

PAROC FIRE PROTECTION SOLUTIONS FOR PIPE PENETRATIONS

May 2017



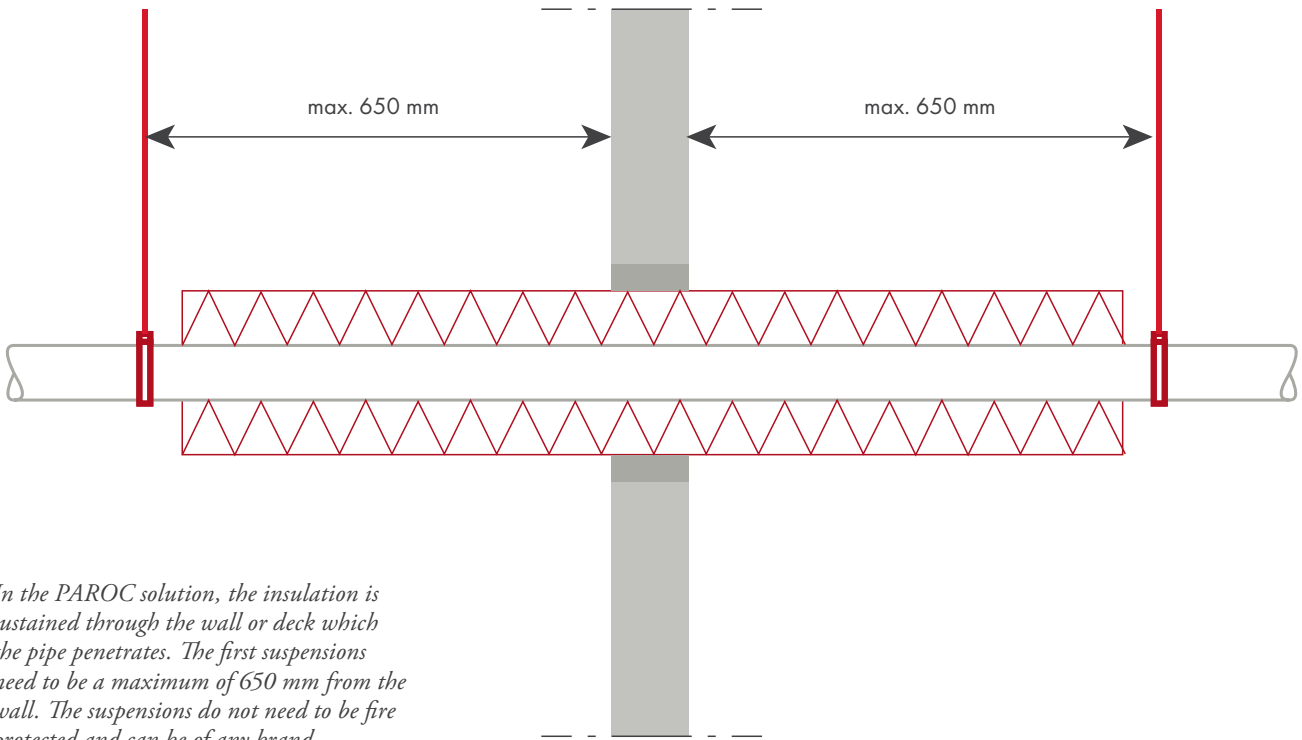
APPROVED FIRE SAFETY WITH PAROC® STONE WOOL

EN 1366-3 is a harmonized European standard for fire resistance tests for penetration seals. The test method covers seals for pipes penetrating a fire-classified wall, e.g. an EI 90 wall. The sealing must prevent the fire from spreading for at least this time and have the same classification as the wall.

PAROC stone wool is Euroclass A1 classified, which is the highest class of building material fire performance. Using insulation solutions made with PAROC stone wool products therefore means long-term, maintenance-free fire protection that does not deteriorate with time, but keeps its insulating and fire protection properties.

PAROC FIRE PROTECTION SOLUTIONS FOR PIPE PENETRATIONS

- Maintenance-free, long-term solution
- Prevents fire from spreading for up to 120 minutes
- Tested according to harmonised European standard EN 1366-3
- Suitable for metal and composite pipes, and filled plastic pipes
- Based on one product: PAROC Hvac Section AluCoat T
- Provides fire protection, thermal and condensation insulation



In the PAROC solution, the insulation is sustained through the wall or deck which the pipe penetrates. The first suspensions need to be a maximum of 650 mm from the wall. The suspensions do not need to be fire protected and can be of any brand.

FIRE PROTECTION FOR UP TO 120 MINUTES

PAROC fire protection solutions for pipe penetrations includes fire resistance classes up to EI 120.

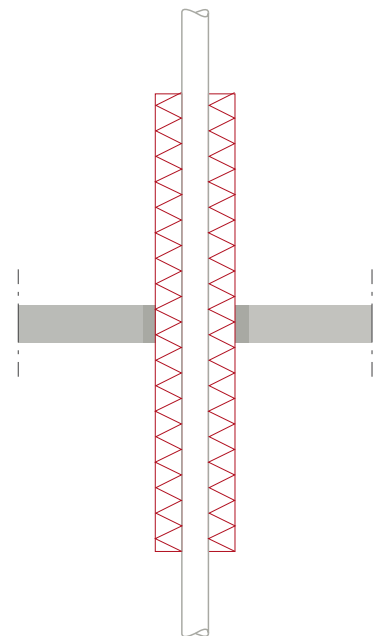
In the fire resistance classification “E” stands for “integrity”, which is the capacity of the penetration to withstand flames, hot gases and smoke. “I” stands for “insulation”, to prevent heat from spreading to surrounding structures. The number stands for the number of minutes for which the construction prevents the spread of fire.

FOR VARIOUS APPLICATIONS

PAROC fire solutions for pipe penetrations cover a large number of different pipe types: conventional copper and iron pipes, and also steel, stainless steel, cast iron, plastic and composite pipes of different thicknesses.

The solution can be used in rigid decks and walls, such as concrete or aerated concrete. It is also tested and classified for fire rated flexible walls e.g. gypsum boards and studs.

Pipes used for drinking water, heating water, comfort cooling and unventilated sewage pipes are all included in the solution.



Insulation sustained through the deck which the pipe penetrates.

All solutions in this guide achieve up to 90 minutes fire protection with non-combustible (metal) pipes and up to 120 minutes with combustible (plastic or composite) pipes.

INSULATION CASES

Local insulation means the pipe is insulated locally at the penetration with one 1200 mm long pipe section and in most cases this is enough. In some cases, continued insulation is required. This means that the pipe is insulated for the entire length inside the fire compartment. The tables starting on page 6 show whether local or continuous insulation should be used.

In the PAROC solutions, the insulation is sustained through the wall which the pipe penetrates. This is an advantage if the pipe also needs to be insulated against condensation.

PAROC SOLUTIONS IN PRACTICE

To choose a pipe penetration solution of the correct thickness, you need the following information:

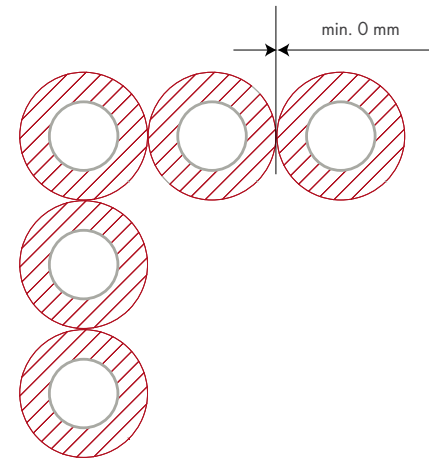
The material, diameter and thickness of the pipe: the required insulation thickness and insulation case are different depending on the pipe material and dimensions. See the tables starting on page 6 for the various pipe types.

The fire resistance classification of the wall or deck: If the wall or deck is e.g. fire resistance class EI 90, it is important that the penetration is approved for at least EI 90 (90 minutes).

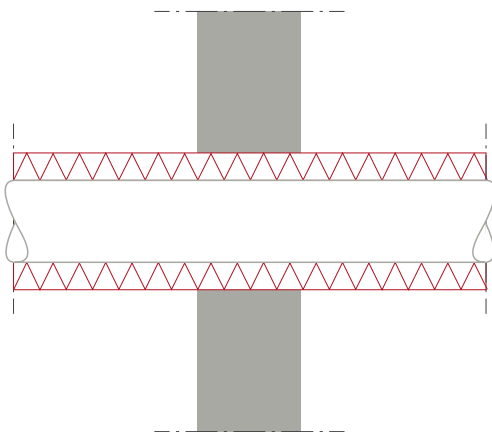
MULTIPLE FUNCTIONS WITH ONE PRODUCT

PAROC fire protection solutions for pipe penetrations are based on one product: PAROC Hvac Section AluCoat T. A wide range of sizes is available. The product has an AluCoat facing which works as a vapour barrier and eliminates the risk of damage caused by condensation.

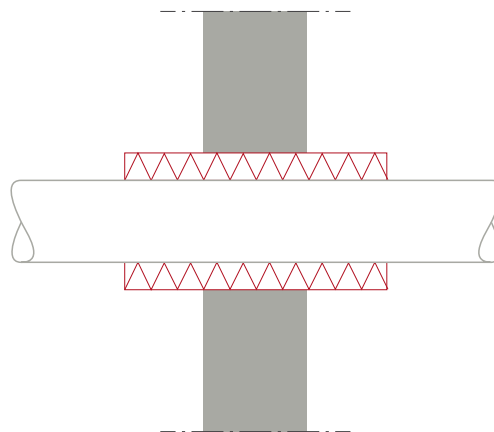
PAROC fire protection solutions for pipe penetrations can be used when the distance between the pipes is small. The free distance between insulated pipes can be 0 mm when using PAROC pipe sections.



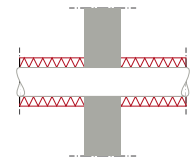
Continuous sustained (CS)



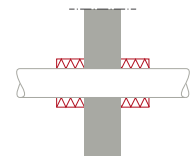
Local sustained (LS)



Continuous interrupted (CI)

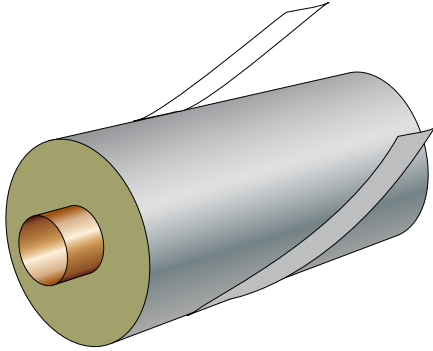


Local interrupted (LI)

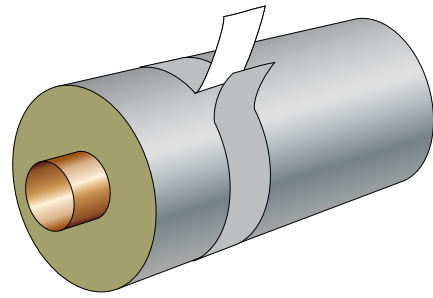


The drawings above describe different insulation cases. PAROC fire protection solutions for pipe penetrations are sustained insulation solutions. The sustained solution is the only possible one if you need to insulate the pipes against condensation.

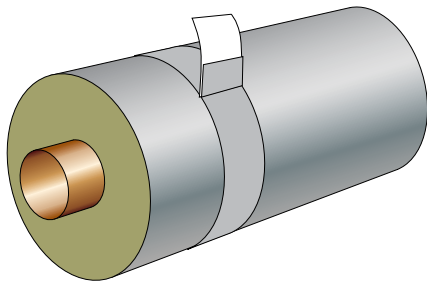
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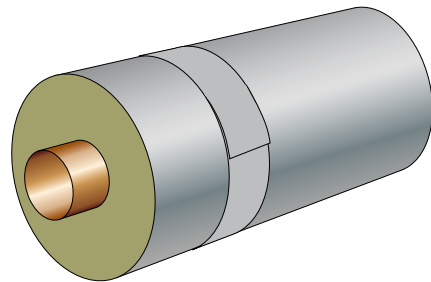
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3



4



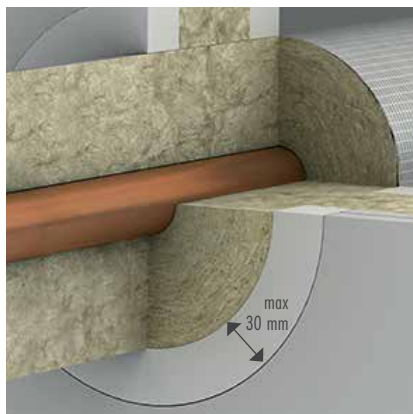
When using tape instead of galvanized wire, you should secure the tape as shown in the illustration.

FIXING THE INSULATION

Apart from the longitudinal tape on the product, the insulation needs to be fixed with galvanized wire or with tape to ensure the fastening of the section. Use three bonds of galvanized wire per section or if you use tape, three strips of tape are needed per section.

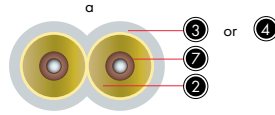
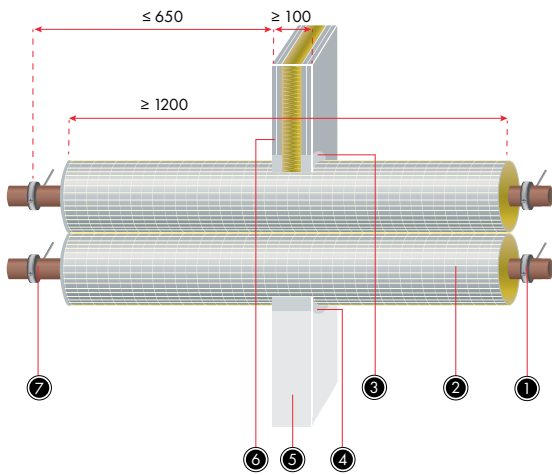
SEALING THE GAP

The gap between the insulation and the wall shall be maximum 30 mm. In a flexible construction, the gap shall be insulated with PAROC stone wool and sealed with a non-combustible material such as gypsum plaster. In a rigid construction the gap shall be sealed with a non-combustible material, e.g. cement.



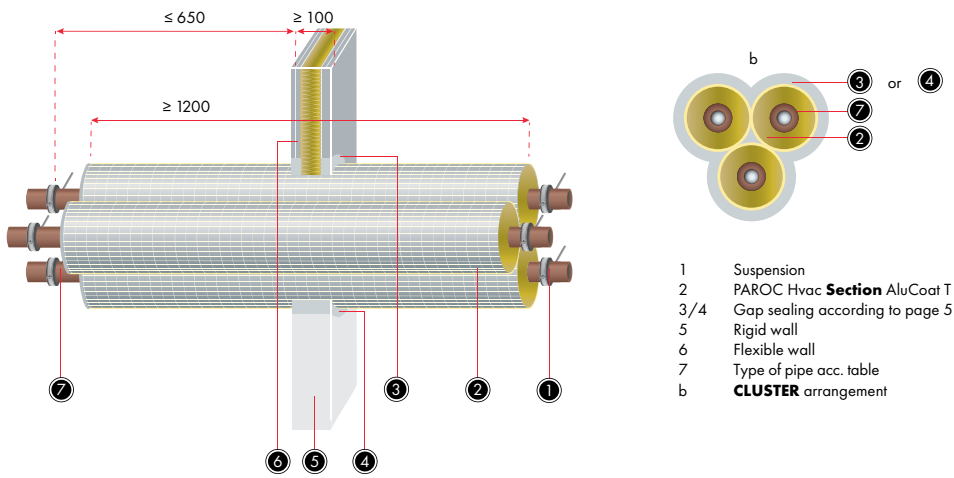
PAROC HVAC SECTION ALUCOAT T

NON COMBUSTIBLE PIPES IN RIGID AND FLEXIBLE WALLS



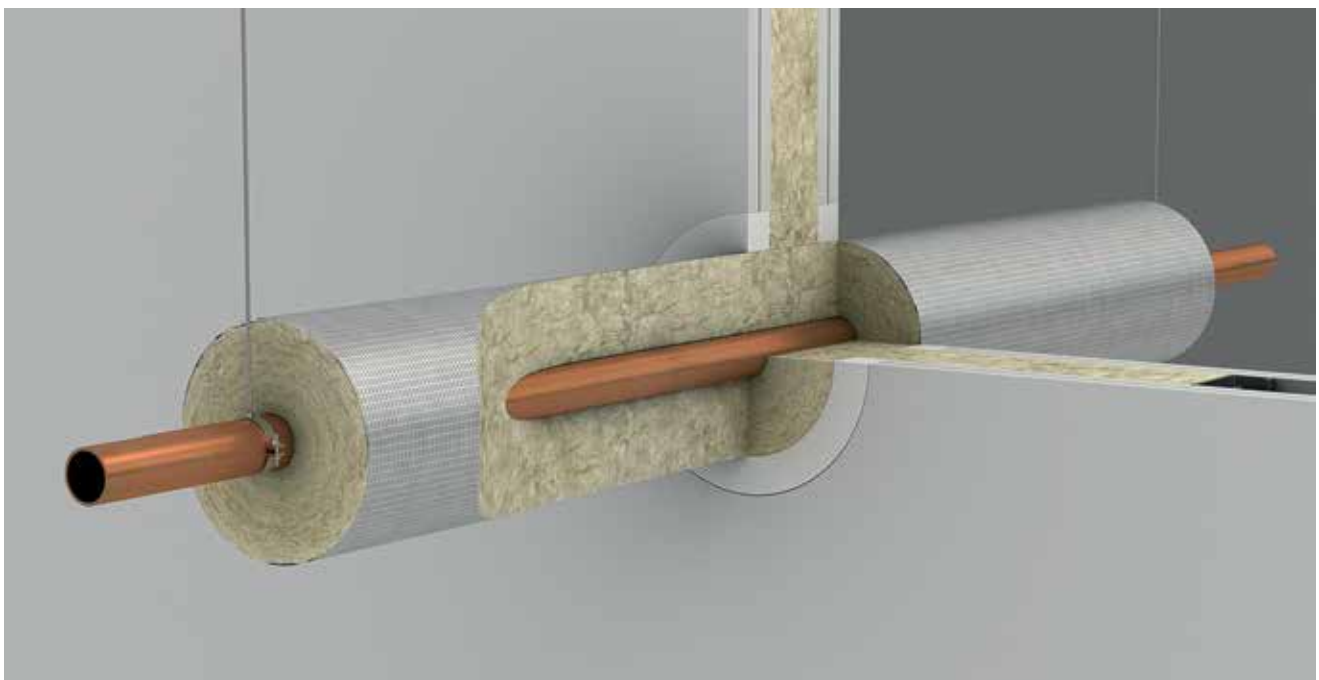
- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3/4 Gap sealing according to page 5
- 5 Rigid wall
- 6 Flexible wall
- 7 Type of pipe acc. table
- a **LINEAR** arrangement

Installation in flexible and rigid walls (≥ 1200 mm) positioned linear, PAROC Hvac Section AluCoat T					
Material	Outer diameter of pipe	Pipe thickness	Local Sustained	Continuous Sustained	Continuous Sustained
			Zero spacing	Zero spacing	100 mm spacing
			100 mm spacing	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Copper	≤ 10,0	≥ 0,8		20 - 50	
	> 10,0	≥ 1,0		20 - 80	
	≤ 22,0				
	> 22,0	≥ 1,2		20 - 100	
	≤ 42,0				
	> 42,0	≥ 1,5	20 - 30	20 - 100	
	≤ 54,0				
	> 54,0	≥ 2,0		40 - 100	
	≤ 89,0				
> 89,0	≥ 2,5		40 - 100		
≤ 108,0					
Steel, stainless steel, cast iron	≤ 10,0	≥ 0,8		20 - 50	
	> 10,0	≥ 1,0		20 - 80	
	≤ 22,0				
	> 22,0	≥ 1,2		20 - 100	
	≤ 42,0				
	> 42,0	≥ 1,5	20 - 30	20 - 100	
	≤ 54,0		30 - 100		
	> 54,0	≥ 2,0		40 - 100	
	≤ 89,0		30 - 100	30 - 100	
	> 89,0	≥ 2,5		40 - 100	
	≤ 108,0				
	> 108,0	≥ 4,0		40 - 100	
	≤ 159,0				
	> 159,0	≥ 4,2		40 - 100	
	≤ 219,0				



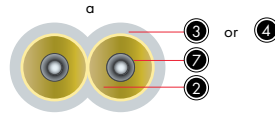
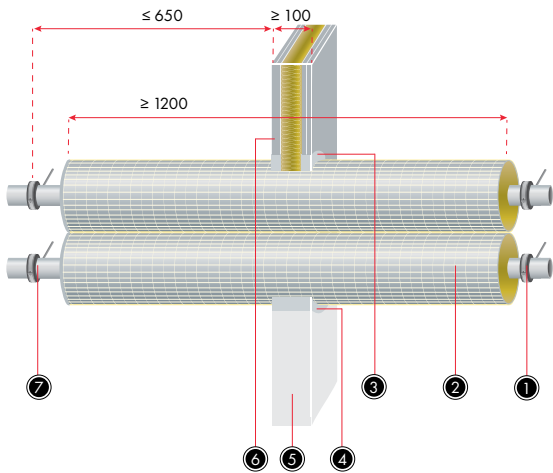
Installation in flexible and rigid walls (≥ 1200 mm) positioned in cluster, PAROC Hvac Section AluCoat T

Material	Outer diameter of pipe [mm]	Pipe thickness [mm]	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
			Thickness	Thickness	Thickness
			[mm]	[mm]	[mm]
Copper, steel, stainless steel, cast iron	$\leq 10,0$	$\geq 0,8$	20 - 50		
	$> 10,0$	$\geq 1,0$	20 - 80		
	$\leq 22,0$				
	$> 22,0$	$\geq 1,2$	20 - 30		
	$\leq 42,0$				
	$> 42,0$	$\geq 1,5$	20 - 100		
$\leq 54,0$					

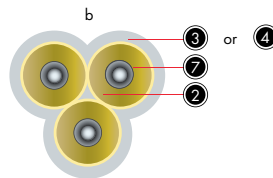
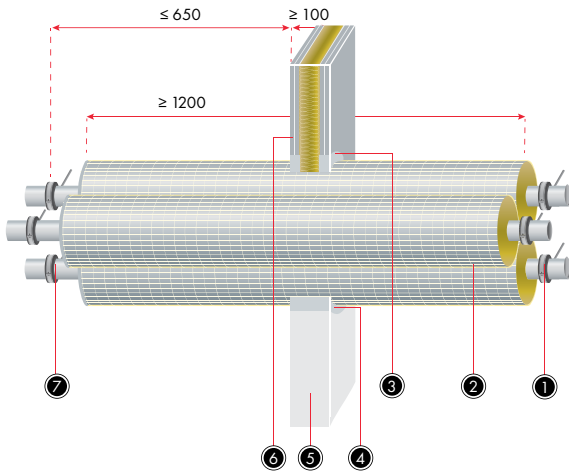


PAROC HVAC SECTION ALUCOAT T

COMPOSITE PIPES IN RIGID AND FLEXIBLE WALLS



- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3/4 Gap sealing according to page 5
- 5 Rigid wall
- 6 Flexible wall
- 7 Composite pipe
- a **LINEAR** arrangement



- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3/4 Gap sealing according to page 5
- 5 Rigid wall
- 6 Flexible wall
- 7 Composite pipe
- b **CLUSTER** arrangement

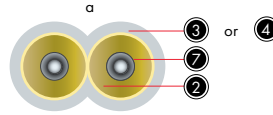
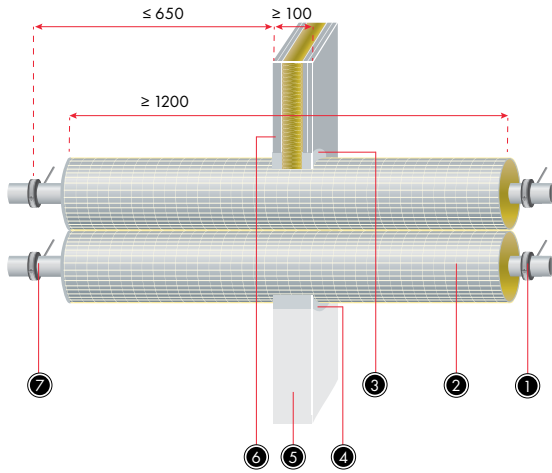
Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Outer diameter of pipe	Pipe thickness	Thickness of aluminium	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
		AL	Thickness	Thickness	Thickness
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
≤ 32,0	≥ 4,5	0,15		20 - 80	
> 32,0	≥ 5,6				
≤ 40,0	≥ 6,9				
> 40,0	≥ 8,7				
≤ 50,0	≥ 10,4				
> 50,0	≥ 12,5				
≤ 63,0	≥ 15,1				
> 63,0					
≤ 75,0					
> 75,0					
≤ 90,0					
> 90,0					
≤ 110,0					

Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Outer diameter of pipe	Pipe thickness	Thickness of aluminium	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
		AL	Thickness	Thickness	Thickness
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
$\leq 16,0$	$\geq 2,0$	$\geq 0,2$		20 - 100	
$> 16,0$	$\geq 2,2$	$\geq 0,2$			
$\leq 20,0$					
$> 20,0$	$\geq 2,5$	$\geq 0,2$			
$\leq 25,0$					
$> 25,0$	$\geq 3,0$	$\geq 0,35$			
$\leq 32,0$					
$> 32,0$	$\geq 3,5$	$\geq 0,6$			
$\leq 40,0$	$\geq 4,0$	$\geq 0,35$			
$> 40,0$	$\geq 4,0$	$\geq 0,6$			
$\leq 50,0$	$\geq 4,5$	$\geq 0,5$			
$> 50,0$	$\geq 4,5$	$\geq 0,8$			
$\leq 63,0$	$\geq 6,0$	$\geq 0,6$			
$> 63,0$	$\geq 7,5$	$\geq 0,7$			
$\leq 75,0$					
$> 75,0$	$\geq 8,5$	$\geq 0,9$			
$\leq 90,0$					
$> 90,0$	$\geq 10,0$	$\geq 1,0$			
$\leq 110,0$					

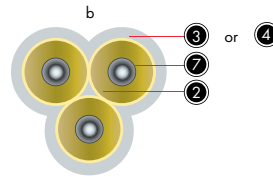
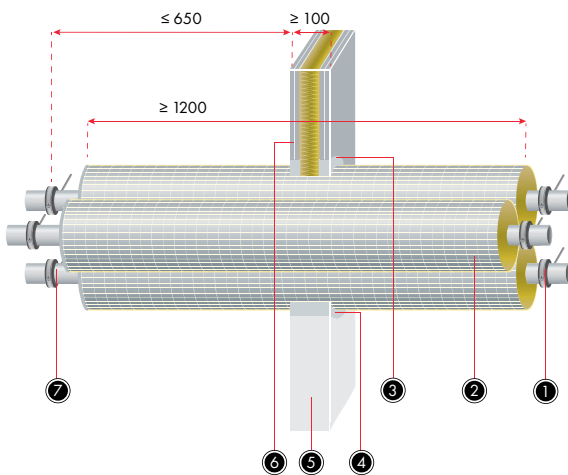
Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Outer diameter of pipe	Pipe thickness	Thickness of aluminium	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
		AL	Thickness	Thickness	Thickness
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
$\leq 16,0$	$\geq 2,0$	$\geq 0,3$		20 - 100	
$> 16,0$	$\geq 2,0$	$\geq 0,4$			
$\leq 20,0$					
$> 20,0$	$\geq 3,0$	$\geq 0,5$			
$\leq 26,0$					
$> 26,0$	$\geq 3,0$	$\geq 0,6$			
$\leq 32,0$					
$> 32,0$	$\geq 3,5$	$\geq 0,85$			
$\leq 40,0$					
$> 40,0$	$\geq 4,0$	$\geq 1,0$			
$\leq 50,0$					
$> 50,0$	$\geq 4,5$	$\geq 1,2$			
$\leq 63,0$					
$> 63,0$	$\geq 5,0$	$\geq 1,35$			
$\leq 75,0$					

PAROC HVAC SECTION ALUCOAT T

COMBUSTIBLE PIPES IN RIGID AND FLEXIBLE WALLS



- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3/4 Gap sealing according to page 5
- 5 Rigid wall
- 6 Flexible wall
- 7 Pipe type according to table
- a **LINEAR** arrangement



- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3/4 Gap sealing according to page 5
- 5 Rigid wall
- 6 Flexible wall
- 7 Pipe type according to table
- b **CLUSTER** arrangement

Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Pipe type	Outer diameter of pipe	Pipe thickness	Local Sustained	Continuous Sustained	Continuous Sustained
			Zero spacing	Zero spacing	100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Multilayer pipe Raxofix / Sanfix Fosta	16,0	≥ 2,2	20 - 100	20 - 100	20 - 100
	20,0	≥ 2,8			
	25,0	≥ 2,7			
	32,0	≥ 3,2			
	40,0	≥ 3,5			
	50,0	≥ 4,0			
	63,0	≥ 4,5			

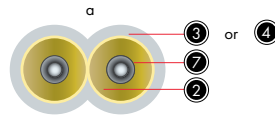
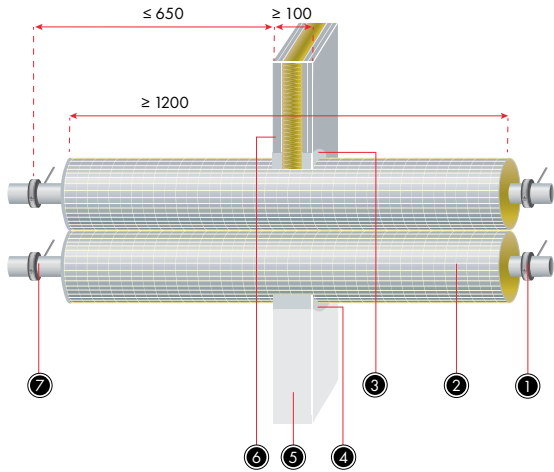
Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Pipe type	Outer diameter of pipe	Pipe thickness	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Polypropylene pipe Aquatherm blue pipe	20,0	$\geq 1,9$	20 - 80		
	25,0	$\geq 2,3$			
	32,0	$\geq 2,9$			

Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Pipe type	Outer diameter of pipe	Pipe thickness	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Faser composite pipe Aquatherm green pipe MF	20,0	$\geq 2,8$	20 - 120		
	25,0	$\geq 3,5$			
	32,0	$\geq 3,6$			
	40,0	$\geq 4,5$			
	50,0	$\geq 5,6$			
	63,0	$\geq 7,1$			
	75,0	$\geq 8,4$			
	90,0	$\geq 10,1$			
	110,0	$\geq 12,3$			

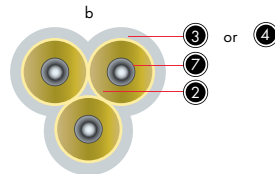
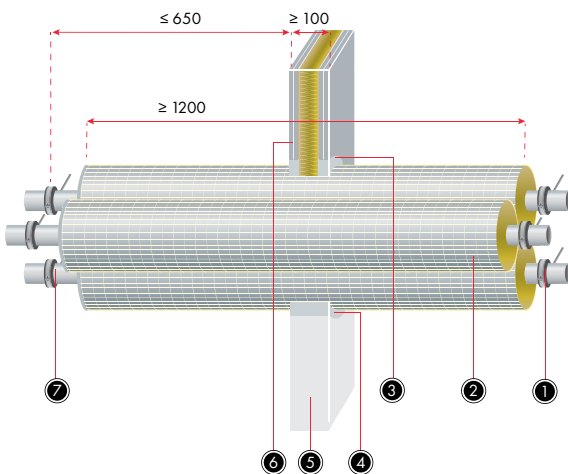
Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Pipe type	Outer diameter of pipe	Pipe thickness	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Stabi composite pipe Aquatherm green pipe MS	20,0	$\geq 2,8$	20 - 80		
	25,0	$\geq 3,5$			
	32,0	$\geq 4,5$			
	40,0	$\geq 5,6$			
	50,0	$\geq 6,9$			
	63,0	$\geq 8,7$			

PAROC HVAC SECTION ALUCOAT T

COMBUSTIBLE PIPES IN RIGID AND FLEXIBLE WALLS



- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3/4 Gap sealing according to page 5
- 5 Rigid wall
- 6 Flexible wall
- 7 Type of pipe acc. table
- a **LINEAR** arrangement



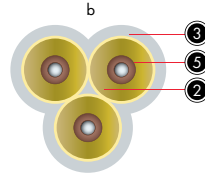
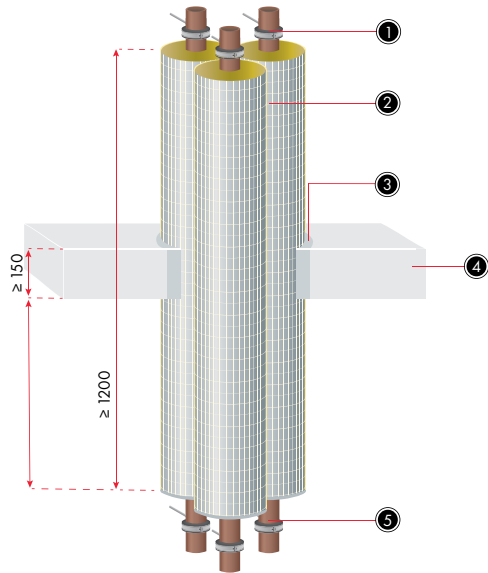
- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3/4 Gap sealing according to page 5
- 5 Rigid eg; masonry wall
- 6 Flexible eg; plasterboard wall
- 7 Type of pipe acc. table
- b **CLUSTER** arrangement

Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Pipe type	Outer diameter of pipe	Pipe thickness	Local Sustained	Continuous Sustained	Continuous Sustained
			Zero spacing	Zero spacing	100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Multilayer pipe Rehau Rautitan stabil / flex	16,0	$\geq 2,2$	20 - 80	20 - 80	20 - 80
	20,0	$\geq 2,9$			
	25,0	$\geq 3,7$			
	32,0	$\geq 4,7$			
	40,0	$\geq 5,5$			
	50,0	$\geq 6,9$			
	63,0	$\geq 8,6$			

Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Pipe type	Outer diameter of pipe	Pipe thickness	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Multilayer pipe Geberit Mepla ML	16,0	$\geq 2,25$	20 - 80	20 - 80	20 - 80
	20,0	$\geq 2,5$			
	26,0	$\geq 3,0$			
	32,0	$\geq 3,0$			
	40,0	$\geq 3,5$			
	50,0	$\geq 4,0$			
	63,0	$\geq 4,5$			
	75,0	$\geq 4,7$			
Multilayer pipe IVT PRINETO	14,0	$\geq 2,0$	20 - 80	20 - 80	20 - 80
	17,0	$\geq 2,8$			
	21,0	$\geq 3,4$			
	26,0	$\geq 4,0$			
	33,0	$\geq 4,9$			
	42,0	$\geq 4,6$			
	52,0	$\geq 5,6$			
	63,0	$\geq 6,0$			
Polyethylene pipe JRG Sanipex	16,0	$\geq 2,2$	20 - 80	20 - 80	20 - 80
	20,0	$\geq 2,8$			
	25,0	$\geq 3,5$			
	32,0	$\geq 4,4$			
	40,0	$\geq 5,5$			
	50,0	$\geq 6,9$			
	63,0	$\geq 8,7$			
Polybutene pipe GF Instaflex	16,0	$\geq 2,2$	20 - 120	20 - 120	20 - 120
	20,0	$\geq 2,8$			
	25,0	$\geq 2,3$			
	32,0	$\geq 2,9$			
	40,0	$\geq 3,7$			
	50,0	$\geq 4,6$			
	63,0	$\geq 5,8$			
	75,0	$\geq 6,8$			
	90,0	$\geq 8,2$			
	110,0	$\geq 10,0$			

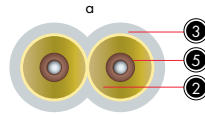
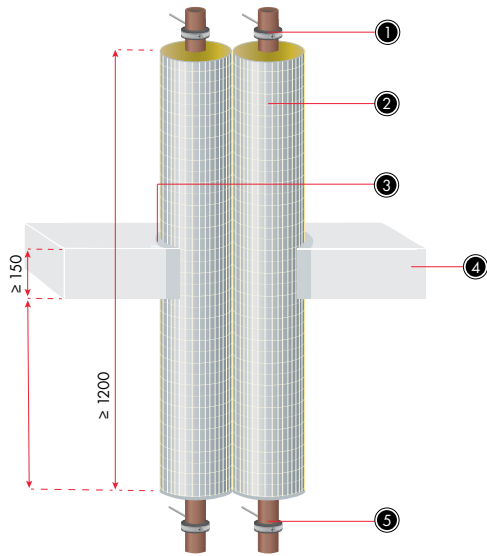
PAROC HVAC SECTION ALUCOAT T

NON-COMBUSTIBLE PIPES IN RIGID DECKS



- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3 Gap sealing according to page 5
- 4 Rigid eg; concrete deck
- 5 Pipe type according to table
- b **CLUSTER** arrangement

Installation in flexible and rigid walls (≥ 1200 mm) positioned in cluster, PAROC Hvac Section AluCoat T					
Material	Outer diameter of pipe	Pipe thickness	Local Sustained	Continuous Sustained	Continuous Sustained
			Zero spacing	Zero spacing	100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Copper, Steel, stainless steel, cast iron	$\leq 10,0$	$\geq 0,8$			
	$> 10,0$	$\geq 1,0$			
	$\leq 22,0$				
	$> 22,0$	$\geq 1,2$	20 - 80		
	$\leq 42,0$				

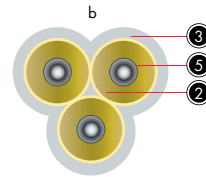
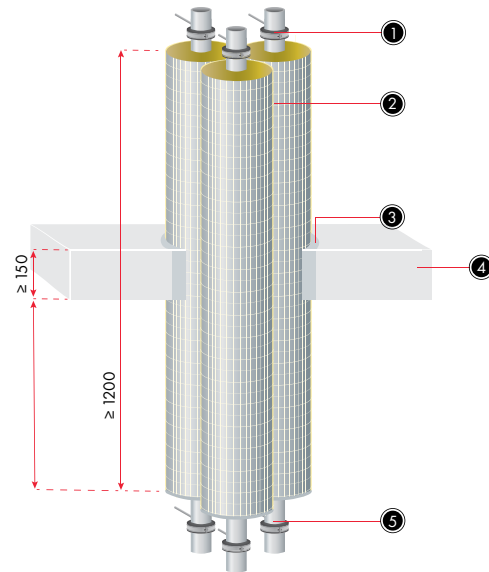
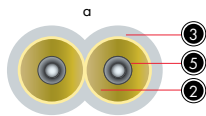
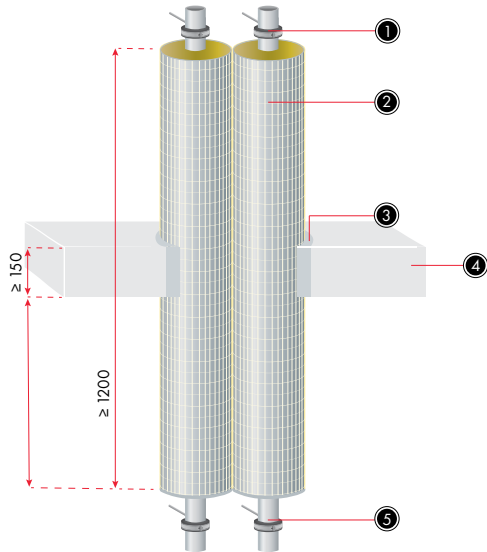


- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3 Gap sealing according to page 5
- 4 Rigid, eg; concrete deck
- 5 Type of pipe acc. table
- a **LINEAR** arrangement

Installation in flexible and rigid walls (≥ 1200 mm) positioned linear, PAROC Hvac Section AluCoat T						
Material	Outer diameter of pipe	Pipe thickness	Local Sustained	Local Sustained	Continuous Sustained	Continuous Sustained
			Zero spacing	100 mm spacing	Zero spacing	100 mm spacing
			Thickness	Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Copper	$\leq 10,0$	$\geq 0,8$	20 - 50			
	$> 10,0$	$\geq 1,0$				
	$\leq 22,0$	$\geq 1,2$	20 - 80			
	$> 22,0$	$\geq 1,5$				
	$\leq 42,0$	$\geq 2,0$	30 - 100		40 - 100	
	$> 42,0$	$\geq 2,5$				
	$\leq 54,0$	$\geq 2,5$	40 - 100			
	$> 54,0$	$\geq 2,5$				
	$\leq 89,0$	$\geq 2,5$	40 - 100			
	$> 89,0$	$\geq 2,5$				
Steel, stainless steel, cast iron	$\leq 10,0$	$\geq 0,8$	20 - 50			
	$> 10,0$	$\geq 1,0$				
	$\leq 22,0$	$\geq 1,2$	20 - 80			
	$> 22,0$	$\geq 1,5$				
	$\leq 42,0$	$\geq 1,5$	30 - 100		40 - 100	
	$> 42,0$	$\geq 2,0$				
	$\leq 54,0$	$\geq 2,0$	40 - 100			
	$> 54,0$	$\geq 2,5$				
	$\leq 89,0$	$\geq 2,5$	40 - 100			
	$> 89,0$	$\geq 2,5$				
	$\leq 108,0$	$\geq 2,5$	40 - 100			
	$> 108,0$	$\geq 2,5$				
	$\leq 159,0$	$\geq 4,0$	40 - 100			
	$> 159,0$	$\geq 4,0$				
	$\leq 219,0$	$\geq 4,2$	50 - 100			
$> 219,0$	$\geq 4,2$					

PAROC HVAC SECTION ALUCOAT T

COMPOSITE PIPES IN RIGID DECKS



- 1 Suspension
- 2 PAROC Hvac **Section AluCoat T**
- 3 Gap sealing according to page 5
- 4 Rigid decks
- 5 Composite pipes
- a **LINEAR** arrangement

- 1 Suspension
- 2 PAROC Hvac **Section AluCoat T**
- 3 Gap sealing according to page 5
- 4 Rigid decks
- 5 Composite pipes
- b **CLUSTER** arrangement

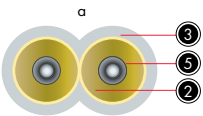
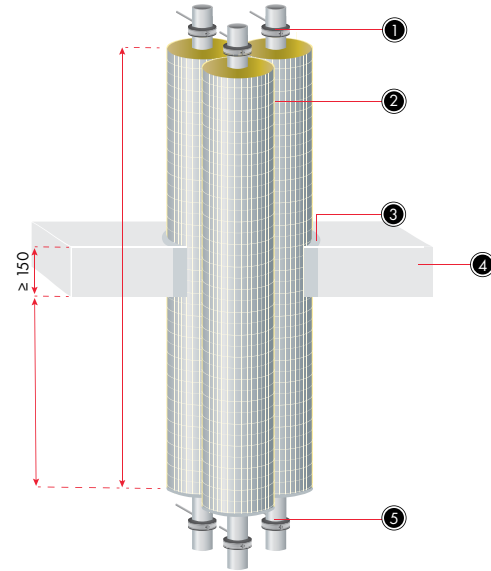
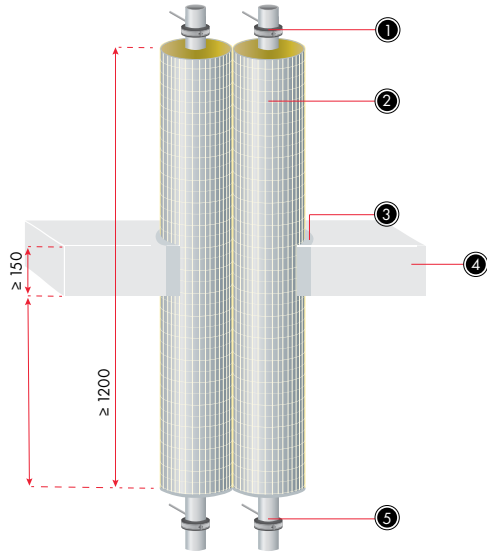
Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster arrangement, PAROC Hvac Section AluCoat T					
Outer diameter of pipe	Pipe thickness	Aluminium core thickness	Local Sustained 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
D	s	AL	Thickness	Thickness	Thickness
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
$\leq 32,0$	$\geq 4,5$	0,15		20 - 80	
$> 32,0$	$\geq 5,6$				
$\leq 40,0$					
$> 40,0$	$\geq 6,9$				
$\leq 50,0$					
$> 50,0$	$\geq 8,7$				
$\leq 63,0$					
$> 63,0$	$\geq 10,4$				
$\leq 75,0$					
$> 75,0$	$\geq 12,5$				
$\leq 90,0$					
$> 90,0$	$\geq 15,1$				
$\leq 110,0$					

Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Outer diameter of pipe	Pipe thickness	Thickness of aluminium	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
		AL	Thickness	Thickness	Thickness
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
$\leq 16,0$	$\geq 2,0$	$\geq 0,2$		20 - 100	
$> 16,0$	$\geq 2,2$	$\geq 0,2$			
$\leq 20,0$		$\geq 2,5$			
$> 20,0$	$\geq 3,0$				
$\leq 25,0$		$\geq 3,0$			
$> 25,0$	$\geq 3,5$				
$\leq 32,0$		$\geq 4,0$			
$> 32,0$	$\geq 4,0$				
$\leq 40,0$		$\geq 4,5$			
$> 40,0$	$\geq 4,5$				
$\leq 50,0$		$\geq 6,0$			
$> 50,0$	$\geq 6,0$				
$\leq 63,0$		$\geq 7,5$			
$> 63,0$	$\geq 7,5$				
$\leq 75,0$		$\geq 8,5$			
$> 75,0$	$\geq 8,5$				
$\leq 90,0$		$\geq 10,0$			
$> 90,0$	$\geq 10,0$				
$\leq 110,0$					

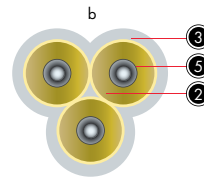
Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Outer diameter of pipe	Pipe thickness	Thickness of aluminium	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
		AL	Thickness	Thickness	Thickness
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
$\leq 16,0$	$\geq 2,0$	$\geq 0,3$		20 - 100	
$> 16,0$	$\geq 2,0$	$\geq 0,4$			
$\leq 20,0$		$\geq 3,0$			
$> 20,0$	$\geq 3,0$				
$\leq 26,0$		$\geq 3,0$			
$> 26,0$	$\geq 3,5$				
$\leq 32,0$		$\geq 4,0$			
$> 32,0$	$\geq 4,0$				
$\leq 40,0$		$\geq 4,5$			
$> 40,0$	$\geq 4,5$				
$\leq 50,0$		$\geq 5,0$			
$> 50,0$	$\geq 5,0$				
$\leq 63,0$					
$> 63,0$					
$\leq 75,0$					

PAROC HVAC SECTION ALUCOAT T

COMBUSTIBLE PIPE IN RIGID DECKS



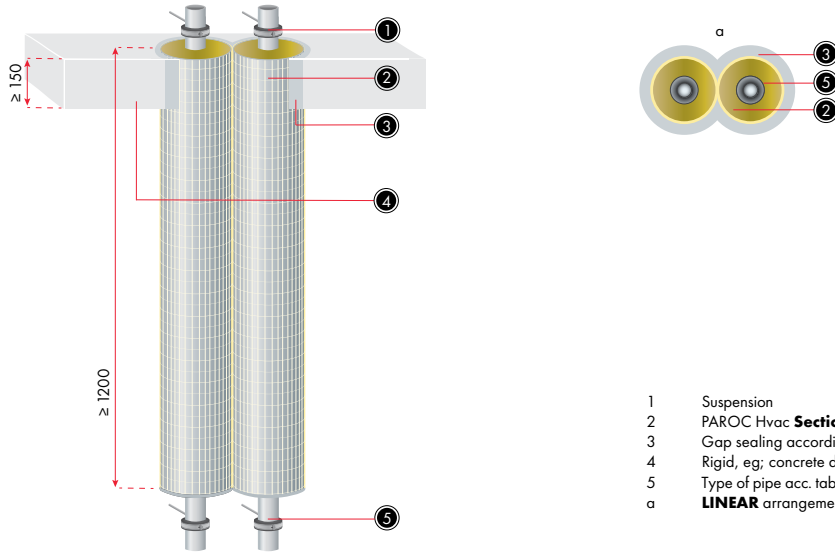
- 1 Suspension
 - 2 PAROC Hvac **Section** AluCoat T
 - 3 Gap sealing according to page 5
 - 4 Rigid, eg; concrete deck
 - 5 Type of pipe acc. table
- a **LINEAR** arrangement



- 1 Suspension
 - 2 PAROC Hvac **Section** AluCoat T
 - 3 Gap sealing according to page 5
 - 4 Rigid, eg; concrete deck
 - 5 Type of pipe acc. table
- b **CLUSTER** arrangement

Installation in flexible and rigid walls (≥ 1200 mm) positioned in cluster, PAROC Hvac Section AluCoat T					
Pipe type	Outer diameter of pipe	Pipe thickness	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Multilayer pipe Raxofix / Sanfix Fosta	16,0	$\geq 2,2$	20 - 100	20 - 100	20 - 100
	20,0	$\geq 2,8$			
	25,0	$\geq 2,7$			
	32,0	$\geq 3,2$			
	40,0	$\geq 3,5$			
	50,0	$\geq 4,0$			
Multilayer pipe Geberit Mepla ML	63,0	$\geq 4,5$	20 - 80	20 - 80	20 - 80
	16,0	$\geq 2,25$			
	20,0	$\geq 2,5$			
	26,0	$\geq 3,0$			
	32,0	$\geq 3,0$			
	40,0	$\geq 3,5$			
	50,0	$\geq 4,0$			
	63,0	$\geq 4,5$			
75,0	$\geq 4,7$				

ASYMMETRIC PLACEMENT



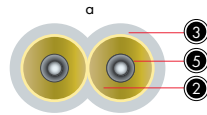
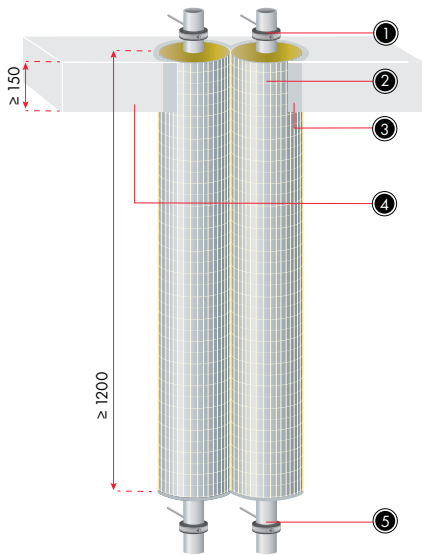
- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3 Gap sealing according to page 5
- 4 Rigid, eg; concrete deck
- 5 Type of pipe acc. table
- a **LINEAR** arrangement

Installation in flexible and rigid walls (≥ 1200 mm) linear arrangement, PAROC Hvac Section AluCoat T					
Pipe type	Outer diameter of pipe	Pipe thickness	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Multilayer pipe Geberit Mepla ML	16,0	≥ 2,25	20 - 80		
	20,0	≥ 2,5			
	26,0	≥ 3,0			
	32,0	≥ 3,0			
	40,0	≥ 3,5			
	50,0	≥ 4,0			
	63,0	≥ 4,5			
	75,0	≥ 4,7			

Installation in flexible and rigid walls (≥ 1200 mm) linear arrangement, PAROC Hvac Section AluCoat T					
Pipe type	Outer diameter of pipe	Pipe thickness	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Multilayer pipe Raxofix / Sanfix Fosta	16,0	≥ 2,2	20 - 100		
	20,0	≥ 2,8			
	25,0	≥ 2,7			
	32,0	≥ 3,2			
	40,0	≥ 3,5			
	50,0	≥ 4,0			
	63,0	≥ 4,5			

PAROC HVAC SECTION ALUCOAT T

COMPOSITE PIPES IN RIGID DECKS
ASYMMETRIC PLACEMENT



- 1 Suspension
- 2 PAROC Hvac **Section** AluCoat T
- 3 Gap sealing according to page 5
- 4 Rigid, eg; concrete deck
- 5 Composite pipes
- a **LINEAR** arrangement

Installation in flexible and rigid walls (≥ 1200 mm) positioned linear, PAROC Hvac Section AluCoat T					
Outer diameter of pipe	Pipe thickness	Thickness of aluminium	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
		AL	Thickness	Thickness	Thickness
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
≤ 32,0	≥ 4,5	0,15	20 - 80		
> 32,0	≥ 5,6				
≤ 40,0					
> 40,0	≥ 6,9				
≤ 50,0					
> 50,0	≥ 8,7				
≤ 63,0					

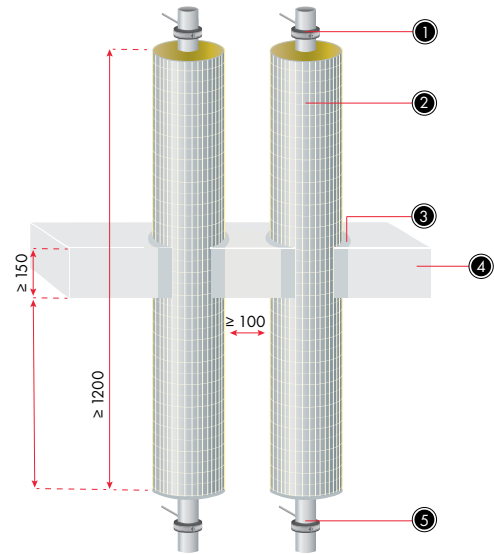
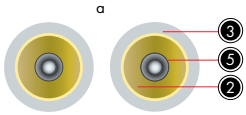
Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Outer diameter of pipe	Pipe thickness	Thickness of aluminium	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
		AL	Thickness	Thickness	Thickness
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
$\leq 16,0$	$\geq 2,0$	$\geq 0,2$	20 - 100	20 - 100	20 - 100
$> 16,0$	$\geq 2,2$	$\geq 0,2$			
$\leq 20,0$					
$> 20,0$	$\geq 2,5$	$\geq 0,2$			
$\leq 25,0$					
$> 25,0$	$\geq 3,0$	$\geq 0,35$			
$\leq 32,0$					
$> 32,0$	$\geq 3,5$	$\geq 0,6$			
$\leq 40,0$					
$> 40,0$	$\geq 4,0$	$\geq 0,6$			
$\leq 50,0$					
$> 50,0$	$\geq 4,5$	$\geq 0,8$			
$\leq 63,0$					

Installation in flexible and rigid walls (≥ 1200 mm) linear and cluster installation, PAROC Hvac Section AluCoat T					
Outer diameter of pipe	Pipe thickness	Thickness of aluminium	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
		AL	Thickness	Thickness	Thickness
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
$\leq 16,0$	$\geq 2,0$	$\geq 0,3$	20 - 100	20 - 100	20 - 100
$> 16,0$	$\geq 2,0$	$\geq 0,4$			
$\leq 20,0$					
$> 20,0$	$\geq 3,0$	$\geq 0,5$			
$\leq 26,0$					
$> 26,0$	$\geq 3,0$	$\geq 0,6$			
$\leq 32,0$					
$> 32,0$	$\geq 3,5$	$\geq 0,85$			
$\leq 40,0$					
$> 40,0$	$\geq 4,0$	$\geq 1,0$			
$\leq 50,0$					
$> 50,0$	$\geq 4,5$	$\geq 1,2$			
$\leq 63,0$					

PAROC HVAC SECTION ALUCOAT T

COMPOSITE PIPES IN RIGID DECKS

SPACING 100 MM



- 1 Suspension
- 2 PAROC Hvac **Section AluCoat T**
- 3 Gap sealing according to page 5
- 4 Rigid, eg; concrete deck
- 5 Type of pipe acc. table
- α **LINEAR** arrangement

Installation in flexible and rigid walls (≥ 1200 mm) linear arrangement, PAROC Hvac Section AluCoat T					
Pipe type	Outer diameter of pipe	Pipe thickness	Local Sustained Zero spacing 100 mm spacing	Continuous Sustained Zero spacing	Continuous Sustained 100 mm spacing
			Thickness	Thickness	Thickness
	[mm]	[mm]	[mm]	[mm]	[mm]
Multilayer pipe Rehau Rautitan stabil	16,0	$\geq 2,2$	20 - 80		20 - 80
	20,0	$\geq 2,9$			
	25,0	$\geq 3,7$			
	32,0	$\geq 4,7$			
Multilayer pipe Rehau Rautitan stabil	40,0	$\geq 5,5$	20 - 80		20 - 80
	50,0	$\geq 6,9$			
Polypropylene pipe Aquatherm blue pipe	63,0	$\geq 8,6$	20 - 80		20 - 80
	20,0	$\geq 1,9$			
Polyethylene pipe JRG Sanipex	25,0	$\geq 2,3$	20 - 80		20 - 80
	32,0	$\geq 2,9$			
	16,0	$\geq 2,2$			
	20,0	$\geq 2,8$			
	25,0	$\geq 3,5$			
	32,0	$\geq 4,4$			
Polybutene pipe GF Instaflex	40,0	$\geq 5,5$	20 - 60		20 - 60
	50,0	$\geq 6,9$			
	63,0	$\geq 8,7$			
	16,0	$\geq 2,2$			
	20,0	$\geq 2,8$			
	25,0	$\geq 2,3$			
	32,0	$\geq 2,9$			
	40,0	$\geq 3,7$			
	50,0	$\geq 4,6$			
63,0	$\geq 5,8$				
75,0	$\geq 6,8$	25 - 60		25 - 60	
90,0	$\geq 8,2$				
	110,0	$\geq 10,0$			

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BUILDING INSULATION

offers a wide range of products and solutions for all traditional building insulation. The building insulation products are mainly used for the thermal, fire and sound insulation of exterior walls, roofs, floors and basements, intermediate floors and partitions.



SOUND ABSORBING

ceilings and wall panels for interior acoustic control, as well as industrial noise control products, are available in the range.



TECHNICAL INSULATION

products are used for thermal, fire and sound insulation in HVAC systems, industrial processes and pipe work, industrial equipment as well as shipbuilding and offshore industry.



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