

# UL-EU CERTIFICATE

**Certificate No.** UL-EU-01129-CPR  
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**Date of Issue** 2020-03-12

**Certificate Holder** FSi Limited  
Westminster Industrial Estate  
Tamworth Road  
Measham  
DE12 7DS

**Manufacturer** As above

**Certified Product Type** Fire Stop - Putty  
**Product Trade Name** Penopatch  
**Trademark** N/A  
**Rating/Classification** See Appendix

**Harmonised Technical Specifications Supporting Documentation** EAD 350454-00-1104, September 2017 / EN 13501-2  
ETA 19/0833, EC – CERTIFICATE OF CONSTANCY OF PERFORMANCE - 0843 – CPR – 0548 and Classification Report No. 409437 Issue 4

**Additional information** Additional test evidence is held on file  
**Expiry date** 2030-03-11



A handwritten signature in purple ink, appearing to read 'Chris Miles', is located in the bottom left corner of the page.

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**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 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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.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 PenoPatch for fire stopping where small cables, pipes or conduits penetrate flexible, masonry or concrete wall constructions. The detailed scope is given in pages 3 to 9 of this Certificate. This shows the thickness and acceptable dimensions, substrates and orientations required to provide fire resistance periods of up to 120 minutes (E 120/ EI 60).

The product is certificated on the basis of:

- i) ETA 19/0833
- ii) EC – CERTIFICATE OF CONSTANCY OF PERFORMANCE 0843 – CPR – 0548
- iii) Inspection and surveillance of factory production control by UL
- iv) Fire resistance test data in accordance with 1366-3: 2009
- v) Classification in accordance with EN 13501-2
- v) Durability and Serviceability as defined in EAD 350454-00-1104, September 2017

The durability class of PenoPatch is Y<sub>1</sub> -

Intended use at temperatures below 0°C, with exposure UV but no exposure to rain.



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Product-type: Intumescent sheet		Intended use: Penetration Seal
Assessment method	Essential characteristic	Product performance
<b>BWR 2 Safety in case of fire</b>		
EN 13501-1	Reaction to fire	No performance determined
EN 13501-2	Resistance to fire	See page 4
<b>BWR 3 Hygiene, health and environment</b>		
EN 1026	Air permeability	No performance determined
EAD 350454-00-1104, Annex C	Water permeability	No performance determined
Declaration of manufacturer & EN 16516	Content, emission and/or release of dangerous substances	Use categories: IA1 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	Adhesion	No performance determined
EAD 350454-00-1104, Clause 2.2.9	Durability	Y <sub>1</sub>
<b>BWR 5 Protection against noise</b>		
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	Rw(C;Ctr)= 67 (-1;-6) dB
<b>BWR 6 Energy economy and heat retention</b>		
EN 12664, EN 12667, EN 12939, EN ISO 8990, EN ISO 6946, EN ISO 14683, EN ISO 10211, EN ISO 10456	Thermal properties	No performance determined
EN ISO 12572, EN 12086, EN ISO 10456	Water vapour permeability	No performance determined





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PenoPatch: Double Sided* Service Penetration Seals in Walls						
Substrate	Minimum Substrate Thickness (mm)	Aperture (mm)	Services (fitted at any position within the aperture)	PenoPatch - mm	Fire Resistance (mins.)	
					E	EI
Drywall/ Masonry/ Concrete	100	25 wide x 25 high	Blank	60 Ø x 4 mm thick	120	60
			Electric cables up to 21 mm diameter		60	30
			Single steel pipes up to 16 mm diameter		120	20
			Single PVC pipes up to 16 mm diameter		60	60
			Single 'E type' cable		120	30
		50 wide x 50 high	Blank	100 Ø x 4 mm thick	60	60
			Electric cables up to 21 mm diameter		60	45
			Single steel pipes up to 16 mm diameter		60	15
			Single PVC pipes up to 16 mm diameter		60	30
			Single 'E type' cable		45	45

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

\* Seal applied to both sides of the wall.

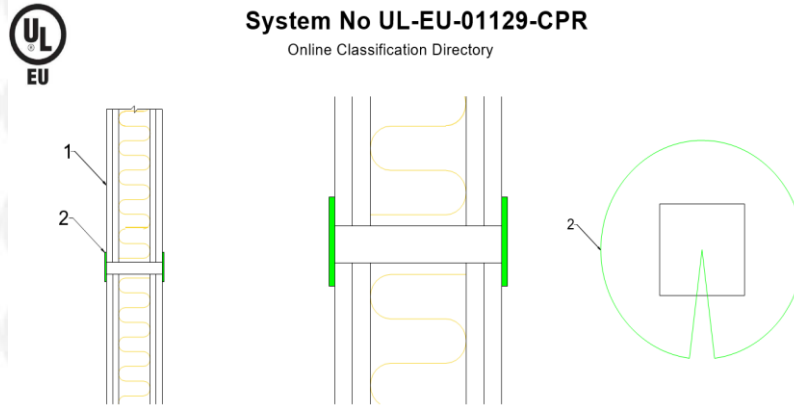
Further details relating to specific end use application are included in Figures 1 to 5



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**Figure 1 - Blank Seal in Walls  $\geq 100$ mm Thickness**



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**1. Wall Assembly –**

- A. Flexible walls or partitions with a minimum thickness of 100mm comprised of 2 layers of gypsum board on either side of the construction. Insulation shall be included within the construction of the supporting wall and shall have a minimum density of 45 kg/m<sup>3</sup> for a desired fire resistance up to and including 60 minutes.
- B. For rigid wall constructions block, masonry, aerated concrete and concrete with a minimum density of  $\geq 450$ kg/m<sup>3</sup> and a minimum thickness of 100mm shall be used.

**2. Firestop System -**

- A. The penetration seal is to be applied to both sides of the wall. Ensure that the aperture and services in question are tested with PenoPatch, and the site conditions are within the application specification.
- B. The maximum aperture must be no bigger than 25mm x 25mm for the Ø60mm PenoPatch or 50mm x 50mm for the Ø100mm PenoPatch.
- C. All services and apertures need to be thoroughly clean and clear of all dust and loose particles. The aperture temperature needs to be at 5°C or above at time of installation. Upon installation ensure the protective paper is removed and apply the PenoPatch around the penetrant with the logo face up and the slit facing down. Smoothly fit the PenoPatch around the service and tightly press into place

Service Type	Service Size	Service Description	Aperture Size	Wall Type	Integrity (E)	Insulation (EI)
N/A	N/A	N/A	25mm x 25mm / 1in x 1in	Rigid or Flexible	120 min	60 min
			50mm x 50mm / 2in x 2in		60 min	60 min



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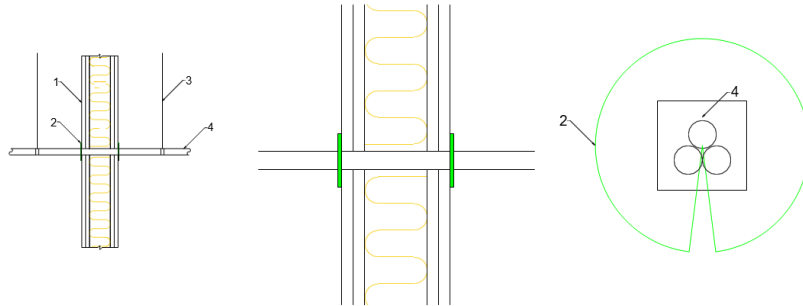
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**Figure 2 - Electrical Cables up to Ø21mm in Walls ≥ 100mm Thickness**



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**1. Wall Assembly -**

- A. Flexible walls or partitions with a minimum thickness of 100mm comprised of 2 layers of gypsum board on either side of the construction. Insulation shall be included within the construction of the supporting wall and shall have a minimum density of 45 kg/m<sup>3</sup> for a desired fire resistance up to and including 60 minutes.
- B. For rigid wall constructions block, masonry, aerated concrete and concrete with a minimum density of ≥450kg/m<sup>3</sup> and a minimum thickness of 100mm shall be used.

**2. Firestop System -**

- A. The penetration seal is to be applied to both sides of the wall. Ensure that the aperture and services in question are tested with PenoPatch, and the site conditions are within the application specification.
- B. The maximum aperture must be no bigger than 25mm x 25mm for the Ø60mm PenoPatch or 50mm x 50mm for the Ø100mm PenoPatch.
- C. All services and apertures need to be thoroughly clean and clear of all dust and loose particles. The aperture temperature needs to be at 5°C or above at time of installation. Upon installation ensure the protective paper is removed and apply the PenoPatch around the penetrant with the logo face up and the slit facing down. Smoothly fit the PenoPatch around the service and tightly press into place

**3. Service Supports -**

- A. The services should be rigidly supported via steel angles, hangers, or channels not further than 400mm from the surface of the sealing system on both faces of the wall unless otherwise specified in the performance data.

**4. Through Penetrants -**

- A. Electrical Cables ≤21mm diameter to be supported on both sides of the wall construction.

Service Type	Service Size	Service Description	Aperture Size	Wall Type	Integrity (E)	Insulation (EI)
Electrical Cables ≤21mm	≤21mm / ≤0.8in	≤21mm single cable or cable bunches ≤21mm	25mm x 25mm / 1in x 1in	Rigid or Flexible	60 min	30 min
			50mm x 50mm / 2in x 2in		60 min	45 min



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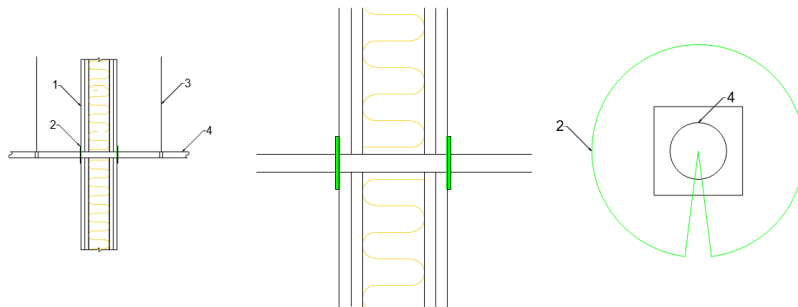
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**Figure 3 - Single 'E Type' Cable in Walls  $\geq 100\text{mm}$  Thickness**



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## 1. Wall Assembly -

- A. Flexible walls or partitions with a minimum thickness of 100mm comprised of 2 layers of gypsum board on either side of the construction. Insulation shall be included within the construction of the supporting wall and shall have a minimum density of 45 kg/m<sup>3</sup> for a desired fire resistance up to and including 60 minutes.
- B. For rigid wall constructions block, masonry, aerated concrete and concrete with a minimum density of  $\geq 450\text{kg/m}^3$  and a minimum thickness of 100mm shall be used.

## 2. Firestop System -

- A. The penetration seal is to be applied to both sides of the wall. Ensure that the aperture and services in question are tested with PenoPatch, and the site conditions are within the application specification.
- B. The maximum aperture must be no bigger than 25mm x 25mm for the  $\text{\O}60\text{mm}$  PenoPatch or 50mm x 50mm for the  $\text{\O}100\text{mm}$  PenoPatch.
- C. All services and apertures need to be thoroughly clean and clear of all dust and loose particles. The aperture temperature needs to be at 5°C or above at time of installation. Upon installation ensure the protective paper is removed and apply the PenoPatch around the penetrant with the logo face up and the slit facing down. Smoothly fit the PenoPatch around the service and tightly press into place

## 3. Service Supports -

- A. The services should be rigidly supported via steel angles, hangers, or channels not further than 400mm from the surface of the sealing system on both faces of the wall unless otherwise specified in the performance data.

## 4. Through Penetrants -

- A. Single 'E Type' Cable to be supported on both sides of the wall construction.

Service Type	Service Size	Service Description	Aperture Size	Wall Type	Integrity (E)	Insulation (EI)
Single 'E Type' Cable	23mm - 27mm	Medium Sheathed Cable	25mm x 25mm / 1in x 1in	Rigid or Flexible	120 min	30 min
			50mm x 50mm / 2in x 2in		45 min	45 min



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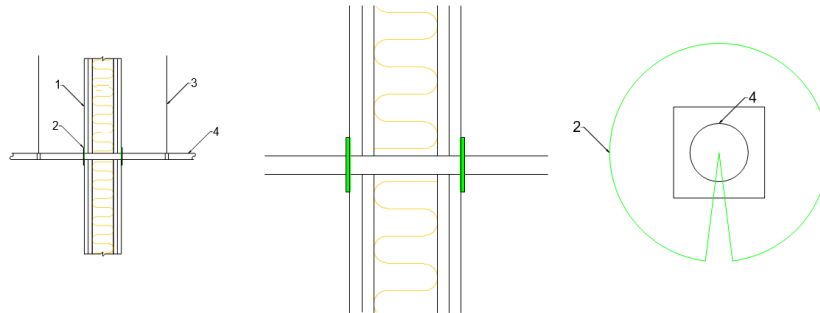
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**Figure 4 – Metal Pipes in Walls  $\geq 100\text{mm}$  Thickness**



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## 1. Wall Assembly -

- A. Flexible walls or partitions with a minimum thickness of 100mm comprised of 2 layers of gypsum board on either side of the construction. Insulation shall be included within the construction of the supporting wall and shall have a minimum density of 45 kg/m<sup>3</sup> for a desired fire resistance up to and including 60 minutes.
- B. For rigid wall constructions block, masonry, aerated concrete and concrete with a minimum density of  $\geq 450\text{kg/m}^3$  and a minimum thickness of 100mm shall be used.

## 2. Firestop System -

- A. The penetration seal is to be applied to both sides of the wall. Ensure that the aperture and services in question are tested with PenoPatch, and the site conditions are within the application specification.
- B. The maximum aperture must be no bigger than 25mm x 25mm for the  $\text{\O}60\text{mm}$  PenoPatch or 50mm x 50mm for the  $\text{\O}100\text{mm}$  PenoPatch.
- C. All services and apertures need to be thoroughly clean and clear of all dust and loose particles. The aperture temperature needs to be at 5°C or above at time of installation. Upon installation ensure the protective paper is removed and apply the PenoPatch around the penetrant with the logo face up and the slit facing down. Smoothly fit the PenoPatch around the service and tightly press into place

## 3. Service Supports -

- A. The services should be rigidly supported via steel angles, hangers, or channels not further than 400mm from the surface of the sealing system on both faces of the wall unless otherwise specified in the performance data.

## 4. Through Penetrants -

- A. Metal pipe  $\leq 16\text{mm}$  diameter with a minimum wall thickness of 1mm to be supported on both sides of the wall construction.

Service Type	Service Size	Service Description	Aperture Size	Wall Type	Integrity (E)	Insulation (EI)
Steel	$\leq 16\text{mm}$ / $\leq 0.6\text{in}$	$\geq 1\text{mm}$ wall	25mm x 25mm / 1in x 1in	Rigid or Flexible	120 min	20 min
			50mm x 50mm / 2in x 2in		60 min	15 min



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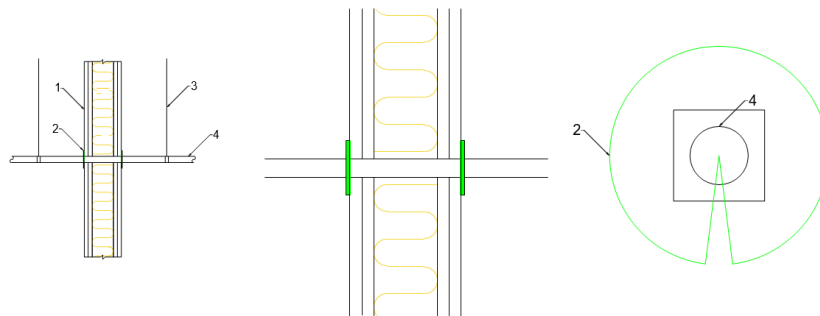
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**Figure 5 – Plastic Pipes in Walls  $\geq 100\text{mm}$  Thickness**



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## 1. Wall Assembly -

- A. Flexible walls or partitions with a minimum thickness of 100mm comprised of 2 layers of gypsum board on either side of the construction. Insulation shall be included within the construction of the supporting wall and shall have a minimum density of 45 kg/m<sup>3</sup> for a desired fire resistance up to and including 60 minutes.
- B. For rigid wall constructions block, masonry, aerated concrete and concrete with a minimum density of  $\geq 450\text{kg/m}^3$  and a minimum thickness of 100mm shall be used.

## 2. Firestop System -

- A. The penetration seal is to be applied to both sides of the wall. Ensure that the aperture and services in question are tested with PenoPatch, and the site conditions are within the application specification.
- B. The maximum aperture must be no bigger than 25mm x 25mm for the Ø60mm PenoPatch or 50mm x 50mm for the Ø100mm PenoPatch.
- C. All services and apertures need to be thoroughly clean and clear of all dust and loose particles. The aperture temperature needs to be at 5°C or above at time of installation. Upon installation ensure the protective paper is removed and apply the PenoPatch around the penetrant with the logo face up and the slit facing down. Smoothly fit the PenoPatch around the service and tightly press into place

## 3. Service Supports -

- A. The services should be rigidly supported via steel angles, hangers, or channels not further than 400mm from the surface of the sealing system on both faces of the wall unless otherwise specified in the performance data.

## 4. Through Penetrants -

- A. Plastic pipe  $\leq 16\text{mm}$  diameter with a minimum wall thickness of 1mm to be supported on both sides of the wall construction.

Service Type	Service Size	Service Description	Aperture Size	Wall Type	Integrity (E)	Insulation (EI)
PVC	$\leq 16\text{mm}$ / $\leq 0.6\text{in}$	$\geq 1\text{mm}$ wall	25mm x 25mm / 1in x 1in	Rigid or Flexible	60 min	60 min
			50mm x 50mm / 2in x 2in		60 min	30 min



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# Appendix UL-EU Certificate

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