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designated according to Article 29 of the Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment, [www.eota.eu](http://www.eota.eu))

## European Technical Assessment

**ETA 15/0819**  
**of 04/12/2015**

**Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: UL International (UK) Ltd**

**Trade name of the construction product**

K-FIRE Sealant S Plus

**Product family to which the construction product belongs**

Fire Stopping and Sealing Product:  
 • Penetration Seals

**Manufacturer**

L' ISOLANTE K-FLEX UK Ltd  
 Unit 9 Coalville Business Park,  
 Jackson Street  
 Coalville  
 Leicestershire  
 LE67 3NR

**Manufacturing plant(s)**

A/001

**This European Technical Assessment contains**

11 pages including 1 Annex which forms an integral part of this assessment.

**This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of**

ETAG 026-2, edition 2011, used as European Assessment Document (EAD).

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may be made, with the written consent of the issuing Technical Assessment Body. Any partial reproduction has to be identified as such.

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## I. SPECIFIC PARTS OF THE EUROPEAN TECHNICAL ASSESSMENT

### 1 Technical description of the product

- 1) K-FIRE Sealant S Plus is a sealant used to form a penetration seal around metallic pipes 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.
- 2) The K-FIRE Sealant S Plus is supplied in liquid form contained within 310 ml cartridges, 600ml foils or in 5, 10, 15 or 19 litre tubs. The sealant is gunned or trowelled into the aperture in or between the separating element/elements and where appropriate around the service or services, to a specified depth utilising various backing materials.
- 3) The applicant has presented a declaration that the product and/or constituents of the product contains no substances which have been 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.

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.

- 4) The use category of K-FIRE Sealant S Plus in relation to BWR 3 (Health, hygiene and environment) is IA1, S/W3.

### 2 Specification of the intended uses of the product in accordance with the applicable European Assessment Document (Hereinafter EAD): ETAG 026-2

Detailed information and data is given in Annex A.

- 1) The intended use of system K-FIRE Sealant S Plus is to reinstate the fire resistance performance of rigid wall constructions and rigid floor constructions where they are penetrated by various metal pipe services with and without combustible insulation and electrical cables.
- 2) The specific elements of construction that the system K-FIRE Sealant S Plus may be used to provide a penetration seal in, are as follows:

Rigid walls:	The wall must have a minimum thickness of 150 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650 kg/m <sup>3</sup> .
Rigid floors:	The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m <sup>3</sup> .

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

- 3) The system K-FIRE Sealant S Plus may be used to provide a penetration seal with specific single insulated metal pipes, uninsulated metal pipes and with specific electrical cables, single or in a bundle (for details see Annex A).

- 4) Apertures in the separating element shall be maximum 80 mm diameter. The annular space/gap around the services shall be infilled with stone wool insulation backing material and K-FIRE Sealant S Plus sealant. Blank seals (without services) are not permitted. Blank seals (without services) are not permitted. For full details, see Annex A.
- 5) Pipes shall be supported at maximum 350 mm away from both faces of the wall constructions and from the upper face of floor constructions.
- 6) The provisions made in this European Technical Assessment are based on an assumed working life of the K-FIRE Sealant S Plus of 10 years, provided that the conditions laid down in sections manufacturer's instructions and datasheet 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.
- 7) Type X: Intended for use at conditions exposed to weathering and in the temperature range - 20°C to 70°C. Also suitable for internal conditions.

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

Product-type: Sealant		Intended use: Linear Joint & Gap Seal
Basic requirement for construction work	Basic Requirement	Performance
<b>BWR 1 Mechanical resistance and stability</b>		
-	None	Not relevant
<b>BWR 2 Safety in case of fire</b>		
EN 13501-1	Reaction to fire	Class F
EN 13501-2	Resistance to fire	Annex A
<b>BWR 3 Hygiene, health and environment</b>		
EN 1026:2000	Air permeability (material property)	No performance determined
ETAG 026-3, Annex C	Water permeability (material property)	No performance determined
Declaration of manufacturer	Release of dangerous substances	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 ISO 11600	Adhesion	No performance determined
<b>BWR 5 Protection against noise</b>		
EN 10140-2/ EN ISO 717-1	Airborne sound insulation	No performance determined
EN 10140-3/ EN ISO 717-2	Impact sound insulation	No performance determined
<b>BWR 6 Energy economy and heat retention</b>		
EN 12664, EN 12667 or EN 12939	Thermal properties	No performance determined
EN ISO 12572 EN 12086	Water vapour permeability	No performance determined
<b>General aspects relating to fitness for use</b>		
ISO 8339: 2005, ISO 9046: 2004 & ISO 7389: 2003	Durability and serviceability	X
<b>BWR 7 Sustainable use of natural resources</b>		
-	-	No performance determined

**4 ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE (HEREINAFTER AVCP) SYSTEM APPLIED, WITH REFERENCE TO ITS LEGAL BASE**

According to the decision 1999/454/EC – Commission Decision of date 22nd June 1999 on the procedure for attesting the conformity of construction products pursuant to Article 20(2) of Council Directive 89/106/EEC as regards fire stopping, fire sealing and fire protective products, published in the Official Journal of the European Union (OJEU) L178/52 of 14/07/1999, see <http://eur-lex.europa.eu/JOIndex.do> of the European Commission<sup>1</sup>, as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table(s) applies (apply).

<b>Product(s)</b>	<b>Intended use(s)</b>	<b>Level(s) or class(es)</b>	<b>System(s)</b>
Fire stopping and Fire Sealing Products	For fire compartmentation and/or fire protection or fire performance	Any	1

**5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD**

Tasks of the manufacturer:

Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the product is in conformity with this European technical Assessment.

The manufacturer may only use initial / raw / constituent materials stated in the technical documentation of this European Technical Assessment.

The factory production control shall be in accordance with the Control Plan of 20th December 2012 relating to the European technical assessment ETA 15/0819 issued on 04/12/2015 which is part of the technical documentation of this European technical approval. The "Control Plan" is laid down in the context of the factory production control system operated by the manufacturer and deposited at UL International (UK) Ltd.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the Control Plan.

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<sup>1</sup> Official Journal of the European Communities L178/52 of 14/7/1999

Other tasks of the manufacturer

Additional information

The manufacturer shall provide a technical data sheet and an installation instruction with the following minimum information:

(a) Technical data sheet:

- Field of application:
- Building elements for which the penetration seal is suitable, type and properties of the building elements like minimum thickness, density, and - in case of lightweight constructions – the construction requirements.
- Limits in size, minimum thickness etc. of the penetration seal
- Construction of the penetration seal including the necessary components and additional products (e.g. backfilling material) with clear indication whether they are generic or specific.
- Services which the penetration seal is suitable, type and properties of the services like material, diameter, thickness etc. in case of pipes including insulation materials; necessary/allowed supports/fixings (e.g. cable trays)

(b) Installation instruction:

- Steps to be followed
- Procedure in case of retrofitting
- Stipulations on maintenance, repair and replacement

**6 Issued on:**

**4<sup>th</sup> December 2015**

Report by:



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Building and Life Safety Technologies

Reviewed by:



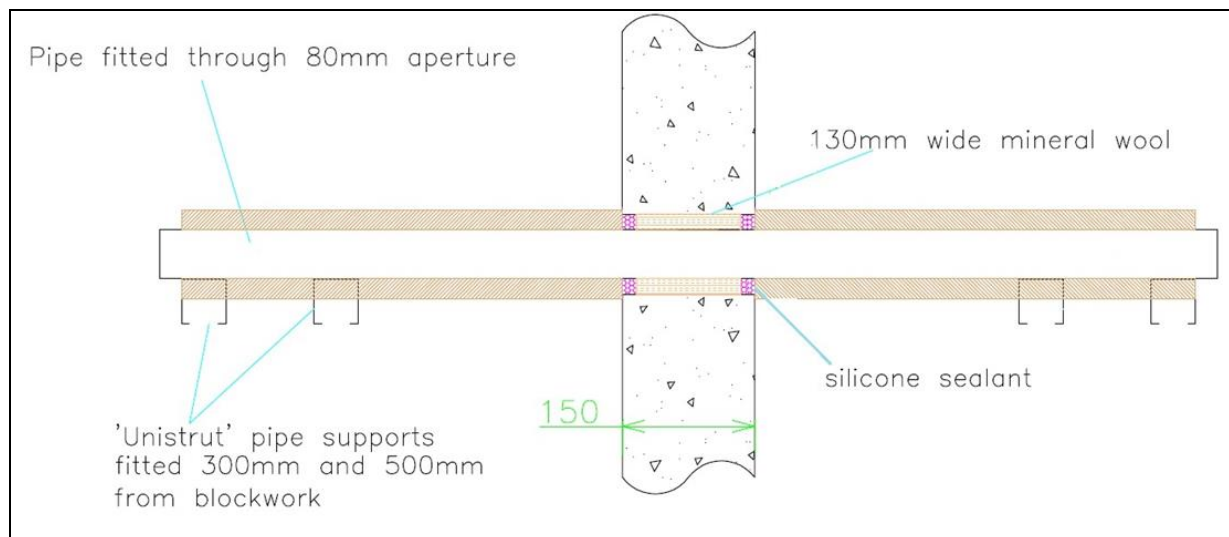
C. W. Miles  
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**For and on behalf of UL International (UK) Ltd.**

## ANNEX A – Resistance to Fire Classification – K-FIRE Sealant S Plus

### A.1 Rigid wall constructions with wall thickness of minimum 150 mm

#### A.1.1 Penetration seal with metal pipe including continued interrupted (CI) or minimum 500 mm long local interrupted (LI) combustible insulation



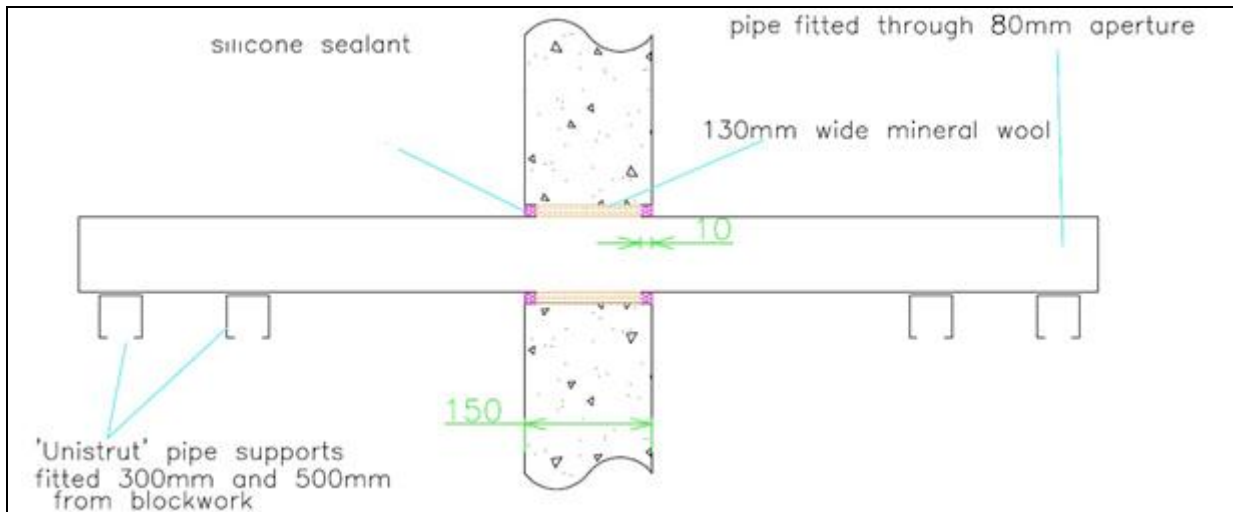
#### A.1.1.1

K-FIRE Sealant S Plus Penetration Seals in Rigid Walls 150 mm thick (min.)				
Aperture size (mm)	Seal composition	Service(s)	Position of service(s)	Classification
80 diameter	Single 10 mm deep K-FIRE Sealant S Plus flush to both faces of the wall, backed with 130 mm deep Stone wool (90 kg/m <sup>3</sup> )	Single steel pipe 40 mm diameter and 3.2 – 14.2 mm wall, insulated with 25 mm thick 'Class B*' Nitrile Rubber insulation	Central	EI 240 C/U
		Single copper pipe 38 mm diameter and 1.2 – 14.2 mm wall, insulated with 25 mm thick 'Class B*' Nitrile Rubber insulation		EI 120 C/U

\* Classified to EN 13501-1



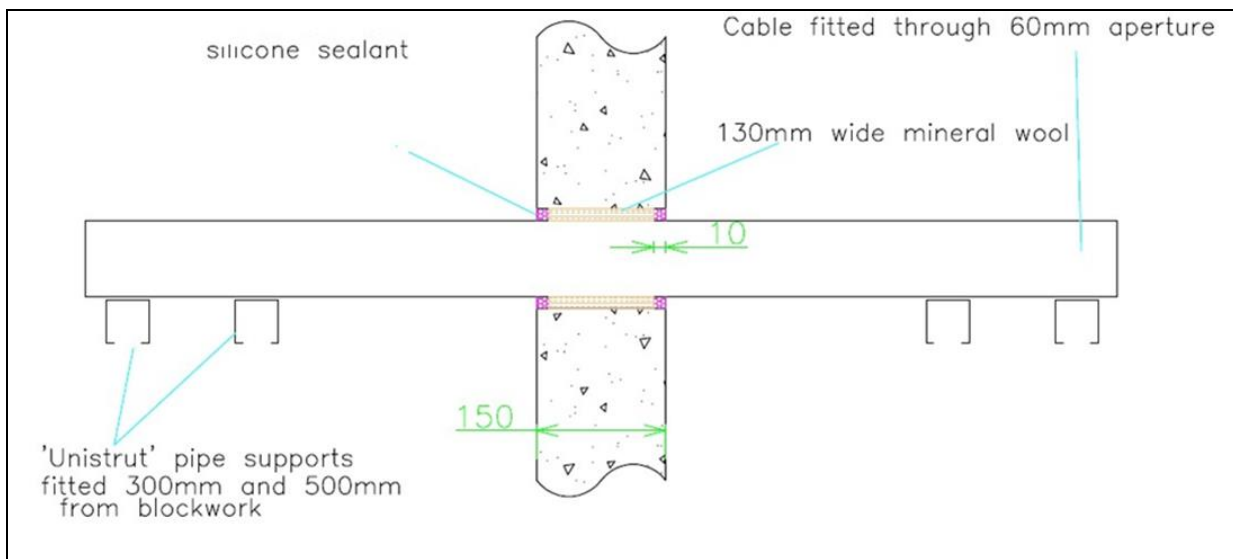
**A.1.2 Penetration seal with uninsulated metal pipe**



**A.1.2.1**

<b>K-FIRE Sealant S Plus Penetration Seals in Rigid Walls 150 mm thick (min.)</b>				
<b>Aperture size (mm)</b>	<b>Seal composition</b>	<b>Service(s)</b>	<b>Position of service(s)</b>	<b>Classification</b>
80 diameter	Single 10 mm deep K-FIRE Sealant S Plus flush to both faces of the wall, backed with 130 mm deep Stone wool (90 kg/m <sup>3</sup> )	Single steel pipe 40 mm diameter and 3.2 – 14.2 mm wall	Central	<b>E 240 C/U</b>
		Single copper pipe 38 mm diameter and 1.2 – 14.2 mm wall		<b>EI 120 C/U</b>
				<b>E 120 C/U</b>

**A.1.3 Penetration seal with cables**



**A.1.3.1**

<b>K-FIRE Sealant S Plus Penetration Seals in Rigid Walls 150 mm thick (min.)</b>				
<b>Aperture size (mm)</b>	<b>Seal composition</b>	<b>Service(s)</b>	<b>Position of service(s)</b>	<b>Classification</b>
60 diameter	Single 10 mm deep K-FIRE Sealant S Plus flush to both faces of the wall, backed with 130 mm deep Stone wool (90 kg/m <sup>3</sup> )	Bunch of 4 x 'A3' cables + 1 x 'C3' cable	Central	<b>EI 240</b>
		Single 'E' cable		

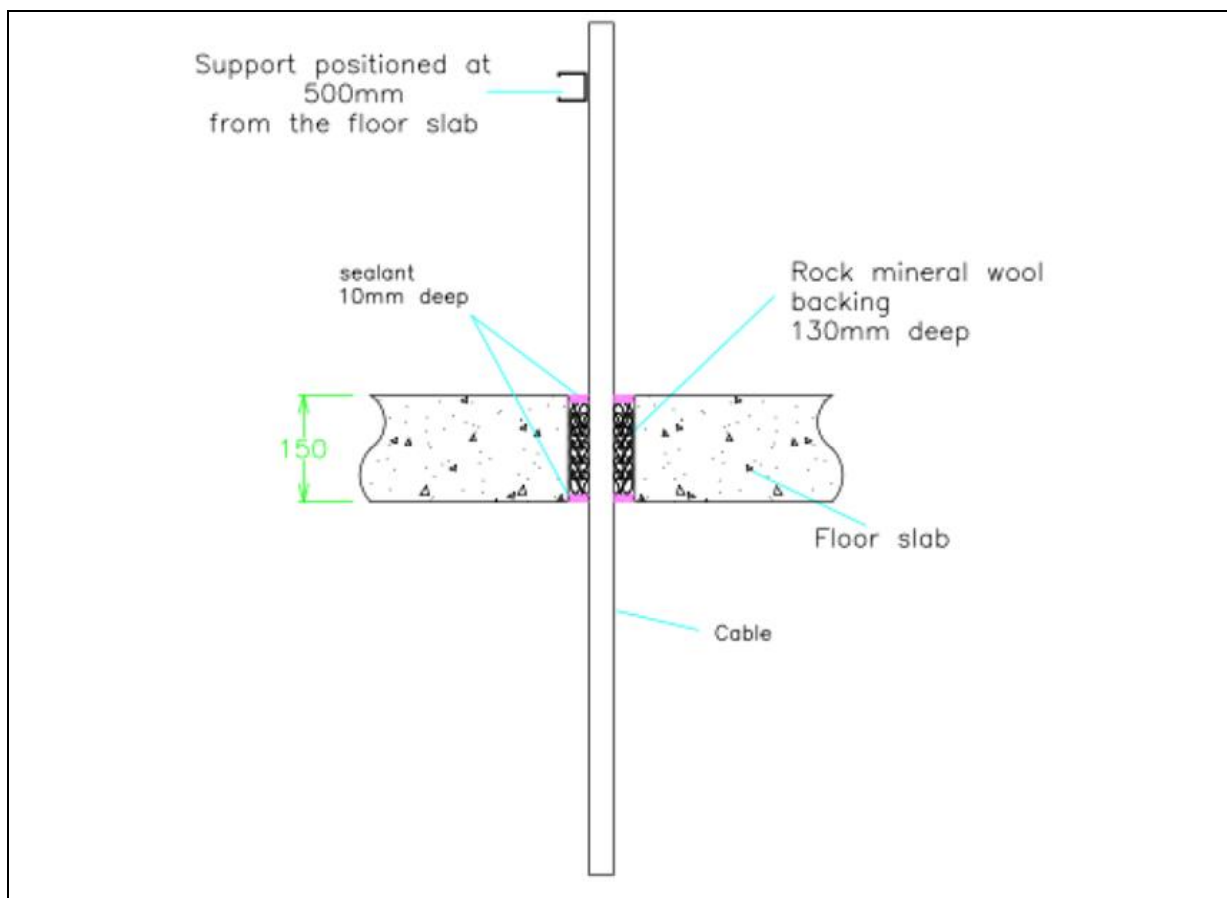
A3 cable = 5 x 1.5 mm<sup>2</sup> core HD604.5 electrical cable with XLPE insulation, EVA sheath and 13 mm diameter

C3 cable = 4 x 95 mm<sup>2</sup> core HD604.5 electrical cable with XLPE insulation, EVA sheath and 42 mm diameter

E cable = 1 x 185 mm<sup>2</sup> core HD603.3 electrical cable with PVC insulation, PVC sheath and 23-27 mm diameter

**A.2 Rigid floor constructions with floor thickness of minimum 150 mm**

**A.2.1 Penetration seal with cables**



**A.2.1.1**

<b>K-FIRE Sealant S Plus Penetration Seals in Rigid Floors 150 mm thick (min.)</b>				
<b>Aperture size (mm)</b>	<b>Seal composition</b>	<b>Service(s)</b>	<b>Position of service(s)</b>	<b>Classification</b>
80 diameter	Single 10 mm deep K-FIRE Sealant S Plus flush to both faces of the floor, backed with 130 mm deep Stone wool (90 kg/m <sup>3</sup> )	Single 'E' cable	Central	<b>E 240</b> <b>EI 45</b>

E cable = 1 x 185 mm<sup>2</sup> core HD603.3 electrical cable with PVC insulation, PVC sheath and 23-27 mm diameter