UL-EU CERTIFICATE

Certificate No. UL-EU-00771-CPR

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Date of Issue 2015-04-19

Revised 2018-06-15

Certificate Holder FSi Ltd

Westminster Industrial Estate

Tamworth Rd Measham DE12 7DS

United Kingdom

Manufacturer A/008

Certified Product Type Fire Stop – Coated Board

Product Trade Name Stopseal 50 Coated Board / Stopseal 60 Coated Board

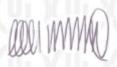
Trademark N/A

Rating/Classification See Appendix

Harmonised Technical Specifications ETAG 026-2 / EN 13501-2 / EN 13501-3

Expiry date 2025-04-19





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 Productilisted 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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.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 Stopseal 50 Coated Board / Stopseal 60 Coated Board for fire stopping where services penetrate floors and walls. The detailed scope is given in pages 3 to 21 of this Certificate. This shows the thickness and acceptable dimensions, substrates and orientations required to provide fire resistance periods of up to 120 minutes (EI 120).

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 1366-3: 2009 & EN 1366-1: 2000
- iii) Classification in accordance with EN 13501-2 & EN 13501-3
- iv) Durability and Servicability as defined in ETAG 026-2

The durability class of Flexi Coat is Z_1 - intended for use at internal conditions with high humidity, excluding temperatures below $0^{\circ}C$

VOC test report – Indoor Air Comfort GOLD® referenced – eurofins 392-2017-00008801_A_EN, is also available.

Fire resisting ducts penetrating the Stopseal Coated board shall be classified (EN13501-3) for the required performance period, in addition to the details given on page 21.



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Product-type: Coated board	Intended use: Pene	tration Seal
Basic requirement for construction work	Basic Requirement	Basic requirement for construction work
$\mathbf{Y}\mathbf{U}_{1}\mathbf{Y}\mathbf{U}_{2}\mathbf{Y}\mathbf{U}_{3}\mathbf{Y}\mathbf{U}_{4}$	BWR 1 Mechanical resistance and stabili	ty
	None	
Mir. Mir. Mir.	BWR 2 Safety in case of fire	Mir.Mir.Mir
EN 13501-1	Reaction to fire	Class E
EN 13501-2	Resistance to fire	See page 7
)(U ₁)(U ₁)(U ₁	BWR 3 Hygiene, health and environmen	t)(U
EN 1026:2000	Air permeability (material property)	See page 4
ETAG 026-3, Annex C	Water permeability (material property)	No performance determined
Declaration of manufacturer	Release of dangerous substances	Declaration of manufacturer
1000	BWR 4 Safety in use	1/2/2/2
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
Viral/iia	BWR 5 Protection against noise	\(\in\)\(
EN 10140-2/ EN ISO 717-1	Airborne sound insulation	Rw (C;C _{tr})= 24(-2;-3) and See pages 5&6
EN 10140-3/ EN ISO 717-2	Impact sound insulation	No performance determined
	BWR 6 Energy economy and heat retention	on
EN 12664, EN 12667 or EN 12939	Thermal properties	No performance determined
EN ISO 12572 EN 12086	Water vapour permeability	No performance determined
人で人でし人で	General aspects relating to fitness for use	e A PLAPLA
ISO 8339: 2005, ISO 9046: 2004 & ISO 7389: 2003	Durability and serviceability	Z_{l}
В	WR 7 Sustainable use of natural resource	ees
		No performance determined

No performance determined



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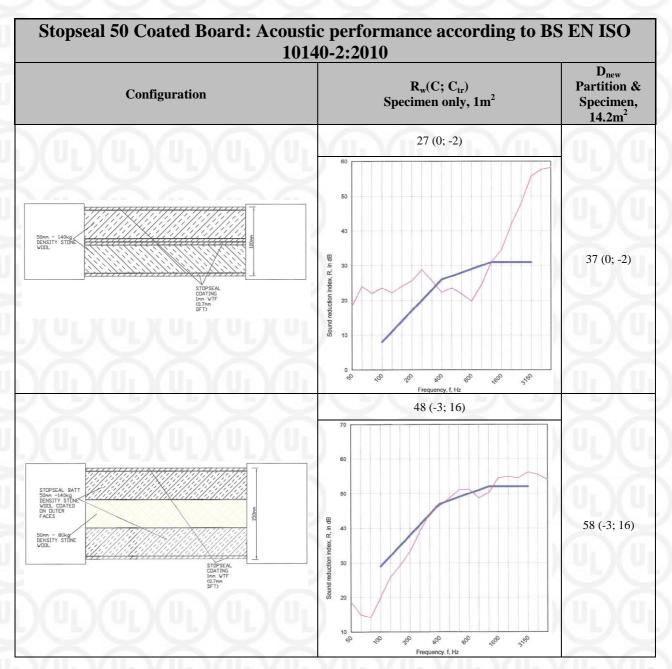
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Stopse	al 50 Coated B	oard: Air Permeab	ility according	to BS EN 1026	
Pressure (Pa)	Results under pos	sitive chamber pressure	Results under negative chamber pre		
Tressure (1 a)	Leakage (m³/h)	Leakage (m³/m²/h)	Leakage (m³/h)	Leakage (m ³ /m ² / h)	
50	0.6	0.8	1.1	1.5	
100	1.0	1.4	1.3	1.8	
150	2.8	3.9	1.5	2.1	
200	3.8	5.3	1.9	2.6	
250	4.5	6.3	2.0	2.8	
300	5.0	6.9	2.4	3.3	
450	5.1	7.1	1.9	2.6	
600	6.7	9.3	2.2	3.1	



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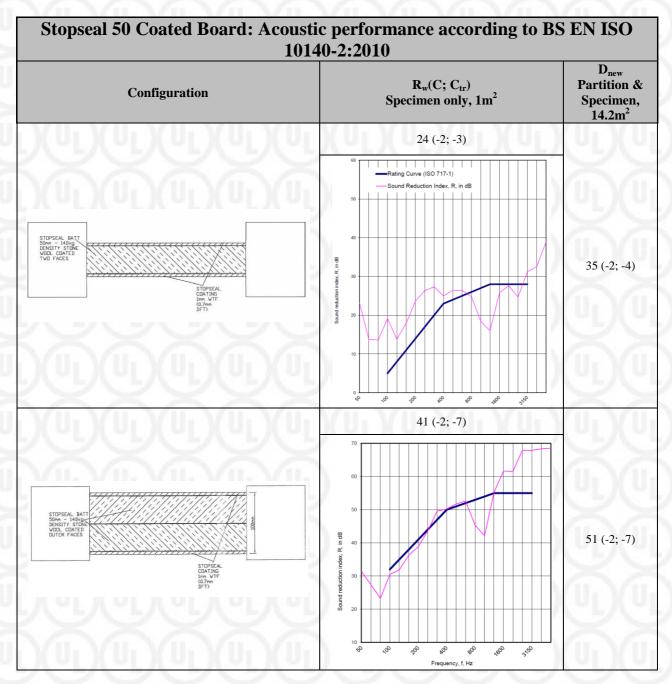
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Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Service / Insulation**	Fire Re (mi	sistance ns.)		
Substrate	Thickness (mm)	(mm)	Position	Depth (mm)		Sci vice / Insulation	E	EI		
火			ST.			Steel or Copper pipe 40 mm diameter and 1.5 – 14.2 mm wall thickness / 20 mm thick foil faced glass wool insulation (min 80 kg/m³)	90	60		
	L)(UL)	(UL)($U_L)$ (UL)(I	15 mm deep by 15 mm wide annulus FSi HPE Sealant to	Steel or Copper pipe 40 - 159 mm diameter and 2.3 – 14.2 mm wall thickness / 30 mm thick foil faced glass wool insulation (min 80 kg/m³)	60	60		
			11.V	UD(11.V		both faces of the batt seal	Steel pipe 40 mm diameter and 1.5 – 14.2 mm wall thickness / 20 mm thick foil faced glass wool insulation (min 80 kg/m³)	90	60
	1200 high x 730 wide					Steel pipe 40 - 159 mm diameter and 2.3 – 14.2 mm wall thickness / 30 mm thick foil faced glass wool insulation (min 80 kg/m³)	60	60		
			h Yah Yah	Electrical cables up to 21 mm diameter	60	60				
Drywall/			PVCF	Electrical cables 22-80 mm diameter	60	45				
Masonry/ Concrete	100	1	Central	100*	100*	100*	5 /5	Steel cable trays and ladders	60	60
wall	JUL	(UL)(UL)(JP)(AF	Telecommunication cables up to 21 mm diameter and in a bundle of up to 100 mm diameter	60	60		
		/iii\					Unsheathed electrical cables up to 17 mm diameter	60	30	
	LJ(UL)	ハリノ	ᄔᄊ	ULJU	None	Unsheathed electrical cables 18-24 mm diameter	60	15		
	$\langle \times \rangle$	\times	\times	\times	\prec	Steel or Copper conduits up to 16 mm diameter	60	15		
	- Y/ U - 1	$V \cup_{i} V$	Ui Y	$U_1 \mathcal{M}_1$	Jr W Ur	Plastic conduits up to 16 mm diameter	60	60		
	600 high x 600 wide	义)		Steel or Copper pipe 42-159 mm diameter and 1.2 – 14.2 mm wall thickness / 25 mm thick foil faced glass wool insulation (min 30 kg/m³)	120	45				
		Jr)(i	և)(Ա	Steel or Copper pipe 42 diameter and 1.0 – 14.2 mm wall thickness / 25 mm thick foil faced glass wool insulation (min 30 kg/m³)	120	60				

^{*} Two layers of 50 mm batt



^{**} Continuous through seal and full length of the pipe

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Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Service / Insulation** Min. 0mm between services and 50mm	Fire Re (mi	sistance ns.)	
Substruce	Thickness (mm)	(mm)	Position	Depth (mm)		to seal edge	E	EI	
K)		X	X	*>	<i>XX</i>	Steel or Copper pipe 42-159 mm diameter and 1.2 – 14.2 mm wall thickness / 40 mm thick foil faced stone wool insulation (min 40 kg/m³)	45	45	
Drywall/ Masonry/ Concrete	100	1200 high x 730 wide	Central	100*	None	Steel 42 - 324 mm diameter and 16 mm wall thickness / 40 mm thick foil faced stone wool insulation (min 40 kg/m³)	45	45	
wall		730 wide	ũ. γ	1111			Steel or Copper pipe 42-159 mm diameter and 1.2 – 14.2 mm wall thickness / 2 mm DFT FSi PST coating	120	45
						Steel pipe 42-324 mm diameter and 14.2 mm wall thickness / 2 mm DFT FSi PST coating	120	45	
Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Service / Insulation*** Min. 0mm between services and 50mm	Fire Re (mi		
Substrate	Thickness (mm)	(mm)	Position	Depth (mm)		to seal edge	E	EI	
M	Yu	(Un)	U Y	in/i	n (Ui	Steel or Copper pipe 42-159 mm diameter and 1.2 – 14.2 mm wall thickness / 13-25 mm thick K Flex ST insulation	120	60	
Dervivel1/		\times	X)	X)	KX.	Steel or Copper pipe 42 mm diameter and 1.0 – 14.2 mm wall thickness / 13-25 mm thick K Flex ST insulation	120	90	
Drywall/ Masonry/ Concrete wall	100	1200 high x 750 wide	Central	100*	None	Steel or Copper pipe 42-108 mm diameter and 1.2 – 14.2 mm wall thickness / 25-40 mm thick Kingspan Kooltherm FM insulation	120	60	
wan	Min			Steel or Copper pipe 42 mm diameter and 1.0 – 14.2 mm wall thickness / 25-40 mm thick Kingspan Kooltherm FM insulation	120	90			
			*	<u> </u>		Steel or Copper pipe 42 mm diameter and 1.2 – 14.2 mm wall thickness / 50 mm thick glassfibre insulation	120	90	

^{*} Two layers of 50 mm batt



^{**} Continuous through the seal and full length of the pipe

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Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Service / Insulation		sistance ins.)	
Substrate	Thickness (mm)	(mm)	Position	Depth (mm)		Service / Misulation	E	EI	
I_)(U	L)(UL	(UL)(UE)(UL)(կ)(կ	Electrical cables up to 21 mm diameter insulated with FSi P40/40 stone wool insulation** 40 mm thick, 40 kg/m ³	120	120	
	\leq	\times	\times	\times	$\leq \times$	Electrical cables 22-80 mm diameter insulated with FSi P40/40 stone wool insulation** 40 mm thick, 40 kg/m³	120	90	
		1200 high x 730 wide	Central	entral 100*		Steel cable trays and ladders insulated with FSi P40/40 stone wool insulation** 40 mm thick, 40 kg/m^3	120	120	
)(UL)	$(U_L)($	$U_L)$		II)(i	UL)(I	UL)(UL	Telecommunication cables up to 21 mm diameter and in a bundle of up to 100 mm diameter insulated with FSi P40/40 stone wool insulation** 40 mm thick, 40 kg/m ³	120
	M		īV		Unsheathed electrical cables up to 24 mm diameter insulated with FSi P40/40 stone wool insulation** 40 mm thick, 40 kg/m³	120	120		
Masonry/ Concrete Wall	150		Any position within wall thickness		None	Steel or Copper pipe 108 mm diameter and 1.5 – 14.2 mm wall thickness / 40 mm thick stone wool insulation (min 140 kg/m³)***	60	45	
			X	*		Electrical cables up to 80 mm diameter insulated with 6 mm thick FSi Thermal Defense Wrap min. 300 mm long	60	60	
	J)(U	600 high x 600 wide	UL)(50	년)(년	Steel cable trays and ladders insulated with 6 mm thick FSi Thermal Defense Wrap min. 300 mm long	60	60	
	(UL)	(U)	Central	ij(i	I_)(I_	Telecommunication cables up to 21 mm diameter and in a bundle of up to 100 mm diameter insulated with 6 mm thick FSi Thermal Defense Wrap min. 300 mm long	60	60	
		$\widetilde{\mathcal{A}}$	11.V	V	5 /10	Unsheathed electrical cables up to 24 mm diameter insulated with 6 mm thick FSi Thermal Defense Wrap min. 300 mm long	60	60	

^{*} Two layers of 50 mm batt



^{**} Interupted at the seal and extending 200 mm from both faces of the seal

^{***} Interupted at the seal and full length of the pipe

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Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Service / Insulation***		sistance ins.)					
Substrate	Thickness (mm)	(mm)	Position	Depth (mm)		Scivice / Insulation	E	EI					
1)(0	_)(U_	(UL)(U _L)(U_)(կ)(կ	Electrical cables up to 80 mm diameter insulated with FSi P40/40 stone wool insulation 40 mm thick, 40 kg/m ³)(i	L)					
	\leq	\times	\times	200**	200**	\times	\times	\leq	\leq	5	Steel cable trays and ladders insulated with FSi P40/40 stone wool insulation 40 mm thick, 40 kg/m³	$\langle \rangle$	K
Drywall/ Masonry/ Concrete Wall	100	1200 high x 750 wide	Patress** , single layer to each face			None	Telecommunication cables up to 21 mm diameter and in a bundle of up to 100 mm diameter insulated with FSi P40/40 stone wool insulation 40 mm thick, 40 kg/m ³	120	120				
	լ)(Մլ	(UL)(UL)(UL)((UL)(I	UL)(!	UL)(!	UL)(()(PL)(UL)(만)(만	Unsheathed electrical cables up to 24 mm diameter insulated with FSi P40/40 stone wool insulation 40 mm thick, 40 kg/m³
			ii.V	ii V		Plastic Conduits up to 16 mm diameter insulated with FSi P40/40 stone wool insulation 40 mm thick, 40 kg/m ³	M	ň					
Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Service / Insulation****	-	sistance ns.)					
	Thickness (mm)	(mm)	Position	Depth (mm)			E	EI					
Y.		W.	K	Y)		Electrical cables up to 21 mm diameter insulated with FSi P40/40 stone wool insulation 40 mm thick, 40 kg/m ³	120	120					
	L)(UL)	$(U_L)($	U_L)(U_)(Մ_)(Մլ	Electrical cables 22-80 mm diameter insulated with FSi P40/40 stone wool insulation 40 mm thick, 40 kg/m ³	120	90					
Masonry/ Concrete Wall	150	1200 high x 730 wide	Flush to both faces of	150*	None	Steel cable trays and ladders insulated with FSi P40/40 stone wool insulation 40 mm thick, 40 kg/m³	120	120					
wan			wall			Telecommunication cables up to 21 mm diameter and in a bundle of up to 100 mm diameter insulated with FSi P40/40 stone wool insulation 40 mm thick, 40 kg/m ³	120	120					
	J(U	(4)	<u>ur)(</u>	UL)(r)(nr	Unsheathed electrical cables up to 24 mm diameter insulated with FSi P40/40 stone wool insulation 40 mm thick, 40 kg/m ³	120	120					

^{*} Two layers of 60 mm batt separated by minimum 30 mm



^{**} Two layers of 50 mm batt separated by minimum 100 mm

^{**} Interupted at the seal and extending 300 mm from both faces of the seal

^{***} Interupted at the seal and extending 200 mm from both faces of the seal

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Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Collar ref.	PVC Pipe**	Fire Re (mi								
Substitute	Thickness (mm)	(mm)	Position	Depth (mm)			1 v O Tipe	E	EI							
11 N U	I M DI	M III M		U1 10 1	31 W U1	32mm	32mm Ø / 1.8mm wall									
レハー	レノヘーレ	ハーレハ	アレハ	- L/V		40mm	40mm Ø / 1.8mm wall									
					\sim	50mm	50mm Ø / 1.8mm wall									
						55mm	55mm Ø / 1.8-2.3mm wall									
D11/	- 37 III - 1	$M \coprod_{i \in M} M$	Flush to	1111-37-1	PipeBloc PCP	63mm	63mm Ø / 2.3-3mm wall		11.							
Drywall/		1200 1:-1	both	UL AU	secured to both 75mm 75mm Ø / 3.1-4.8mm wall	75mm Ø / 3.1-4.8mm wall		uj.								
Masonry/ Concrete	100	1200 high x 730 wide	faces of	100*	100*	f 100*	100*	100*	faces with	82mm	82mm Ø / 3.1-4.8mm wall	120	120			
wall		730 wide	wall					80mm steel pig	90mm	90mm Ø / 4.2-7.4mm wall						
wali	N/11 1	V11.3/	wan	111 3/1	tail screw	100mm	100mm Ø / 4.2-7.4mm wall									
1 N U		UT M	UINI		110mm	110mm Ø / 4.2-7.4mm wall		$u_L)$								
	ハールハ	- I-/N	ニレハ		125mm	125mm Ø / 6mm wall										
						140mm	140mm Ø / 6.1-7.5mm wall									
						160mm	160mm Ø / 6.2-9.5mm wall									
Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Collar ref.	PP Pipe**	Fire Re (mi								
	Thickness (mm)	(mm)	Position	Depth (mm)				E	EI							
v VIII	· VIII	$V \coprod_{i \in V} V$	11. V	110 3/1	15 3/115	32mm	32mm Ø / 2.9mm wall	II. V	11.							
						32mm		Hr W	UT M							
ヒハロヒバ	$-N \sim L$	$n \sim \iota \cdot n$	~ 1.7	UL-A	ᆚᆜᄊᄓ	40mm	40mm Ø / 2.9mm wall									
	りべり	VEPV	Z FV													
			7			40mm	40mm Ø / 2.9mm wall		3							
		X	*		PineBloc PCP	40mm 50mm	40mm Ø / 2.9mm wall 50mm Ø / 2.9mm wall		X							
Drywall/			Flush to		PipeBloc PCP secured to both	40mm 50mm 55mm	40mm Ø / 2.9mm wall 50mm Ø / 2.9mm wall 55mm Ø / 2.9-4.4mm wall		<u> </u>							
Masonry/	100	1200 high x	both	100*	1	40mm 50mm 55mm 63mm	40mm Ø / 2.9mm wall 50mm Ø / 2.9mm wall 55mm Ø / 2.9-4.4mm wall 63mm Ø / 2.9-4.4mm wall	120	120							
Masonry/ Concrete	100	1200 high x 730 wide	both faces of	100*	secured to both	40mm 50mm 55mm 63mm 75mm	40mm Ø / 2.9mm wall 50mm Ø / 2.9mm wall 55mm Ø / 2.9-4.4mm wall 63mm Ø / 2.9-4.4mm wall 75mm Ø / 2.8-6.7mm wall	120	120							
Masonry/	100		both	100*	secured to both faces with	40mm 50mm 55mm 63mm 75mm 82mm	40mm Ø / 2.9mm wall 50mm Ø / 2.9mm wall 55mm Ø / 2.9-4.4mm wall 63mm Ø / 2.9-4.4mm wall 75mm Ø / 2.8-6.7mm wall 82mm Ø / 2.8-6.7mm wall	120	120							
Masonry/ Concrete	100		both faces of	100*	secured to both faces with 80mm steel pig	40mm 50mm 55mm 63mm 75mm 82mm 90mm	40mm Ø / 2.9mm wall 50mm Ø / 2.9mm wall 55mm Ø / 2.9-4.4mm wall 63mm Ø / 2.9-4.4mm wall 75mm Ø / 2.8-6.7mm wall 82mm Ø / 2.8-6.7mm wall 90mm Ø / 2.7-10mm wall	120	120							
Masonry/ Concrete	100		both faces of	100*	secured to both faces with 80mm steel pig	40mm 50mm 55mm 63mm 75mm 82mm 90mm 100mm	40mm Ø / 2.9mm wall 50mm Ø / 2.9mm wall 55mm Ø / 2.9-4.4mm wall 63mm Ø / 2.9-4.4mm wall 75mm Ø / 2.8-6.7mm wall 82mm Ø / 2.8-6.7mm wall 90mm Ø / 2.7-10mm wall 100mm Ø / 2.7-10mm wall	120	120							
Masonry/ Concrete	100		both faces of	100*	secured to both faces with 80mm steel pig	40mm 50mm 55mm 63mm 75mm 82mm 90mm 100mm	40mm Ø / 2.9mm wall 50mm Ø / 2.9mm wall 55mm Ø / 2.9-4.4mm wall 63mm Ø / 2.9-4.4mm wall 75mm Ø / 2.8-6.7mm wall 82mm Ø / 2.8-6.7mm wall 90mm Ø / 2.7-10mm wall 100mm Ø / 2.7-10mm wall	120	120							

^{*} Two layers of 50 mm batt



^{**} Minimum distance between services 0 mm and 50 mm to edges of seal

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Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Collar ref.	PE Pipe**		sistance ns.)								
Substruce	Thickness (mm)	(mm)	Position	Depth (mm)			TE TIPE	E	EI								
	I M UI	N UI N	UIN	UINI	JI W UI	32mm	32mm Ø / 2.9mm wall	UT M	UI I								
	L/\L	ハーレハ	T 1-//	//	//	40mm	40mm Ø / 2.9mm wall		/-								
						50mm	50mm Ø / 2.9mm wall										
		1000				55mm	55mm Ø / 2.9-4.4mm wall										
5 11/	. 37 11.	M = M	Flush to		f = 11 + -M = 1	PipeBloc PCP	63mm	63mm Ø / 2.9-4.4mm wall	11. 37	11. 1							
Drywall/		12001:1			both			\sim L Λ	ULA	UI NI	secured to	secured to both	75mm	75mm Ø / 2.8-6.7mm wall		\sim L J	
Masonry/ Concrete	100	1200 high x 730 wide		100*	faces with	82mm	82mm Ø / 2.8-6.7mm wall	120	120								
wall		730 wide	faces of		80mm steel pig	90mm	90mm Ø / 2.7-10mm wall										
wan	wall		111 \ \/ 1	11 3/1			111. 371	111. \\/1	111. \\/1	11. \/1	11. \/1	11 3/1	tail screw	100mm	100mm Ø / 2.7-10mm wall	1.37	11\
		ULKI	31 X U1	110mm	110mm Ø / 4.2-7.4mm wall		UI I										
	L/\ L	/\ b/\	- b/\	L/\.	L/\ L	125mm	125mm Ø / 3.1mm wall		. 14/								
						140mm	140mm Ø / 3.5-5.8mm wall										
	1/50	1/22 11	\/	11 1/1	1 1/6	160mm	160mm Ø / 4.9-9.5mm wall										
Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Uponor M Composit	MLC (Multi-layer te) Pipe	Fire Resistano (mins.)									
54 .5 24.00	Thickness (mm)	(mm)	Position	Depth (mm)				E	EI								
1 V I	r W 13 r	V III V	$M \rightarrow M$	111 37 1	D IIDE	W III w	40mm Ø / 4mm wall	II V									
Masonry/	レハーレ	ハートハ	Central.	"LAY	Pyropro HPE, 20mm annulus	5	0mm Ø / 4.5mm wall		~ L./								
Concrete	150	1100 high x	back to	100*	and full depth		63mm Ø / 6mm wall	120	120								
wall	130	750 wide	back		100*	100*	100*	100*	100*	of the Stopseal	7	5mm Ø / 7.5mm wall	120				
wan	. WII.	VII. V	back							/11. VI	/m. \/ in	/11. \/ II	m.\/m	III. VIII	m. Vi	batt seal	9
					out sour		10mm Ø 10mm wall	ui M	UI J								

^{*} Two layers of 50 mm batt / 100mm separation



^{**} Min. Separation between services 0 mm, and 50 mm to edges of seal

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Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Wrap ref.	Insulated*** PVC Pipe****		sistance ns.)							
Substitute.	Thickness (mm)	(mm)	Position	Depth (mm)			Insulated 1 ve lipe	E	EI							
-Vii	Min	VII. V	H-V	m. Wi	ьVIII	3x2mm	40mm Ø / 1.9mm wall with 25mm Kingspan Kooltherm FM	120	90							
シベ		CFV	٨ځت			3x2mm	40mm Ø / 3mm wall with 15mm Kingspan Kooltherm FM	120	90							
1		VIII. V			PipeBloc EL	5x2mm	110mm Ø / 4.2mm wall with 25mm Kingspan Kooltherm FM	120	120							
Drywall/ Masonry/	100	1200 high x	Flush to both	100*	secured internally	5x2mm	110mm Ø / 6.6mm wall with 20mm Kingspan Kooltherm FM	120	90							
Concrete wall	100	730 wide	faces of wall		100	within both faces of	3x2mm	40mm Ø / 1.9mm wall with 32mm Armaflex Class O	120	90						
L)(U	L)(UL	$(U_L)($	U_L)(U_L)(1	StopSeal Batt	3x2mm	40mm Ø / 3mm wall with 9mm Armaflex Class O	120	90							
< >	<	\sim	\leq	\times	$\prec \times$	5x2mm	110mm Ø / 4.2mm wall with 32mm Armaflex Class O	120	120							
· Yu	- Mu-	$V \cup V$	Ur W	II. YI	Jr Y/Uri	5x2mm	110mm Ø / 6.6mm wall with 13mm Armaflex Class O	120	90							
G 1 4 4	Minimum Substrate	Maximum	Seal	Minimum Seal	Incorporated seal	Wrap ref.	Insulated*** Steel or		sistance ins.)							
Substrate	Thickness (mm)	Seal Size (mm)	Position	Depth (mm)			Copper Pipe	E	EI							
ア		J. P.	T-V		P/C		42-159mm Ø / 1.2mm wall with 13-25mm K Flex ST	120	60							
Mil	N/ii	VII.V	II.V	ii.Vi	1.VII.	VII.	42-159mm Ø / 1.2-14.2mm wall with 25mm K Flex ST	120	90							
L/U	レ人ピレ	\ L\	거니시		ᆚᆺᆚ	۲u	42mm Ø / 1-14.2mm wall with 13-25mm K Flex ST	120	120							
Drywall/		1200 high x 750 wide	Patress**		PipeBloc EL secured		42-108mm Ø / 1.2-14.2mm wall with 25-40mm Kingspan Kooltherm FM	120	90							
Masonry/ Concrete wall	100		, single layer to each face	200*	internally within both faces of	within both	within both	within both	within both	internally within both	internally within both	internally within both	2x2mm	42mm Ø / 1-14.2mm wall with 25-40mm Kingspan Kooltherm FM	120	120
wall	r YUr	$V \cup_{i} V$	UrY	Ur VI	StopSeal Batt	YU_{i}	42mm Ø / 1.2-14.2mm wall with 50mm glassfibre min. 30 kg/m ³	120	90							
Ÿ\S		600 600	*	义)	F/F/V		42-159mm Ø / 1.2-14.2mm wall with 25mm foil faced glassfibre min. 30 kg/m ³	120	90							
r)(n)(U)(U))(U))(4))(U)	600 x 600	UL)(η ^Γ)(1	L)(UL)(Սւ	42 Ø / 1-14.2mm wall with 25mm foil faced glassfibre min. 30 kg/m ³	120	120			

^{*} Two layers of 50 mm batt / 100mm separation



^{**} Patress installation of Stopseal Coated Batt. The batts are installed in horizontal rows and fixed in minimum 2 vertical edges. Overlap of batts to wall min. 100mm. Batts mechanically fixed to the wall with min. 6 x 8 mm steel screws and steel retaining washer at 300 mm centres.

^{***} Continuous through the seal and full length of the pipe

^{****} Min. Separation between services 0 mm, and 50 mm to edges of seal

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Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Collar ref.	PE Pipe***		sistance ns.)																	
Substrate	Thickness (mm)	(mm)	Position	Depth (mm)			T E T Ipc	E	EI																	
. \/	1/00	100 31	11 1	\ /	. \/ii	32mm	32mm Ø / 2.9mm wall	. \/																		
11 W 11	W H	M III M	Hr W	11 m W 1	II Willi	40mm	40mm Ø / 2.9mm wall		Harana Ya																	
ーレハー		ハーレハ	TLA	ニトン	・レハーレ	50mm	50mm Ø / 2.9mm wall																			
						55mm	55mm Ø / 2.9-4.4mm wall																			
D 11/			-								Pipe!	PipeBloc PCP	63mm	63mm Ø / 2.9-4.4mm wall												
Drywall/	. \/ . \	12001:1	Patress**	11. 3/1	secured to both	75mm	75mm Ø / 2.8-6.7mm wall		11																	
Masonry/	100	1200 high x	, single	200*	faces with	82mm	82mm Ø / 2.8-6.7mm wall	120	120																	
Concrete wall	7 \ ~	730 wide	layer to each face	. "/\	80mm steel pig	90mm	90mm Ø / 2.7-10mm wall																			
wan		each face	tail screw	100mm	100mm Ø / 2.7-10mm wall																					
11 N/11	1/11/1	1/11/21	11 1/	16.76	111 3/1	11 1/1	111 3/11	111 3/1	11 3/1	11 1/1	11 1/1	111 3/71	11 3/1	111 3 // 1	100 16	11 1/1	11 1/1		1. 1			1 3/11	110mm	110mm Ø / 4.2-7.4mm wall		
31 M U	1 1/ 1.11	M Ur M	$U \mapsto W$	Ur M I	Jr M Ur	125mm	125mm Ø / 3.1mm wall		LIN TO																	
- L/\ -	L/_TL	ハーレハ	ニトハ	ニレノ人	ニレノヘニレ	140mm	140mm Ø / 3.5-5.8mm wall		100																	
						160mm	160mm Ø / 4.9-9.5mm wall																			
Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Uponor M Composit	ALC (Multi-layer e) Pipe	Fire Resistan (mins.)																		
2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	Thickness (mm)	(mm)	Position	Depth (mm)				E	EI																	
- \ /_		100			Pyropro HPE,		40mm Ø / 4mm wall																			
Masonry/	- W III-	W Hr W	Patress**	111 37 1	20mm annulus		0mm Ø / 4.5mm wall		11-1																	
Concrete	150	1100 high x	, single	250*	and full depth		63mm Ø / 6mm wall	45	30																	
wall	130	750 wide	layer to		of the Stopseal		5mm Ø / 7.5mm wall	43																		
wan			each face												batt seal		0mm Ø / 8.5mm wall									
1 3/11	1//11	V/11 3/		11 7 6		W/III	10mm Ø 10mm wall	11. 3/																		

^{*} Two layers of 50 mm batt / 100 or 150mm separation



^{**} Patress installation of Stopseal Coated Batt. The batts are installed in horizontal rows and fixed in minimum 2 vertical edges. Overlap of batts to wall min. 100mm. Batts mechanically fixed to the wall with min. 6 x 8 mm steel screws and steel retaining washer at 300 mm centres.

^{***} Min. Separation between services 0 mm, and 50 mm to edges of seal

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Substrate	Minimum Substrate	Maximum Seal		Minimum Seal	Incorporated seal	Collar ref.	PP Pipe***		sistance ns.)		
Substrate	Thickness (mm)	(mm)	Position	Depth (mm)			ППрс	E	EI		
//	-/\ -/	V 1-71	-//	-//	P// P/	32mm	32mm Ø / 2.9mm wall	-//	100		
						40mm	40mm Ø / 2.9mm wall				
16	1/	1.			. \ /	50mm	50mm Ø / 2.9mm wall				
h WH	: W III ::	$M \coprod_{i \in M} M$	1111111	111×361	I = 1/ III =	55mm	55mm Ø / 2.9-4.4mm wall		$U_L)$		
5 11/	レハーレ	ハーレハ		~L/\'	PipeBloc PCP	63mm	63mm Ø / 2.9-4.4mm wall				
Drywall/		12001:1	Patress**		secured to both	75mm	75mm Ø / 2.8-6.7mm wall				
Masonry/	100	1200 high x	, single 200*			200*	faces with	82mm	82mm Ø / 2.8-6.7mm wall	120	120
Concrete	. 3711.	730 wide	layer to	111. 371	80mm steel pig	90mm	90mm Ø / 2.7-10mm wall		111		
wall		K VI A	each face	ULKI	tail screw	100mm	100mm Ø / 2.7-10mm wall	ᄖᄊ	UI I		
-/\-		/_ =/\	/1	/ \		110mm	110mm Ø / 4.2-7.4mm wall		. 14./		
						125mm	125mm Ø / 3.1mm wall				
1 / / 1	7/507	150		11 11 11	- N/S/	140mm	140mm Ø / 3.5-8mm wall	40.7/1			
h W.U	1 W U1	$M \cup M \cup M$	$1.1 \times M$	11 to W 1	Jan W. Ula	160mm	160mm Ø / 4-14.6mm wall		U 1 1		
Substrate	Minimum Substrate Thickness	Maximum Seal Size (mm)	Seal Position	Minimum Seal Depth	Incorporated seal	Collar ref.	PVC Pipe***		sistance ns.) EI		
	(mm)	` ′		(mm)		20	22 0 /10 11				
-/	-/ \/		-/1			32mm	32mm Ø / 1.8mm wall		/		
						40mm	40mm Ø / 1.8mm wall				
1/1	7/	160 34		· \ / ·	. \ /	50mm	50mm Ø / 1.8mm wall				
11 W 11	1 7/ 111	M III M	11111111	111111111	In Willia	55mm	55mm Ø / 1.8-2.3mm wall		Ha Y		
Drywall/	レハーレ	ハーレハ	Patress**	ーレノい	PipeBloc PCP	63mm	63mm Ø / 2.3-3mm wall		~ 1/		
Masonry/		1200 high x	, single		secured to both	75mm	75mm Ø / 3.1-4.8mm wall				
Concrete	100	730 wide	layer to	200*	faces with	82mm	82mm Ø / 3.1-4.8mm wall	120	120		
wall	. 37 II. 3	750 Wide	each face	11.371	80mm steel pig	90mm	90mm Ø / 4.2-7.4mm wall		111		
	N U	N UI N	34011 14400	UI MI	tail screw	100mm	100mm Ø / 4.2-7.4mm wall				
-/\		/\ \ \ \ \ /\\	-//	//	/\	110mm	110mm Ø / 4.2-7.4mm wall		11.0		
				\times		125mm	125mm Ø / 6mm wall				
		100							1		
1	1/	100	. \			140mm	140mm Ø / 6.1-7.5mm wall				

^{*} Two layers of 50 mm batt / 100 or 150mm separation



^{**} Patress installation of Stopseal Coated Batt. The batts are installed in horizontal rows and fixed in minimum 2 vertical edges. Overlap of batts to wall min. 100mm. Batts mechanically fixed to the wall with min. 6 x 8 mm steel screws and steel retaining washer at 300 mm centres.

^{***} Min. Separation between services 0 mm, and 50 mm to edges of seal

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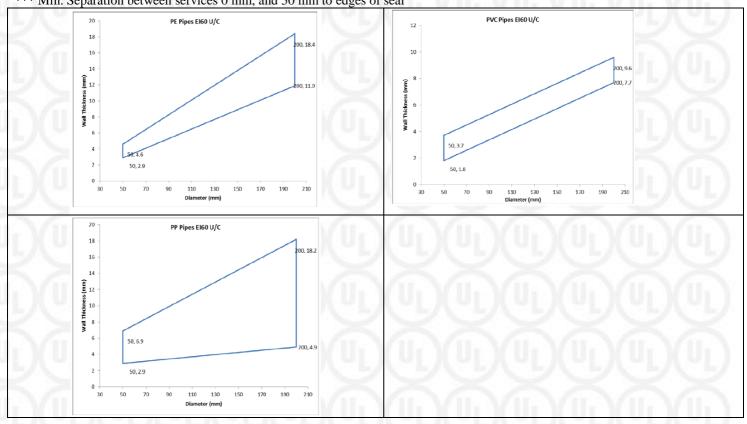
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Substrate	Minimum Substrate	Maximum Seal Size	Seal	Minimum Seal	Incorporated seal	Wrap size	Pipe Diameter***		sistance ns.)													
Substrate	Thickness (mm)	(mm)	Position	Depth (mm)		WxT (mm)	•	E	EI													
-//			Patress** 600 x 600 layer to	-//	PipeBloc PWP	40x2	32mm Ø – 50mm Ø	-//	-/													
Drywall/					secured	40x4	51mm Ø – 82mm Ø															
Masonry/		1		, single		/	10			, single layer to 200*	200*	single yer to 200*	, single 200* internally within both				/ .	internally	40x6	83mm Ø – 115mm Ø		
Concrete	100	600 x 600												40x8	116mm Ø – 160mm Ø	See diagra	ams below					
wall	レハマレ	ハーレハ	each face	$\sim L M^{-1}$	$\nu_{L} \chi_{1}$	ν_{LN}	ULAV	ULAV	$\sim L \Lambda ^{\gamma}$				faces of	40x10	161mm Ø – 200mm Ø	ベレハ						
	$\mathbb{Z} \times \mathbb{Z}$		3	\leq	Stopseal Coated Batt	40x12	201mm Ø – 250mm Ø	= ()	52													

^{*} Two layers of 50 mm batt / 100 or 150mm separation

*** Min. Separation between services 0 mm, and 50 mm to edges of seal





^{**} Patress installation of Stopseal Coated Batt. The batts are installed in horizontal rows and fixed in minimum 2 vertical edges. Overlap of batts to wall min. 100mm. Batts mechanically fixed to the wall with min. 6 x 8 mm steel screws and steel retaining washer at 300 mm centres.

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Substrate	Minimum Substrate Thickness (mm)	Maximum Seal Size (mm)	Seal	Minimum Seal	Incorporated seal	Service / Insulation	Fire Resistano (mins.)	
				Depth (mm)		Service / Insuration	E	EI
)(U)	600 x 600 1100 high by 730 wide	50* Central	50*	None	Electrical cables up to 80 mm diameter insulated with FSi TDW**	60	60
	<					Steel cable trays and ladders insulated with FSi TDW**	60	60
	L)(UL)					Telecommunication cables up to 21 mm diameter and in a bundle of up to 100 mm diameter insulated with FSi TDW**	60	60
	150					Unsheathed electrical cables up to 24 mm diameter insulated with FSi TDW**	60	60
Masonry/ Concrete						Steel or copper pipe 108mm Ø, 1.5-14.2mm wall with 40mm stone wool insulation 40kg/m ³ continuous through the seal and full length of the pipe	60	45
						Steel or copper pipe 42mm Ø, 1.2-14.2mm wall with 40mm stone wool insulation 40kg/m³ interrupted at the seal and 300 mm long on each face	45	45
						Steel or copper pipe 42-159mm Ø, 2-14.2mm wall with 40mm stone wool insulation 40kg/m³ interrupted at the seal and 300 mm long on each face	45	15
Wall		1100 high by 750 wide		$\leq >$	500mm wide perforated steel cable tray coated with 2mm DFT PST for 300mm to both faces	30	30	
						Electrical cables up to 21 mm diameter coated with 2mm DFT PST for 300mm to both faces	45	45
						1 off 'C2' Cable coated with 2mm DFT PST for 300mm to both faces	45	45
				Ur YI		1 off 'C2' Cable coated with 2mm DFT PST for 300mm to both faces	45	45
				<u>ځ</u> ٨		1 off 'C2' Cable coated with 2mm DFT PST for 300mm to both faces	45	45
	2/11/2			ii.Vi	Pyropro HPE, 20mm annulus and full depth of the Stopseal batt seal	500mm wide perforated steel cable tray coated with 2mm DFT PST for 300mm to both faces	120	120
						Electrical cables up to 21 mm diameter coated with 2mm DFT PST for 300mm to both faces	120	120
				100***		1 off 'C2' Cable coated with 2mm DFT PST for 300mm to both faces	120	120
						1 off 'C2' Cable coated with 2mm DFT PST for 300mm to both faces	120	90
				$\leq \times$	1 off 'C2' Cable coated with 2mm DFT PST for 300mm to both faces	120	120	

^{*} One layer of 50 mm batt



^{**} Thermal Defense Wrap, 6mm thick, interupted at the seal and extending 300 mm from both faces of the seal

^{***} Two layers of 50 mm batt

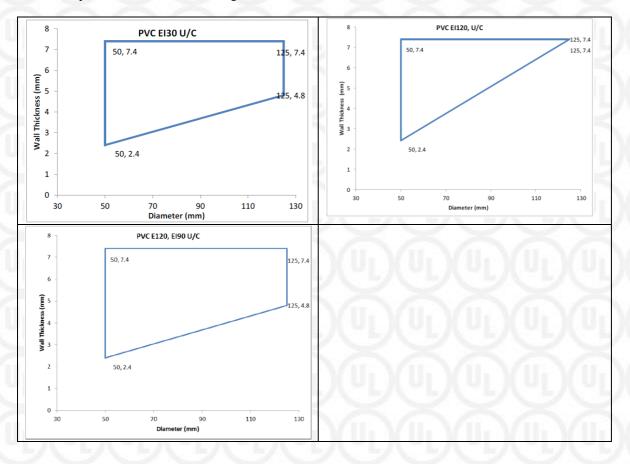
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Substrate	Minimum Substrate Thickness (mm)	Maximum Seal Size (mm)	Seal Position	Minimum Seal	Incorporated seal	Service / Insulation	Fire Resistance (mins.)	
Substruce				Depth (mm)		Service / Misulation	E	EI
J _L)(U	150	1100 high by 750 wide		100*	Pyropro HPE, 20mm annulus and full depth of the Stopseal batt seal	PVC Pipe 50mm diameter / 2.4-7.4mm wall	45**	45**
Masonry/					Pyropro HPE, 20mm annulus and 20mm depth to both faces of the Stopseal batt seal	PVC Pipe	See diagram below	
Concrete Wall		1100 high by 750 wide	- Central			Steel or Copper Pipe 42mm diameter / 1.2-14.2mm wall, insulated with 40mm stone wool min. 40kg/m³***	120	60
r)(n					None	Steel or Copper Pipe 42-159mm diameter / 2-14.2mm wall, insulated with 40mm stone wool min. 40kg/m³***	120	30

^{*} Two layers of 50 mm batt

^{***} interupted at the seal and extending 300 mm from both faces of the seal





^{**} And as per diagram below

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Substrate	Minimum Substrate Thickness (mm)	Maximum Seal Size (mm)	Seal Position	Minimum Seal Depth (mm)	Incorporated seal	Service / Insulation	Fire Resistar (mins.)	
							E	EI
i)(u		1600 x 700	Flush to top of floor	50	None	None	60	60
₹>		\times	Central, back to back	50*	None	Electrical cables up to 80 mm diameter insulated with 40mm stone wool insulation 40kg/m³ **	60	60
LXU	L)(UL)	$\mathcal{N}^{UL}\mathcal{N}$				Steel cable trays and ladders insulated with 40mm stone wool insulation 40kg/m³ **	60	60
NO.	150	1100 x 700				Telecommunication cables up to 21 mm diameter and in a bundle of up to 100 mm diameter insulated with 40mm stone wool insulation 40kg/m³ **	60	60
						Unsheathed electrical cables up to 17 mm diameter insulated with 40mm stone wool insulation 40kg/m³ **	60	60
						Unsheathed electrical cables up to 18-24 mm diameter insulated with 40mm stone wool insulation 40kg/m³ **	60	60
Concrete Floor						Steel or Copper conduits up to 16mm diameter insulated with 40mm stone wool insulation 40kg/m³ **	60	60
<>>						Plastic conduits up to 16 mm diameter insulated with 40mm stone wool insulation 40kg/m³ **	60	60
r)(n						Steel or copper pipe 42mm Ø, 1.2-14.2mm wall insulated with 40mm stone wool insulation 40kg/m ³ **	120	120
						Steel or copper pipe 42-159mm Ø, 2-14.2mm wall insulated with 40mm stone wool insulation 40kg/m ³ **	120	30
					Pyropro HPE, 20mm annulus and full depth of the Stopseal batt seal	500mm wide perforated steel cable tray coated with 2mm DFT PST for 300mm to both faces	60	60
						Electrical cables up to 21 mm diameter coated with 2mm DFT PST for 300mm to both faces	60	60
						1 off 'C1' Cable coated with 2mm DFT PST for 300mm to both faces	60	60
						1 off 'C2' Cable coated with 2mm DFT PST for 300mm to both faces	60	60
						1 off 'C3' Cable coated with 2mm DFT PST for 300mm to both faces	60	60

^{*} Two layers of 50 mm batt



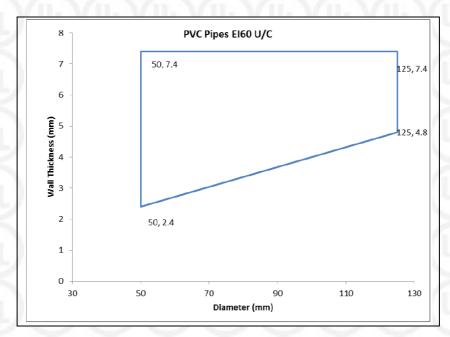
^{**} Interupted at the seal and extending 300 mm from both faces of the seal

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Substrate	Minimum Substrate Thickness (mm)	Maximum Seal Size (mm)	Seal Position	Minimum Seal Depth (mm)	Incorporated seal	Uponor MLC (Multi-layer Composite) Pipe	Fire Resistance (mins.)	
							E	EI
Concrete floor	150	1100 x 750	Central, back to back	100*	Pyropro HPE, 20mm annulus and full depth of the Stopseal batt seal	40mm Ø / 4mm wall 50mm Ø / 4.5mm wall 63mm Ø / 6mm wall 75mm Ø / 7.5mm wall 90mm Ø / 8.5mm wall 110mm Ø 10mm wall	60	60
Substrate	Minimum Substrate Thickness (mm)	Maximum Seal Size (mm)	Seal Position	Minimum Seal Depth (mm)	Incorporated seal	PVC Pipe		esistance ins.) EI
Concrete floor	150	1100 x 750	Central, back to back	100*	Pyropro HPE, 20mm annulus and 25mm depth to both faces of the Stopseal batt seal	See diagram below	1)(I	11) 14)

^{*} Two layers of 50 mm





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Substrate	Minimum Substrate Thickness (mm)	Maximum Seal width (mm)	Minimum Seal Depth (mm)	Duct A	Duct Specification (Duct must be classified in accordance with EN 13501-3 for the required period)	Fire Resistance (mins.)	
Substrate				Duct B		E	S
Drywall/ Concrete/	100	100	200*	A	Uninsulated 1.0mm GMS steel, rectangular duct, maximum dimensions 1250 mm wide by 1000 mm high.	60	120
Masonry wall				В		120	ĭ
Concrete	150	250	275**	A		120	120
floor				В		120	UL)(

^{* 4} layers, outer layers overlapped



^{** 50} mm Stopseal Batt/100 mm Silverseal HS Compound/125 mm Stopseal Batt

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 Certificate Manufacturer's name or trademark and model number shall also appear elsewhere on the product.

All content shall be in accordance with the details provided on this UL-EU Certificate.

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