



UL INTERNATIONAL (UK) LTD  
 Womersley House, Building C,  
 The Guildway,  
 Old Portsmouth Road,  
 Guildford. GU3 1LR.  
 United Kingdom.



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 15/0756 of 29/10/2015

**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-Flex K-Fire Collar

**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/005

**This European Technical Assessment contains**

12 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.

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## I. SPECIFIC PARTS OF THE EUROPEAN TECHNICAL ASSESSMENT

### 1 Technical description of the product

- 1) K-Flex K-Fire Collar is a pipe closure device used to form penetration seals where combustible pipes, cables and metal pipes with insulation penetrate walls and floors.
- 2) The K-Flex K-Fire Collar is supplied with intumescent liner complete within metal steel shell, to be clamped around the service and screw fixed back to the supporting element. The K-Flex K-Fire Collar may be supplied with powder coated steel shells incorporating a hinge and toggle latch, stainless steel half shells with slide together fixing and galvanized steel half shells with slide together fixing.
- 3) The applicant has submitted a written 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-Flex K-Fire Collar in relation to BWR 4 (safety in use) 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.

The intended use of system K-Flex K-Fire Collar is to reinstate the fire resistance performance of flexible wall and rigid wall and floor constructions, where they are penetrated by services.

- 1) The specific elements of construction that the system K-Flex K-Fire Collar may be used to provide a penetration seal in, are as follows:

Flexible walls:	The wall must have a minimum thickness of 100 mm and comprise steel studs lined on both faces with minimum 2 layers of 12.5 mm thick boards.
Rigid walls:	The wall must have a minimum thickness of 100 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.

- 2) The system K-Flex K-Fire Collar may be used to provide a penetration seal with specific supporting constructions and substrates (for details see Annex A).

- 3) The provisions made in this European Technical Assessment are based on an assumed working life of the K-Flex K-Fire Collar 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.
- 4) Type Y<sub>2</sub>: intended for use at temperatures below 0°C, but with no exposure to rain nor UV. Includes lower use categories.

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

Product-type: Pipe Collar		Intended use: Penetration 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 026-2, Annex C	Water permeability (material property)	No performance determined
Declaration of manufacturer	Release of dangerous substances	Use categories: IA1, S/W3 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	Adhesion	No performance determined
<b>BWR 5 Protection against noise</b>		
EN 10140-2/ EN ISO 717-1	Airborne 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>		
EOTA TR 024:2009, clause 3.1.11 & 3.1.12	Durability and serviceability	Y <sub>2</sub>
<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 23<sup>rd</sup> January 2014 relating to the European Technical Assessment ETA 15/0756 issued on 29/10/15 which is part of the technical documentation of this European Technical Assessment. 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.

(b) Installation instruction:

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

**6 Issued on:**

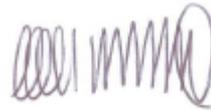
**29<sup>th</sup> October 2015**

Report by:



C. Johnson  
Staff Engineer  
Building and Life Safety Technologies

Reviewed by:



C. W. Miles  
Business Manager – Europe & Latin America  
Building and Life Safety Technologies

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

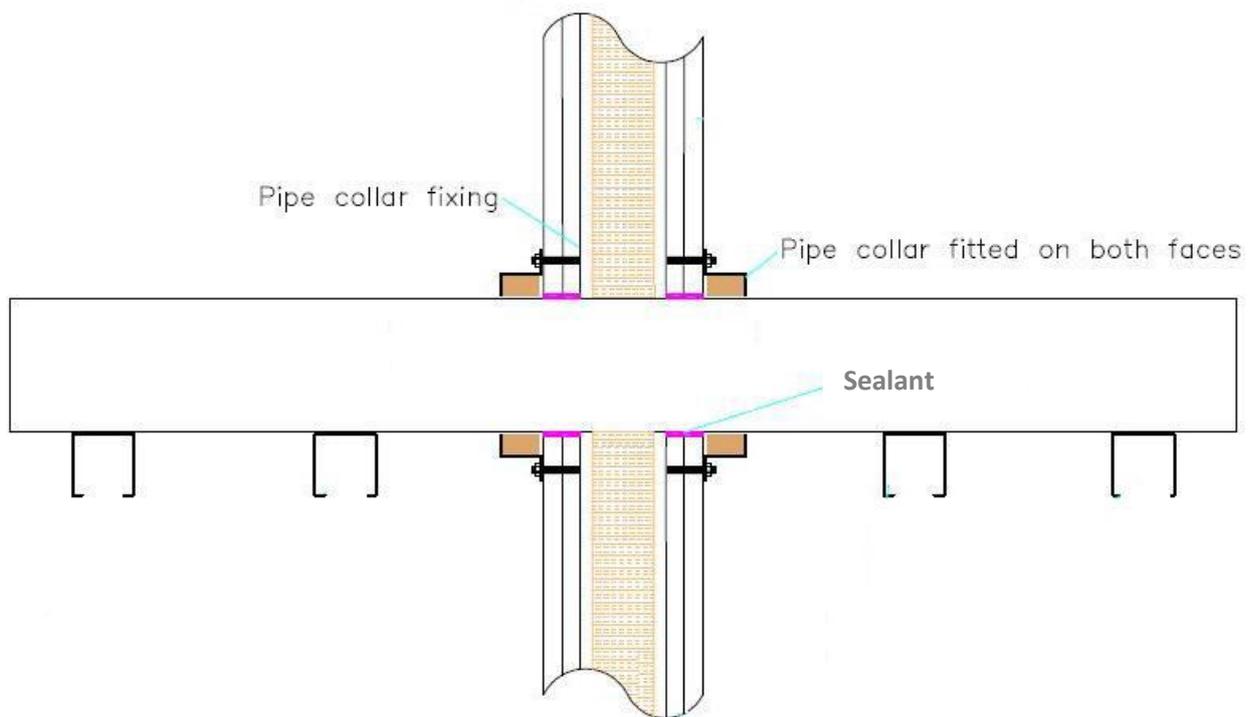
## ANNEX A – Resistance to Fire Classification – K-Flex K-Fire Collar

### A.1 Flexible or rigid wall constructions with wall thickness of minimum 100 mm

#### A.1.1 Penetration seals, in drywalls and concrete/masonry walls

**Penetration Seal:** Insulated metal and combustible pipes and telecoms cables fitted with K-Flex K-Fire Collar to both sides of the wall.

Construction details:



### A.1.1.1

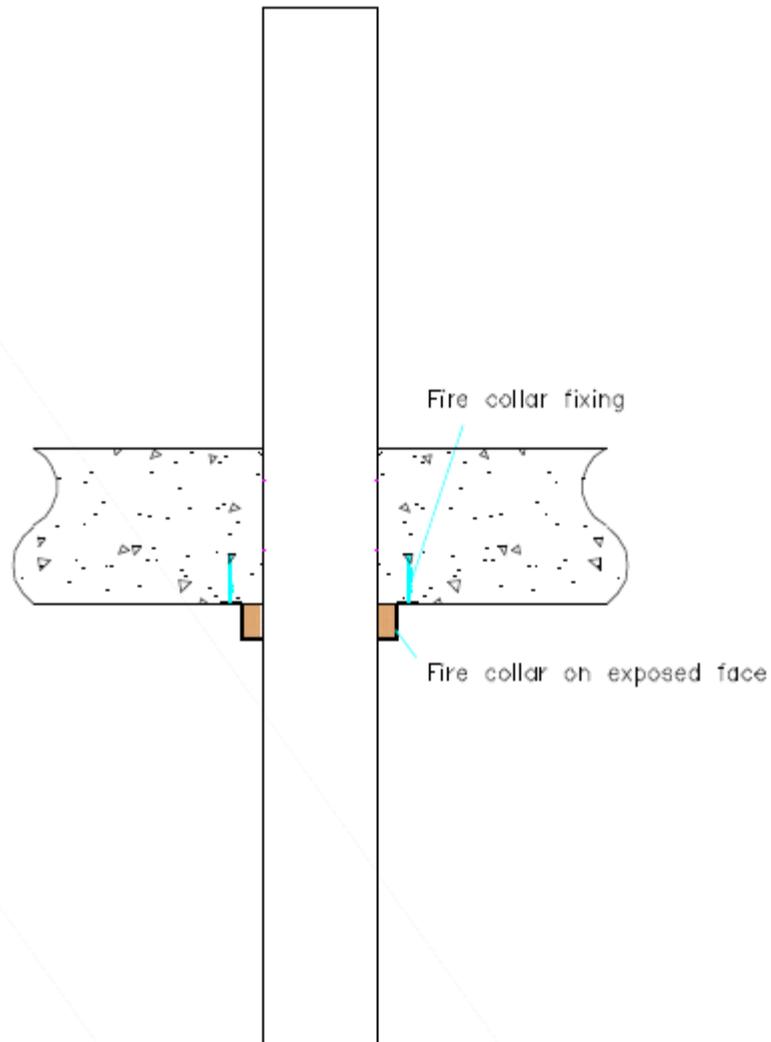
Services	Collar Inlay	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1		
Diameter 32 mm, wall thickness 3-3.2 mm	50 x 4 mm	EI 120 U/U, EI 120 C/U, EI 120 U/C, EI 120 C/C
Diameter 38 mm, wall thickness 3-3.2 mm		
Diameter 40 mm, wall thickness 3-3.2 mm		
Diameter 42.2 mm, wall thickness 3.2 mm		
Diameter 46 mm, wall thickness 3.2 mm		
Diameter 48.3 mm, wall thickness 3.2 mm		
Diameter 50 mm, wall thickness 3.2 mm		
Diameter 55 mm, wall thickness 3.2 mm		
Diameter 82 mm, wall thickness 3.2 mm		
Diameter 110 mm, wall thickness 6.6 mm	50 x 8 mm	
Diameter 160 mm, wall thickness 9.5 mm	60 x 12 mm	
Diameter 160 mm, wall thickness 3.2 mm	60 x 18 mm	
Diameter 200 mm, wall thickness 3.9 mm	125 x 20 mm	
PE pipe according to EN 1519-1, EN 12201-2 and EN 12FX 4006-1, ABS pipe according to EN 1455-1 and SAN+PVC pipe according to EN 1565-1		
Diameter 32 mm, wall thickness 3.7-4.6 mm	50 x 4 mm	EI 120 U/U, EI 120 C/U, EI 120 U/C, EI 120 C/C
Diameter 38 mm, wall thickness 3.7-4.6 mm		
Diameter 40 mm, wall thickness 3.7-4.6 mm		
Diameter 42.2 mm, wall thickness 4.6 mm		
Diameter 46 mm, wall thickness 4.6 mm		
Diameter 48.3 mm, wall thickness 4.6 mm		
Diameter 50 mm, wall thickness 4.6 mm		
Diameter 75 mm, wall thickness 6.8 mm	50 x 6 mm	EI 60 U/U, EI 60 C/U, EI 60 U/C, EI 60 C/C
Diameter 75 mm, wall thickness 5.1 mm	50 x 8 mm	EI 120 U/U, EI 120 C/U, EI 120 U/C, EI 120 C/C
Diameter 90 mm, wall thickness 5.1 mm	50 x 8 mm	
Diameter 110 mm, wall thickness 6.2	50 x 8 mm	EI 120 U/U, EI 120 C/U, EI 120 U/C, EI 120 C/C
Diameter 110 mm, wall thickness 10 mm	50 x 8 mm	EI 60 U/U, EI 60 C/U, EI 60 U/C, EI 60 C/C
Diameter 160 mm, wall thickness 7 mm	60 x 17 mm	EI 120 U/U, EI 120 C/U, EI 120 U/C, EI 120 C/C
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1 with 19 mm Armaflex insulation		
Diameter 55 mm, wall thickness 2 mm	50 x 8 mm	E 120 U/U, E 120 C/U, E 120 U/C, E 120 C/C EI 90 U/U, EI 90 C/U, EI 90 U/C, EI 90 C/C
Copper with 19 mm thick Armaflex insulation		
Diameter 54 mm, wall thickness 0.8-14.2 mm	50 x 8 mm	E 120 U/U, E 120 C/U, E 120 U/C, E 120 C/C EI 60 U/U, EI 60 C/U, EI 60 U/C, EI 60 C/C
Telecoms cables up to 21 mm diameter in bundles up to 100 mm diameter^		
Up to 21 mm diameter in bundles up to 100 mm diameter^		E 120, EI 90
Up to 21 mm diameter in bundles up to 100 mm diameter^ wrapped with 300 mm long Insuwrap material	50 x 8 mm	EI 120

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

### A.2.1 Penetration seals, in concrete floors

**Penetration Seal:** Combustible pipes fitted with K-Flex K-Fire Collar to the soffit of the floor.

Construction details:



### A.2.1.1

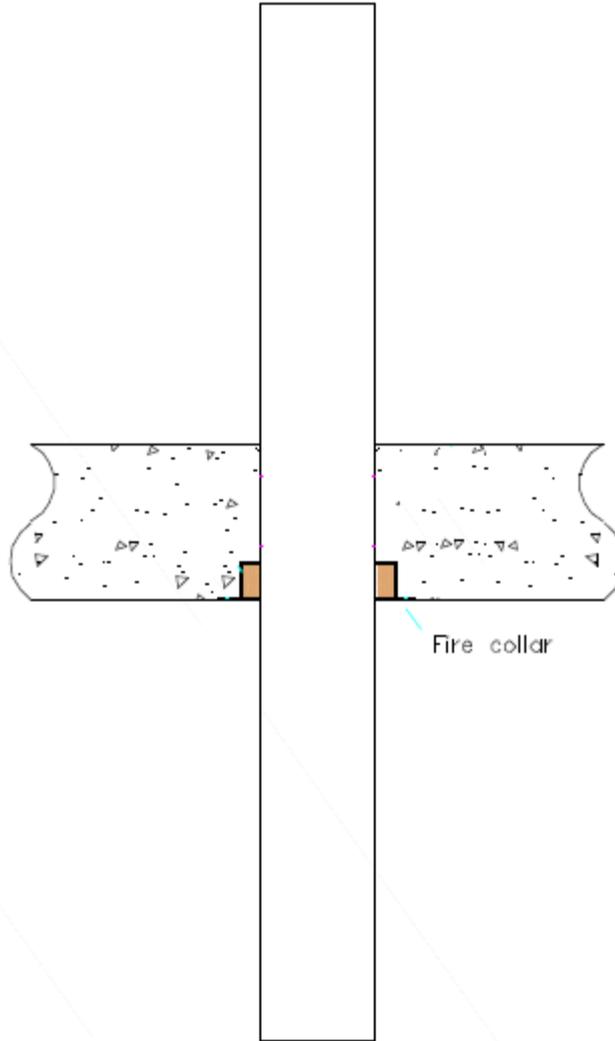
Services	Collar Inlay	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1		
Diameter 32 mm, wall thickness 3 mm	50 x 4 mm	EI 240 U/U, EI 240 C/U, EI 240 U/C, EI 240 C/C
Diameter 38 mm, wall thickness 3 mm		
Diameter 40 mm, wall thickness 3 mm		EI 180 U/U, EI 180 C/U, EI 180 U/C, EI 180 C/C
Diameter 42.2 mm, wall thickness 2 mm		
Diameter 46 mm, wall thickness 2 mm		
Diameter 48.3 mm, wall thickness 2 mm		
Diameter 50 mm, wall thickness 2 mm		
Diameter 55 mm, wall thickness 2 mm	50 x 6 mm	
Diameter 82 mm, wall thickness 3.2 mm	50 x 8 mm	
Diameter 110 mm, wall thickness 6.6 mm	60 x 18 mm	
Diameter 160 mm, wall thickness 9.5 mm	125 x 20 mm	
Diameter 200 mm, wall thickness 3.9 mm		
PE pipe according to EN 1519-1, EN 12201-2 and EN 12FX 4006-1, ABS pipe according to EN 1455-1 and SAN+PVC pipe according to EN 1565-1		
Diameter 32 mm, wall thickness 3.7 mm	50 x 4 mm	EI 180 U/U, EI 180 C/U, EI 180 U/C, EI 180 C/C
Diameter 38 mm, wall thickness 3.7 mm		
Diameter 40 mm, wall thickness 3.7 mm		
Diameter 75 mm, wall thickness 8.2 mm	50 x 8 mm	EI 240 U/U, EI 240 C/U, EI 240 U/C, EI 240 C/C
Diameter 110 mm, wall thickness 8.2 mm		
Diameter 160 mm, wall thickness 6.2 mm	60 x 18 mm	EI 180 U/U, EI 180 C/U, EI 180 U/C, EI 180 C/C

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

#### A.3.1 Penetration seals, in concrete floors

**Penetration Seal:** Combustible pipes fitted with K-Flex K-Fire Collar to the recessed/cast in, within the soffit of the floor.

Construction details:



##### A.3.1.1

Services	Collar Inlay	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1		
Diameter 110 mm, wall thickness 3.2 mm	50 x 8 mm	EI 90 U/U, EI 90 C/U, EI 90 U/C, EI 90 C/C
Diameter 200 mm, wall thickness 3.9 mm	125 x 20 mm	EI 240 U/U, EI 240 C/U, EI 240 U/C, EI 240 C/C