

# PRODUCT CERTIFICATE

## Knauf Insulation d.o.o.

manufactures

### Mineral fibre pipe sections Thermo-teK PS Pro ALU

Product Thermo-teK PS Pro ALU is aimed to be used as pipe penetration seals in partition walls and floors. System consists of stone wool and aluminum covering. This certificate is based on an initial type testing and assessment of the product to the certification criteria SERT R69. The fire resistance properties of the system is tested according to test standard EN 1366-3 and classified according to EN 13501-2 at MPA NRW, Erwitte. Fire resistance properties are presented in this product certificate. Products are CE-marked and resistance to fire properties are according to product standard EN 14303 and presented in Declaration of conformity. A summary of the reaction to fire characteristics is presented below. Resistance to fire characteristics are presented in Annex 1.

Table 1. Density, reaction to fire properties and cover material

Product name	Density (kg/m <sup>3</sup> )	Thickness (mm)	Reaction to fire EN 13501-1	Cover material
Thermo-teK PS Pro ALU	85 - 135	20 - 120	A2-S1, d0	Aluminum foil

According to the test results Thermo-teK PS Pro ALU can be used as pipe penetration seals for non-combustible pipes and plastic pipes mounted in rigid partition walls and floors as well as in light weight wall partitions. Rigid wall and floor construction needs to have minimum density of 550 kg/m<sup>3</sup> and thickness of the wall minimum 100 mm and floor minimum 150 mm. Lightweight partition has to be classified according to EN 13501-2 and thickness of the wall to be minimum 94 mm.

Thermo-teK PS Pro ALU insulated pipe sections are mounted on partition construction according to manufacturer instructions. Responsible assembler draws up the installation certificate according to manufacturer example. Mounting details are presented in Annex 2.

The remaining gap of 10 – 50 mm shall be filled with class-A, gypsum based material to the depth of the component. Insulating shells shall be wound with steel wire c/c of < 200 mm.

This certificate is valid until October 31, 2029 on condition that the product is not essentially changed and the manufacturer and Eurofins Expert Services Oy have a valid contract on certification. To check the validity of this certificate, [www.sertifikaattihaku.fi](http://www.sertifikaattihaku.fi). Other conditions are listed on the reverse side of the certificate.

Espoo, October 31, 2024

Katja Vahtikari  
Manager, Construction Certification

Heli Välimäki  
Senior Expert

*This document has been signed electronically*

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# PRODUCT CERTIFICATE

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No EUFI29-19002580-C  
October 31, 2024

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The validity of the certificate:

Where reference is made in this certificate to any regulations, publications, standards or other documents, it shall be construed as a reference to such publication in the form of which it is in force at the date of this certificate.

The manufacturer is responsible for the quality and continuous quality control of the product. In granting this certificate, Eurofins Expert Services Oy does not accept responsibility to any person or body for any loss or damage incurred in respect of personal injury arising as direct or indirect result of the use of this product.

The use of the name of Eurofins Expert Services Oy or the name Eurofins in any other form in advertising or distribution in part of this certificate is only permissible with written authorisation from Eurofins Expert Services Oy.

## ANNEX 1

**Fire retarding sealing in Wall**

Table 1.

Non-combustible metal pipes insulated with Thermo-teK PS Pro ALU C/U Insulation length 1200 mm, Case LS, (localized insulation)				
Pipe material	Pipe diameter $d_u$ , mm	Thickness of insulation $s$ , mm	Thickness of the pipe mm	Fire resistance class
Copper	$\leq 54$	20 - 100	$\geq 0,7 - 2,5$	EI 120
Steel	$>54 \dots \leq 89$	30 - 120		EI 120
Stainless steel Cast iron	$>89 \dots \leq 108$	30 - 110		EI 90
Steel	$\leq 115$	30 - 110	$\geq 2,5 - 14,2$	EI 90
stainless steel	$>115 \dots \leq 140$	30 - 90		EI 90
Cast iron	$\leq 168$	50		EI 90
		$>50 - 80$		EI 60

With covered pipe end configuration (C/C),

Table 2.

Non-combustible metal pipes insulated with Thermo-teK PS Pro ALU C/U Continuous insulation over entire length of pipe, Case CS, (continuous insulation)				
Pipe material	Pipe diameter $d_u$ , mm	Thickness of insulation $s$ , mm	Thickness of the pipe mm	Fire resistance class
Copper	$\leq 54$	20 - 100	$\geq 0,7 - 2,5$	EI 120
Steel	$>54 \dots \leq 89$	30 - 120		
Stainless steel Cast iron	$>89 \dots \leq 108$	30 - 110		
Steel	$\leq 115$	30 - 110	$\geq 2,5 - 14,2$	
stainless steel	$>115 \dots \leq 140$	30 - 90		
Cast iron	$\leq 168$	50 - 80		

With covered pipe end configuration (C/C)

Table 3.

Multi-layer composite pipes insulated with Thermo-teK PS Pro ALU U/C Insulation length 1200 mm, Case LS, (localized insulation)				
Pipe material	Pipe diameter $d_u$ , mm	Thickness of insulation $s$ , mm	Thickness of the pipe mm	Fire resistance class
aquatherm green pipe MS	$\leq 50$	20 - 100	$\leq 6,9$	EI 120
	$\leq 110$	30	$\leq 15,2$	
	$\leq 110$	$> 30 - 110$	$\leq 15,2$	EI 90
alpex F50 Profi	$\leq 32$	20 - 80	$\leq 3,0$	EI 120
alpex L	$\leq 75$	30 - 80	$\leq 5,0$	
Uponor MLC pipe, white	$\leq 50$	20-100	$\leq 4,5$	
	$\leq 110$	30-100	$\leq 10,0$	

With covered pipe end configuration (C/C)

Table 4.

Asymmetric insulation with Thermo-teK PS Pro ALU U/C Insulation length $\geq 600$ mm, Case LS, (localized insulation)				
Pipe material	Pipe diameter $d_u$ , mm	Thickness of insulation $s$ , mm	Thickness of the pipe mm	Fire resistance class
aquatherm green pipe MS	$\leq 32$	20 - 50	$\leq 4,5$	EI 60
alpex F50 Profi	$\leq 32$	20 - 50	$\leq 3,0$	EI 90
Uponor MLC pipe, white	$\leq 32$	20 - 50	$\leq 3,0$	EI 60

### Fire retarding sealing in Floor

Table 5.

Non-combustible metal pipes insulated with Thermo-teK PS Pro ALU C/U Insulation length 1200 mm, Case LS, (localized insulation)				
Pipe material	Pipe diameter $d_u$ , mm	Thickness of insulation $s$ , mm	Thickness of the pipe mm	Fire resistance class
Copper	$\leq 54$	20 - 100	$\geq 0,7 - 2,5$	EI 120
Steel	$>54 \dots \leq 89$	30 - 120		
Stainless steel	$>89 \dots \leq 108$	30 - 110		EI 90
Cast iron				
Steel	$\leq 115$	30 - 110	$\geq 2,5 - 14,2$	EI 120
stainless steel	$>115 \dots \leq 140$	30 - 90		
Cast iron	$\leq 168$	50 >50 - 80		

Table 6.

Non-combustible metal pipes insulated with Thermo-teK PS Pro ALU C/U Continuous insulation over entire length of pipe, Case CS, (continuous insulation)				
Pipe material	Pipe diameter $d_u$ , mm	Thickness of insulation $s$ , mm	Thickness of the pipe mm	Fire resistance class
Copper	$\leq 54$	20 - 100	$\geq 0,7 - 2,5$	EI 120
Steel	$>54 \dots \leq 89$	30 - 120		
Stainless steel	$>89 \dots \leq 108$	30 - 110		
Cast iron				
Steel	$\leq 115$	30 - 110	$\geq 2,5 - 14,2$	EI 120
stainless steel	$>115 \dots \leq 140$	30 - 90		
Cast iron	$\leq 168$	50 - 80		

Table 7.

Multi-layer composite pipes insulated with Thermo-teK PS Pro ALU U/C Insulation length 1200 mm, Case LS, (localized insulation)				
Pipe material	Pipe diameter $d_u$ , mm	Thickness of insulation $s$ , mm	Thickness of the pipe mm	Fire resistance class
aquatherm green pipe MS	$\leq 50$	20 - 100	$\leq 6,9$	EI 120
	$\leq 110$	30 - 100	$\leq 15,2$	
alpex F50 Profi	$\leq 32$	20 - 80	$\leq 3,0$	
alpex L	$\leq 75$	30 - 80	$\leq 5,0$	
Uponor MLC pipe, white	$\leq 50$	20 - 100	$\leq 4,5$	
	$\leq 110$	30 - 100	$\leq 10,0$	

Table 8.

Asymmetric insulation with Thermo-teK PS Pro ALU , installed on top side of the ceiling. U/C Insulation length $\geq 600$ mm, Case LS, (localized insulation)				
Pipe material	Pipe diameter $d_u$ , mm	Thickness of insulation $s$ , mm	Thickness of the pipe mm	Fire resistance class
aquatherm green pipe MS	$\leq 32$	20 - 50	$\leq 4,5$	EI 120
alpex F50 Profi	$\leq 32$	20 - 50	$\leq 3,0$	
Uponor MLC pipe, white	$\leq 32$	20 - 50	$\leq 3,0$	

Table 9.

Asymmetric insulation with Thermo-teK PS Pro ALU , installed on bottom side of the ceiling. U/C Insulation length $\geq 600$ mm, Case LS, (localized insulation)				
Pipe material	Pipe diameter $d_u$ , mm	Thickness of insulation $s$ , mm	Thickness of the pipe mm	Fire resistance class
aquatherm green pipe MS	$\leq 32$	20 - 50	$\leq 4,5$	EI 60
alpex F50 Profi	$\leq 32$	20 - 50	$\leq 3,0$	EI 120
Uponor	$\leq 32$	20	$\leq 3,0$	EI 120
MLC pipe, white	$\leq 32$	$> 20 - 50$	$\leq 3,0$	EI 90

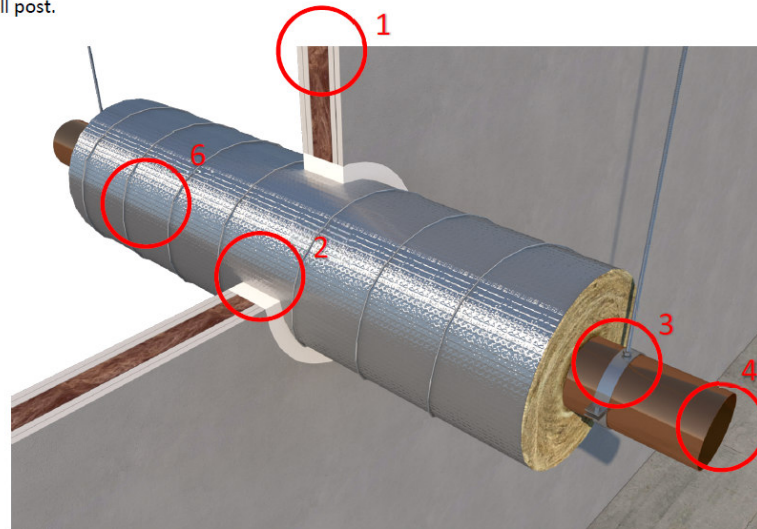
ANNEX 2

**Mounting instructions and detailed drawings**

Mounting instructions

**1. WALL STRUCTURE**

Knauf Insulation seal systems for pipes penetrating wall might be used both in lightweight and massive walls. The same fire resistance intended for pipe insulation must be applied to the wall. The thickness of the wall must be minimally 94 mm and no part of the penetration seal may be located less than 100 mm from the lightweight wall post.



**2. GAP FILLING**

The remaining gap of 10 – 50 mm shall be filled with class-A, gypsum based material to the depth of the component. Insulating shells shall be wound with steel wire c/c of < 200 mm.

**3. SUSPENSION SYSTEM**

First brackets (supports) for the pipes must be positioned at a spacing of ≤ 650 mm from the wall. The brackets must be non-combustible.

**4. PIPES**

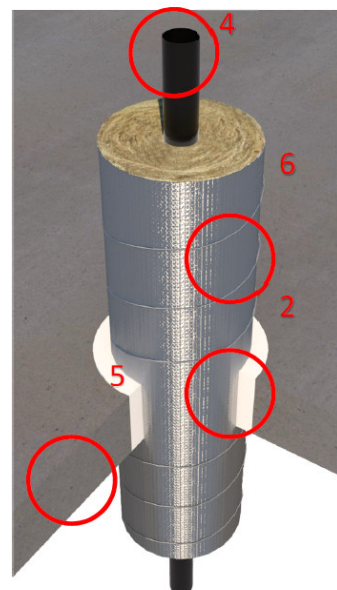
Pipe dimensions and material must be in harmony with materials listed in Annex 1, tables 1-9.

**5. CEILING STRUCTURE**

Ceiling structures are massive. Their thickness must be ≥ 150 mm and their density ≥ 550 kg/m<sup>3</sup>.

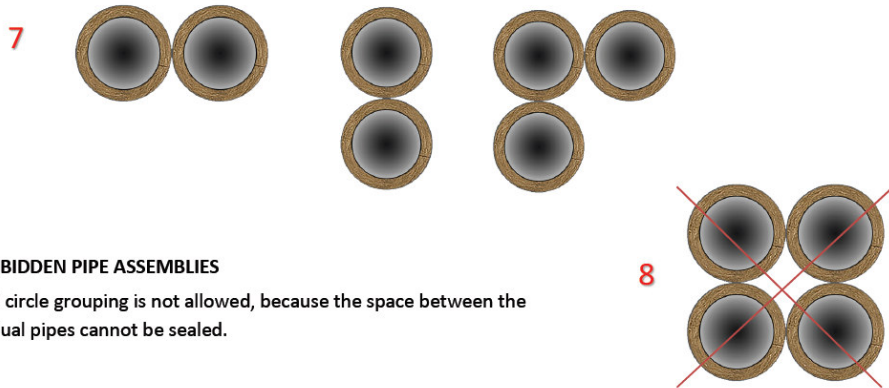
**6. GENERAL REQUIREMENTS**

All pipes must only be passed through the wall/ceiling at right angles. In addition, pipe insulation must be wound by steel wire with  $\varnothing \geq 0,6$  mm at least 6 turns/m. The spacing between every single wire loops must be < 200 mm.



**7. ALLOWED PIPE ASSEMBLIES**

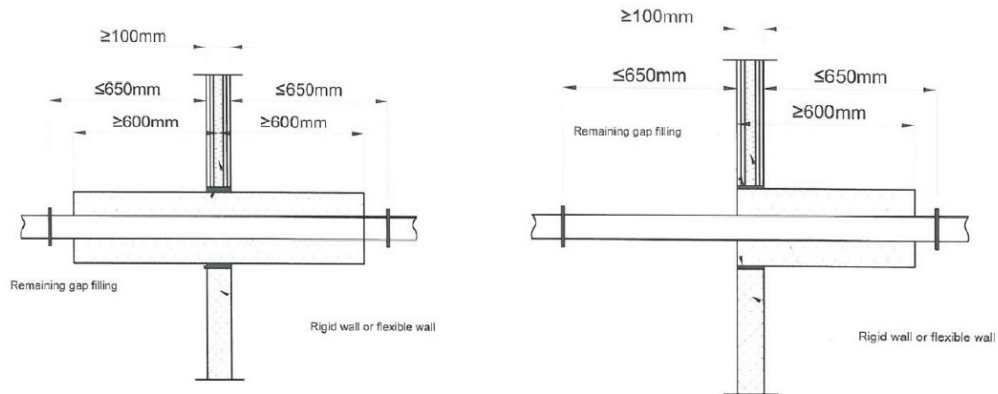
Pipes can be easily grouped in existing holes. The distance between grouped insulated pipes is 0 mm. This pipe assembly will have fire resistance equal to the shortest classification period. A spacing of  $\geq 100$  must be observed from other installations/penetration seals.



**8. FORBIDDEN PIPE ASSEMBLIES**

Closed circle grouping is not allowed, because the space between the individual pipes cannot be sealed.

**9. WALL INSTALLATION DIMENSIONS**



**10. CEILING INSTALLATION DIMENSIONS**

