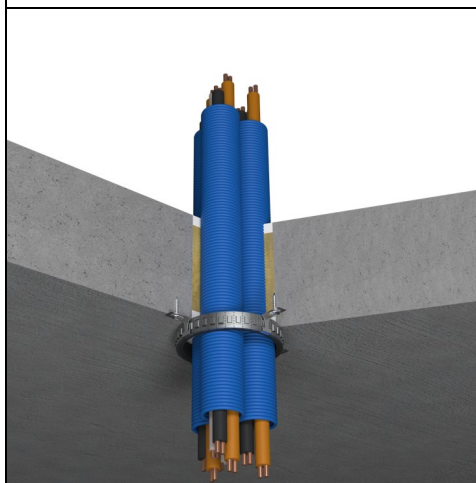


Fig. 12 AROT pipe bundle, transition in the ceiling, single flange at the bottom of the ceiling

- 1 – rigid ceiling $H \geq 150 \text{ mm}$
- 2 – **AROT** cable bundle
with cable/cable bundle or
without
- 3 – free space filled with
ALFA FR MASTIC compound to
a minimum depth of $\geq 25 \text{ mm}$
/ or cement mortar
- 4 – **INTU FR COLLAR L SLIM**
mounted from the bottom of the
ceiling
- 5 – Steel screws min. $\varnothing 6 \times 50 \text{ mm}$

INTU FR COLLAR L SLIM

Intumescent pipe collar roll

TECHNICAL DATA SHEET

Fig.13-16

System compatible with INTU FR UNIBOARD

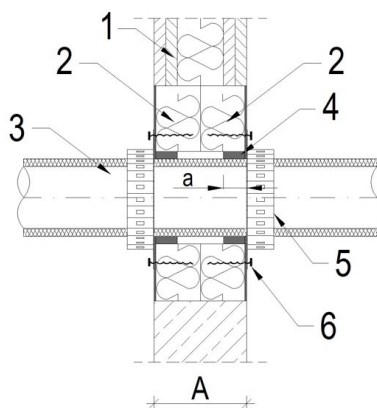
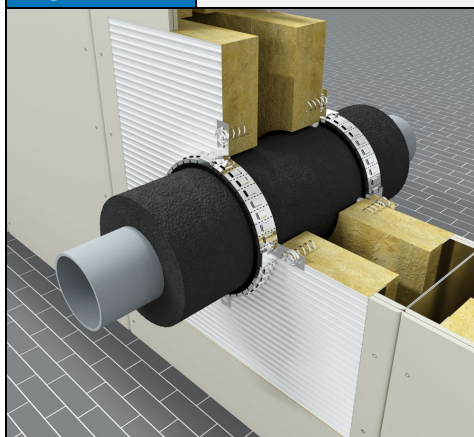


Fig. 13 Insulated combustible pipe or insulated non-combustible pipe, wall penetration, double wool board

- 1 – flexible/rigid wall, $A \geq 100$ mm
- 2 – 2 x **INTU FR UNIBOARD 1S**
- 3 – insulated or non-combustible pipe insulated
- 4 – free space filled with **ALFA FR MASTIC** compound to a minimum depth of $a \geq 25$ mm
- 5 – **INTU FR COLLAR L SLIM** mounted on both sides of the partition
- 6 – **SPRING-W** screws for wool

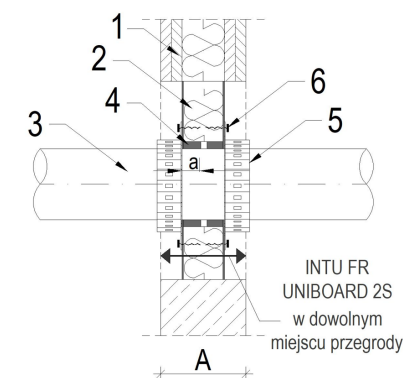
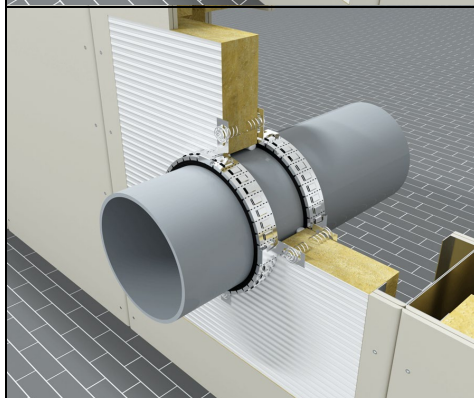


Fig. 14 Fire pipe, wall passage, single wool board

- 1 – flexible/rigid wall, $A \geq 100$ mm
- 2 – 1 x **INTU FR UNIBOARD 2S** board placed anywhere in the partition
- 3 – combustible pipe
- 4 – free space filled with **ALFA FR MASTIC** compound to a minimum depth of $a \geq 25$ mm
- 5 – **INTU FR COLLAR L SLIM** mounted on both sides of the wool board
- 6 – **SPRING-W** wool screws

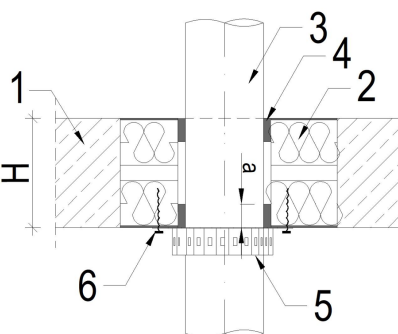
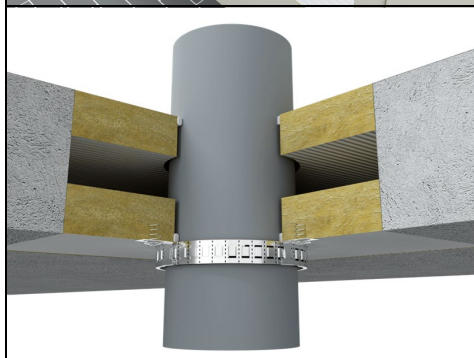


Fig. 15 Fire pipe, ceiling passage, double wool board

- 1 – rigid ceiling, $H \geq 150$ mm
- 2 – 2 x **INTU FR UNIBOARD 1S**
- 3 – combustible pipe
- 4 – free space filled with **ALFA FR MASTIC** compound to a minimum depth of $a \geq 25$ mm
- 5 – **INTU FR COLLAR L SLIM** mounted from the bottom of the lower wool
- 6 – **SPRING-W** wool screws

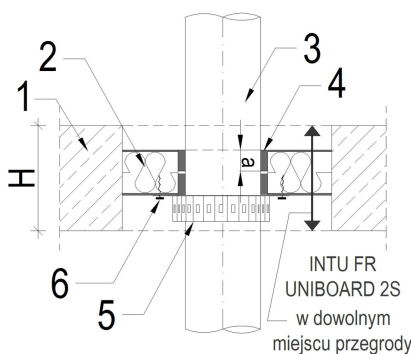
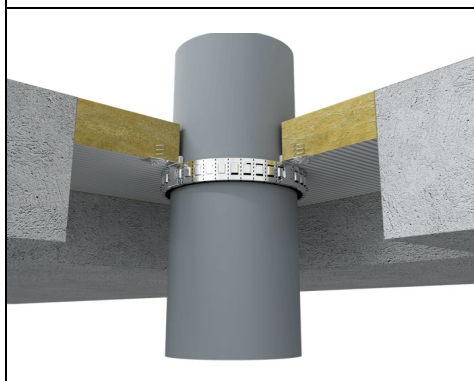


Fig. 16 Fire pipe, ceiling passage, single wool board

- 1 – rigid ceiling, $H \geq 150$ mm
- 2 – 1 x **INTU FR UNIBOARD 2S** board
- 3 – combustible pipe
- 4 – free space filled with **ALFA FR MASTIC** compound to a minimum depth of $a \geq 25$ mm
- 5 – **INTU FR COLLAR L SLIM** mounted from the bottom of the wool board
- 6 – **SPRING-W** wool screws