

UL-EU CERTIFICATE

Certificate No. UL-EU-01120-CPR

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Certificate Holder PILO ESH
Hasandlar 5 Eilat
Israel

Manufacturer A/003

Certified Product Type Fire Stop - Mortar
Product Trade Name PILOSTOP MORTAR
Trademark N/A
Rating/Classification See Appendix

Expiry date 2029-11-25



A handwritten signature in purple ink, appearing to read 'Chris Miles'.

Head of Notified Body
Chris Miles

This is to certify that representative samples of the Certified Product listed above have been investigated by Underwriters Laboratories to the Standard(s) indicated on this Certificate, in accordance with the UL Global Services Agreement and the UL-EU Mark Service Terms and Conditions ("Agreement"). The Certificate Holder is entitled to use the UL-EU Mark for the Certified Product listed on the certificate and manufactured at the production site(s) listed, in accordance with the terms of the Agreement. Only those products bearing the UL-EU Mark for Europe should be considered as being covered by UL's UL-EU Mark Service. This Certificate shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.



Appendix UL-EU CERTIFICATE

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This certificate relates to the use of PILOSTOP MORTAR for fire stopping where there are service penetrations through floors and walls. The detailed scope is given in pages 3 to 32 of this Certificate. This shows the thickness and acceptable dimensions, substrates and orientations required to provide fire resistance periods of up to 240 minutes for differing services and wall/floor constructions.

The product is certificated on the basis of:

- i) Inspection and surveillance of factory production control by UL
- ii) Fire resistance test data in accordance with EN 1366-3: 2009
- iii) Classification in accordance with EN 13501-2
- iv) Durability and Servicability as defined in ETAG 026-2, Clause 2.4.12*

PILOSTOP MORTAR has been tested in accordance with the requirements of ETAG 026-2, Clause 2.4.12 to demonstrate its suitability for use in internal conditions with humidity lower than 85 % RH, excluding temperatures below 0°C, without exposure to rain or UV. These conditions are designated Z₂ in ETAG 026-2.

PILOSTOP MORTAR is a gypsum based mortar material, used to reinstate the fire resistance performance of wall and floor constructions where they have been provided with apertures for the penetrations of multiple services.



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Product-type: Mortar		Intended use: Penetration Seal
Basic requirement for construction work	Basic Requirement	Performance
BWR 1 Mechanical resistance and stability		
-	None	Not relevant
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	Class ‘A1’
EN 13501-2	Resistance to fire	Pages 4 to 32
BWR 3 Hygiene, health and environment		
EN 1026:2000	Air permeability (material property)	No performance determined
ETAG 026-2, Annex C	Water permeability (material property)	No performance determined
Declaration of manufacturer	Release of dangerous substances	Use categories: IA1, S/W3 Declaration of manufacturer
BWR 4 Safety in use		
EOTA TR 001:2003	Mechanical resistance and stability	Suitable for use in walls and floors in Zone Types I, II, III & IV*
EOTA TR 001:2003	Resistance to impact/movement	
EOTA TR 001:2003	Adhesion	
BWR 5 Protection against noise		
EN 10140-2/ EN ISO 717-1	Airborne sound insulation	No performance determined
BWR 6 Energy economy and heat retention		
EN 12664, EN 12667 or EN 12939	Thermal properties	No performance determined
EN ISO 12572 EN 12086	Water vapour permeability	No performance determined
General aspects relating to fitness for use		
EOTA TR 024:2009, clause 3.1.11 & 3.1.12	Durability and serviceability	Z ₂
BWR 7 Sustainable use of natural resources		
-	-	No performance determined

*At dimensions up to those given in 2.4) and with soft and hard body impact

27-CP-F0855 Issue: 3.0



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PILOSTOP MORTAR: Service Penetration Seals in Walls									
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services	Seal Position	Minimum Seal Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Fire Resistance (mins.)	
								E	EI
Masonry/ Concrete	150	2400 wide x 1200 high	None	No restriction	50	Stone Mineral Wool 150 kg/m ³	50	180	120
			Electrical cables up to 21 mm Ø					180	60
			Electrical cables up to 50 mm Ø					180	45
			Electrical cables up to 80 mm Ø					120	45
			Telecom cables up to 21 mm Ø					180	90
			Steel cable trays & ladders					180	60
			Non-sheathed wires up to 17 mm Ø					180	45
			Non-sheathed wires up to 24 mm Ø					180	30
			Copper conduit up to 16 mm Ø					180	30
			Steel conduit up to 16 mm Ø					180	60
			PVC conduit up to 16 mm Ø					180	60
			Steel pipe 219 diameter/ 5-14.2 mm wall with CS insulation of 30 mm stone wool 80 kg/m ³					120	90
			Copper pipe up to 54 mm diameter/ 1-14.2 mm wall*					180	120
			75 mm Alupex composite pipe with 7.5 mm wall with LI or CI 600 mm long, 32 mm Elastomeric insulation minimum class B-s3,d0					60	60
		80 x 80	Single electrical cables up to 21 mm Ø					240	60
		70 x 70	Copper pipe up to 12 mm diameter/ 0.9-5 mm wall*					240	240
		115 x 115	Copper pipe up to 54 mm diameter/ 1-14.2 mm wall*					240	120

* with LI or CI 1000 mm long, 20 mm stone wool 80 kg/m³

LS = Local Sustained
 CS = Continuous Sustained
 LI = Local Interrupted
 CI = Continuous Interrupted



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PILOSTOP MORTAR: Service Penetration Seals in Walls

Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services – Mild or stainless steel pipe with LI or CI 1000 mm long/ 30 mm Stone wool insulation, 80 kg/m³	Seal Position	Minimum Seal Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Fire Resistance (mins.)	
								E	EI
Masonry/ Concrete	150	2400 wide x 1200 high	40 mm diameter/1.5-14.2 mm wall*	No restriction	50	Stone Mineral Wool 150 kg/m³	50	120	90
			50 mm diameter/1.7-14.2 mm wall*						
			60 mm diameter/1.9-14.2 mm wall*						
			75 mm diameter/2.2-14.2 mm wall*						
			90 mm diameter/2.5-14.2 mm wall*						
			100 mm diameter/2.7-14.2 mm wall*						
			115 mm diameter/3-14.2 mm wall*						
			140 mm diameter/3.5-14.2 mm wall*						
			165 mm diameter/ 3.9-14.2 mm wall*						
			180 mm diameter/ 4.2-14.2 mm wall*						
			200 mm diameter/ 4.6-14.2 mm wall*						
			219 mm diameter/ 5.0-14.2 mm wall*						
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services – Mild or stainless steel pipe with LI or CI 1000 mm long/ 20 mm Stone wool insulation, 80 kg/m³	Seal Position	Minimum Seal Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Fire Resistance (mins.)	
								E	EI
Masonry/ Concrete	150	2400 wide x 1200 high	40 mm diameter/1.5-14.2 mm wall	No restriction	50	Stone Mineral Wool 150 kg/m³	50	180	120
		100 x100						240	240

* Typical pipe diameters shown, intermediate sizes are possible

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Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services	Seal Position	Minimum Seal Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Fire Resistance (mins.)	
								E	EI
Masonry/Concrete	150	2400 wide x 1200 high	None	No restriction	100	None	-	240	240
			Electrical cables up to 80 mm Ø					240	60
			Telecom cables up to 21 mm Ø					120	120
			Steel cable trays & ladders					120	60
			Non-sheathed wires up to 24 mm Ø					180	30
			Copper conduit up to 16 mm Ø					180	60
			Steel conduit up to 16 mm Ø					240	240
Masonry/Concrete	150	2400 wide x 1200 high	Penetrating Services - Mild or stainless steel pipe insulated with CS 13-19 mm Elastomeric insulation minimum class B-s3,d0	No restriction	100	1 off 50 x 1.8mm PILOSTOP PIPE WRAP, fitted central		240	60
			40 mm diameter/1.5-14.2 mm wall*						
			50 mm diameter/1.6-14.2 mm wall*						
			60 mm diameter/1.7-14.2 mm wall*						
			75 mm diameter/1.9-14.2 mm wall*						
			90 mm diameter/2.1-14.2 mm wall*						
			100 mm diameter/2.1-14.2 mm wall*						
Masonry/Concrete	150	2400 wide x 1200 high	Penetrating Services - Mild or stainless steel pipe insulated with CS 13 mm Elastomeric insulation minimum class B-s3,d0	No restriction	100	1 off 50 x 3.6mm PILOSTOP PIPE WRAP, fitted central		240	240
			40 mm diameter/1.5-14.2 mm wall						
Masonry/Concrete	150	2400 wide x 1200 high	Penetrating Services - Mild or stainless steel pipe insulated with CS 9 mm Elastomeric insulation minimum class B-s3,d0	No restriction	100	1 off 50 x 3.6mm PILOSTOP PIPE WRAP, fitted central		240	30
			165 mm diameter/4.5-14.2 mm wall						

* Typical pipe diameters shown, intermediate sizes are possible

All conduit classifications are end configuration C/U, except PVC which is also C/C (U=Uncapped, C=Capped).
 All pipe classifications are pipe end configuration C/U (U=Uncapped, C=Capped).

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PILOSTOP MORTAR: Service Penetration Seals in Walls								
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services - Mild or stainless steel pipe insulated with CS 13-25 mm Elastomeric insulation minimum class B-s3,d0	Seal Position	Minimum Seal Depth (mm)	Additional component	Fire Resistance (mins.)	
							E	EI
Masonry/Concrete	150	2400 wide x 1200 high	40 mm diameter/1.5-14.2 mm wall*	No restriction	100	1 off 50 x 3.6mm PILOSTOP PIPE WRAP, fitted central	180	60
			50 mm diameter/1.8-14.2 mm wall*					
			60 mm diameter/2-14.2 mm wall*					
			75 mm diameter/2.3-14.2 mm wall*					
			90 mm diameter/2.7-14.2 mm wall*					
			100 mm diameter/2.9-14.2 mm wall*					
			115 mm diameter/3.3-14.2 mm wall*					
			140 mm diameter/3.9-14.2 mm wall*					
165 mm diameter/4.5-14.2 mm wall*								
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1	Seal Position	Minimum Seal Depth (mm)	Additional component	Fire Resistance (mins.)	
							E	EI
Masonry/Concrete	150	2400 wide x 1200 high	315 mm diameter/9.2 mm wall	No restriction	100	1 off 75 x 18 mm PILOSTOP PIPE WRAP, fitted central	120	120

All metal pipe classifications are pipe end configuration C/U, PVC-U pipe classifications are pipe end configuration C/C (U=Uncapped, C=Capped).

* Typical pipe diameters shown, intermediate sizes are possible.

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 CS = Continuous Sustained
 LI = Local Interrupted
 CI = Continuous Interrupted

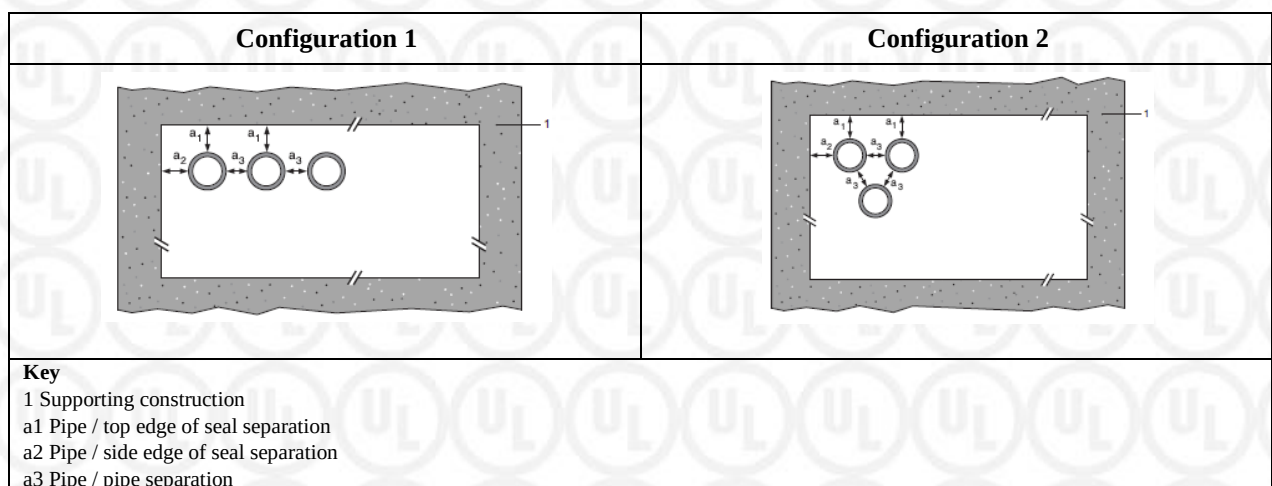


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Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Services - PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1	Seal Position	Minimum Seal Depth (mm)	Permitted configuration for seal separation	Fire Resistance (mins.)	
							E	EI
Concrete	150	2400 x 1200	Diameter up to 32 mm, wall thickness 1.6 – 2.4 mm	No restriction	100	1 & 2 between all specified pipes	120	120
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Services - PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1	Seal Position	Minimum Seal Depth (mm)	Permitted configuration for seal separation	Fire Resistance (mins.)	
							E	EI
Concrete	150	2400 x 1200	Diameter up to 32 mm, wall thickness 1.8 – 3.0 mm	No restriction	100	1 & 2 between all specified pipes	120	120
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Services - PP pipe according to EN 1852-1: 2009	Seal Position	Minimum Seal Depth (mm)	Permitted configuration for seal separation	Fire Resistance (mins.)	
							E	EI
Concrete	150	2400 x 1200	Diameter up to 32 mm, wall thickness 1.9 – 4.4 mm	No restriction	100	1 & 2 between all specified pipes	120	120

All pipe classifications are pipe end configuration U/C and C/C (U=Uncapped, C=Capped).
 Minimum separation between pipes of 30 mm (a^3) and from seal edges 30 mm (a^1 & a^2).
 Pipes to be supported at 220 and 450 mm from each face of the wall.



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PILOSTOP MORTAR: Service Penetration Seals in Walls								
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services - Mild or stainless steel pipe	Seal Position	Minimum Seal Depth (mm)	Insulation	Fire Resistance (mins.)	
							E	EI
Masonry/ Concrete	150	2400 wide x 1200 high	40 mm diameter/1.5-14.2 mm wall*	No restriction	100	20 mm Stone wool insulation 80 kg/m ³	240	240
			40 mm diameter/1.5-14.2 mm wall*			30 mm Stone wool insulation 80 kg/m ³	240	120
			50 mm diameter/1.7-14.2 mm wall*					
			60 mm diameter/1.9-14.2 mm wall*					
			75 mm diameter/2.2-14.2 mm wall*					
			90 mm diameter/2.5-14.2 mm wall*					
			100 mm diameter/2.7-14.2 mm wall*					
			115 mm diameter/3-14.2 mm wall*					
			140 mm diameter/3.5-14.2 mm wall*					
			165 mm diameter/ 3.9-14.2 mm wall*					
			180 mm diameter/ 4.2-14.2 mm wall*					
			200 mm diameter/ 4.6-14.2 mm wall*					
			219 mm diameter/ 5.0-14.2 mm wall*					

* Typical pipe diameters shown, intermediate sizes are possible

All pipe classifications are pipe end configuration C/U (U=Uncapped, C=Capped).

All pipe insulation shall be 1000 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted)



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PILOSTOP MORTAR: Service Penetration Seals in Walls								
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services	Seal Position	Minimum Seal Depth (mm)	Backing Material	Fire Resistance (mins.)	
							E	EI
Masonry/Concrete	150	2400 wide x 1200 high	Blank seals	Both sides	50	50 mm Stone wool 150 kg/m ³	240	240
			Electric cables up to 80 mm diameter, single or in a bundle.				240	60
			Steel cable trays and ladders up to 500 mm wide				60	60
			Telecoms cables up to 21 mm diameter, single or in a bundle up to 100 mm diameter				240	120
			Unsheathed wire up to 24 mm diameter					

Minimum separation between cables and the edge of the seal of 30 mm.

PILOSTOP MORTAR: Service Penetration Seals in Floors								
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services	Seal Position	Minimum Seal Depth (mm)	Backing Material	Fire Resistance (mins.)	
							E	EI
Concrete	150	2400 wide x 1200 long	None (blank)	Flush with upper face of floor	50	50 mm Stone wool 150 kg/m ³	180	180
			Single* electrical cables up to 21 mm Ø				180	90
			Electrical cables up to 21 mm Ø (single, bundled and on trays)				180	60
			Electrical cables up to 80 mm Ø (single, bundled and on trays)				90	45
			Telecommunication cables up to 21 mm Ø (in tied bundles up to 100 mm Ø)				180	180
			Steel cable trays & ladders				90	60
			Non-sheathed wires up to 17 mm Ø				180	60
			Non-sheathed wires up to 24 mm Ø				180	30
			PVC conduit up to 16 mm Ø				180	180

* To be separated by at least 30 mm
 Minimum cable separation from seal edges 30 mm
 Conduit classification is end configuration C/U and C/C (U=Uncapped, C=Capped).



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PILOSTOP MORTAR: Service Penetration Seals in Floors									
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services – Copper Pipe	Seal Position	Minimum Seal Depth (mm)	Backing Material	Insulation	Fire Resistance (mins.)	
								E	EI
Concrete	150	70 x 70	Up to 12 mm diameter/ 1-5 mm wall	Flush with upper face of floor	50	50 mm Stone wool 150 kg/m ³	20 mm Stone wool 80 kg/m ³	240	240
		115 x 115	Up to 54 mm diameter/ 1-14.2 mm wall					240	180
		2400 x 1200	Up to 54 mm diameter/ 1-14.2 mm wall					180	180
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services – Mild or Stainless Steel	Seal Position	Minimum Seal Depth (mm)	Backing Material	Insulation	Fire Resistance (mins.)	
								E	EI
Concrete	150	280 x 280	40 mm diameter/1-14.2 mm wall*	Flush with upper face of floor	50	50 mm Stone wool 150 kg/m ³	20 mm Stone wool 80 kg/m ³	240	240
			40 mm diameter/1-14.2 mm wall*				30 mm Stone wool 80 kg/m ³	240	90
			50 mm diameter/1.2-14.2 mm wall*						
			60 mm diameter/1.4-14.2 mm wall*						
			75 mm diameter/1.7-14.2 mm wall*						
			90 mm diameter/2-14.2 mm wall*						
			100 mm diameter/2.2-14.2 mm wall*						
			115 mm diameter/2.5-14.2 mm wall*						
			140 mm diameter/3-14.2 mm wall*						
			165 mm diameter/3.5-14.2 mm wall*						
			180 mm diameter/3.8-14.2 mm wall*						
			200 mm diameter/4.2-14.2 mm wall*						
			219 mm diameter/4.5-14.2 mm wall*						

* Typical pipe diameters shown, intermediate sizes are possible

All copper pipe classifications are pipe end configuration C/C, all steel pipe classifications are pipe end configuration C/U (U=Uncapped, C=Capped).

Minimum pipe separation from seal edges 30 mm.

All pipe insulation shall be 1000 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted)



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PILOSTOP MORTAR: Service Penetration Seals in Floors									
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services – Mild or Stainless Steel	Seal Position	Minimum Seal Depth (mm)	Backing Material	Insulation	Fire Resistance (mins.)	
								E	EI
Concrete	150	2400 x 1200	40 mm diameter/1-14.2 mm wall*	Flush with upper face of floor	50	50 mm Stone wool 150 kg/m ³	20 mm Stone wool 80 kg/m ³	180	180
			40 mm diameter/1-14.2 mm wall*				30 mm Stone wool 80 kg/m ³	180	90
			50 mm diameter/1.2-14.2 mm wall*						
			60 mm diameter/1.4-14.2 mm wall*						
			75 mm diameter/1.7-14.2 mm wall*						
			90 mm diameter/2-14.2 mm wall*						
			100 mm diameter/2.2-14.2 mm wall*						
			115 mm diameter/2.5-14.2 mm wall*						
			140 mm diameter/3-14.2 mm wall*						
			165 mm diameter/3.5-14.2 mm wall*						
			180 mm diameter/3.8-14.2 mm wall*						
			200 mm diameter/4.2-14.2 mm wall*						
			219 mm diameter/4.5-14.2 mm wall*						

* Typical pipe diameters shown, intermediate sizes are possible
 All pipe classifications are pipe end configuration C//U (U=Uncapped, C=Capped).
 Minimum pipe separation from seal edges 30 mm.
 All pipe insulation shall be 1000 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted)



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PILOSTOP MORTAR: Service Penetration Seals in Floors									
Substrate	Minimum Substrate Thickness (mm)	Max. Opening Size (mm)	Penetrating Services – Mild or Stainless Steel	Seal Position	Minimum Seal Depth (mm)	Backing Material	Insulation CS	Fire Resistance (mins.)	
								E	EI
Concrete	150	2400 x 1200	40 mm diameter/1-14.2 mm wall	At any position within the depth of the floor	50	50 mm Stone wool 140 kg/m³	20 mm Stone wool 80 kg/m³	180 240#	180 240#
			40 mm diameter/1-14.2 mm wall*				30-80 mm thick stone, mineral wool min. 80 kg/m³		
			50 mm diameter/1.2-14.2 mm wall*						
			60 mm diameter/1.4-14.2 mm wall*						
			75 mm diameter/1.6-14.2 mm wall*						
			90 mm diameter/1.9-14.2 mm wall*						
			100 mm diameter/2.1-14.2 mm wall*						
			115 mm diameter/2.4-14.2 mm wall*						
			140 mm diameter/2.9-14.2 mm wall*						
			165 mm diameter/ 3.4-14.2 mm wall*						
			180 mm diameter/ 3.6-14.2 mm wall*						
			200 mm diameter/ 4.0-14.2 mm wall*						
			219 mm diameter/ 4.3-14.2 mm wall*						
			250 mm diameter/ 5.0-14.2 mm wall*						
			300 mm diameter/ 5.9-14.2 mm wall*						
324 mm diameter/ 6.35-14.2 mm wall*									
Substrate	Minimum Substrate Thickness (mm)	Max. Opening Size (mm)	Penetrating Services – PEX pipe in pipe system	Seal Position	Minimum Seal Depth (mm)	Backing Material	Insulation CS	Fire Resistance (mins.)	
								E	EI
Concrete	150	2400 x 1200	15 mm diameter x 2.5 mm wall inner /25mm diameter outer	At any position within the depth of the floor	50	50 mm Stone wool 140 kg/m³	None	180 240#	180 240#

* Typical pipe diameters shown, intermediate sizes are possible

#EI 240 in apertures up to a maximum of 550 x 1100 mm

All steel pipe classifications are pipe end configuration C/U (U=Uncapped, C=Capped). PEX pipes are pipe end configuration C/C
 Minimum pipe separation from seal edges 30 mm.
 CS = Continuous Sustained



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PILOSTOP MORTAR: Service Penetration Seals in Floors									
Substrate	Minimum Substrate Thickness (mm)	Max. Opening Size (mm)	Penetrating Services – Mild or Stainless Steel	Seal Position	Minimum Seal Depth (mm)	PILOSTOP PIPE WRAP	Insulation CS	Fire Resistance (mins.)	
								E	EI
Concrete	150	2400 x 1200	40 mm diameter/1-14.2 mm wall	At any position within the depth of the floor	100	50 x 3.6 mm (2 x 1.8 layer) at the soffit	25 mm thick Elastomeric insulation minimum class B-s3,d0	240	240
			40 mm diameter/1-14.2 mm wall*					240	120
			50 mm diameter/1.2-14.2 mm wall*						
			60 mm diameter/1.4-14.2 mm wall*						
			75 mm diameter/1.6-14.2 mm wall*						
			90 mm diameter/1.9-14.2 mm wall*						
			100 mm diameter/2.1-14.2 mm wall*						
			115 mm diameter/2.4-14.2 mm wall*						
			140 mm diameter/2.9-14.2 mm wall*						
			165 mm diameter/ 3.4-14.2 mm wall*						
			180 mm diameter/ 3.6-14.2 mm wall*						
			200 mm diameter/ 4.0-14.2 mm wall*						
			219 mm diameter/ 4.3-14.2 mm wall*						
			250 mm diameter/ 5.0-14.2 mm wall*						
			300 mm diameter/ 5.9-14.2 mm wall*						
			324 mm diameter/ 6.35-14.2 mm wall*			50 x 5.4 mm (3 x 1.8 layer) at the soffit	25-50 mm thick Elastomeric insulation minimum class B-s3,d0	120	120
			40 mm diameter/1-14.2 mm wall*						
			50 mm diameter/1.2-14.2 mm wall*						
			60 mm diameter/1.4-14.2 mm wall*						
			75 mm diameter/1.6-14.2 mm wall*						
			90 mm diameter/1.9-14.2 mm wall*						
			100 mm diameter/2.1-14.2 mm wall*						
			115 mm diameter/2.4-14.2 mm wall*						
			140 mm diameter/2.9-14.2 mm wall*						
			165 mm diameter/ 3.4-14.2 mm wall*						
			180 mm diameter/ 3.6-14.2 mm wall*						
			200 mm diameter/ 4.0-14.2 mm wall*						
			219 mm diameter/ 4.3-14.2 mm wall*						
			250 mm diameter/ 5.0-14.2 mm wall*						
			300 mm diameter/ 5.9-14.2 mm wall*						
			324 mm diameter/ 6.35-14.2 mm wall*						

* Typical pipe diameters shown, intermediate sizes are possible
 All steel pipe classifications are pipe end configuration C/U (U=Uncapped, C=Capped).
 Minimum pipe separation from seal edges 30 mm.
 CS = Continuous Sustained



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PILOSTOP MORTAR: Service Penetration Seals in Floors								
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services	Seal Position	Minimum Seal Depth (mm)	Backing Material	Fire Resistance (mins.)	
							E	EI
Concrete	150	2400 x 1200	None (blank)	Flush with upper face of floor	100	None	240	240
			Electrical cables up to 50 mm Ø (single, bundled and on trays)				180	60
			Electrical cables up to 80 mm Ø (single, bundled and on trays)				120	60
			Cables up to 21 mm Ø (in tied bundles up to 100 mm Ø)				180	120
			Steel cable trays & ladders				120	60
			Non-sheathed cables up to 17 mm Ø				180	90
			Non-sheathed cables up to 24 mm Ø				180	20
			PVC conduit up to 16 mm Ø				180	180

Minimum cable separation from seal edges 30 mm.
 Conduit classification is end configuration C/U and C/C (U=Uncapped, C=Capped).



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PILOSTOP MORTAR: Service Penetration Seals in Floors								
Substrate	Minimum Substrate Thickness (mm)	Services – Copper Pipe	Min. Seal Depth (mm)	Max. Seal Size (mm)	Wrap	Insulation	Fire Resistance (mins.)	
							E	EI
Concrete	150	12 mm diameter/1 mm wall	100	1200 x 2400	50 x 3.6 mm PILOSTOP PIPE WRAP fitted to the soffit	9 mm Elastomeric insulation minimum class B-s3,d0	240	240
		12-54 mm diameter/1-1.2 mm wall				13-25 mm Elastomeric insulation minimum class B-s3,d0	240	60
Substrate	Minimum Substrate Thickness (mm)	Services – Gerberit Mepla MLC (PE-Xb/Aluminium/PE-HD pipe)	Min. Seal Depth (mm)	Max. Seal Size (mm)	Wrap	Insulation	Fire Resistance (mins.)	
							E	EI
Concrete	150	16 mm diameter/2.25 mm wall	100	1200 x 2400	50 x 3.6 mm PILOSTOP PIPE WRAP fitted to the soffit	9 mm Elastomeric insulation minimum class B-s3,d0	240	240
		16 mm diameter/2.25 mm wall				9-13 mm Elastomeric insulation minimum class B-s3,d0	240	90
		20 mm diameter/2.5 mm wall						
		26 mm diameter/3 mm wall						
		32 mm diameter/3 mm wall						
		40 mm diameter/3.5 mm wall						
		50 mm diameter/4 mm wall						
		63 mm diameter/4.5 mm wall						
		75 mm diameter/4.7 mm wall						
		16 mm diameter/2.25 mm wall				13-25 mm Elastomeric insulation minimum class B-s3,d0	180	90
		20 mm diameter/2.5 mm wall						
		26 mm diameter/3 mm wall						
		32 mm diameter/3 mm wall						
		40 mm diameter/3.5 mm wall						
		50 mm diameter/4 mm wall						
		63 mm diameter/4.5 mm wall						
		75 mm diameter/4.7 mm wall						

All pipe classifications are pipe end configuration C/C (C=Capped).
 Minimum pipe separation is 30 mm from other services and 25 mm from seal edges.
 All pipe insulation shall be CS (Continuous Sustained).

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PILOSTOP MORTAR: Service Penetration Seals in Floors							
Substrate	Minimum Substrate Thickness (mm)	Min. Seal Depth (mm)	Services	Max. Seal Size (mm)	Insulation	Fire Resistance (mins.)	
						E	EI
Concrete	150	100	Up to 16 mm diameter steel pipe 1.5-7 mm wall	2400 x 1200	None	240	120
			Up to 54 mm diameter Copper pipe 1.5-14.2 mm wall			120	20
			75 mm Alupex composite pipe with 4.6 mm wall			240	20
Substrate	Minimum Substrate Thickness (mm)	Min. Seal Depth (mm)	Services- Mild or Stainless Steel Pipe	Max. Seal Size (mm)	Insulation	Fire Resistance (mins.)	
						E	EI
Concrete	150	100	40 mm diameter/1.5-14.2 mm wall*	2400 x 1200	20 mm Stone wool 80 kg/m ³	240	240
			40 mm diameter/1.5-14.2 mm wall*		30 mm Stone wool 80 kg/m ³	240	120
			50 mm diameter/1.7-14.2 mm wall*				
			60 mm diameter/1.8-14.2 mm wall*				
			75 mm diameter/2.1-14.2 mm wall*				
			90 mm diameter/2.3-14.2 mm wall*				
			100 mm diameter/2.5-14.2 mm wall*				
			115 mm diameter/2.8-14.2 mm wall*				
			140 mm diameter/3.2-14.2 mm wall*				
			165 mm diameter/ 3.6-14.2 mm wall*				
			180 mm diameter/ 3.9-14.2 mm wall*				
			200 mm diameter/ 4.2-14.2 mm wall*				
			219 mm diameter/ 4.5-14.2 mm wall*				

* Typical pipe diameters shown, intermediate sizes are possible.

All steel and copper pipe classifications are pipe end configuration C/C, Alupex composite pipe classifications are pipe end configuration U/C (U= Uncapped, C=Capped).

Minimum pipe separation is 30 mm from seal edges.

All pipe insulation shall be 1000 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted).

Seals shall be flush with the top surface of the floor.



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PILOSTOP MORTAR: Service Penetration Seals in Floors								
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe	Min. Seal Depth (mm)	Max. Seal Size (mm)	Wrap	Insulation	Fire Resistance (mins.)	
							E	EI
Concrete	150	40 mm diameter/1.5-14.2 mm wall	100	2400 x 1200	1 off 50 x 1.8 mm PILOSTOP PIPE WRAP fitted to the soffit	13 mm Elastomeric insulation minimum class B-s3,d0	180	180
		40 mm diameter/1.5-14.2 mm wall*				13-19 mm Elastomeric insulation minimum class B-s3,d0	180	120
		50 mm diameter/1.6-14.2 mm wall*						
		60 mm diameter/1.7-14.2 mm wall*						
		75 mm diameter/1.9-14.2 mm wall*						
		90 mm diameter/2-14.2 mm wall*						
		100 mm diameter/2.1-14.2 mm wall*						
		115 mm diameter/2.3-14.2 mm wall*						
		140 mm diameter/2.6-14.2 mm wall*						
		165 mm diameter/2.8-14.2 mm wall*						

* Typical pipe diameters shown, intermediate sizes are possible.
 All pipe classifications are pipe end configuration C/U (U= Uncapped, C=Capped).
 Minimum pipe separation is 100 mm from other services and 40 mm from seal edges.
 All pipe insulation shall be CS (Continuous Sustained).
 Seals shall be flush with the top surface of the floor.



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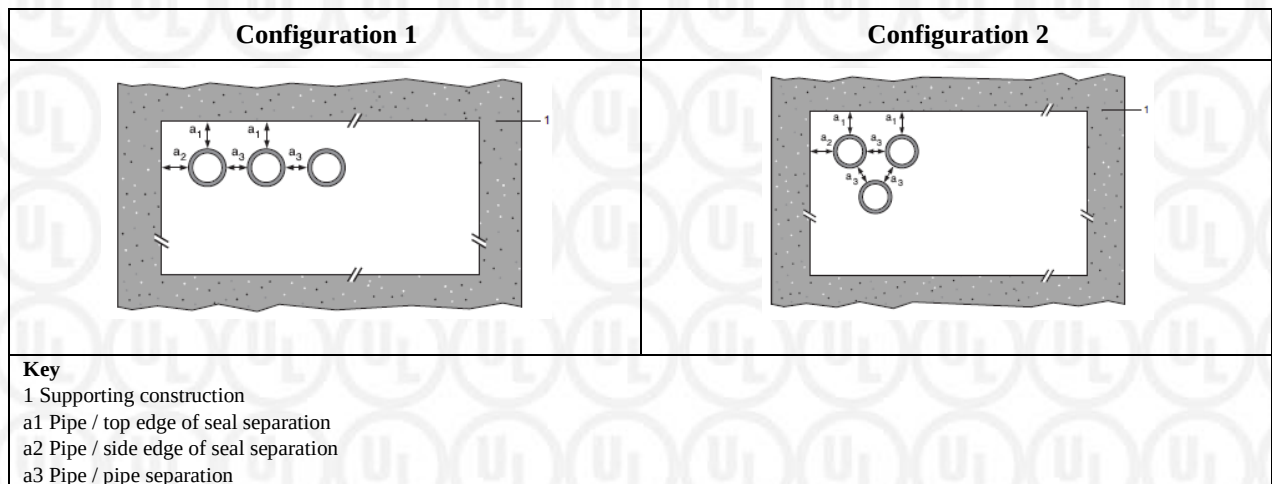
PILOSTOP MORTAR: Service Penetration Seals in Floors							
Substrate	Minimum Substrate Thickness (mm)	Services - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1	Min. Seal Depth (mm)	Max. Seal Size (mm)	Wrap	Fire Resistance (mins.)	
						E	EI
Concrete	150	Up to 40 mm diameter / 1.8-3.7 mm wall ~	100	2400 x 1200	50 x 1.8 mm	180	120
		Up to 110 mm diameter / 3.0-6.6 mm wall			50 x 3.6 mm	240	240
		Up to 125 mm diameter / 3.5-7.4 mm wall			50 x 7.2 mm	120	120
		Up to 160 mm diameter / 4.5 mm wall **			50 x 10.8 mm	240	240
		Up to 110 mm diameter/ 2.7-6.6 mm wall, containing up to 90mm Ø bundle of up to 14 mm Ø telecom cables			50 x 3.6 mm	120	120
Substrate	Minimum Substrate Thickness (mm)	Services - PP pipe according to EN 1451-1	Min. Seal Depth (mm)	Max. Seal Size	Wrap	Fire Resistance (mins.)	
						E	EI
Concrete	150	Up to 40 mm diameter /1.8-4.4 mm wall	100	2400 x 1200	None	120	120
		Up to 40 mm diameter /1.8-5.5 mm wall ~			50 x 1.8 mm	120	120
		Up to 50 mm diameter /2.5-5.5 mm wall **			50 x 3.6 mm	240	240
		Up to 75 mm diameter /3.5-5.5 mm wall **			50 x 3.6 mm	240	240
		Up to 110 mm diameter /2.7-6.3 mm wall			50 x 3.6 mm	240	240
		Up to 125 mm diameter /3.4-11.4 mm wall			50 x 7.2 mm	240	240
		Up to 160 mm diameter /4.9-14.6 mm wall			50 x 10.8 mm	240	240
		Up to 110 mm diameter/ 3.4-6.3 mm wall, containing up to 90mm Ø bundle of up to 14 mm Ø telecom cables			50 x 3.6 mm	60	60
Substrate	Minimum Substrate Thickness (mm)	Services - PE pipe according to EN 1519-1, EN 12201-2 and EN 12666-1	Min. Seal Depth (mm)	Max. Seal Size	Wrap	Fire Resistance (mins.)	
						E	EI
Concrete	150	Up to 40 mm diameter / 2.0-4.4 mm wall	100	2400 x 1200 mm	None	120	120
		Up to 40 mm diameter / 2.4-3.7 mm wall ~			50 x 1.8 mm	240	240
		Up to 110 mm diameter / 3.4-10.0 mm wall			50 x 3.6 mm	120	120
		Up to 125 mm diameter / 3.9-11.4 mm wall			50 x 7.2 mm	240	240
		Up to 160 mm diameter / 4.9-14.6 mm wall			50 x 10.8 mm	120	120
		Up to 250 mm diameter / 7.8 mm wall **			75 x 12.6 mm	180	180
		Up to 110 mm diameter/ 2.7-10.0 mm wall, containing up to 90mm Ø bundle of up to 14 mm Ø telecom cables			50 x 3.6 mm	120	60

All pipe classifications are pipe end configurations U/C, with the exception of those marked ‘**’ which are C/C, and those marked ‘~’ which are U/U, C/U, U/C and C/C (U=Uncapped, C=Capped).
 Minimum pipe separation is 30 mm from other services and from seal edges.
 Seals may be at any position within the floor.



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PILOSTOP MORTAR: Service Penetration Seals in Floors								
Substrate	Minimum Substrate Thickness (mm)	Services – Gerberit Mepla MLC (PE-Xb/Aluminium/PE-HD pipe)	Min. Seal Depth (mm)	Max. Seal Size (mm)	Backing	Insulation	Fire Resistance (mins.)	
							E	EI
Concrete	150	16 mm diameter/2.25 mm wall	50	135 x 135	50 mm Stone wool 150 kg/m³	500 mm long, minimum 20 mm Stone wool minimum 80 kg/m³	240	240
		16 mm diameter/2.25 mm wall					240	180
		20 mm diameter/2.5 mm wall						
		26 mm diameter/3 mm wall						
		32 mm diameter/3 mm wall						
		40 mm diameter/3.5 mm wall						
		50 mm diameter/4 mm wall						
		63 mm diameter/4.5 mm wall						
		75 mm diameter/4.7 mm wall						
		16 mm diameter/2.25 mm wall		2400 x 1200			180	180
		20 mm diameter/2.5 mm wall						
		26 mm diameter/3 mm wall						
		32 mm diameter/3 mm wall						
		40 mm diameter/3.5 mm wall						
		50 mm diameter/4 mm wall						
		63 mm diameter/4.5 mm wall						
		75 mm diameter/4.7 mm wall						

All pipe classifications are pipe end configuration C/C (C=Capped).
 Minimum pipe separation is 10 mm from seal edges.
 All pipe insulation shall be CI (Continuous Interrupted) or LI (Local Interrupted).
 Seals shall be flush with the top surface of the floor.

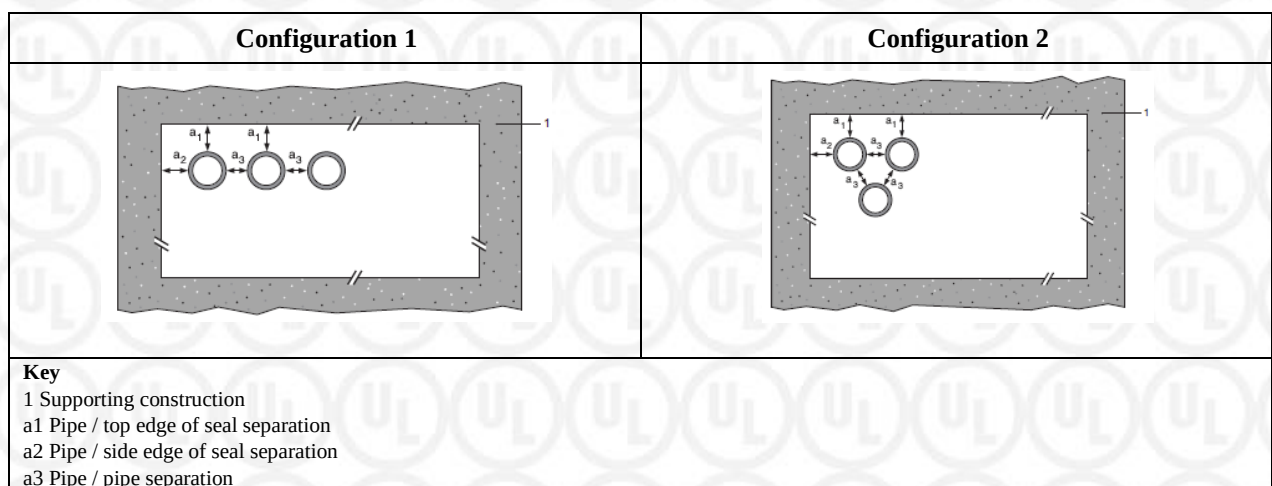


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PILOSTOP MORTAR: Service Penetration Seals in Floors								
Substrate	Minimum Substrate Thickness (mm)	Services – Copper or steel pipe	Min. Seal Depth (mm)	Max. Seal Size (mm)	Backing	Insulation	Fire Resistance (mins.)	
							E	EI
Concrete	150	12 -54 mm diameter/0.7-14.2 mm wall	50	2400 x 1200	50 mm Stone wool 150 kg/m ³	Minimum 20-80 mm Stone wool insulation minimum 80 kg/m ³	180	120
		6 mm diameter/0.7-3 mm wall				None	180	120
		7-15 mm diameter/0.9-7.5 mm wall					180	30
Substrate	Minimum Substrate Thickness (mm)	Services – Steel pipe	Min. Seal Depth (mm)	Max. Seal Size (mm)	Backing	Insulation	Fire Resistance (mins.)	
Concrete	150	4-16 mm diameter/1.0-8.0 mm wall*	50	2400 x 1200	50 mm Stone wool 150 kg/m ³	None	180	180
Substrate	Minimum Substrate Thickness (mm)	Services – Alupex pipe	Min. Seal Depth (mm)	Max. Seal Size (mm)	Backing	Insulation	Fire Resistance (mins.)	
Concrete	150	16-20 mm diameter/2.0 mm wall	50	2400 x 1200	50 mm Stone wool 150 kg/m ³	None	180	180

All pipe classifications are pipe end configuration C/C (C=Capped), with the exception of those marked “*” which are C/U.
 Minimum pipe separation is 30 mm from seal edges.
 All pipe insulation shall be CS (Continuous Sustained).
 Seals may be at any position to either side of the floor.



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PILOSTOP MORTAR: Service Penetration Seals in Floors								
Substrate	Minimum Substrate Thickness (mm)	Services	Min. Seal Depth (mm)	Max. Seal Size (mm)	Backing	Wrap	Fire Resistance (mins.)	
							E	EI
Concrete	150	40 mm diameter /3 mm wall PP pipe according to EN 1451-1	50	2400 x 1200	50 mm Stone wool 150 kg/m ³	None	120	120
		40 mm diameter /4 mm wall PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1\$, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1						
		110 mm diameter /4.3 mm wall PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1\$, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1				50 x 2 mm	60	60

All pipe classifications are pipe end configuration C/C (C=Capped).
 Minimum pipe separation is 30 mm from other services, 30 mm from seal edges.
 Seals shall be flush with the top surface of the floor.

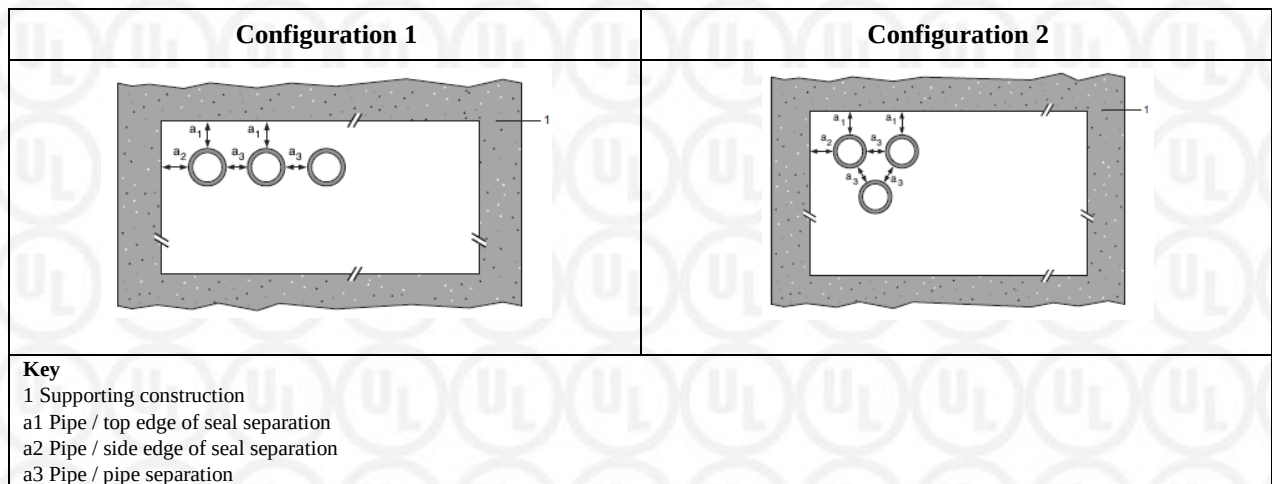


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PILOSTOP MORTAR: Service Penetration Seals in Floors								
Substrate	Minimum Substrate Thickness (mm)	Services - PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1	Min. Seal Depth (mm)	Max. Seal Size (mm)	Backing	Permitted configuration for seal separation	Fire Resistance (mins.)	
							E	EI
Concrete	150	Diameter 16 mm, wall thickness 1.6 – 3.4 mm, to diameter 40 mm, wall thickness 1.9-3.0 mm	50	2400 x 1200	50 mm Stone wool 150 kg/m ³	1 & 2 between all specified pipes	120	120

All pipe classifications are pipe end configurations U/C or C/C (U=Uncapped, C=Capped).
 Minimum separation between pipes of 30 mm (a3) and from seal edges 30 mm (a1 & a2).
 Seals may be flush with either surface of the floor.
 Pipe support required 450 mm above floor.



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PILOSTOP MORTAR: Service Penetration Seals in Floors								
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services	Seal Position	Minimum Seal Depth (mm)	Backing Material	Fire Resistance (mins.)	
							E	EI
Concrete	150	2400 x 1200	Blank seals	Either face of floor	150	None	240	180
			Electric cables up to 21 mm diameter, single or in a bundle.				240	120
			Steel cable trays and ladders up to 500 mm wide				240	90
			Electric cables 22-50 mm diameter, single or in a bundle.				90	60
			Electric cables 51-80 mm diameter, single or in a bundle.				120	120
			Telecoms cables up to 21 mm diameter, single or in a bundle up to 100 mm diameter					
			Unsheathed wire up to 24 mm diameter					

Minimum separation between cables and the edge of the seal of 30 mm.
 Support to cable trays at 450 mm above floor.



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PILOSTOP MORTAR: Service Penetration Seals in Walls									
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services	Seal Position	Minimum Seal Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Fire Resistance (mins.)	
								E	EI
Drywall/ Masonry/ Concrete	100	2400 wide x 1200 high	None	Both sides of the wall	25	Stone wool 150 kg/m ³	50	120	120
			Single electrical cables up to 21 mm Ø (min.100 separation from other services)					120	90
			Electrical cables up to 80 mm Ø (single, bundle and on trays)					120	60
			Cables up to 21 mm Ø in tied bundles up to 100 mm Ø						
			Steel cable trays & ladders						
			Steel conduit up to 16 mm Ø					120	60
			Copper conduit up to 16 mm Ø					120	45
			Non-sheathed wires up to 24 mm Ø					120	45
			PVC conduit up to 16 mm Ø					120	120

Penetration Seal: Cables fitted at any position within the aperture (min. separation 25 mm from seal edges), with 25 mm PILOSTOP MORTAR to both sides of the wall, backed with 50 mm stone wool board 150 kg/m³.

All pipe configurations are capped/uncapped (C/U)



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PILOSTOP MORTAR: Service Penetration Seals in Walls								
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services	Min. Seal Depth (mm)	Max. Seal Size (mm)	Backing	Insulation	Fire Resistance (mins.)	
							E	EI
Drywall/ Masonry/ Concrete	100	Up to 54 mm diameter Copper pipe 1-14.2 mm wall**	25	2400 x 1200	50 mm Stone wool 150 kg/m ³	500 mm long, minimum 20 mm Stone wool minimum 80 kg/m ³	120	120
		75 mm diameter Alupex composite pipe with 7.5 mm wall~				600 mm long, minimum 25 mm AES Fibre ≥ 128kg/m ³ #	60	60
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe	Min. Seal Depth (mm)	Max. Seal Size (mm)	Backing	Insulation	Fire Resistance (mins.)	
							E	EI
Drywall/ Masonry/ Concrete	100	40 mm diameter /1-14.2 mm wall	25	2400 x 1200	50 mm Stone wool 150 kg/m ³	500 mm long, minimum 20 mm Stone wool minimum 80 kg/m ³	120	120
		40 mm diameter /1-14.2 mm wall*				500 mm long, minimum 30 mm Stone wool minimum 80 kg/m ³	120	90
		50 mm diameter /1.2-14.2 mm wall*						
		60 mm diameter /1.4-14.2 mm wall*						
		75 mm diameter /1.7-14.2 mm wall*						
		90 mm diameter /2-14.2 mm wall*						
		100 mm diameter /2.2-14.2 mm wall*						
		115 mm diameter /2.5-14.2 mm wall*						
		140 mm diameter /3-14.2 mm wall*						
		165 mm diameter /3.5-14.2 mm wall*						
		180 mm diameter /3.8-14.2 mm wall*						
		200 mm diameter /4.2-14.2 mm wall*						
		219 mm diameter /4.5-14.2 mm wall*						

Penetration Seal: 500 mm (min.)* LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic (and composite) pipes (single) fitted at any position within the aperture (min. separation 30 mm from seal edges and from other services), with 25 mm PILOSTOP MORTAR to both sides of the wall backed with 50 mm stone wool board 150 kg/m³. Maximum seal size 2400 mm wide x 1200 mm high

* Typical pipe diameters shown, intermediate sizes are possible

All pipe classifications are pipe end configurations C/U, with the exception of those marked ‘***’ which are C/C, and those marked ‘~’ which are U/U, C/U, U/C and C/C (U=Uncapped, C=Capped).

‘#’ Minimum 600 mm long insulation required for Alupex pipe

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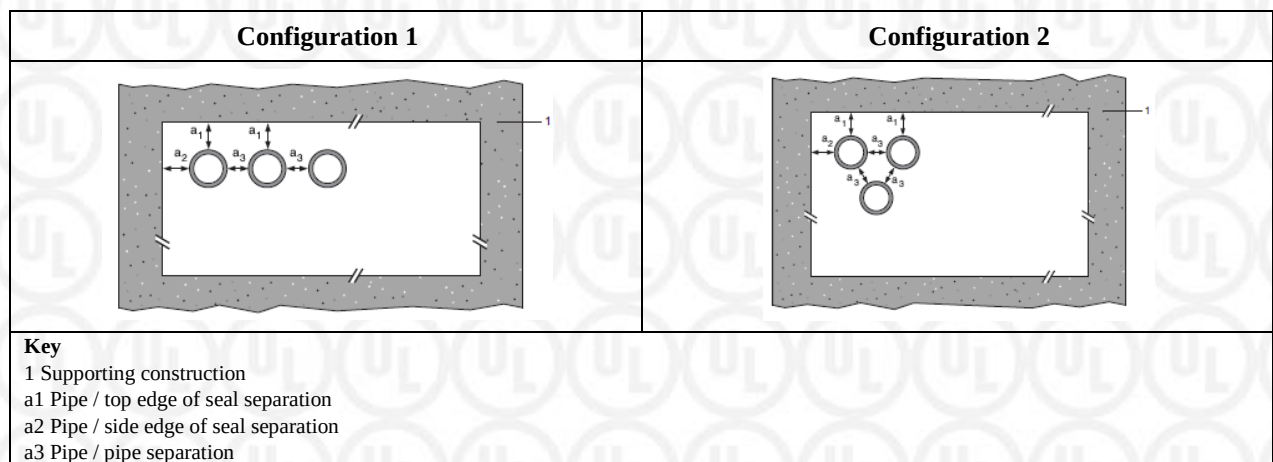
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PILOSTOP MORTAR: Service Penetration Seals Comprising 25 mm deep PILOSTOP MORTAR to both faces backed with 50 mm stone wool board 140 kg/m³								
Substrate	Minimum Wall Thickness (mm)	Penetrating Services - PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1	Seal Position	Min. Seal Depth (mm)	Backing	Permitted Configuration for Seal Separation	Fire Resistance (mins.)	
							E	EI
Gypsum board, Masonry/Concrete	100	Diameter up to 32 mm, wall thickness 1.6 – 2.4 mm	Both Sides	25	50 mm Stone wool 140 kg/m ³	1 & 2 between specified pipes	120	120
Substrate	Minimum Wall Thickness (mm)	Penetrating Services - PE pipe according to EN 1519-1, EN 12201-2 and EN 12666-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1	Seal Position	Min. Seal Depth (mm)	Backing	Permitted Configuration for Seal Separation	Fire Resistance (mins.)	
							E	EI
Gypsum board, Masonry/Concrete	100	Diameter up to 32 mm, wall thickness 1.8 – 3.0 mm	Both Sides	25	50 mm Stone wool 140 kg/m ³	1 & 2 between specified pipes	120	120
Substrate	Minimum Wall Thickness (mm)	Penetrating Services - PP pipe according to EN 1852-1: 2009	Seal Position	Min. Seal Depth (mm)	Backing	Permitted Configuration for Seal Separation	Fire Resistance (mins.)	
							E	EI
Gypsum board, Masonry/Concrete	100	Diameter up to 32 mm, wall thickness 1.9 – 4.4 mm	Both Sides	25	50 mm Stone wool 140 kg/m ³	1 & 2 between specified pipes	120	120

Penetration Seal: Combustible pipes sealed with PILOSTOP MORTAR, to both sides of the wall, backed with stone wool board 140 kg/m³. Minimum separation between pipes of 30 mm (a₃) and from seal edges 30 mm (a₁ & a₂). Maximum seal size 2400 mm wide x 1200 mm high.

All pipe configurations are uncapped /capped (U/C)



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PILOSTOP MORTAR: Service Penetration Seals in Walls								
Substrate	Minimum Substrate Thickness (mm)	Maximum Opening Size (mm)	Penetrating Services - Mild or stainless steel pipe insulated with CS 13-32 mm Elastomeric insulation minimum class B-s3,d0	Seal Position	Minimum Seal Depth (mm)	Additional component	Fire Resistance (mins.)	
							E	EI
Drywall/ Masonry/ Concrete	100	2400 wide x 1200 high	40 mm diameter/1-14.2 mm wall*	No restriction but 50 mm seals must be back to back	100 (50 mm applied from both sides of wall)	2 off 50 x 3.6 mm PILOSTOP PIPE WRAP, one fitted flush to each face of seal	120	60
			50 mm diameter/1.3-14.2 mm wall*					
			60 mm diameter/1.6-14.2 mm wall*					
			75 mm diameter/2-14.2 mm wall*					
			90 mm diameter/2.4-14.2 mm wall*					
			100 mm diameter/2.7-14.2 mm wall*					
			115 mm diameter/3.1-14.2 mm wall*					
			140 mm diameter/3.8-14.2 mm wall*					
			165 mm diameter/ 4.5-14.2 mm wall*					

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes fitted at any position within the aperture (min. separation 30 mm from seal edges), 50 mm PILOSTOP MORTAR to both sides of the wall without backing*. PILOSTOP PIPE WRAPs are required to be fitted to both faces of the seal.

* Typical pipe diameters shown, intermediate sizes are possible

LS = Local Sustained
 CS = Continuous Sustained
 LI = Local Interrupted
 CI = Continuous Interrupted

All pipe configurations are capped/uncapped (C/U)



Appendix UL-EU Certificate

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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 25 mm deep PILOSTOP MORTAR to both faces backed with 50 mm mineral fibre board, installed within flexible or rigid wall							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Copper pipe	Wrap	Wrap Position	Insulation	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	12-54 mm diameter/1-1.2 mm wall	2 off 50 x 3.6 mm	Fitted to each face of seal	9-25 mm Elastomeric insulation minimum class B-s3,d0	120	120
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Geberit Mepla MLC (PE-Xb/Aluminium/PE-HD) pipe	Wrap	Wrap Position	Insulation	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	16 mm diameter/2.25 mm wall	2 off 50 x 3.6 mm	Fitted to each face of seal	9-25 mm Elastomeric insulation minimum class B-s3,d0	120	120
		20 mm diameter/2.5 mm wall					
		26 mm diameter/3 mm wall					
		32 mm diameter/3 mm wall					
		40 mm diameter/3.5 mm wall					
		50 mm diameter/4 mm wall					
		63 mm diameter/4.5 mm wall					
		75 mm diameter/4.7 mm wall					

Penetration Seal: CS (Continuous Sustained) insulated metallic and composite pipes fitted at any position within the aperture (min. separation 25 mm from seal edges), with 25 mm PILOSTOP MORTAR to both sides of the wall, backed with 25 mm stone wool 150 kg/m³*. PILOSTOP PIPE WRAPS are required to be fitted to both faces of the seal. Maximum seal size 2400 mm wide x 1200 mm long.

All pipe classifications are pipe end configuration C/C (C=Capped).



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 25 mm deep PILOSTOP MORTAR to both faces backed with 50 mm mineral fibre board, installed within flexible or rigid wall							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Geberit Mepla MLC (PE-Xb/Aluminium/PE-HD) pipe	Wrap	Wrap Position	Insulation	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	16 mm diameter/2.25 mm wall	2 off 50 x 3.6 mm	One fitted flush to each face of seal	Minimum 20 mm stone wool, minimum 80 kg/m ³	120	120
		20 mm diameter/2.5 mm wall					
		26 mm diameter/3 mm wall					
		32 mm diameter/3 mm wall					
		40 mm diameter/3.5 mm wall					
		50 mm diameter/4 mm wall					
		63 mm diameter/4.5 mm wall					
		75 mm diameter/4.7 mm wall					

Penetration Seal: 500 mm (min.)* LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic (and composite) pipes (single) fitted at any position within the aperture (min. separation 30 mm from seal edges and from other services), with 25 mm PILOSTOP MORTAR to both sides of the wall backed with 50 mm stone wool board 150 kg/m³. Maximum seal size 2400 mm wide x 1200 mm high

All pipe classifications are pipe end configuration C/C (C=Capped).



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 25 mm deep PILOSTOP MORTAR to both faces backed with 50 mm mineral fibre board, installed within flexible or rigid wall							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Mild or stainless steel pipe	Wrap	Wrap Position	Insulation	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/ Concrete	100	40 mm diameter/1-14.2 mm wall	2 off 50 x 1.8 mm	One fitted flush to each face of seal	13 mm Elastomeric insulation minimum class B-s3,d0	120	120
		40 mm diameter/1-14.2 mm wall*	2 off 50 x 3.6 mm			120	60
		50 mm diameter/1.3-14.2 mm wall*					
		60 mm diameter/1.6-14.2 mm wall*					
		75 mm diameter/2-14.2 mm wall*					
		90 mm diameter/2.4-14.2 mm wall*					
		100 mm diameter/2.7-14.2 mm wall*					
		115 mm diameter/3.1-14.2 mm wall*					
		140 mm diameter/3.8-14.2 mm wall*					
		165 mm diameter/ 4.5-14.2 mm wall*					

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes fitted at any position within the aperture (min. separation 30 mm from seal edges), with 25 mm PILOSTOP MORTAR to both sides of the wall, backed with 50 mm stone wool board 150 kg/m³ or 50 mm PILOSTOP MORTAR to both sides of the wall without backing. Maximum seal size of 2400 mm wide x 1200 mm high.

All pipe classifications are pipe end configuration C/U (U=Uncapped, C=Capped).

* Typical pipe diameters shown, intermediate sizes are possible.

Configuration 1	Configuration 2
Key 1 Supporting construction a1 Pipe / top edge of seal separation a2 Pipe / side edge of seal separation a3 Pipe / pipe separation	



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