

INTU FR COLLAR (ST)

Intumescent pipe collar

TDS TECHNICAL DATA SHEET



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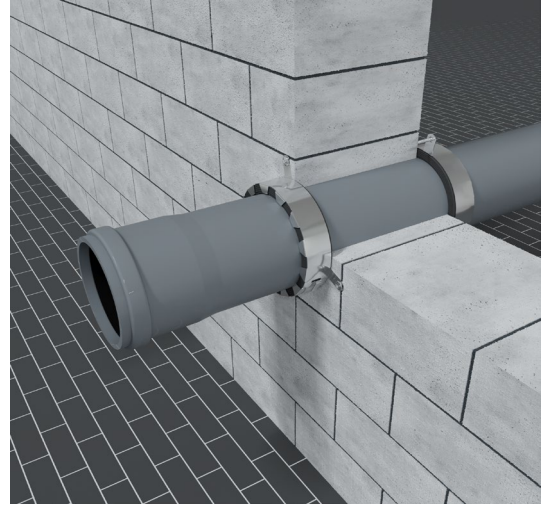
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→ PRODUCT DESCRIPTION

The firestop collar **INTU FR COLLAR (ST)** is composed of a flexible insert made of graphite-based material and an external casing made of 1.0 mm stainless steel sheet. The steel collar casing is equipped with a lock used for strapping the ends and stabilizing it on the pipe, as well as mounting brackets fixing the collar to the partition. The collars ensure fire resistance class up to max EI 240.

→ APPLICATION

The **INTU FR COLLAR (ST)** is used for fire protection of penetrations with plastic pipes (PVC, PP, PE, HDPE, PE-RT, PE-X, PP-R/Al/PP-R, PP-R/PP-R-GF/PP-R, PE-RT/Al/PE-RT, PE-X/Al/PE-X) and bundles of plastic pipes running through fire partitions.



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 min. 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 1700 kg/m³.

→ COMPLIANCE:

- Test standard:
EN 1366-3 / EAD 350454-00-1104
- European Technical Assessment:
ETA 19/0844 of 05/08/2020
- Declaration of Performance:
DoP 2/2019
- Certificate of Constancy of Performance
1488-CPR-0825/W

→ AVAILABILITY

Product	Type	Box	Article number
INTU FR COLLAR (ST)	32 mm	50	INCOST32
	40 mm	50	INCOST40
	55 mm	30	INCOST55
	63 mm	30	INCOST63
	75 mm	30	INCOST75
	82 mm	30	INCOST82
	90 mm	30	INCOST90
	110 mm	20	INCOST110
	125 mm	15	INCOST125
	160 mm	10	INCOST160
	200 mm	10	INCOST200
	250 mm	1	INCOST250
	315 mm	1	INCOST315



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→ TRANSPORT AND STORAGE

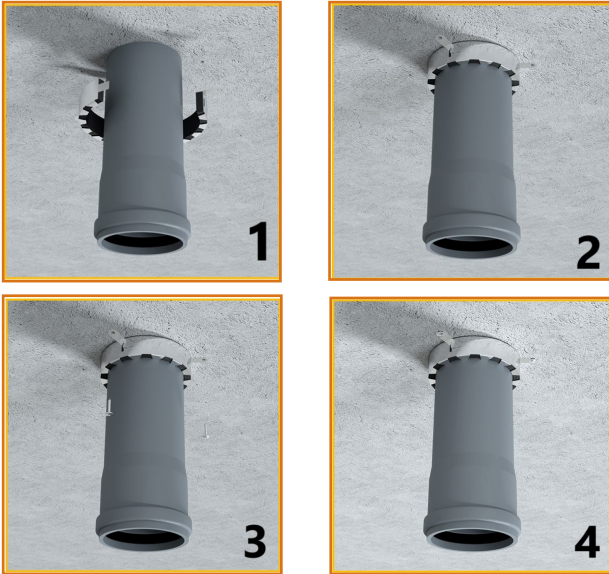
Store in dry and cool conditions;
at a temperature from + 5°C to + 35°C.

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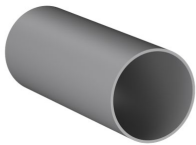
→ INSTALLATION METHOD



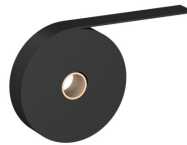
Clean the hole and installations from dust, dirt and grease. The gaps between the hole and the edge of the pipe should be filled with mass **INTU FR MASTIC**.

1. Install **INTU FR COLLAR (ST)** on the pipe.
2. Secure **INTU FR COLLAR (ST)** using the lock.
3. Use steel wedge anchors for installation in the partition.
4. Fill any gaps with intumescent acrylic mass **INTU FR MASTIC**.

→ TECHNICAL DATA



Pipe diameter Ø [mm]



Intumescent insert



Flange

Pipe diameter Ø [mm]	Width [mm]	Number of layers	Number of fixing brackets	Collar height [mm]
Ø ≤ 50	30	2	2	31
50 < Ø ≤ 75	30	3	2	31
75 < Ø ≤ 90	30	4	3	31
90 < Ø ≤ 110	30	5	3	31
110 < Ø ≤ 125	40	7	4	41
125 < Ø ≤ 160	40	9	4	41
160 < Ø ≤ 200	60	10	4	61
200 < Ø ≤ 315	2 x 75	2 x 15	5	220
315 < Ø ≤ 355	2 x 75	2 x 15	6	220

→ FIRE RESISTANCE CLASSIFICATION

RIGID WALL/FLOOR (thickness ≥ 150mm)				
Pipe material	Diameter Ø [mm]	Collar height [mm]	Pipe wall thick. [mm]	Configuration C/C and U/C
PE-RT	Ø ≤ 20	31	2,0	EI 240
PE-X	Ø ≤ 20	31	2,0	EI 240
		31	2,1 – 7,5	EI 120 / E 240
PP-R/Al/PP-R	20 < Ø ≤ 75	31	7,5	EI 120 / E 240
		31	3,4	EI 180 / E 240
PP-R/Al/PP-R	Ø ≤ 20	31	3,5 – 18,3	EI 90 / E 180
		31	18,3	EI 90 / E 180
PP-R/PP-R-GF/PP-R	20 < Ø ≤ 110	31	3,4	EI 240
		31	3,5 – 18,3	EI 90 / E 120
		31	18,3	EI 90 / E 120

RIGID FLOOR (thickness ≥ 150mm)				
Pipe material	Diameter Ø [mm]	Collar height [mm]	Pipe wall thickness [mm]	Configuration C/C and U/C
PE – RT/Al/PE-RT	Ø ≤ 20	31	2,0	EI 240
PE-X/Al/PE-X	Ø ≤ 20	31	2,0	EI 240
PP-R/Al/PP-R	Ø ≤ 20	31	3,4	EI 240
		31	3,5 – 18,3	EI 120
PP-R/Al/PP-R	20 < Ø ≤ 110	31	18,3	EI 120

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Pipe material: PVC					
Diameter Ø [mm]	Collar height [mm]	RIGID WALL		RIGID FLOOR	
		Pipe wall thickness [mm]	Configuration C/C and U/C	Pipe wall thickness [mm]	Configuration C/C and U/C
Ø ≤ 32	31	1,8 – 3,6	EI 240	1,8 – 2,5	EI 240
32 < Ø ≤ 40		1,8 – 3,6		1,8 – 2,5	
40 < Ø ≤ 50		1,8 – 3,6		1,8 – 2,5	
50 < Ø ≤ 55		1,9 – 3,6	EI 180	1,9	EI 180
55 < Ø ≤ 63		1,9 – 3,6		2,0 – 3,6	EI 240
				1,9	EI 180
63 < Ø ≤ 75		1,9 – 3,6		2,0 – 3,6	EI 240
				1,9	EI 180
75 < Ø ≤ 90		2,1 – 3,9		2,0 – 3,6	EI 120
				2,1 – 3,1	EI 180
90 < Ø ≤ 110	2,2	3,2 – 4,2	EI 120		
		2,1 – 3,1	EI 180		
110 < Ø ≤ 125	41	2,3 – 4,2	EI 120		
		2,5 – 4,8	EI 240		
125 < Ø ≤ 160	3,2	3,2 – 4,2	EI 240		
		3,3 – 6,2	EI 120		

Pipe material: PVC					
Diameter Ø [mm]	Collar height [mm]	FLEXIBLE / RIGID WALL			
		Wall thickness: 100 ≤ A < 125 mm		Wall thickness: 125 ≤ A < 150 mm	
		Configuration C/C and U/C	Fire resistance classification	Pipe wall thickness [mm]	Configuration C/C and U/C
Ø ≤ 32	31	1,8 - 3,6	EI 120	1,8 - 3,6	EI 120
32 < Ø ≤ 40		1,8 - 3,6		1,8 - 3,6	
40 < Ø ≤ 50		1,8 - 3,6		1,8 - 3,6	
50 < Ø ≤ 55		1,9 - 3,5	EI 90	1,9 - 3,5	
		3,6	EI 120		
55 < Ø ≤ 63		1,9 - 3,5	EI 90	1,9 - 3,5	
		3,6	EI 120		
63 < Ø ≤ 75		1,9 - 3,5	EI 90	1,9 - 3,5	
		3,6	EI 120		
75 < Ø ≤ 90		2,1 - 2,2	EI 90	2,1 - 3,9	
	2,3 - 3,9	EI 60	2,2 - 4,2		
90 < Ø ≤ 110	2,2	EI 90	2,5 - 3,9		
	2,3 - 4,2	EI 60	4,0 - 4,8		
110 < Ø ≤ 125	41	2,5 - 3,2	EI 90	3,2	EI 120
125 < Ø ≤ 160	3,2 - 6,2		EI 90	3,3 - 6,2	EI 90
					EI 120

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Pipe material: PP						
Diameter Ø [mm]	Collar height [mm]	RIGID WALL		RIGID FLOOR		
		Pipe wall thickness [mm]	Configuration C/C and U/C	Pipe wall thickness [mm]	Configuration C/C and U/C	
Ø ≤ 32	31	1,8	EI 240	1,8 - 8,3	EI 240	
		1,9 - 8,3	EI 120			
32 < Ø ≤ 40		1,8	EI 240	1,8 - 8,3		
		1,9 - 8,3	EI 120			
40 < Ø ≤ 50		1,8	EI 240	1,8 - 8,3		
		1,9 - 8,3	EI 120			
50 < Ø ≤ 55		1,9 - 12,5	EI 120	1,9		EI 180
		55 < Ø ≤ 63	1,9 - 12,5	EI 120		
-			1,9			EI 120
63 < Ø ≤ 75		1,9 - 12,5	EI 120	2,0 - 12,5		EI 180
		-		1,9	EI 120	
75 < Ø ≤ 90		2,3 - 15,1	EI 120	2,3 - 15,1	EI 120	
		2,7 - 18,3		2,7		
90 < Ø ≤ 110		18,4	EI 240	2,8 - 18,4	EI 180	
		110 < Ø ≤ 125	3,8 - 14,8	EI 120	3,8 - 15,1	EI 120
14,9 - 15,2			EI 60			
125 < Ø ≤ 160	6,2		EI 180	6,2 - 7,3	EI 120	
	6,3 - 7,7		EI 60			
160 < Ø ≤ 170	6,6 - 7,6	EI 60	6,3 - 6,5	EI 60		
	7,7	EI 180	6,6 - 7,4	EI 120		
	170 < Ø ≤ 185	7,2 - 7,6	EI 60	6,3 - 7,1	EI 60	
7,7		EI 180	7,2 - 7,6	EI 120		
185 < Ø ≤ 200	7,7		EI 180	6,3 - 7,6	EI 60	
		EI 180	7,7	EI 120		

Pipe material: PP						
Diameter Ø [mm]	Collar height [mm]	FLEXIBLE / RIGID WALL				
		Wall thickness: 100 ≤ A < 125 mm		Wall thickness: 125 ≤ A < 150 mm		
		Pipe wall thickness [mm]	Configuration C/C and U/C	Pipe wall thickness [mm]	Configuration C/C and U/C	
Ø ≤ 32	31	1,8	EI 90	1,8 - 8,3	EI 120	
		1,9 - 12,5	EI 60			
32 < Ø ≤ 40		1,8	EI 90	1,8 - 8,3		
		1,9 - 12,5	EI 60			
40 < Ø ≤ 50		1,8	EI 90	1,8 - 8,3		
		1,9 - 12,5	EI 60			1,9 - 12,5
50 < Ø ≤ 55		1,9 - 12,5		1,9 - 12,5		
		55 < Ø ≤ 63		1,9 - 12,5		1,9 - 12,5
63 < Ø ≤ 75				1,9 - 12,5		1,9 - 12,5
		75 < Ø ≤ 90		2,3 - 15,1		EI 60
90 < Ø ≤ 110				2,7 - 18,4	8,4 - 15,1	
		110 < Ø ≤ 125		4,1 - 15,1	EI 60	2,7
2,8 - 18,4						EI 90
125 < Ø ≤ 160		41		7,3	4,1 - 15,1	EI 60
					7,3	

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Pipe material: PE-HD, PE, ABS, SAN+PVC					
Diameter Ø [mm]	Collar height [mm]	RIGID WALL		RIGID FLOOR	
		Pipe wall thickness [mm]	Configuration C/C and U/C	Pipe wall thickness [mm]	Configuration C/C and U/C
Ø ≤ 32	31	2,0	EI 120	1,8 - 4,8	EI 240
		2,1 - 4,8		2,4 - 4,8	
		2,5 - 4,8		3,0 - 4,8	
		3,0 - 4,8		2,8 - 3,5	
50 < Ø ≤ 55		3,0 - 3,5	EI 90	3,6	EI 240
		3,6	EI 240	3,7 - 6,8	EI 180
55 < Ø ≤ 63		3,0 - 3,5	EI 90	3,1 - 3,5	EI 240
		3,6 - 6,8	EI 240	3,6	
63 < Ø ≤ 75		3,0 - 3,5	EI 90	3,6	EI 240
		3,6	EI 240		
75 < Ø ≤ 90		3,7 - 6,8	EI 120	3,7 - 6,8	EI 180
		3,6 - 3,8	EI 90	3,9 - 8,2	EI 120
90 < Ø ≤ 110		3,9 - 8,2	EI 120		
		4,2 - 9,9		EI 240	
110 < Ø ≤ 125		4,8 - 6,1	EI 120	6,2 - 9,4	
		6,2 - 9,0		9,5	
125 < Ø ≤ 160	6,2 - 9,4	EI 180	6,2 - 9,4	EI 180	
	9,5	EI 180	9,5	EI 180	
160 < Ø ≤ 170	61	6,6 - 9,1	EI 60	6,6 - 9,1	EI 120
				9,2 - 11,0	EI 90
11,1 - 11,3				EI 60	
7,2 - 8,4				EI 120	
8,5 - 11,0				EI 90	
11,1 - 11,3				EI 60	
170 < Ø ≤ 185		7,2 - 8,4	EI 60	7,2 - 8,4	EI 120
				8,5 - 11,0	EI 90
				11,1 - 11,3	EI 60
				7,7	EI 120
				7,8 - 11,0	EI 90
				11,1 - 11,3	EI 60
185 < Ø ≤ 200	7,7	EI 60	7,7	EI 120	
			7,8 - 11,0	EI 90	
110 < Ø ≤ 125	41	6,2 - 9,4	EI 180	EI 180	
		9,5	EI 180	EI 180	
125 < Ø ≤ 160	41	6,2 - 9,4	EI 180	EI 180	
		9,5	EI 180	EI 180	
FLEXIBLE / RIGID WALL					
Diameter Ø [mm]	Collar height [mm]	Wall thickness: 100 ≤ A < 125 mm		Wall thickness: 100 ≤ A < 125 mm	
		Pipe wall thickness [mm]	Configuration C/C and U/C	Pipe wall thickness [mm]	Configuration C/C and U/C
Ø ≤ 32	31	2,0	EI 120	2,0 - 4,6	EI 120
		2,1 - 6,8	EI 60	2,2 - 6,8	EI 90
		2,2 - 6,8		2,5 - 6,8	
		2,5 - 6,8		2,6 - 6,8	
2,6 - 6,8		2,8 - 6,8			
50 < Ø ≤ 55		2,6 - 6,8	EI 60	3,0 - 6,8	EI 60
		2,8 - 6,8		3,6 - 4,2	
55 < Ø ≤ 63		3,0 - 6,8	EI 60	4,3 - 8,2	EI 60
		3,6 - 8,2		4,2	EI 90
75 < Ø ≤ 90		3,6 - 8,2	EI 60	4,3 - 10,0	EI 60
				4,2	
90 < Ø ≤ 110		4,2 - 10,0	EI 60	4,3 - 10,0	EI 60
				4,8 - 9,9	
110 < Ø ≤ 125		41	EI 120	4,8 - 9,9	EI 120
				6,2 - 9,5	EI 60
125 < Ø ≤ 160		41	EI 180	6,2 - 9,5	EI 180
	9,5			EI 180	

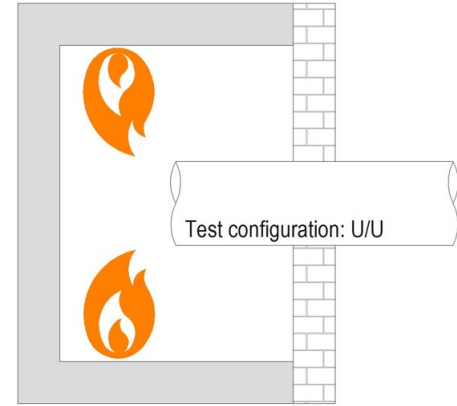
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➔ FIRE RESISTANCE CLASSIFICATION for plastic pipes in U/U configuration

Test setup	Pipe end		Permitted use			
	Inside furnace	Outside furnace	U/U	C/U	U/C	C/C
U/U	Uncapped	Uncapped	Yes	Yes	Yes	Yes



Based on: Classification of fire resistance FIRES-CR-241-19-AUPE of 31/10/2019

FLEXIBLE / RIGID WALL (thickness ≥ 100 mm)				
Pipe material	Diameter Ø [mm]	Collar height [mm]	Pipe wall thick. [mm]	Configuration U/U
PP	Ø ≤ 50	31	1,8 mm	EI 60 – U/U
			8,3 mm	EI 30 – U/U
	Ø ≤ 75	31	1,9 mm	EI 60 – U/U
			2,2 mm	EI 45 – U/U
PVC	Ø ≤ 50	31	1,8 mm	EI 60 – U/U
			3,7 mm	EI 90 – U/U
	Ø ≤ 75	31	1,9 mm	EI 60 – U/U
			5,6 mm	EI 45 – U/U
	Ø ≤ 110	31	2,2 mm	EI 60 – U/U
			4,2 mm	EI 30 – U/U
PE-HD	Ø ≤ 50	31	3,0 mm	EI 60 – U/U
			4,6 mm	EI 30 – U/U
	Ø ≤ 75	31	3,0 mm	EI 60 – U/U
			6,8 mm	EI 30 – U/U

➔ FIRE RESISTANCE CLASSIFICATION for bundle of plastic pipes

Diameter Ø [mm]	Bundle characteristics	RIGID WALL (thickness ≥ 150 mm)		
		Pipe material	Pipe wall thickness [mm]	EI classification
				Configuration C/C and U/C
1) Ø ≤ 32 mm	Maximum in one bundle (3 plastic pipes)	PE	2,0	EI 240
1) Ø ≤ 32 mm		PE	2,0	
3) Ø ≤ 32 mm		PE	2,0	
1) Ø ≤ 32 mm	Maximum in one bundle (3 plastic pipes)	PE - HD	2,0	EI 120 / E 180
1) Ø ≤ 32 mm		PE	2,0	
3) Ø ≤ 32 mm		ABS or SAN + PVC	2,0	
1) Ø ≤ 32 mm	Maximum in one bundle (3 plastic pipes)	PE - HD	2,0	EI 120
2) Ø ≤ 32 mm		PE or PE-HD	2,0	
3) Ø ≤ 32 mm		ABS or SAN + PVC	2,0	

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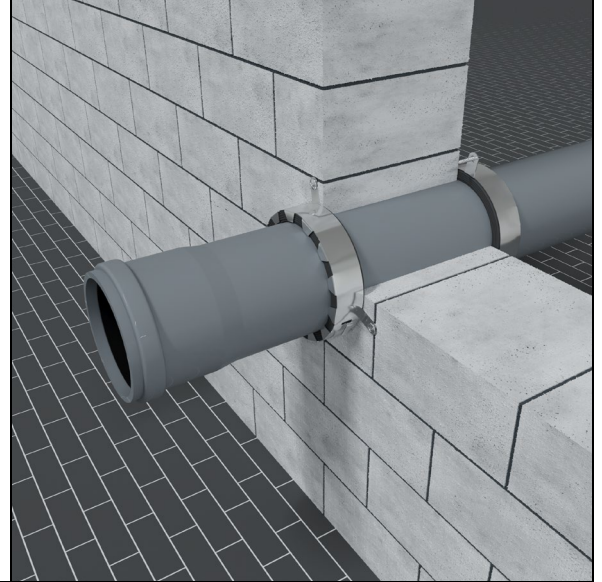
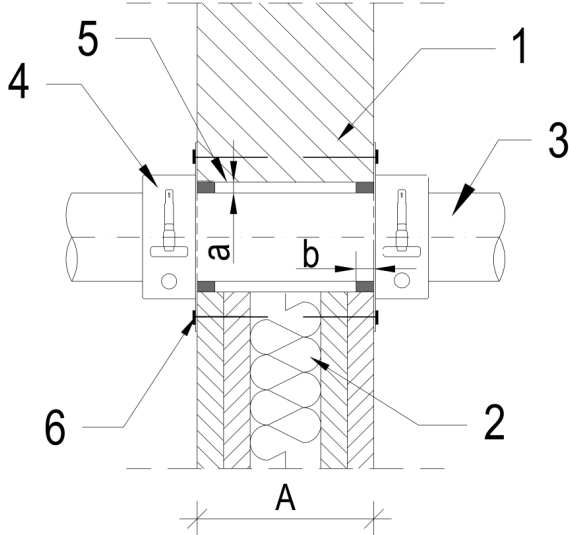
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➔ SOLUTION DETAILS

PLASTIC PIPE pipe penetration seal in RIGID/FLEXIBLE WALL

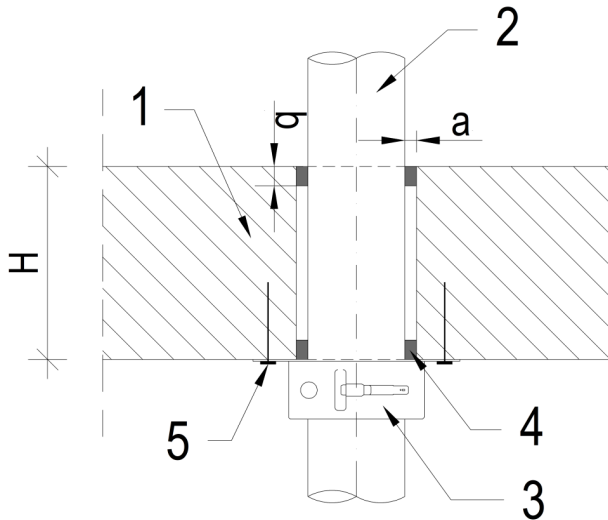
Fig. 1. Penetration seal in rigid/flexible wall $A \geq 100$ mm



- 1 – rigid wall with thickness $A \geq 100$ mm
- 2 – flexible wall with thick. $A \geq 100$ mm
- 3 – plastic pipe
- 4 – INTU FR COLLAR (ST) fire protection collar installed on both sides of wall
- 5 – gap around collar filled with INTU FR MASTIC intumescent acrylic sealant: width $25 \text{ mm} \geq a \geq 0$ mm, depth $b \geq 10$ mm
- 6 – screw $\text{Ø}6 \times 40$ mm

PLASTIC PIPE pipe penetration seal in RIGID FLOOR

Fig. 2. Penetration seal in rigid floor $H \geq 150$ mm



- 1 – rigid floor with thickness $H \geq 150$ mm
- 2 – plastic pipe
- 3 – INTU FR COLLAR (ST) fire protection collar installed below of the floor
- 4 – gap filled with INTU FR MASTIC acrylic sealant on both sides of partition: width $25 \text{ mm} \geq a \geq 0$ mm, depth $b \geq 10$ mm
- 5 – screw $\text{Ø}6 \times 40$ mm