# **UL-EU CERTIFICATE**

Certificate No. **UL-EU-00924-CPR** 

### **Issue date** 14-07-2016

### Issue No. 4

**Re-Issue date** 08-02-2024

**Expiry date** 13-07-2026





**Certificate Holder:** FSi Ltd Address: Westminster Industrial Estate, Tamworth Rd, Measham, DE12 7DS, United Kingdom **Product:** Silverseal HS Compound Manufacturer: A/011 Standard EAD 350454-00-1104 / EN 13501-2

Rating/Classification See Appendix

Authorised Signatory:

Plin

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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.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 Silverseal HS Compound for fire stopping where services penetrate floors. The detailed scope is given in pages 3 to 25 of this Certificate. This shows the thickness and acceptable dimensions, substrates and orientations required to provide fire resistance periods of up to 180 minutes (EI 180). 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 Servicability as defined in EAD 350454-00-1104

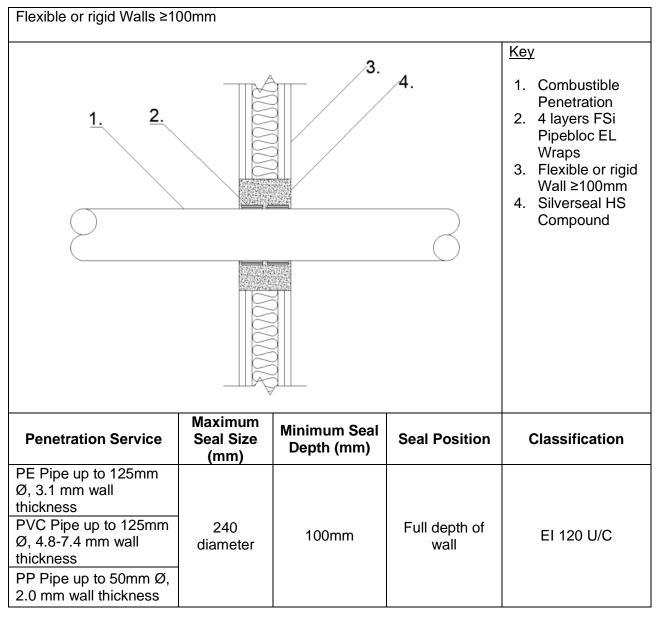
The durability class of Silverseal HS Compound is Z1 - intended for use at internal conditions with high humidity, excluding temperatures below 0°C



Product-type: Mortar	enetration Seal					
Assessment method Essential characteristic		Product performance				
BWR 2 Safety in case of fire						
EN 13501-1	Reaction to fire	No performance determined				
EN 13501-2	Resistance to fire	See pages 4 - 25				
BWR 3	Hygiene, health and environn	nent				
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	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 ISO 11600	Adhesion	No performance determined				
EAD 350454-00-1104, Clause 2.2.9	Durability	Z <sub>1</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> )= 50(-1;-4)				
BWR 6 Energy economy and heat retention						
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				



### Flexible or Rigid Walls Minimum Thickness 100mm

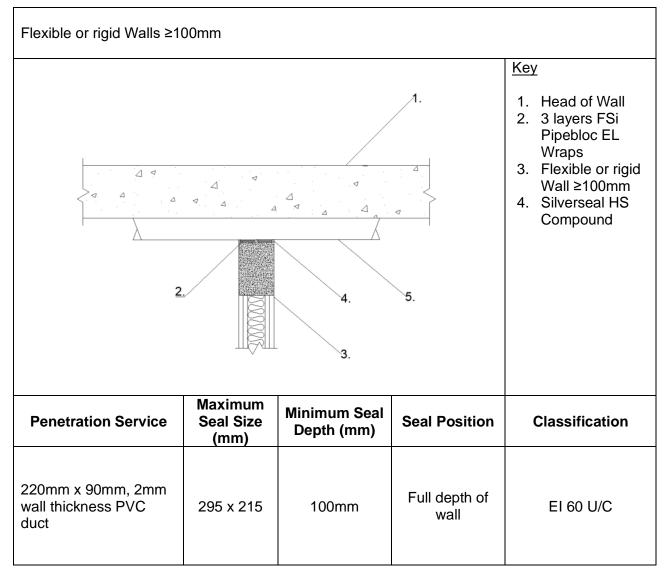




Flexible or rigid Walls ≥100mm					
<u>1.</u> <u>2</u> .	<ul> <li>Key</li> <li>1. Combustible Penetration</li> <li>2. 4 layers FSi Pipebloc EL Wraps</li> <li>3. Flexible or rigid Wall ≥100mm</li> <li>4. Silverseal HS Compound</li> </ul>				
Penetration Service	Maximum Seal Size (mm)	Minimum Seal Depth (mm)	Seal Position	Classification	
PE Pipe up to 125mm Ø, 3.1 mm wall thickness PVC Pipe up to 125mm Ø, 4.8-7.4 mm wall thickness PP Pipe up to 50 Ø, 2.0 mm wall thickness	295 wide x 215 high	100mm	Full depth of wall	EI 120 U/C	



### PVC Vent Duct Penetration





#### Flexible or rigid Walls ≥100mm Key 3. 4 1. Combustible Penetration 2. 1. 2. Pipebloc PCP Collar 3. Flexible or rigid Wall ≥100mm 4. Silverseal HS Compound Maximum Minimum Seal **Penetration Service** Seal Position Classification Seal Size Depth (mm) (mm) PVC-U. PVC-C<sup>(1)</sup> – See Annex A, Table 1 for scope PE, ABS, SAN-PVC<sup>(2)</sup>-EI 120 U/C See Annex A, Table 1 for scope PP<sup>(3)</sup> – See Annex A, Table 1 for scope Full depth of 295 x 215 100mm PVC-U, $PVC-C^{(1)}$ – wall See Annex A, Table 2 for scope PE, ABS, SAN-PVC<sup>(2)</sup>-EI 60 U/C See Annex A, Table 2 for scope $PP^{(3)}$ – See Annex A, Table 2 for scope

Combustible Penetrations fitted centrally within the aperture

All services supported with pipe supports at 400 mm from both faces of the wall.

- <sup>(1)</sup> PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1 and PVC-C according to EN 1566-1
- (2) PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1
- <sup>(3)</sup> PP pipe according to EN 1852-1: 2009



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### **Combustible Penetrations**

Flexible or rigi	Flexible or rigid Walls ≥100mm					
Flexible of rigid Walls ≥100mm       1.     2.       2.     3.       2.     3.       3.     3.       3.     3.       3.     3.       4.     3.       3.     3.       4.     3.       4.     3.       5.     3.       6.     3.       7.						
Penetration Service	Maximum Seal Size (mm)	Minimum Seal Depth (mm)	Seal Position	Collar	Installation	Classification
PVC-U, PVC-C <sup>(1)</sup> , 110 mm Ø x 6.6 mm thick wall PE, ABS, SAN-PVC <sup>(2)</sup> , 110 mm Ø x 2.7 mm thick wall $PP^{(3)}$ , 50 mm Ø x 2.9 mm thick wall	295 x 215	100mm	Full depth of wall	160 mm Pipebloc PCP with 40 x 18 mm inlay 110 mm Pipebloc PCP with 40 x 11 mm inlay	Face fixed each side of the wall using 3no 50 mm long x 5 mm diameter screw with penny washer. Pyrocoustic Sealant applied to annular space 10mm depth both sides of wall. Angle of pipe is permitted from	EI 90 U/C

All services supported with pipe supports at 400 mm from both faces of the wall.

<sup>(1)</sup> PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1 and PVC-C according to EN 1566-1

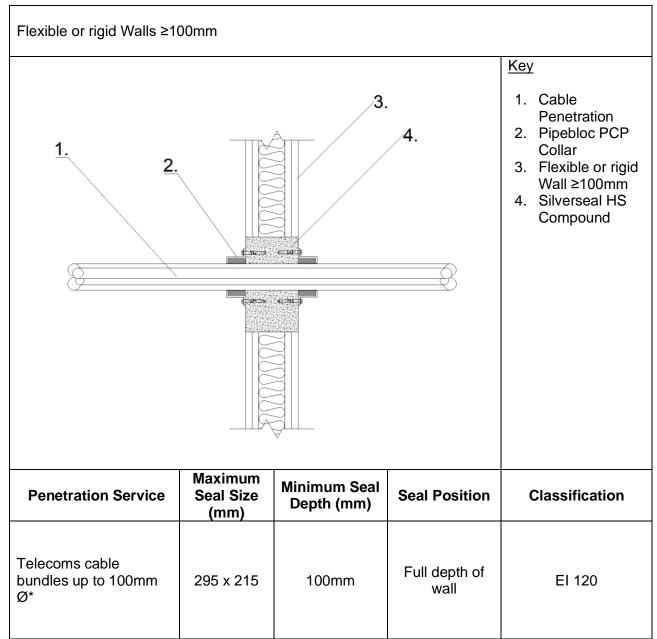
(2) PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1

<sup>(3)</sup> PP pipe according to EN 1852-1: 2009



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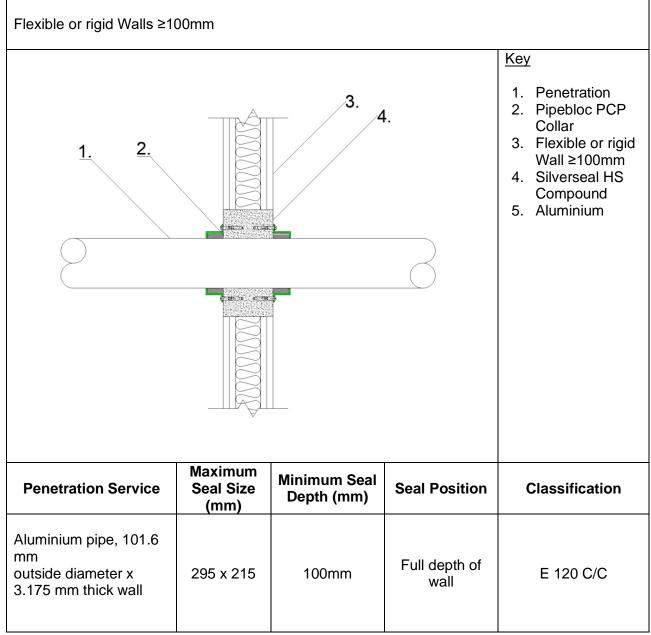
Cable Penetrations fitted centrally within the aperture



All services supported with pipe supports at 400 mm from both faces of the wall. \*Different size collars required depending on bundle size, to ensure a tight fit



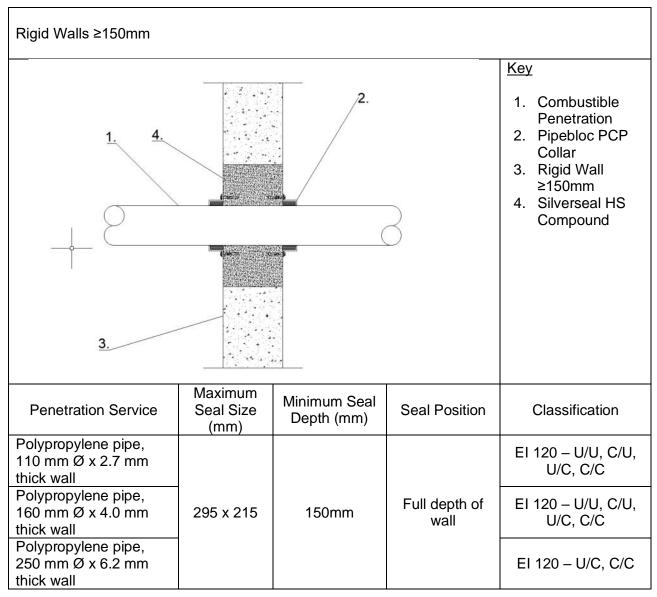
### Aluminium Penetrations fitted centrally within the aperture



All services supported with pipe supports at 400 mm from both faces of the wall.

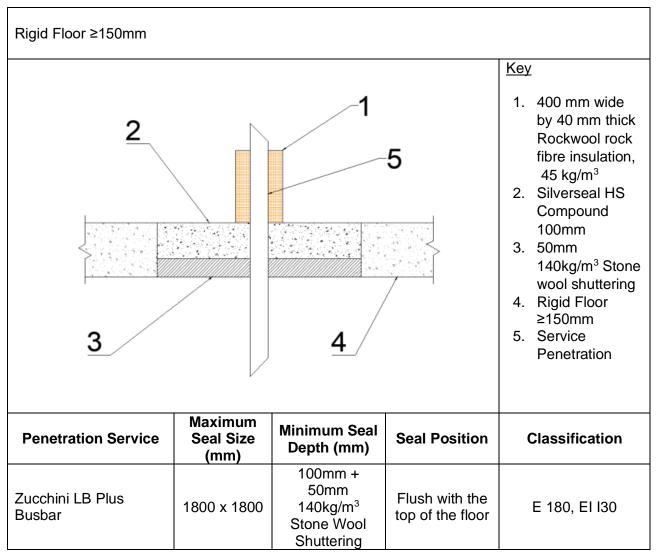


### **Rigid Walls Minimum Thickness 150mm**



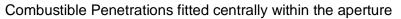


### **Rigid Floor Minimum Thickness 150mm**

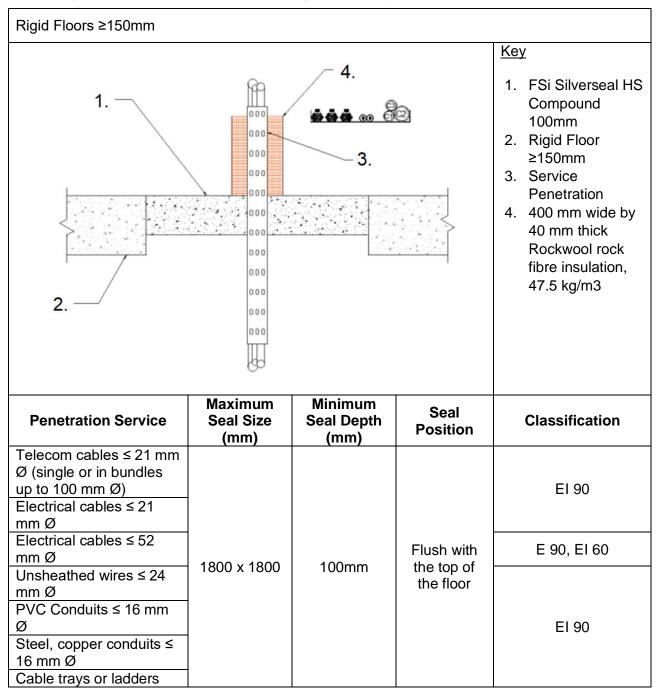




Rigid Floors ≥150mm Key 1 5. 1. 3 layers FSi Pipebloc EL Wraps 2. Silverseal HS 2. 4 Compound 100mm 3. 50mm 140kg/m<sup>3</sup> Stone wool shuttering 4. Rigid Floor ≥150mm 5. Service Penetration 3. Maximum Minimum Seal **Penetration Service** Seal Position Classification Seal Size Depth (mm) (mm) 100mm + 110mm PVC Pipe, 50mm 4.2mm Wall Thickness 1800 x 140kg/m3 Flush with the EI 180 U/C Stone Wool 1800 top of the floor 110mm PE Pipe, Shuttering 6.3mm Wall Thickness

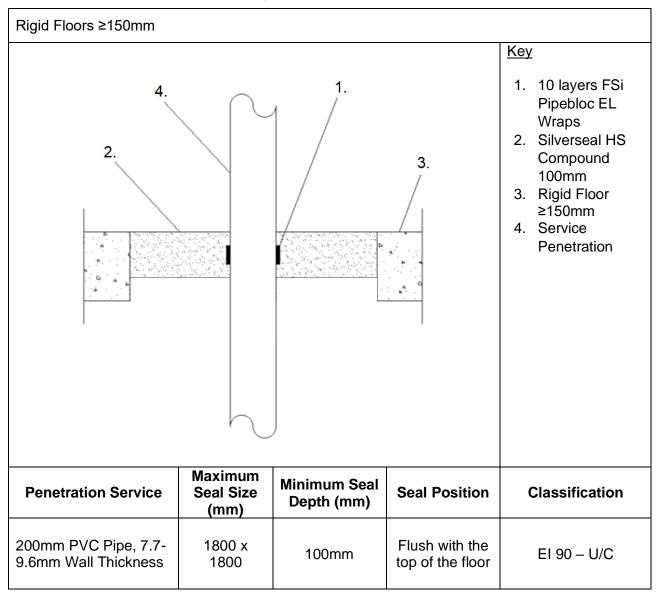




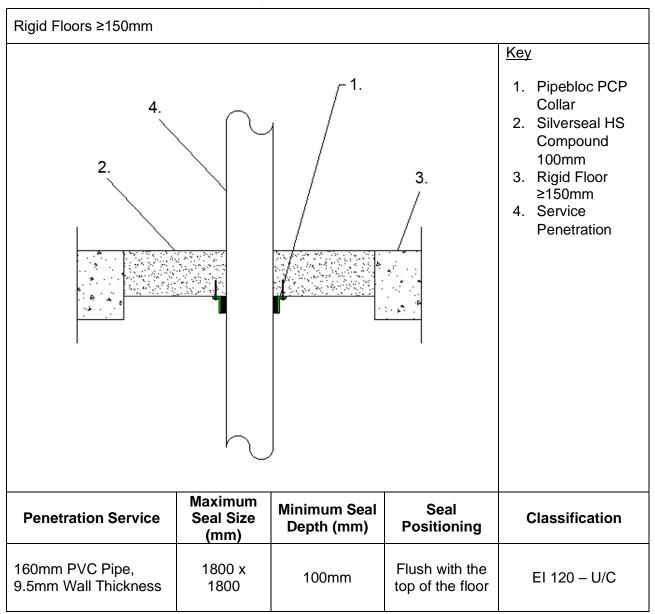


Cable Tray/Ladder Penetrations fitted centrally within the aperture

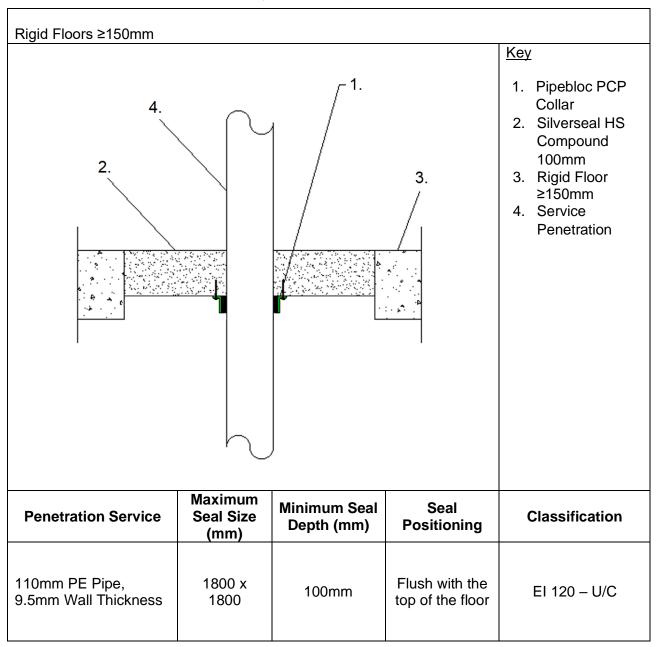




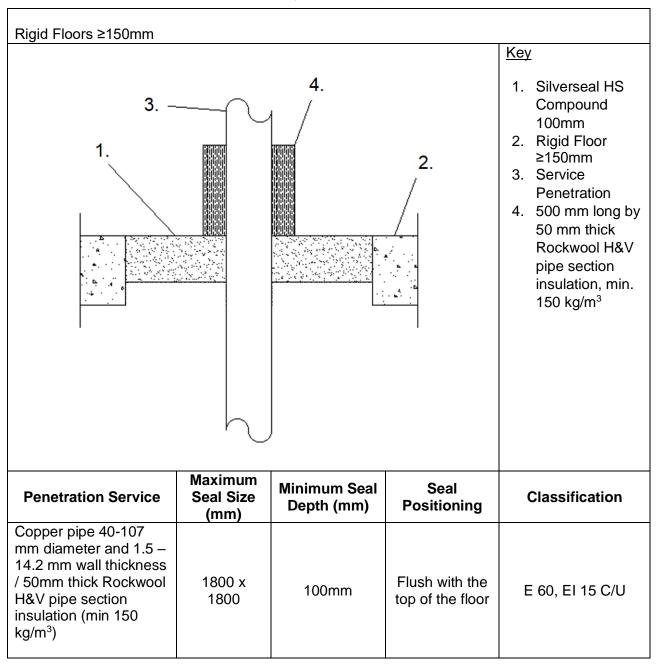






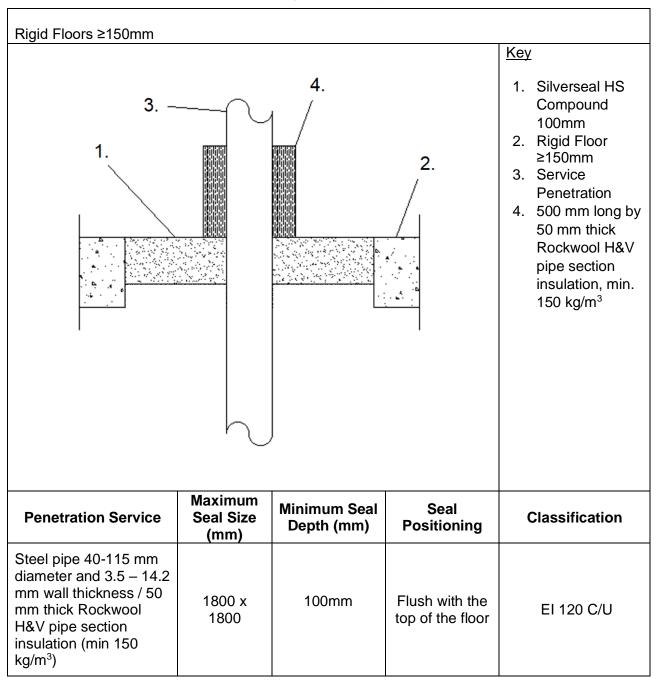






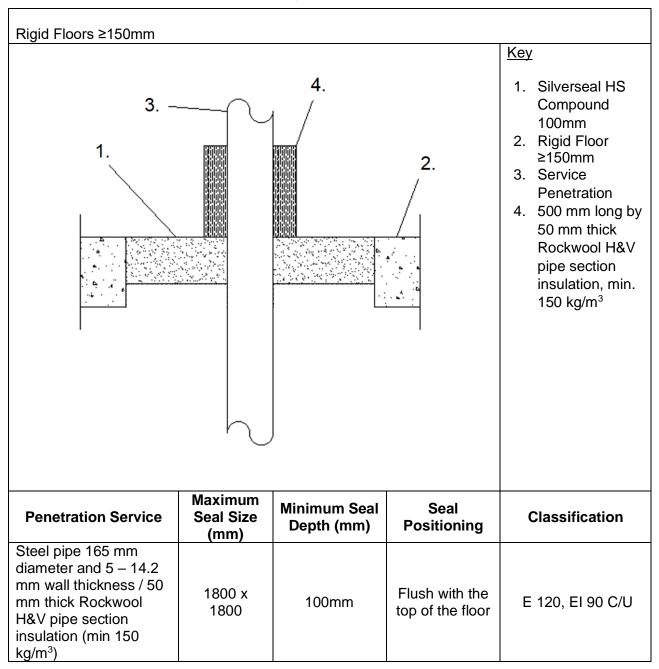
Insulated Metallic Penetrations fitted centrally within the aperture





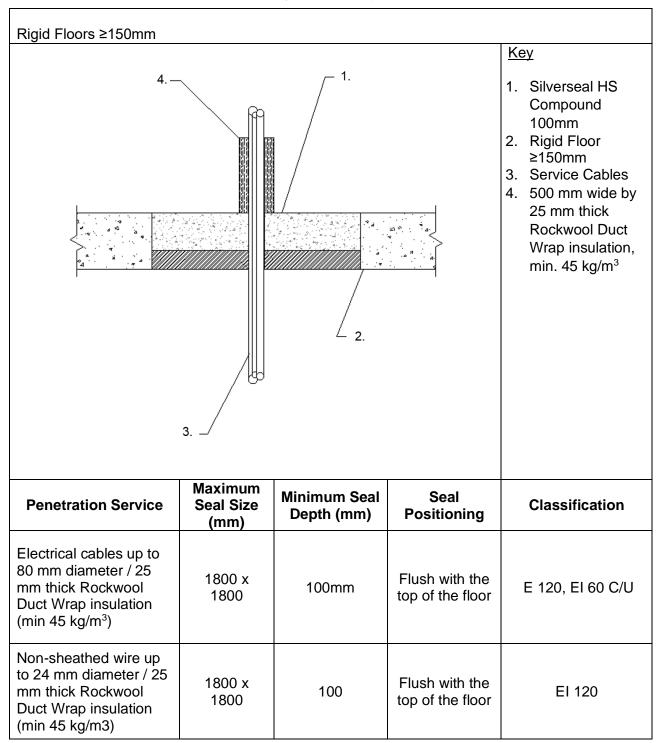
Insulated Metallic Penetrations fitted centrally within the aperture





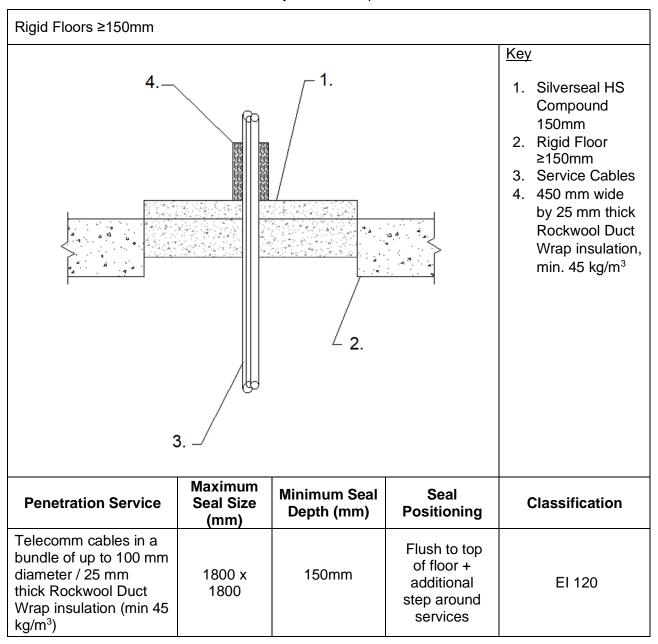
Insulated Metallic Penetrations fitted centrally within the aperture





Insulated Cable Penetrations fitted centrally within the aperture





Insulated Cable Penetrations fitted centrally within the aperture



Plastic Type and pipe wall thickness (mm)					
Pipebloc PCP ref. *	PVC-U, PVC-C	PE, ABS, SAN-PVC	PP		
32	1.8	2.9	2.9		
40	1.8	2.9	2.9		
50	1.8	2.9	2.9		
55	1.8 - 2.3	2.9 - 5.1	2.9 - 4.4		
63	2.3 - 3	2.9 - 5.8	2.9 - 4.4		
75	3.1 - 4.8	2.8 - 6.9	2.8 - 6.7		
82	3.1 - 4.8	2.8 - 7.5	2.8 - 6.7		
90	4.2 - 7.4	2.8 - 8.2	2.7 - 10		
100	4.2 - 7.4	2.7 - 9.1	2.7 - 10		
110	4.2 - 7.4	2.7 - 10	2.7 - 10		
125	6	3.1	3.1		
140	6.1 - 7.5	3.9 - 5.8	3.5 - 8		
160	6.2-9.5	4.9 - 9.5	4 - 14.6		

#### Annex A Table 1

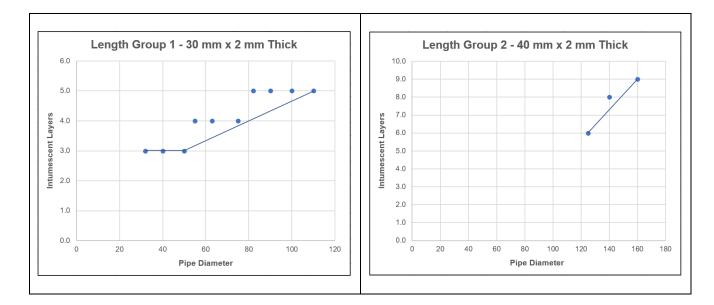
\* See graphs on page 30 for specific intumescent layers

### Table 2

Plastic Type and pipe wall thickness (mm)					
Pipebloc PCP ref.	PVC-U, PVC-C	PE, ABS, SAN-PVC	PP		
32	1.8	3.0	2		
40	1.8	3.0	2		
50	1.8 – 3.7	3.0 - 4.6	2 – 6.9		
55	2 - 3.9	3.0- 5.1	2.1 - 7.2		
63	2.3 - 4.3	3.0 - 5.8	2.2 - 7.6		
75	2.8 -4.9	2.9 - 6.9	2.3 - 8.2		
82	3.1 - 5.2	2.9 - 7.5	2.4 - 8.6		
90	3.4 - 5.6	2.8 - 8.2	2.5 - 9		
100	3.8 - 6.1	2.8 - 9.1	2.6 - 9.5		
110	4.2 - 6.6	2.7 - 10	2.7 - 10		
125	4.8 - 7.4				
140	5.4 - 8.3				
160	6.2 - 9.5				

\* See graphs on pages 30 for specific intumescent layers







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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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