

UL-EU CERTIFICATE

Certificate No. UL-EU-01122-CPR
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Certificate Holder PILO ESH
Hasandlar 5 Eilat
Israel

Manufacturer A/003

Certified Product Type Fire Stop – Pipe Wrap
Product Trade Name PILOSTOP PIPE WRAP
Trademark N/A
Rating/Classification See Appendix

Expiry date 2029-11-25



A handwritten signature in black ink, appearing to be 'Chris Miles', is located to the left of the Head of Notified Body text.

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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.



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This certificate relates to the use of PILOSTOP PIPE WRAP for fire stopping where there are service penetrations through floors and walls. The detailed scope is given in pages 3 to 28 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 products are 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 EAD 350454-00-1104, September 2017

The durability class of PILOSTOP PIPE WRAP is X - intended for use at conditions exposed to weathering. Includes lower use categories.

PILOSTOP PIPE WRAP is a pipe closure device used to form penetration seals where combustible pipes and insulated metal pipes penetrate walls and floors. The PILOSTOP PIPE WRAP is supplied in Polyethylene bags size according to pipe diameter.



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Product-type: Pipe Wrap		Intended use: Penetration Seal
Assessment method	Essential characteristic	Product Performance
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	Class F (not tested)
EN 13501-2	Resistance to fire	See pages 4 - 37
BWR 3 Hygiene, health and environment		
EN 1026	Air permeability	No performance determined
EAD 350454-00-1104, Annex C	Water permeability	No performance determined
Declaration of manufacturer & EN 16516	Content, emission and/or 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	No performance determined
EOTA TR 001:2003	Resistance to impact/movement	No performance determined
EOTA TR 001:2003	Adhesion	No performance determined
EAD 350454-00-1104, Clause 2.2.9	Durability	X
BWR 5 Protection against noise		
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	No performance determined
BWR 6 Energy economy and heat retention		
EN 12664, EN 12667, EN 12939, EN ISO 8990, EN ISO 6946, EN ISO 14683, EN ISO 10211, EN ISO 10456	Thermal properties	No performance determined
EN ISO 12572, EN 12086, EN ISO 10456	Water vapour permeability	No performance determined



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PILOSTOP PIPE WRAP: Service Penetration Seals in 100 mm thick PILOSTOP MORTAR seals** in Walls - Maximum mortar seal size 2400 mm wide x 1200 mm high							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Mild or stainless steel pipe	Wrap Position	Wrap	Insulation	Fire Resistance (mins.)	
						E	EI
Masonry/ Concrete	150	40 mm diameter/1.5-14.2 mm wall*	Central	1 off 50 x 1.8mm	CS 13 -19 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	240	60
		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*					
		40 mm diameter/1.5-14.2 mm wall	Central	1 off 50 x 3.6mm	CS 13 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	240	240
		165 mm diameter/4.5-14.2 mm wall	Central	1 off 50 x 3.6mm	CS 9 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	240	30
		40 mm diameter/1.5-14.2 mm wall*	Central	1 off 50 x 3.6 mm	CS 13-25 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	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*					

CS = Continuous Sustained

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

* Typical pipe diameters shown, intermediate sizes are possible

** min. separation 10 mm from mortar seal edges



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PILOSTOP PIPE WRAP: Service Penetration Seals in 100 mm thick PILOSTOP MORTAR seals* in Walls - Maximum mortar seal size 2400 mm wide x 1200 mm high							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1 and PVC-C according to EN 1566-1	Wrap Position	Wrap	Insulation	Fire Resistance (mins.)	
						E	EI
Masonry/Concrete	150	315 mm diameter/9.2 mm wall	Central	1 off 75 x 18 mm	None	120	120

* min. separation 10 mm from mortar seal edges

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



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PILOSTOP PIPE WRAP: Service Penetration Seals in 100 mm thick PILOSTOP MORTAR seals* in Floors - Maximum mortar seal size 1200 mm x 2400 mm							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Copper pipe	Wrap Position	Wrap	Insulation CS	Fire Resistance (mins.)	
						E	EI
Concrete	150	12 mm diameter/1 mm wall	Fitted to soffit of floor	1 off 50 x 3.6 mm	9 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	240	240
		12-54 mm diameter/1-1.2 mm wall			13-25 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	240	60
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Geberit Mepla MLC (PE-Xb/Aluminium/PE-HD pipe)	Wrap Position	Wrap	Insulation	Fire Resistance (mins.)	
Concrete	150	16 mm diameter/2.25 mm wall	Fitted to soffit of floor	1 off 50 x 3.6 mm	9 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	240	240
		16 mm diameter/2.25 mm wall			9-13 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	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			13-25 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	180	90
		75 mm diameter/4.7 mm wall					
		16 mm diameter/2.25 mm wall					
		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					

CS = Continuous Sustained

* min. separation 25 mm from seal mortar edges and 30 mm from other services

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PILOSTOP PIPE WRAP: Service Penetration Seals in 100mm thick PILOSTOP MORTAR seals** in Floors - Maximum mortar seal size 2400 mm x 1200 mm							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Mild or stainless steel pipe	Wrap Position	Wrap	Insulation CS	Fire Resistance (mins.)	
						E	EI
Concrete	150	40 mm diameter/1.5-14.2 mm wall	Fitted to soffit of seal	1 off 50 x 1.8 mm	13 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	180	180
		40 mm diameter/1.5-14.2 mm wall*			13 -19 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	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*					

CS = Continuous Sustained

* Typical pipe diameters shown, intermediate sizes are possible

**min. separation 30 mm from seal edges and 30 mm from other services

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



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PILOSTOP PIPE WRAP: Service Penetration Seals Comprising 100 mm deep PILOSTOP MORTAR, Installed in a Concrete Floor							
Substrate	Minimum Floor Thickness (mm)	Penetrating Services* - Mild or Stainless Steel pipe	Wrap Position	Wrap	Pipe insulation CS	Fire Resistance (mins.)	
						E	EI
Concrete	150	40 mm diameter/1-14.2 mm wall	Soffit	50 x 3.6 mm (2 x 1.8 layer)	25 mm thick Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	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*					
		40 mm diameter/1-14.2 mm wall*		50 x 5.4 mm (3 x 1.8 layer)	25-50mm thick Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	120	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*					

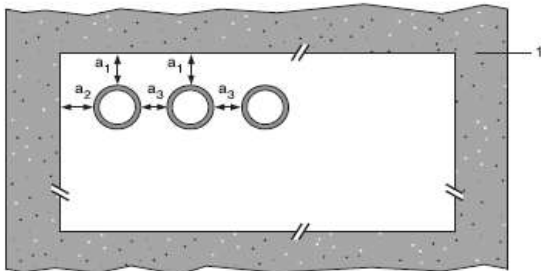
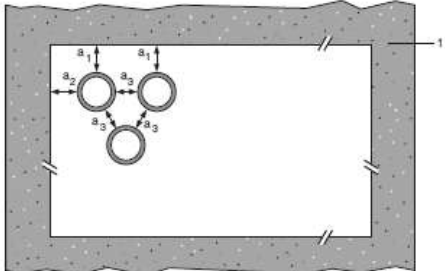
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* Typical pipe diameters shown, intermediate sizes are possible.



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Configuration 1	Configuration 2
	
Key 1 Supporting construction a1 Pipe / top edge of seal separation = 30 mm a2 Pipe / side edge of seal separation = 30 mm a3 Pipe / pipe separation = 30 mm	

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PILOSTOP PIPE WRAP: Service Penetration Seals in 100 mm thick PILOSTOP MORTAR seals* in Floors - Maximum mortar seal size 2400 mm x 1200 mm						
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1 and PVC-C according to EN 1566-1	Wrap Position	Wrap	Fire Resistance (mins.)	
					E	EI
Concrete	150	Up to 40 mm diameter / 1.8-3.7 mm wall**	Fitted to bottom of seal	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 160 mm diameter / 4.5-9.5 mm wall		50 x 10.8 mm	90	90
		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)	Penetrating Services - PP pipe according to EN 1451-1	Wrap Position	Wrap	Fire Resistance (mins.)	
					E	EI
Concrete	150	Up to 40 mm diameter / 1.8-4.4 mm wall	Fitted to bottom of seal	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)	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	Wrap Position	Wrap	Fire Resistance (mins.)	
					E	EI
Concrete	150	Up to 40 mm diameter / 2.0-4.4 mm wall	Fitted to bottom of seal	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

* min. separation 30 mm from seal edges and 30 mm from other services

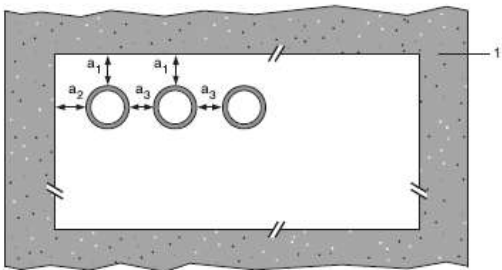
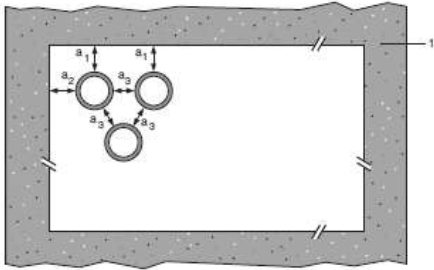
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Configuration 1	Configuration 2
	
Key 1 Supporting construction a1 Pipe / top edge of seal separation a2 Pipe / side edge of seal separation a3 Pipe / pipe separation	

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PILOSTOP PIPE WRAP: Service Penetration Seals in 100 mm thick PILOSTOP MORTAR seals* in Floors - Maximum mortar seal size 2400 mm x 1200 mm							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1 and PVC-C according to EN 1566-1	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Concrete	150	160 mm diameter / 9.5 mm wall	Fitted to bottom of seal	50 x 10.8 mm	1 & 2	90	90
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Uponor Wirsbo PEX pipe in pipe system according to ISO 15875	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Concrete	150	Maximum 54 mm diameter/0.4 mm wall thickness (outer pipe), 28 mm diameter/4.0 mm wall thickness (inner pipe)***	Fitted to bottom of seal	50 x 3.6 mm	1 & 2	120	120
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Rehau Raupiano Plus PP-DD according to DIN 4102	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Concrete	150	40-50 mm diameter/1.8-2.7 mm wall thickness**	Fitted to bottom of seal	50 x 3.6 mm	1 & 2	120	120
		75-110 mm diameter/2.7 mm wall thickness#		50 x 3.6 mm	1 & 2	120	120
		125 mm diameter/3.1 mm wall thickness		50 x 7.2 mm	1 & 2	240	120
		160 mm diameter/3.9 mm wall thickness		50 x 10.8 mm	1 & 2	120	120
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Polo-Kal NG Poloplast PP-MV according to DIN 4102	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Concrete	150	32-110 mm diameter/3.4 mm wall thickness	Fitted to bottom of seal	50 x 3.6 mm	1 & 2	180	180
		125 mm diameter/3.9 mm wall thickness		50 x 7.2 mm	1 & 2	240	240
		160 mm diameter/4.3 mm wall thickness		50 x 10.8 mm	1 & 2	240	240
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Aquatherm Green SDR9 MF PP-RP according to ISO 21003	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Concrete	150	32 mm diameter/3.6 mm wall thickness***	Fitted to bottom of seal	50 x 1.8 mm	1 & 2	240	240
		40-50 mm diameter/5.6-12.3 mm wall thickness***		50 x 3.6 mm	1 & 2	240	240
		63-110 mm diameter/12.3 mm wall thickness***		50 x 3.6 mm	1 & 2	240	240

* min. separation 30 mm from seal edges and 30 mm from other services

All pipe classifications are pipe end configurations U/C & C/C only, with the exception of those marked '***' which are U/U, C/U, U/C and C/C, or those marked '****' which are C/C (U=Uncapped, C=Capped).

For further details of permitted seal configuration see diagrams on page 13.



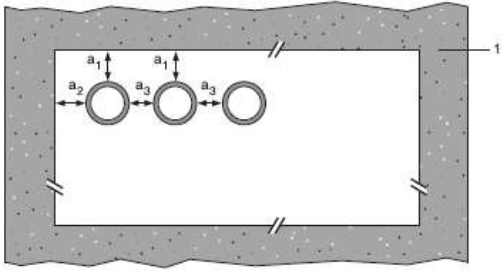
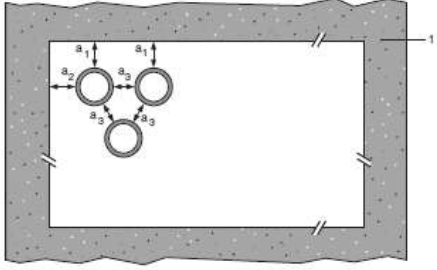
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PILOSTOP PIPE WRAP: Service Penetration Seals in 100 mm thick PILOSTOP MORTAR seals* in Floors - Maximum mortar seal size 2400 mm x 1200 mm							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Wavin SiTech + PP-M B according to EN 13501-1	Wrap Position	Wrap	Permitted Configuration for Seal Separation	Fire Resistance (mins.)	
						E	EI
Concrete	150	32-50 mm diameter/1.8-3.4 mm wall thickness**	Fitted to bottom of seal	50 x 3.6 mm	1 & 2	120	120
		75-110 mm diameter/3.4 mm wall thickness		50 x 3.6 mm	1 & 2	120	120
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Gilbert Silent PP according to DIN 4102	Wrap Position	Wrap	Permitted Configuration for Seal Separation	Fire Resistance (mins.)	
						E	EI
Concrete	150	32-50 mm diameter/1.8-3.4 mm wall thickness**	Fitted to bottom of seal	50 x 3.6 mm	1 & 2	120	120
		75-110 mm diameter/3.4 mm wall thickness		50 x 3.6 mm	1 & 2	120	120

* min. separation 30 mm from seal edges and 30 mm from other services

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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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PILOSTOP PIPE WRAP: Service Penetration Seals with PILOSTOP MORTAR seals* in Floors Maximum mortar seal size 2400 mm x 1200 mm								
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1	Wrap Position	Wrap	Mortar Depth	Permitted Configuration for Seal Separation^	Fire Resistance (mins.)	
							E	EI
Concrete	150	Diameter 41 mm, wall thickness 1.8-3.7 mm to diameter 125 mm, wall thickness 4.8-7.4 mm***	Fitted to bottom of seal	50 x 7.2 mm	150 mm	1 & 2	60	60
		125 mm diameter / 7.4 mm wall**		50 x 7.2 mm	150 mm	1 & 2	120	120
		Diameter 126 mm, wall thickness 4.8-7.4 mm to diameter 160 mm, wall thickness 9.5 mm***		75 x 10.8 mm	150 mm	1	120	30
		160 mm diameter / 9.5 mm wall**		75 x 7.2 mm	150 mm	1	120	30
		160 mm diameter / 4.5-9.5 mm wall thickness***		75 x 10.8 mm	120 mm	1 & 2	120	120
		315 mm diameter / 7.7 mm wall thickness		75 x 18 mm	120 mm	1	120	120
		Diameter 161 mm, wall thickness 4.5-9.5 mm to diameter 315 mm, wall thickness 7.7-12.1 mm#		75 x 18 mm	120 mm	1	90	90
		315 mm diameter / 12.1 mm wall thickness		75 x 18 mm	120 mm	1	90	90
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - PP pipe according to EN 1451-1	Wrap Position	Wrap	Mortar Depth	Permitted Configuration for Seal Separation^	Fire Resistance (mins.)	
							E	EI
Concrete	150	Diameter 41 mm, wall thickness 1.8-5.5 mm to diameter 160 mm, wall thickness 4.9-14.6 mm***	Fitted to bottom of seal	75 x 10.8 mm	150 mm	1 & 2	120	120
		160 mm diameter / 14.6 mm wall**		75 x 7.2 mm	150 mm	1 & 2	240	240
		Diameter 161 mm, wall thickness 4.9-14.6 mm to diameter 200 mm, wall thickness 4.9-18.2 mm#		75 x 10.8 mm	120 mm	1 & 2	240	240
		Diameter 201 mm, wall thickness 4.9-18.2 mm to diameter 315 mm, wall thickness 7.7-28.6 mm#		75 x 18 mm	150 mm	N/A	60	60
		315 mm diameter / 7.7 mm wall		75 x 18 mm	150 mm	N/A	180	180
		315 mm diameter / 7.7-28.6 mm wall		75 x 18 mm	150 mm	1	60	60

* min. separation 30 mm from seal edges and 30 mm from other services

Typical pipe diameters shown, intermediate sizes are possible

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

^ For further details of permitted seal configuration see diagrams on page 15.

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PILOSTOP PIPE WRAP: Service Penetration Seals with PILOSTOP MORTAR seals* in Floors Maximum mortar seal size 2400 mm x 1200 mm								
Substrate	Minimum Substrate 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	Wrap Position	Wrap	Mortar Depth	Permitted Configuration for Seal Separation	Fire Resistance (mins.)	
							E	EI
Concrete	150	Diameter 126 mm, wall thickness 3.9-11.4 mm to diameter 160 mm, wall thickness 14.6#	Fitted to bottom of seal	75 x 18 mm	150 mm	N/A	240	120
		160 mm diameter / 14.6 mm wall		75 x 7.2 mm	150 mm	1 & 2	240	120
		Diameter 161 mm, wall thickness 4.9-14.6 mm to diameter 315 mm, wall thickness 9.7-18.7 mm#**		75 x 18 mm	150 mm	N/A	60	60

* min. separation 30 mm from seal edges and 30 mm from other services

Typical pipe diameters shown, intermediate sizes are possible

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

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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PILOSTOP PIPE WRAP: Service Penetration Seals in 150 mm thick PILOSTOP MORTAR seals* in Floors - Maximum mortar seal size 2400 mm x 1200 mm							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Concrete	150	Up to 40 mm diameter/1.8-3.7 mm wall*	Fitted to bottom of seal	50 x 1.8 mm	1 & 2	120	120
		Up to 125 mm diameter / 4.8-7.4 mm wall*		50 x 7.2 mm		60	60
		Up to 160 mm diameter/9.5 mm wall*		75 x 7.2 mm		120	30
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - PP pipe according to EN 1451-1	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Concrete	150	Up to 40 mm diameter/1.8-5.5 mm wall*	Fitted to bottom of seal	50 x 1.8 mm	1 & 2	120	120
		Up to 125 mm diameter / 11.4 mm wall*		50 x 7.2 mm		240	240
		Up to 160 mm diameter/14.6 mm wall*		75 x 7.2 mm		240	240
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Concrete	150	Up to 40 mm diameter/2.4-3.7 mm wall*	Fitted to bottom of seal	50 x 1.8 mm	1 & 2	240	240
		Up to 110 mm diameter/3.4-10 mm wall*		75 x 5.4 mm		240	240
		Up to 125 mm diameter/11.4 mm wall*		50 x 7.2 mm		240	240
		Up to 160 mm diameter/4.9-14.6 mm wall*		75 x 7.2 mm		120	120

* min. separation 30 mm from seal edges and 30 mm from other services

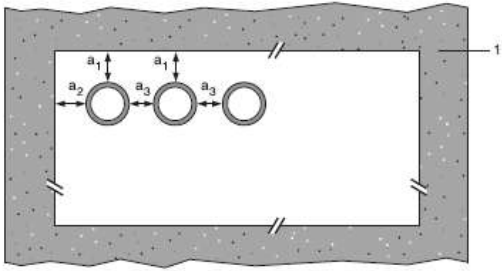
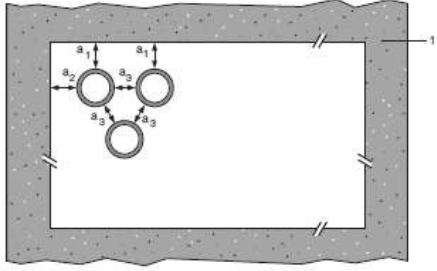
For further details of permitted seal configuration see diagrams on page 17.

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



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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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PILOSTOP PIPE WRAP: Service Penetration Seals Comprising 50 mm thick PILOSTOP MORTAR seals* backed with 50 mm thick stone wool 150 kg/m³. Maximum mortar seal size 2400 mm x 1200 mm fitted to top of floor with PILOSTOP PIPE WRAPS required to be fitted into the mortar seal.

Substrate	Minimum Substrate 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	Wrap	Fire Resistance (mins.)	
				E	EI
Concrete	150	110 mm diameter / 4.3 mm wall	50 x 2.0 mm	60	60

* min. separation 30 mm from seal edges and 30 mm from other services

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 150 kg/m³, or 50 mm PILOSTOP MORTAR to both sides of the wall without backing, installed within flexible or rigid wall**
Maximum mortar seal size of 2400 mm wide x 1200 mm high

Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Mild or stainless steel pipe	Wrap	Wrap Position	Insulation CS	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 or PE Foam insulation	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*					

CS = Continuous Sustained

* Typical pipe diameters shown, intermediate sizes are possible.

**min. separation 30 mm from seal edges

All pipe classifications are pipe end configuration C/U (U=Uncapped, 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 150 kg/m³, installed within flexible or rigid wall Maximum seal size 2400 mm wide x 1200 mm high							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Geberit Mepla MLC (PE-Xb/Aluminium/PE-HD) pipe*	Wrap	Wrap Position	Insulation LI or CI	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 500 mm long by 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					

LI = Local Interrupted
 CI = Continuous Interrupted

*min. separation 30 mm from mortar seal edges and 30 mm from other services

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 150 kg/m³, installed within flexible or rigid wall Maximum seal size 2400 mm wide x 1200 mm long							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Copper pipe*	Wrap	Wrap Position	Insulation CS	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 or PE Foam insulation	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 or PE Foam insulation	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					

CS = Continuous Sustained

*min. separation 25 mm from seal edges

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



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 50 mm deep PILOSTOP MORTAR to both faces, installed within flexible or rigid wall - Maximum seal size 2400 mm wide x 1200 mm long							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services** - Mild or stainless steel pipe	Wrap	Wrap Position	Insulation CS	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	40 mm diameter/1-14.2 mm wall*	2 off 50 x 3.6 mm	One fitted to each face of seal	13 -32 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	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*					

CS = Continuous Sustained

* Typical pipe diameters shown, intermediate sizes are possible.

**min. separation 30 mm from seal edges

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



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 1x 60 mm PILOSTOP FIRESEAL PANEL 2-S seals, in rigid walls - Maximum aperture size 2400 mm x 1200 mm.							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services* - Mild or stainless steel pipe	Wrap	Wrap Position	Insulation CS	Fire Resistance (mins.)	
						E	EI
Masonry/ Concrete	150	165 mm diameter/ 4.5-14.2 mm wall	1 off 50 x 1.8 mm	Central	9-25 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	120	45

CS = Continuous Sustained

*min. separation 40 mm from seal edges and 100 mm from other services

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



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 2x 60 mm PILOSTOP FIRESEAL PANEL 2-S seals (separated) , in rigid walls - Maximum aperture size 2400 mm x 1200 mm.						
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services** - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1 and PVC-C according to EN 1566-1	Wrap Position	Wrap	Fire Resistance (mins.)	
					E	EI
Concrete	150	Up to 40 mm diameter / 1.9-3.0 mm wall	One fitted central of each board seal	50 x 1.8 mm	240	240
		Up to 110 mm diameter / 2.7-6.6 mm wall		50 x 3.6 mm	240	240
		Up to 125 mm diameter / 4.7-7.4 mm wall		50 x 7.2 mm	240	240
		Up to 160 mm diameter / 4.0-9.5 mm wall*		50 x 10.8 mm	240	240
		Up to 315 mm diameter/7.7-12.1 mm wall thickness* # ***		75 x 18 mm	120	120
		Up to 400 mm diameter/9.8-15.3 mm wall thickness* # ***		75 x 28.6 mm	120	120
Substrate	Minimum Substrate 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	Wrap Position	Wrap	Fire Resistance (mins.)	
					E	EI
Concrete	150	Up to 40 mm diameter / 2.4-4.6 mm wall	One fitted central of each board seal	50 x 1.8 mm	240	240
		Up to 110 mm diameter / 3.4-10.0 mm wall		50 x 3.6 mm	240	240
		Up to 125 mm diameter / 3.9-7.4 mm wall		50 x 7.2 mm	240	240
		Up to 160 mm diameter / 4.9-9.5 mm wall		50 x 10.8 mm	240	240
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services** - PP pipe according to EN 1451-1	Wrap Position	Wrap	Fire Resistance (mins.)	
					E	EI
Concrete	150	Up to 40 mm diameter / 1.8-5.5 mm wall	Fitted to bottom of seal	50 x 1.8 mm	240	240
		Up to 110 mm diameter / 2.7-10.0 mm wall***		50 x 3.6 mm	240	240
		Up to 125 mm diameter / 3.1-11.4 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

* Typical pipe diameters shown, intermediate sizes are possible.

** min. separation 30 mm from other services

Permitted configuration for seal separation, Configuration 1 & 2

All pipe classifications are pipe end configurations U/C & C/C only, with the exception of those marked '***' which are C/C (U=Uncapped, C=Capped).



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 1x 50 mm PILOSTOP FIRESEAL PANEL 2-S seals, in floors - Maximum aperture size 2400 mm x 1200 mm						
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services* - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1	Wrap	Wrap Position	Fire Resistance (mins.)	
					E	EI
Concrete	150	110 mm diameter/ 3.4 mm wall	1 off 50 x 3.6 mm	Central	90	90

*min. separation 40 mm from seal edges and 100 mm from other services

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



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 1x 60 mm PILOSTOP FIRESEAL PANEL 2-S seals, in floors - Maximum aperture size 2400 mm x 1200 mm							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services* - Mild or stainless steel pipe	Wrap	Wrap Position	Insulation CS	Fire Resistance (mins.)	
						E	EI
Concrete	150	165 mm diameter/ 4.5-14.2 mm wall	1 off 50 x 3.6 mm	Fitted to the bottom of the seal	13 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	90	45
					19 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	90	90

CS = Continuous Sustained

*min. separation 40 mm from seal edges and 100 mm from other service

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



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 2x 60 mm PILOSTOP FIRESEAL PANEL 2-S seals (separated), in floors - Maximum aperture size 2400 mm x 1200 mm							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Mild or stainless steel pipe	Wrap	Wrap Position	Insulation CS	Fire Resistance (mins.)	
						E	EI
Concrete	150	40 mm diameter/ 1-14.2 mm wall	1 off 50 x 1.8 mm	Fitted to the bottom of the seal	13 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	180	120

CS = Continuous Sustained

*min. separation 40 mm from seal edges and 100 mm from other services

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



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 2x 60 mm PILOSTOP FIRESEAL PANEL 2-S seals (back to back), in floors - Maximum aperture size 2400 mm x 1200 mm							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services* - Copper pipe	Wrap	Wrap Position	Insulation CS	Fire Resistance (mins.)	
						E	EI
Concrete	150	12-54 mm diameter/1-1.2 mm wall	1 off 50 x 3.6 mm	Fitted to both sides of the seal	9-13 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	240	60
					13-25 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	180	45
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Geberit Mepla MLC (PE-Xb/Aluminium/PE-HD pipe)	Wrap	Wrap Position	Insulation CS	Fire Resistance (mins.)	
						E	EI
Concrete	150	16 mm diameter/2.25 mm wall	1 off 50 x 3.6 mm	Fitted to both sides of the seal	9 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	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					
		16 mm diameter/2.25 mm wall			13-25 mm Elastomeric insulation minimum class B-s3,d0 or foil faced Phenolic Foam insulation	60	45
		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					

CS = Continuous Sustained

*min. separation 40 mm from seal edges and 100 mm from other services

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

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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 2x 50 mm PILOSTOP FIRESEAL PANEL 1-S seals, in flexible and rigid walls - Maximum aperture size 2400 mm x 1200 mm.							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services* - Mild or stainless steel pipe	Wrap to both sides	Wrap Position	Insulation CS	Fire Resistance (mins.)	
						E	EI
Gypsum board/ Masonry/ Concrete	100	40 mm diameter/1-14.2 mm wall*	50 x 5.4 mm (3 x 1.8 layer)	Central	32-50 mm thick Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	90	90
		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*					

CS = Continuous Sustained

* Typical pipe diameters shown, intermediate sizes are possible.

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

Configuration 1	Configuration 2
Key 1 Supporting construction a1 Pipe / top edge of seal separation = 30 mm a2 Pipe / side edge of seal separation = 30 mm a3 Pipe / pipe separation = 30 mm	



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 2x 50 mm PILOSTOP FIRESEAL PANEL 1-S, in flexible or rigid walls - Maximum aperture size 2400 mm x 1200 mm							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services** - Copper pipe	Wrap	Wrap Position	Insulation CS	Fire Resistance (mins.)	
						E	EI
Gypsum board, Concrete/ Masonry	100	40 mm diameter/1-14.2 mm wall	1 off 50 x 1.8 mm	Central	13 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	120	120
		40 mm diameter/1-14.2 mm wall*	2 off 50 x 3.6 mm	One fitted flush to each side of the seal	13 - 32mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	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*					

CS = Continuous Sustained

* Typical pipe diameters shown, intermediate sizes are possible.

**min. separation 40 mm from seal edges and 100 mm from other services

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



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 2x 50 mm PILOSTOP FIRESEAL PANEL 1-S, in flexible or rigid wall - Maximum aperture size 2400 mm x 1200 mm.							
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services* - Copper pipe	Wrap	Wrap Position	Insulation LS or CS Min. 350 mm	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/ Concrete	100	12 mm diameter/1 mm wall	2 off 50 x 3.6 mm	One fitted to each face of seal	9 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	120	120
		12-54 mm diameter/1-1.2 mm wall			9-13 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	120	90
		12-54 mm diameter/1-1.2 mm wall			13-25 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	120	60
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - Geberit Mepla MLC (PE-Xb/Aluminium/PE-HD) pipe	Wrap	Wrap Position	Insulation LS or CS Min. 350 mm	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 to each face of seal	9-25 mm Elastomeric insulation minimum class B-s3,d0 or PE Foam insulation	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					

LS = Local Sustained
 CS = Continuous Sustained

*min. separation 40 mm from seal edges and 100 mm from other services

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



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PILOSTOP PIPE WRAP: Service Penetration Seals comprising 2x PILOSTOP FIRESEAL PANEL 1-S, in flexible or rigid wall - Maximum aperture size 2400 mm x 1200 mm						
Substrate	Minimum Substrate Thickness (mm)	Penetrating Services - PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1 and PVC-C according to EN 1566-1	Wrap	Wrap Position	Fire Resistance (mins.)	
					E	EI
Gypsum board, Masonry/Concrete	100	315 mm diameter/ 9.2 mm wall	1 off 75 x 18 mm	Central	45	45

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



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PILOSTOP PIPE WRAP: Service Penetration Seals Comprising 2x PILOSTOP FIRESEAL PANEL 1-S, in flexible or rigid walls							
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	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	Diameter up to 40 mm, wall thickness 1.9 – 3.0 mm**	Both Sides	50 x 1.8 mm (1 layer)	1 & 2 between PVC-U/PVC-C, PE/ABS/SAN+ PVC and PP pipes in any combination	120	120
		Diameter up to 110 mm, wall thickness 2.7 – 6.6 mm		50 x 3.6 mm (2 x 1.8 layer)		120	90
		Diameter up to 125 mm, wall thickness 3.7 – 7.4 mm		50 x 5.4 mm (3 x 1.8 layer)			
		Diameter up to 160 mm, wall thickness 9.5 mm#		50 x 7.2 mm (4 x 1.8 layer)			
		Diameter up to 315 mm, wall thickness 7.7-12.1 mm#****		50 x 18 mm (10 x 1.8 layers)	n/a	90	90
		Diameter up to 400 mm, wall thickness 9.8-15.3 mm#****		50 x 28.8 mm (16 x 1.8 layers)	n/a	90	90
		Diameter up to 110 mm, wall thickness 2.7–6.6 mm, fully or partially filled conduits with cables up to 14 mm diameter		50 x 3.6 mm (2 x 1.8 layers)	1 & 2	120	90
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	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	Diameter up to 40 mm, wall thickness 2.4 – 3.7 mm**	Both Sides	50 x 1.8 mm (1 layer)	1 & 2 between PVC-U/PVC-C, PE/ABS/SAN+ PVC and PP pipes in any combination	120	120
		Diameter up to 110 mm, wall thickness 4.2 – 10 mm		50 x 3.6 mm (2 x 1.8 layer)		120	90
		Diameter up to 125 mm, wall thickness 4.8 – 12 mm		50 x 5.4 mm (3 x 1.8 layer)			
		Diameter up to 160 mm, wall thickness 14.6 mm		50 x 7.2 mm (4 x 1.8 layer)			
		Diameter up to 110 mm, wall thickness 4.2–10 mm, fully or partially filled conduits with cables up to 14 mm diameter		50 x 3.6 mm (2 x 1.8 layers)	1 & 2	120	90
Substrate	Minimum Wall Thickness (mm)	Penetrating Services* - PP pipe according to EN 1852-1: 2009	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	Diameter up to 40 mm, wall thickness 1.8 – 5.5 mm**	Both Sides	50 x 1.8 mm (1 layer)	1 & 2 between PVC-U/PVC-C, PE/ABS/SAN+ PVC and PP pipes in any combination	120	120
		Diameter up to 110 mm, wall thickness 2.7 – 15.1 mm**		50 x 3.6 mm (2 x 1.8 layer)		90	90
		Diameter up to 125 mm, wall thickness 3.1 – 17.1 mm		50 x 5.4 mm (3 x 1.8 layer)		120	90
		Diameter up to 160 mm, wall thickness 21.9 mm		50 x 7.2 mm (4 x 1.8 layer)			
		Diameter up to 110 mm, wall thickness 2.7–15.1 mm, fully or partially filled conduits with cables up to 14 mm diameter		50 x 3.6 mm (2 x 1.8 layers)	1 & 2	120	90

* Minimum separation between penetration seals and seal edges of 30 mm.

All pipe classifications are pipe end configurations U/C & C/C only, with the exception of those marked '**' which are U/U, C/U, U/C and C/C, or those marked '****' which are C/C (U=Uncapped, C=Capped).

For further details of permitted seal configuration see diagrams on page 35.



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PILOSTOP PIPE WRAP: Service Penetration Seals Comprising 2x PILOSTOP FIRESEAL PANEL 1-S, in flexible or rigid walls							
Substrate	Minimum Wall Thickness (mm)	Penetrating Services* - Uponor Wirsbo PEX pipe in pipe system according to ISO 15875	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	Diameter up to 54 mm/4.0 mm wall thickness (outer pipe), 28 mm diameter/0.4 mm wall thickness (inner pipe)****	Both Sides	50 x 3.6 mm (2 x 1.8 layer)	1 & 2	120	120
Substrate	Minimum Wall Thickness (mm)	Penetrating Services* - Uponor Wirsbo PEX double pipe in pipe system	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	Diameter up to 25 mm pipes, wall thickness 0.6 mm, in bundles up to 50 mm****	Both Sides	50 x 3.6 mm (2 x 1.8 layer)	1 & 2	90	90
Substrate	Minimum Wall Thickness (mm)	Penetrating Services* - BluePower Multilayer pipe according to EN 1451-1	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	32-50 mm diameter/1.8 mm wall thickness**	Both Sides	50 x 3.6 mm (2 x 1.8 layer)	1 & 2	90	90
		75-110 mm diameter/3.4 mm wall thickness***		50 x 3.6 mm (2 x 1.8 layer)		90	90
Substrate	Minimum Wall Thickness (mm)	Penetrating Services* - Rehau Raupiano Plus PP-DD according to DIN 4102	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	40-50 mm diameter/1.8-2.7 mm wall thickness**	Both Sides	50 x 3.6 mm (2 x 1.8 layers)	1 & 2	120	120
		75-110 mm diameter/2.7 mm wall thickness		50 x 3.6 mm (2 x 1.8 layers)		120	120
		125 mm diameter/3.9 mm wall thickness		50 x 7.2 mm (4 x 1.8 layers)		120	120
		160 mm diameter/3.9 mm wall thickness		50 x 10.8 mm (6 x 1.8 layers)		120	120
Substrate	Minimum Wall Thickness (mm)	Penetrating Services* - Polo-Kal NG Poloplast PP-MV according to DIN 4102	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	32-50 mm diameter/2.0-3.4 mm wall thickness**	Both Sides	50 x 3.6 mm (2 x 1.8 layers)	1 & 2	120	120
		75-110 mm diameter/3.4 mm wall thickness		50 x 3.6 mm (2 x 1.8 layers)		120	120
		125 mm diameter/3.9 mm wall thickness		50 x 7.2 mm (4 x 1.8 layers)		120	120
		160 mm diameter/4.9 mm wall thickness		50 x 10.8 mm (6 x 1.8 layers)		120	120

* Minimum separation between penetration seals and seal edges of 30 mm.

All pipe classifications are pipe end configurations U/C & C/C only, with the exception of those marked '**' which are U/U, C/U, U/C and C/C, or those marked '***' which are C/U, or those marked '****' which are C/C (U=Uncapped, C=Capped).

For further details of permitted seal configuration see diagrams on page 35.

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PILOSTOP PIPE WRAP: Service Penetration Seals Comprising 2x PILOSTOP FIRESEAL PANEL 1-S, in flexible or rigid walls							
Substrate	Minimum Wall Thickness (mm)	Penetrating Services* - Aquatherm Green SDR9 MF PP-RP according to ISO 21003	Wrap Position	Wrap	Permitted Configuration for Seal Separation	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	32 mm diameter/3.0 mm wall thickness***	Both Sides	50 x 1.8 mm (1 x 1.8 layer)	1 & 2	120	90
		40-50 mm diameter/5.6-12.3 mm wall thickness***		50 x 3.6 mm (2 x 1.8 layers)		120	90
		63-110 mm diameter/12.3 mm wall thickness***		50 x 3.6 mm (2 x 1.8 layers)		120	90
Substrate	Minimum Wall Thickness (mm)	Penetrating Services* - Wavin SiTech + PP-M B according to EN 13501-1	Wrap Position	Wrap	Permitted Configuration for Seal Separation	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	32-50 mm diameter/1.8-3.4 mm wall thickness**	Both Sides	50 x 3.6 mm (2 x 1.8 layer)	1 & 2	120	90
		75-110 mm diameter/3.4 mm wall thickness		50 x 3.6 mm (2 x 1.8 layer)		120	60
Substrate	Minimum Wall Thickness (mm)	Penetrating Services* - Gilbert Silent PP according to DIN 4102	Wrap Position	Wrap	Permitted Configuration for Seal Separation	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/Concrete	100	32-50 mm diameter/1.8-3.4 mm wall thickness**	Both Sides	50 x 3.6 mm (2 x 1.8 layers)	1 & 2	120	120
		75-110 mm diameter/3.4 mm wall thickness		50 x 3.6 mm (2 x 1.8 layers)		120	120

* Minimum separation between penetration seals and seal edges of 30 mm.

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

Configuration 1	Configuration 2
Key 1 Supporting construction a1 Pipe / top edge of seal separation = 30 mm a2 Pipe / side edge of seal separation = 30 mm a3 Pipe / pipe separation = 30 mm	

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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 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	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/ Concrete	100	Diameter up to 40 mm, wall thickness 3.0 – 4.3 mm**	Both Sides	50 x 1.8 mm (1 layer)	1 & 2 between PVC-U/PVC-C, PE/ABS/SAN+PVC and PP pipes in any combination	120	60
		Diameter up to 110 mm, wall thickness 2.7 - 6.6 mm**		50 x 3.6 mm (2 x 1.8 layer)		120	90
		Diameter up to 125 mm, wall thickness 3.7 – 7.4 mm		50 x 5.4 mm (3 x 1.8 layer)		120	120
		Diameter up to 160 mm, wall thickness 3.2 - 9.5 mm		50 x 7.2 mm (4 x 1.8 layer)		60	60
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	Wrap Position	Wrap	Permitted Configuration for Seal Separation#	Fire Resistance (mins.)	
						E	EI
Gypsum board, Masonry/ Concrete	100	Diameter up to 40 mm, wall thickness 3.2 – 3.7 mm	Both Sides	50 x 1.8 mm (1 layer)	1 & 2 between PVC-U/PVC-C, PE/ABS/SAN+PVC and PP pipes in any combination	120	120
		Diameter up to 110 mm, wall thickness 4.2 - 10 mm		50 x 3.6 mm (2 x 1.8 layer)		60	60
		Diameter up to 125 mm, wall thickness 12 mm		50 x 5.4 mm (3 x 1.8 layer)		120	120
		Diameter up to 160 mm, wall thickness 4.9 – 12.0 mm		50 x 7.2 mm (4 x 1.8 layer)		120	120
		Diameter up to 160 mm, wall thickness 12.0 mm				90	90
Substrate	Minimum Wall Thickness (mm)	Penetrating Services* - PP pipe according to EN 1852-1: 2009	Wrap Position	Wrap	Permitted Configuration for Seal Separation#		
Gypsum board, Masonry/ Concrete	100	Diameter up to 40 mm, wall thickness 4.0 – 5.5 mm	Both Sides	50 x 1.8 mm (1 layer)	1 & 2 between PVC-U/PVC-C, PE/ABS/SAN+PVC and PP pipes in any combination	120	120
		Diameter up to 110 mm, wall thickness 6.6 mm**		50 x 3.6 mm (2 x 1.8 layer)		120	90
		Diameter up to 125 mm, wall thickness 17.1 mm**		50 x 5.4 mm (3 x 1.8 layer)		120	90
		Diameter up to 160 mm, wall thickness 4.0 - 21.9 mm		50 x 7.2 mm (4 x 1.8 layer)		120	120
		Diameter up to 160 mm, wall thickness 21.9 mm				60	60

*Minimum separation between penetration seals and seal edges of 30 mm.

Partition walls must incorporate a full fill core insulation of Stonewool (35kg/m³ density).

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

For further details of permitted seal configuration see diagrams on page 37.

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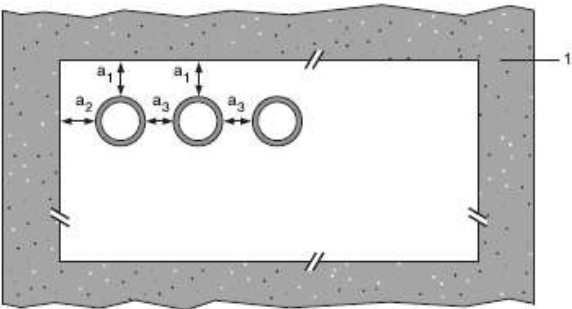
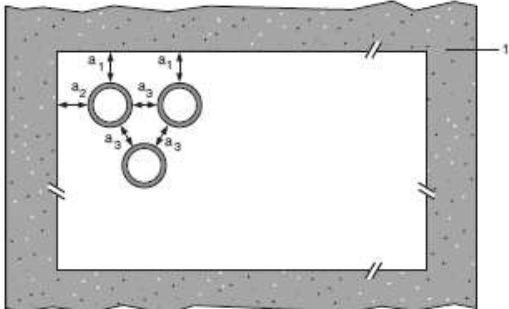


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Configuration 1	Configuration 2
	
Key 1 Supporting construction a1 Pipe / top edge of seal separation a2 Pipe / side edge of seal separation a3 Pipe / pipe separation	

Appendix UL-EU Certificate

Certification Mark	UL-EU mark
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The UL-EU Mark, as displayed below, shall appear on certified products only. Minimum size is not specified, as long as the Mark is legible. The following is suggested.



The minimum height of the registered trademark symbol ® shall be 1 mm. When the overall diameter of the UL-EU Mark is less than 9.5 mm, the trademark symbol may be omitted if it is not legible to the naked eye.

The UL-EU Mark may appear on a label, nameplate, or may be cast, stamped or molded into the product. When appearing on a label or nameplate, the Manufacturer's name or trademark along with a model number are also required on that same label or nameplate. If cast, stamped or molded, the Manufacturer's name or trademark and model number shall also appear elsewhere on the product.

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