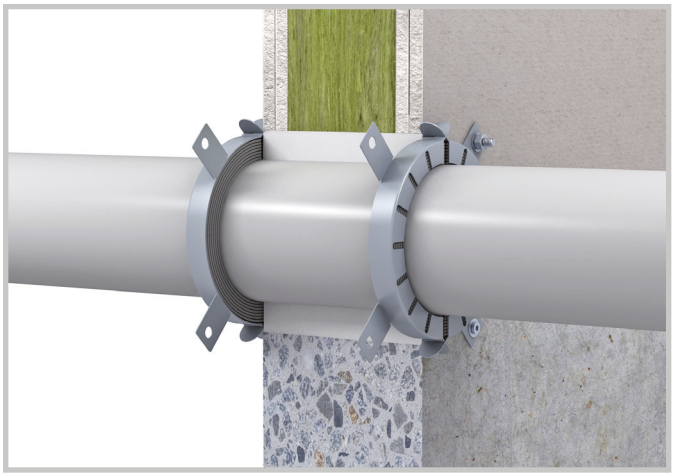
KUHN FIRE PROTECTION SYSTEMS

Assembly Instruction

ROKU® AWM II / AWM II Light

according to ETA-11/0208



Content

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Target audience

This assembly instruction is addressed exclusively to trained experts on fire technology.

Usage of assembly instruction

- Please read through the lot of this assembly instruction carefully prior to work start. Regard in particular the following safety information.
- The holder of assessment assumes no liability for damages which are caused by disregard for this assembly instruction.
- Graphic depictions serve as examples only. Assembly results may vary visually.

Safety information

For processing of partition components, please regard the safety data sheets.

Protection and hygiene measures:

- Observe the usual precautions when handling chemicals. Wash hands before work breaks and immediately after handling the product. Avoid contact with skin, eyes and clothing. Take off stained or soaked clothes immediately.

Eye wash with clean water (EN 15154).
Wear closed work clothing.

	Respiratory protection - Dust mask When exposure limit is exceeded (e.g. possible when turning on), use particle-filtering half mask FFP 1 (white).
	Hand protection - Protective gloves Use waterproof, abrasion- and alkali-restistant nitrile gloves. Different requirements can result depending on application. Therefore observe additional recommendations by the protective gloves' manufacturer.
	Eye protection – Use safety goggles
	Body protection – Use protective work wear

Do not eat, drink or smoke during work. After the end of work, clean uncovered body parts with soap.

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Components

Rigid walls

The wall must have a minimum thickness of ≥ 100 mm bzw. ≥ 300 mm (depending on pipe dimension and fire resistance classification) and consist of concrete, ferroconcrete or aerated concrete with a minimum raw density of 630 kg / m³. The wall shall be classified in accordance to EN 13501 - 2 for the required fire resistance period.

Lightweight partition walls

The lightweight partition wall must have a minimum thickness of ≥ 100 mm and consist of wooden or steel framework in accordance to EN14195. It should be encased on both sides with 2 layers of concrete or gypsum building panels (minimum thickness 12.5 mm) with the fire performance of class A1 or A2 in accordance to EN 13501-1.

Bei Holzständerwerk muss ein Mindestabstand von ≥ 100 mm der Schottung zu den einzelnen Ständern eingehalten werden und der Hohlraum zwischen den Bekleidungen der Wand und dem Ständer bzw. der Abschottung muss mindestens 100 mm tief mit Mineralwolle der Euro Klasse A1 oder A2 nach EN 13501 - 1 verstopft werden.

Die Wandkonstruktion muss nach EN13501 - 2 klassifiziert werden.

Rigid floor

The floor must have a minimum thickness of ≥ 150 mm or ≥ 300 mm (depending on pipe dimension and fire resistance classification) and consist of concrete, ferroconcrete or aerated concrete wit a minimum raw density of 630 kg / m³. The rigid floor shall be classified in accordance with EN 13501 – 2 for the required fire resistance period.

Application field

Identifier	Wall	Floor
Thickness of the component	≥ 100 mm or ≥ 300 mm	≥ 150 mm or ≥ 300 mm
Maximum dimension of isolated combustible pipelines	≤ 400 mm	≤ 400 mm
Distance to other openings or installations	≥ 200 mm	≥ 200 mm
Distance to other openings or installations if isolated component seal is not larger than 200 mm x 200 mm	≥ 100 mm	≥ 100 mm

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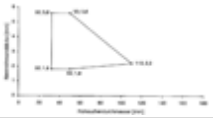
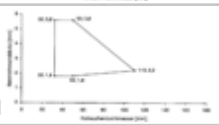
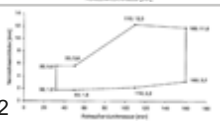
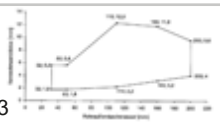
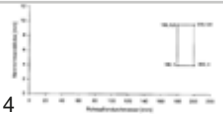
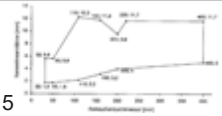
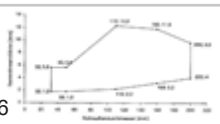
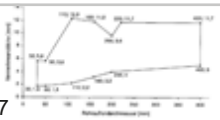
Approved assignments and classifications

The pipe penetration seal may be used on straight pipes which are fixed perpendicular to the wall or floor surface.
The pipe work shall only be used for non-combustible liquids and fluids, pneumatic dispatch systems or vacuum cleaning pipes.
Pneumatic dispatch, pneumatic lines or alike have to be turned of with additional measures in case of fire.
Pneumatische Förderanlagen, pnema müssen im Brandfall durch zusätzliche Maßnahmen abgeschaltet werden.

No ventilation system

Raw material PVC						
Component	Component thickness [mm]	Pipe-Ø [mm]	Fire resistance class		Pipe end configuration	Permitted pipe dimensions
			E	I		
Light partition wall	≥ 100	≤ 110	120	120	U/U	 Pic. 1
Rigid wall	≥ 100	≤ 110	120	120	U/U	 Pic. 1
Light partition wall	≥ 100	≤ 160	120	120	U/C	 Pic. 2
Rigid wall	≥ 100	≤ 200	120	120	U/C	 Pic. 3
Rigid wall	≥ 100	≥ 180 ≤ 200	120	120	U/C	 Pic. 4
Rigid wall	≥ 300	≤ 400	120	120	U/C	 Pic. 5
Rigid floor	≥ 150	≤ 200	120	120	U/C	 Pic. 6
Rigid floor	≥ 300	≤ 400	120	120	U/C	 Pic. 7

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Raw material PE-HD						
Component	Component thickness [mm]	Pipe-Ø [mm]	Fire resistance class		Pipe end configuration	Permitted pipe dimensions
			E	I		
Light partition wall	≥ 100	≤ 160	120	120	U/C	Pic. 8
Rigid wall	≥ 100	≤ 200	120	120	U/C	Pic. 9
Rigid wall	≥ 300	≤ 400	120	120	U/C	Pic. 10
Rigid floor	≥ 150	≤ 200	120	120	U/C	Pic. 11
Rigid floor	≥ 300	≤ 400	120	120	U/C	Pic. 12

Raw material PP						
Component	Component thickness [mm]	Pipe-Ø [mm]	Fire resistance class		Pipe end configuration	Permitted pipe dimensions
			E	I		
Light partition wall	≥ 100	≤ 160	120	120	U/C	Pic. 13
Rigid floor	≥ 100	≤ 200	120	120	U/C	Pic. 14
Rigid floor	≥ 150	≤ 200	120	120	U/C	Pic. 15
Rigid floor	≥ 300	≤ 315	120	120	U/C	Pic. 16

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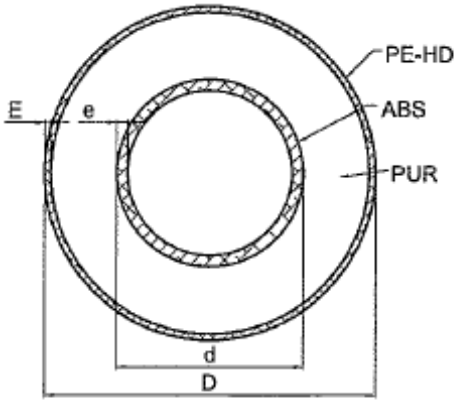
Special pipe „CoolFit“



d = Outer diameter ABS-pipe
D = Outer diameter PE-HD-pipe
e = Pipe wall thickness of ABS-pipe
E = Pipe wall thickness of PE-HD-pipe
G = Weight PUR + ABS

D [mm]	E [mm]	d [mm]	e [mm]	G [kg/m]	Component	Component thickness d_w or d_D	FRC
90	2,2	25	2,3	1,24	LTW, MW	≥ 100 mm	EI 120-U/C
					D	≥ 150 mm	
90	2,2	32	1,9	1,29	LTW, MW	≥ 100 mm	EI 120-U/C
					D	≥ 150 mm	
110	2,7	40	2,4	1,76	LTW, MW	≥ 100 mm	EI 120-U/C
					D	≥ 150 mm	
110	2,7	50	3,0	1,89	LTW, MW	≥ 100 mm	EI 120-U/C
					D	≥ 150 mm	
125	3,0	63	3,8	2,48	LTW, MW	≥ 100 mm	EI 120-U/C
					D	≥ 150 mm	
140	3,0	75	4,6	3,17	LTW, MW	≥ 100 mm	EI 120-U/C
					D	≥ 150 mm	EI 90-U/C
160	3,0	90	5,4	4,11	LTW, MW	≥ 100 mm	EI 120-U/C
					D	≥ 150 mm	EI 90-U/C
180	3,0	110	6,6	5,22	LTW, MW	≥ 100 mm	EI 120-U/C
					D	≥ 150 mm	EI 90-U/C
225	3,2	140	9,2	8,16	MW	≥ 240 mm	EI 120-U/C
					D	≥ 200 mm	EI 90-U/C
250	3,9	160	10,5	10,34	MW	≥ 240 mm	EI 120-U/C
					D	≥ 200 mm	EI 90-U/C
280	4,4	200	13,1	13,42	MW	≥ 240 mm	EI 90-U/C
					D	≥ 200 mm	
315	4,9	225	14,8	17,97	MW	≥ 240 mm	EI 90-U/C
					D	≥ 200 mm	EI 120-U/C

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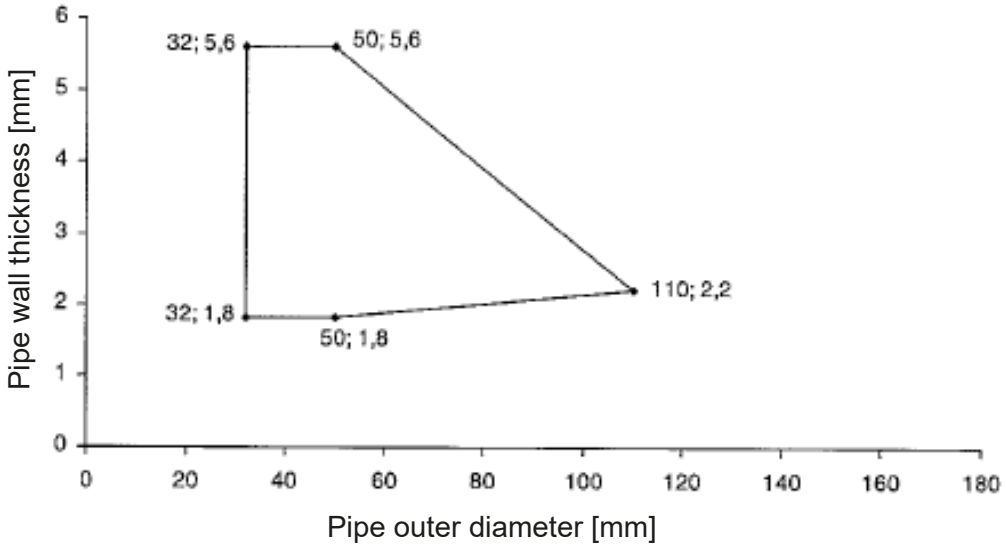
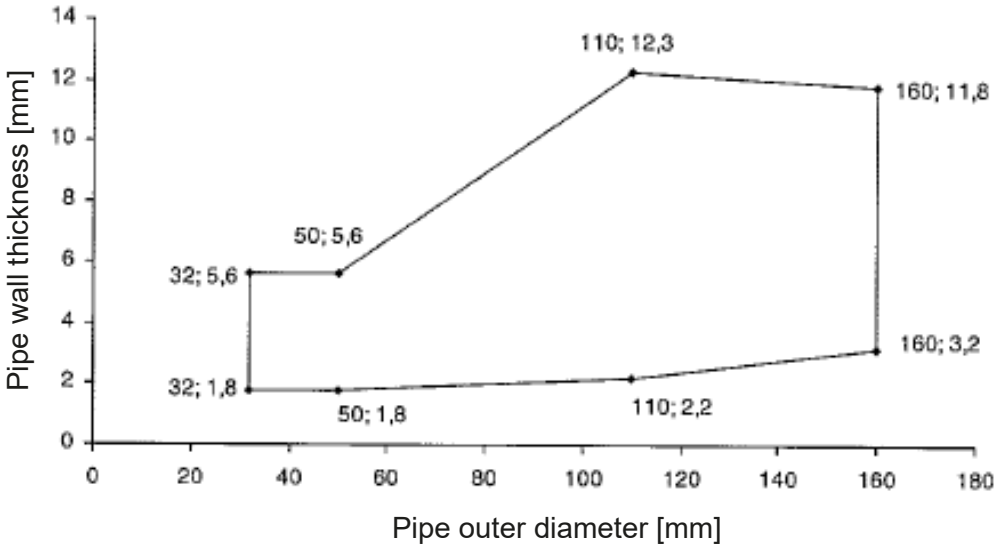
Pic. 1: Pipes according to pipe group A (PVC): Installation in light partition walls and rigid walls; $d_W \geq 100$mm; Fire resitance class EI 120-U/U



Pic. 2: Pipes according to pipe group A (PVC): Installation in light partitionwalls; $d_W \geq 100$mm; Fire resitance class EI 120-U/U



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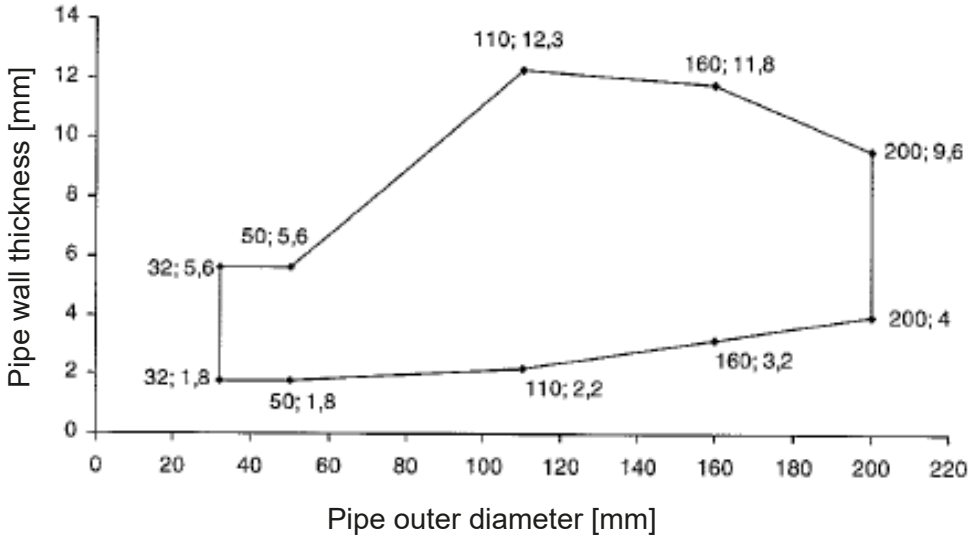
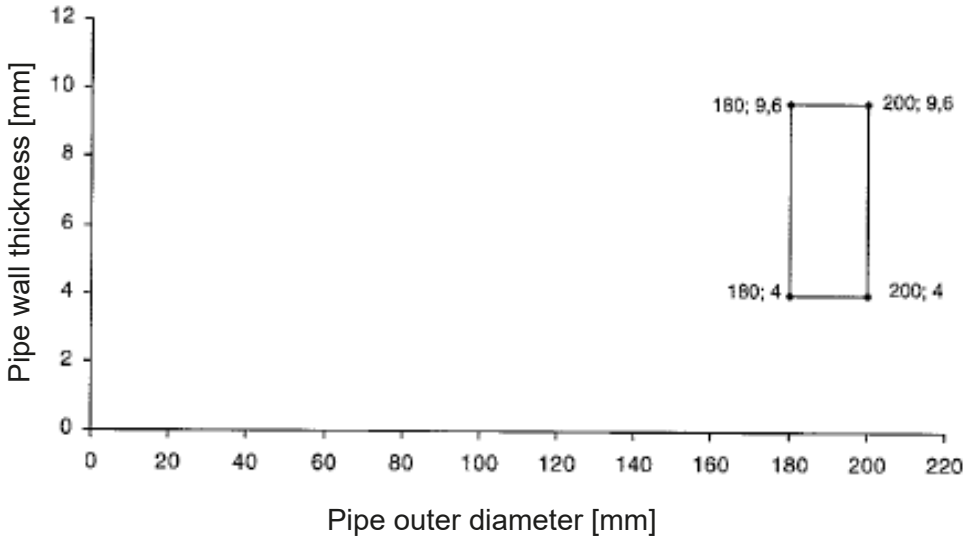
Pic. 3: Pipes according to pipe group A (PVC): Installation in rigid walls; $d_W \geq 100$mm; Fire resitance class EI 120-U/U



Pic. 4: Pipes according to pipe group A (PVC): Installation in rigid walls; $d_W \geq 100$mm; Fire resitance class EI 240-U/U



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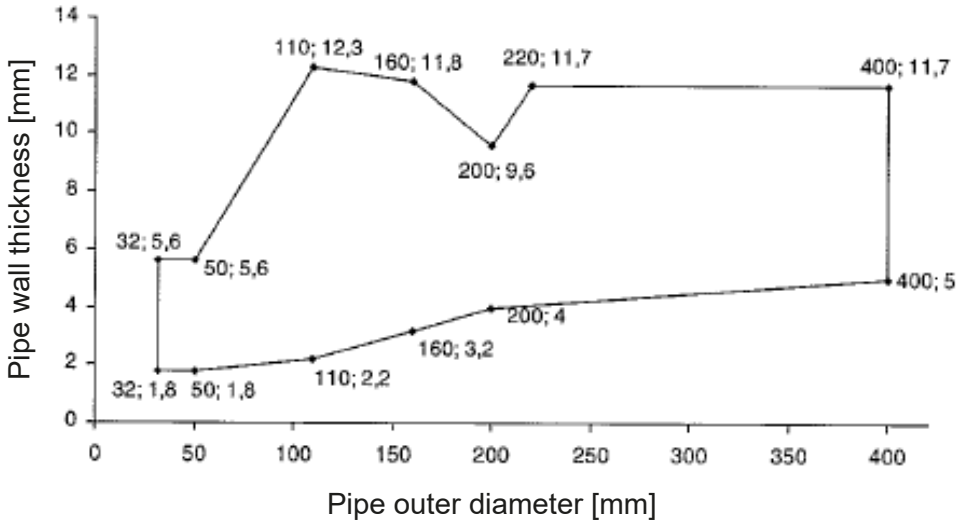
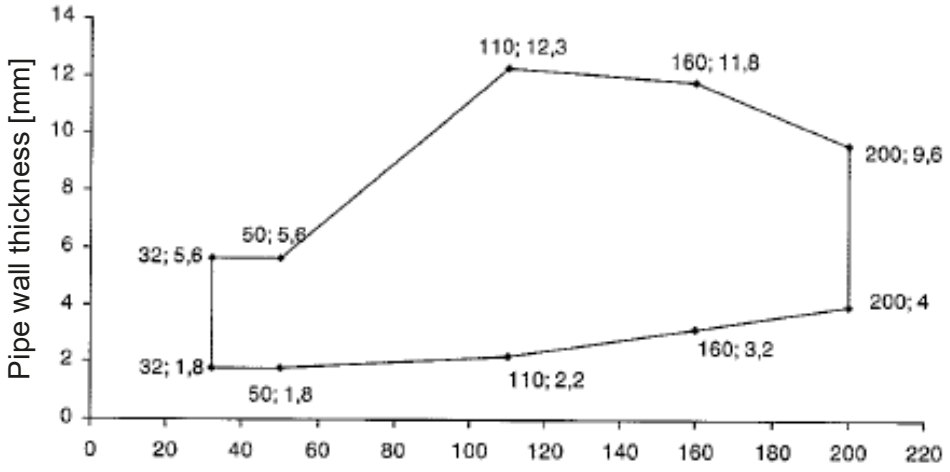
Pic. 5: Pipes according to pipe group A (PVC): Installation in rigid walls; $d_W \geq 300$mm; Fire resitance class EI 120-U/U



Pic. 6: Pipes according to pipe group A (PVC): Installation in rigid floors; $d_W \geq 150$mm; Fire resitance class EI 120-U/U



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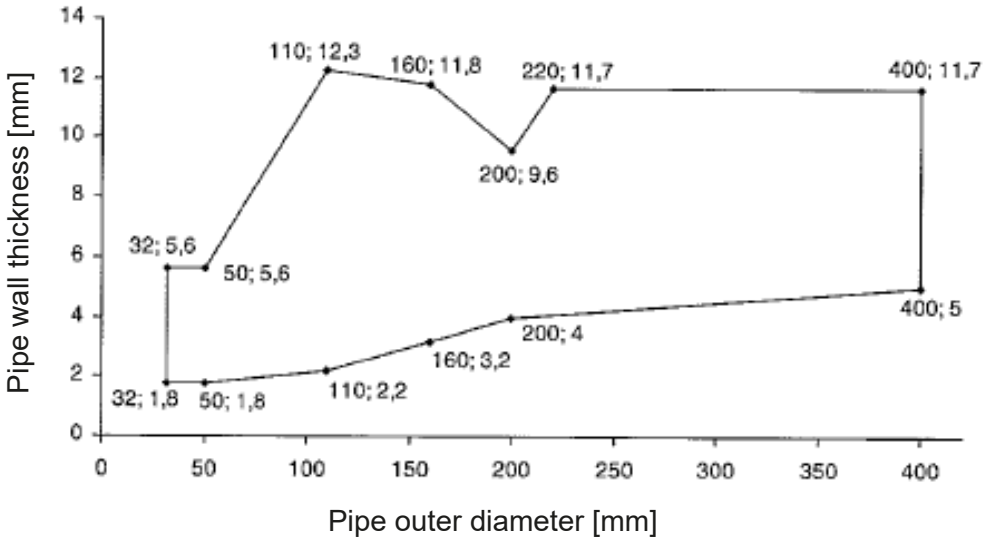
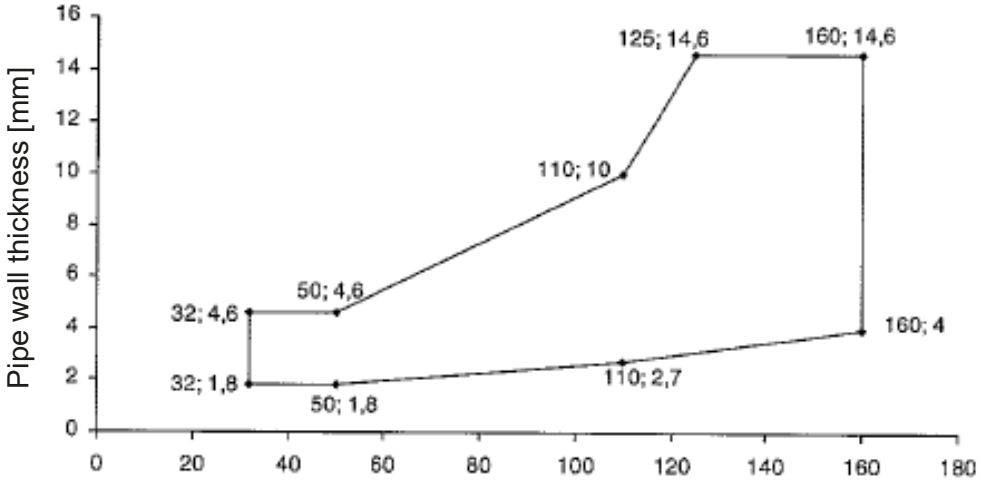
Pic. 7: Pipes according to pipe group A (PVC): Installation in rigid floors; $d_W \geq 300$mm; Fire resitance class EI 120-U/U



Pic. 8: Pipes according to pipe group B (PE-HD): Installation in light partition walls and rigid walls; $d_W \geq 100$mm; Fire resitance class EI 120-U/U



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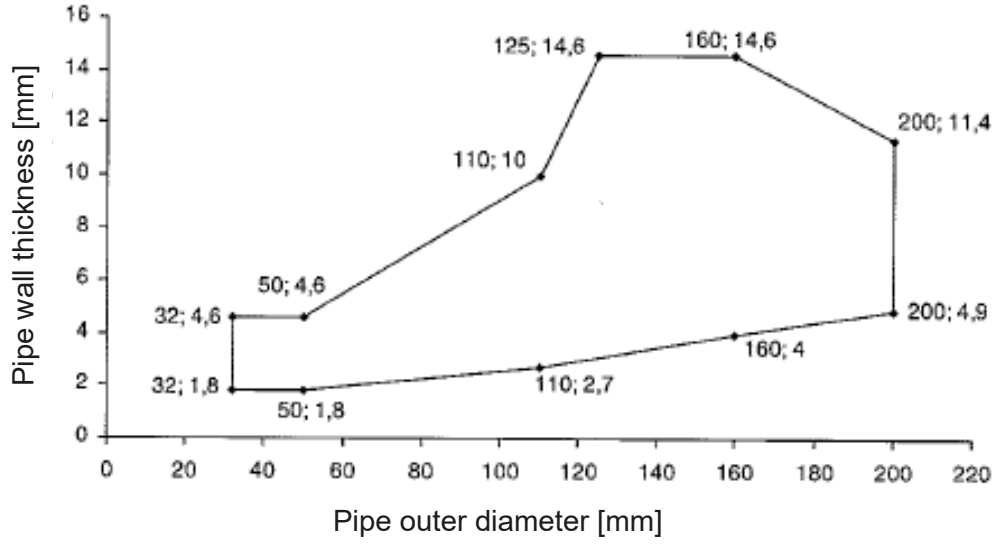
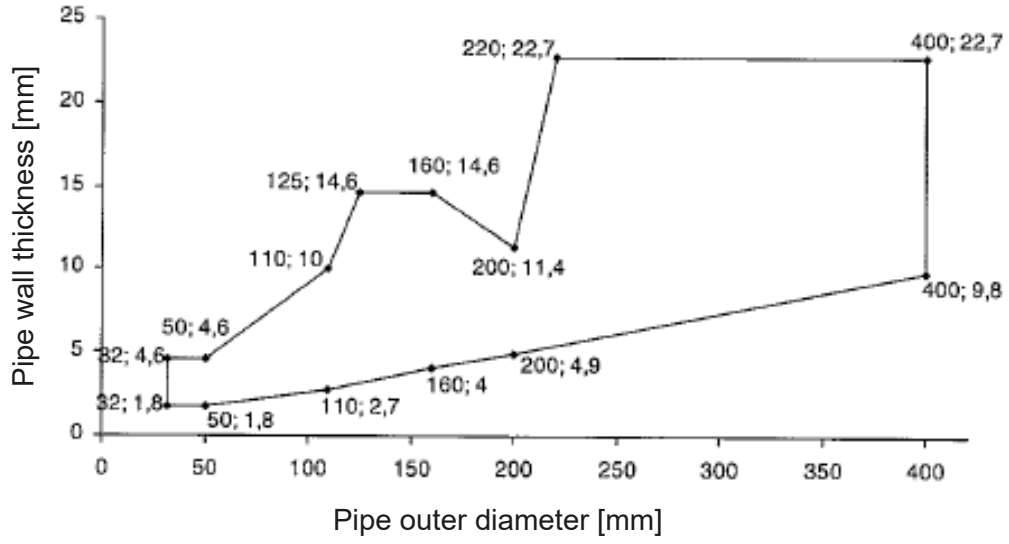
Pic. 9: Pipes according to pipe group B (PE-HD): Installation in rigid walls; $d_W \geq 100$mm; Fire resitance class EI 120-U/U



Pic.10: Pipes according to pipe group B (PE-HD): Installation in rigid walls; $d_W \geq 300$mm; Fire resitance class EI 120-U/U



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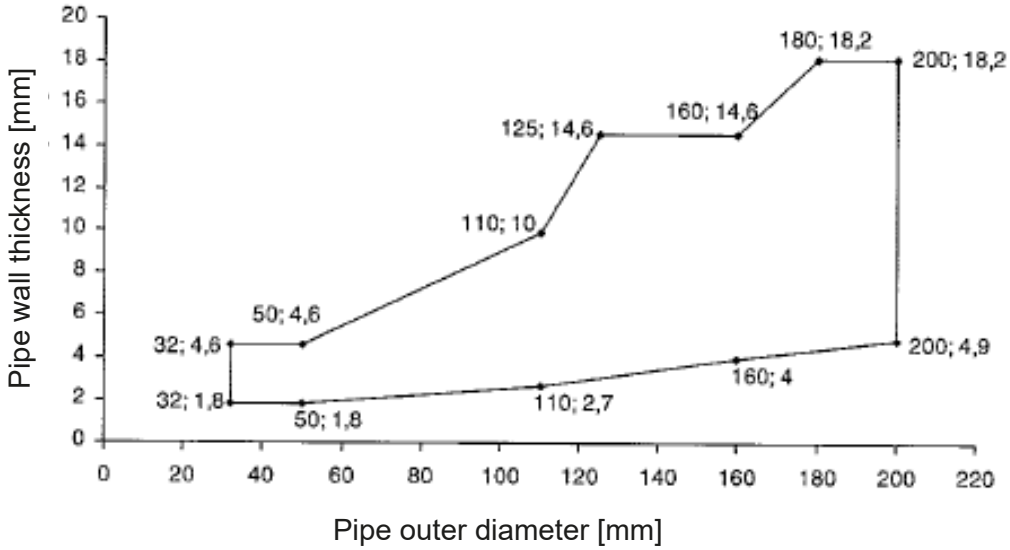
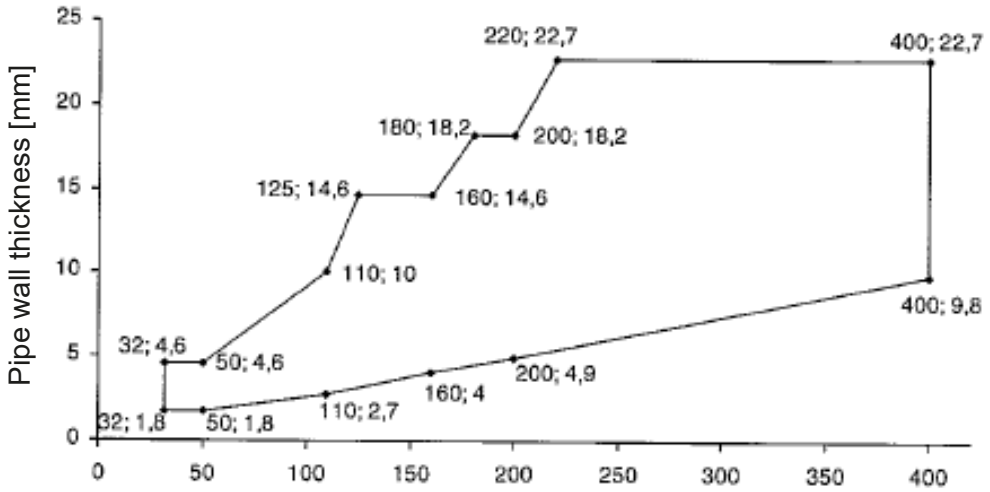
Pic.11: Pipes according to pipe group B (PE-HD): Installation in rigid floors;
$d_W \geq 150$mm; Fire resitance class EI 120-U/U



Pic.12: Pipes according to pipe group B (PE-HD): Installation in rigid floors;
$d_W \geq 300$mm; Fire resitance class EI 120-U/U



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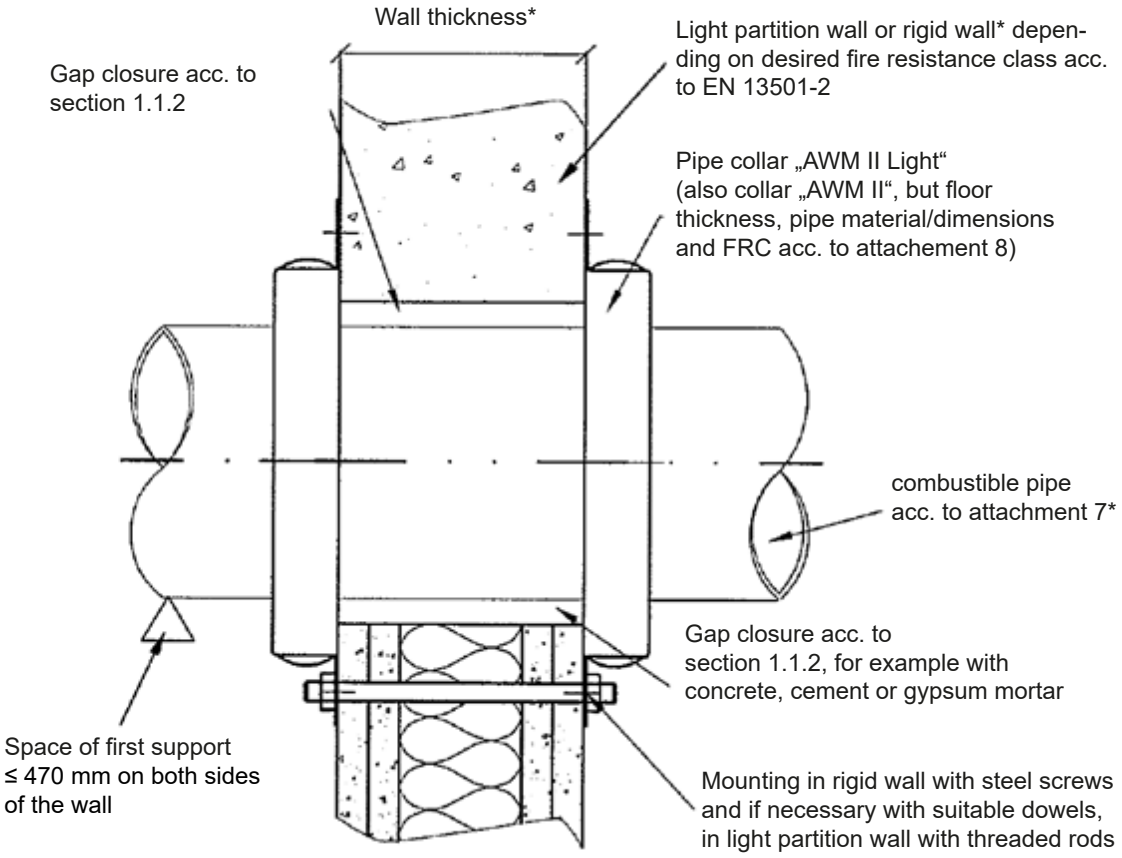
Approved assignment - wall



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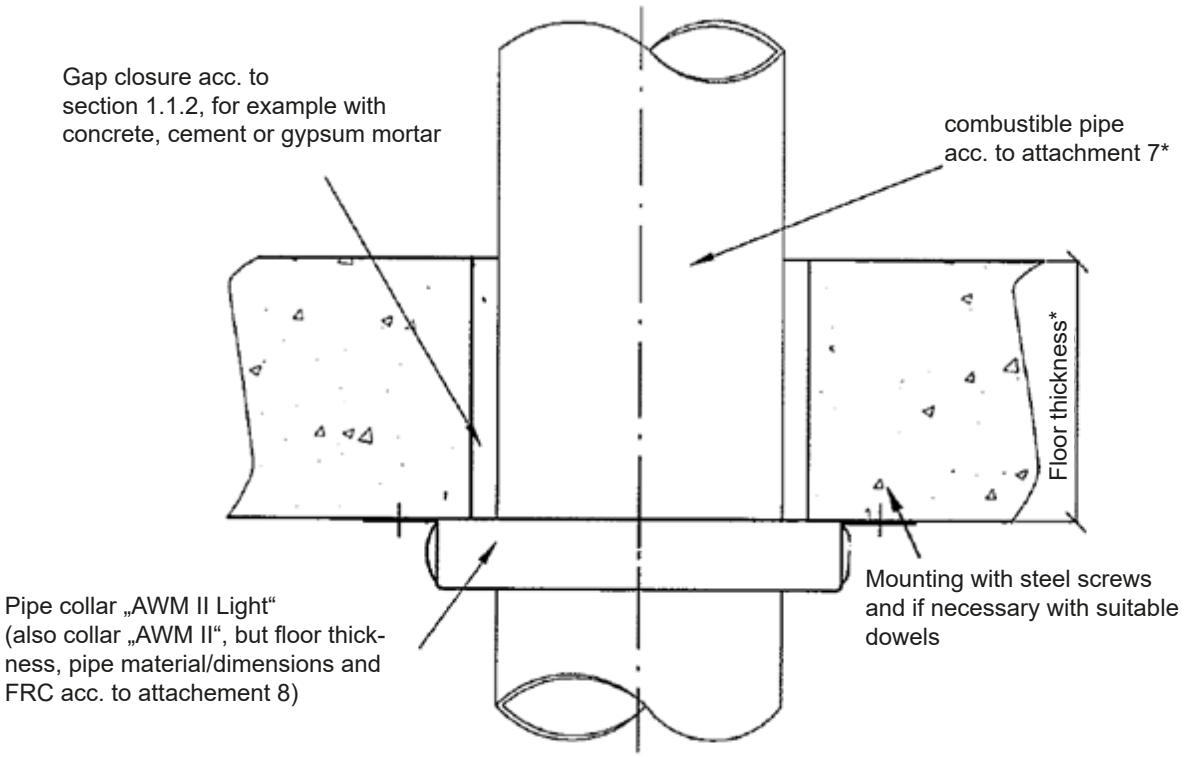
Approved assignment - floor



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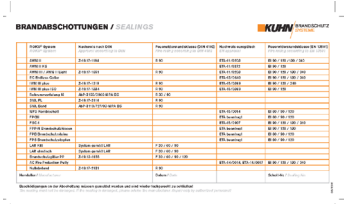
Applied products

Image	Article Identifier		Art-No.
AWM II Fire protection collar			
	Diameter [mm]		
	32		0705000320
	40		0705000400
	50		0705000500
	63		0705000630
	75		0705000750
	90		0705000900
	110		0705001100
	125		0705001250
	140		0705001400
	160		0705001600
	180		0705001800
	200		0705002000
	225		0705002250
	250		0705002500
	280		0705002800
	300		0705003000
	315		0705003150
	355		0705003550
	400		0705004000
Accesory			
	Mounting kit	Ø 32 – 50 mm	0707002000
		Ø 63 – 125 mm	0707002020
		Ø 140 – 50 mm	0707002030
		Ø 180 – 200 mm	0707002040
		Ø 225 – 250 mm	0707002050
		Ø 280 – 400 mm	0707002060
	Identification sign		0750050060

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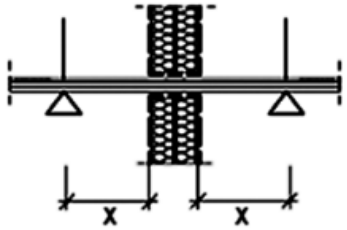
Arrangement of the first support (backings)

Supports/Backings of the installations in front of the wall insulation must consist of essentially non-combustible components and be arranged with a distance according to the following overview.

Installation	Wall	Floor
non-combustible pipes	≤ 470 mm on both sides	≤ ??? mm above



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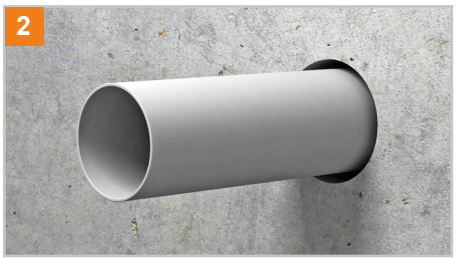
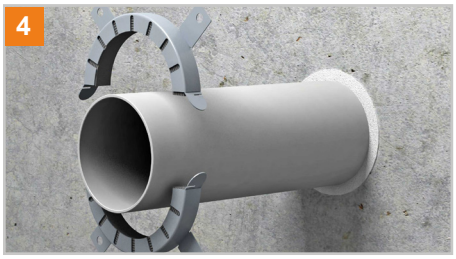
Assembly steps

Before the installation of the pipe seal, it is to be checked if all boundary conditions (e.g. type and thickness of wall or floor, type and size of pipes and insulations as well as environmental conditions) comply with the regulations.

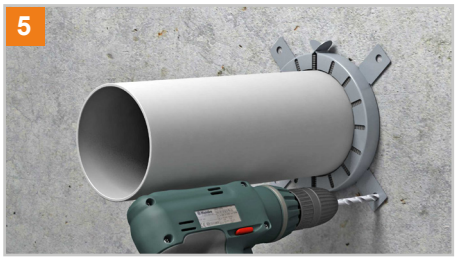


The pipe collar Kuhn AWM II can be applied for uninsulated pipes only.

Floor penetration seals or bigger wall seals need a formwork. Soaking surfaces of the strcutural element shall be moistened with water.

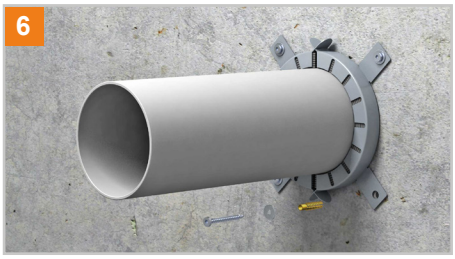


Before assembling the fire protection mortar, the remaining gaps between wall or floor and the inserted pipe are to be filled completely with dimensionally stable, non-combustible building materials, e.g. concrete, cement or gypsum mortar (class A1 or A2-s1,d0 according to EN 13501-1.



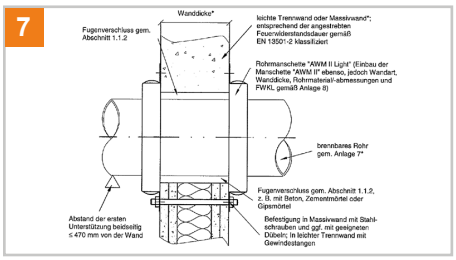
A suitable fire protection collar must be utilised.

For pipe penetrations through floors, there must be a fire protection collar arranged to the bottom side of the floor. For pipe penetration through walls, there must be a fire protection collar arranged on each side of the wall.

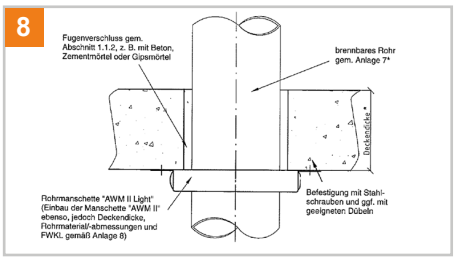


The pipe collars must be mounted to the rigid walls or floors through the fastening clip with appropriate dowels and steel screws M6 or M8.

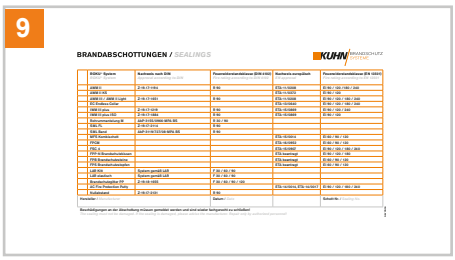
Availabe fixing points should be used.



Wall installation



Floor installation



Finally apply the identification sign to the penetration seal. The identification must be placed next to the penetration seal to the building component and is available at Rolf Kuhn GmbH.

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ROLF*KUHN*GMBH
PASSIVER TECHNISCHER BRANDSCHUTZ

DECLARATION OF PERFORMANCE

for the construction product **ROKU® System AWM II**

Le/DoP No. 502/01/1307

1.	Unique identification code of the product-type:	**RK-11/0208**
2.	Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11 (4):	**Batch number, see product packaging**
3.	Inteded use or uses of the construction product, in accordance with the the applicable harmonized technical specification, as forseen by the manufacturer:	**pipe penetration seal**
4.	Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11 (5):	**Rolf Kuhn GmbH 57339 Erndtebrück Deutschland**
5.	If applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12 (2):	**not relevant**
6.	System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:	**System 1**
7.	In case of the declaration of performance concerning a construction product covered by a harmonized standard:	**not relevant**
8.	In case of the declaration of performance concerning a construction product for which an European Technical Assessment has been issued:	**The notified body MPA Braunschweig, No. 0761 has performed the initial inspection of the factory production control and performs the continuous surveillance, assessment and approval of the factory production on a regular basis according System 1 and issued the following:** **Certificate of constancy of performance:** **Nr. 0761 – CPD – 0200 according to ETA-11/0208**

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BIC: HYVEDEMMXXX
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BIC: PBNKDEFF

9. Declared performance

Essential characteristics	Performance	Harmonized technical specification
Fire resistance as a pipe penetration seal for plastic pipes made of PVC, PE or PP due to fire protection collar type AWM II with dimensions up to max. 400 mm or type AWM II Light with dimensions up to max. 160 mm in min. 100 mm thick rigid walls or min. 150 mm thick rigid walls.	Max. EI 120 - U/U or Max. EI 240 - U/C	ETA-11/0208
Reaction to fire to the intumescent inlay ROKU© Strip	E	
Reaction to fire of the steel housing	A1	
Durability and serviceability	Use category type X	
Release of dangerous substances	none	
For more details please see ETA-11/0208		

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

p.p. Jürgen Stauffer, Division Manager Kuhn Systems
(name and function)

Erndtebrück, 25.09.2017 .....

(place and date of issue) (signature)

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0761

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11

Le/DoP No. 501/01/1307

ETA-11/0208

Pipe penetration seal

RK-11/0208

Fire resistance as a pipe penetration seal for plastic pipes made of PVC, PE or PP due to fire protection collar type AWM II with dimensions up to max. 400 mm or type AWM II Light with dimensions up to max. 160 mm in min. 100 mm thick rigid walls or min. 150 mm thick rigid walls.	Max. EI 120 - U/U or Max. EI 240 - U/C
Reaction to fire to the intumescent inlay ROKU© Strip	E
Reaction to fire of the steel housing	A1
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For more details please see ETA-11/0208	

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