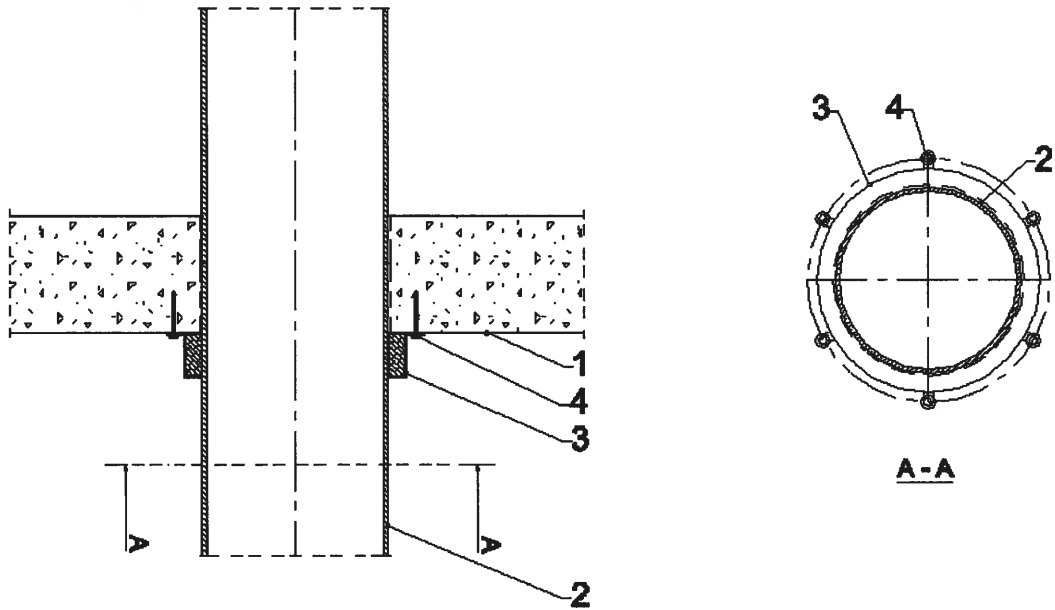


**Plastic pipe penetration seal in rigid floor, made with use of Squeezer Compact.**



- 1 Rigid floor with thickness  $\geq 150$  mm and density  $\geq 600$  kg/m<sup>3</sup>
- 2 Plastic pipe
- 3 Squeezer Compact, fixed at the bottom of the floor
- 4 Fastener M6x60, number of fasteners in accordance with Annex A

<b>Squeezer Compact and Maxi Wrap</b>	<b>Annex C15</b>
<b>Construction details of penetration seals made with use of Squeezer Compact</b> Plastic pipe penetration seal in rigid floor	of European Technical Assessment ETA-17/0867

**Resistance to fire classification of plastic pipes penetration seals in rigid floor, made with use of Squeezer Compact, in accordance with Annex C15:**

**Table C16.1 PE-HD pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PE-HD	$\varnothing \leq 63$	3,0 – 5,8	30	5,0	EI 90 – U/C EI 90 – C/C
	$63 < \varnothing \leq 87$	3,8 – 7,9	30	7,5	
	$87 < \varnothing \leq 111$	4,6 – 10,1	30	10,0	
	$111 < \varnothing \leq 135$	5,4 – 12,3	30	12,5	
	$135 < \varnothing \leq 160$	6,2 – 14,6	30	15,0	
	$160 < \varnothing \leq 205$	7,9 – 14,6	60	17,5	
	$205 < \varnothing \leq 250$	9,6 – 14,6	60	20,0	

**Table C16.2 PP-R pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PP-R	$\varnothing \leq 63$	5,8 – 10,5	30	5,0	EI 90 – U/C EI 90 – C/C
	$63 < \varnothing \leq 87$	5,8 – 11,5	30	7,5	
	$87 < \varnothing \leq 111$	5,8 – 12,5	30	10,0	
	$111 < \varnothing \leq 135$	5,7 – 13,5	30	12,5	
	$135 < \varnothing \leq 160$	5,6 – 14,6	30	15,0	

**Table C16.3 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 63$	2,0 – 5,1	30	5,0	EI 90 – U/C EI 90 – C/C
	$63 < \varnothing \leq 87$	2,3 – 5,0	30	7,5	
	$87 < \varnothing \leq 111$	2,6 – 4,9	30	10,0	
	$111 < \varnothing \leq 135$	2,9 – 4,8	30	12,5	
	$135 < \varnothing \leq 160$	3,2 – 4,7	30	15,0	
	$160 < \varnothing \leq 205$	4,7 – 8,5	60	17,5	
	$205 < \varnothing \leq 250$	6,2 – 9,6	60	20,0	

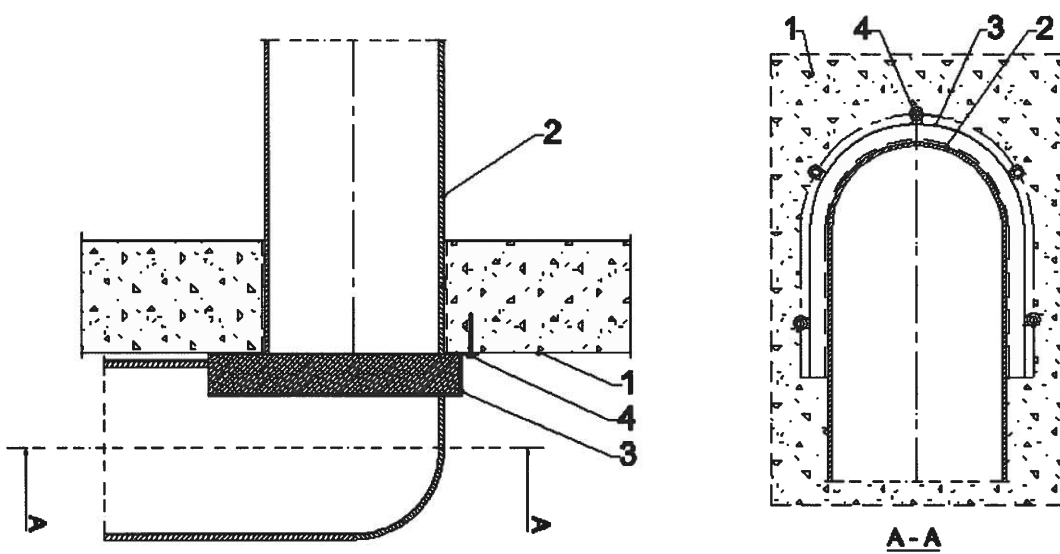
**Squeezer Compact and Maxi Wrap**

**Resistance to fire classification of penetration seals made with use of Squeezer Compact**  
Plastic pipe penetration seal in rigid floor

**Annex C16**

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**Plastic pipe penetration seal in rigid floor, made with use of Squeezer Compact – pipe elbow on the bottom of the floor.**



- 1 Rigid floor with thickness  $\geq 150$  mm and density  $\geq 600$  kg/m<sup>3</sup>
- 2 Plastic pipe
- 3 Squeezer Compact, fixed at the bottom of the floor
- 4 Fastener M6x60, number of fasteners in accordance with Annex A

**Resistance to fire classification of plastic pipe elbow penetration seals in rigid floor, made with use of Squeezer Compact:**

**Table C17.1 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 63$	2,0 – 5,1	30	5,0	EI 90 – U/C EI 90 – C/C
	$63 < \varnothing \leq 86$	2,3 – 5,7	30	7,5	
	$86 < \varnothing \leq 110$	2,6 – 6,5	30	10,0	
	$110 < \varnothing \leq 135$	2,9 – 5,6	30	12,5	
	$135 < \varnothing \leq 160$	3,2 – 4,7	30	15,0	

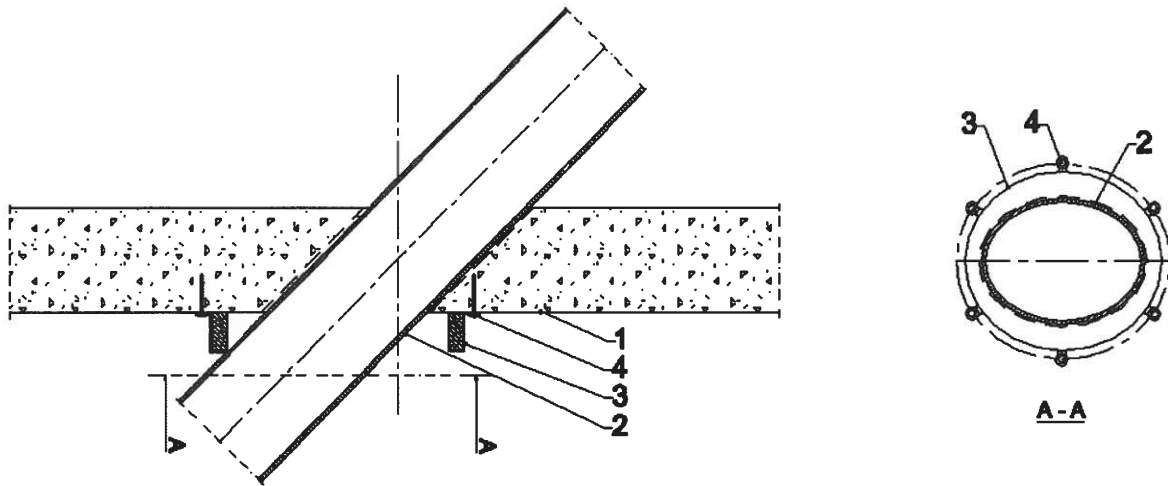
**Squeezer Compact and Maxi Wrap**

**Annex C17**

**Construction details and resistance to fire classification of penetration seals made with use of Squeezer Compact**  
Plastic pipe elbow penetration seal in rigid floor

of European  
Technical Assessment  
ETA-17/0867

**Plastic pipe penetration seal in rigid floor, made with use of Squeezer Compact, placed in angle between 0° and 89° to the floor.**



- 1 Rigid floor with thickness  $\geq 150$  mm and density  $\geq 600$  kg/m<sup>3</sup>
- 2 Plastic pipe
- 3 Squeezer Compact, fixed at the bottom of the floor
- 4 Fastener M6x60, number of fasteners in accordance with Annex A

**Resistance to fire classification of plastic pipes penetration seals in rigid floor, made with use of Squeezer Compact, placed in angle between 0° and 89° to the floor:**

**Table C18.1 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 32$	1,8 – 3,4	30	5,0	EI 120 – U/C EI 120 – C/C
	$32 < \varnothing \leq 51$	2,2 – 4,1	30	7,5	
	$51 < \varnothing \leq 71$	2,5 – 4,9	30	10,0	
	$71 < \varnothing \leq 90$	2,9 – 5,7	30	12,5	
	$90 < \varnothing \leq 110$	3,2 – 6,5	30	15,0	
	$110 < \varnothing \leq 135$	3,2 – 5,6	60	17,5	
	$135 < \varnothing \leq 160$	3,2 – 4,7	60	20,0	

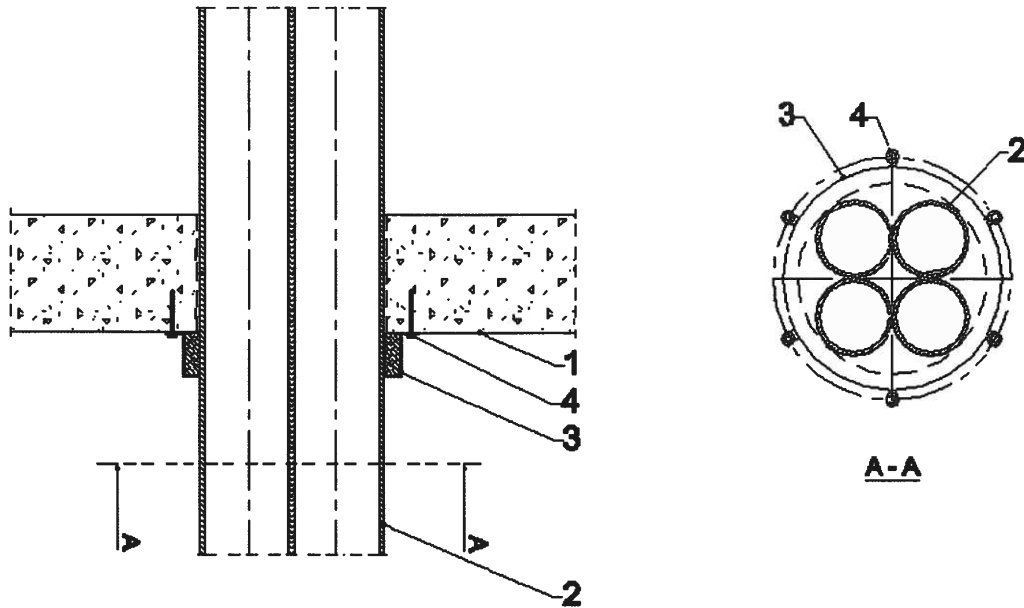
**Squeezer Compact and Maxi Wrap**

**Construction details and resistance to fire classification of penetration seals made with use of Squeezer Compact**  
Plastic pipe penetration seal in rigid floor

**Annex C18**

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**Plastic pipes bundle penetration seal in rigid floor, made with use of Squeezer Compact.**



- 1 Rigid floor with thickness  $\geq 150$  mm and density  $\geq 600$  kg/m<sup>3</sup>
- 2 Plastic pipe (maximum 4 pipes in bundle)
- 3 Squeezer Compact, fixed at the bottom of the floor
- 4 Fastener M6x60, number of fasteners in accordance with Annex A

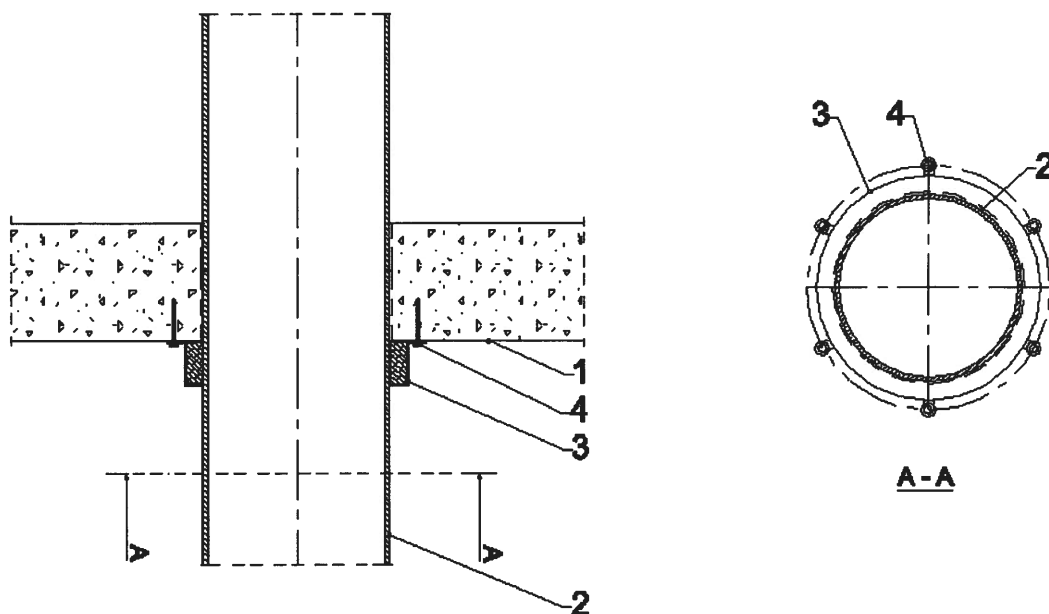
**Resistance to fire classification of plastic pipes bundle penetration seals in rigid floor, made with use of Squeezer Compact:**

**Table C19.1 PP-R pipes (maximum 4 pipes in bundle)**

Pipe material	Single pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PP-R	$\varnothing \leq 32$	2,9 – 5,4	30	7,5	EI 120 – U/C EI 120 – C/C
	$32 < \varnothing \leq 40$	3,5 – 6,7	60	10,0	
	$40 < \varnothing \leq 49$	4,1 – 8,2	60	12,5	
	$49 < \varnothing \leq 57$	4,6 – 9,5	60	15,0	
	$57 < \varnothing \leq 66$	5,2 – 11,0	60	17,5	
	$66 < \varnothing \leq 75$	5,8 – 12,5	60	20,0	

<b>Squeezer Compact and Maxi Wrap</b>	<b>Annex C19</b>  of European Technical Assessment ETA-17/0867
<b>Construction details and resistance to fire classification of penetration seals made with use of Squeezer Compact</b> Plastic pipes bundle penetration seal in rigid floor	

**Plastic pipe penetration seal in rigid floor, made with use of Squeezer Compact.**



- 1 Rigid floor with thickness  $\geq 150$  mm and density  $\geq 600$  kg/m<sup>3</sup>
- 2 Plastic pipe
- 3 Squeezer Compact, fixed at the bottom of the floor
- 4 Fastener M6x60, number of fasteners in accordance with Annex A

<b>Squeezer Compact and Maxi Wrap</b>	<b>Annex C20</b>  of European Technical Assessment ETA-17/0867
Construction details of penetration seals made with use of Squeezer Compact Plastic pipe penetration seal in rigid floor	

**Resistance to fire classification of plastic pipes penetration seals in rigid floor, made with use of Squeezer Compact, in accordance with Annex C20:**

**Table C21.1 PE-HD pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PE-HD	$\varnothing \leq 63$	3,0 – 5,8	30	5,0	EI 120 – U/C EI 120 – C/C
	$63 < \varnothing \leq 87$	3,8 – 7,9	30	7,5	
	$87 < \varnothing \leq 111$	4,6 – 10,1	30	10,0	
	$111 < \varnothing \leq 135$	5,4 – 12,3	30	12,5	
	$135 < \varnothing \leq 160$	6,2 – 14,6	30	15,0	
	$160 < \varnothing \leq 205$	7,9 – 12,1	60	17,5	
	$205 < \varnothing \leq 250$	9,6	60	20,0	

**Table C21.2 PP-R pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PP-R	$\varnothing \leq 63$	5,8 – 10,5	30	5,0	EI 120 – U/C EI 120 – C/C
	$63 < \varnothing \leq 87$	5,8 – 9,2	30	7,5	
	$87 < \varnothing \leq 111$	5,8 – 8,0	30	10,0	
	$111 < \varnothing \leq 135$	5,7 – 6,8	30	12,5	
	$135 < \varnothing \leq 160$	5,6	30	15,0	

**Table C21.3 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 63$	2,0 – 5,1	30	5,0	EI 120 – U/C EI 120 – C/C
	$63 < \varnothing \leq 87$	2,3 – 5,0	30	7,5	
	$87 < \varnothing \leq 111$	2,6 – 4,9	30	10,0	
	$111 < \varnothing \leq 135$	2,9 – 4,8	30	12,5	
	$135 < \varnothing \leq 160$	3,2 – 4,7	30	15,0	
	$160 < \varnothing \leq 205$	4,7 – 8,5	60	17,5	
	$205 < \varnothing \leq 250$	6,2 – 9,6	60	20,0	

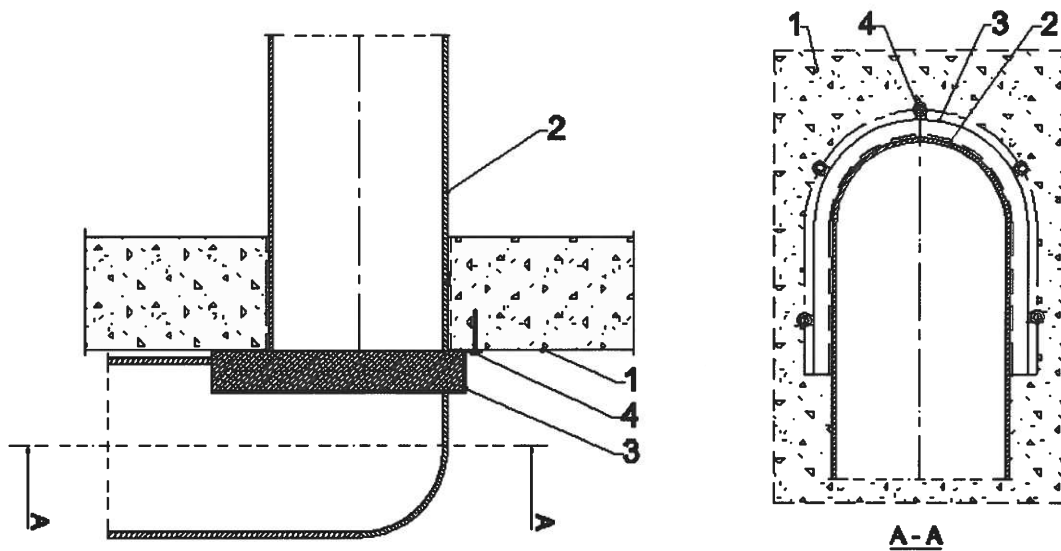
**Squeezer Compact and Maxi Wrap**

**Resistance to fire classification of penetration seals made with use of Squeezer Compact**  
Plastic pipe penetration seal in rigid floor

**Annex C21**

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**Plastic pipe penetration seal in rigid floor, made with use of Squeezer Compact – pipe elbow on the bottom of the floor.**



- 1 Rigid floor with thickness  $\geq 150$  mm and density  $\geq 600$  kg/m<sup>3</sup>
- 2 Plastic pipe
- 3 Squeezer Compact, fixed at the bottom of the floor
- 4 Fastener M6x60, number of fasteners in accordance with Annex A

**Resistance to fire classification of plastic pipe elbow penetration seals in rigid floor, made with use of Squeezer Compact:**

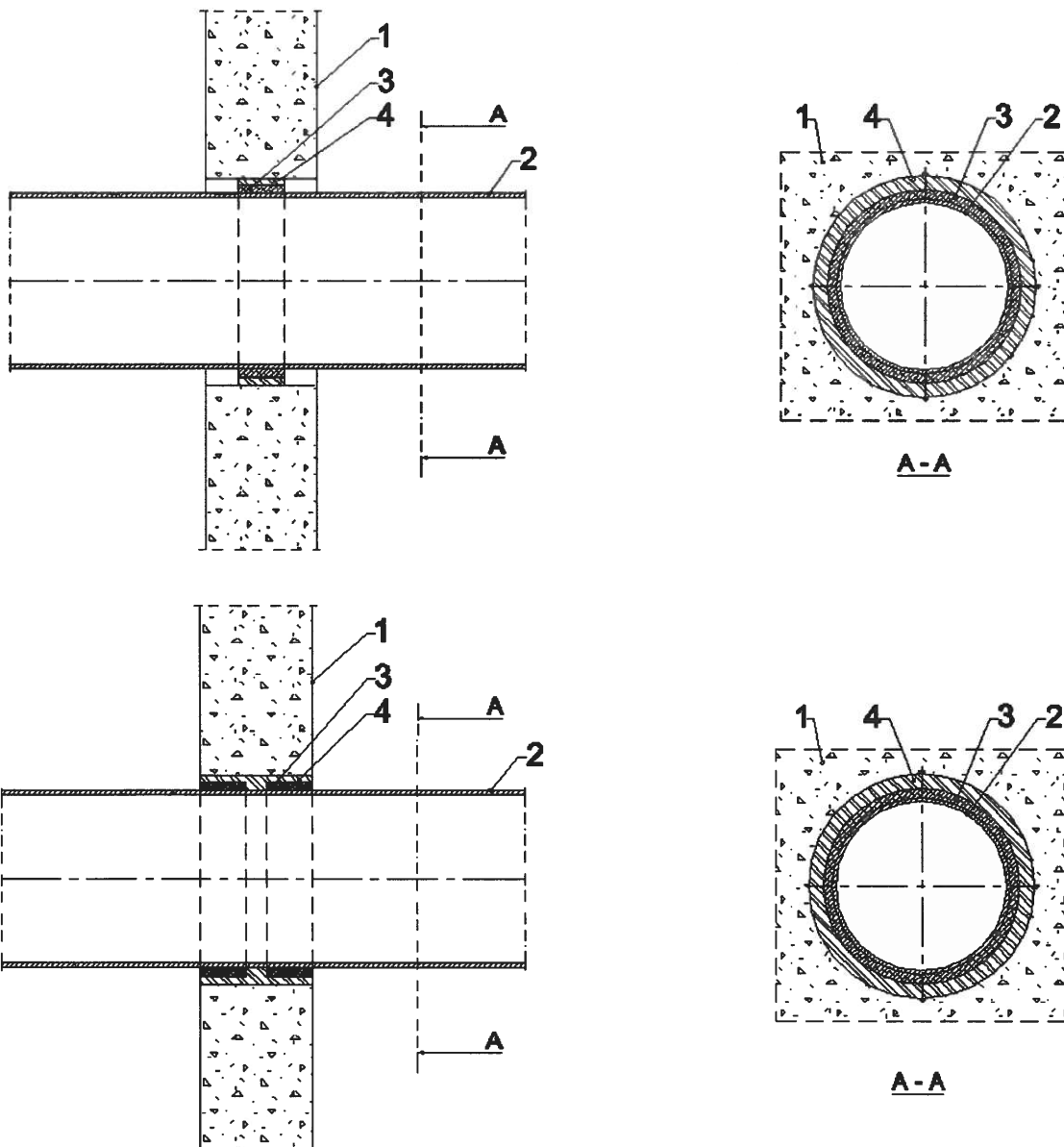
**Table C22.1 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 63$	2,0 – 5,1	30	5,0	EI 120 – U/C EI 120 – C/C
	$63 < \varnothing \leq 86$	2,3 – 5,7	30	7,5	
	$86 < \varnothing \leq 110$	2,6 – 6,5	30	10,0	
	$110 < \varnothing \leq 135$	2,9 – 5,6	30	12,5	
	$135 < \varnothing \leq 160$	3,2 – 4,7	30	15,0	

<b>Squeezer Compact and Maxi Wrap</b>	<b>Annex C22</b>
<b>Construction details and resistance to fire classification of penetration seals made with use of Squeezer Compact</b> Plastic pipe elbow penetration seal in rigid floor	of European Technical Assessment ETA-17/0867



**Plastic pipe penetration seal in rigid wall, made with use of Maxi Wrap.**



- 1 Rigid wall with thickness  $\geq 100 \text{ mm}$ <sup>\*)</sup> and density  $\geq 600 \text{ kg/m}^3$
  - 2 Plastic pipe
  - 3 Maxi Wrap:
    - one wrap for pipes with diameter  $\leq 75 \text{ mm}$ , placed in the centre of the wall thickness
    - two wraps for pipes with diameter  $> 75 \text{ mm}$ , placed symmetrically on both sides of the axis of the wall
  - 4 Gap filler (cement or gypsum mortar); gap width  $\leq 15 \text{ mm}$
- <sup>\*)</sup> In certain cases wall thickness is increased to  $\geq 150 \text{ mm}$ , by means of two layers of 12,5 mm thick 'Type F' gypsum plasterboards according to EN 520, placed on both sides of the wall (see Table C24.3 in Annex C24)

<b>Squeezer Compact and Maxi Wrap</b>	<b>Annex C23</b>  of European Technical Assessment ETA-17/0867
Construction details of penetration seals made with use of Maxi Wrap Plastic pipe penetration seal in rigid wall	

**Resistance to fire classification of plastic pipes penetration seals in rigid wall, made with use of Maxi Wrap, in accordance with Annex C23:**

**Table C24.1 PE-HD pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PE-HD	$\varnothing \leq 75$	3,0 – 6,8	60	5,0	EI 60 – U/C EI 60 – C/C
	$75 < \varnothing \leq 96$	3,8 – 8,7	60	7,5	
	$96 < \varnothing \leq 117$	4,6 – 10,6	60	10,0	
	$117 < \varnothing \leq 138$	5,4 – 12,5	60	12,5	
	$138 < \varnothing \leq 160$	6,2 – 14,6	60	15,0	
	$160 < \varnothing \leq 205$	7,9 – 14,6	60	17,5	
	$205 < \varnothing \leq 250$	9,6 – 14,6	60	20,0	

**Table C24.2 PP-R pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PP-R	$\varnothing \leq 75$	6,8 – 12,5	60	5,0	EI 60 – U/C EI 60 – C/C
	$75 < \varnothing \leq 96$	6,6 – 13,0	60	7,5	
	$96 < \varnothing \leq 117$	6,3 – 13,5	60	10,0	
	$117 < \varnothing \leq 138$	6,0 – 14,0	60	12,5	
	$138 < \varnothing \leq 160$	5,6 – 14,6	60	15,0	

**Table C24.3 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 75$	1,8 – 6,5	60	5,0	EI 60 – U/C EI 60 – C/C
	$75 < \varnothing \leq 96$	2,2 – 6,0	60	7,5	
		2,8 – 6,8 <sup>)</sup>	60 <sup>)</sup>	7,5 <sup>)</sup>	EI 60 – U/C <sup>)</sup> EI 60 – C/C <sup>)</sup>
	$96 < \varnothing \leq 117$	2,5 – 5,6	60	10,0	EI 60 – U/C EI 60 – C/C
		3,7 – 7,2 <sup>)</sup>	60 <sup>)</sup>	10,0 <sup>)</sup>	EI 60 – U/C <sup>)</sup> EI 60 – C/C <sup>)</sup>
	$117 < \varnothing \leq 138$	2,9 – 5,1	60	12,5	EI 60 – U/C EI 60 – C/C
		4,7 – 7,6 <sup>)</sup>	60 <sup>)</sup>	12,5 <sup>)</sup>	EI 60 – U/C <sup>)</sup> EI 60 – C/C <sup>)</sup>

**Squeezer Compact and Maxi Wrap**

**Resistance to fire classification of penetration seals made with use of Maxi Wrap**  
Plastic pipe penetration seal in rigid wall

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**Table C24.3 (continued) PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	138 < Ø ≤ 160	3,2 – 4,7	60	15,0	EI 60 – U/C EI 60 – C/C
		4,7 – 8,0 <sup>*)</sup>	60 <sup>*)</sup>	15,0 <sup>*)</sup>	EI 60 – U/C <sup>*)</sup> EI 60 – C/C <sup>*)</sup>
	160 < Ø ≤ 205	4,7 – 8,8 <sup>*)</sup>	60 <sup>*)</sup>	17,5 <sup>*)</sup>	
	205 < Ø ≤ 250	6,2 – 9,6 <sup>*)</sup>	60 <sup>*)</sup>	20,0 <sup>*)</sup>	

<sup>\*)</sup> wall thickness ≥ 150 mm (initial thickness increased by two layers of 12,5 mm thick 'Type F' gypsum plasterboards according to EN 520, placed on both sides of the wall)

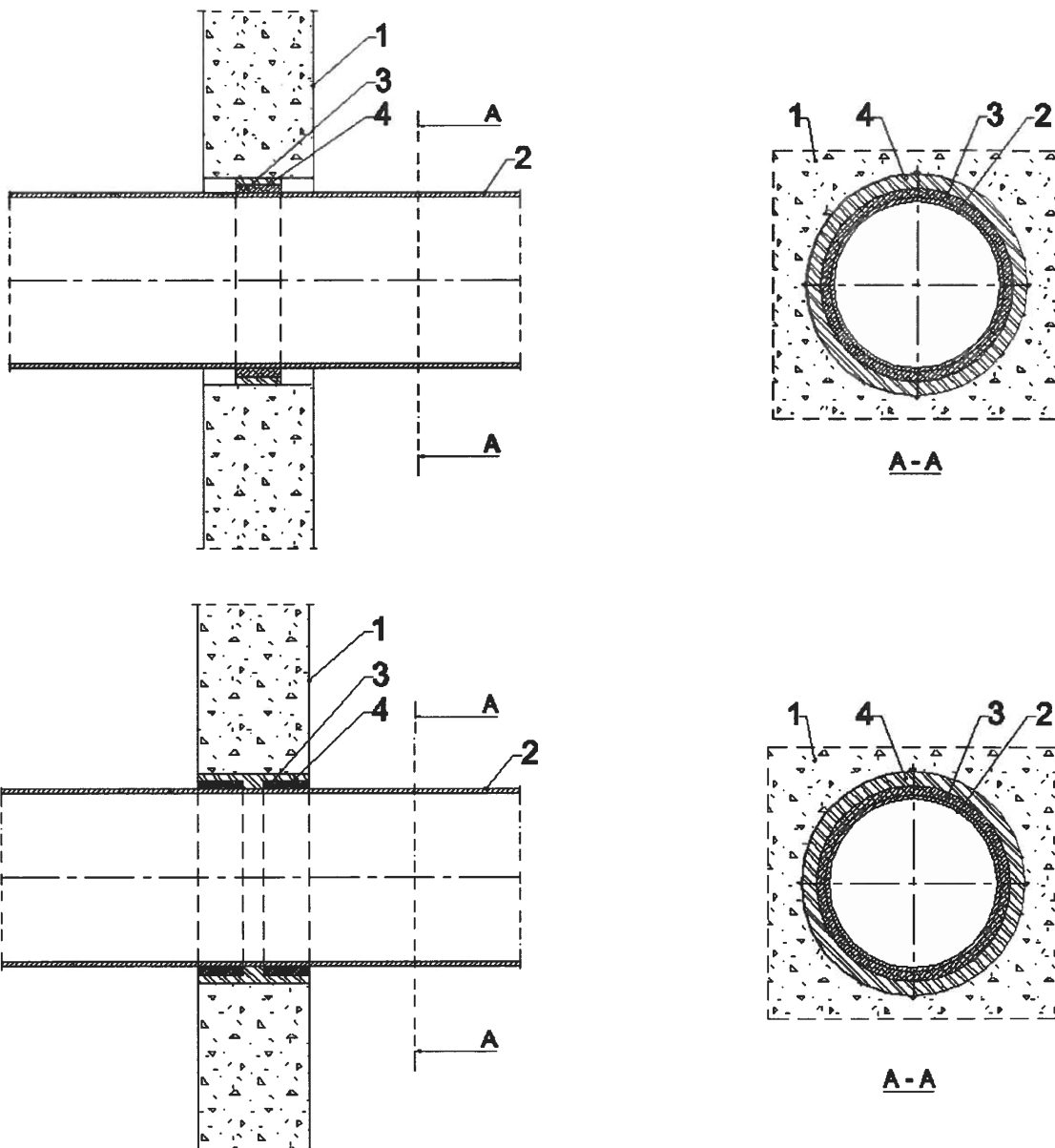
**Squeezer Compact and Maxi Wrap**

**Resistance to fire classification of penetration seals  
made with use of Maxi Wrap**  
Plastic pipe penetration seal in rigid wall

**Annex C24**

of European  
Technical Assessment  
ETA-17/0867

**Plastic pipe penetration seal in rigid wall, made with use of Maxi Wrap.**



- 1 Rigid wall with thickness  $\geq 100 \text{ mm}$ <sup>1)</sup> and density  $\geq 600 \text{ kg/m}^3$
  - 2 Plastic pipe
  - 3 Maxi Wrap:
    - one wrap for pipes with diameter  $\leq 75 \text{ mm}$ , placed in the centre of the wall thickness
    - two wraps for pipes with diameter  $> 75 \text{ mm}$ , placed symmetrically on both sides of the axis of the wall
  - 4 Gap filler (cement or gypsum mortar); gap width  $\leq 15 \text{ mm}$
- <sup>1)</sup> In certain cases wall thickness is increased to  $\geq 150 \text{ mm}$ , by means of two layers of 12,5 mm thick 'Type F' gypsum plasterboards according to EN 520, placed on both sides of the wall (see Table C26.3 in Annex C26)

<b>Squeezer Compact and Maxi Wrap</b>	<b>Annex C25</b>
Construction details of penetration seals made with use of Maxi Wrap Plastic pipe penetration seal in rigid wall	of European Technical Assessment ETA-17/0867

**Resistance to fire classification of plastic pipes penetration seals in rigid wall, made with use of Maxi Wrap, in accordance with Annex C25:**

**Table C26.1 PE-HD pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PE-HD	$\varnothing \leq 75$	3,0 – 6,8	60	5,0	EI 90 – U/C EI 90 – C/C
	$75 < \varnothing \leq 96$	4,4 – 8,7	60	7,5	
	$96 < \varnothing \leq 117$	5,8 – 10,6	60	10,0	
	$117 < \varnothing \leq 138$	7,2 – 12,5	60	12,5	
	$138 < \varnothing \leq 160$	8,7 – 14,6	60	15,0	
	$160 < \varnothing \leq 205$	11,7 – 14,6	60	17,5	
	$205 < \varnothing \leq 250$	14,6	60	20,0	

**Table C26.2 PP-R pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PP-R	$\varnothing \leq 75$	6,8 – 12,5	60	5,0	EI 90 – U/C EI 90 – C/C
	$75 < \varnothing \leq 96$	6,6 – 13,0	60	7,5	
	$96 < \varnothing \leq 117$	6,3 – 13,5	60	10,0	
	$117 < \varnothing \leq 138$	6,0 – 14,0	60	12,5	
	$138 < \varnothing \leq 160$	5,6 – 14,6	60	15,0	

**Table C26.3 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 75$	1,8 – 6,5	60	5,0	EI 90 – U/C EI 90 – C/C
		2,2 – 6,0	60	7,5	
	$75 < \varnothing \leq 96$	2,8 – 6,8 <sup>)</sup>	60 <sup>)</sup>	7,5 <sup>)</sup>	EI 90 – U/C <sup>)</sup> EI 90 – C/C <sup>)</sup>
		2,5 – 5,6	60	10,0	EI 90 – U/C EI 90 – C/C
	$96 < \varnothing \leq 117$	3,7 – 7,2 <sup>)</sup>	60 <sup>)</sup>	10,0 <sup>)</sup>	EI 90 – U/C <sup>)</sup> EI 90 – C/C <sup>)</sup>
		2,9 – 5,1	60	12,5	EI 90 – U/C EI 90 – C/C
	$117 < \varnothing \leq 138$	4,7 – 7,6 <sup>)</sup>	60 <sup>)</sup>	12,5 <sup>)</sup>	EI 90 – U/C <sup>)</sup> EI 90 – C/C <sup>)</sup>

**Squeezer Compact and Maxi Wrap**

**Resistance to fire classification of penetration seals made with use of Maxi Wrap**  
Plastic pipe penetration seal in rigid wall

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**Table C26.3 (continued) PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	138 < $\varnothing$ ≤ 160	3,2 – 4,7	60	15,0	EI 90 – U/C EI 90 – C/C
		4,7 – 8,0 <sup>*)</sup>	60 <sup>*)</sup>	15,0 <sup>*)</sup>	EI 90 – U/C <sup>*)</sup> EI 90 – C/C <sup>*)</sup>
	160 < $\varnothing$ ≤ 205	4,7 – 8,8 <sup>*)</sup>	60 <sup>*)</sup>	17,5 <sup>*)</sup>	
	205 < $\varnothing$ ≤ 250	6,2 – 9,6 <sup>*)</sup>	60 <sup>*)</sup>	20,0 <sup>*)</sup>	

<sup>\*)</sup> wall thickness ≥ 150 mm (initial thickness increased by two layers of 12,5 mm thick 'Type F' gypsum plasterboards according to EN 520, placed on both sides of the wall)

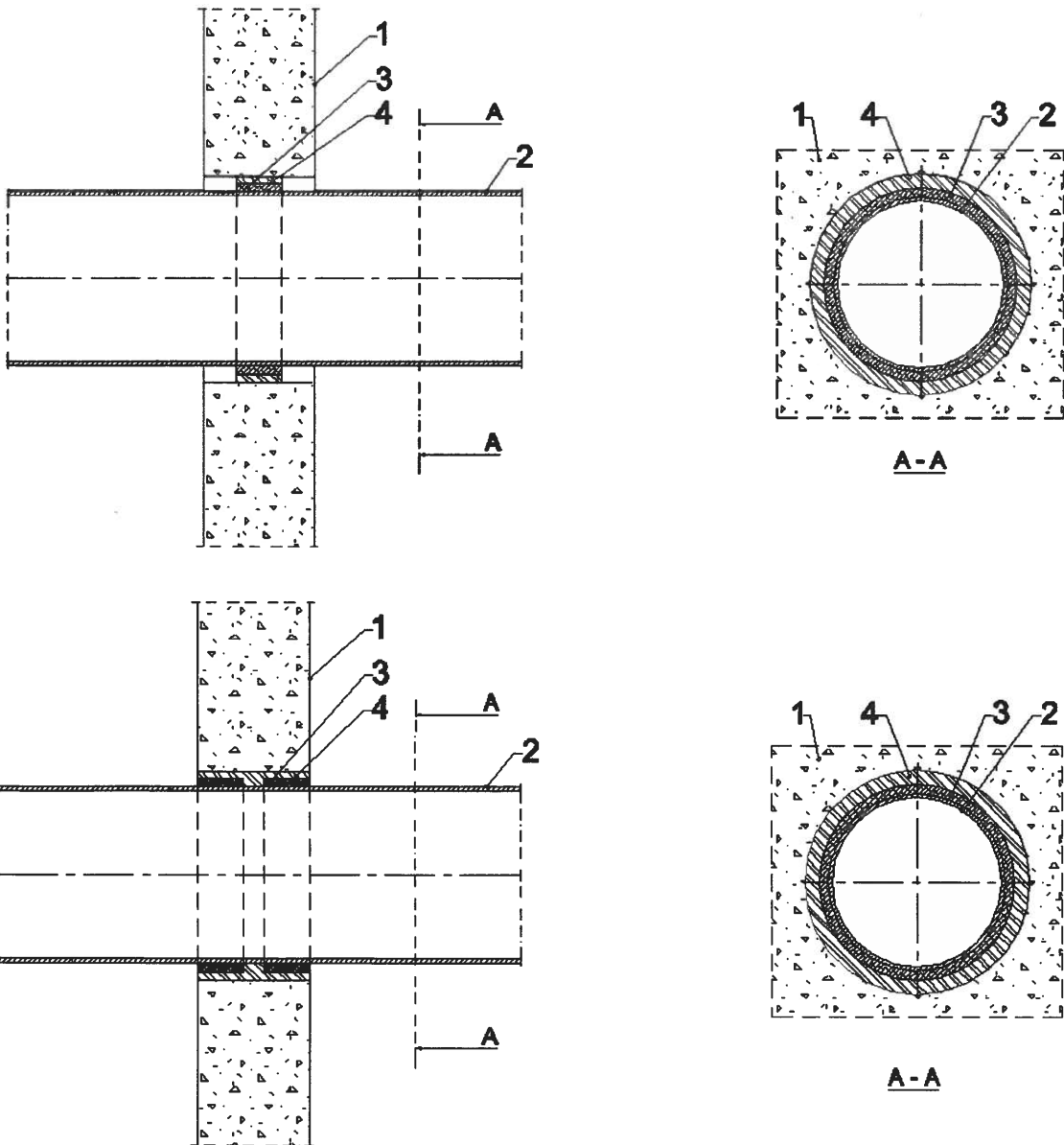
**Squeezer Compact and Maxi Wrap**

**Resistance to fire classification of penetration seals  
made with use of Maxi Wrap**  
Plastic pipe penetration seal in rigid wall

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of European  
Technical Assessment  
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**Plastic pipe penetration seal in rigid wall, made with use of Maxi Wrap.**



- 1 Rigid wall with thickness  $\geq 100 \text{ mm}$ <sup>1)</sup> and density  $\geq 600 \text{ kg/m}^3$
  - 2 Plastic pipe
  - 3 Maxi Wrap:
    - one wrap for pipes with diameter  $\leq 75 \text{ mm}$ , placed in the centre of the wall thickness
    - two wraps for pipes with diameter  $> 75 \text{ mm}$ , placed symmetrically on both sides of the axis of the wall
  - 4 Gap filler (cement or gypsum mortar); gap width  $\leq 15 \text{ mm}$
- <sup>1)</sup> In certain cases wall thickness is increased to  $\geq 150 \text{ mm}$ , by means of two layers of 12,5 mm thick 'Type F' gypsum plasterboards according to EN 520, placed on both sides of the wall (see Table C28.3 in Annex C28)

<b>Squeezer Compact and Maxi Wrap</b>	<b>Annex C27</b>
<b>Construction details of penetration seals made with use of Maxi Wrap</b> Plastic pipe penetration seal in rigid wall	of European Technical Assessment ETA-17/0867

**Resistance to fire classification of plastic pipes penetration seals in rigid wall, made with use of Maxi Wrap, in accordance with Annex C27:**

**Table C28.1 PE-HD pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PE-HD	$\varnothing \leq 75$	3,0 – 6,8	60	5,0	EI 120 – U/C EI 120 – C/C
	$75 < \varnothing \leq 96$	4,4 – 8,7	60	7,5	
	$96 < \varnothing \leq 117$	5,8 – 10,6	60	10,0	
	$117 < \varnothing \leq 138$	7,2 – 12,5	60	12,5	
	$138 < \varnothing \leq 160$	8,7 – 14,6	60	15,0	
	$160 < \varnothing \leq 205$	11,7 – 14,6	60	17,5	
	$205 < \varnothing \leq 250$	14,6	60	20,0	

**Table C28.2 PP-R pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PP-R	$\varnothing \leq 75$	6,8 – 12,5	60	5,0	EI 120 – U/C EI 120 – C/C
	$75 < \varnothing \leq 96$	8,8 – 13,0	60	7,5	
	$96 < \varnothing \leq 117$	10,7 – 13,5	60	10,0	
	$117 < \varnothing \leq 138$	12,6 – 14,0	60	12,5	
	$138 < \varnothing \leq 160$	8,7 – 14,6	60	15,0	

**Table C28.3 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 75$	1,8 – 6,5	60	5,0	EI 120 – U/C EI 120 – C/C
	$75 < \varnothing \leq 96$	2,8 – 6,8 <sup>*)</sup>	60 <sup>*)</sup>	7,5 <sup>*)</sup>	EI 120 – U/C <sup>*)</sup> EI 120 – C/C <sup>*)</sup>
	$96 < \varnothing \leq 117$	3,7 – 7,2 <sup>*)</sup>	60 <sup>*)</sup>	10,0 <sup>*)</sup>	
	$117 < \varnothing \leq 138$	4,7 – 7,6 <sup>*)</sup>	60 <sup>*)</sup>	12,5 <sup>*)</sup>	
	$138 < \varnothing \leq 160$	5,6 – 8,0 <sup>*)</sup>	60 <sup>*)</sup>	15,0 <sup>*)</sup>	
	$160 < \varnothing \leq 205$	7,6 – 8,8 <sup>*)</sup>	60 <sup>*)</sup>	17,5 <sup>*)</sup>	
	$205 < \varnothing \leq 250$	9,6 <sup>*)</sup>	60 <sup>*)</sup>	20,0 <sup>*)</sup>	

<sup>\*)</sup> wall thickness  $\geq 150$  mm (initial thickness increased by two layers of 12,5 mm thick 'Type F' gypsum plasterboards according to EN 520, placed on both sides of the wall)

**Squeezer Compact and Maxi Wrap**

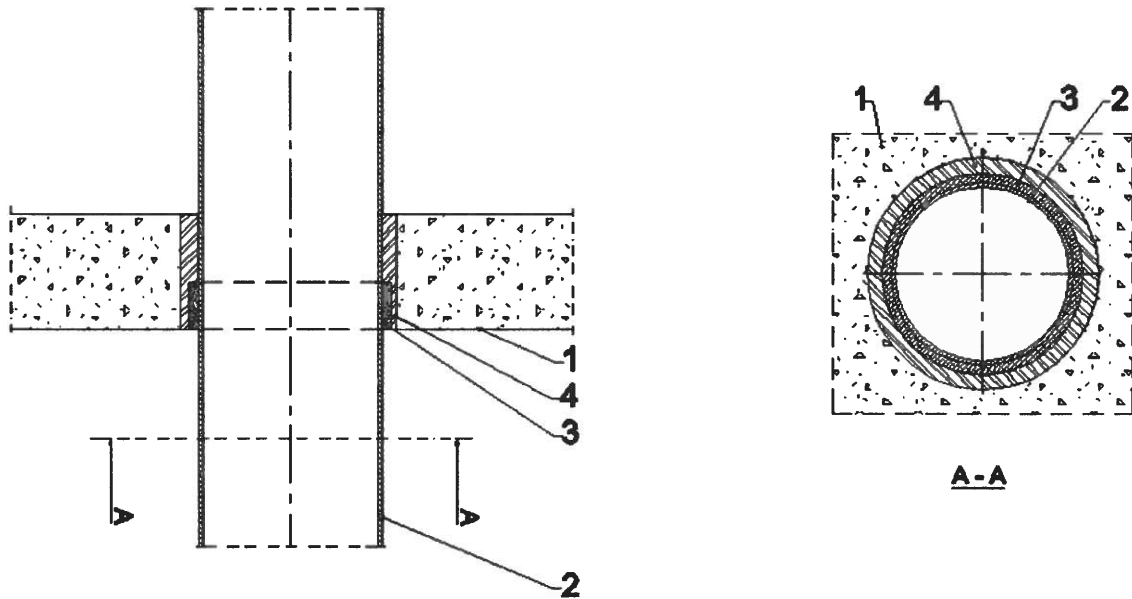
**Resistance to fire classification of penetration seals made with use of Maxi Wrap**  
Plastic pipe penetration seal in rigid wall

**Annex C28**

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**Plastic pipe penetration seal in rigid floor, made with use of Maxi Wrap.**



- 1 Rigid floor with thickness  $\geq 150$  mm and density  $\geq 600$  kg/m<sup>3</sup>
- 2 Plastic pipe
- 3 Maxi Wrap placed on the bottom of the floor
- 4 Gap filler (cement or gypsum mortar); gap width  $\leq 15$  mm

**Squeezer Compact and Maxi Wrap**

**Construction details of penetration seals  
made with use of Maxi Wrap**  
Plastic pipe penetration seal in rigid floor

**Annex C29**

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**Resistance to fire classification of plastic pipes penetration seals in rigid floor, made with use of Maxi Wrap, in accordance with Annex C29:**

**Table C30.1 PE-HD pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PE-HD	$\varnothing \leq 75$	3,0 – 6,8	60	5,0	EI 45 – U/C EI 45 – C/C
	$75 < \varnothing \leq 96$	3,8 – 8,7	60	7,5	
	$96 < \varnothing \leq 117$	4,6 – 10,6	60	10,0	
	$117 < \varnothing \leq 138$	5,4 – 12,5	60	12,5	
	$138 < \varnothing \leq 160$	6,2 – 14,6	60	15,0	
	$160 < \varnothing \leq 205$	7,9 – 14,6	60	17,5	
	$205 < \varnothing \leq 250$	9,6 – 14,6	60	20,0	

**Table C30.2 PP-R pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PP-R	$\varnothing \leq 75$	6,8 – 12,5	60	5,0	EI 45 – U/C EI 45 – C/C
	$75 < \varnothing \leq 96$	6,6 – 13,0	60	7,5	
	$96 < \varnothing \leq 117$	6,3 – 13,5	60	10,0	
	$117 < \varnothing \leq 138$	6,0 – 14,0	60	12,5	
	$138 < \varnothing \leq 160$	5,6 – 14,6	60	15,0	

**Table C30.3 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 75$	1,8 – 6,5	60	5,0	EI 45 – U/C EI 45 – C/C
	$75 < \varnothing \leq 96$	2,2 – 6,8	60	7,5	
	$96 < \varnothing \leq 117$	2,5 – 7,2	60	10,0	
	$117 < \varnothing \leq 138$	2,9 – 7,6	60	12,5	
	$138 < \varnothing \leq 160$	3,2 – 8,0	60	15,0	
	$160 < \varnothing \leq 205$	4,7 – 8,8	60	17,5	
	$205 < \varnothing \leq 250$	6,2 – 9,5	60	20,0	
		9,7 – 14,6	60	20,0	

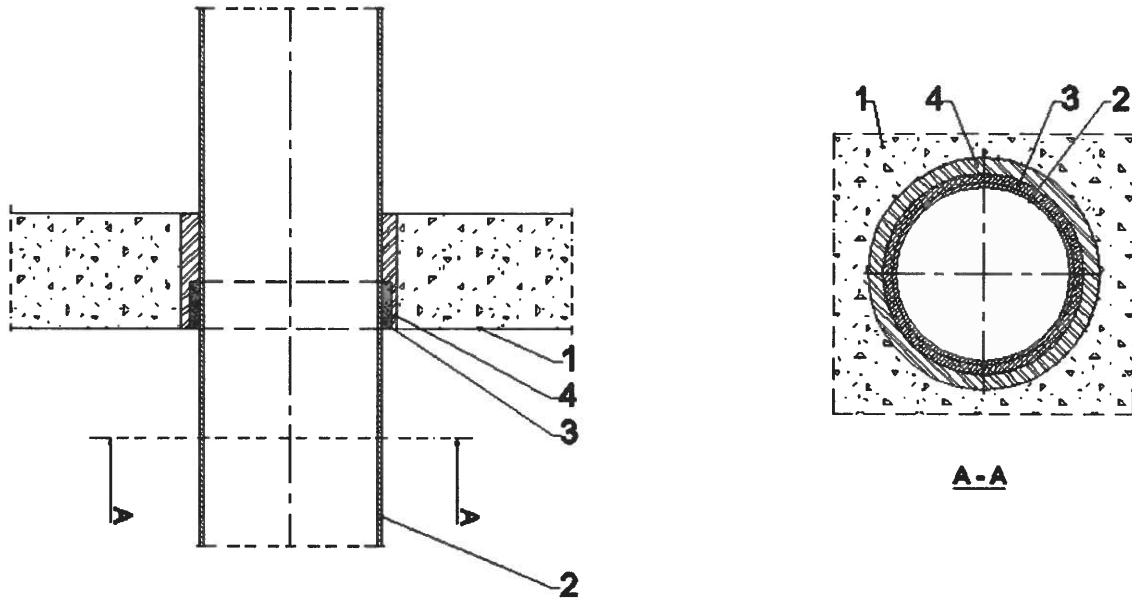
**Squeezer Compact and Maxi Wrap**

**Resistance to fire classification of penetration seals made with use of Maxi Wrap**  
Plastic pipe penetration seal in rigid floor

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**Plastic pipe penetration seal in rigid floor, made with use of Maxi Wrap.**



- 1 Rigid floor with thickness  $\geq 150$  mm and density  $\geq 600$  kg/m<sup>3</sup>
- 2 Plastic pipe
- 3 Maxi Wrap placed on the bottom of the floor
- 4 Gap filler (cement or gypsum mortar); gap width  $\leq 15$  mm

**Squeezer Compact and Maxi Wrap**

**Construction details of penetration seals  
made with use of Maxi Wrap  
Plastic pipe penetration seal in rigid floor**

**Annex C31**

**of European  
Technical Assessment  
ETA-17/0867**

**Resistance to fire classification of plastic pipes penetration seals in rigid floor, made with use of Maxi Wrap, in accordance with Annex C31:**

**Table C32.1 PE-HD pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PE-HD	$\varnothing \leq 75$	3,0 – 6,8	60	5,0	EI 90 – U/C EI 90 – C/C
	$75 < \varnothing \leq 96$	3,8 – 8,7	60	7,5	
	$96 < \varnothing \leq 117$	4,6 – 10,6	60	10,0	
	$117 < \varnothing \leq 138$	5,4 – 12,5	60	12,5	
	$138 < \varnothing \leq 160$	6,2 – 14,6	60	15,0	
	$160 < \varnothing \leq 205$	7,9 – 14,6	60	17,5	
	$205 < \varnothing \leq 250$	9,6 – 14,6	60	20,0	

**Table C32.2 PP-R pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PP-R	$\varnothing \leq 75$	6,8 – 12,5	60	5,0	EI 90 – U/C EI 90 – C/C
	$75 < \varnothing \leq 96$	6,6 – 13,0	60	7,5	
	$96 < \varnothing \leq 117$	6,3 – 13,5	60	10,0	
	$117 < \varnothing \leq 138$	6,0 – 14,0	60	12,5	
	$138 < \varnothing \leq 160$	5,6 – 14,6	60	15,0	

**Table C32.3 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 75$	1,8 – 6,5	60	5,0	EI 90 – U/C EI 90 – C/C
	$75 < \varnothing \leq 96$	2,2 – 6,8	60	7,5	
	$96 < \varnothing \leq 117$	2,5 – 7,2	60	10,0	
	$117 < \varnothing \leq 138$	2,9 – 7,6	60	12,5	
	$138 < \varnothing \leq 160$	3,2 – 8,0	60	15,0	
	$160 < \varnothing \leq 205$	6,4 – 8,8	60	17,5	
	$205 < \varnothing \leq 250$	9,7 – 14,6	60	20,0	

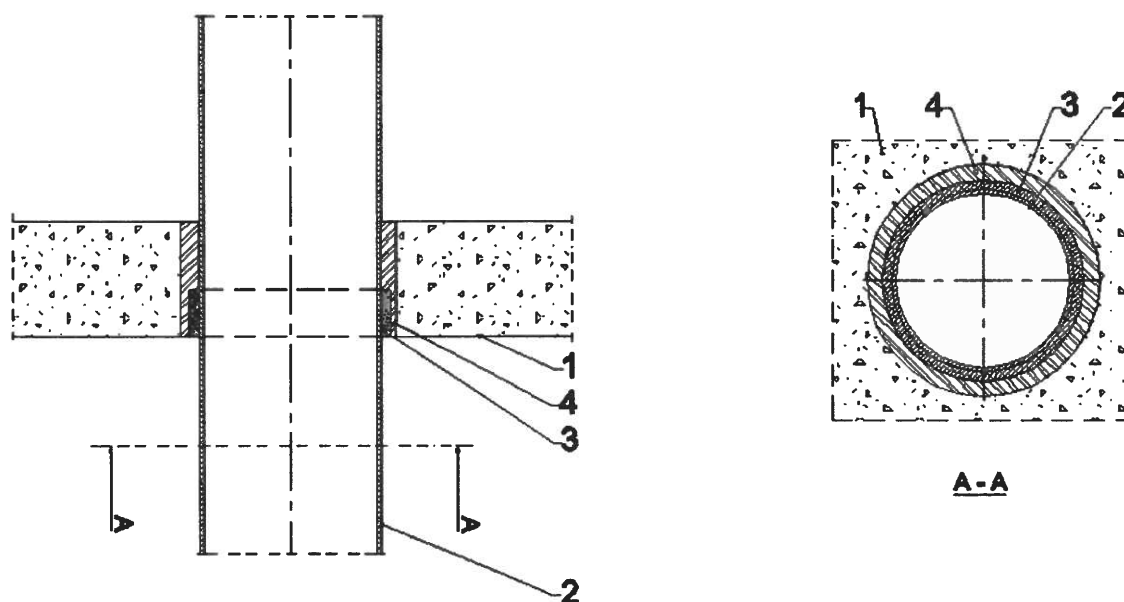
**Squeezer Compact and Maxi Wrap**

**Resistance to fire classification of penetration seals made with use of Maxi Wrap**  
Plastic pipe penetration seal in rigid floor

**Annex C32**

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**Plastic pipe penetration seal in rigid floor, made with use of Maxi Wrap.**



- 1 Rigid floor with thickness  $\geq 150$  mm and density  $\geq 600$  kg/m<sup>3</sup>
- 2 Plastic pipe
- 3 Maxi Wrap placed on the bottom of the floor
- 4 Gap filler (cement or gypsum mortar); gap width  $\leq 15$  mm

**Squeezer Compact and Maxi Wrap**

**Construction details of penetration seals  
made with use of Maxi Wrap**  
Plastic pipe penetration seal in rigid floor

**Annex C33**

of European  
Technical Assessment  
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**Resistance to fire classification of plastic pipes penetration seals in rigid floor, made with use of Maxi Wrap, in accordance with Annex C33:**

**Table C34.1 PE-HD pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PE-HD	$\varnothing \leq 75$	3,0 – 6,8	60	5,0	EI 120 – U/C EI 120 – C/C
	$75 < \varnothing \leq 96$	3,8 – 8,7	60	7,5	
	$96 < \varnothing \leq 117$	4,6 – 10,6	60	10,0	
	$117 < \varnothing \leq 138$	5,4 – 12,5	60	12,5	
	$138 < \varnothing \leq 160$	6,2 – 14,6	60	15,0	
	$160 < \varnothing \leq 205$	7,9 – 12,1	60	17,5	
	$205 < \varnothing \leq 250$	9,6	60	20,0	

**Table C34.2 PP-R pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PP-R	$\varnothing \leq 75$	6,8 – 12,5	60	5,0	EI 120 – U/C EI 120 – C/C
	$75 < \varnothing \leq 96$	6,6 – 13,0	60	7,5	
	$96 < \varnothing \leq 117$	6,3 – 13,5	60	10,0	
	$117 < \varnothing \leq 138$	6,0 – 14,0	60	12,5	
	$138 < \varnothing \leq 160$	5,6 – 14,6	60	15,0	

**Table C34.3 PVC-U / PVC-C pipes**

Pipe material	Pipe diameter, [mm]	Pipe wall thickness, [mm]	Intumescent material		Fire resistance class
			width, [mm]	thickness, [mm]	
PVC-U / PVC-C	$\varnothing \leq 75$	1,8 – 6,5	60	5,0	EI 120 – U/C EI 120 – C/C
	$75 < \varnothing \leq 96$	2,2 – 6,8	60	7,5	
	$96 < \varnothing \leq 117$	2,5 – 7,2	60	10,0	
	$117 < \varnothing \leq 138$	2,9 – 7,6	60	12,5	
	$138 < \varnothing \leq 160$	3,2 – 8,0	60	15,0	
	$160 < \varnothing \leq 205$	6,4 – 8,8	60	17,5	
	$205 < \varnothing \leq 250$	9,7 – 14,6	60	20,0	

**Squeezer Compact and Maxi Wrap**

**Resistance to fire classification of penetration seals  
made with use of Maxi Wrap  
Plastic pipe penetration seal in rigid floor**

**Annex C34**

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