UL-EU CERTIFICATE

Certificate No.
UL-EU-01304-EN

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15-10-2024

Issue No.
1

Re-Issue date
-

Expiry date
14-10-2034

UKAS PRODUCT CERTIFICATION
4705

Certificate Holder:
Greentech Thermal Insulation Products Mfg Co LLC

Address:
PO Box 3350
New Industrial Area
Umm AL Quwain
United Arab Emirates

Product:
HEATSHIELD M1150

Places of production:
U/001

Standard:
EAD 350454-00-1104, September 2017

Authorised Signatory:

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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.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 HEATSHIELD M1150, a gypsum-based mortar material, used to reinstate the fire resistance performance of floor constructions where they have been provided with apertures for the penetrations of multiple services.
The detailed scope is given in pages 4 to 12 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 EN 1366-3:2009 and EN 1366-3:2021
iii) Classification in accordance with EN 13501-2:2016
iv) Durability and Serviceability as defined in EAD 350454-00-1104, September 2017

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I. SPECIFIC PARTS OF THE UL-EU CERTIFICATION

1 Technical description of the product

1) HEATSHIELD M1150 is a gypsum-based mortar material, used to reinstate the fire resistance performance of floor constructions where they have been provided with apertures for the penetrations of multiple services.

2) The HEATSHIELD M1150 is supplied as a dry material and is mixed with water to the required ratio prior to installation.

3) HEATSHIELD M1150 when mixed is self-supporting and may be used with or without a permanent mineral fibre backing material depending upon the required application and classification (see Annex A).

4) The additional component HEATSHIELD S500 is a fire-resistant sealant to be used between and around cables and as smoke seal between cable tray insulation and HEATSHIELD M1150 mortar, is supplied in liquid form contained within 300 ml cartridges and 600 ml foil packs.

5) The additional component HEATSHIELD FS50 is a pipe closure wrap to be used around specific plastic pipes. HEATSHIELD FS50 is required to be used in conjunction with HEATSHIELD M1150 depending upon the required application and classification (see Annex A).

6) Greentech Thermal Insulation Products Mfg Co LLC submitted a written declaration that HEATSHIELD M1150 does not contain substances which have to be classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No 1272/2008 and listed in the "Indicative list on dangerous substances" of the EGDS - taking into account the installation conditions of the construction product and the release scenarios resulting from there. An emission report has also been provided.

   In addition to the specific clauses relating to dangerous substances contained in this European technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

7) The use category of HEATSHIELD M1150in relation to BWR 3 (Hygiene, health and environment) is IA1, S/W2

2 Specification of the intended uses of the product in accordance with the applicable European Assessment Document (Hereinafter EAD): EAD 350454-00-1104: 2017

Detailed information and data is given in Annex A.

The intended use of system HEATSHIELD M1150 is to reinstate the fire resistance performance rigid floor constructions where they are penetrated by various metal pipe services, plastic pipes and electrical cables.

1) The specific elements of construction that the system HEATSHIELD M1150 may be used to provide a penetration seal in, are as follows:

   Rigid floors: The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 600 kg/m^3.

The supporting construction must be classified in accordance with EN 13501-2 for the required fire resistance period.

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2) The system HEATSHIELD M1150 may be used to provide a penetration seal for specific services in specific supporting constructions and substrates (for details see Annex A).

3) The maximum opening size for HEATSHIELD M1150 (min. 50 mm thick) backed with 50 mm mineral fibre-board shall be 1000 mm x 600 mm. The total amount of cross sections of services (including insulation) should not exceed 60% of the penetration area.

4) The first support (service support construction) for penetrants in rigid floors has to be at maximum 250 mm from top surface of floor.

5) The designation U/U, C/U, U/C or C/C indicates whether or not the product under test are capped during the fire test.
The first letter refers to the situation in the furnace and the second to the situation outside the furnace (see table).

Test condition	**Configuration**	
	Inside the furnace	Outside the furnace
U/U	Uncapped	Uncapped
C/U	Capped	Uncapped
U/C	Uncapped	Capped
C/C	Capped	Capped

The tests carried out with uncapped ends (U/U) correspond to the most unfavorable situation, since the fire can spread more easily because the two ends are open.
The results of these tests may therefore be applied in all situations (U/U, C/U, U/C and C/C).
The C/U tests may be used in the following situations: C/U, U/C and C/C. The U/C tests may in turn be used for situations U/C and C/C, while the C/C tests may only be used in the C/C situation.

6) Where PVC conduits are mentioned in Annex A, this includes PVC-U rigid conduits according to EN 61386-1 and EN 61386-21. Where PVC pipes are mentioned in Annex A, this includes PVC-U pipes according to EN 1329-1, EN 1453-1, EN ISO 15493 and EN ISO 1452-2 and PVC-C according to EN 1566-1, EN ISO 15493 and EN ISO 15877-2.

7) The provisions made in this European Technical Assessment are based on an assumed working life of the HEATSHIELD M1150 of 10 years, provided that the conditions laid down in the manufacturers datasheet and instructions for the packaging/transport/storage/installation/ use/repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

8) Type Z_2: intended for uses in internal conditions with humidity lower than 85% RH excluding temperatures below 0°C, without exposure to rain or UV.

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3 Performance of the product and references to the methods used for its assessment

Product-type: Mortar	Intended use: Penetration Seal	
Basic requirement for construction work	Essential characteristic	Performance
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	Class E
EN 13501-2	Resistance to fire	Annex A
BWR 3 Hygiene, health and environment		
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, S/W2 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_2
BWR 5 Protection against noise		
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	No performance determined
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

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ANNEX A – Resistance to Fire Classification – HEATSHIELD M1150

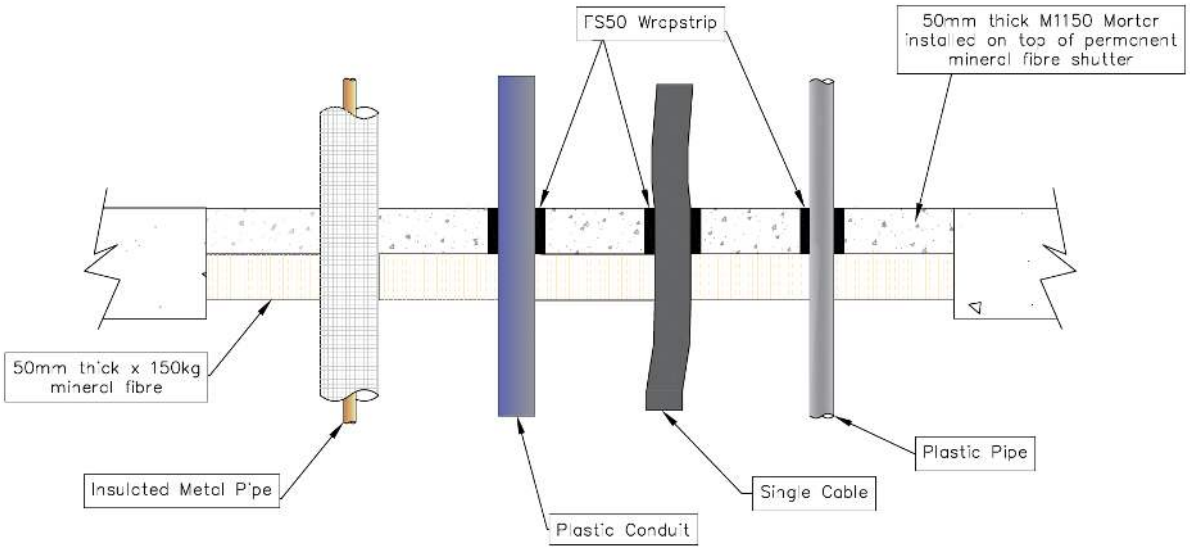
A.1 Rigid floor constructions according to 1.2.1 with floor thickness of minimum 150 mm

A.1.1 Multiple penetration seal with HEATSHIELD M1150 backed with mineral fibre-board

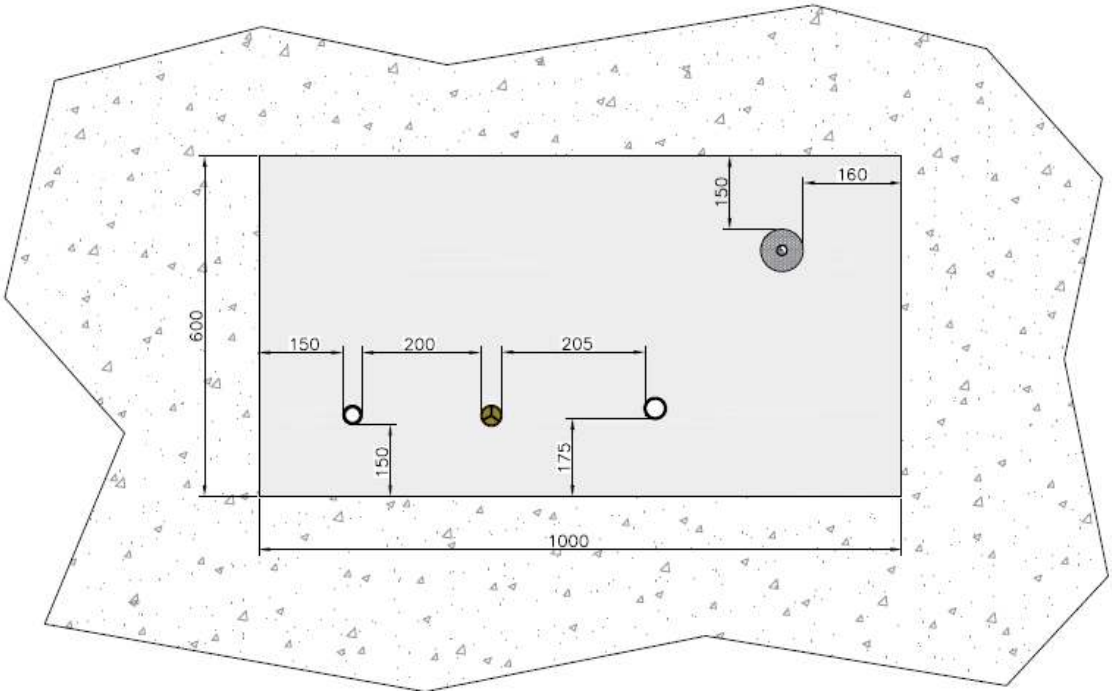
Penetration Seal: Multiple penetrations within the aperture and sealed with HEATSHIELD M1150 to a min. depth of 50 mm. 50 mm thick mineral fibre-board (150 kg/m^3) recessed min. 50 mm from top side of floor used as shutter cut to closely follow penetrants. HEATSHIELD FS 50 wrap installed around single cables and plastic pipes/conduits. Minimum working clearance between penetrants and between penetrants and aperture shall be as shown in drawing below. Dimensions for minimum working clearances not shown in drawing shall be at least 200 mm. Minimum separation between penetration seals of 100 mm.

Construction details:

Section view:



Front view:



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A.1.1.1

Services	Insulation	HEATSHIELD M1150 seal details	Classification
Single electrical cable of H07RN-F (4x95 mm^2) with a maximum outer diameter of 61 mm	-	1 layer of 50 mm wide x 2 mm thick HEATSHIELD FS50 wrapped around cable flush with top surface of floor	**E 120** **EI 120**
ABS pipe (BS5391-1) up to 32 mm diameter and 2.2 mm wall thickness		2 layers of 50 mm wide x 2 mm thick HEATSHIELD FS50 wrapped around pipe flush with top surface of floor	**E 120-C/C** **EI 120-C/C**
PVC conduit up to 19 mm diameter and 1.6 mm wall thickness			**E 120-C/C** **EI 120-C/C**
Copper, steel or cast iron pipe up to 15 mm diameter and min. wall thickness of 0.7 mm	Min. 25 mm thick aluminium foil faced stone wool insulation (CS, 50 kg/m^3)	-	**E 120-C/C** **EI 120-C/C**
Copper, steel or cast iron pipe up to 67 mm diameter and min. wall thickness of 1.2 mm		-	**E 120-C/C** **EI 120-C/C**
Copper, steel or cast iron pipe up to 108 mm diameter and min. wall thickness of 1.5 mm		-	**E 120-C/C** **EI 60-C/C**

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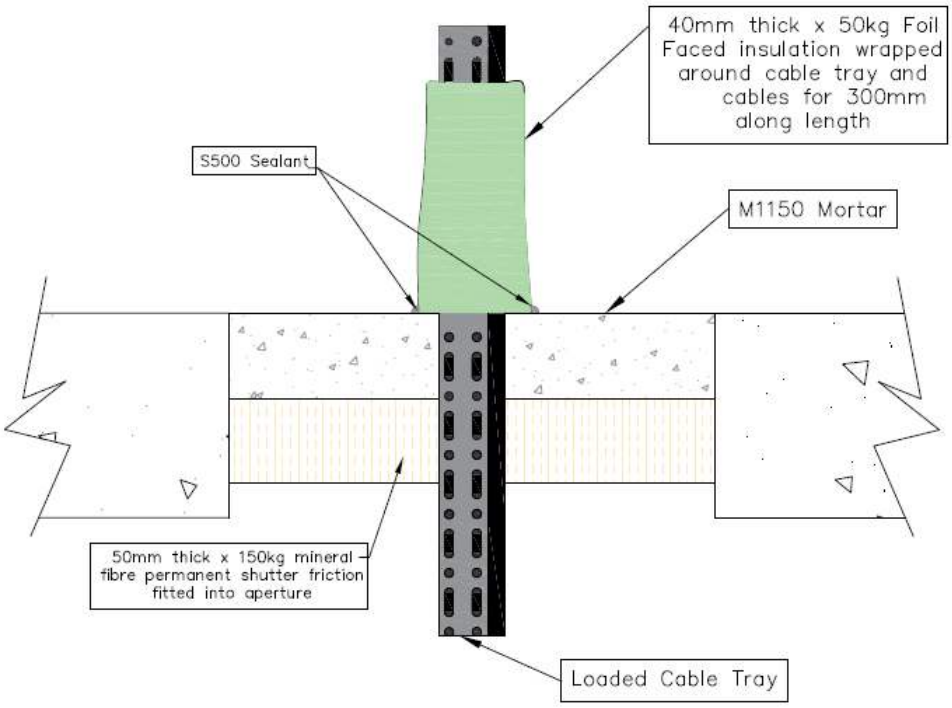
A.1.2 Penetration seal with insulated cable trays with HEATSHIELD M1150 backed with mineral fibre-board

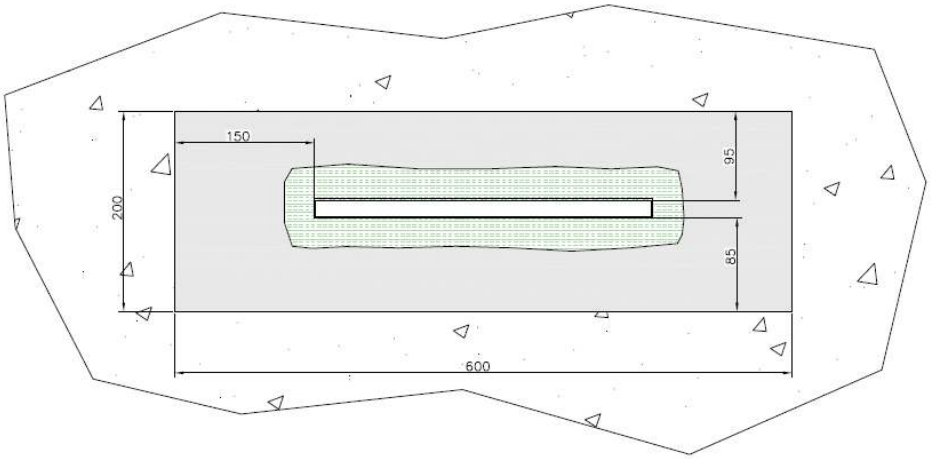
Penetration Seal: Cables on cable tray within the aperture sealed with HEATSHIELD M1150 to a min. depth of 50 mm. 50 mm thick mineral fibre-board (150 kg/m^3) recessed min. 50 mm from top side of floor used as shutter cut to closely follow penetrants. Minimum working clearance between penetrants and aperture shall be as shown in drawing below. Minimum separation between penetration seals of 100 mm.

Construction details:

Section view:



Front view:



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A.1.2.1

Services	Insulation	HEATSHIELD M1150 seal details	Classification
Perforated Cable tray (300 x 18 x 1.4 mm) incl. following cables/conduits: - max. 10 No. of NYY-J (5x 1.5 mm^2) with a maximum outer diameter of 14 mm - max. 10 No. of H07RN-F (5x1.5 mm^2) with a maximum outer diameter of 14 mm - max. 10 No. of NYM-J (5x2.5 mm^2) with a maximum outer diameter of 12 mm - max. 1 No. of H07RN-F (4x95 mm^2) with a maximum outer diameter of 61 mm	Min. 40 mm thick aluminium foil faced stone wool insulation (50 kg/m^3). Min. 300 mm long from top surface of floor wrapped around entire cable tray. Open ends of mineral wool wrap filled with loose mineral wool (50 kg/m^3).	Gaps between cables and cable bundles sealed with HEATSHIELD M1150 mortar to min. depth of 50 mm. Interface of insulation to M1150 mortar sealed with 12 mm thick bead of HEATSHIELD S500	**E 120** **EI 120**
Perforated Cable Tray (450 x 25 x 1.1 mm) incl. following cables/conduits: - max. 1 No. of H07V-R (1x 95 $mm^{2)}$ with a maximum outer diameter of 17 mm - max.1 No. of H07V-R (1x 185 mm^2) with a maximum outer diameter of 23 mm - max. 100 mm diameter bundle of Cat-5e Network cable with a maximum outer diameter of 6 mm			**E 120** **EI 60**

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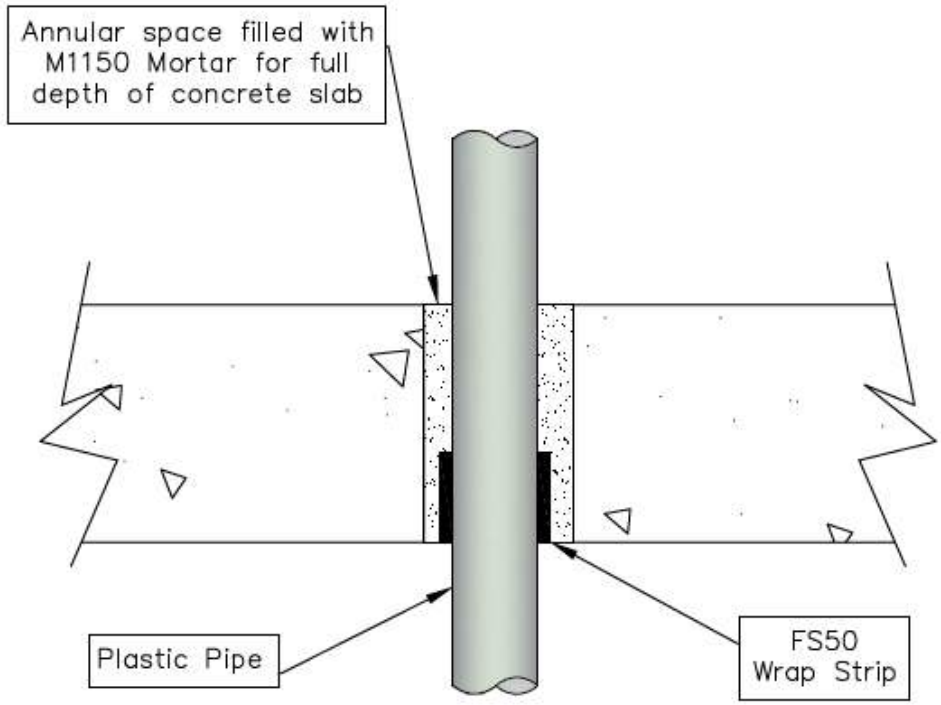
A.1.3 Penetration seal with plastic pipes with HEATSHIELD M1150

Penetration Seal: Single plastic pipe within the aperture sealed with HEATSHIELD M1150 to a min. depth of 150 mm. Minimum separation between penetration seals of 100 mm. Max. opening size shall be up to 202 mm diameter.
Construction details: Section view: 

A.1.3.1

Services	HEATSHIELD M1150 seal details	Classification
PVC-U pipe up to a diameter of 160 mm and a wall thickness of 6.2 mm	5 layers of 50 mm wide x 2 mm thick HEATSHIELD FS50 wrapped around pipe flush with bottom surface of floor	**E 90-C/C** **EI 90-C/C**

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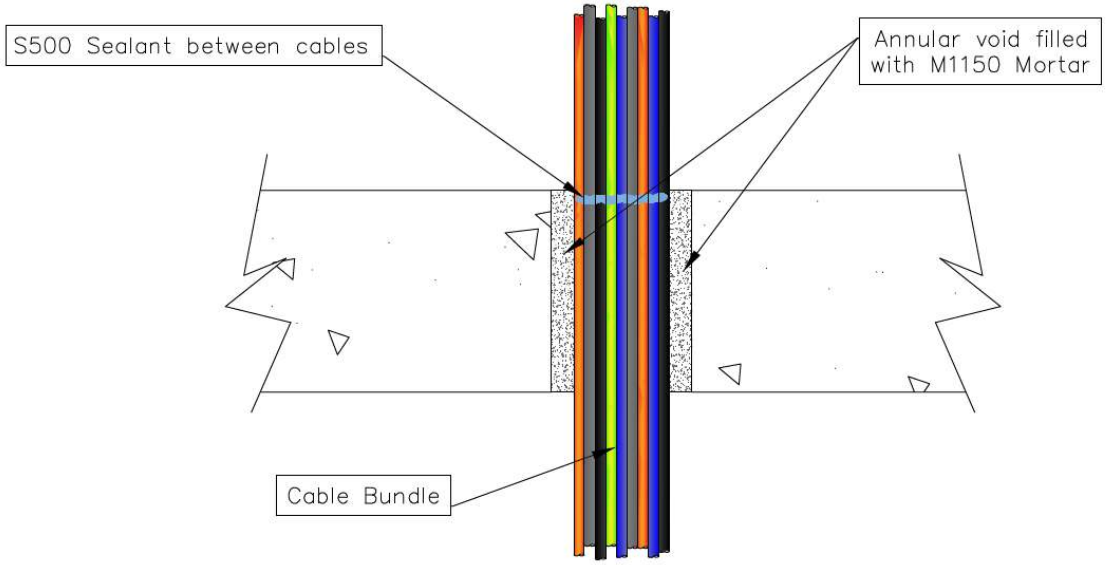
A.1.4 Penetration seal with cables with HEATSHIELD M1150

Penetration Seal: Cables within the aperture sealed with HEATSHIELD M1150 to a min. depth of 150 mm. Minimum separation between penetration seals of 100 mm. Max. opening size shall be up to 150 mm diameter.

Construction details:

Section view:



A.1.4.1

Services	HEATSHIELD M1150 seal details	Annular space	Classification
Max. 10 No. of H07RN-F (5x1.5 mm^2) with a maximum outer diameter of 14 mm	Gaps between cables in cable bundle sealed with HEATSHIELD S500 sealant with min. 12 mm depth. M1150 Mortar in the gap between floor and services	20-30 mm	**E 120** **EI 120**

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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.

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

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