ETA-Danmark A/S
Göteborg Plads 1
DK-2150 Nordhavn
Tel. +45 72 24 59 00
Internet www.etadanmark.dk

Authorised and notified according to Article 29 of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011

MEMBER OF EOTA

European Technical Assessment ETA-24/0610 of 2024/07/02

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S	
Trade name of the construction product:	Fireguard Board 931
Product family to which the above construction product belongs:	Fire Stopping, Fire Sealing & Fire Protective Products. Fire Retardant Products
Manufacturer:	Dana Lim A/S Københavnsvej 220 DK 4600 Køge Denmark
Manufacturing plant:	E/055
This European Technical Assessment contains:	43 pages including 3 annexes which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:	EAD 350454-00-1104 Firestopping and fire sealing products, Penetration Seals
This version replaces:	-

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

1 Technical Description of the Product

1) Fireguard Board 931 is a coated mineral wool board used to reinstate the fire resistance performance of wall constructions where they have been provided with apertures for the penetration of single or multiple services.

2) Fireguard Board 931 is supplied coated on both faces. The board is then cut and friction fit into the aperture, prior to being inserted into the aperture in the wall.

3) Fireguard Board 931 are supplied as 50mm thick and supplied in overall dimensions 1200 mm x 600mm with a density of 140 kg/m^3.

4) Fireguard Board 931 are supplied as 60mm thick and supplied in overall dimensions 1200 mm x 600mm with a density of 160 kg/m^3 and are coated to one face only.

5) Fireguard A+ 566 is required to seal all joints and junctions during the sealing process. 5) Fireguard A+ 566 is subject to a separate ETA referenced ETA-24/0611 & ETA-24/0612.

6) Fireguard GR570 is required to seal around specific services (See Annex C). Fireguard GR570 subject to a separate ETA referenced ETA 24/0609.

2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

The intended use of Fireguard Board 931 is to reinstate the fire resistance performance of rigid and flexible wall constructions where they are penetrated by various cables and metallic pipes

1) The specific elements of construction that the system Fireguard Board 931 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^3.
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.
Flexible walls	The wall must have a minimum thickness of 100 mm and comprise timber or steel studs lined on both faces with minimum 2 layers of 12.5 mm thick, 'Type F' Gypsum boards according to EN 520. In timber stud walls, no part of the penetration shall be closer than 100 mm to a stud, the cavity must be closed between the penetration seal and the stud and minimum 100 mm of insulation of class A1 or A2 according to EN 13501-1, is provided within the cavity between the penetration seal and the stud.

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

2) The Fireguard Board 931 may be used to provide a penetration seal with pipes and cables, and cable trays and ladders (for details see Annex C).

3) The total amount of cross sections of services (including insulation) should not exceed 60% of the penetration area.

4) The Fireguard Board 931 may be used to seal apertures in the separating element up to 730mm wide by 1200mm high or 600mm x 600mm dependant on the configuration. The minimum permitted separation between adjacent seals/apertures is 200mm.

5) Pipes must be installed singular, cables require no minimum separation.

6) The provisions made in this European Technical Assessment are based on an assumed working life of the Fireguard Board 931 of 10 years, provided that the conditions laid down in the product data sheet 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.

Use Category

Type Z_1: Intended for use in internal conditions with humidity equal to or higher than 85% RH excluding temperatures below 0°C, without exposure to rain or UV.

3 Performance of The Product And References To The Methods Used For Its Assessment

BWR	Characteristic	Assessment of characteristic
2	**Safety in case of fire**	
	Reaction to fire	See Clause 1.1
	Resistance to fire	See clause 1.2
3	**Hygiene, Health and the Environment**	
	Air permeability	See clause 2.1
	Content and release of Dangerous substances	See clause 2.2
4	**Safety in use**	
	Durability and Serviceability	see clause 3.1
5	**Protection against noise**	
	Airborne sound insulation	See clause 4.1

3.1 Safety in case of fire

3.1.1 Reaction to fire

No performance assessed.

3.1.2 Resistance to fire

Fireguard Board 931 has been tested in accordance with BS EN 1366-3: 2009 based upon the test results and the field of direct application specified within EN 1366-3: 2009, the Fireguard Board 931 has been classified in accordance with EN 13501-2, as given in Annex C:

The seals may only be penetrated by the services described in Annex C; other parts or support constructions must not penetrate the seal.

The service support construction must be fixed to the building element containing the penetration seal or a suitable adjacent building element, in such a manner that in the case of fire, no additional load is imposed on the seal. Furthermore it is assumed that the unexposed face support is maintained for the required period of fire resistance.

Pipes must be perpendicular to the seal surface.

It is assumed that compressed air systems are switched off by other means in the case of fire.

The function of the pipe seal in case of pneumatic dispatch systems, pressurised air systems etc. is guaranteed only when the systems are shut off in case of fire.

The assessment does not cover the avoidance of destruction of the seal or of the abutting building element(s) by forces caused by temperature changes in case of fire. This has to be considered when designing the piping system.

The assessment does not address any risks associated with leakage of dangerous liquids or gases caused by failure of the pipe(s) in case of fire.

The durability assessment does not take account of the possible effect of substances permeating through the pipe on the penetration seal.

3.2 Hygiene, Health and the environment.

3.2.1. Air permeability

Fireguard Board 931 has been tested in accordance with BS EN 1314-1 to provide the following results:

Product tested			Fireguard Board 931 (50mm)	
	Results under positive chamber pressure		Results under negative chamber pressure	
Pressure (Pa)	Leakage (m^3/h)	Leakage ($m^3/m^2/h$)	Leakage (m^3/h)	Leakage ($m^3/m^2/h$)
50	0.6	0.8	1.1	1.5
100	1.0	1.4	1.3	1.8
150	2.8	3.9	1.5	2.1
200	3.8	5.3	1.9	2.6
250	4.5	6.3	2.0	2.8
300	5.0	6.9	2.4	3.3
450	5.1	7.1	1.9	2.6
600	6.7	9.3	2.2	3.1

3.2.2. Content and release of Dangerous Substances

The applicant have presented a declaration that Fireguard Board 931 and Coating is in compliance with Council Directive 76/769/EEC of 27th July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations (incl. all amendments and adaptations).

Confirmation has further been declared that all dangerous chemical substances ≥ 1.0 % w/w as well as all toxic, carcinogenic, toxic for reproduction and mutagenic chemical substances ≥ 0.1 % w/w (Status: 29. adaption – 2004/73/EG – of the EU directive 67/548/EEC - classification, packaging and labelling of dangerous substances) are stated in the Fireguard Board 931 and Coating material safety data sheets (according to 91/155/EEC including amendments) and have been considered for the classification of the products according to the directive 1999/45/EG (classification of preparations, including amendments).

All dangerous chemical substances are below the classification limits of 67/548/EEC.

In addition to the specific clauses relating to dangerous substances contained in this European technical approval, 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.

3.1 Safety and accessibility in use

3.1.1 Durability

Fireguard Board 931 has been tested in accordance with EOTA Technical Report - TR024 – Edition November 2006, for the type Z_1 use category specified in EAD 350454-00-1104 – Fire stopping and fire sealing products, penetration seals , and the results of the tests have demonstrated suitability for penetration seals intended for use in internal conditions with humidity equal to or higher than 85% RH excluding temperatures below 0°C, without exposure to rain or UV.

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 of the European Commission the system of assessment and verification of constancy of performance (see Annex V to the Regulation (EU) No 305/2011) given in the following table apply:

Products	Intended use/s	AVCP System
Fire stopping and fire sealing products	For fire compartmentation and / or fire protection or fire performance	System 1

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark A/S prior to CE marking

Issued in Copenhagen on 2024-07-02 by

Thomas Bruun

Managing Director, ETA-Danmark

Annex A

Reference Documents

EN 13501-1	Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests
EN 13501-2	Fire classification of construction products and building elements – Part 2: Classification using test data from fire resistance tests
EOTA TR 024	Characterisation, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products

Annex B

Description of Product and Product Literature Fireguard Board 931

A detailed specification of the product is contained in document "Evaluation Report" relating to this European Technical Assessment.

Annex C

Resistance to Fire Classification of Fireguard Board 931

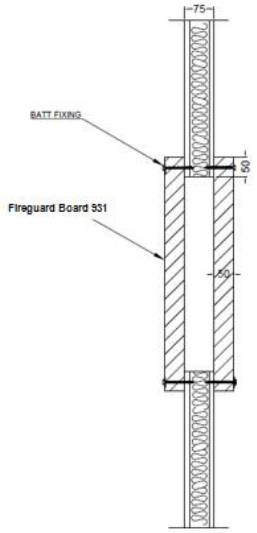
C1 Fireguard Board 931 Penetration Seal in Flexible or Rigid Walls min. 70 mm thick

C1.1 Fireguard Board 931 Single Layer (50mm both sides) Patress Install Penetration Seal

C1.1.1 Cables and Conduits Penetrations

Construction details:

- Single layer of Fireguard Board 931 patress installed both sides of the wall.
- Max. Aperture size 570mm wide x 200mm high
- Patress installation of Fireguard Board 931.
- The Fireguard Board 931 are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres
- First service support 1025mm from both faces of the substrate



Service(s)	Classification
500mm wide x 60mm deep steel cable basket containing 3 x type 'B' cable and 20 x bundle of telecoms cables	**EI90**
500mm wide x 60mm deep steel cable tray containing 1 x type 'B' cable, 3 x type 'A1' cable, 3 x type 'A2' cable, and 3 x type 'A3' cable	

Service(s)	Classification
20mm dia Adaptaflex SPL20 flexible conduit	**EI90**
20mm dia Kopex KSU 316 stainless steel flexible conduit	
150mm wide x 60mm deep steel cable tray containing 4 x FP200 Gold (Firealarm cable 7mm dia red) Cables	

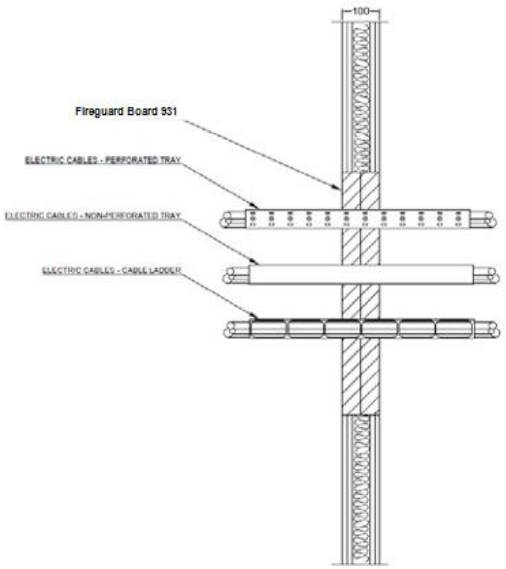
C2 Fireguard Board 931 Penetration Seal in Flexible or Rigid Walls min. 100 mm thick

C2.1 Double Layer (50mm) Fireguard Board 931 Penetration Seal

C2.1.1 Cable Penetrations

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 730mm wide x 1200mm high
- First service support 250mm from both faces of the substrate

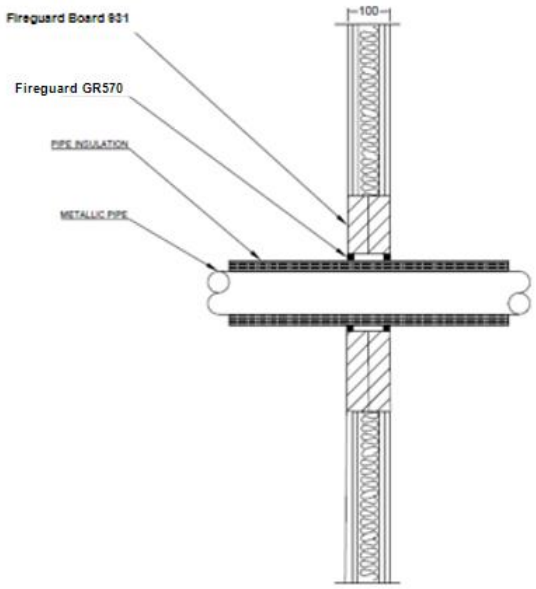


Service(s)	Classification
Electrical cables up to 21mm dia	**EI 60**
Electrical cables 22mm to 80mm dia	**E 60** **EI 45**
Cable Trays and Ladders	**EI 60**
100 mm diameter bundle telecommunication cable type "F"	**EI 60**
Unsheathed electrical cables up to 17mm dia	**E 60** **EI 30**
Unsheathed electrical cables 18-24mm dia	**E 60** **EI 15**
Steel or Copper Conduits up to 16mm	**E 60** **EI 15**
Plastic conduits up to 16mm	**EI 60**

C2.1.2 Metalic Pipe Penetrations

Construction details:

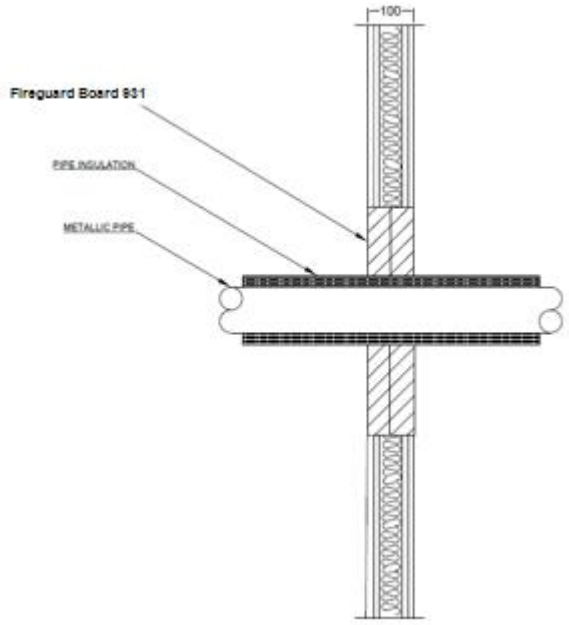
- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 730mm wide x 1200mm high
- Continuous / Sustained CS insulated metallic pipes
- 15mm deep x 15mm wide anulus Fireguard GR570 to both faces
- First service support 250mm from both faces of the substrate



Service(s)	Classification
Single copper or mild steel pipe 40mm diameter and 1.5 – 14.2 mm wall with sustained/continuous 20mm thick foil faced glass wool insulation (min 80Kg/m^3)	**E 90 U/C** **EI 60 U/C**
Single copper or mild steel pipe 40-159mm diameter and 2.3 – 14.2 mm wall with sustained/continuous 30mm thick foil faced glass wool insulation (min 80Kg/m^3)	**EI 60 U/C**

Construction details:

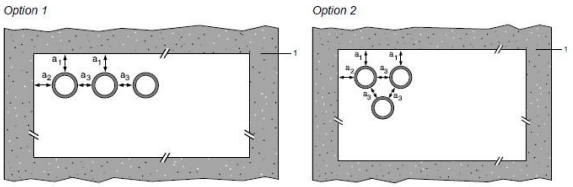
- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 600mm wide x 600mm high
- Continuous / Sustained CS insulated metallic pipes
- First service support 400mm from both faces of the substrate

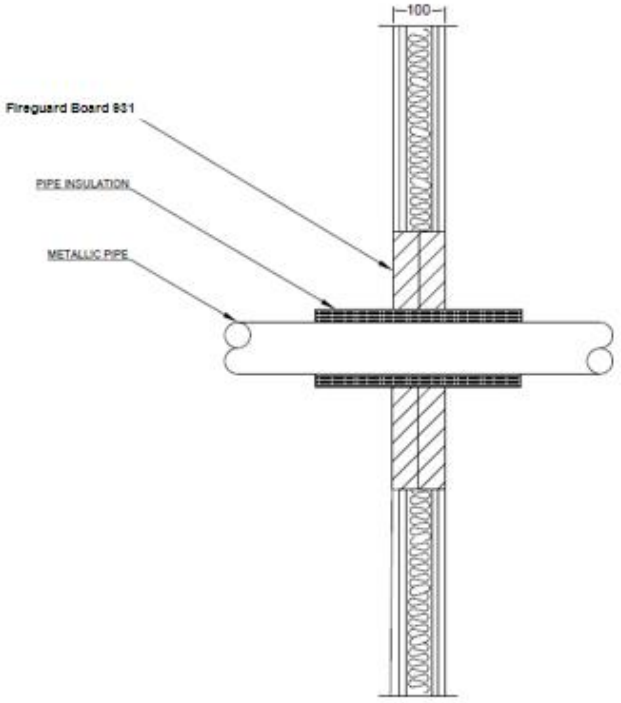


Service(s)	Classification
Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m^3 (C/S)	**E 120 C/U** **EI 45 C/U**
Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m^3 (C/S)	**E 120 C/U** **EI 60 C/U**

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 730mm wide x 1200mm high
- Continuous / Sustained CS insulated metallic pipes
- Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal
- First service support 400mm from both faces of the substrate

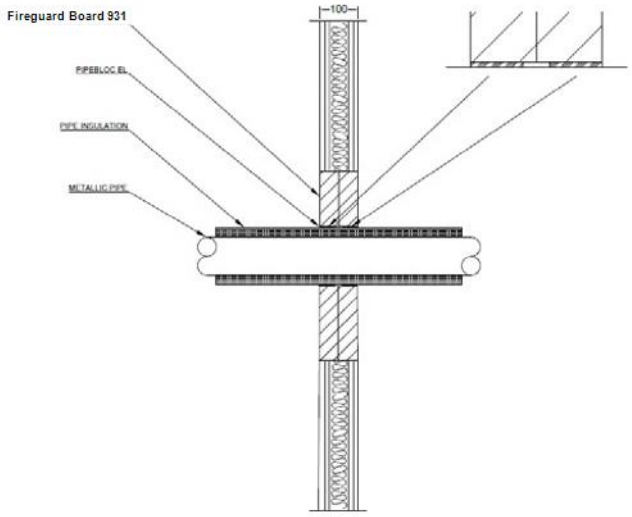




Service(s)	Classification
Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness 40mm thick stonewool insulation min. 40kg/m^3 (L/I 400mm)	**EI 45 C/U**
Steel 42-324mm Ø, 16mm wall thickness. 40mm thick stonewool insulation min. 40kg/m^3 (L/I 400mm)	**EI 45 C/U**
Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness PST coating along the penetration 2mm DFT (L/I 400mm)	**E 120 C/U** **EI 45 C/U**
Steel 42-324mm Ø, 16mm wall thickness. 14.2mm wall thickness PST coating along the penetration 2mm DFT (L/I 400mm)	**E 120 C/U** **EI 45 C/U**

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 750mm wide x 1200mm high
- Continuous / Sustained CS insulated metallic pipes
- 2 x 2mm thick layers of PipeBloc EL installed both sides of the Fireguard Board 931
- First service support 400mm from both faces of the substrate

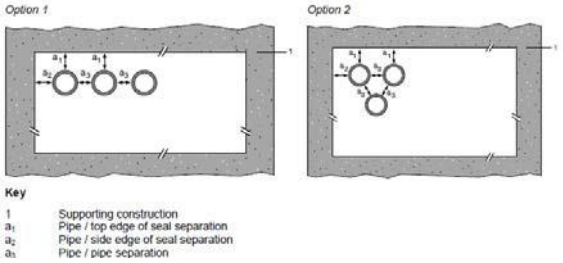


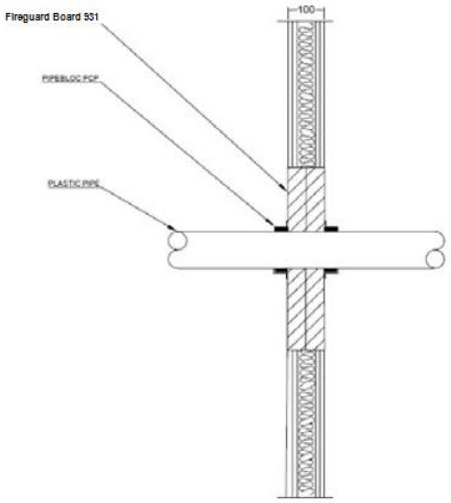
Service(s)	Classification
Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST Insulation (C/S)	**E 120 C/U** **EI 60 C/U**
Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 25-13mm thick K Flex ST insulation (C/S)	**E 120 C/U** **EI 90 C/U**
[1]Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation (C/S)	**E 120 C/U** **EI 60 C/U**
Steel or Copper Pipe 42mm Ø, 1–14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation (C/S)	**E 120 C/U** **EI 90 C/U**
[1]Steel or Copper Pipe 42mm Ø, 1.2–14.2mm wall thickness. 50mm thick glassfibre insulation (C/S)	**E 120 C/U** **EI 90 C/U**

C2.1.3 Plastic Pipe Penetrations

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 730mm wide x 1200mm high
- PipeBloc PCP secured both faces of the substrate utilising 80mm long steel pig tail screw through to Fireguard Board 931
- Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal
- First service support 400mm from both faces of the substrate





Service(s)	PipeBloc PCP Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	**EI 120 U/C**
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	
PVC Pipe 160mm Ø, 6.2-9.5mm wall thickness	160mm	

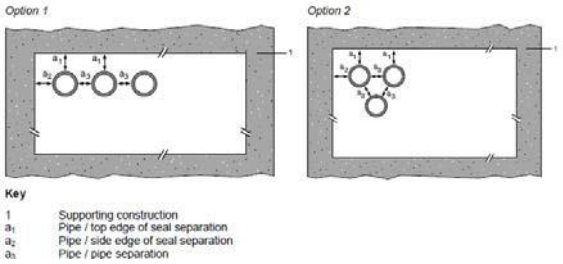
Service(s)	PipeBloc PCP Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	

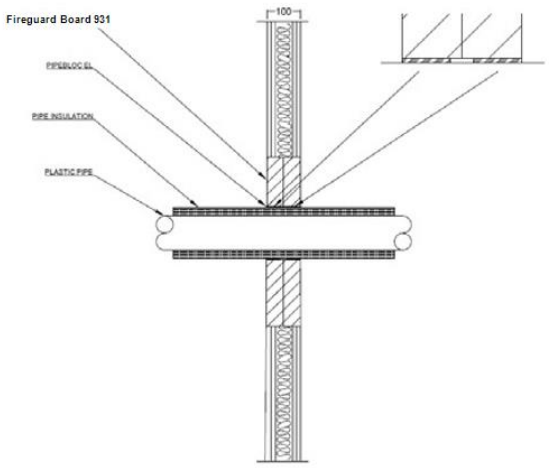
Service(s)	PipeBloc PCP Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	

C2.1.4 Insulated Plastic Pipe Penetrations

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 730mm wide x 1200mm high
- PipeBloc EL secured internally within both faces of the Fireguard Board 931
- Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal
- First service support 400mm from both faces of the substrate





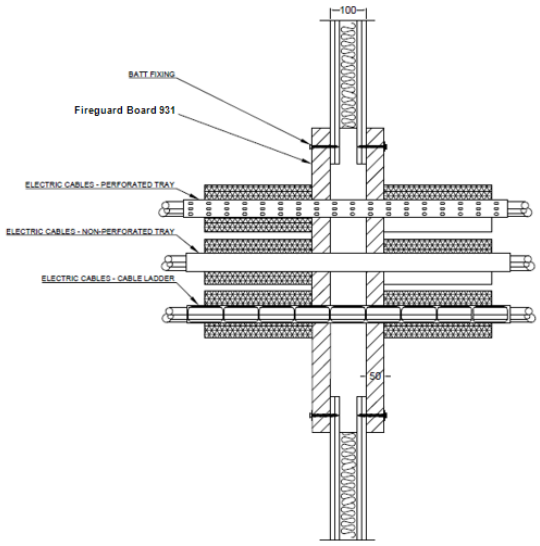
Service(s)	PipeBloc EL Ref	Classification
PVC Pipe 40mm Ø, 1.9mm wall thickness. 25 mm thick Kingspan Kooltherm FM insulation (C/S)	3 x 2mm thickness	**E 120 U/C** **EI 90 U/C**
PVC Pipe 40mm Ø, 3mm wall thickness. 15 mm thick Kingspan Kooltherm FM insulation (C/S)	3 x 2mm thickness	
PVC Pipe 110mm Ø, 4.2mm wall thickness. 25 mm thick Kingspan Kooltherm FM insulation (C/S)	5 x 2mm thickness	**EI 120 U/C**
PVC Pipe 110mm Ø, 6.6mm wall thickness. 20 mm thick Kingspan Kooltherm FM insulation (C/S)	5 x 2mm thickness	**E 120 U/C** **EI 90 U/C**
PVC Pipe 40mm Ø, 1.9mm wall thickness. 32 mm thick Armacell Armaflex Class O (C/S)	3 x 2mm thickness	**E 120 U/C** **EI 90 U/C**
PVC Pipe 40mm Ø, 3mm wall thickness. 9 mm thick Armacell Armaflex Class O (C/S)	3 x 2mm thickness	
PVC Pipe 110mm Ø, 4.2mm wall thickness. 32 mm thick Armacell Armaflex Class O (C/S)	5 x 2mm thickness	**EI 120 U/C**
PVC Pipe 110mm Ø, 6.6mm wall thickness. 13 mm thick Armacell Armaflex Class O (C/S)	5 x 2mm thickness	**E 120 U/C** **EI 90 U/C**

C2.2 Single Layer (50mm) Fireguard Board 931 Patress Installed Both Faces Penetration Seal

C2.2.1 Cable Penetrations

Construction details:

- Single layer of Fireguard Board 931 (50mm) installed both faces of the wall.
  - o Patress installation of Fireguard Board 931. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres
- Max. Aperture size 750mm wide x 1200mm high
- Cables and cable trays wrapped with a single layer of 40mm thick, 40kg/m3 Stonewool (L/I 300mm)
- First service support 400mm from both faces of the substrate

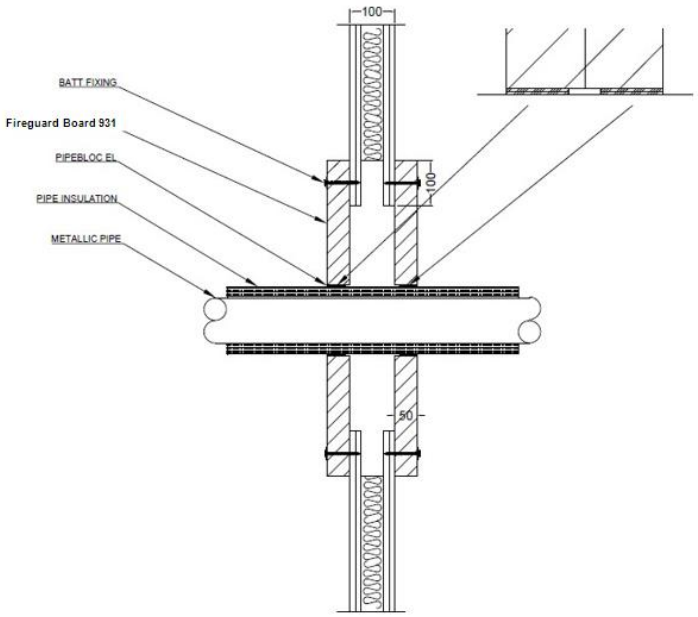


Service(s)	Classification
Electrical cables upto 80mm Ø	**EI120**
Cable Trays and Ladders	
100 mm diameter bundle telecommunication cable type "F"	
Unsheathed electrical cables up to 24mm Ø	
Steel or Copper Conduits up to 16mm Ø	
Plastic conduits up to 16mm Ø	

C2.2.2 Metalic Pipe Penetrations

Construction details:

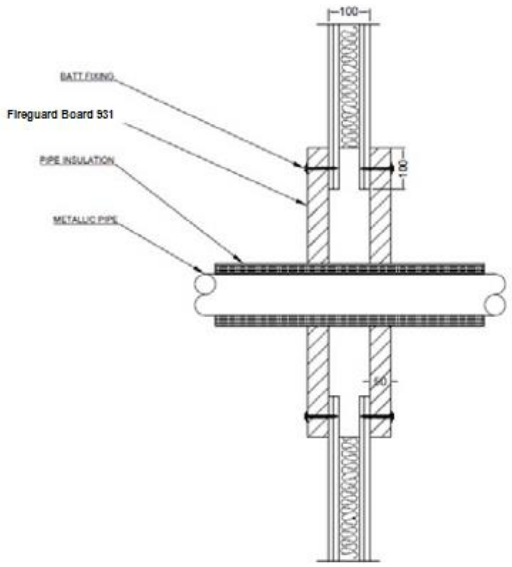
- Single layer of Fireguard Board 931 (50mm) installed both faces of the wall.
  - o Patress installation of Fireguard Board 931. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres
- Max. Aperture size 750mm wide x 1200mm high
- Continuous / Sustained CS insulated metallic pipes
- 2 x 2mm thick layers of PipeBloc EL installed both sides of the Fireguard Board 931
- First service support 400mm from both faces of the substrate



Service(s)	Classification
[2]Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST Insulation (C/S)	**E 120 C/U** **EI 60 C/U**
[2]Steel or Copper Pipe 42-159mm Ø, 1.2 – 14.2mm wall thickness. 25mm thick K Flex ST insulation (C/S)	**E 120 C/U** **EI 90 C/U**
[2]Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 25-13mm thick K Flex ST insulation (C/S)	**EI 120 C/U**
[2]Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation (C/S)	**E 120 C/U** **EI 90 C/U**
[2]Steel or Copper Pipe 42mm Ø, 1–14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation (C/S)	**EI 120 C/U**
[2]Steel or Copper Pipe 42mm Ø, 1.2–14.2mm wall thickness. 50mm thick glassfibre insulation min. 30kg/m^3 (C/S)	**E 120 C/U** **EI 90 C/U**

Construction details:

- Single layer of Fireguard Board 931 (50mm) installed both faces of the wall.
  - o Patress installation of Fireguard Board 931. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres
- Max. Aperture size 600mm wide x 600mm high
- Continuous / Sustained CS insulated metallic pipes
- First service support 400mm from both faces of the substrate

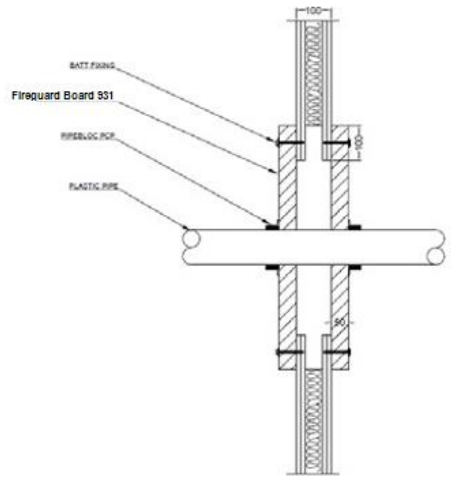


Service(s)	Classification
Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m^3 (C/S)	**E 120 C/U** **EI 90 C/U**
Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m^3 (C/S)	**EI 120 C/U**

C2.2.2 Plastic Pipe Penetrations

Construction details:

- Single layer of Fireguard Board 931 (50mm) installed both faces of the wall.
  - o Patress installation of Fireguard Board 931. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres
- Max. Aperture size 730mm wide x 1200mm high
- PipeBloc PCP secured both faces of the substrate utilising 80mm long steel pig tail screw through to Fireguard Board 931
- Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal
- First service support 400mm from both faces of the substrate



Service(s)	PipeBloc PCP Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	**EI 120 U/C**
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	
PVC Pipe 160mm Ø, 6.2-9.5mm wall thickness	160mm	

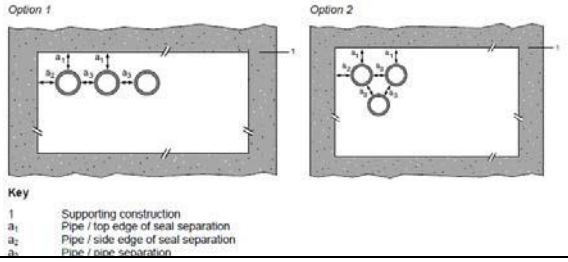
Service(s)	PipeBloc PCP Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	

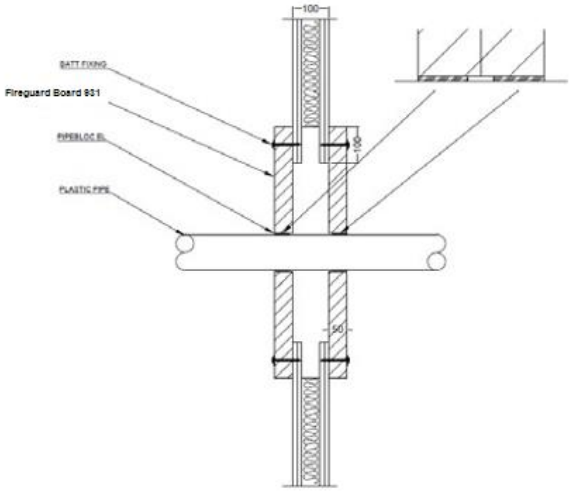
Service(s)	PipeBloc PCP Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	

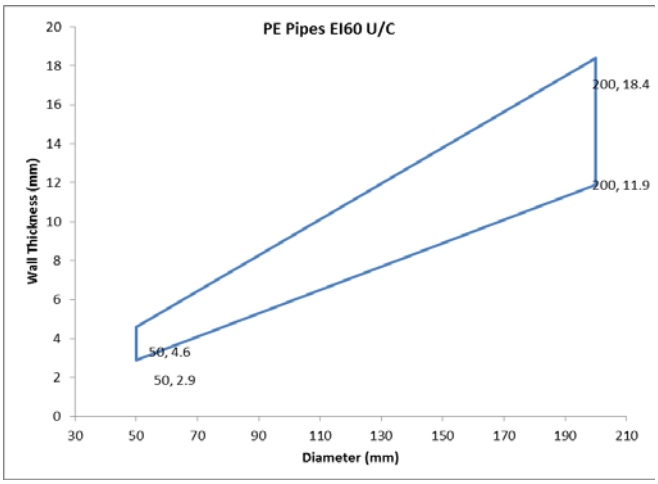
Construction details:

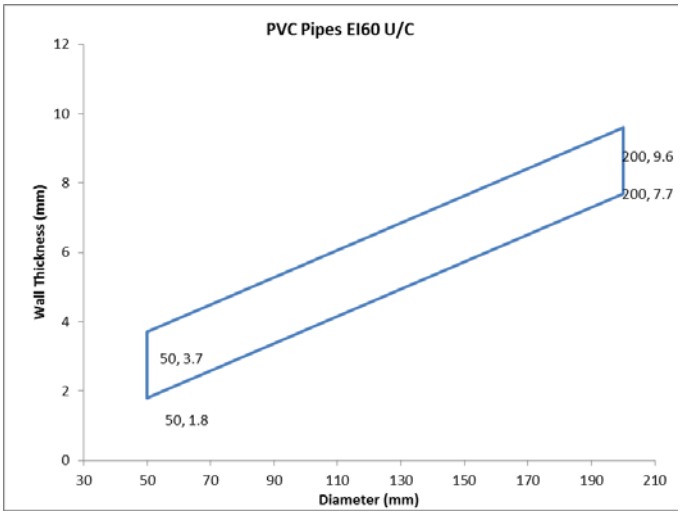
- Single layer of Fireguard Board 931 (50mm) installed both faces of the wall.
  - o Patress installation of Fireguard Board 931. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres
- Max. Aperture size 730mm wide x 1200mm high
- PipeBloc PWP Fire Wrap secured internally within both faces of the Fireguard Board 931
- Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal
- First service support 400mm from both faces of the substrate

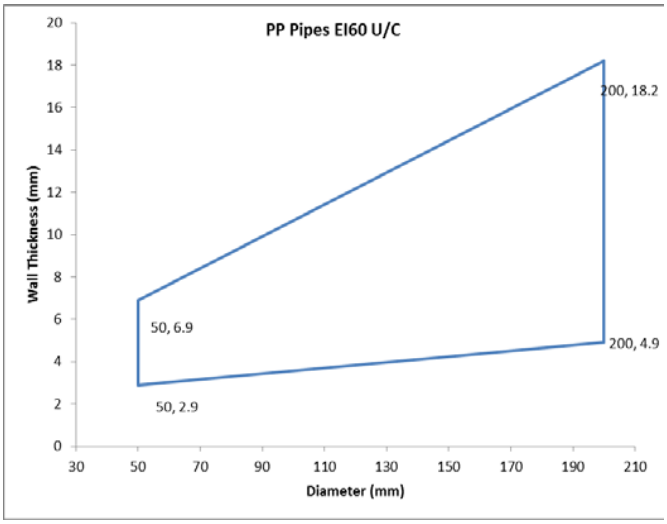
Intumescent Thickness	
Pipe Diameter	**Intumescent Material**
ø 32 mm - ø 50 mm	40 mm (W) x 2 mm (T)
ø 51 mm - ø 82 mm	40 mm (W) x 4 mm (T)
ø 83 mm - ø 115 mm	40 mm (W) x 6 mm (T)
ø 116 mm - ø 160 mm	40 mm (W) x 8 mm (T)
ø 161 mm - ø 200 mm	40 mm (W) x 10 mm (T)
ø 201 mm - ø 250 mm	40 mm (W) x 12 mm (T)






PE Pipes EI60 U/C
Wall Thickness (mm)
Diameter (mm)
200, 18.4
200, 11.9
50, 4.6
50, 2.9


PVC Pipes EI60 U/C
Wall Thickness (mm)
Diameter (mm)
200, 9.6
200, 7.7
50, 3.7
50, 1.8

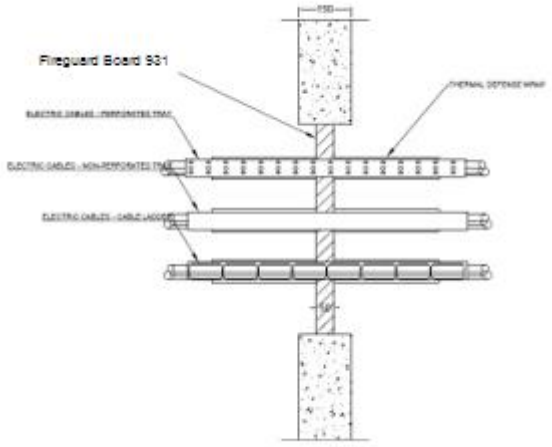

PP Pipes EI60 U/C
Wall Thickness (mm)
Diameter (mm)
200, 18.2
200, 4.9
50, 6.9
50, 2.9

C3 Fireguard Board 931 Penetration Seal in Rigid Walls min. 150 mm thick

C3.1 Single Layer (50mm) Fireguard Board 931 Penetration Seal C3.1.1 Cable Penetrations

Construction details:

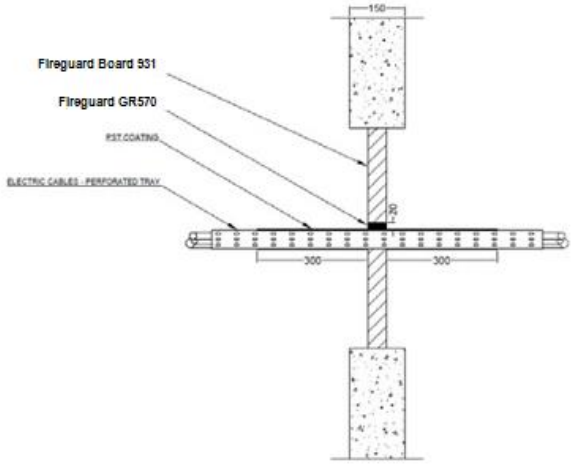
- Single layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 600mm wide x 600mm high
- Cables and cable trays wrapped with a single layer of 6mm thick FSi Thermal Defense Wrap (L/I 300mm)
- First service support 250mm from both faces of the substrate



Service(s)	Classification
Electrical cables up to 80mm Ø	**EI 60**
Cable Trays and Ladders	**EI 60**
100 mm diameter bundle telecommunication cable type "F"	**EI 60**
Unsheathed electrical cables up to 24mmØ	**EI 60**

Construction details:

- Single layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 750mm wide x 1100mm high
- All cables coated with 2mm DFT PST Coating 300mm along the cables both sides of the seal
- 50mm deep x 20mm wide anulus Fireguard GR570
- First service support 400mm from both faces of the substrate

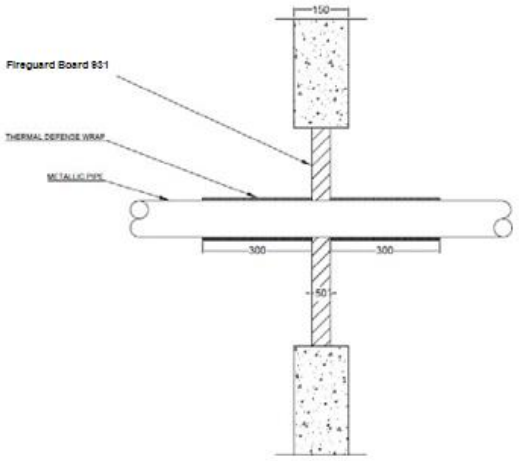


Service(s)	Classification
500mm perforated cable tray	**EI30**
Electrical cables up to 21mm ø	**EI45**
1 off 'C1' Cable	
1 off 'C2' Cable	
1 off 'C3' Cable	

C3.1.2 Metallic Pipe Penetrations

Construction details:

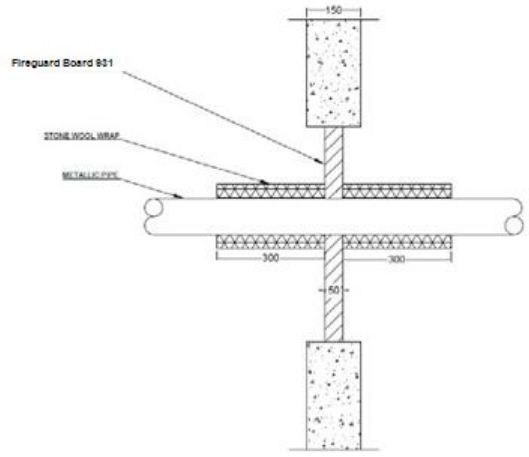
- Single layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 600mm wide x 600mm high
- Metallic pipes wrapped with a single layer of 6mm thick FSi Thermal Defense Wrap (L/I 300mm)
- First service support 250mm from both faces of the substrate



Service(s)	Classification
Steel or Copper Pipe 108mm Ø, 1.5mm – 14.2mm Wall Thickness. (C/S) 40mm stone wool insulation (min 140Kg/m^3)	**E60 C/U** **EI45 C/U**

Construction details:

- Single layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 730mm wide x 1100mm high
- First service support 400mm from both faces of the substrate

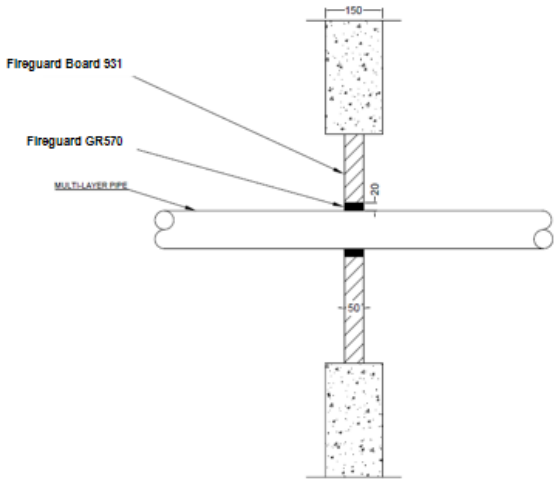


Service(s)	Classification
Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m^3)	**EI45 C/U**
Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m^3)	**E45 C/U** **EI15 C/U**

C3.1.3 Plastic Pipe Penetrations

Construction details:

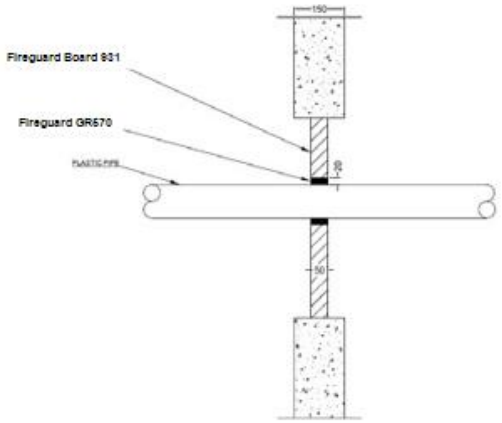
- Single layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 750mm wide x 1100mm high
- Fireguard GR570 20mm annulus full 50mm depth of the Fireguard Board 931
- First service support 400mm from both faces of the substrate



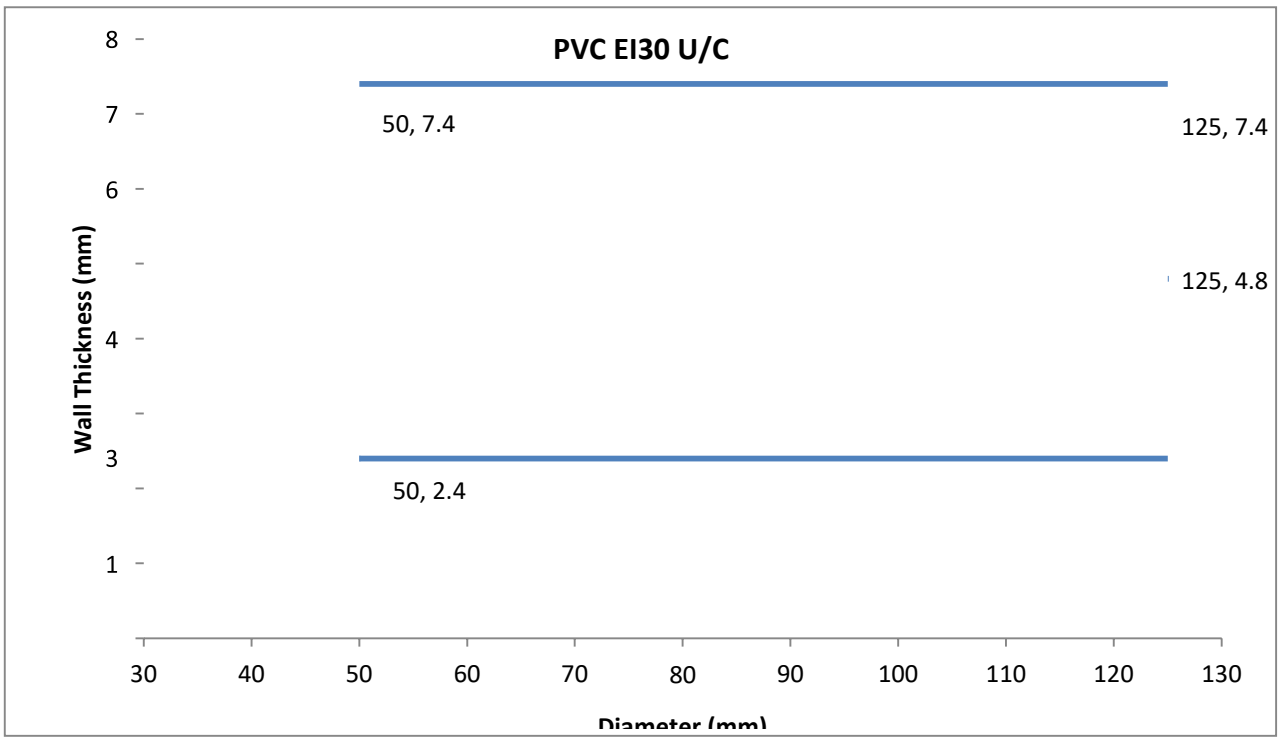
Penetration Specification	Classification
Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall thickness	**E45 U/C** **EI30 U/C**
Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall thickness	

Construction details:

- Single layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 750mm wide x 1100mm high
- Fireguard GR570 20mm annulus full 50mm depth of the Fireguard Board 931
- First service support 400mm from both faces of the substrate



Penetration Specification	Classification
PVC Pipe 50mm ø 2.4-7.4mm wall thickness	**EI45 U/C**
Also scope as per graphs below	

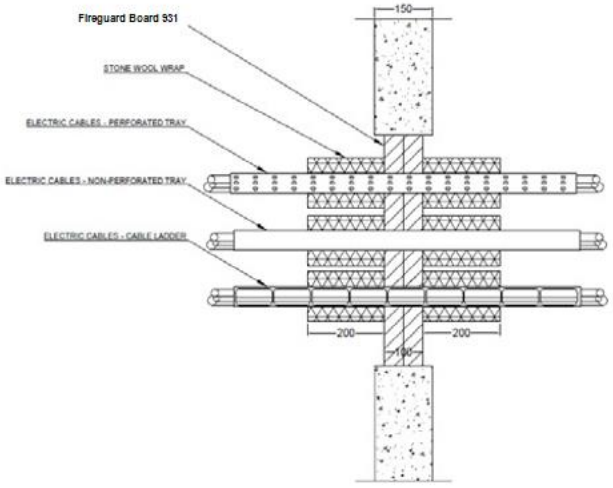


C3.2 Double Layer (50mm) Fireguard Board 931Penetration Seal

C3.2.1 Cable Penetrations

Construction details:

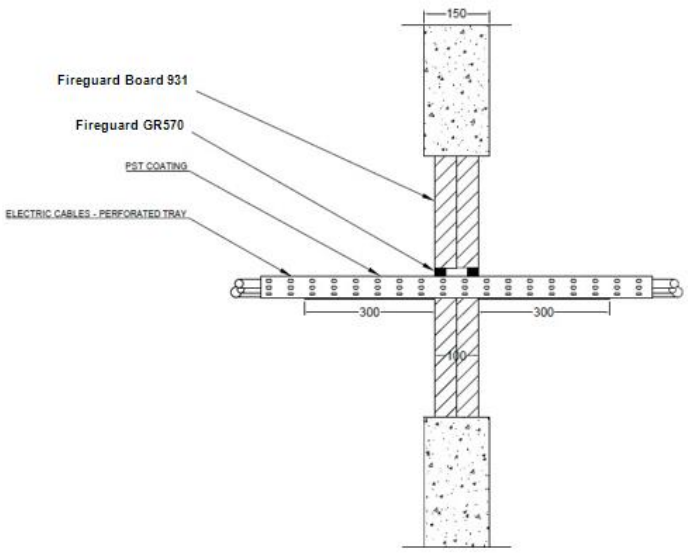
- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 700mm wide x 1100mm high
- Cables and cable trays wrapped with Stone Wool Insulation 45mm thick, 40Kg/m3 (L/I 200mm)
- First service support 400mm from both faces of the substrate



Service(s)	Classification
Electrical cables up to 21mm dia	**EI 120**
Electrical cables 22mm – 80mm dia	**E120, EI90**
Cable Trays and Ladders	**EI 120**
100 mm diameter bundle telecommunication cable type "F"	**EI 120**
Unsheathed electrical cables up to 24mm dia	**EI 120**

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 750mm wide x 1200mm high
- Cables and cable trays wrapped with Stone Wool Insulation 45mm thick, 40Kg/m3 (L/I 200mm)
- Fireguard GR570 20mm annulus full 50mm depth of the Fireguard Board 931
- First service support 400mm from both faces of the substrate

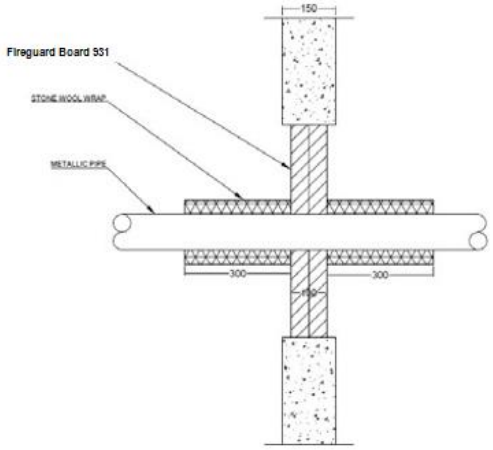


Penetration Specification	Classification
500mm perforated cable tray	**EI120**
Electrical cables up to 21mm ø	
1 off 'C1' Cable	
1 off 'C2' Cable	**E120** **EI90**
1 off 'C3' Cable	**EI120**

C3.2.2 Metallic Pipe Penetrations

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 700mm wide x 1100mm high
- Cables and cable trays wrapped with 40mm stone wool insulation (min 40Kg/m^3) (L/I 300mm)
- First service support 400mm from both faces of the substrate

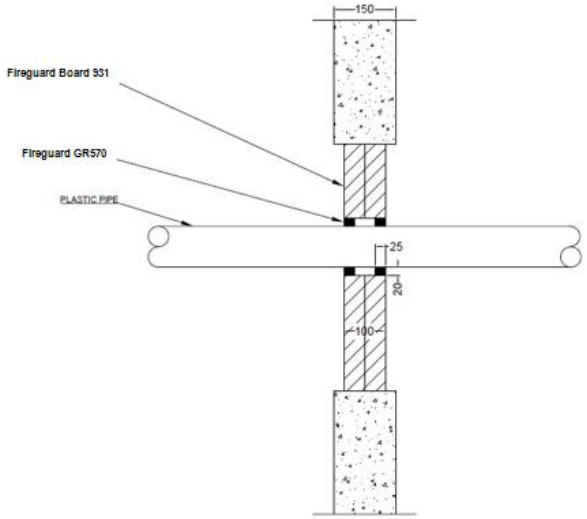


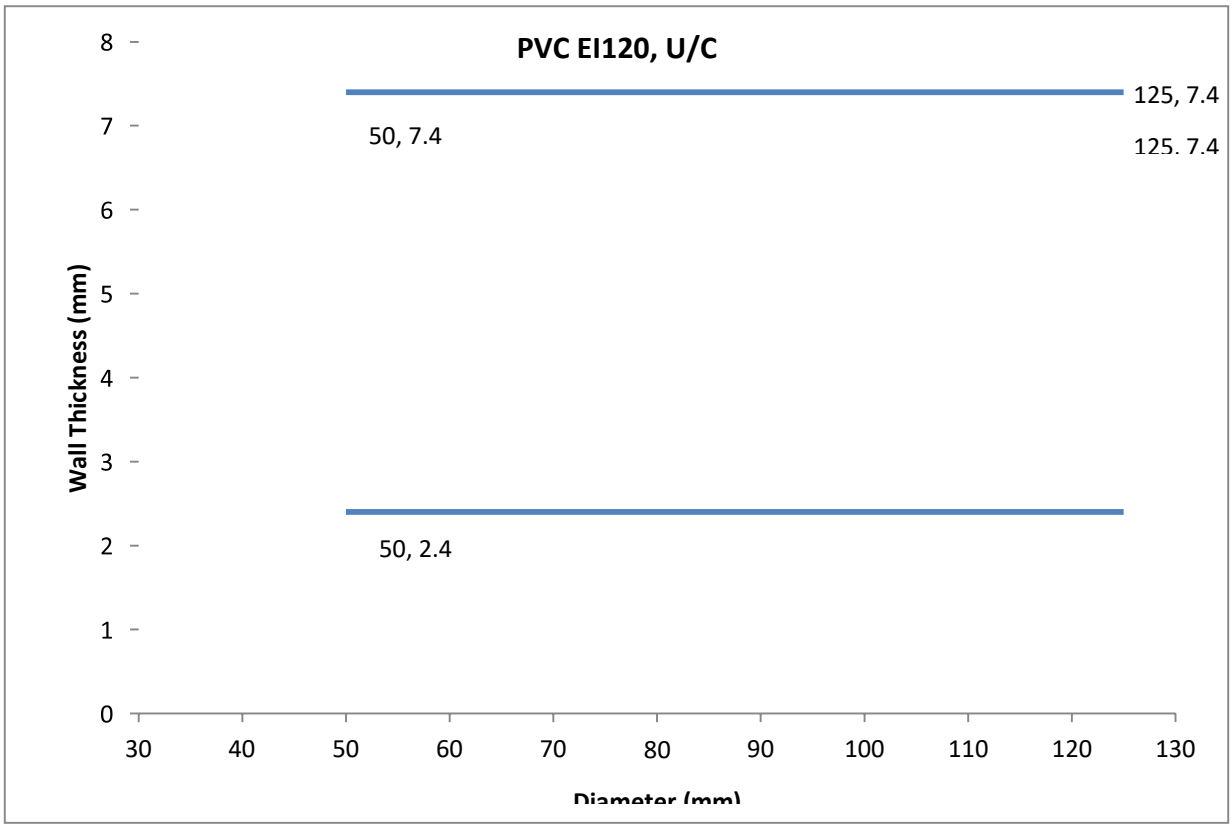
Service(s)	Classification
Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m^3)	**E120 C/U** **EI60 C/U**
Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m^3)	**E120 C/U** **EI30 C/U**

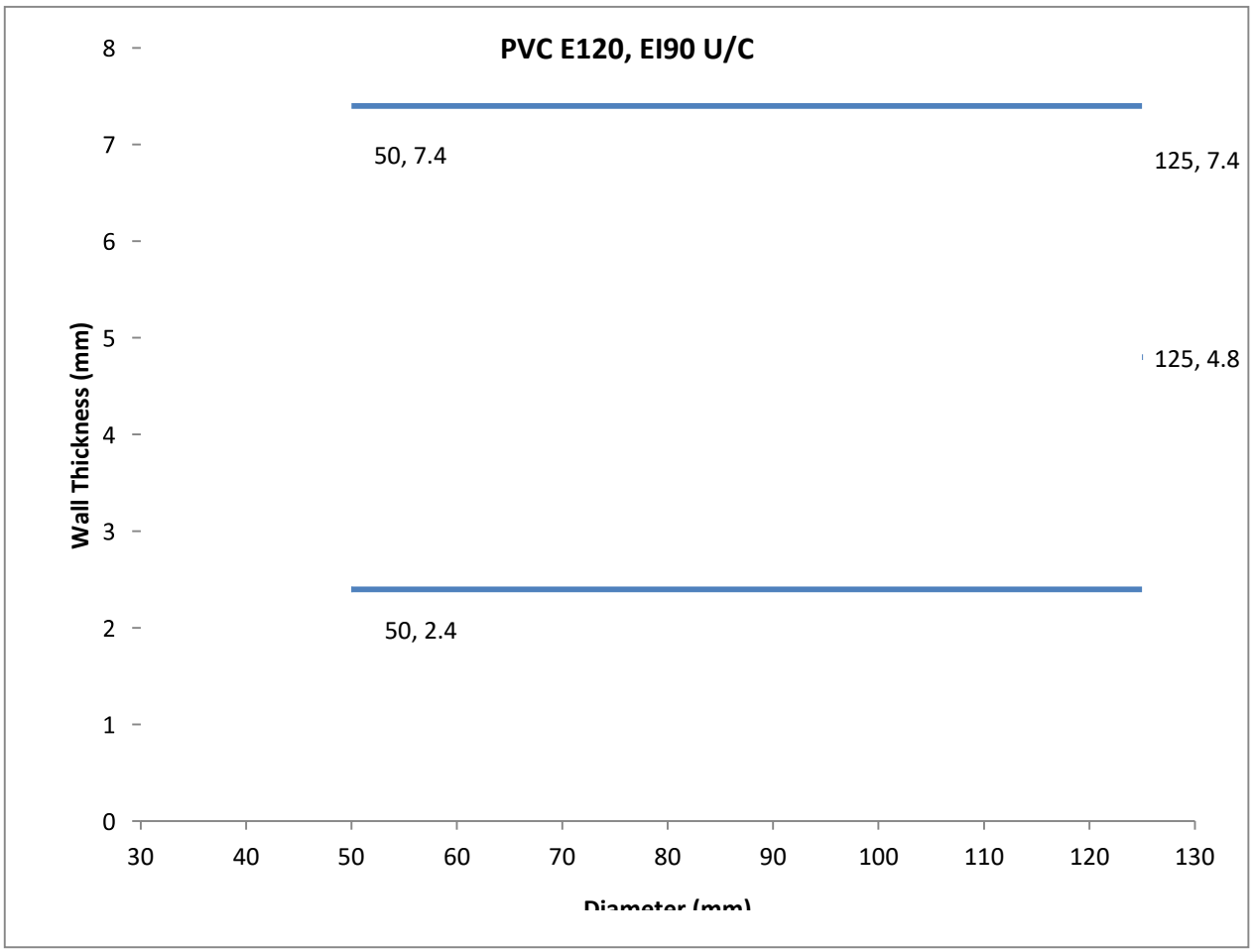
C3.2.3 Plastic Pipe Penetrations

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 750mm wide x 1100mm high
- Fireguard GR570 20mm annulus, 25mm deep both faces of the Fireguard Board 931
- First service support 400mm from both faces of the substrate

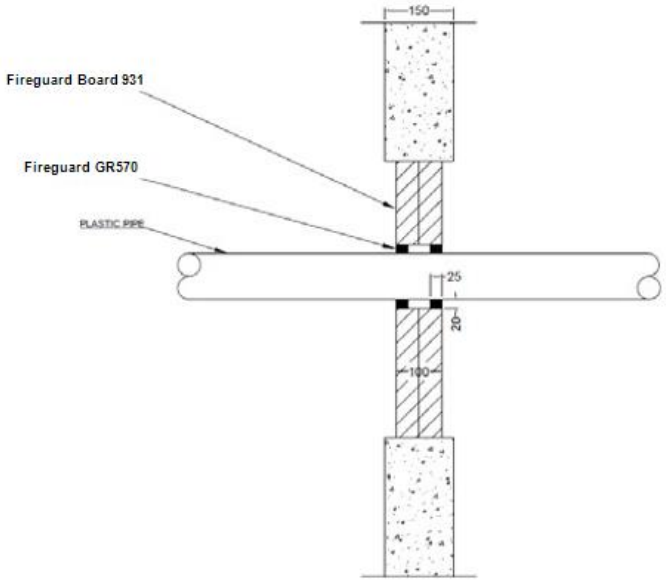





PVC E120, EI90 U/C
Wall Thickness (mm)
8
7
6
5
4
3
2
1
0
30
40
50
60
70
80
90
100
110
120
130
50, 7.4
125, 7.4
125, 4.8
50, 2.4

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 750mm wide x 1100mm high
- Fireguard GR570 20mm annulus, 25mm deep both faces of the Fireguard Board 931
- First service support 400mm from both faces of the substrate



Penetration Specification	Classification
Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall thickness	**EI120 U/C**
Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall thickness	

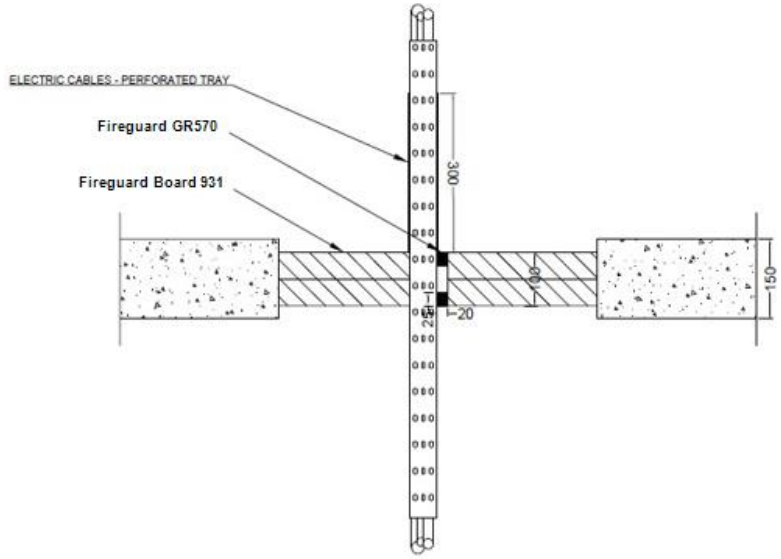
C3 Fireguard Board 931 Penetration Seal in Rigid Floors min. 150 mm thick

C3.1 Double Layer (50mm) Fireguard Board 931 Penetration Seal

C3.1.1 Cable Penetrations

Construction details:

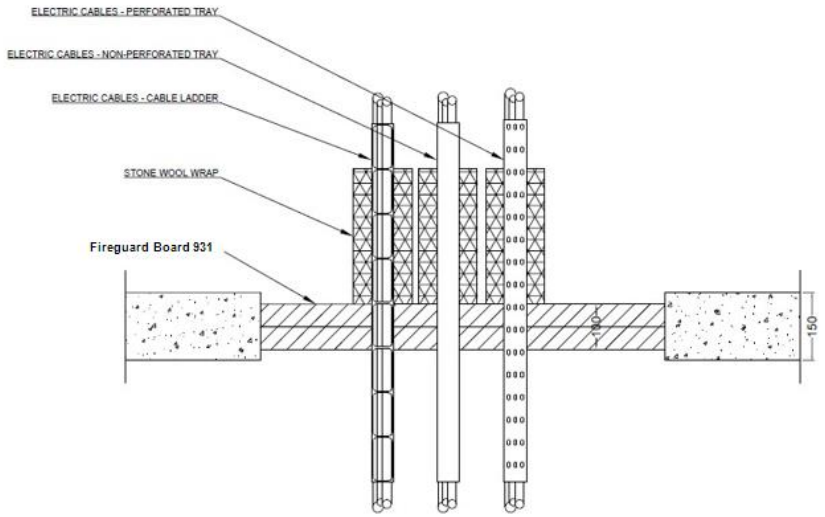
- Double layer of Fireguard Board 931 (50mm) installed internally within the floor.
- Max. Aperture size 700mm wide x 1100mm high
- All cables coated with 2mm DFT PST Coating 300mm along the cables upper side of the seal
- Fireguard GR570 20mm annulus full 25mm depth both sides of the floor
- First service support 400mm from both faces of the substrate



Penetration Specification	Classification
500mm perforated cable tray	**EI60**
Electrical cables up to 21mm ø	
1 off 'C1' Cable	
1 off 'C2' Cable	
1 off 'C3' Cable	

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the floor.
- Max. Aperture size 700mm wide x 1100mm high
- Cables and cable trays wrapped with a single layer of 40mm thick stonewool, min 40kg/m3 (L/I 300mm)
- First service support 400mm from both faces of the substrate

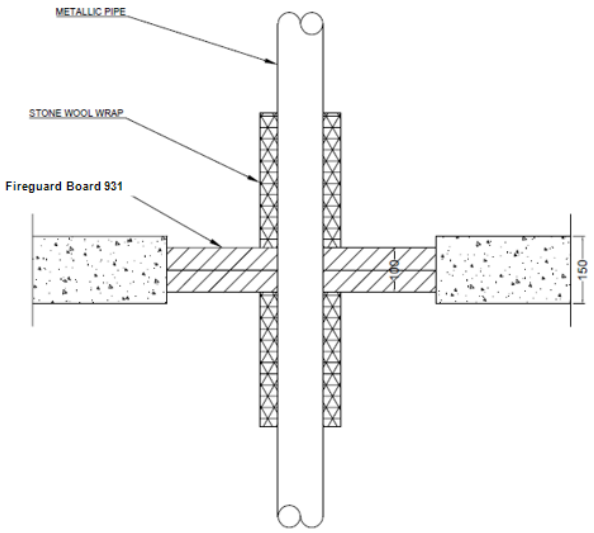


Service(s)	Classification
Electrical cables upto 80mm dia	**EI60**
Cable Trays and Ladders	
100 mm diameter bundle telecommunication cable type "F"	
Unsheathed electrical cables up to 17mm dia	
Unsheathed electrical cables 18-24mm dia	
Steel or Copper Conduits up to 16mm	
Plastic conduits up to 16mm	

C3.1.2 Metallic Pipe Penetrations

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 700mm wide x 1100mm high
- Cables and cable trays wrapped with 40mm stone wool insulation (min 40Kg/m^3) (L/I 300mm)
- First service support 400mm from both faces of the substrate

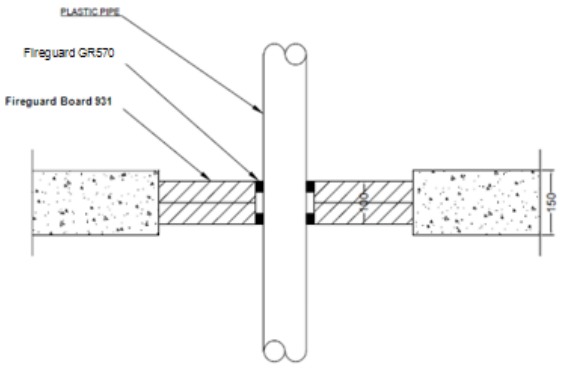


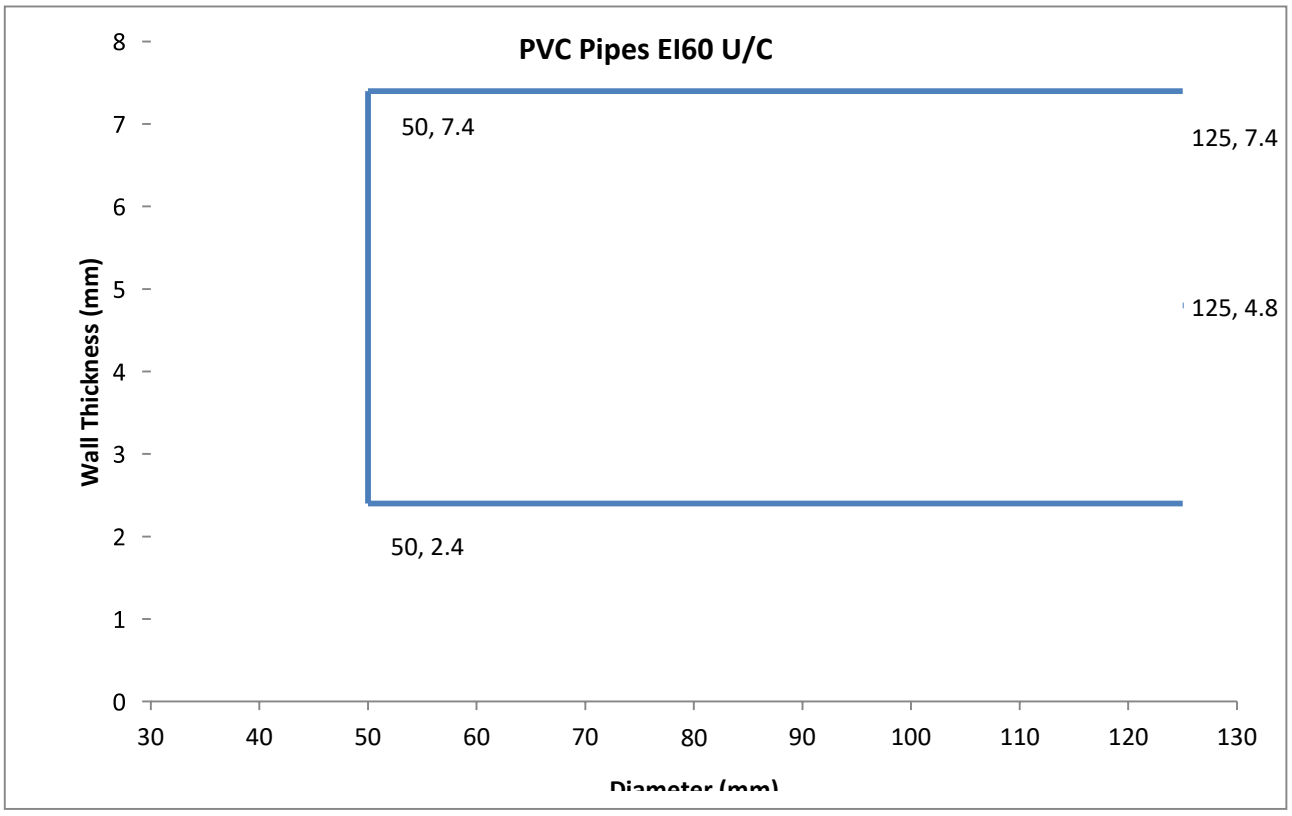
Service(s)	Classification
Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall thickness.	**EI120 C/U**
Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall thickness.	**E120 C/U** **EI30 C/U**

C3.1.3 Plastic Pipe Penetrations

Construction details:

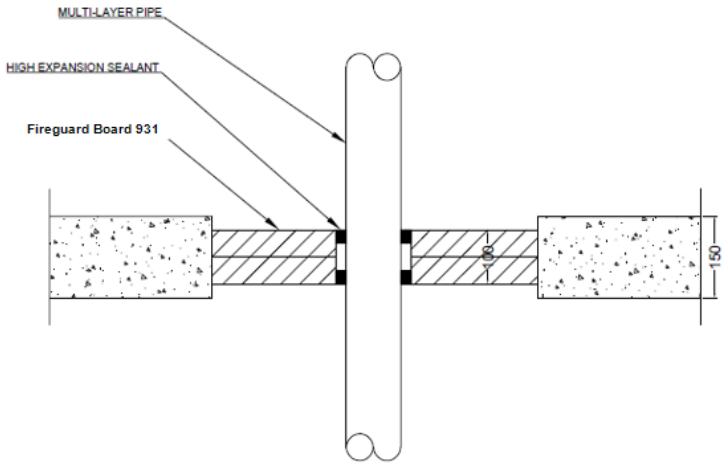
- Double layer of Fireguard Board 931 (50mm) installed internally within the floor.
- Max. Aperture size 750mm wide x 1100mm high
- Fireguard GR570 20mm annulus, 25mm deep both faces of the Fireguard Board 931
- First service support 400mm from both faces of the substrate





Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the floor.
- Max. Aperture size 750mm wide x 1100mm high
- Fireguard GR570 20mm annulus, 25mm deep both faces of the Fireguard Board 931
- First service support 400mm from both faces of the substrate



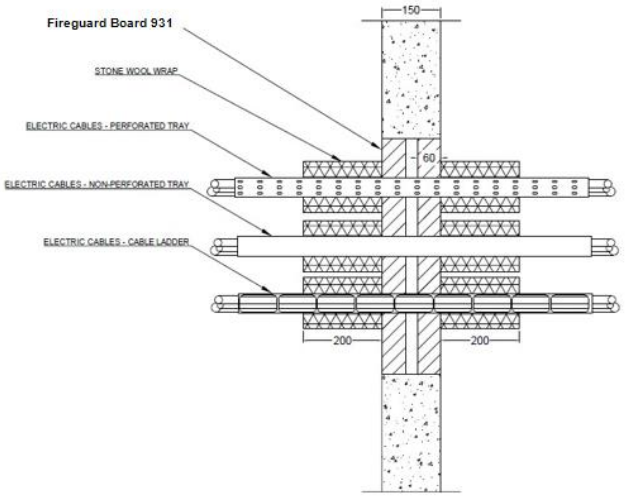
Penetration Specification	Classification
Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall thickness	**EI60 U/C**
Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall thickness	
Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall thickness	

C3 Fireguard Board 931Penetration Seal in Rigid Walls min. 150 mm thick

C3.1 Double Layer (60mm) Fireguard Board 931 Penetration Seal C3.1.1 Cable Penetrations

Construction details:

- Double layer of Fireguard Board 931 (50mm) installed internally within the wall.
- Max. Aperture size 700mm wide x 1100mm high
- Cables and cable trays wrapped with Stone Wool Insulation 45mm thick, 40Kg/m3 (L/I 200mm)
- First service support 400mm from both faces of the substrate



Service(s)	Classification
Electrical cables up to 21mm dia	**EI 120**
Electrical cables 22mm – 80mm dia	**E120** **EI90**
Cable Trays and Ladders	**EI 120**
100 mm diameter bundle telecommunication cable type "F"	**EI 120**
Unsheathed electrical cables up to 24mm dia	**EI 120**