

UL-EU CERTIFICATE

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UL-EU-01160-EN

Issue date
15-02-2021

Issue No.
4

Re-Issue date
15-01-2025

Expiry date
14-02-2031
(10 Years)



4705

Certificate Holder:
INJECTACLAD

Address:
Unit 7
LLandough Trading Estate
Penarth Road
Cardiff
CF11 8RR

Product:
Injectaclad

Places of production:
A/008 & A/023

Standard:
EAD 350141-00-1106, September 2017 / EAD 350454-00-1104,
September 2017 / EN 13501-2

Authorised Signatory:

A blue ink signature of Chris Johnson.

Chris Johnson

Issued by UL International (UK) Ltd

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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.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 Injectaclad sealant 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 11 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 EN 1366-3: 2009, EN 1366-4: 2006+A1: 2010 and EN 1366-4: 2021
- iii) Classification reports in accordance with EN 13501-2
- iv) Durability and Serviceability as defined in EAD 350141-00-1106 / EAD 350454-00-1104

The durability class of Injectaclad is X - intended for use in conditions exposed to weathering.

Injectaclad sealant has been tested in accordance with BS 8414-2: 2015 + A1 2017 as per the requirements of BR135:2013, as detailed on page 7.



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Product: Injectaclad		
Product-type: Sealant / Bag		Intended use: Linear Joint, Gap Seal & Penetration Seal
Assessment method	Essential characteristic	Product Performance
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	Class F
EN 13501-2	Resistance to fire	See pages 5 to 11
BWR 3 Hygiene, health and environment		
Declaration of manufacturer & EN 16516	Content, emission and/or release of dangerous substances	Declaration of manufacturer
EN 1026:2000	Air permeability (material property)	See page 4
EAD 350141-00-1106, Annex C & EN 12390-8	Water permeability (material property)	No performance determined
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 ISO 11600 & EAD 350141-00-1106, Clause 2.2.13	Adhesion	No performance determined
EAD 350141-00-1106, Clause 2.2.12	Durability	X
EAD 350141-00-1106, Clause 2.2.13	Movement capacity	No performance determined
EAD 350141-00-1106, Clause 2.2.14	Cycling of perimeter seals for curtain walls	No performance determined
EAD 350141-00-1106, Clause 2.2.15	Compression set	No performance determined
EAD 350141-00-1106, Clause 2.2.16	Linear expansion on setting	No performance determined
BWR 5 Protection against noise		
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	Rw (C;C _{tr})= 52(-1;-6)
BWR 6 Energy economy and heat retention		
EN 12664, EN 12667, EN 12939, EN ISO 8990, EN ISO 6946, EN ISO 10456	Thermal properties	No performance determined
EN ISO 12572, EN 12086, EN ISO 10456	Water vapour permeability	No performance determined



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Injectaclad: Air Permeability according to BS EN 1314-1				
Pressure (Pa)	Results under positive chamber pressure		Results under negative chamber pressure	
	Leakage (m ³ /h)	Leakage (m ³ /m ² / h)	Leakage (m ³ /h)	Leakage (m ³ /m ² / h)
50	0.2	5.6	0.3	8.3
100	0.4	11.1	0.6	16.7
150	0.7	19.4	0.9	25.0
200	1.0	27.8	1.2	33.3
250	1.1	30.6	1.6	44.4
300	1.2	33.3	1.9	52.8
450	2.2	61.1	2.7	75.0
600	2.4	66.7	3.4	94.4



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Penetration seals in walls								
Substrate	Minimum Substrate Thickness (mm)	Seal annulus (mm)	Seal Position	Minimum Seal Depth (mm)	Backing Material	Service/insulation	Fire Resistance (mins.)	
							E	EI
Drywall/ Masonry/ Concrete wall	120	10	Both sides	25	None	40 mm diameter PVC Pipe with 1.9-3mm wall thickness	120	120
		16			Rock fibre mineral wool 30 mm deep and 80 kg/m³	125 mm diameter PVC Pipe with 4.8-7.4mm wall thickness		
		300 x 100 (seal size)				63 mm diameter HDPE Pipe with 7.2mm wall thickness		
						Electrical cables up to 21 mm diameter		
						90 mm diameter HDPE Pipe with 9.2mm wall thickness		
		90 mm diameter ABS Pipe with 6mm wall thickness						
		12.5			60 mm diameter Copper or Steel pipe with 0.8-14.2 mm wall thickness and insulated with 32 mm Armaflex AF*	120	90	
	20	15 mm diameter Copper or Steel pipe with 0.8-7 mm wall thickness and insulated with 13 mm Armaflex AF*	120	120				
	15	20		None	40 mm diameter PVC Pipe with 1.9mm wall thickness	60	60	
	125 mm diameter PVC Pipe with 9.2mm wall thickness				120	120		
	40 mm diameter ABS Pipe with 1.9mm wall thickness							
	40 mm diameter HDPP Pipe with 2mm wall thickness				120	30		
	40 mm diameter Copper or Steel pipe with 1.5-14.2 mm wall thickness and insulated with 32 mm Armaflex AF**							
	40-159 mm diameter Copper or Steel pipe with 2.0-14.2 mm wall thickness and insulated with 32 mm Armaflex AF**							
	159 mm diameter Copper or Steel pipe with 2.0-14.2 mm wall thickness and insulated with 30 mm Pipelane SGR glass wool tube (80kg/m³) **							

* Continuous through seal and full length of the pipe (CS)

** Continuous through seal and extending minimum 650 mm from both faces of the seal (LS)



Solutions

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Penetration seals in floors								
Substrate	Minimum Substrate Thickness (mm)	Seal annulus (mm)	Seal Position	Minimum Seal Depth (mm)	Backing Material	Service/insulation	Fire Resistance (mins.)	
							E	EI
Concrete floor	150	50 x 50 – 200 x 200 (seal size)	Upper face	25	Rock fibre mineral wool 100 mm deep and 45 kg/m³	Electrical cables up to 21 mm diameter	180	120
						Electrical cables 22 to 80 mm diameter	120	120
						Non-sheathed electrical cables up to 24 mm diameter	180	15
						Telecoms cables up to 21 mm diameter (bundles up to 100 mm diameter)	180	20
		20				41-159 mm diameter Copper or Steel pipe with 2.5-14.2 mm wall thickness and insulated with 16-32 mm Armaflex AF*	120	120
						50-110 mm diameter PP Pipe with 2.1 to 10.7 mm wall thickness	30	30
						50 mm diameter PP Pipe with 2.1mm wall thickness	240	240
						110 mm diameter PP Pipe with 10.7 mm wall thickness	120	120
						40-125 mm diameter PE Pipe with 4.1 to 11.4 mm wall thickness	60	60
						40 mm diameter PE Pipe with 4.1 mm wall thickness	240	240
						125 mm diameter PE Pipe with 11.4 mm wall thickness	90	90
						40-114 mm diameter PVC Pipe with 2.0 to 8.1 mm wall thickness	90	30
						40 mm diameter PVC Pipe with 2.0 mm wall thickness	240	240
						114 mm diameter PVC Pipe with 8.1 mm wall thickness	120	120

* Continuous through seal and full length of the pipe (CS)



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Injectaclad: SPS Envirowall Render System with Injectaclad Sealant Injected Behind the Floor Slab Horizontal Cavity Barriers

Construction details:

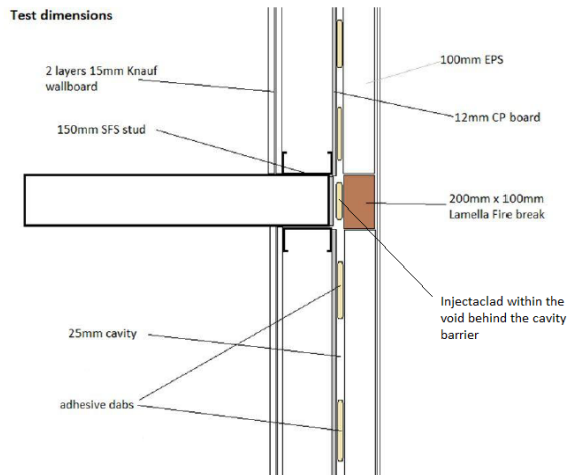


Figure 2. Cross-section of the cladding system (supplied by Test Sponsor).

- Note: - 200mm x 200mm x 5mm-thick square hollow steel section used as floor slab.
 - 90mm x 150mm x 1000mm sections of green stone wool insulation formed the horizontal fire barrier.
 - a triple layer of 12mm-thick cement particle board was attached to the front face of the 1st and 3rd floor slab.
 - 90mm-thick carbon infused expanded polystyrene (EPS) was installed.
 - To fill the cavity formed behind the cavity barrier, Injectaclad was injected through Ø16mm holes at 150mm horizontal centres located in line with the top of each floor slab

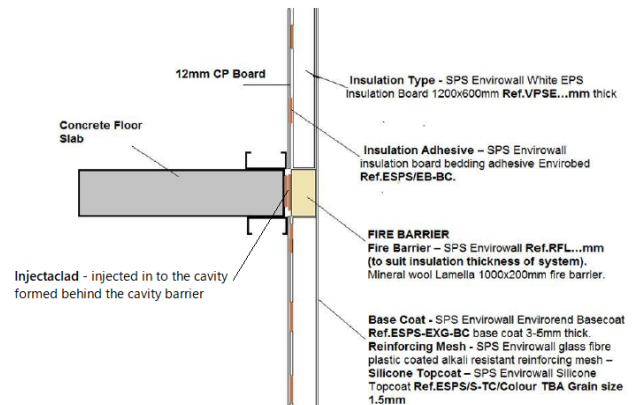


Figure 3. Cross-section of the cladding system detailing render system (supplied by Test Sponsor).

- Note: - Internal face of steel framing system completed with a double layer of 15mm-thick Knauf Wallboard.
 - 200mm x 200mm x 5mm-thick square hollow steel section used as floor slab.
 - either a single (2nd floor) or triple layer (1st and 3rd floor) of 12mm-thick cement particle board was attached to the front face of each floor slab.
 - 90mm x 150mm x 1000mm sections of green stone wool insulation formed the horizontal fire barrier.
 - To fill the cavity formed behind the cavity barrier, Injectaclad was injected through Ø16mm holes at 150mm horizontal centres located in line with the top of each floor slab

Test Method	Parameter	No. Tests	Injectaclad Seal Position	Results	
				Fire spread test result time, t_s (min)	Compliance with parameters in Annex B BR135: 2013
BS 8414 Part 2: 2015 + A1: 2017	External fire spread	1	Injectaclad injected within the void behind the cavity barrier through Ø16 mm holes at 150 mm horizontal centres, each located in line with the top of each floor slab*	>15 minutes	Compliant
	Internal fire spread			>15 minutes	Compliant
	System burn through			>15 minutes	Compliant

* The render system shall be repaired at the height of the injection points by the addition of a layer of mesh, 250 mm high and reinstatement of the render and topcoat.



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Linear Joints or Gap Seals between Insulation/Boards and Rigid Walls							
Detail Reference	Substrates	Minimum Substrate Thickness (mm)	Maximum Gap Size (mm)	Seal Position/Orientation	Seal Restraint	Minimum Seal Depth (mm)	Classification
001	Masonry/ 'Celotex' PIR Insulation Board	150 (masonry) / 300 (Board)	80	Full depth of masonry	Within custom made polyester mesh sock, supported by steel pins	150	EI60 – V – X – F – W 80
002	Masonry/ Stone wool (80kg/m ³ and A1 classification to BS EN 13501-1)	150 (masonry) / 300 (Stone wool)	80	Full depth of masonry	Within custom made polyester mesh sock, supported by steel pins	150	EI20 EI90 – V – X – F – W 80
003	Masonry/ Kingspan 'Kooltherm K15' Insulation Board (35kg/m ³)	150 (masonry) / 250 (Board)	80	Full depth of masonry	Within custom made polyester mesh sock, supported by steel pins	150	EI120 – V – X – F – W 80
004	Masonry/ 'Kingspan Kooltherm K12' Insulation Board (35kg/m ³)	150 (masonry) / 315 (Board)	80	Full depth of masonry	Within custom made polyester mesh sock, supported by steel pins	150	EI120 – V – X – F – W 80
005	Masonry	150	110*	Full depth of masonry	Within two custom made polyester mesh socks, supported by steel pins	150	EI120 – V – X – F – W 110*
006	Masonry/ 'Celotex' PIR Insulation Board	600 (masonry) / 550 (Board)	80	In line with timber joist	Within custom made polyester mesh sock, supported by steel pins	125	EI120 – V – X – F – W 80
007	OSB / OSB, with AAC to the exposed face	150 (masonry) and 400 (OSB)	110	In line with timber joist	Within two custom made polyester mesh socks, supported by steel pins	70	EI120 – V – X – F – W 110
008	Masonry / OSB with AAC to the exposed face	600 (masonry) / 150 (masonry) and 400 (OSB)	110	In line with timber joist	Within two custom made polyester mesh socks, supported by steel pins	70	EI120 – V – X – F – W 110

*EN 13501-2: 2016 requires linear gap sealing systems to be tested at a ratio of 10:1 (as per the requirements of EN 1366-4: 2006). The test specimen had a width of 200mm, however, the test specimen length was 1100mm and so the maximum width which can be classified is 110mm.



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Linear Joints or Gap Seals between Insulation and Flexible Walls							
Detail Reference	Substrates	Minimum Substrate Thickness (mm)	Maximum Gap Size (mm)	Seal Position/ Orientation	Seal Restraint	Minimum Seal Depth (mm)	Classification
009	Shaft Wall/ 'Celotex' PIR Insulation Board	127.5 (Shaft wall) / 300 (Board)	20	Full depth of shaft wall	Within custom made polyester mesh sock, supported by steel pins	127.5	EI60 – V – X – F – W 20



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Linear Joints or Gap Seals between Insulation/Boards and Rigid Floors							
Detail Reference	Substrates	Minimum Substrate Thickness (mm)	Maximum Gap Size (mm)	Seal Position/ Orientation	Seal Restraint	Minimum Seal Depth (mm)	Classification
007	Masonry/ Stone wool cavity barrier	600 (masonry) / 100 (Cavity barrier)	30	Full depth of cavity barrier	Within custom made polyester mesh sock, supported by steel pins	100	EI90 – H – X – F – W 30
008	Masonry/ Kingspan 'Kooltherm K15' 'Insulation Board (35kg/m ³)	600 (masonry) / 700 (Board)	80	Flush with soffit of masonry floor	Within custom made polyester mesh sock, supported by steel pins	150	EI60 – H – X – F – W 80
009	Masonry	600	110*	Flush with soffit of masonry floor	Within two custom made polyester mesh socks, supported by steel pins	150	EI120 – H – X – F – W 110*
010	Masonry/ 'Celotex' PIR Insulation Board	380 (masonry) / 500 (Board)	80	Flush with soffit of masonry floor	Within custom made polyester mesh sock, supported by steel pins	150	EI60 – H – X – F – W 80
011	Masonry/ 'Celotex' PIR Insulation Board	400 (masonry) / 500 (Board)	80	In line with timber joists	Within custom made polyester mesh sock, supported by steel pins	125	EI120 – H – X – F – W 80
012	OSB / OSB, with AAC to the exposed face	150 (masonry) and 400 (OSB)	110	In line with timber joist	Within two custom made polyester mesh socks, supported by steel pins	70	EI120 – H – X – F – W 110
013	Masonry / OSB with AAC to the exposed face	600 (masonry) / 150 (masonry) and 400 (OSB)	110	In line with timber joist	Within two custom made polyester mesh socks, supported by steel pins	70	EI120 – H – X – F – W 110

*EN 13501-2: 2016 requires linear gap sealing systems to be tested at a ratio of 10:1 (as per the requirements of EN 1366-4: 2006). The test specimen had a width of 200mm, however, the test specimen length was 1100mm and so the maximum width which can be classified is 110mm.



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Linear Joints or Gap Seals between Horizontal Steel Sections above Rigid Floors							
Detail Reference	Substrates	Minimum Substrate Thickness (mm)	Maximum Gap Size (mm)	Seal Position/ Orientation	Seal Restraint	Minimum Seal Depth (mm)	Classification
014	Steel / Steel, with AAC to the exposed face	150 (masonry) and 150 (Steel)	50	Flush with soffit of parallel flange channel above stone wool insulation	Within custom made polyester mesh sock, supported by steel pins	75	E90 EI15 – H – X – F – W 50
015	Steel / Steel, with AAC to the exposed face	150 (masonry) and 150 (Steel)	50	Flush with top of large steel angle between parallel flange channel	Within custom made polyester mesh sock, supported by steel pins	75	E90 EI30 – H – X – F – W 50
016	Steel / Steel, with AAC to the exposed face	150 (masonry) and 150 (Steel)	25	Flush with top of large steel angle between parallel flange channel	Within custom made polyester mesh sock, supported by steel pins	145	E90 EI45 – H – X – F – W 25



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



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

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

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PROCUREMENT

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