

# UL-EU CERTIFICATE

**Certificate No.** UL-EU-00912  
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**Date of Issue** 2015-10-09

**Certificate Holder** Polyseam AS  
Ravneveien 7  
Linnestad Næringsområde  
N-3174 Revetal, Norway  
<http://www.polyseam.com>

**Manufacturer** Polyseam Ltd  
Shaw Park  
Silver Street  
Huddersfield, West Yorkshire  
HD5 9AF, UK

**Certified Product Type** Fire Stop - Sealant  
**Product Trade Name** Protecta FR Acrylic  
**Trademark** N/A  
**Rating/Classification** See Appendix

**Harmonised Technical Specifications** ETAG 026-2 / ETAG 026-3 / EN 13501-2  
**Supporting Documentation** ETA 13/0880, ETA 13/0879, EC – CERTIFICATE OF CONFORMITY - 0843 – CPR – 0139 and Classification Report No. 13CA21782 A  
**Additional information** Additional test evidence is held on file  
**Expiry date** 2025-10-08



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**Certification Manager**  
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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.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 Protecta FR Acrylic for fire stopping where there are joints in or between walls & floors or 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 product is certificated on the basis of:

- i) ETA 13/0880 & ETA 13/0879
- ii) EC – CERTIFICATE OF CONFORMITY - 0843 – CPD – 0139
- iii) Inspection and surveillance of factory production control by UL
- iv) Fire resistance test data in accordance with EN 1366-3 and 1366-4
- v) Classification in accordance with EN 13501-2
- vi) Durability and Serviceability as defined in ETAG 026-3, Clause 2.4.13\*

\* Protecta FR Acrylic sealant has been tested in accordance with BS EN ISO 8339: 2005 and BS EN ISO 9046: 2004 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 Z<sub>2</sub> in ETAG 026-2 and ETAG 026-3.

The movement capability of Protecta FR Acrylic joint seals is restricted to  $\leq 7.5\%$

Protecta FR Acrylic is a sealant used to form a penetration seal around metallic pipes, plastic pipes, composite pipes and electrical cables to reinstate the fire resistance performance of wall and floor constructions, where they have been provided with apertures for the penetration of services. It is also used to form linear gap seals where gaps are present in wall and floor constructions and linear joint seals where wall and floor constructions abut.

Protecta FR Acrylic is supplied in liquid form contained within 310 ml & 380 ml cartridges and 600 ml foil packs. The sealant is gunned into the aperture in the separating element/elements and around the service or services, to a specified depth utilising mineral fibre insulation backing material.



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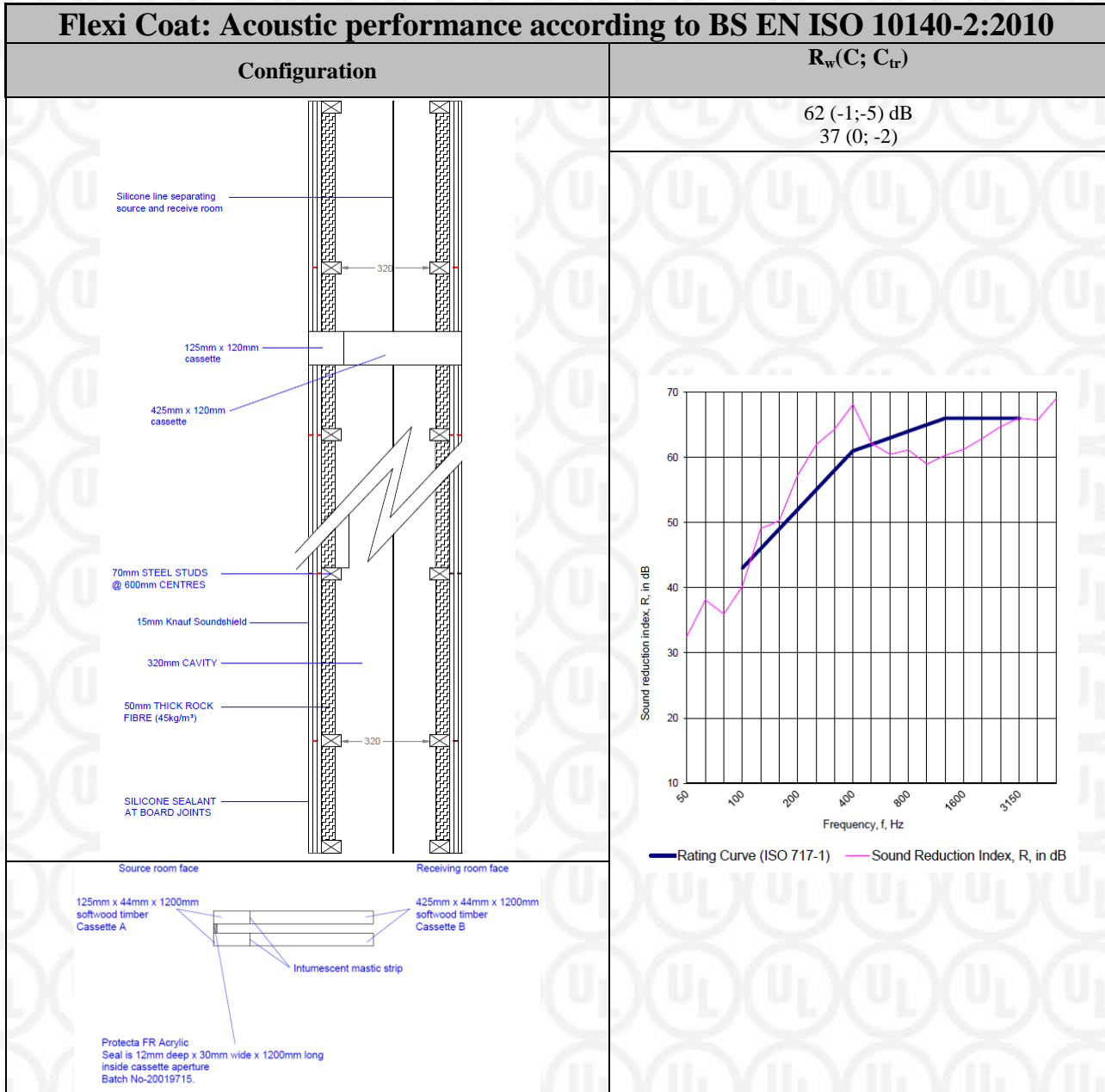
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Product: Protecta FR Acrylic		
Product-type: Sealant		Intended use: Linear Joint, Gap Seal & Penetration Seal
Basic requirement for construction work	Basic Requirement	Performance
<b>BWR 1 Mechanical resistance and stability</b>		
-	None	Not relevant
<b>BWR 2 Safety in case of fire</b>		
EN 13501-1	Reaction to fire	Class D-s1, d1
EN 13501-2	Resistance to fire	See pages 5 to 29
<b>BWR 3 Hygiene, health and environment</b>		
EN 1026:2000	Air permeability (material property)	No performance determined
ETAG 026-2, Annex C ETAG 026-3, Annex C	Water permeability (material property)	No performance determined
Declaration of manufacturer	Release of dangerous substances	Use categories: IA1, S/W3 Declaration of manufacturer
<b>BWR 4 Safety in use</b>		
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 ISO 11600	Adhesion	No performance determined
<b>BWR 5 Protection against noise</b>		
EN 10140-2/ EN ISO 717-1	Airborne sound insulation	Rw(C;Ctr)= 62 (-1;-5) dB*
EN 10140-3/ EN ISO 717-2	Impact sound insulation	No performance determined
<b>BWR 6 Energy economy and heat retention</b>		
EN 12664, EN 12667 or EN 12939	Thermal properties	No performance determined
EN ISO 12572 EN 12086	Water vapour permeability	No performance determined
<b>General aspects relating to fitness for use</b>		
ISO 8339: 2005, ISO 9046: 2004 & ISO 7389: 2003	Durability and serviceability	Z <sub>2</sub>
<b>BWR 7 Sustainable use of natural resources</b>		
-	-	No performance determined
*12 mm depth and only applicable to linear joint and gap seals		



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PROTECTA FR Acrylic: Single Sided Penetration Seals in Walls								
Substrate	Minimum Substrate Thickness (mm)	Services (fitted centrally)	Sealant Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Maximum Seal Size	Fire Resistance (mins.)	
							E	EI
Masonry/ Concrete	150	Single electrical cables up to 21 mm Ø	25 (to either face of wall)	Protecta Mineral Fibre BIO	48	87 mm Ø	240	90
		Blank seals				300 x 300 mm	240	60
		Single electrical cables up to 21 mm Ø					35 x 35 mm / 36 mm Ø	240
		Blank seals						
		Single electrical cables up to 21 mm Ø						

Minimum separation between cables and the edge of the seal of 7 mm.



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Substrate	Minimum Substrate Thickness (mm)	Services	Sealant Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Maximum Seal Size	Fire Resistance (mins.)	
							E	EI
Masonry/ Concrete	150	Blank seals	15	Stone wool 35 kg/m <sup>3</sup>	25	300 x 300 mm	240	240
		Electric cables up to 21 mm diameter, single or in a bundle.					240	120
		Electric cables 22-80 mm diameter, single or in a bundle.					120	60
		Blank seals	25	Protecta Mineral Fibre BIO	48		240	240
		Electric cables up to 80 mm diameter, single or in a bundle.					240	60
		Telecoms cables up to 21 mm diameter, single or in a bundle up to 100 mm diameter					240	240

Minimum separation between cables and the edge of the seal of 10 mm



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PROTECTA FR Acrylic: Single Sided Penetration Seals in Walls 15 mm deep Protecta FR Acrylic / 20 mm deep 40 kg/m <sup>3</sup> stone wool backing						
Substrate	Minimum Substrate Thickness (mm)	Services (fitted centrally)	Seal Width Around Pipe (mm)	Insulation LI or CI	Fire Resistance (mins.)	
					E	EI
Masonry/ Concrete	150	Copper pipe up to 54 mm diameter/0.9-14.2 mm wall	8-9	1000 mm length 20 mm Stone wool insulation 80 kg/m <sup>3</sup>	240	180
		Copper pipe up to 12 mm diameter/0.9-5 mm wall	8		240	240
		Alupex composite pipe 75 mm diameter/7.5 mm wall	30	25 mm Protecta Mineral Fibre BIO insulation, 600 mm long (min.)	120	120
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe (fitted centrally)	Seal Width Around Pipe (mm)	Insulation LI or CI	Fire Resistance (mins.)	
					E	EI
Masonry/ Concrete	150	40 mm diameter/1.5-14.2 mm wall*	6-18	1000 mm length of 20 mm Stone wool insulation 80 kg/m <sup>3</sup>	240	240
		40 mm diameter/1.5-14.2 mm wall*		1000 mm length of 30 mm Stone wool insulation 80 kg/m <sup>3</sup>	240	240
		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*						

LI = Local Interrupted  
 CI = Continuous Interrupted

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

\* Typical pipe diameters shown, intermediate sizes are possible.



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PROTECTA FR Acrylic: Single Sided Penetration Seals in Walls 15 mm deep Protecta FR Acrylic / 25 mm deep 40 kg/m <sup>3</sup> stone wool backing						
Substrate	Minimum Substrate Thickness (mm)	Services (fitted centrally)	Maximum Seal Size (mm)	Insulation LI or CI	Fire Resistance (mins.)	
					E	EI
Masonry/ Concrete	150	Copper pipe up to 54 mm diameter/0.9-14.2 mm wall	300 x 300	1000 mm length 20 mm Stone wool insulation 80 kg/m <sup>3</sup>	240	60
		Copper pipe up to 12 mm diameter/0.9-5 mm wall				
		Alupex composite pipe 75 mm diameter/7.5 mm wall				
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe (fitted centrally)	Maximum Seal Size (mm)	Insulation LI or CI	Fire Resistance (mins.)	
Masonry/ Concrete	150	40 mm diameter/1.5-14.2 mm wall*	300 x 300	1000 mm length of 20 mm Stone wool insulation 80 kg/m <sup>3</sup>	240	60
		40 mm diameter/1.5-14.2 mm wall*				
		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*	1000 mm length of 30 mm Stone wool insulation 80 kg/m <sup>3</sup>					

LI = Local Interrupted  
 CI = Continuous Interrupted

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

\* Typical pipe diameters shown, intermediate sizes are possible.





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PROTECTA FR Acrylic: Double Sided** Penetration Seals in Walls 15 mm deep Protecta FR Acrylic / 30 mm deep 40 kg/m <sup>3</sup> stone wool backing						
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe (fitted centrally)	Maximum Seal Size (mm)	Insulation LI or CI	Fire Resistance (mins.)	
					E	EI
Masonry/ Concrete	150	40 mm diameter/1.5-14.2 mm wall*	300 x 300	1000 mm length of 20 mm Stone wool insulation 80 kg/m <sup>3</sup>	240	240
		40 mm diameter/1.5-14.2 mm wall*				
		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*		1000 mm length of 30 mm Stone wool insulation 80 kg/m <sup>3</sup>	240	120
		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*						

LI = Local Interrupted  
 CI = Continuous Interrupted

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

\* Typical pipe diameters shown, intermediate sizes are possible.

\*\* seal applied to both sides of the wall



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PROTECTA FR Acrylic: Double Sided** Penetration Seals in Walls								
Substrate	Minimum Substrate Thickness (mm)	Services	Sealant Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Maximum Seal Size	Fire Resistance (mins.)	
							E	EI
Drywall/ Masonry/ Concrete	100	None (blank)	12.5	Stone wool 35-140 kg/m <sup>3</sup>	20	300 x 300 mm*	120	120
		Electrical cables up to 21 mm Ø, single or in bundles up to 100 mm Ø	25	Stone wool 40 kg/m <sup>3</sup>	20		120	120
		Electrical cables up to 80 mm Ø, single or in bundles up to 100 mm Ø		Protecta Mineral Fibre BIO	25		120	60
		Telecommunication cables up to 21 mm Ø single or in bundles up to 100 mm Ø	Stone wool 40 kg/m <sup>3</sup>	20	120		120	
		Single 'E cable' - 1 x 185 mm <sup>2</sup> core HD603.3 electrical cable with PVC insulation, PVC sheath and 23-27 mm diameter	12.5	Stone wool 140 kg/m <sup>3</sup>	20		120	60

\* Or 30 mm wide x 3000 mm high for cables up to 21 mm Ø

\*\* seal applied to both sides of the wall



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PROTECTA FR Acrylic: Double Sided** Penetration Seals in Walls 300 x 300 mm maximum seal size.								
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe (fitted centrally)	Sealant Depth (mm)	Backing Material	Insulation CS	Fire Resistance (mins.)		
						E	EI	
Drywall/ Masonry/ Concrete	100	22 mm diameter/3-10 mm wall	25	Stone wool, 25 mm deep, 35 kg/m <sup>3</sup>	None	120	120	
		40 mm diameter/1-14.2 mm wall	12.5	Stone wool, 20 mm deep, 40 kg/m <sup>3</sup>		120	120	
		40 mm diameter/1-14.2 mm wall*						
		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*	25	25 mm Protecta Mineral Fibre BIO	13 -19 mm Kaiflex ST insulation	120	60	
		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

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

\* Typical pipe diameters shown, intermediate sizes are possible.

\*\* seal applied to both sides of the wall



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PROTECTA FR Acrylic: Double Sided* Penetration Seals in Walls								
Substrate	Minimum Substrate Thickness (mm)	Services – Copper Pipe (fitted centrally)	Sealant Depth (mm)	Backing Material	Insulation CS	Fire Resistance (mins.)		
						E	EI	
Drywall/ Masonry/ Concrete	100	12 mm diameter/1 mm wall	25 mm	25 mm Protecta Mineral Fibre BIO	9 mm Kaiflex ST insulation	120	120	
		12-54 mm diameter/1-1.2 mm wall			9-13 mm Kaiflex ST insulation	120	60	
		12-54 mm diameter/1-1.2 mm wall			13-25 mm Kaiflex ST insulation	60	60	
Substrate	Minimum Substrate Thickness (mm)	Services – Gerberit Mepla MLC (PE-Xb/Aluminium/PE-HD pipe) (fitted centrally)	Sealant Depth (mm)	Backing Material	Insulation CS	Fire Resistance (mins.)		
						E	EI	
Drywall/ Masonry/ Concrete	100	16 mm diameter/2.25 mm wall	25 mm	25 mm Protecta Mineral Fibre BIO	9-25 mm Kaiflex ST insulation	9 mm Kaiflex ST insulation	120	120
		16 mm diameter/2.25 mm wall				60	60	
		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).

\* seal applied to both sides of the wall



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PROTECTA FR Acrylic: Double Sided* Penetration Seals in Walls							
Maximum seal size 300 x 300 mm							
Substrate	Minimum Substrate Thickness (mm)	Services – Gerberit Mepla MLC (PE-Xb/Aluminium/PE-HD pipe) (fitted centrally)	Sealant Depth (mm)	Backing Material	Insulation LI or CI	Fire Resistance (mins.)	
						E	EI
Drywall/ Masonry/ Concrete	100	16 mm diameter/2.25 mm wall	12.5 mm	12.5 mm Stone wool 40 kg/m <sup>3</sup>	20 mm Stone wool 80 kg/m <sup>3</sup> , 500 mm length from both sides of the seal	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

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

\* seal applied to both sides of the wall



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<b>PROTECTA FR Acrylic: Double Sided** Penetration Seals in Walls</b>							
<b>Maximum seal size 300 x 300 mm / min. 10 mm seal width around service</b>							
Substrate	Minimum Substrate Thickness (mm)	Services (fitted centrally)	Sealant Depth (mm)	Backing Material	Insulation LI or CI	Fire Resistance (mins.)	
						E	EI
Drywall/ Masonry/ Concrete	100	Copper pipe up to 54 mm diameter/1-14.2 mm wall	12.5 mm	20 mm Stone wool 40 kg/m <sup>3</sup>	500 mm length of 20 mm Stone wool 80 kg/m <sup>3</sup>	120	120
		Alupex composite pipe 75 mm diameter/7.5 mm wall		20 mm Stone wool 140 kg/m <sup>3</sup>	600 mm length of 25 mm Protecta Mineral Fibre BIO	60	60
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe (fitted centrally)	Sealant Depth (mm)	Backing Material	Insulation LI or CI	Fire Resistance (mins.)	
						E	EI
Drywall/ Masonry/ Concrete	100	40 mm diameter/1-14.2 mm wall	12.5	20mm Stone wool 40 kg/m <sup>3</sup>	500 mm length of 20 mm stone wool 80 kg/m <sup>3</sup>	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/1.7-14.2 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*							
					500 mm length of 30 mm stone wool 80 kg/m <sup>3</sup>	120	90
						120	90

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

LI = Local Interrupted

CI = Continuous Interrupted

\* Typical pipe diameters shown, intermediate sizes are possible.

\*\* seal applied to both sides of the wall



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PROTECTA FR Acrylic: Double Sided* Penetration Seals in Walls 10 mm seal width around PVC pipes and 29 mm around PP pipes							
Substrate	Minimum Substrate Thickness (mm)	Services (fitted centrally)	Sealant Depth (mm)	Backing Material	Aperture Ø (mm)	Fire Resistance (mins.)	
						E	EI
Drywall/ Masonry/ Concrete	100	PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1 32 mm Ø/1.7 mm wall	12.5	None required (PE foam may be utilised if required)	52	45	45
		PP pipe according to EN 1451-1 32 mm Ø/2 mm wall	25		90	90	

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

\* seal applied to both sides of the wall



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PROTECTA FR Acrylic: Single Sided Penetration Seals in Floors							
Substrate	Minimum Substrate Thickness (mm)	Services (fitted centrally*)	Sealant Depth (mm)	Backing Material	Aperture Ø (mm)	Fire Resistance (mins.)	
						E	EI
Concrete	150	Single electrical cables up to 21 mm Ø	25	Protecta Mineral Fibre BIO 25 mm deep	82 Ø or max. 100 x 1000	120	60

\* for circular seals or min. 30 mm from the edges of rectilinear apertures

PROTECTA FR Acrylic: Single Sided Penetration Seals in Floors Installed to top side of floor / 10 mm seal width around service							
Substrate	Minimum Substrate Thickness (mm)	Services	Sealant Depth (mm)	Backing Material	Aperture (mm)	Fire Resistance (mins.)	
						E	EI
Concrete	150	Blanks Seals	15	20 mm Stone wool 35 kg/m <sup>3</sup>	300 x 300	90	60
			25	25 mm Stone wool 35 kg/m <sup>3</sup>		120	120
		25	Electric cables up to 21 mm diameter, single.	48 mm Mineral Fibre BIO		120	90
			23-27 mm diameter, 1 mm x 185 mm <sup>2</sup> core, PVC sheath and insulation electrical cable, single			240	240





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PROTECTA FR Acrylic: Double Sided* Penetration Seals in Floors Min. 7 mm seal width around service							
Substrate	Minimum Substrate Thickness (mm)	Services (fitted centrally)	Sealant Depth (mm)	Backing Material	Aperture (mm)	Fire Resistance (mins.)	
						E	EI
Concrete	150	Blank seals	15	25 mm Stone wool 35 kg/m <sup>3</sup>	300 x 300	240	240
		Electric cables up to 21 mm diameter, single or in a bundle.				120	120
		Electric cables 22-50 mm diameter, single or in a bundle.				120	90
		Electric cables 51-80 mm diameter, single or in a bundle.				120	60

\* seal fitted to both faces of the floor



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PROTECTA FR Acrylic: Single Sided Penetration Seals in Floors							
Substrate	Minimum Substrate Thickness (mm)	Services – Copper Pipe	Max. Seal Size	Sealant / Backing Depth*	Insulation LI or CI	Fire Resistance (mins.)	
						E	EI
Concrete	150	Up to 54 mm diameter/0.9-14.2 mm wall	10 mm width around pipe	15 mm / 20 mm	Min. 1000 mm of 20 mm Stone wool insulation 80 kg/m <sup>3</sup>	240	180
		Up to 12 mm diameter/0.9-5 mm wall				240	240
		Up to 54 mm diameter/0.9-14.2 mm wall	Up to 100 x 1000 mm	25 mm / 20 mm		120	120
		Up to 54 mm diameter/0.9-14.2 mm wall	300 x 300 mm	15 mm / 20 mm		90	60
		Up to 12 mm diameter/0.9-5 mm wall		25 mm / 20 mm		120	120
		Up to 54 mm diameter/0.9-14.2 mm wall					

LI = Local Interrupted  
 CI = Continuous Interrupted

\* backed with 40 kg/m<sup>3</sup> stone wool insulation or Protecta Mineral Fibre BIO.

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



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PROTECTA FR Acrylic: Single Sided Penetration Seals in Floors							
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe (fitted centrally)	Max. Seal Size	Sealant/Backing** Depth	Insulation min. 1000 mm LI or CI	Fire Resistance (mins.)	
						E	EI
Concrete	150	40 mm diameter/1-14.2 mm wall	10 mm width around pipe	15 mm / 20 mm	20 mm Stone wool insulation 80 kg/m <sup>3</sup>	240	240
		50 mm diameter/1.2-14.2 mm wall*			30 mm Stone wool insulation 80 kg/m <sup>3</sup>		
		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*					
	150	40 mm diameter/1-14.2 mm wall	Up to 100 x 1000 mm	25 mm / 20 mm	20mm Stone wool 80 kg/m <sup>3</sup>	120	90
		40 mm diameter/1-14.2 mm wall*			30 mm Stone wool 80 kg/m <sup>3</sup>		
		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*							

LI = Local Interrupted  
 CI = Continuous Interrupted

\*\* backed with 40 kg/m<sup>3</sup> stone wool insulation or Protecta Mineral Fibre BIO. All pipe classifications are pipe end configuration C/U (U=Uncapped, C=Capped).  
 \* Typical pipe diameters, intermediate sizes are possible.



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PROTECTA FR Acrylic: Single Sided Penetration Seals in Floors							
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe (fitted centrally)	Max. Seal Size	Sealant / Backing** Depth	Insulation min 1000 mm LI or CI	Fire Resistance (mins.)	
						E	EI
Concrete	150	40 mm diameter/1-14.2 mm wall	300 x 300 mm	15 mm / 20 mm	20 mm Stone wool insulation 80 kg/m <sup>3</sup>	90	90
		50 mm diameter/1.2-14.2 mm wall*			30 mm Stone wool insulation 80 kg/m <sup>3</sup>		
		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*					
	150	40 mm diameter/1-14.2 mm wall	300 x 300 mm	25 mm / 20 mm	20mm Stone wool 80 kg/m <sup>3</sup>	120	90
		40 mm diameter/1-14.2 mm wall*			30 mm Stone wool 80 kg/m <sup>3</sup>		
		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*							

LI = Local Interrupted

CI = Continuous Interrupted

\*\*backed with 40 kg/m<sup>3</sup> stone wool insulation or Protecta Mineral Fibre BIO. All pipe classifications are pipe end configuration C/U (U=Uncapped, C=Capped).

\* Typical pipe diameters, intermediate sizes are possible.



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PROTECTA FR Acrylic: Single Sided Penetration Seals in Floors Maximum seal size 300 x 300 mm							
Substrate	Minimum Substrate Thickness (mm)	Services – Gerberit Mepla MLC (PE-Xb/Aluminium/PE-HD pipe (fitted centrally))	Sealant Depth	Backing	Insulation CI	Fire Resistance (mins.)	
						E	EI
Concrete	150	16 mm diameter/2.25 mm wall	25 mm	48 mm Protecta Mineral Fibre BIO	20 mm Stone wool 80 kg/m <sup>3</sup> , 500 mm length from both sides of the seal	240	240
		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					

CI = Continuous Interrupted

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



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PROTECTA FR Acrylic: Double Sided** Penetration Seals in Floors 25 mm deep Protecta FR Acrylic							
Substrate	Minimum Substrate Thickness (mm)	Services	Max. Seal Size	Backing	Insulation	Fire Resistance (mins.)	
						E	EI
Concrete	150	Copper pipe 54 mm diameter/2-14.2 mm wall	300 x 300 mm	25 mm deep 140 kg/m <sup>3</sup> Stone wool	None	120	20
		Mild steel pipe 16 mm diameter/1.5-7.5 mm wall				240	240
		Mild steel pipe 16 mm diameter/1.5-7.5 mm wall	Up to 100 x 1000 mm	25 mm deep Protecta Mineral Fibre BIO		120	120

\* Seal to both faces of floor

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



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PROTECTA FR Acrylic: Double Sided** Penetration Seals in Floors 25 mm deep Protecta FR Acrylic							
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe (fitted centrally)	Max. Seal Size	Backing	Insulation CS	Fire Resistance (mins.)	
						E	EI
Concrete	150	40 mm diameter/1-14.2 mm wall	300 x 300 mm	20 mm Stone wool 40 kg/m <sup>3</sup>	13 -19 mm Kaiflex ST insulation	180	180
		40 mm diameter/1-14.2 mm wall*		25 mm Protecta Mineral Fibre BIO		60	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, intermediate sizes are possible.

\*\* seal to both faces of floor



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PROTECTA FR Acrylic: Double Sided* Penetration Seals in Floors 25 mm deep Protecta FR Acrylic							
Substrate	Minimum Substrate Thickness (mm)	Services – Copper Pipe	Max. Seal Size	Backing	Insulation CS	Fire Resistance (mins.)	
						E	EI
Concrete	150	12 mm diameter/1 mm wall	300 x 300 mm	25 mm Protecta Mineral Fibre BIO	9 mm Kaiflex ST insulation	240	180
		12-54 mm diameter/1-1.2 mm wall			9-13 mm Kaiflex ST insulation	180	120
		12-54 mm diameter/1-1.2 mm wall			13-25 mm Kaiflex ST insulation	90	60
Substrate	Minimum Substrate Thickness (mm)	Services – Gerberit Mepla MLC (PE-Xb/Aluminium/PE-HD pipe)	Max. Seal Size	Backing	Insulation CS	Fire Resistance (mins.)	
						E	EI
Concrete	150	16 mm diameter/2.25 mm wall	300 x 300 mm	25 mm Protecta Mineral Fibre BIO	9 mm Kaiflex ST insulation	180	180
		16 mm diameter/2.25 mm wall			9-13 mm Kaiflex ST insulation	120	60
		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			13-25 mm Kaiflex ST insulation	60	60
		63 mm diameter/4.5 mm wall					
		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

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

\* Seal to both faces of floor





# Appendix UL-EU Certificate

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PROTECTA FR Acrylic: Double Sided** Penetration Seals in Floors							
15 mm deep Protecta FR Acrylic							
Substrate	Minimum Substrate Thickness (mm)	Services – Mild or Stainless Steel Pipe (fitted centrally)	Max. Seal Size	Backing	Insulation Min. 1000 mm LI or CI	Fire Resistance (mins.)	
						E	EI
Concrete	150	40 mm diameter/1-14.2 mm wall	300 x 300 mm or 100 x 1000 mm	20 deep 40 kg/m <sup>3</sup> stone wool insulation	20 mm Stone wool 80 kg/m <sup>3</sup>	240	240
		40 mm diameter/1-14.2 mm wall*			30 mm Stone wool 80 kg/m <sup>3</sup>	240	120
		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*					
		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*							

LI = Local Interrupted)  
 CI = Continuous Interrupted

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

\* Typical pipe diameters, intermediate sizes are possible.

\* seal to both faces of floor

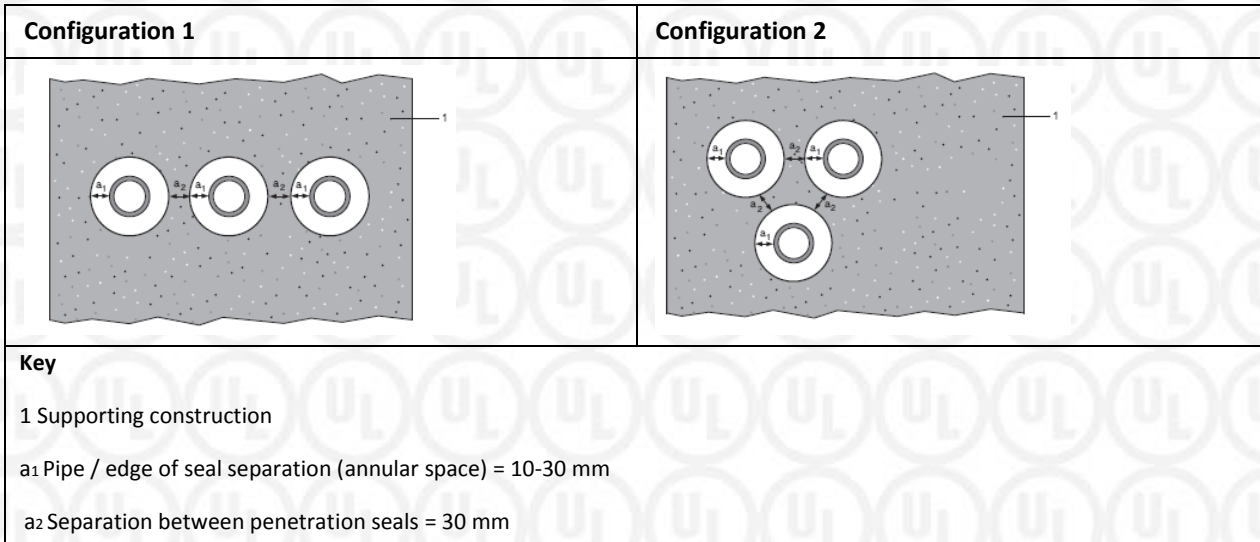


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PROTECTA FR Acrylic: Double Sided** Penetration Seals in Floors							
Substrate	Minimum Substrate Thickness (mm)	Services (separation as per configuration 1 or 2)	Sealant Depth (mm)	Backing Material	Aperture Ø (mm)	Fire Resistance (mins.)	
						E	EI
Concrete	150	PP pipe according to EN 1451-1	25	25 mm Protecta Mineral Fibre BIO	65	120	120
		40 mm Ø/3 mm wall					
		75 mm Ø/2.8 mm wall		25 mm stone wool 140 kg/m <sup>3</sup>	115	180	180
		PE (PE-HD) 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					
		40 mm Ø/4 mm wall		25 mm stone wool 35 kg/m <sup>3</sup>	65	240	240
		PVC-U pipes according to EN 1329-1, EN 1453-1 or EN 1452-1, PVC-C according to EN 1566-1					
up to 40 mm Ø and 1.6-3.4 mm wall	25 mm stone wool 35 kg/m <sup>3</sup>	Up to 100	240	240			

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



# Appendix UL-EU Certificate

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PROTECTA FR Acrylic: Linear Gaps Head of Flexible Wall to Concrete Floor Soffit and Vertical End of Flexible Wall and Concrete Wall								
Substrates	Minimum Substrate Thickness (mm)	Maximum Gap Size (mm)	Seal Position/Orientation	Minimum Seal Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Fire Resistance (mins.)	
							E	EI
Plasterboard & Concrete	100	30	Both Sides, Horizontal Joint	12.5	Stone wool 35 kg/m <sup>3</sup> plus 50 mm steel partition head track	12.5	120	120
			Both Sides, Vertical Joint		Stone wool 35 kg/m <sup>3</sup> *	20		
			Both Sides, Horizontal Joint	25	50 mm steel partition head track	50		

\* Maximum partition/wall height of 3 metres.

PROTECTA FR Acrylic: Linear Gaps Head of Rigid Wall to Concrete Floor Soffit and Between Rigid Walls								
Substrates	Minimum Substrate Thickness (mm)	Maximum Gap Size (mm)	Seal Position/Orientation	Minimum Seal Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Fire Resistance (mins.)	
							E	EI
Masonry/Concrete	150	30	One Side, Horizontal Joint	25	Stone wool 40 kg/m <sup>3</sup>	20	240	60
			Both Sides, Vertical or Horizontal Joint	15			240	240
			One Side, Horizontal Joint	25	Protecta Mineral Fibre BIO	48	240	120

Single sided seals may be either side (or any position between) of the wall.



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PROTECTA FR Acrylic: Linear Gaps Between Concrete Floor Slabs or Between Floor Slab and Rigid Wall								
Substrate	Minimum Substrate Thickness (mm)	Maximum Gap Size (mm)	Seal Position	Minimum Seal Depth (mm)	Backing Material	Minimum Backing Depth (mm)	Fire Resistance (mins.)	
							E	EI
Masonry/ Concrete	150	100	Either face	25	Protecta Mineral Fibre BIO	25	120	60
			Top face				180	180
			Both sides	25	Stone wool 40 kg/m <sup>3</sup>		120	120
				15	Stone wool 140 kg/m <sup>3</sup>		180	180
		30	Both sides*	15	Stone wool 35 kg/m <sup>3</sup>	240	240	

\*Horizontal joint at wall head to floor soffit.



# Appendix UL-EU Certificate

<b>Certification Mark</b>	<b>UL-EU mark</b>
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