UL-EU CERTIFICATE

Certificate No.
UL-EU-01300-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 S500

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

EAD 350454-00-1104, September 2017
EAD 350141-00-1106, 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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.

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This certificate relates to the use of HEATSHIELD S500, is a fire-resistant sealant used to form linear gap seals where gaps are present in wall and floor constructions and to form a penetration seal around metallic pipes, combustible cable conduits and electrical cables to reinstate the fire resistance performance of wall and floor constructions, where they have been provided with apertures for the penetration of services.
The detailed scope is given in pages 4 to 15 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)) for penetration seals and up to 240 minutes (EI 240) for linear gap seals.

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 1366-3:2021 and EN 1366-4:2021
iii) Classification in accordance with EN 13501-2:2016
iv) Durability and Serviceability as defined in EAD 350454-00-1104, September 2017 and EAD 350141-00-1106, 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.

According to EN 13501-2: 2023, Clause 7.5.8.4, the following classification codes are defined in addition E & EI:

Test conditions	**Designation**
Specimen orientation - Horizontal supporting construction - Vertical supporting construction – vertical joint - Vertical supporting construction – horizontal joint	 H V T
Movement capability - No movement - Movement induced lateral (in%) - Movement induced lateral (in%)	 X $M_{lat}000$ $M_{shear}000$
Type of splices - Manufactured - Field - Both manufactured and field	 M F B
Joint widths range (in mm)	W w1 to w2
e.g. EI 30 – H – $M_{lat}30$ – B – W 30 to W 90	

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

Product-type: Sealant		Intended use: Linear Joint & Gap Seal; 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		
Declaration of manufacturer & EN 16516	Content, emission and/or release of dangerous substances	Use categories: IA1, S/W2 Declaration of manufacturer
EN 1026:2000	Air permeability (material property)	No performance determined
EAD 350141-00-1106, Annex C & EN 12390-8	Water permeability (material property)	No performance determined
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 ISO 11600 & EAD 350141-00-1106, Clause 2.2.13	Adhesion	No performance determined
EAD 350141-00-1106, Clause 2.2.12 / EAD 350454-00-1104, Clause 2.2.9	Durability	Z_1
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	No performance determined
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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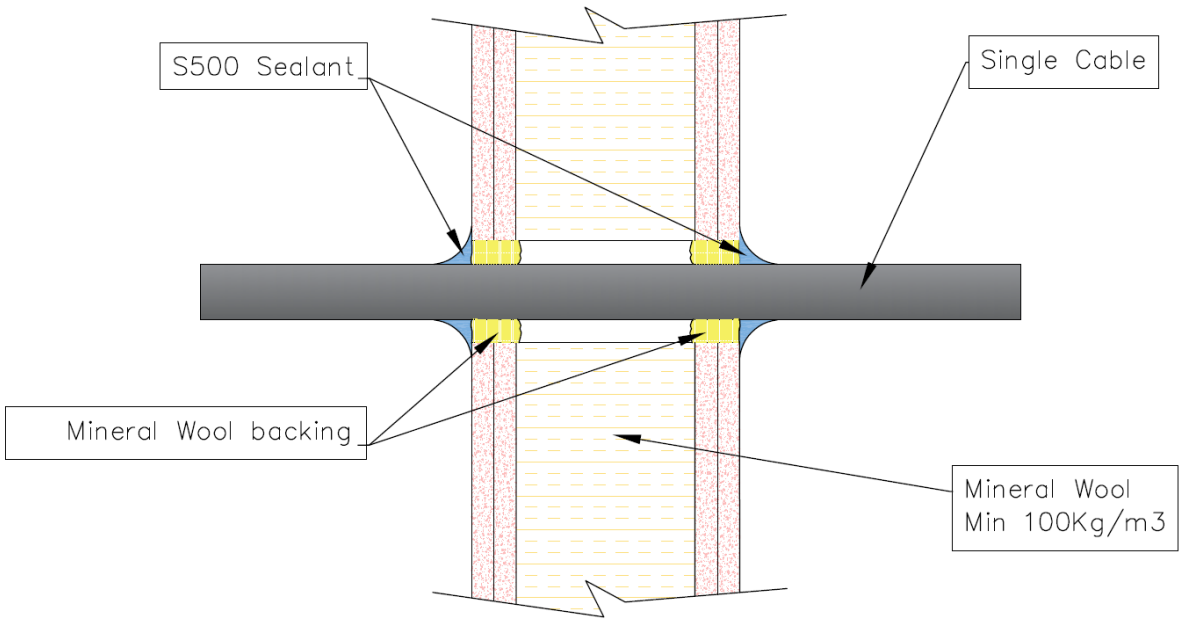
ANNEX A – Resistance to Fire Classification (Penetration Seal Systems) – HEATSHIELD S500

A.1 Flexible wall constructions with wall thickness of minimum 135 mm
A.1.1 Double sided penetration seal with cables

Penetration Seal: Cables (single) centered within the aperture and sealed with HEATSHIELD S500. Minimum separation between penetration seals of 100 mm.

Construction details:



Services	Opening size [mm]	S500 sealant details	Backing material	Annular space	Classification
Electrical cable N2XH (5x1.5 mm^2) with a maximum outer diameter of 14 mm	Ø ≤ 25	Bead of 10 mm x 10 mm	30 mm deep stone wool (ρ ≥ 50 kg/m^3) flush with both surfaces of wall	5-6 mm	**E 120** **EI 120**

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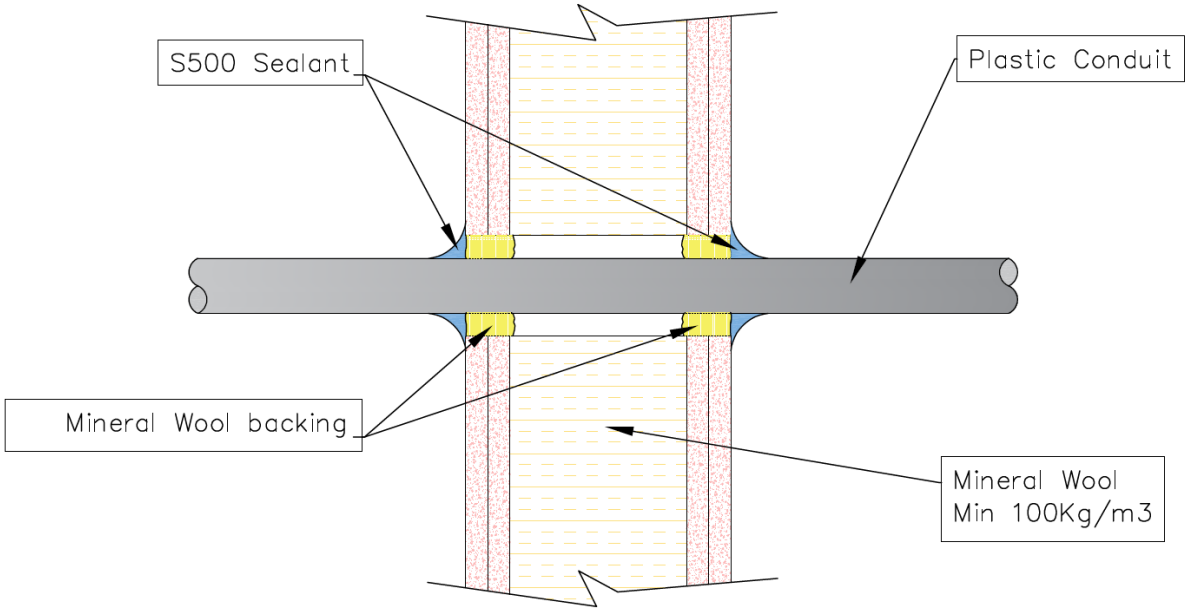
A.1.2 Double side penetration seal with plastic conduits

Penetration Seal: Combustible conduits (single) centered within the aperture and sealed with HEATSHIELD S500. Minimum separation between penetration seals of 100 mm.

Construction details:



Services	Opening size [mm]	S500 sealant details	Backing material	Annular space	Classification
PVC conduit, Diameter ≤ 20 mm, wall thickness 1.6 mm	Ø ≤ 32	Bead of 10 mm x 10 mm	30 mm deep stone wool (50 kg/m^3) flush with both surfaces of wall	6 mm	**E 120 C/C EI 120 C/C**

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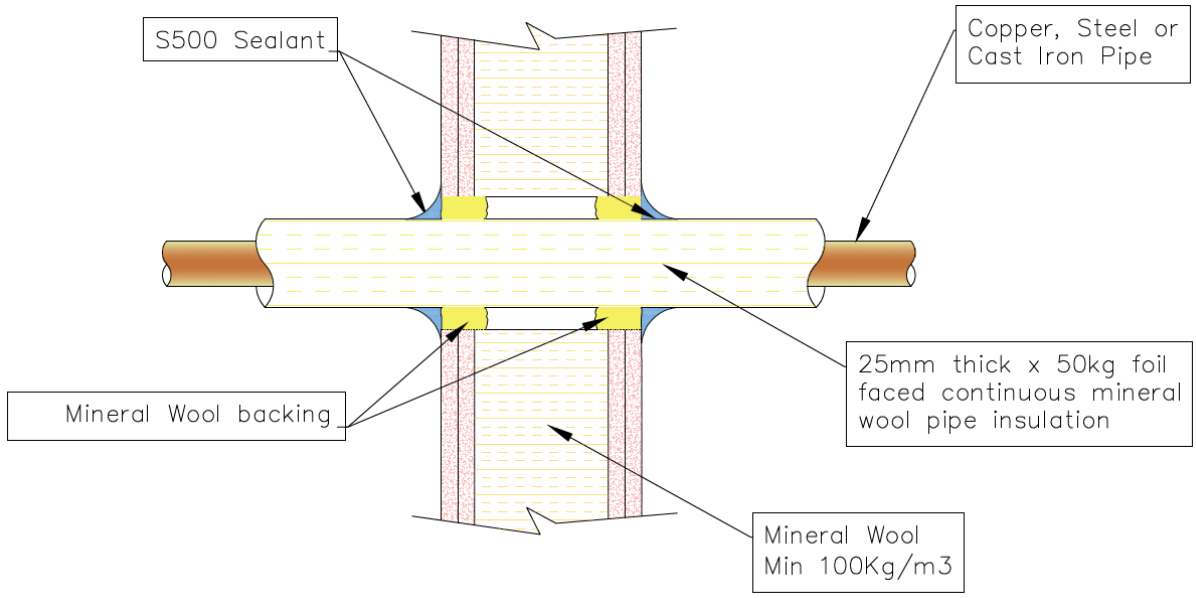
A.1.3 Double sides penetration seal with insulated metal pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) centered within the aperture and sealed with HEATSHIELD S500. Minimum separation between penetration seals of 100 mm.

Construction details:



Services	Opening size [mm]	S500 sealant details	Backing material	Insulation	Annular space	Classification
Copper, steel or cast iron pipe up to 108 mm diameter and min. wall thickness of 1.5 mm	Ø ≤ 180	Bead of min. 11 mm x 10 mm	30 mm deep stone wool (50 kg/m^3) flush with both surfaces of wall	Min. 25 mm thick aluminium foil faced stone wool insulation (50 kg/m^3)	11 mm	**E 120 C/C EI 120 C/C**
Steel or cast iron pipe up to 152.4 mm diameter and min. wall thickness of 3.25 mm	Ø ≤ 220	Bead of min. 10 mm x 10 mm			9 mm	**E 120 C/C EI 120 C/C**

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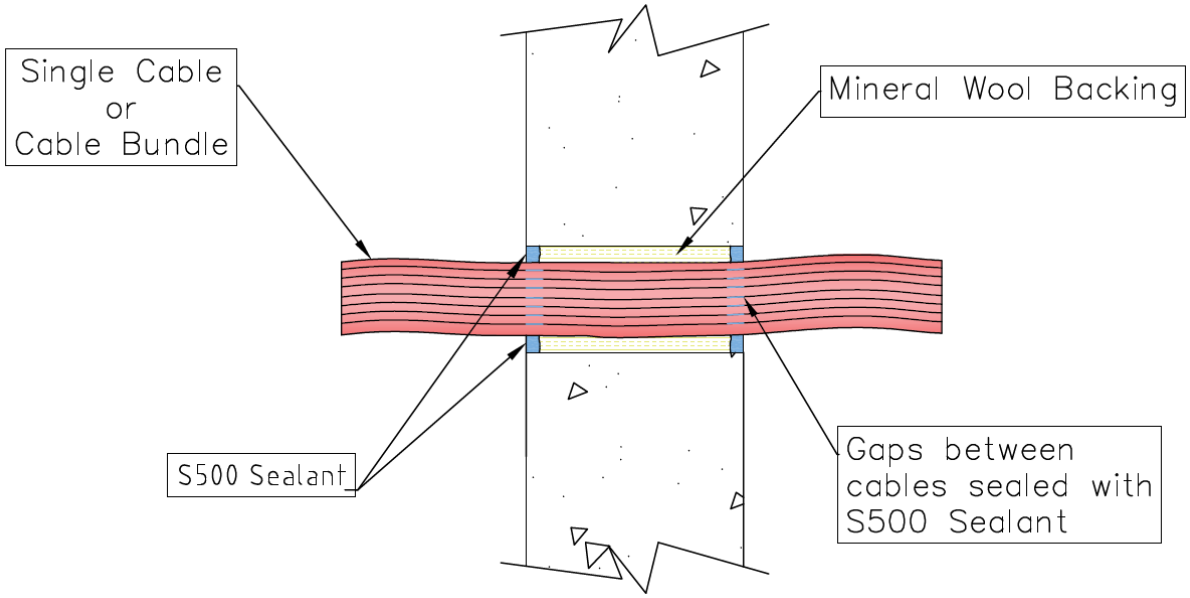
A.2 Rigid wall constructions with wall thickness of minimum 125 mm

A.2.1 Double side penetration seal with cables

Penetration Seal: Cables (single or bundles) centered within the aperture and sealed with HEATSHIELD S500. Minimum separation between penetration seals of 100 mm.

Construction details:



Services	Opening size [mm]	S500 sealant details	Backing material	Annular space	Classification
Electrical cable(s), single or bundle of up to 10 No., of NYY-J (5x1.5 mm^2) with a maximum outer diameter of 14 mm	Ø ≤ 82	10 mm depth flush with both surfaces of wall	Mineral stone wool (50 kg/m^3) recessed 10 mm into opening	18 mm	**E 120 EI 120**
Electrical cable(s), single or bundle of up to 6 No., of NYM-J (5x2.5 mm^2) with a maximum outer diameter of 14 mm	Ø ≤ 102			32 mm	**E 120 EI 120**
Single electrical cable of H07V (1x185 mm^2) EN 50525-2-31 with a maximum outer diameter of 23 mm	Ø ≤ 82	12 mm depth flush with both surfaces of wall	Mineral stone wool (50 kg/m^3) recessed 12 mm into opening	30 mm	**E 120 EI 20**

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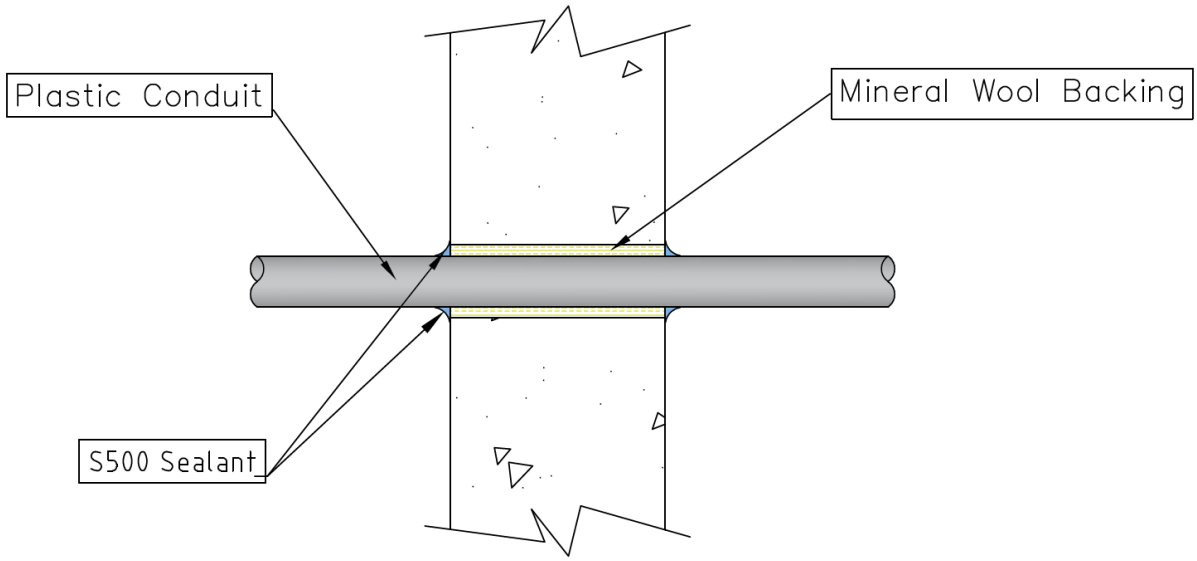
A.2.2 Double side penetration seal with plastic conduits

Penetration Seal: Combustible conduits (single) centered within the aperture and sealed with HEATSHIELD S500. Minimum separation between penetration seals of 100 mm.

Construction details:



Services	Opening size [mm]	S500 sealant details	Backing material	Annular space	Classification
PVC conduit, Diameter ≤ 20 mm, wall thickness 1.6 mm	Ø ≤ 32	Bead of 10 mm x 10 mm	Mineral stone wool (50 kg/m^3) flush with both surfaces of wall	6 mm	**E 120 C/C EI 120 C/C**

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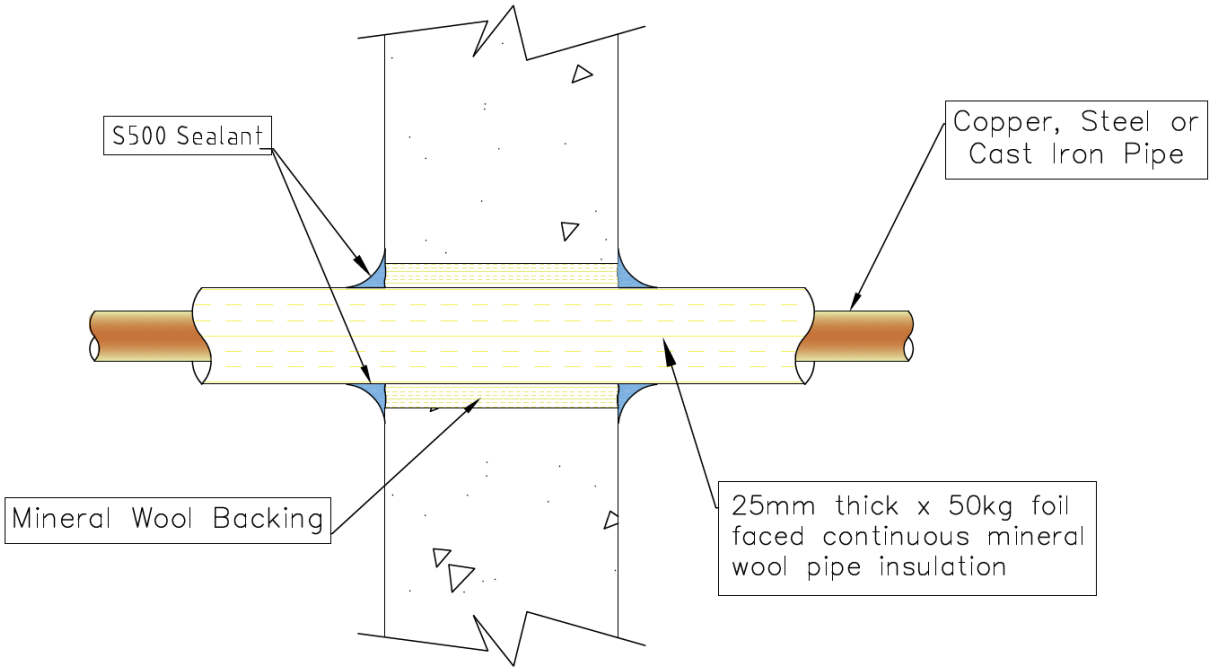
A.2.3 Double side penetration seal with insulated metal pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) centered within the aperture and sealed with HEATSHIELD S500. Minimum separation between penetration seals of 100 mm.

Construction details:



Services	Opening size [mm]	S500 sealant details	Backing material	Insulation	Annular space	Classification
Copper, steel or cast iron pipe up to 15 mm diameter and min. wall thickness of 0.7 mm	Ø ≤ 71	Bead of min. 10 mm x 10 mm	Mineral stone wool (50 kg/m^3) flush with both surfaces of wall	Min. 25 mm thick aluminium foil faced stone wool insulation (50 kg/m^3)	3 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	Ø ≤ 180	Bead of min. 11 mm x 10 mm			11 mm	**E 120 C/C EI 120 C/C**
Steel or cast iron pipe up to 152.4 mm diameter and min. wall thickness of 3.25 mm	Ø ≤ 220	Bead of min. 10 mm x 10 mm			9 mm	**E 120 C/C EI 120 C/C**

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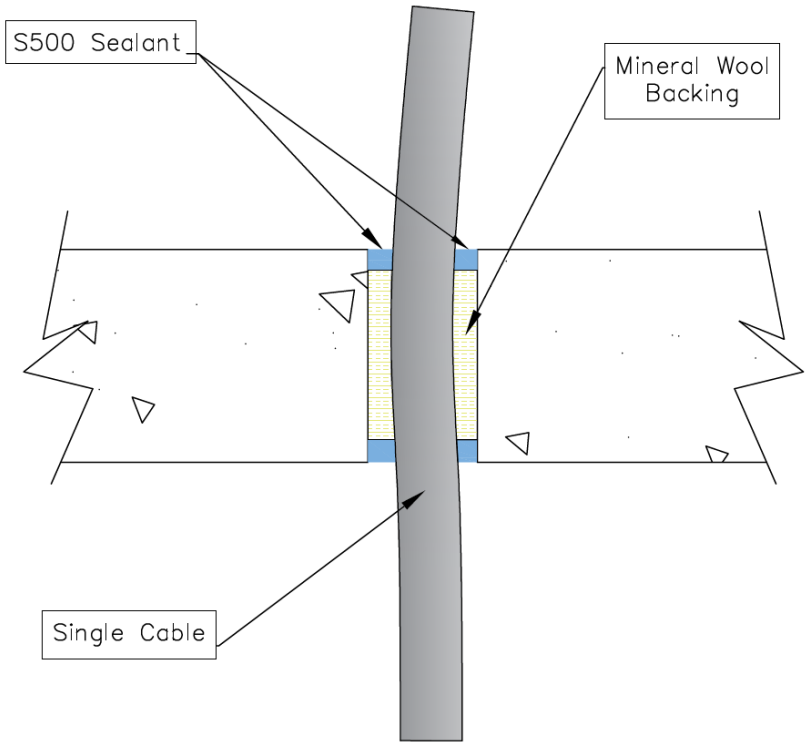
A.3 Rigid floor constructions with floor thickness of minimum 150 mm

A.3.1 Double side penetration seal with cables

Penetration Seal: Cables (single or bundles) centered within the aperture and sealed with HEATSHIELD S500. Minimum separation between penetration seals of 100 mm.

Construction details:



Services	Opening size [mm]	S500 sealant details	Backing material	Annular space	Classification
Electrical cable(s), single or bundle of up to 5 No., of NYY-J (5x1.5 mm^2) with a maximum outer diameter of 14 mm	Ø ≤ 82	10 mm depth flush with both surfaces of floor	Mineral stone wool (50 kg/m^3) recessed 10 mm into opening	22 mm	**E 120 EI 120**
Electrical cable(s), single or bundle of up to 10 No., of NYM-J (5x2.5 mm^2) with a maximum outer diameter of 14 mm	Ø ≤ 50	12 mm depth flush with both surfaces of floor	Mineral stone wool (50 kg/m^3) recessed 12 mm into opening	12 mm	**E 120 EI 120**
Single electrical cable of H07RN-F (4x95 mm^2) with a maximum outer diameter of 60 mm	Ø ≤ 71				**E 120 EI 120**

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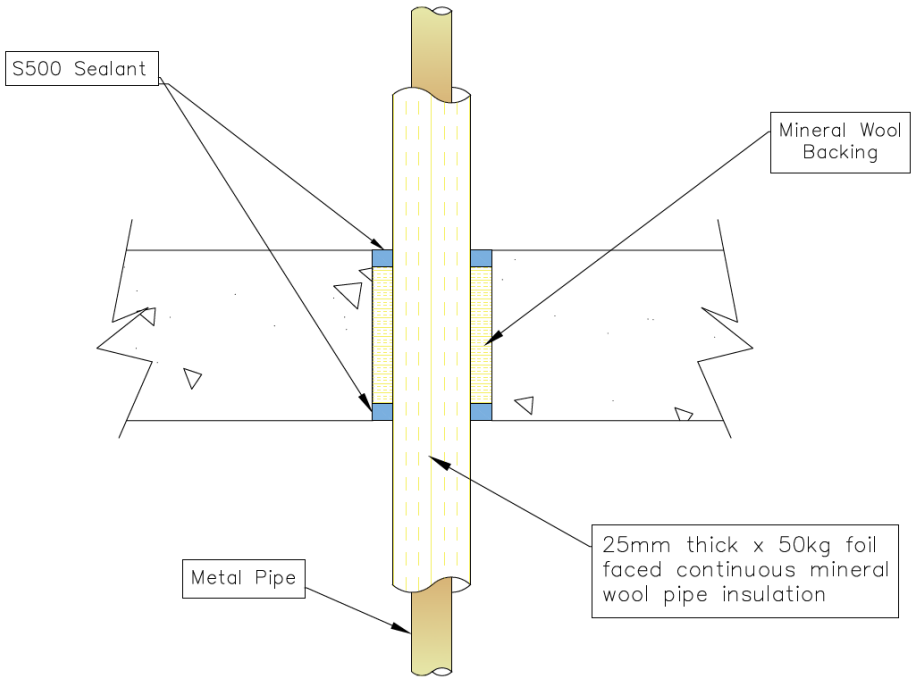
A.3.2 Double side penetration seal with insulated metal pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) centered within the aperture and sealed with HEATSHIELD S500. Minimum separation between penetration seals of 100 mm.

Construction details:



Services	Opening size [mm]	S500 sealant details	Backing material	Insulation	Annular space	Classification
Steel or cast iron pipe up to 22.2 mm diameter and min. wall thickness of 1.2 mm	Ø ≤ 102	Depth of 12 min. flush with both surfaces of floor	Mineral stone wool (50 kg/m^3) recessed 12 mm into opening	Min. 25 mm thick aluminium foil faced stone wool insulation (50 kg/m^3)	15 mm	**E 120 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 ≤ 180				11 mm	**E 120 C/C EI 90 C/C**
Steel or cast iron pipe up to 152.4 mm diameter and min. wall thickness of 3.25 mm	Ø ≤ 244	10 mm depth flush with both surfaces of floor	30 mm deep stone wool (50 kg/m^3) recessed 10 mm from both surfaces of floor		21 mm	**E 120 C/C EI 90 C/C**

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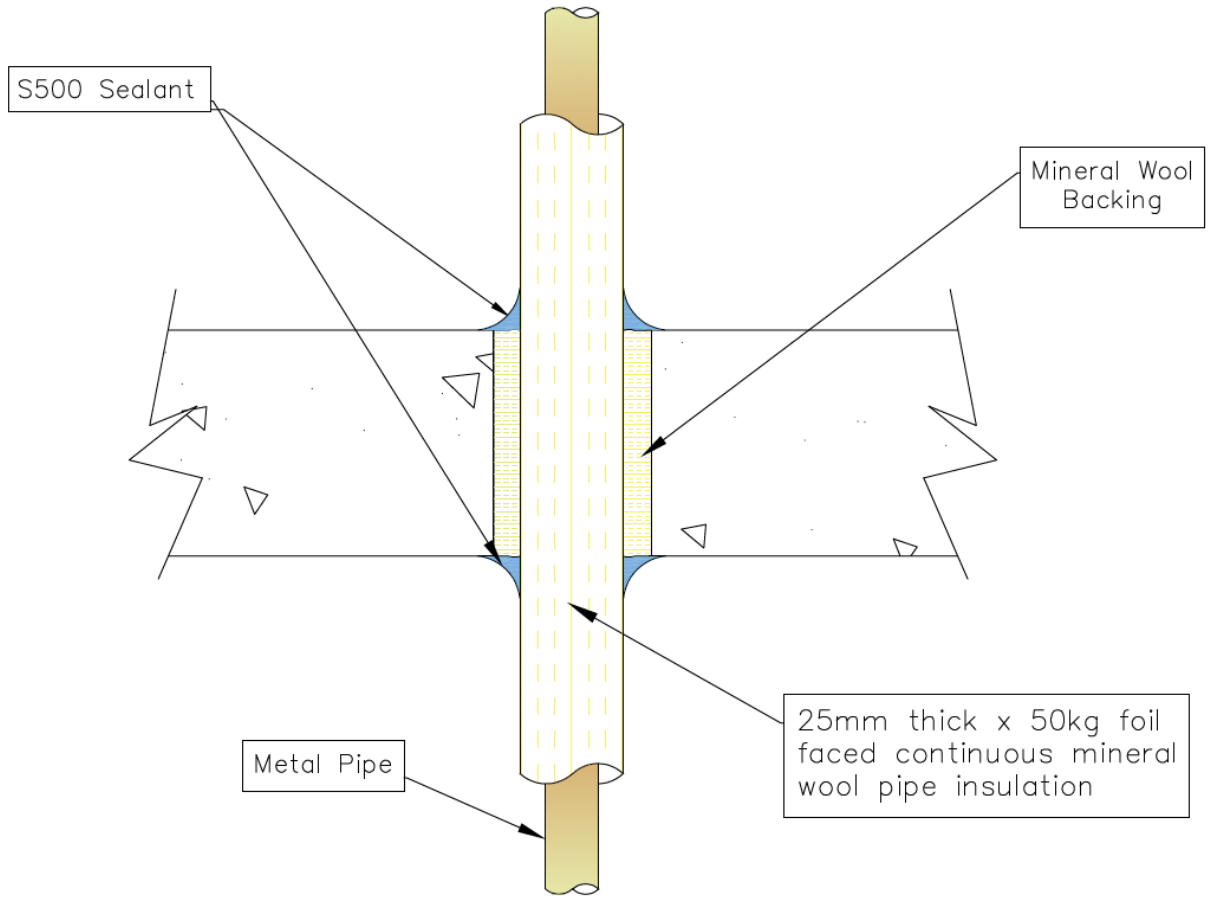
A.3.3 Double side penetration seal with insulated metal pipes (S500 bead application)

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) centered within the aperture and sealed with HEATSHIELD S500. Minimum separation between penetration seals of 100 mm.

Construction details:



Services	Opening size [mm]	S500 sealant details	Backing material	Insulation	Annular space	Classification
Copper, steel or cast iron pipe up to 15 mm diameter and min. wall thickness of 0.7 mm	Ø ≤ 71	Bead of min. 12 mm x 12 mm	Mineral stone wool (50 kg/m^3) flush with both surfaces of floor	Min. 25 mm thick aluminium foil faced stone wool insulation (50 kg/m^3)	3 mm	**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	Ø ≤ 132				7.5 mm	**E 120 C/C EI 120 C/C**

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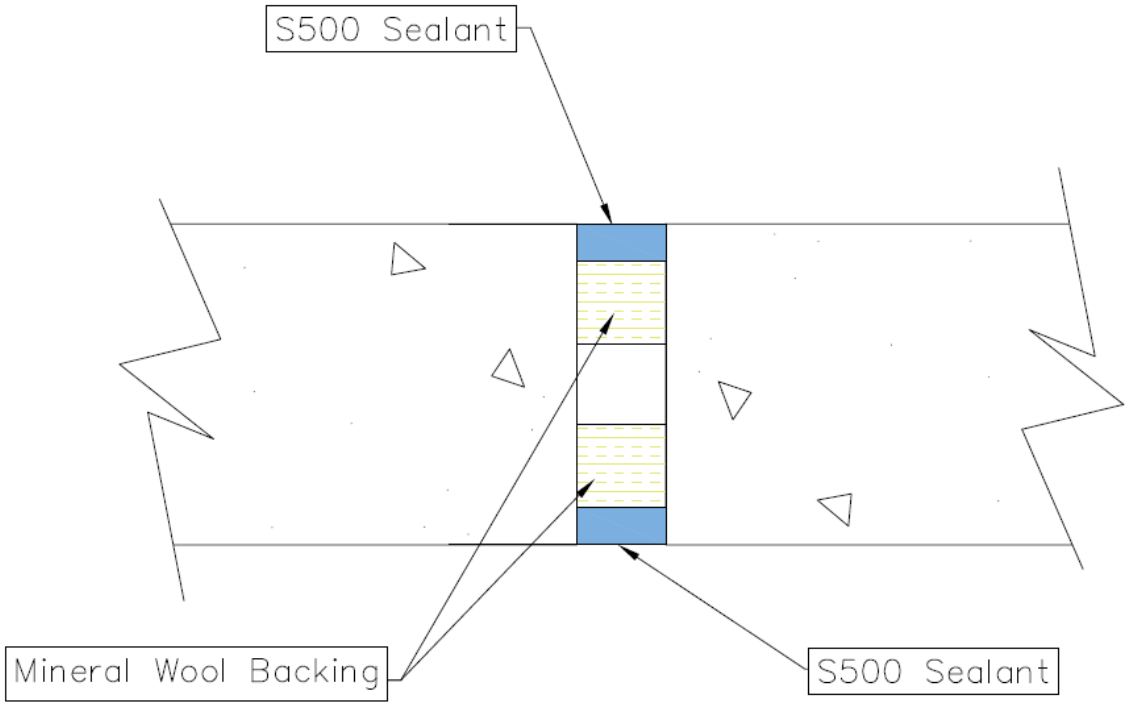
Resistance to Fire Classification (Linear Joint Seals) – HEATSHIELD S500
A.4 Rigid wall constructions with wall thickness of minimum 120 mm
A.4.1 Linear joint seals between walls (vertical)

Joint Seal: HEATSHIELD S500 to both sides of the wall backed with mineral stone wool (50kg/m^3) with a min. compression of 50% across the joint width. Backing material to be recessed from surface of wall to accommodate required sealant thickness.

Construction details:



Substrate	Sealant depth [mm]	Maximum joint width [mm]	Backing (minimum)	Classification
Concrete	12	15	45 mm depth	**EI 240-V-X-B-W10 to W15**
	12	25	45 mm depth	**EI 240-V-X-B-W10 to W25**
	20	40	40 mm depth	**EI 240-V-X-B-W10 to W40**
	7.5	15	50 mm depth	**EI 240-V-X-B-W10 to W15**

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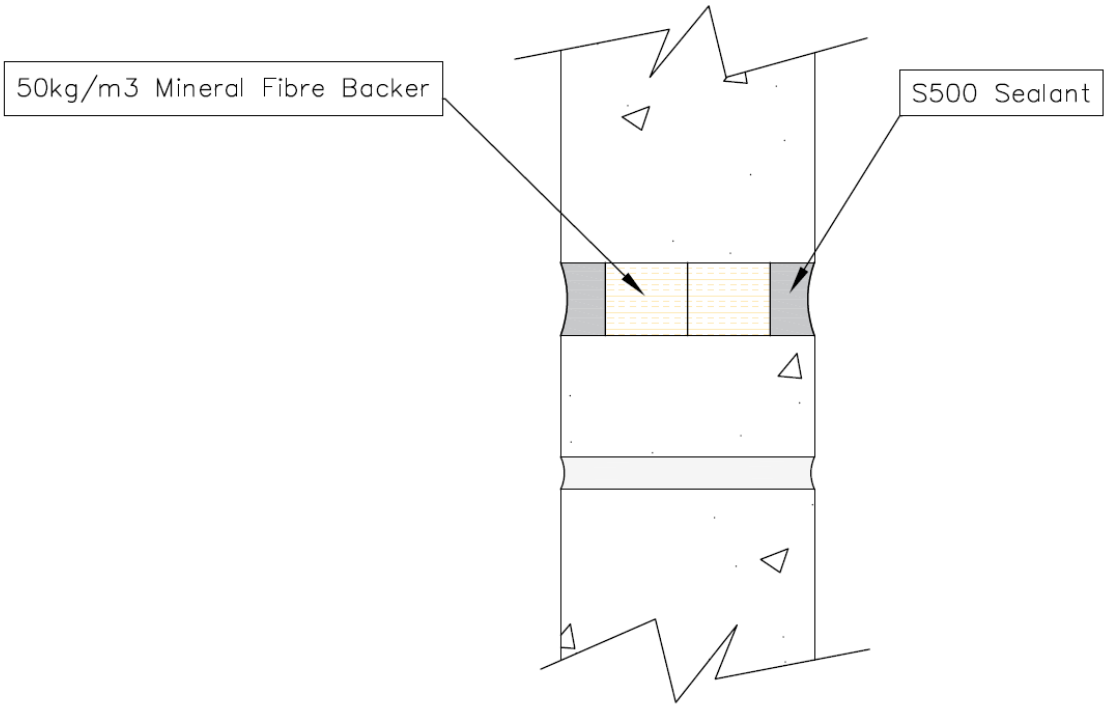
A.4.2 Linear joint seals between walls (horizontal)

Joint Seal: HEATSHIELD S500 to both sides of the wall backed with mineral stone wool (50kg/m^3) with a min. compression of 50% across the joint width. Backing material to be recessed from surface of wall to accommodate required sealant thickness.

Construction details:



Substrate	Sealant depth [mm]	Maximum joint width [mm]	Backing (minimum)	Classification
Concrete	12	15	45 mm depth	**EI 240-T-X-B-W10 to W15**
	15	30	45 mm depth	**E 240-T-X-B-W10 to W30** **EI 180-T-X-B-W10 to W30**

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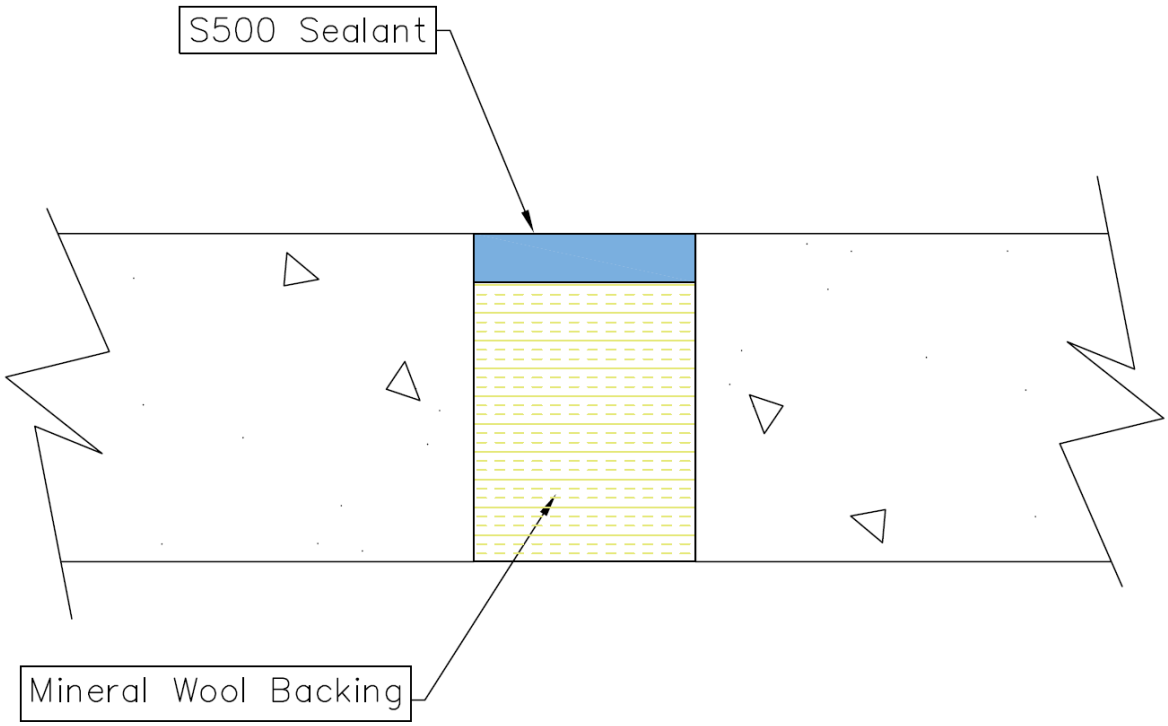
A.5 Rigid floor constructions with floor thickness of minimum 150 mm
A.5.1 Linear joint or gap seal between floor slabs

Joint Seal: HEATSHIELD S500 applied flush to top side of floor backed with mineral stone wool (50kg/m^3) with a min. compression of 50% across the joint width. Backing material to be recessed from top surface of floor to accommodate required sealant thickness.

Construction details:



Substrate	Sealant depth [mm]	Maximum joint width [mm]	Backing (minimum)	Classification
Concrete	12	15	138 mm depth	**EI 120-H-X-B-W 00 to W 15**
	12	25	138 mm depth	**EI 120-H-X-B-W 00 to W 25**

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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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