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UL INTERNATIONAL (UK) LTD
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United Kingdom.

Designated according to Article 29 of Regulation (EU) No 305/2011

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

European Technical Assessment

ETA 19/0683
of 28/10/2019

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	Fire Box
Product family to which the construction product belongs	Fire Stopping and Sealing Product: • Penetration Seals
Manufacturer	FireSeal AB Esbogatan 14 164 07 Kista Sweden
Manufacturing plant(s)	A/005
This European Technical Assessment contains	20 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	EAD 350454-00-1104, September 2017.

Table of Contents

I. SPECIFIC PARTS OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of the product

1) Fire Box is cable box device used to form penetration seals where combustible pipes, cables and metal pipes with insulation penetrate walls and floors.

2) The Fire Box is supplied with intumescent liner complete within metal steel shell, to be installed within and screw fixed back to the supporting element.

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 Fire Box in relation to BWR 3 (Hygiene, health and environment) is IA1

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

Detailed information and data is given in Annex A.

The intended use of system Fire Box 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 Fire Box 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^3.
   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^3.

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

2) The system Fire Box 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 Fire Box 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_2: 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: Cable box/Fire Box	Intended use: Penetration Seal	
Assessment method	Essential characteristic	Product Performance
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	Class F
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 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	Y_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

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[1], 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).

Product(s)	Intended use(s)	Level(s) or class(es)	System(s)
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 23rd January 2014 relating to the European Technical Assessment ETA 19/0683 issued on 28/10/19 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.

[1] 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:

28th October 2019

Report by:

D. Yates
Project Engineer
Building and Life Safety Technologies

Reviewed by:

C. Johnson
Staff Engineer
Building and Life Safety Technologies

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

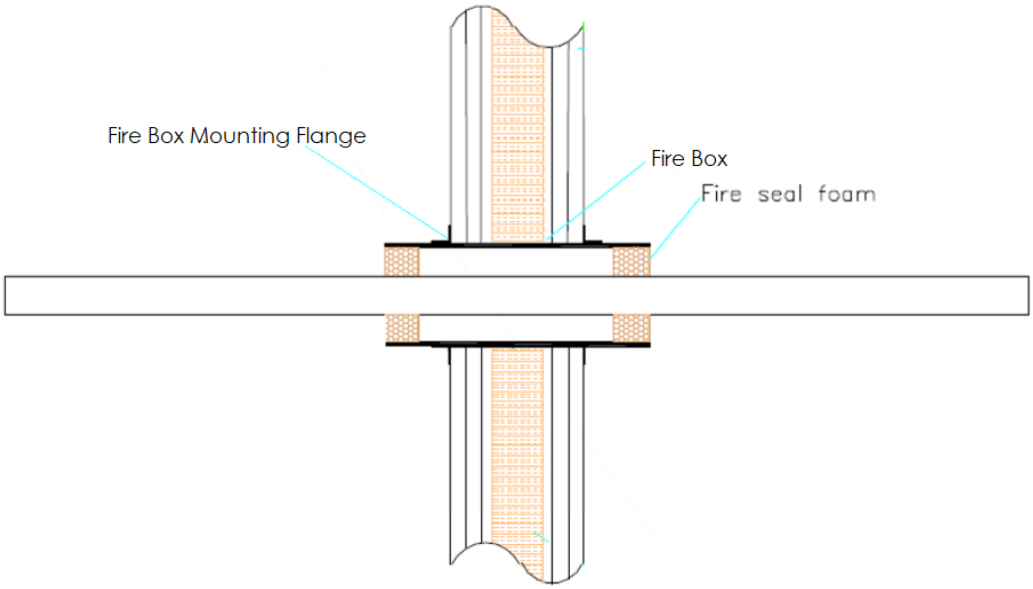
ANNEX A – Resistance to Fire Classification – Fire Box

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

A.1.1 Fire Box penetration seal in flexible or rigid walls min. 100 mm thick

Penetration Seal: Cables fitted through single Fire Box of dimensions, 125 x 125 mm to 1100 x 125 mm. Maximum 60% cable fill. Fire Box has no external insulation material.

Construction details:

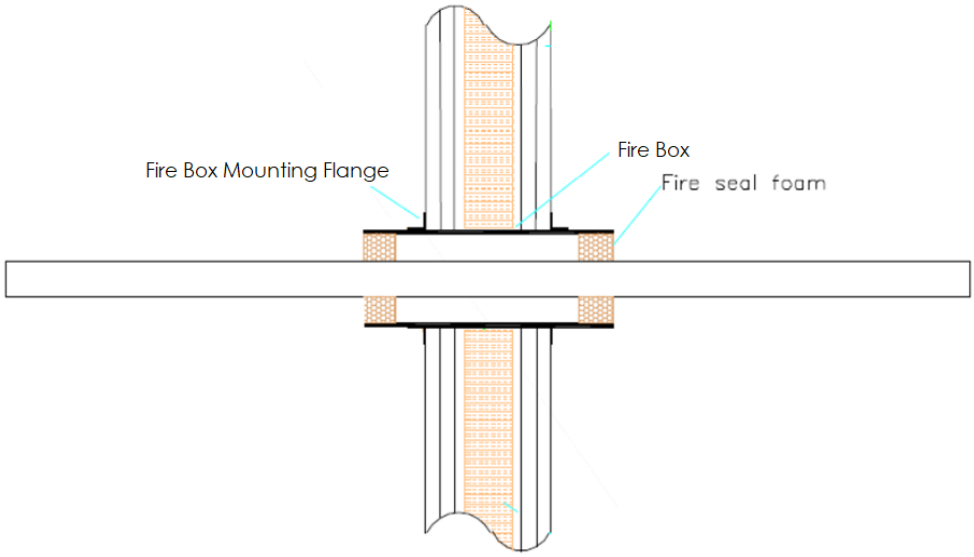


A.1.1.1

Services	Service Insulation	Classification
Electrical cables up to 80 mm diameter, single or in a bundle	None	**E 120, EI 30**
Electrical cables up to 80 mm diameter, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	**E 120, EI 60**
Up to 21 mm diameter telecoms , single or in bundles up to 100 mm diameter	None	**E 120, EI 60**
Unsheathed wire up to 24 mm diameter	None	**E 120, EI 30**
	300 mm long insulwrap to services, 5 mm thick	**E 120, EI 60**

Specific cables	Service Insulation	Classification
Type C2, C3, D1, D2 electrical cables, single or in a bundle	None	**E 120, EI 45**
Type A1, A2, C1, A3 electrical cables, single or in a bundle		**E 120, EI 60**

A.1.2 Fire Box penetration seal in flexible or rigid walls min. 100 mm thick

Penetration Seal: Cables fitted through single Fire Box of dimensions, 65 x 65 mm to 102 x 102 mm and 50 to 100 mm diameter. Maximum 60% cable fill. Fire Box has no external insulation material.
Construction details: 

A.1.2.1

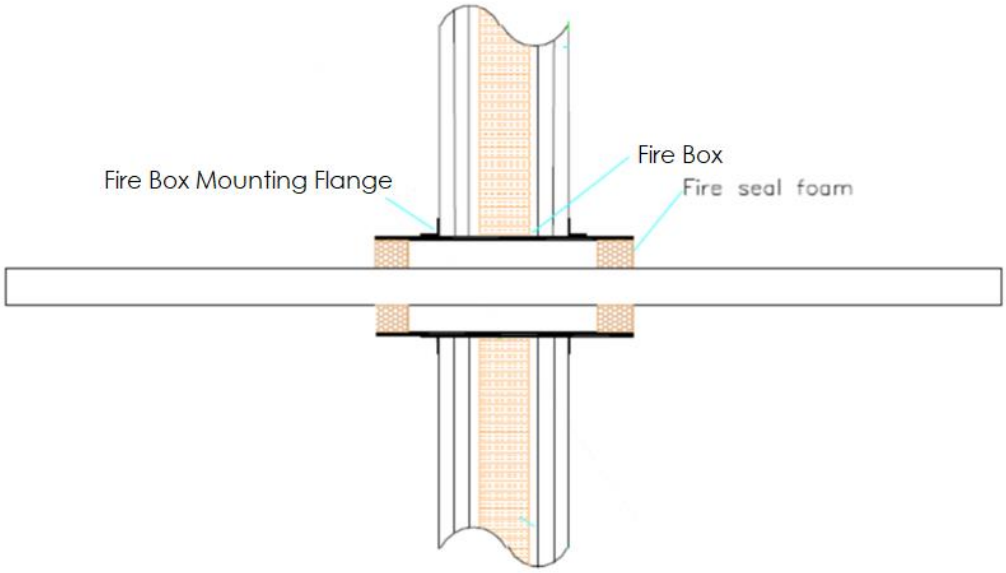
Services	Service Insulation	Classification
Electrical cables up to 80 mm diameter, single or in a bundle, Unsheathed wire up to 24 mm diameter	None	**E 120, EI 30**
Up to 21 mm diameter telecoms , single or in bundles up to 100 mm diameter	None	**E 120, EI 60**
Electrical cables up to 80 mm diameter, single or in a bundle, unsheathed wire up to 24 mm diameter	300 mm long insulwrap to services, 5 mm thick	**E 120, EI 60**
82mm dia. x 3.2mm wall PVC Pipe to EN 1329-1, EN 1453-1 or EN 1452-1	None	**E 120 U/U, C/U, U/C, CC** **EI 60 U/U, C/U, U/C, CC**
54mm dia. Copper Pipe	19 mm Armaflex CS or K-Flex ST	**E 120 U/U** **EI 60 U/U**

Specific cables	Service Insulation	Classification
Type C2, D1, D2 electrical cables, single or in a bundle	None	**E 120, EI 45**
Type A1, C1, D3, A3 electrical cables, single or in a bundle	None	**E 120, EI 60**
Type C2, C3, E, D1, D2 electrical cables, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	**E 120, EI 60**

A.1.3 Fire Box penetration seal in flexible or rigid walls min. 100 mm thick

Penetration Seal: Cables fitted through single Fire Box of dimensions, 125 x 125 mm to 1100 x 125 mm. Maximum 60% cable fill. Exposed surfaces of Fire Box insulated with 5 mm thick insulwrap.

Construction details:



A.1.3.1

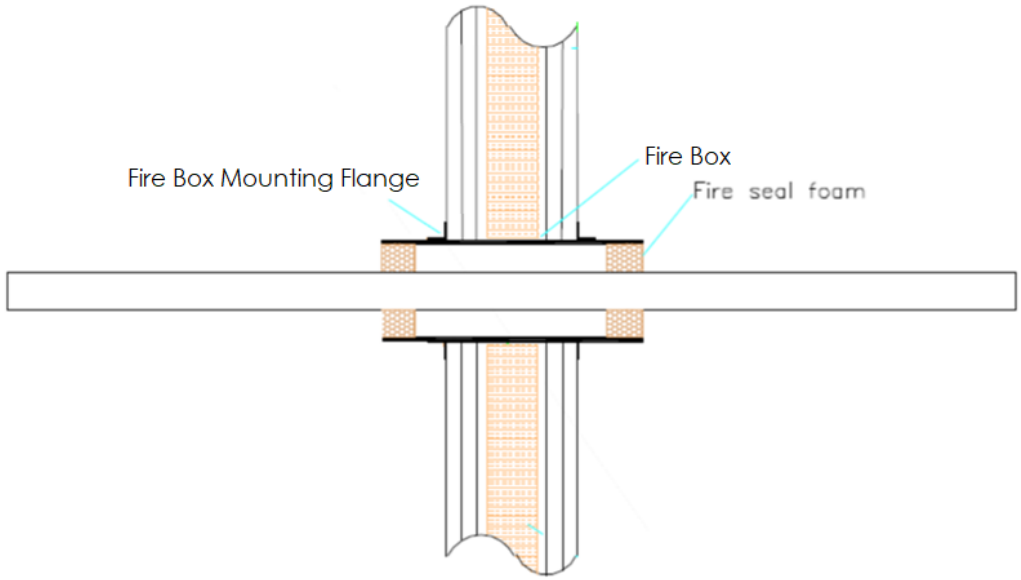
Services	Insulation	Classification
Electrical cables up to 80 mm diameter, single or in a bundle	None	**E 120, EI 30**
Electrical cables 22 to 80 mm diameter, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	**E 120, EI 90**
Electrical cables up to 21 mm diameter, single or in a bundle		**EI 120**
Up to 21 mm diameter telecom cables, single or in bundles up to 100 mm diameter	None	**E120, EI 90**
Unsheathed wire up to 24 mm diameter	None	**E 120, EI 30**
	300 mm long insulwrap to services, 5 mm thick	**E 120, EI 60**

Specific cables	Insulation	Classification
Type C2, C3, D1 or D2 electrical cables, single or in a bundle	None	**E120, EI 45**
Type A1, A2, D3 or C1 electrical cables, single or in a bundle		**E120, EI 60**
Type A3 electrical cables, single or in a bundle		**E120, EI 90**
Type E or D2 electrical cables, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	**EI 120**

A.1.4 Fire Box penetration seal in flexible or rigid walls min. 100 mm thick

Penetration Seal: Cables fitted through single Fire Box of dimensions, 65 x 65 mm to 102 x 102 mm and 50 to 100 mm diameter. Exposed surfaces of Fire Box insulated with 5 mm thick insulwrap.

Construction details:



A.1.4.1

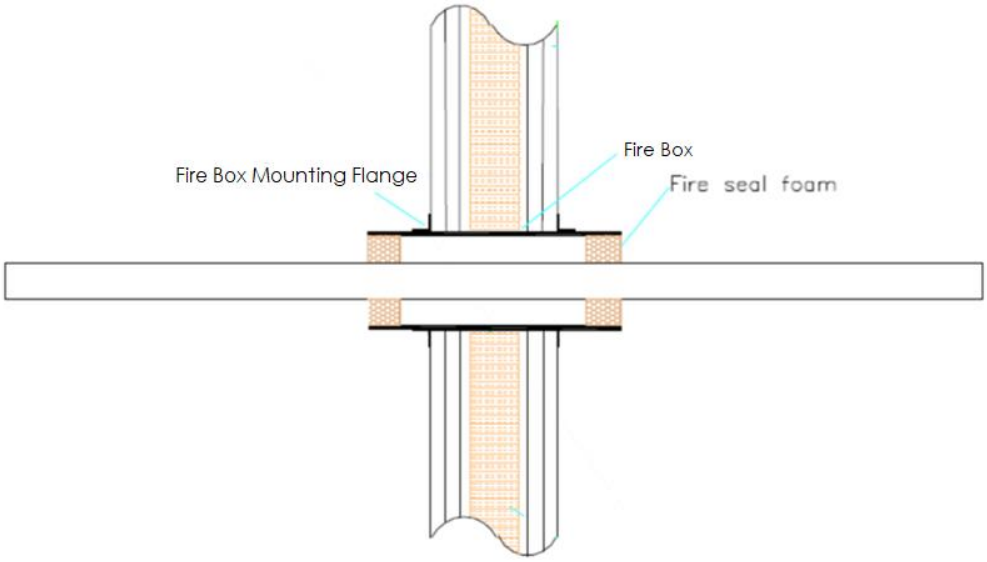
Services	Service Insulation	Classification
Electrical cables up to 80 mm diameter, single or in a bundle	None	**E 120, EI 30**
Electrical cables up to 80 mm diameter, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	**EI 120**
Up to 21 mm diameter telecom cables, single or in bundles up to 100 mm diameter	None	**E120, EI 90**
Unsheathed wire up to 24 mm diameter	None	**E 120, EI 30**
	300 mm long insulwrap to services, 5 mm thick	**E 120, EI 60**
82mm dia. x 3.2mm wall PVC Pipe to EN 1329-1, EN 1453-1 or EN 1452-1	None	**E 120 U/U, C/U, U/C, CC** **EI 90 U/U, C/U, U/C, CC**
54mm dia. Copper Pipe	19 mm Armaflex CS or K-Flex ST	**E 120 U/U** **EI 90 U/U**

Specific cables	Service Insulation	Classification
Type C2, C3, D1 or D2 electrical cables, single or in a bundle	None	**E120, EI 45**
Type A1, A2, D3 or C1 electrical cables, single or in a bundle		**E120, EI 60**
Type A3 electrical cables, single or in a bundle		**E120, EI 90**

A.1.5 Fire Box penetration seal in flexible or rigid walls min. 100 mm thick

Penetration Seal: Cables fitted through ganged Fire Box of dimensions, 65 x 65 mm to 102 x 102 mm. Maximum 60% cable fill. Fire Box has no external insulation material.

Construction details:



A.1.5.1

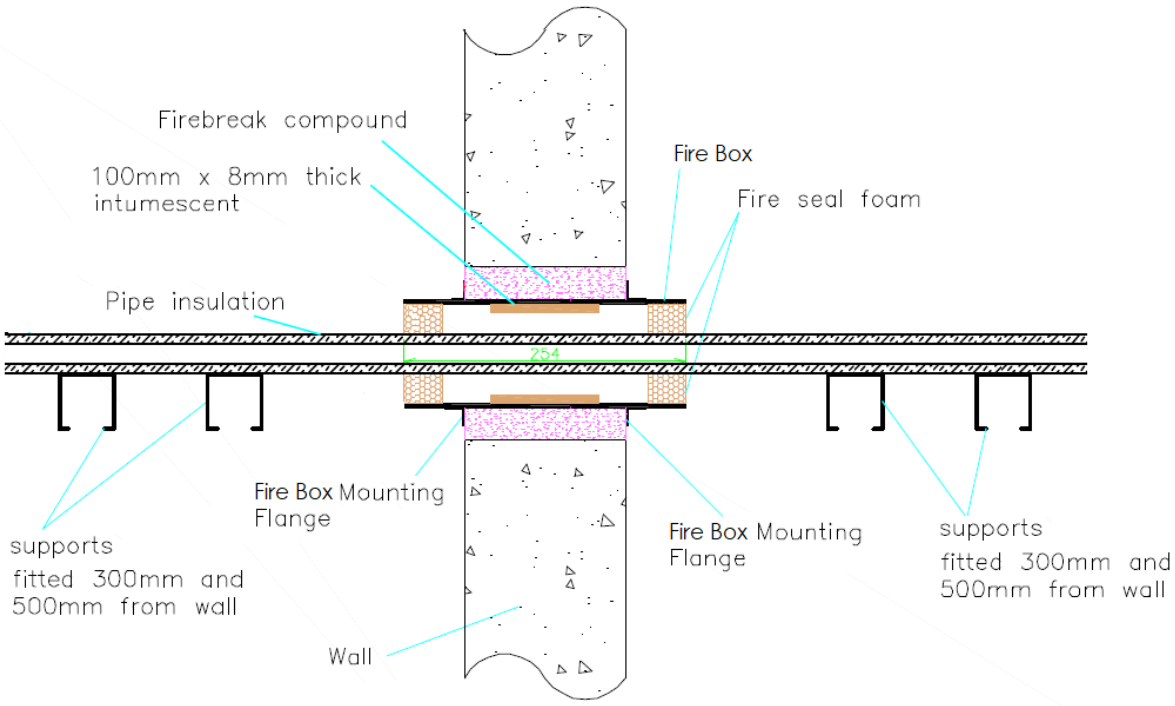
Services	Service Insulation	Classification
Type D3 electrical cables, single	None	**E 120, EI 20**
Up to 21 mm diameter telecoms , single or in bundles up to 100 mm diameter		
Unsheathed wire up to 24 mm diameter		**E 90, EI 20**
82mm dia. x 3.2mm wall PVC Pipe to EN 1329-1, EN 1453-1 or EN 1452-1		**E 120 U/U, C/U, U/C, CC** **EI 20 U/U, C/U, U/C, CC**
54mm dia. Copper Pipe	19 mm Armaflex CS or K-Flex ST	**E 120 U/U** **EI 20 U/U**

A.2 Fire Box penetration seal in rigid walls min. 100 mm thick

A.2.1 Penetration seals, in concrete walls

Penetration Seal: Metal pipes fitted through single Fire Box of dimensions, 125 x 125 mm to 1100mm long x 125mm wide x 254mm deep. Maximum 60% service fill. Fire Box fitted with 50mm foam plugs to both sides and mortared in with 100 mm thick Firebreak compound to all voids around the device

Construction details:



A.2.1.1

Services	Insulation	Classification
Steel pipes 10 mm diameter / 1.0-14.2 mm wall	6 to 19 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 90 C/C**
Steel pipes 25 mm diameter / 1.2-14.2 mm wall	9 to 25 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 60 C/C**
Steel pipes 25 mm diameter / 1.2-14.2 mm wall	25 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Steel pipes 25 mm diameter / 1.2-14.2 mm wall	13 to 25 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 90 C/C**
Steel pipes 40 mm diameter / 1.5-14.2 mm wall	13 to 40 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Steel pipes 40 mm diameter / 1.5-14.2 mm wall	25 to 40 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 180 C/C**
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	9 to 32 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 60 C/C**
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	13-32 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 90 C/C**
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	19-32 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	32 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 180 C/C**
Steel pipes 88.9 mm diameter / 1.6-14.2 mm wall	13 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 90 C/C**
Copper pipes 10 mm diameter / 1.2-14.2 mm wall	6 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 90 C/C**
Copper pipes 28 mm diameter / 1.5-14.2 mm wall	9 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 90 C/C**
Copper pipes 42 mm diameter / 1.5-14.2 mm wall	13 to 40 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 90 C/C**
Copper pipes 42 mm diameter / 1.5-14.2 mm wall	19 to 40 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Copper pipes 42 mm diameter / 1.5-14.2 mm wall	32-40 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 180 C/C**

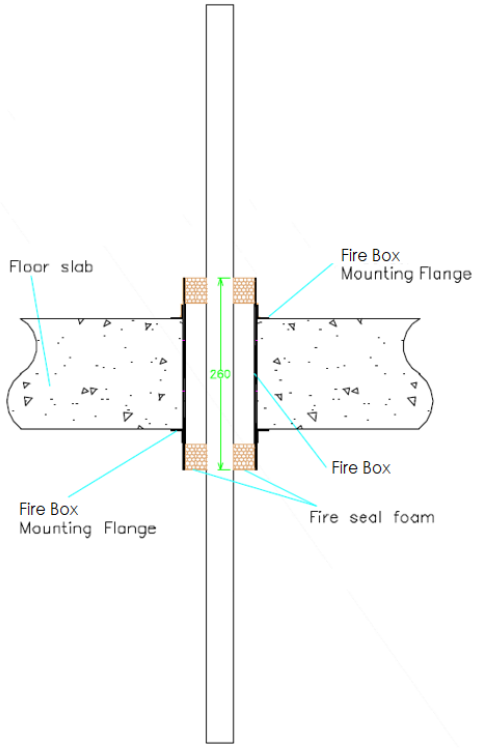
CS – Continuous Sustained insulation
C/C – Capped/Capped

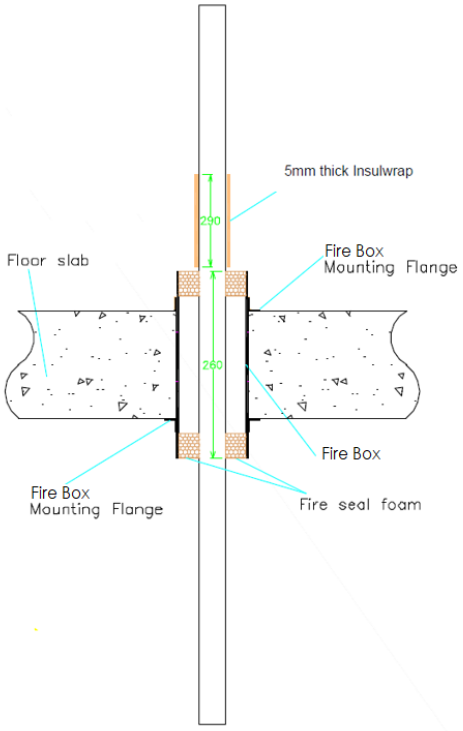
A.3 Fire Box penetration seal in rigid floors min. 150 mm thick

A.3.1 Penetration seals, in concrete floors

Penetration Seal: Cables fitted through single and ganged Fire Box of dimensions, 65 x 65 mm to 102 x 102 mm. Maximum 60% cable fill. Fire Box has no external insulation material.

Construction details:



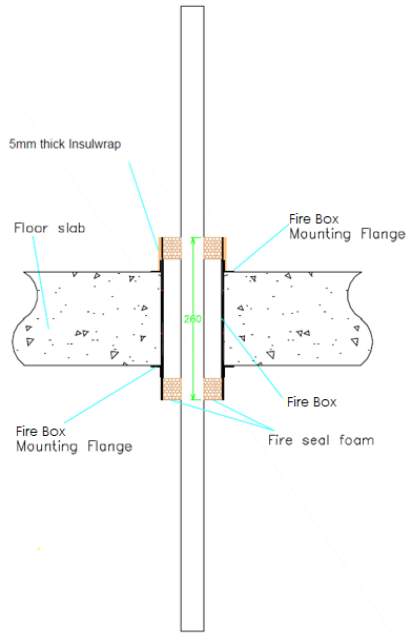
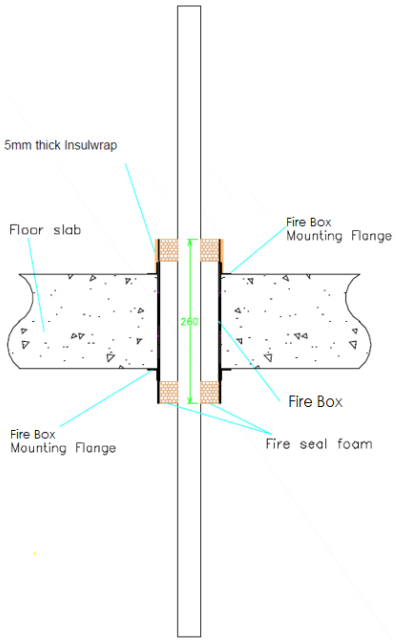


A.3.1.1

Services	Service Insulation	Classification
Electrical cables up to 80 mm diameter, single or in a bundle	None	**E 180, EI 30**
Electrical cables up to 21 mm diameter, single or in a bundle		**E 240, EI 60**
Telecom cables up to 21 mm diameter, single or in a bundle		
Electrical cables up to 80 mm diameter, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	**E 180, EI 45**
Electrical cables up to 21 mm diameter, single or in a bundle		**E 240, EI 60**
Telecom cables up to 21 mm diameter, single or in a bundle		
82mm dia. x 3.2mm wall PVC Pipe to EN 1329-1, EN 1453-1 or EN 1452-1	None	**E 240 U/U, C/U, U/C, C/C EI 60 U/U, C/U, U/C, C/C**

Specific cables	Service Insulation	Classification
Type C3 electrical cables, single or in a bundle	None	**E 240, EI 30**
Type D3 or C2 electrical cables, single or in a bundle		**E 240, EI 45**
Type C1 or B electrical cables, single or in a bundle		**E240, EI 60**

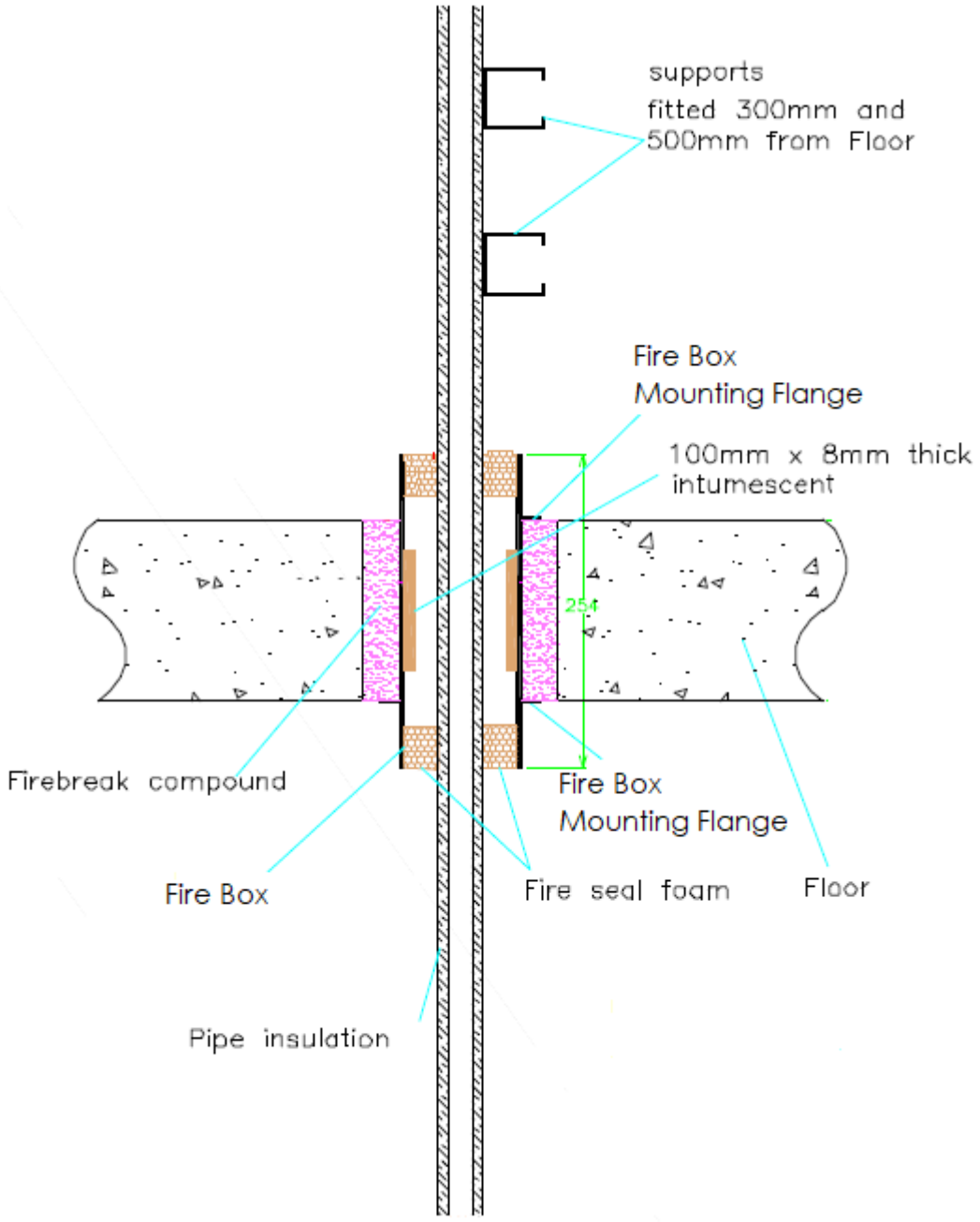
A.3.2 Penetration seals, in concrete floors

Penetration Seal: Cables fitted through single and ganged Fire Box of dimensions, 65 x 65 mm to 102 x 102 mm. Maximum 60% cable fill. Exposed surfaces of Fire Box insulated with 5 mm thick insulwrap	
Construction details: 	

A.3.2.1

Services	Insulation	Classification
Electrical cables 51 to 80 mm diameter, single	None	**E 240, EI 30**
Electrical cables 22 to 50 mm diameter, single		**E 180, EI 30**
Electrical cables up to 21 mm diameter, single or in a bundle		**E 240, EI 60**
Telecom cables up to 21 mm diameter, single or in a bundle		**E 240, EI 60**
Electrical cables 51 to 80 mm diameter, single	300 mm long insulwrap to services, 5 mm thick	**E 180, EI 90**
Electrical cables 22 to 50 mm diameter, single		**E 240, EI 90**
Electrical cables up to 21 mm diameter, single or in a bundle		**E 240, EI 120**
Telecom cables up to 21 mm diameter, single or in a bundle		
82mm dia. x 3.2mm wall PVC Pipe to EN 1329-1, EN 1453-1 or EN 1452-1	None	**E 240 U/U, C/U, U/C, C/C** **EI 120 U/U, C/U, U/C, C/C**
Specific cables	**Service Insulation**	**Classification**
Type C1, C2, C3, D2, D3 electrical cables, single or in a bundle	300 mm long insulwrap to services, 5 mm thick	**E 240, EI 120**

A.3.3 Penetration seals, in concrete floors

Penetration Seal: Metal pipes fitted through single Fire Box of dimensions, 125 x 125 mm to 1100mm long x 125mm wide x 254mm deep. Maximum 60% service fill. Fire Box fitted with 50mm foam plugs to both sides and mortared in with 100 mm thick Firebreak compound to all voids around the device
Construction details: 

A.3.3.1

Services	Insulation	Classification
Steel pipes 10 mm diameter / 1.0-14.2 mm wall	6 to 19 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Steel pipes 25 mm diameter / 1.2-14.2 mm wall	9 to 25 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Steel pipes 40 mm diameter / 1.5-14.2 mm wall	13 to 40 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 180 C/C**
Steel pipes 40 mm diameter / 1.5-14.2 mm wall	19 to 40 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Steel pipes 40 mm diameter / 1.5-14.2 mm wall	40 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	9 to 32 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 90 C/C**
Steel pipes 63.5 mm diameter / 1.6-14.2 mm wall	13-32 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Steel pipes 88.9 mm diameter / 1.6-14.2 mm wall	13 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Copper pipes 10 mm diameter / 1.2-14.2 mm wall	6 to 19 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C***
Copper pipes 10 mm diameter / 1.2-14.2 mm wall	19 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Copper pipes 28 mm diameter / 1.5-14.2 mm wall	9 to 25 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**
Copper pipes 42 mm diameter / 1.5-14.2 mm wall	13 to 40 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 90 C/C**
Copper pipes 42 mm diameter / 1.5-14.2 mm wall	40 mm K-flex ST or Armaflex insulation (CS)	**E 240 C/C, EI 120 C/C**

CS – Continuous Sustained insulation
C/C – Capped/Capped

* No insulation classification obtained due to test instrument failure