# UL-EU CERTIFICATE

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UL-EU-01218-CPR 1/232021-09-22

Sika Services AG **Certificate Holder Tueffenwies 16** 8048 Zurich Switzerland

A/003

Manufacturer

**Certified Product Type Product Trade Name** Trademark **Rating/Classification**  Fire Stop – Putty SikaSeal-632 Fire Putty+ N/A See Appendix

**Harmonised Technical Specifications Expiry** date EAD 350454-00-1104, September 2017 / EN 13501-2 2031-09-21



**Authorized Certification Decision Maker** 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 Produu listed on the certificate and manufactured at the production sile(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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement. uct



www.ul.com 27-CP-F0855 Issue: 3.1

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This certificate relates to the use of SikaSeal-632 Fire Putty+ for fire stopping where insulated or uninsulated metallic pipes, cables and pipes penetrate flexible, masonry or concrete walls and rigid floor constructions, or where cable protrusion of socket boxes penetrate flexible walls. The detailed scope is given in pages 3 to 22 of this Certificate. This shows the thickness and acceptable dimensions, substrates and orientations required to provide fire resistance periods of up to 240 minutes (EI 240).

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
- iii) Classification in accordance with EN 13501-2
- iv) Durability and Serviceability as defined in EAD 350454-00-1104, September 2017

The durability class of SikaSeal-632 Fire Putty+ is  $Z_2$  -

Intended for uses in internal conditions with humidity lower than 85 % RH excluding temperatures below  $0^{\circ}$ C, without exposure to rain or UV.



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Product-type: Intumescent shee	t Intended use: Pene	tration Seal
Assessment method	Essential characteristic	Product performance
	BWR 2 Safety in case of fire	MIMIN
EN 13501-1	Reaction to fire	No performance determined
EN 13501-2	Resistance to fire	See pages 4 - 21
XUIXUIXUI	3WR 3 Hygiene, health and environme	nt
EN 1026	Air permeability	See page 22
EAD 350454-00-1104, Annex C	Water permeability	No performance determined
Declaration of manufacturer	Content, emission and/or release of	Use categories: IA1
& EN 16516	dangerous substances	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	Z <sub>2</sub>
	BWR 5 Protection against noise	
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	Rw (C;C <sub>tr</sub> )= 67 (-2;-7) dB*
B	WR 6 Energy economy and heat retent	ion
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

\*Applicable only for SikaSeal-632 Fire Putty+ pads in socket boxes



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#### SikaSeal-632 Fire Putty+: Double Sided Pipe and Cable Penetration Seals, 4mm Thick in Socket Box, in Walls

Substrate	Minimum Substrate Thickness	Aperture (mm)	Socket box	SikaSeal-632 Fire Putty+ (mm)	Services	Resis (mi	re tance ns.)
22	(mm)	63 Ø	Single or double Høiax Push Wallbox 15mm *	174 x 64 x 4 mm around pipe / 50 Ø x 25 mm at back of the box	Høiax 25mm PEX pipe in pipe hose	Е 90	<b>EI</b> 90
Gypsum	100	135 wide x 75 high	UK standard double socket box, 130mm wide x 70mm high x 47mm deep, each with up to 22mm hole cut to accept the cables	Interior of box fully lined with pad	Cables up to 14 mm diameter	60	60
Drywall wall	120	135 wide x 72 High	UK standard double socket box, maximum 130mm wide x 70mm high x 48mm deep, each with a 25mm	Interior of box fully lined with pad	Cables up to 14 mm diameter	120	120
$\leq \kappa$	120	135 wide x 72 High	wide x 14mm high knock out section centrally located at the bottom back angle of the box to accept the cables	Interior of box fully lined with pad	2.5 mm twin and earth cables	120	120

\*Fixed directly to studs or with steel plate between studs.

	Minimum					F	ire
Substrate	Substrate Thickness	Aperture (mm)	Socket box	SikaSeal-632 Fire Putty+	Services	Resis	
	( <b>mm</b> )					Е	E
$\sim$	N.	73 wide x 91 High x 51 deep	Schneider Electric Ref. IMT 36026 connection box, 72mm wide x 90mm high x 50mm deep	Fitted lining the back of the back box	Cables up to 14 mm diameter	60	45
Gypsum Drywall wall	100 92	92 wide x 112 High	Elko 4189 1223720 connection box, 72mm wide x 90mm high x 58mm deep	Interior of box fully lined with pad	Cables up to 14 mm diameter	90	90
ı.)(Uı	)(U <sub>L</sub> )	74 wide x 74 High	ELKO 5421 123740 connection box, 73mm wide x 73mm high x 55mm deep	Interior of box fully lined with pad	Cables up to 14 mm diameter	90	90



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Substrate	Minimum Substrate	Services (fitted at any position within the	Sealant Depth	Fire Res (miı	
Substrate	Thickness (mm)	aperture)	(mm)	Е	EI
		Blank seal with a 15 mm deep cord of SikaSeal-632 Fire Putty+ on both sides of the wall	15	120	120
Drywall/ Masonry/ Concrete	100	Cables up to 21 mm diameter, single or in a bundle up to 50 mm diameter#	15	120	120
		Cables up to 80 mm diameter, single or in a bundle up to 50 mm diameter#	15	60	60
Mild or stainless s	steel pipes				
Drywall/	100	Maximum 22 mm diameter*	15	120	120
Masonry/ Concrete	100	23-30 mm diameter*	15	120	45
ALUPEX pipes					
Drywall/ Masonry/	100	16 mm diameter*	15	120	120
Concrete	Alli Mi	17-20 mm diameter*	15	120	90
Copper or steel pi	pes	•			
Drywall/	100	6 mm diameter*	15	120	120
Masonry/ Concrete	100	7-12 mm diameter*	15	120	60

All pipe classifications are pipe end configuration C/C (C=Capped, C=Capped) Except Mild or Stainless Steel pipes which are C/U (C=Capped, U=Uncapped).

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

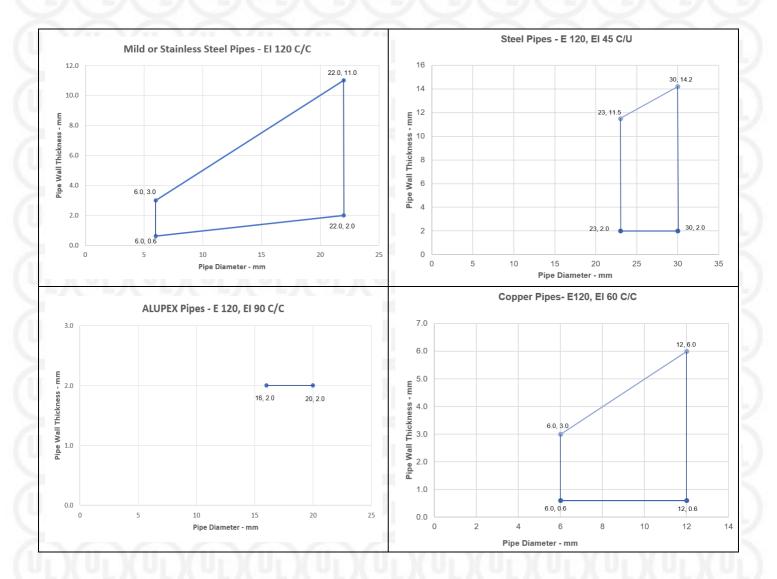
# Cable specification from EN 1366-3 standard cable configuration

\* See below graphs for interpolated pipe sizes.

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



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	SikaSeal-	632 Fire Putty+: Double Sided**	Service	Penetration Seals in Walls	5	
Substrate	Minimum Substrate Thickness	Services (fitted at any position within the aperture)	Sealant Depth (mm)	Insulation (LI)	Fi Resis (mi	tance
	( <b>mm</b> )		(mm)		E	EI
Mild or stainles	s steel pipes, with	minimum 80 kg/m <sup>3</sup> density mineral wool insulation				
Drywall/	Drywall/ Masonry/ 100	Maximum 40 mm diameter*	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup> , 500 mm long butted up to the wall on both faces	120	120
Masonry/ 100 Concrete	40-324 mm diameter*	15	Minimum 30 mm thick mineral wool 80 kg/m <sup>3</sup> , 500 mm long butted up to the wall on both faces	120	120	
Copper or steel	pipe, with minim	um 80 kg/m <sup>3</sup> density mineral wool insulation				
Drywall/ Masonry/ Concrete	100	Maximum 54 mm diameter/1.2-14.2 mm wall	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup> , 500 mm long butted up to the wall on both faces	90	60
ALUPEX pipe	with minimum 80	kg/m <sup>3</sup> density mineral wool insulation				
Drywall/	100	Maximum 16 mm diameter*	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup> , 500 mm long butted up to the wall on both faces	90	90
Masonry/ 100 Concrete		Maximum 75 mm diameter*	15	Minimum 30 mm thick mineral wool 80 kg/m <sup>3</sup> , 500 mm long butted up to the wall on both faces	90	90

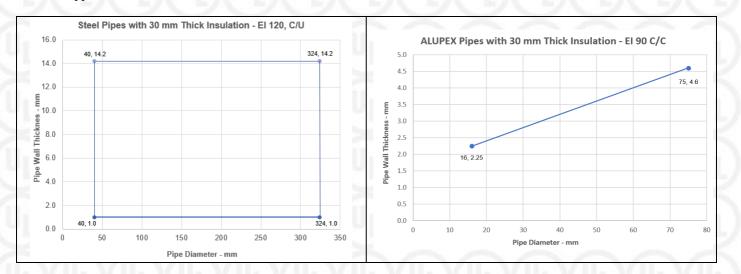
LI = Local Interrupted

All pipe classifications are pipe end configuration C/U (C=Capped, U=Uncapped) Except Copper or ALUPEX pipes which are C/C (C=Capped, C=Capped).

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

\* See below graphs for interpolated pipe sizes.

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





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Substrate	Minimum Substrate Thickness	Services (fitted at any position within the aperture)	Sealant Depth	Insulation (CS)	Fire Resistance (mins.)	
	( <b>mm</b> )		( <b>mm</b> )		Ε	EI
Mild or stainles	s steel pipes, with	minimum 80 kg/m <sup>3</sup> density mineral wool insulation				
Drywall/	100	Maximum 40 mm diameter*	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup>	120	120
Masonry/ 100 Concrete		40-324 mm diameter*	15	30-80 mm thick mineral wool 80 kg/m <sup>3</sup>	90	60
Copper or steel	pipe, with minim	um 80 kg/m <sup>3</sup> density mineral wool insulation				
Drywall/	100	Maximum 12 mm diameter/0.7-6.0 mm wall	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup>	90	60
Masonry/ Concrete	100	Maximum 54 mm diameter/1.2-14.2 mm wall	15	30-80 mm thick mineral wool 80 kg/m <sup>3</sup>	90	60
ALUPEX pipe	with minimum 80	kg/m <sup>3</sup> density mineral wool insulation				
Drywall/	100	Maximum 16 mm diameter*	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup>	90	90
Masonry/ Concrete	100	Maximum 75 mm diameter*	15	Minimum 30 mm thick mineral wool 80 kg/m <sup>3</sup>	90	90

All pipe classifications are pipe end configuration C/U (C=Capped, U=Uncapped) Except Copper or Steel and ALUPEX pipes which are C/C (C=Capped, C=Capped).

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

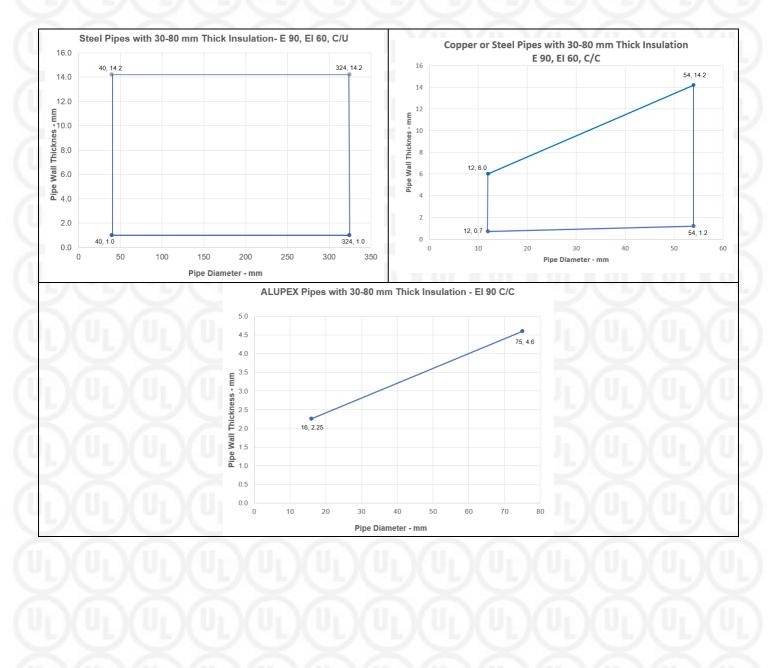
\* See below graphs for interpolated pipe sizes.

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





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	SikaSeal-	632 Fire Putty+: Double Sided**	Service Pe	netration Seals in W	alls	
Substrate	Minimum Substrate Thickness (mm)	Services (fitted at any position within the aperture)	Sealant Depth (mm)	Insulation		re tance ns.) EI
Mild or stainles	s steel pipes					
Drywall/ Masonry/ Concrete	120	Maximum 324 mm diameter/6.35-14.2 mm wall	15	None	90	20
Copper or steel	pipe, with minimu	um 80 kg/m <sup>3</sup> density mineral wool insulation	· · ·			
Drywall/ Masonry/ Concrete	120	Maximum 75 mm diameter/4.6-14.2 mm wall	15	None	90	90
ALUPEX pipe	with minimum 80	kg/m <sup>3</sup> density mineral wool insulation				
Drywall/ Masonry/ Concrete	120	Maximum 54 mm diameter/1.2-14.2 mm wall	15	None	90	15

All pipe classifications are pipe end configuration C/U (C=Capped, U=Uncapped) Except Copper or Steel and ALUPEX pipes which are C/C (C=Capped, C=Capped).

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2). \*\* Seal applied to both sides of the wall



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Substrate	Minimum Substrate Thickness	Services (fitted at any position within the aperture)	Sealant Depth	Insulation (CS)	Fire Resistance (mins.)	
	(mm)	• • • • •	( <b>mm</b> )		E	EI
Mild or stainles	s steel pipes, with	minimum 80 kg/m <sup>3</sup> density mineral wool insulation				
Masonry/	onry/ 150	Maximum 40 mm diameter*	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup>	120	120
Concrete	150	Maximum 324 mm diameter*	15	30-80 mm thick mineral wool 80 kg/m <sup>3</sup>	240	180
Copper or steel	pipe, with minim	um 80 kg/m <sup>3</sup> density mineral wool insulation				
Masonry/ Concrete	150	Maximum 54 mm diameter/1.2-14.2 mm wall	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup>	240	120
ALUPEX pipe	with minimum 80	kg/m <sup>3</sup> density mineral wool insulation				
Masonry/	150	Maximum 16 mm diameter*	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup>	240	240
Concrete	- 150	Maximum 75 mm diameter*	15	Minimum 30 mm thick mineral wool 80 kg/m <sup>3</sup>	240	240

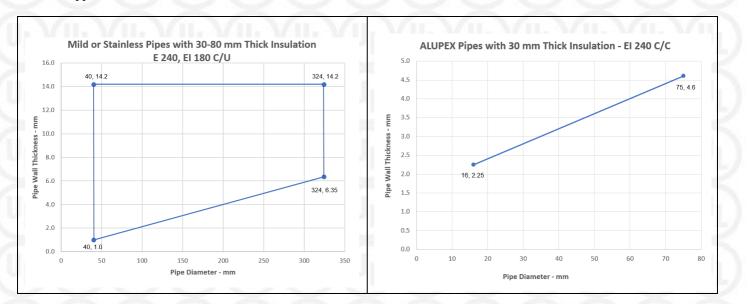
CS = Continuous Sustained

All pipe classifications are pipe end configuration C/U (C=Capped, U=Uncapped) Except Copper or Steel and ALUPEX pipes which are C/C (C=Capped, C=Capped).

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

\* See below graphs for interpolated pipe sizes.

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





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Substrate	Minimum Substrate	Services (fitted at any position within the	Sealant Depth	Fire Resistance (mins.)	
Jubstrate	Thickness (mm)	, i i i i i i i i i i i i i i i i i i i	( <b>mm</b> )	Е	EI
$\sim$	Ň	None (blank)	15	120	30
)(4)(4)	(1.)(1	Cables up to 21 mm diameter in tied bundles up to 50 mm diameter*	15	120	60
	23	Cables up to 21 mm diameter*	15	120	120
		Cables 22-50 mm diameter*	15	120	90
	VIII VI	Cables 51-80 mm diameter*	15	120	60
Concrete	150	Single 'A1' type cable*	15	240	240
	$\sim$	Single 'C3' type cable*	15	240	240
	AL 10	Single 'E' type cable*	15	120	120
. <b>Д</b> ЧЬ,	1-1-1-	Single 'D1' type cable*	15	120	120
	$\times$	Single 'D2' type cable*	15	120	120
	$\sqrt{11}$ , $\sqrt{1}$	Single 'D3' type cable*	15	240	60

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

\* Cable specification from EN 1366-3 standard cable configuration

\*\* Seal applied to top side of floor, except for blank seals where seal is applied flush with bottom face of floor.



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	SikaSeal-63	2 Fire Putty+: Single Sided** Service F	Penetration Seals	in Floors	
Substrate	Minimum Substrate	Services (fitted at any position within the	Sealant Depth	Fire Resistance (mins.)	
Th	Thickness (mm)	aperture)	( <b>mm</b> )	E	EI
LV. L	V-LV	None (blank)	15	120	120
Concrete 150	Cables up to 21 mm diameter in tied bundles up to 75mm diameter#	15	60	45	
	150	Cables up to 21 mm diameter#	15	120	60
		Cables 22-80 mm diameter#	15	90	45
Mild or stainless	steel pipes				
0	150	4 mm diameter*	15	120	120
Concrete	150	5-30 mm diameter*	15	120	45
Copper or steel p	ipes				
Concepto	150	6 mm diameter*	15	120	90
Concrete	150	7-12 mm diameter*	15	120	30

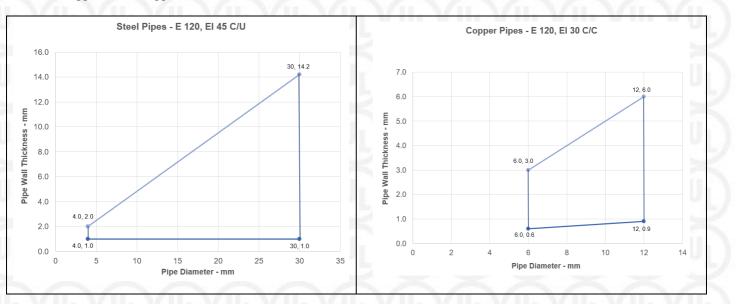
Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

# Cable specification from EN 1366-3 standard cable configuration

\* See below graphs for interpolated pipe sizes.

\*\* Seal applied to bottom side of floor, except for blank seals where seal is applied flush with both faces of floor.

All pipe classifications are pipe end configuration C/C (C=Capped, C=Capped) Except Mild or Stainless Steel pipes which are C/U (C=Capped, U=Uncapped).





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Substrate	Minimum Substrate	Services (fitted at any position within the	Sealant Depth	Fire Resistance (mins.)	
Substitute	Thickness (mm)	aperture)	(mm)	Ε	EI
Mild or stainless	steel pipes				
<b>G</b>	150	Maximum 22 mm diameter/1.2-11.0 mm wall#	15	120	120
Concrete	150	Maximum 324 mm diameter/6.35-14.2 mm wall#	15	240	15
Copper or steel p	ipes				
57.5		6 mm diameter#	15	120	120
Concrete	150	7-10 mm diameter#	15	120	90
	ALL YO	Maximum 54 mm diameter/1.2-14.2 mm wall	15	120	120
ALUPEX pipes			· · · · · · · · · · · · · · · · · · ·		·
Converte	150	16-20 mm diameter#	15	240	240
Concrete	150	Maximum 75 mm diameter/4.6-14.2 mm wall	15	45	30

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

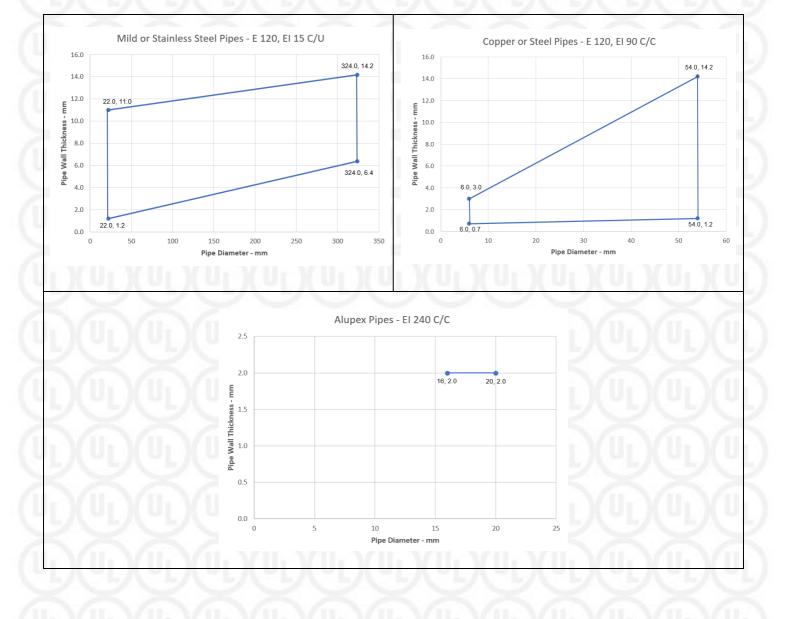
\* Seal applied to top side of floor

All pipe classifications are pipe end configuration C/C (C=Capped, C=Capped) Except Mild or Stainless Steel pipes which are C/U (C=Capped, U=Uncapped).

# See below graphs for interpolated pipe sizes.



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SikaSeal-632 Fire Putty+: Single Sided\*\* Service Penetration Seals in Floors Minimum Fire Sealant Substrate Resistance Services (fitted at any position within Insulation (LI) Substrate Depth (mins.) Thickness the aperture)  $(\mathbf{m}\mathbf{m})$ (mm) Е EI Mild or stainless steel pipes, with minimum 80 kg/m<sup>3</sup> density mineral wool insulation Minimum 20 mm thick mineral Maximum 40 mm diameter\* 15 wool 80 kg/m3, 500 mm long butted 240 240 up to the floor on both faces Concrete 150 Minimum 30 mm thick mineral 41-324 mm diameter\* 15 wool 80 kg/m3, 500 mm long butted 60 240 up to the floor on both faces ALUPEX pipe with minimum 80 kg/m3 density mineral wool insulation Minimum 20 mm thick mineral Maximum 16 mm diameter/2.25-8.0 mm wall\* 240 15 wool 80 kg/m<sup>3</sup>, 500 mm long butted 240 up to the wall on both faces Concrete 150 Minimum 30 mm thick mineral Maximum 75 mm diameter/4.6-14.2 mm wall\* 15 wool 80 kg/m3, 500 mm long butted 240 240 up to the floor on both faces Copper or steel pipe with minimum 75 kg/m<sup>3</sup> density glass or mineral wool insulation Minimum 20 mm thick glass or Maximum 12 mm diameter/0.7-14.2 mm wall\* 15 240 240 mineral wool 75 kg/m<sup>3</sup>, 500 mm 150 Concrete long butted up to the floor on both Maximum 54 mm diameter/1.2-14.2 mm wall\* 15 180 120 faces

#### LI = Local Interrupted

All pipe classifications are pipe end configuration C/U (C=Capped, U=Uncapped) Except Copper or Steel and ALUPEX pipes which are C/C (C=Capped, C=Capped).

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2). \*See below graphs for interpolated pipe sizes. \*\* Seal applied to top side of the floor



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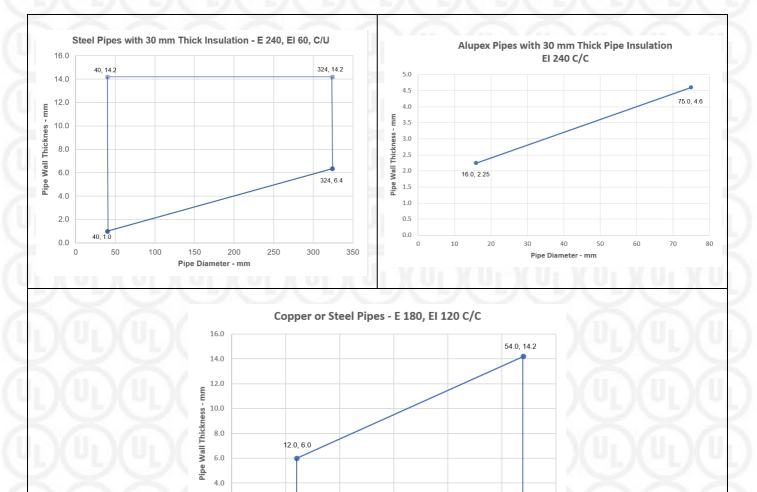
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30 Pipe Diameter - mm

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Substrate	Minimum Substrate Thickness	Services (fitted at any position within the aperture) Sealant Depth (mm) Insulation (C		Insulation (CS)	Fi Resis (mi	tance
	( <b>mm</b> )		(IIIII)		E	EI
Mild or stainle	ss steel pipes, with	minimum 80 kg/m <sup>3</sup> density mineral wool insulation				
	)(ካ)	Maximum 40 mm diameter/1.0-14.2 mm wall	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup>	240	240
Concrete	150	Maximum 324 mm diameter*	15	30-80 mm thick mineral wool 80 kg/m <sup>3</sup>	240	240
Copper or steel	pipe, with minim	um 80 kg/m <sup>3</sup> density mineral wool insulation				
Gamma	150	Maximum 12 mm diameter/0.7-6.0 mm wall	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup>	240	240
Concrete	Concrete 150	Maximum 54 mm diameter/1.2-14.2 mm wall,	15	30-80 mm thick mineral wool 80 kg/m <sup>3</sup>	240	240
ALUPEX pipe	with minimum 80	kg/m <sup>3</sup> density mineral wool insulation				
ALUPEX pipe	with minimum 80	kg/m <sup>3</sup> density mineral wool insulation Maximum 16 mm diameter/2.25-8.0 mm wall*	15	Minimum 20 mm thick mineral wool 80 kg/m <sup>3</sup>	240	240

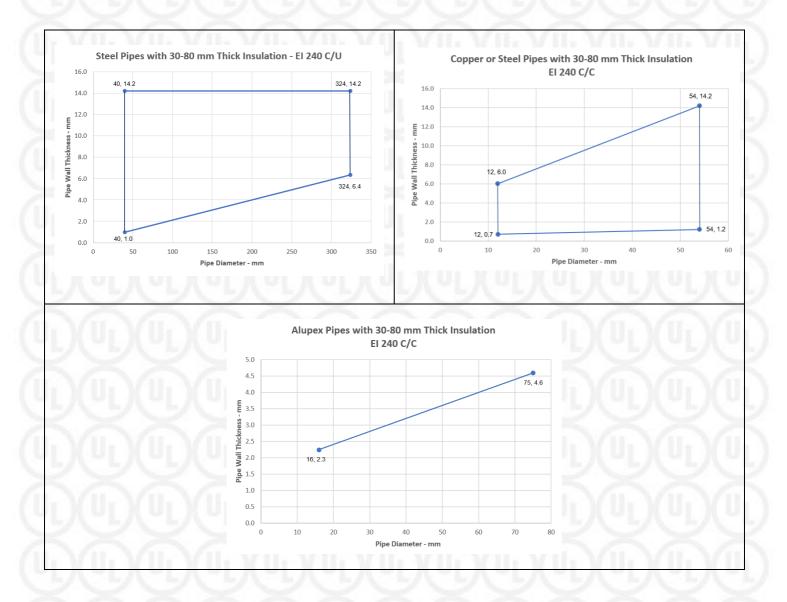
CS = Continuous Sustained

All pipe classifications are pipe end configuration C/U (C=Capped, U=Uncapped) Except Copper or Steel and ALUPEX pipes which are C/C (C=Capped, C=Capped).

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2). \*See below graphs for interpolated pipe sizes. \*\* Seal applied to top side of the floor



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Substrate	Minimum Substrate Thickness	Services (fitted at any position within the aperture)	Sealant Depth	Insulation (CS)	Fire Resistance (mins.)	
	( <b>mm</b> )	•	(mm)		Ε	EI
Copper or steel	pipe, with minim	1m 75 kg/m <sup>3</sup> density glass wool insulation				
Concrete	150	Maximum 12 mm diameter/0.7-6.0 mm wall*	15	Minimum 20 mm thick glass wool 75 kg/m <sup>3</sup>	240	90
		Maximum 54 mm diameter/1.2-14.2 mm wall*	15	20-40 mm thick glass wool 75 kg/m <sup>3</sup>	90	90
ALUPEX pipe	with minimum 75	kg/m <sup>3</sup> density glass wool insulation				
Concrete	150	Maximum 16 mm diameter/2.25-8.0 mm wall*	15	Minimum 20 mm thick glass wool 75 kg/m <sup>3</sup>	120	120
		Maximum 75 mm diameter/4.6-14.2 mm wall*	15	20-50 mm thick glass wool 75 kg/m <sup>3</sup>	120	120

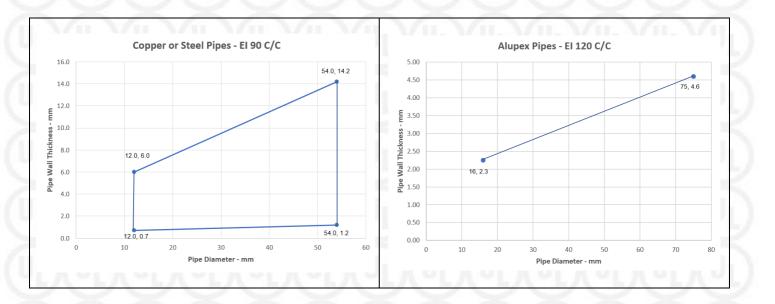
CS = Continuous Sustained

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

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

\*See below graphs for interpolated pipe sizes.

\*\* Seal applied to top side of the floor





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Substrate	Minimum Substrate Thickness (mm)	Services (fitted at any position within the aperture)	Sealant Depth (mm)	Fire Resistance (mins.)	
				Е	EI
Concrete 150		Cables up to 21 mm diameter, in a bundle up to 50 mm diameter*	15	240	240
Copper or steel p	ipes				
Concrete	150	Maximum 10 mm diameter/0.7-14.2 mm wall	15	240	180

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

Maximum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

\* Cable specification from EN 1366-3 standard cable configuration

\*\* Seal applied to both sides of the floor

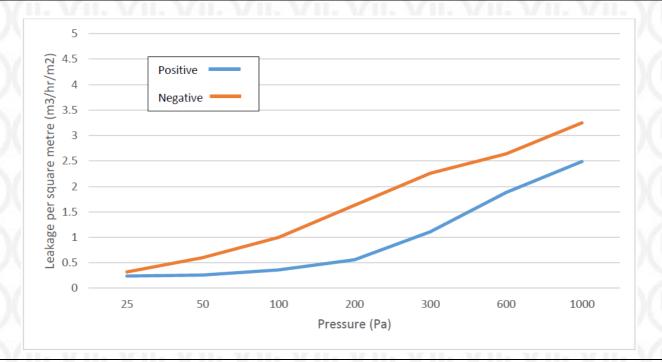


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# SikaSeal-632 Fire Putty+ Cord: Air permeability performance according to BS EN 1026: 2016

Product tested	SikaSeal-632 Fire Putty+ cord around 48mm electrical cable in 58mm hole				
S	ummary of testing procedu	Result			
	Pressure (Pa)	Leakage (m <sup>3</sup> /h)	Leakage (m <sup>3</sup> /m <sup>2</sup> /h)		
	25	0.32	N/A		
I. VII. VII.	50	0.60	N/A		
	100	1.00	N/A		
Results under negative	200	1.63	N/A		
chamber pressure	300	2.26	N/A		
비사비사비	600	2.64	N/A		
	1000	3.25	N/A		
	25	0.24	N/A		
	50	0.26	N/A		
Describer of the states	100	0.36	N/A		
Results under positive	200	0.56	N/A		
chamber pressure	300	1.11	N/A		
~~~~~	600	1.88	N/A		
	1000	2.49	N/A		





#### **Appendix UL-EU Certificate**

Certification Mark UL-EU mark Certificate No. UL-EU-01218-CPR Page 23/23 Date of Issue 2021-09-22

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 <sup>®</sup> 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.

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

#### PROCUREMENT

The Production site may reproduce the Mark or obtain it from a UL authorized supplier. The list of UL authorized suppliers can be found on UL's online directory at www.ul.com.

