UL-EU CERTIFICATE

Certificate No.
UL-EU-01303-EN

Issue date
2024-11-18

Issue No.
2

Re-Issue date
2025-12-11

Expiry date
2034-11-17

This is to acknowledge that:
Triton Middle East LLC

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

Has had the product:
HEATSHIELD B50 SYSTEM

evaluated and meets the requirements of the standard(s):

EAD 350454-00-1104, September 2017

Places of production:
U/003

Authorised Signatory:

Chris Johnson
Issued by UL International (UK) Ltd

UKAS PRODUCT CERTIFICATION
4705

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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.

UL Solutions
Form-ULID-006104 V10.0

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This certificate relates to the use of HEATSHIELD B50 a coated mineral wool board (HEATSHIELD B50-ST) used to reinstate the fire resistance performance of wall and floor constructions where they have been provided with apertures for the penetration of single or multiple services.
The detailed scope is given in pages 4 to 13 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 1366-3:2021
iii) Classification in accordance with EN 13501-2:2016
iv) Durability and Serviceability as defined in EAD 350454-00-1104, September 2017

According to EN 1366-3: 2021+A1: 2024, Clause H.4.1.8.6.2, the following end uses are envisaged* based upon the tested pipe end configuration:

Pipe material	Tested pipe end	Envisaged use scenario
Metal	C/U or C/C	Closed pipe systems (e.g. systems under pressure)
	U/U, U/C or C/U	Ventilated pipe systems (e.g. sewage pipes) and for closed pipe systems
Plastic	U/U or C/U	Ventilated pipe systems and for closed pipe systems
	U/U	Ventilated pipe systems, for rainwater systems and for closed pipe systems

* In the case where a national prescription is in conflict with the content of the table above, the national prescriptions prevail.

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

Product-type: Coated mineral wool slabs		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 the 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 and accessibility 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_1
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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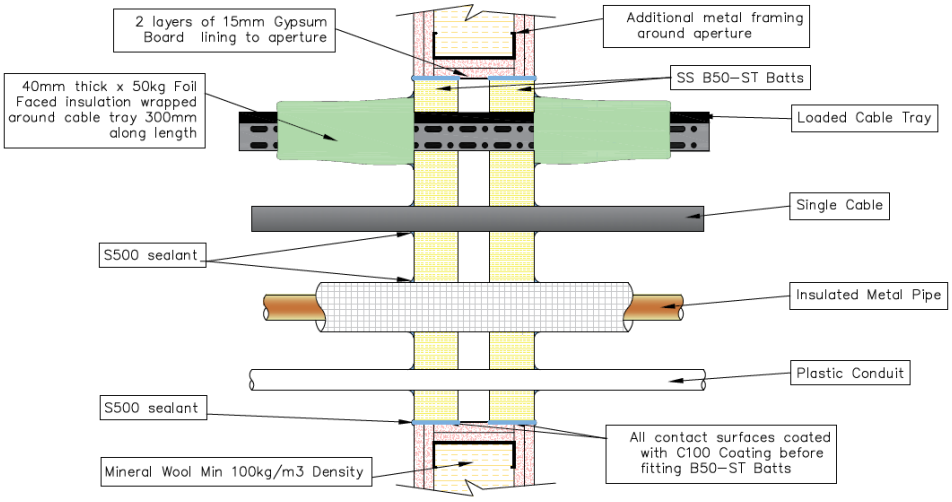
ANNEX A – Resistance to Fire Classification – HEATSHIELD B50 SYSTEM
A.1 Flexible wall constructions with wall thickness of minimum 135 mm
A.1.1 Double sided penetration seal with multiple penetrants

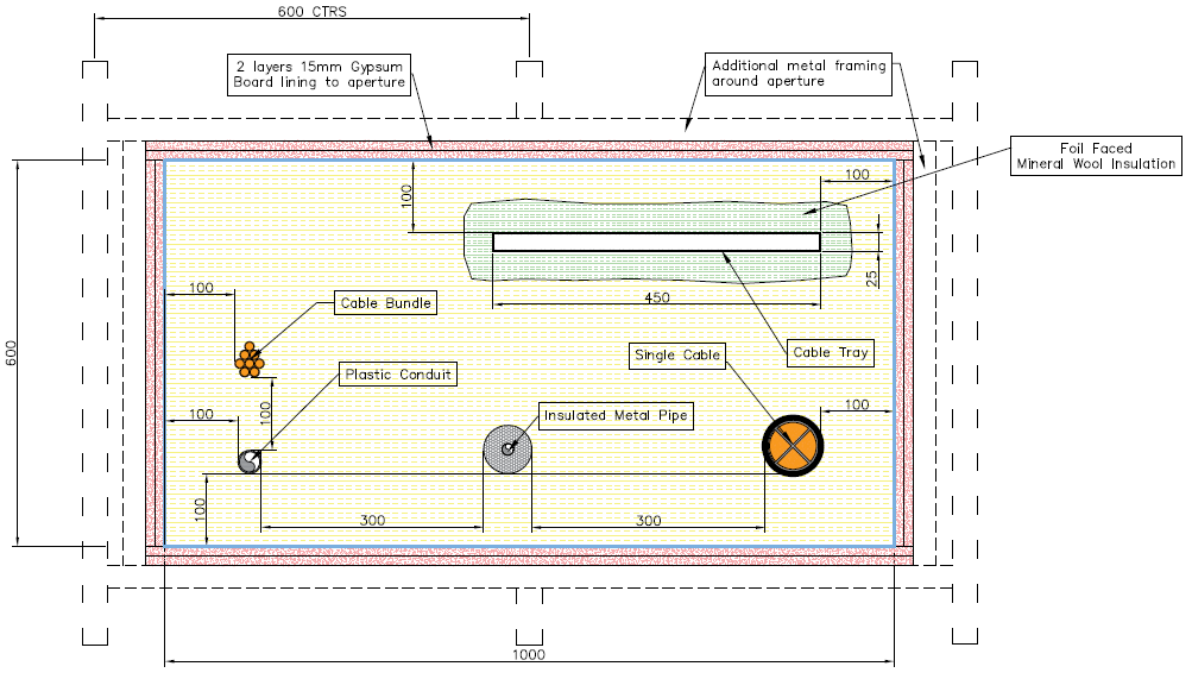
Penetration Seal: Multiple penetrations within the aperture and sealed with HEATSHIELD B50 SYSTEM. HEATSHIELD SS B50-ST batt applied flush to both surfaces of wall. Maximum opening size of framed aperture shall be 1000 mm wide x 600 mm high (see details of framing in drawing below). Minimum working clearance 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 100 mm. Maximum annular space shall be 350 mm. Minimum separation between penetration seals of 100 mm.

Construction details:

Section view:



Front view:



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Services	Max. opening size within HEATSHIELD B50-ST batt	Insulation	B50 SYSTEM seal details	Annular space within HEATSHIELD B50-ST batt	Classification
PVC conduit, Diameter ≤ 32 mm, wall thickness 2.5 mm	Ø ≤ 32 mm	N/A	Bead of 10 mm x 10 mm S500 around penetrant	0 mm	**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	Ø ≤ 70 mm	Min. 25 mm thick aluminium foil faced stone wool insulation (CS, 50 kg/m^3)		5 mm	**E 120 C/C EI 120 C/C**
Single electrical cable of H07RN-F (4x185 mm^2) with a maximum outer diameter of 75 mm	Ø ≤ 75 mm	N/A		≤ 5 mm	**E 120 EI 60**
Perforated Cable Tray (450 x 25 x 1.1 mm) incl. following cables: - max. 2 No. of H07V-R (1x 95 mm$^{2)}$ with a maximum outer diameter of 17 mm - max. 2 No. of H07V-R (1x 185 mm^2) with a maximum outer diameter of 23 mm - max. 20 No. of NYY-J (5x 1.5 mm^2) with a maximum outer diameter of 14 mm - max. 20 No. of N2XH (5x1.5 mm^2) with a maximum outer diameter of 14 mm	460 mm wide x 50 mm high	Min. 40 mm thick aluminium foil faced stone wool insulation (50 kg/m^3). Min. 300 mm long from both surfaces of wall wrapped around entire cable tray (LI). Open ends of mineral wool wrap filled with loose mineral wool (50 kg/m^3).	Bead of 10 mm x 10 mm S500 around penetrants and between cable tray and penetrants. Gap between the cable tray with cables and SS B50-ST Batts is sealed with 10 mm thick S500. Interface of insulation to B50-ST batt sealed with 12 mm thick S500.	≤ 10 mm	**E 120 EI 120**
Electrical cable(s), single or bundle of up to 8 No. of H07RN-F (5x1.5 mm^2) with a maximum outer diameter of 14 mm	Ø ≤ 65 mm	N/A	10 mm thickness of S500 around and between cables	≤ 10 mm	**E 120 EI 120**

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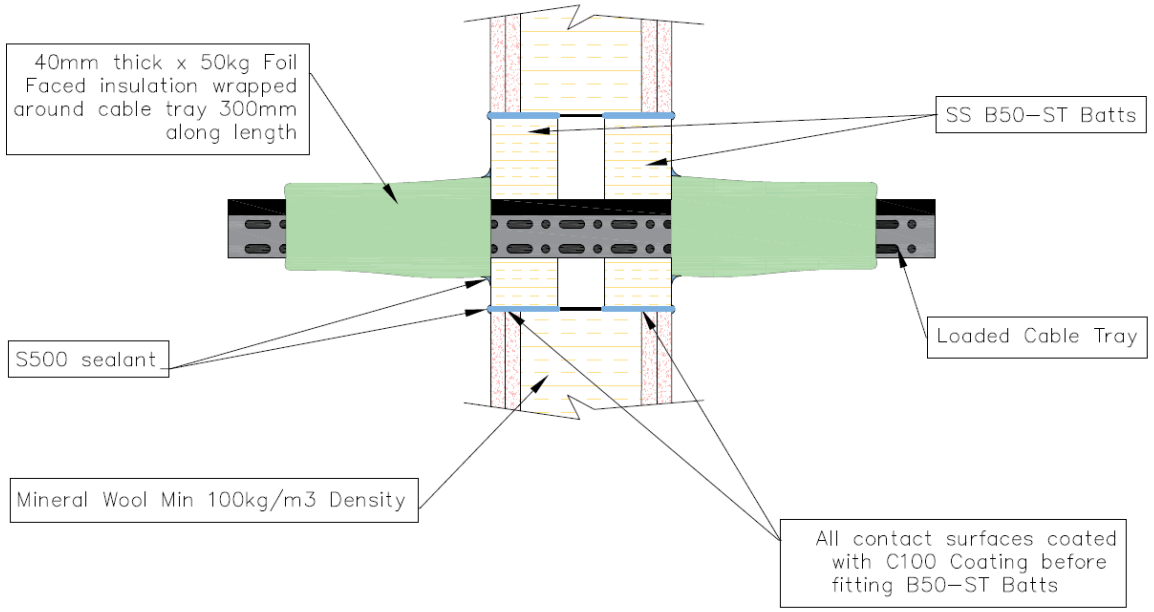
A.1.2 Double sided penetration seal with insulated cable trays

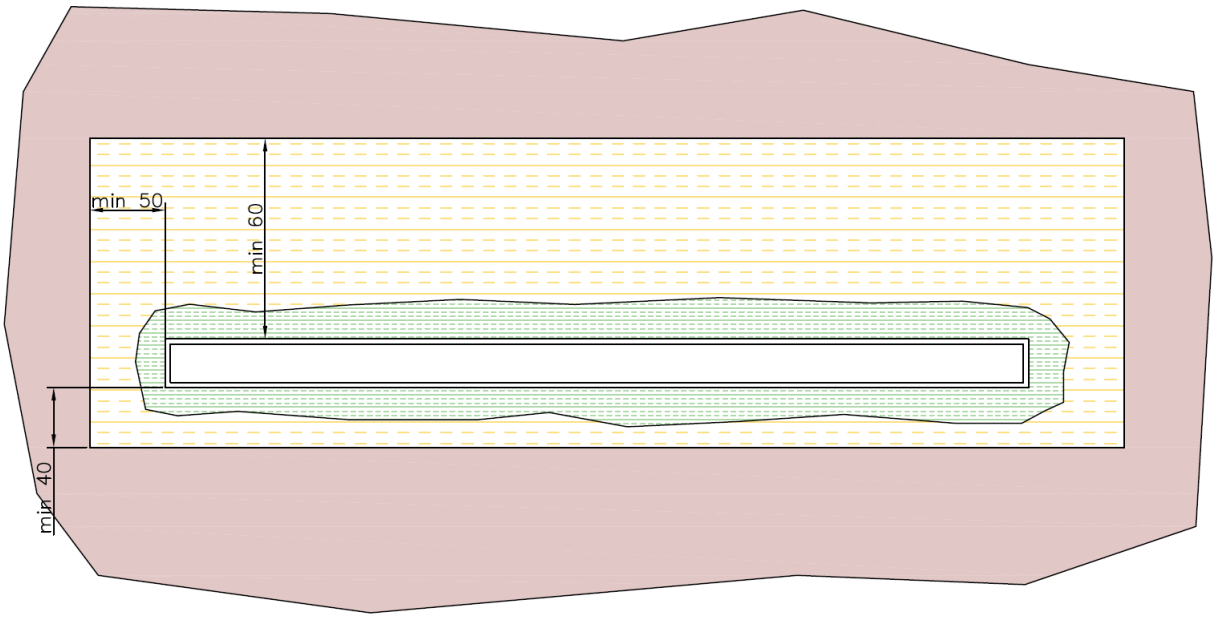
Penetration Seal: Single cable tray with cables within the aperture and sealed with HEATSHIELD B50 SYSTEM. HEATSHIELD SS B50-ST batt applied flush to both surfaces of wall. Minimum working clearance between cable tray and aperture shall be as stated in drawing below. Minimum separation between penetration seals of 100 mm.

Construction details:

Section view:



Front view:



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Services	Max. opening size	Insulation	B50 SYSTEM seal details	Annular space within HEATSHIELD B50-ST batt	Classification
Perforated Cable Tray (450 x 25 x 1.1 mm) incl. following cables/conduits: - max. 2 No. of H07V-R (1x 95 mm^2) with a maximum outer diameter of 17 mm - max. 2 No. of H07V-R (1x 185 mm^2) with a maximum outer diameter of 23 mm - max. 13 No.of Cat-5e Network cable with a maximum outer diameter of 6 mm - max. 1 No. of PVC conduit with a maximum outer diameter of 20 mm x1.6 mm wall thickness - max. 1 No. of PVC conduit with a maximum outer diameter of 32 mm x2.5 mm wall thickness	550 mm wide x 200 mm high	Min. 40 mm thick aluminium foil faced stone wool insulation (50 kg/m^3). Min. 300 mm long from both surfaces of wall wrapped around entire cable tray (LI). Open ends of mineral wool wrap filled with loose mineral wool (50 kg/m^3).	Bead of 10 mm x 10 mm S500 around penetrants and between cable tray and penetrants. Gap between the cable tray with cables and SS B50-ST Batts is sealed with 10 mm thick S500. Interface of insulation to B50-ST batt sealed with 12 mm thick S500.	≤ 10 mm	**E 120 C/C[1)]** **EI 120 C/C[1)]**
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 N2XH (5x1.5 mm^2) with a maximum outer diameter of 14 mm - max. 1 No. of steel conduit with a maximum outer diameter of 20 mm x1.6 mm min. wall thickness	400 mm wide x 200 mm high			≤ 10 mm	**E 120 C/C[1)]** **EI 120 C/C[1)]**

1) Note: Fire resistance classification shall be extended by supplementary specification C/C, i.e.: E 120 C/C; EI 120 C/C for used conduits.

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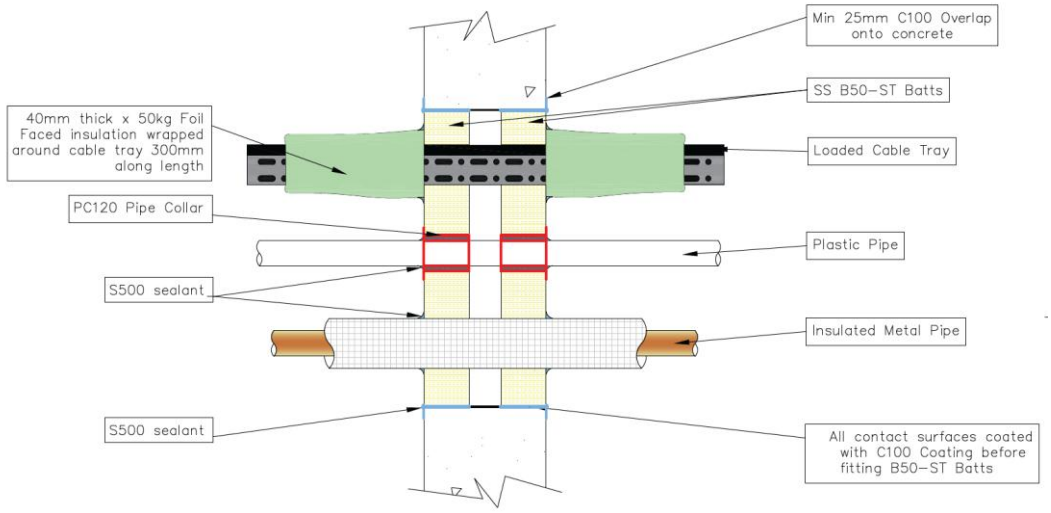
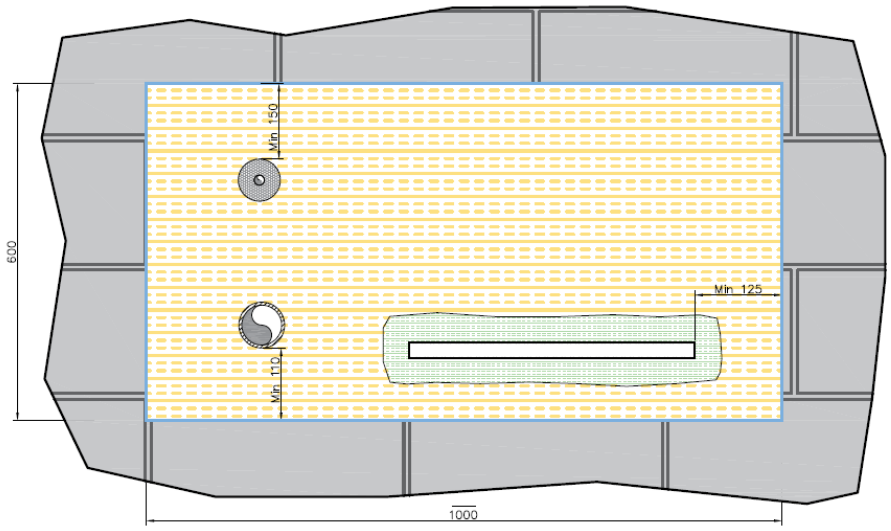
A.2 Rigid wall constructions with wall thickness of minimum 125 mm
A.2.1 Double sided penetration seal with multiple penetrants

Penetration Seal: Multiple penetrations within the aperture and sealed with HEATSHIELD B50 SYSTEM. HEATSHIELD SS B50-ST batt applied flush to both surfaces of wall. Maximum opening size shall be 1000 mm wide x 600 mm high. 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 100 mm. Minimum separation between penetration seals of 100 mm.

Construction details:





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Services	Max. opening size within HEATSHIELD B50-ST batt	Insulation	B50 SYSTEM seal details	Annular space within HEATSHIELD B50-ST batt	Classification
Copper, steel or cast iron pipe up to 15 mm diameter and min. wall thickness of 0.7 mm	Ø ≤ 65 mm	Min. 25 mm thick aluminium foil faced stone wool insulation (CS, 50 kg/m^3)	Bead of 10 mm x 10 mm S500 around penetrant	≤ 5 mm	**E 120 C/C EI 120 C/C**
PVC conduit, Diameter ≤ 50 mm, wall thickness 2.4 mm	Ø ≤ 70 mm	N/A	PC120 Pipe Collar Ø 55 mm. Mounting lugs are flush with surface of SS B50-ST Batts and a bead of S500 (10 x 10) mm applied around the surface of collar at the edge on both sides of the wall	0 mm	**E 120 C/C EI 120 C/C**
Perforated Cable Tray (300 x 18 x 1.4 mm) incl. following cables: - max. 10 No. of NYY-J (5x 1.5 mm^2) with a maximum outer diameter of 14 mm - max. 10 No. of N2XH (5x1.5 mm^2) with a maximum outer diameter of 14 mm	305 mm wide x 50 mm high	Min. 40 mm thick aluminium foil faced stone wool insulation (50 kg/m^3). Min. 300 mm long from both surfaces of wall wrapped around entire cable tray (LI). Open ends of mineral wool wrap filled with loose mineral wool (50 kg/m^3).	Bead of 10 mm x 10 mm S500 around penetrants and between cable tray and penetrants. Gap between the cable tray with cables and SS B50-ST Batts is sealed with 10 mm thick S500. Interface of insulation to B50-ST batt sealed with 12 mm thick S500.	≤ 10 mm	**E 120 EI 120**

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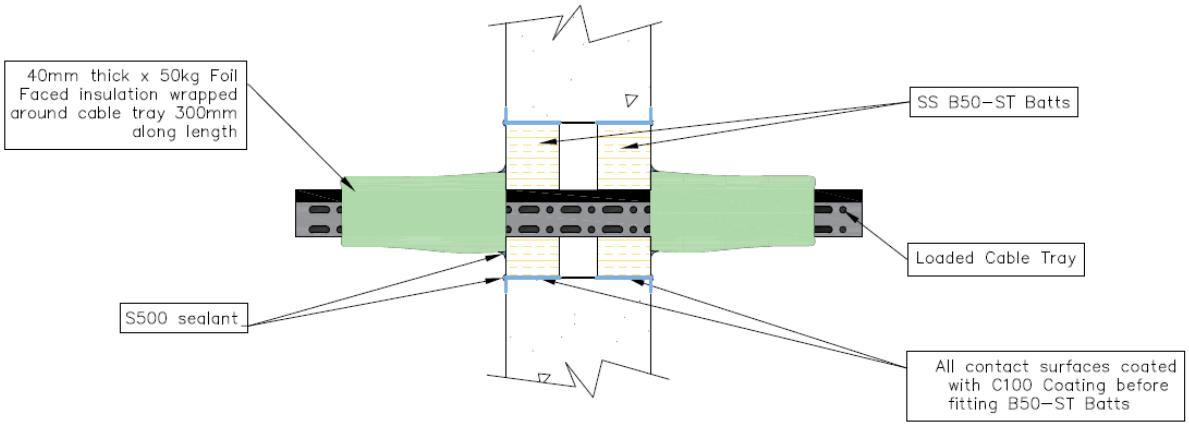
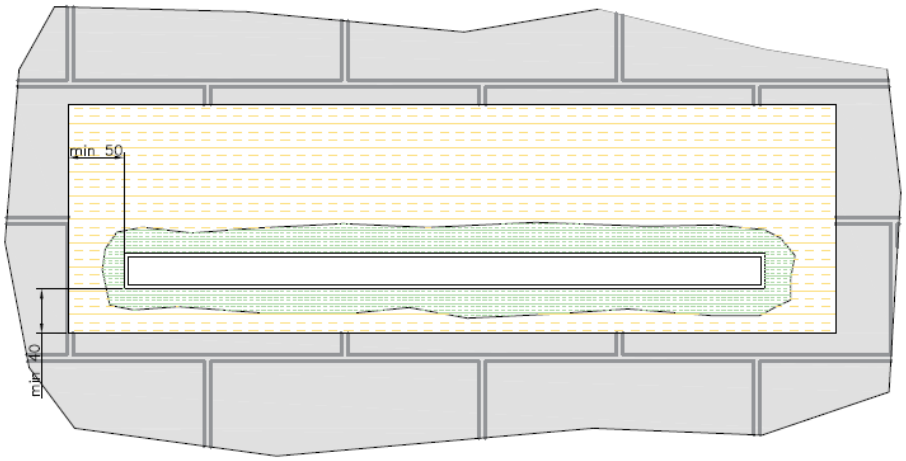
A.2.2 Double sided penetration seal with insulated cable trays

Penetration Seal: Single cable tray with cables within the aperture and sealed with HEATSHIELD B50 SYSTEM. HEATSHIELD SS B50-ST batt applied flush to both surfaces of wall. Minimum working clearance between cable tray and aperture shall be as stated in drawing below. Dimensions for minimum working clearances not shown in drawing shall be at least 100 mm. Minimum separation between penetration seals of 100 mm.

Construction details:





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Services	Max. opening size	Insulation	B50 SYSTEM seal details	Annular space within HEATSHIELD B50-ST batt	Classification
Perforated Cable Tray (450 x 25 x 1.1 mm) incl. following cables/conduits: - max. 2 No. of H07V-R (1x 95 $mm^{2)}$ with a maximum outer diameter of 17 mm - max. 2 No. of H07V-R (1x 185 mm^2) with a maximum outer diameter of 23 mm - max. 100 No.of Cat-5e Network cable with a maximum outer diameter of 6 mm - max. 3 No. of PVC conduit with a maximum outer diameter of 20 mm x1.6 mm wall thickness	550 mm wide x 250 mm high	Min. 40 mm thick aluminium foil faced stone wool insulation (50 kg/m^3). Min. 300 mm long from both surfaces of wall wrapped around entire cable tray (LI). Open ends of mineral wool wrap filled with loose mineral wool (50 kg/m^3).	Bead of 10 mm x 10 mm S500 around penetrants and between cable tray and penetrants. Gap between the cable tray with cables and SS B50-ST Batts is sealed with 10 mm thick S500. Interface of insulation to B50-ST batt sealed with 12 mm thick S500.	≤ 10 mm	**E 120 C/C[1)]** **EI 90 C/C[1)]**
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 N2XH (5x1.5 mm^2) with a maximum outer diameter of 14 mm - max. 1 No. of H07RN-F (4x95 mm^2) with a maximum outer diameter of 50 mm	400 mm wide x 250 mm high			≤ 10 mm	**E 120** **EI 120**

1) Note: Fire resistance classification shall be extended by supplementary specification C/C, i.e.: E 120 C/C; EI 90 C/C for used conduits.

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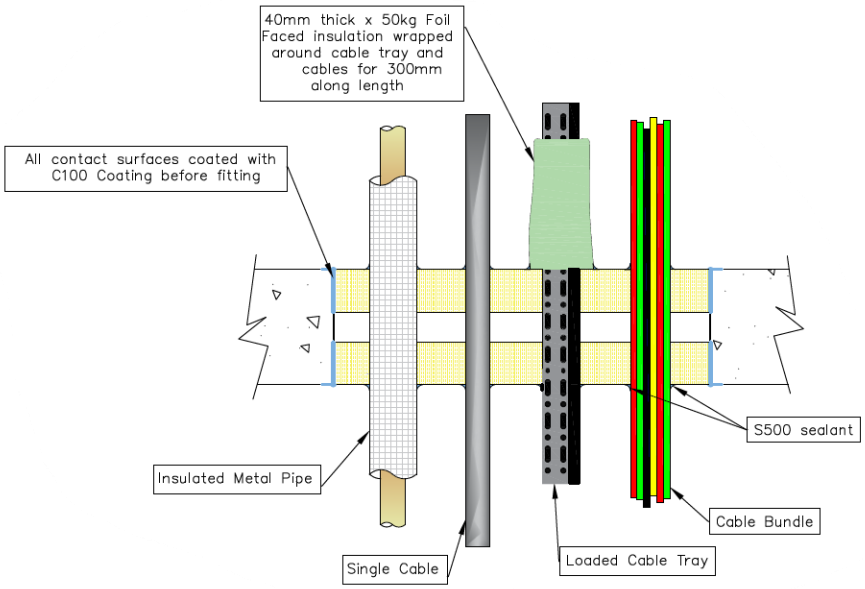
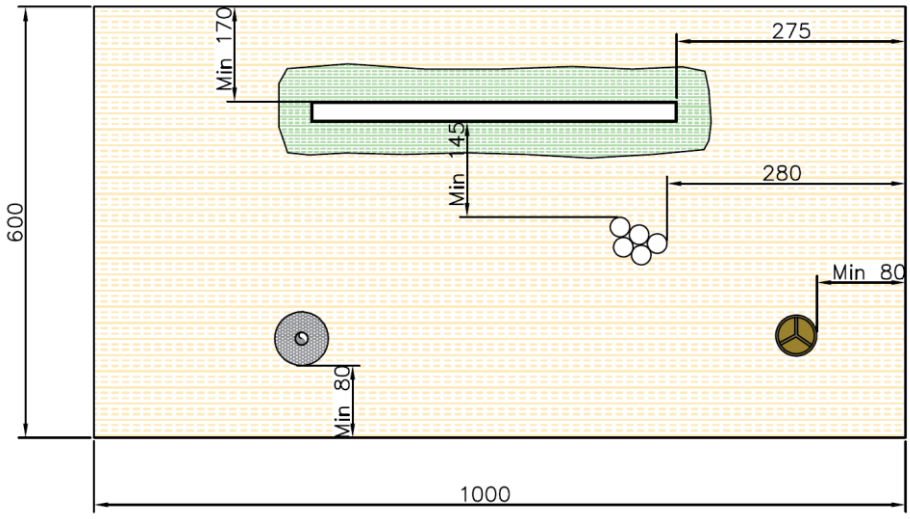
A.3 Rigid floor constructions with floor thickness of minimum 150 mm
A.3.1 Double sided penetration seal with multiple penetrants

Penetration Seal: Multiple penetrations within the aperture and sealed with HEATSHIELD B50 SYSTEM. HEATSHIELD SS B50-ST batt applied flush to both surfaces of floor. Maximum opening size shall be 1000 mm x 600 mm. 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 100 mm. Minimum separation between penetration seals of 100 mm.

Construction details:





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Services	Max. opening size within HEATSHIELD B50-ST batt	Insulation	B50 SYSTEM seal details	Annular space within HEATSHIELD B50-ST batt	Classification
Perforated Cable Tray (450 x 25 x 1.1 mm) incl. following cables: - max. 10 No. of NYY-J (5x 1.5 mm^2) with a maximum outer diameter of 14 mm - max. 20 No. of N2XH (5x1.5 mm^2) with a maximum outer diameter of 14 mm - max. 1 No. of H07RN-F (4x95 mm^2) with a maximum outer diameter of 50 mm	450 mm wide x 50 mm high	Min. 40 mm thick aluminium foil faced stone wool insulation (50 kg/m^3). Min. 300 mm long from both surfaces of wall wrapped around entire cable tray (LI). Open ends of mineral wool wrap filled with loose mineral wool (50 kg/m^3).	Bead of 10 mm x 10 mm S500 around penetrants and between cable tray and penetrants. Gap between the cable tray with cables and SS B50-ST Batts is sealed with 10 mm thick S500. Interface of insulation to B50-ST batt sealed with 12 mm thick S500.	≤ 10 mm	**E 90** **EI 90**
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 N2XH (5x1.5 mm^2) with a maximum outer diameter of 14 mm - max. 1 No. of H07RN-F (4x95 mm^2) with a maximum outer diameter of 50 mm	305 mm wide x 50 mm high			≤ 10 mm	**E 90** **EI 90**
Electrical cable(s), single or bundle of up to 5 No. of NYY-J (5x 1.5 mm^2) with a maximum outer diameter of 14 mm	Ø ≤ 40 mm	N/A	10 mm thickness of S500 around and between cables	≤ 10 mm	**E 90** **EI 90**
Copper, steel or cast iron pipe up to 15 mm diameter and min. wall thickness of 0.7 mm	Ø ≤ 70 mm	Min. 25 mm thick aluminium foil faced stone wool insulation (CS, 50 kg/m^3)	Bead of 10 mm x 10 mm S500 around penetrant	5 mm	**E 90 C/C** **EI 90 C/C**
Copper, steel or cast iron pipe up to 108 mm diameter and min. wall thickness of 1.5 mm	Ø ≤ 160 mm			2 mm	**E 90 C/C** **EI 90 C/C**
Single electrical cable of H07RN-F (4x185 mm^2) with a maximum outer diameter of 60 mm	Ø ≤ 60 mm	N/A	10 mm thickness of S500 around cable	0 mm	**E 90** **EI 90**

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The UL-EU Marks, displayed below represent the enhanced and alternate version of the product marking. Either Mark can be used. These Marks shall appear on certified products only. Minimum size is not specified, as long as the Mark is legible. The following is suggested.

*Note: E12345 is an example of the UL file number.

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 and UL File 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.

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