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United Kingdom

appointed according to Article 29 of Construction Products Regulation 2011 as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020

UK Technical Assessment

0843-UKTA-22/0028 of 29/11/2022

Technical Assessment Body Issuing the UKTA:	UL International (UK) Ltd
Trade name of the construction product	Protecta FR IPT
Product family to which the construction product belongs	Fire Stopping and Sealing Product: • Penetration Seals
Manufacturer	Polyseam Ltd 15. St. Andrews Road Huddersfield, West Yorkshire HD1 6SB, UK www.protecta.co.uk
Manufacturing plant(s)	Polyseam Ltd 15. St. Andrews Road Huddersfield, West Yorkshire HD1 6SB, UK
This UK Technical Assessment contains	25 pages including 1 Annex which forms an integral part of this assessment.
This UK Technical Assessment* is issued, on the basis of	EAD 350454-00-1104, September 2017.
Corrigendum No. 1	

*** in accordance with Construction Products Regulation 2011 as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020**

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I. SPECIFIC PARTS OF THE UK TECHNICAL ASSESSMENT

1 Technical description of the product

1) Protecta FR IPT is a sealant used to form a penetration seal around cables, conduits, metallic pipes and plastic pipes 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 Protecta FR IPT is supplied in liquid form contained within 200 ml, 300 ml, 380 mm and 600 ml containers. The sealant is gunned into the aperture in the separating element/elements and around the service or services, to a specified depth utilising a backing material.

3) Protecta FR IPT contains no carcinogenic substances or mutagenic substances, flame retardants or antimicrobiological agents.

4) Polyseam AS 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 United Kingdom 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.

5) The use category of Protecta FR IPT in relation BWR 4 (safety in use) is IA1, S/W2

2 Specification of the intended uses of the product in accordance with the applicable UK Assessment Document (Pre-Exit European Assessment Document): EAD 350454-00-1104, September 2017

Detailed information and data is given in Annex A.

1) The intended use of system Protecta FR IPT is to reinstate the fire resistance performance of flexible wall constructions, rigid wall constructions and rigid floor constructions where they are penetrated by various metal pipe services without combustible insulation, and plastic pipes.

2) The specific elements of construction that the system Protecta FR IPT may be used to provide a penetration seal in, are as follows:

   a. Flexible walls: The wall must have a minimum thickness of 100 mm and comprise steel studs or timber studs* lined on both faces with minimum 2 layers of 12.5 mm thick boards. Flexible wall solutions may also be used in rigid walls, with a minimum density of 350 kg/m^3.
   b. 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.
   c. 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/m3

   * no part of the penetration seal may 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 must be provided within the cavity between the penetration seal and the stud.

Protecta Fire Protection Systems which involve services penetrating both sides of a flexible wall may also be used in the situation where the services penetrates one side of the wall only and the remaining side of the wall is not penetrated at the same point (i.e. the services continues on the inside of the wall). All fire integrity and thermal insulation ratings for such single-sided penetrations remain the same as for the equivalent double-sided penetration.

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

3) The system Protecta FR IPT may be used to provide a penetration seal with specific cables, conduits, single uninsulated metal pipes and plastic pipes (for details see Annex A).

4) The annular ring width should be minimum 10 mm and maximum 30 mm. The annular space/gap around the services shall be infilled with Protecta FR IPT. For full details, see Annex A.

5) Where a backing material is described in Annex A, this can be replaced with Protecta FR IPT if the total seal depth is the same or greater.

6) Where single sided top face seals are described in Annex A, these can also be used in composite floors (e.g., concrete filled, steel trapezoidal decking).

7) Services through the system Protecta FR IPT may be used in all angles between 90° and 45° in all directions, subject to metallic pipes only.

8) Where PVC pipes are mentioned in Annex A, this includes PVC-U, PVC-C and similar if the pipe is according to EN 1329-1, EN 1452-2, EN 1453-1^ and EN 1566-1. Where PP pipes are mentioned in Annex A, this includes PP-MV, PP-H, PP-R and similar if the pipe is according to EN 1451-1 or DIN 8077/8078. Where PE pipes are mentioned, this includes PE-LD, PE-MD, PE-HD, PE-X and similar according to EN 1519-1, EN 12201-2 or EN 12666-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1.

9) Pipes shall be supported at maximum 250 mm away from both faces of the wall constructions and 450 mm from the upper face of floor constructions.

10) The provisions made in this United Kingdom Technical Assessment are based on an assumed working life of the Protecta FR IPT of 25 years, provided that the conditions laid down in sections 4.2/5.1/5.2 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.

11) Type X: intended for use at conditions exposed to weathering and all lower classes.

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

Product-type: Sealant	Intended use: Penetration Seal	
Basic requirement for construction work	Essential characteristic	Performance
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	Class B-s1, d0
EN 13501-2	Resistance to fire	Annex A
BWR 3 Hygiene, health and environment		
EN 1026	Air permeability	Annex B
EAD 350454-00-1104, Annex C	Water permeability	No performance determined
Declaration of manufacturer & EN 16516	Content, emission and/or release of dangerous substances	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	X
BWR 5 Protection against noise		
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	Rw (C;Ctr)= 62 (0;-4) dB*
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

* Tested at 12 mm deep by 30 mm wide by 1200 mm long as it was impracticable for this product to be tested in the configuration as per EAD 350454-00-1104, Clause 2.2.10

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

According to the Statutory Instrument 2019 No. 465 – made 5th March 2019 and cited as the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and coming into force on exit day and Statutory Instrument 2020 No. 1359 – made 26th November 2020 and cited as the Construction Products (Amendment etc.) (EU Exit) Regulations 2020 and coming into force immediately before the 2019 Regulations come into force, on the procedure for attesting the conformity of construction products as regards fire stopping, fire sealing and fire protective products, published as 'Pre-Exit' European Assessment Documents, (see https://www.gov.uk/guidance/pre-exit-european-assessment-documents-construction-products), the system of assessment and verification of constancy of performance (see Annex V to Construction Products Regulation 2011 as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020) given in the following table(s) 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 UK Technical Assessment.

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

The factory production control shall be in accordance with the Control Plan of 14th October 2021 relating to the UK Technical Assessment 0843-UKTA-22/0028 issued on 29/11/2022 which is part of the technical documentation of this UK 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.

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. pipe trays)

(b) Installation instruction:

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

6 Issued on:

29th November 2022

Report by:

D. Yates
Senior Project Engineer
Built Environment

Reviewed by:

C. Johnson
Senior Staff Engineer
Built Environment

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

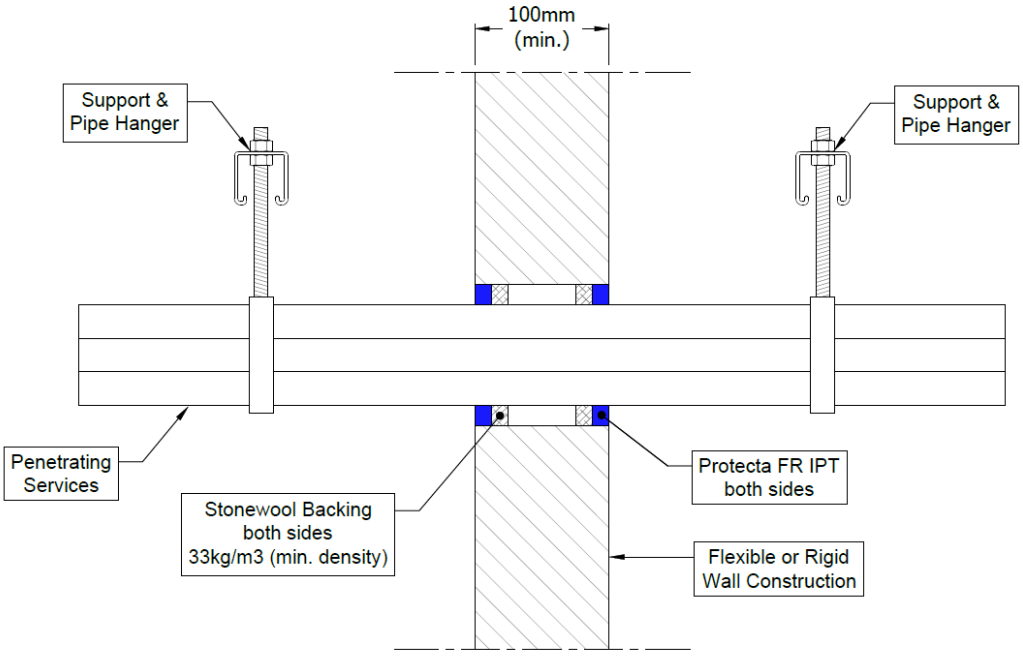
ANNEX A – Resistance to Fire Classification – Protecta FR IPT

A.1 Flexible and rigid wall constructions according to 1.2.1 with wall thickness of minimum 100 mm

A.1.1 Double side penetration seal with cables and conduits

Penetration Seal: Cables (single or bundles up to 100 mm Ø) and conduits fitted at any position within the aperture, with Protecta FR IPT sealant to both sides of the wall, backed with stone wool insulation. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

Construction details:



A.1.1.1 Double sided penetration seal with cables

Services	Sealant depth (min.)	Backing (min.)	Aperture Ø	Classification
Cables up to 21 mm Ø	12.5 mm	Stone wool 12.5 mm deep 33 kg/m^3	Maximum annular ring width 30 mm	**E 90, EI 60**
Cables up to 21 mm Ø, in bundles up to 50 mm Ø				**EI 60**
Cables up to 21 mm Ø, in bundles up to 100 mm Ø				**E 60, EI 45**

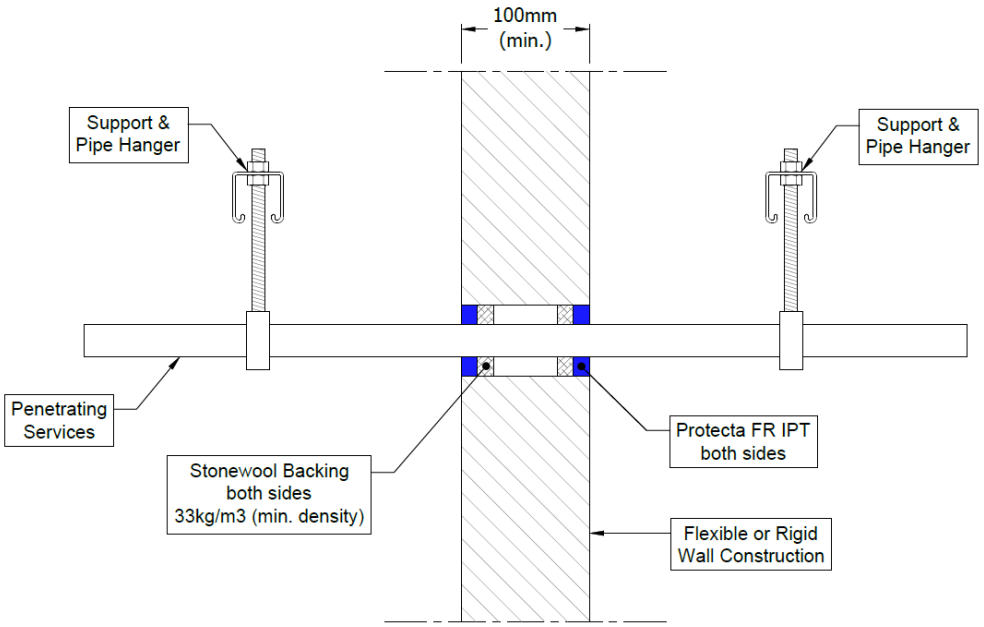
A.1.1.2 Double sided penetration seal with conduits

Services	Sealant depth (min.)	Backing (min.)	Maximum Annular space	Classification
PVC pipe				
Diameter 32 mm, wall thickness 1.6 mm for PVC pipes, fully or partially filled conduits with cables up to 21 mm diameter	12.5 mm	Stone wool 12.5 mm deep 33 kg/m^3	30 mm	**E 90, EI 60 C/C**
Maximum diameter 32 mm, wall thickness 1.0-2.4 mm for PVC pipes, fully or partially filled conduits with cables up to 21 mm diameter	25 mm	None	30 mm	**E 90, EI 60 C/C**
PP pipe				
Diameter 32 mm, wall thickness 4.4 mm for PP pipes, fully or partially filled conduits with cables up to 21 mm diameter	12.5 mm	Stone wool 12.5 mm deep 33 kg/m^3	30 mm	**E 90, EI 60 C/C**
Maximum diameter 32 mm, wall thickness 1.8-4.4 mm for PP pipes, fully or partially filled conduits with cables up to 21 mm diameter	25 mm	None	30 mm	**E 90, EI 60 C/C**

A.1.2 Double side penetration seal with metallic (and composite) pipes

Penetration Seal: Pipe (single) fitted at any position within the aperture, with 12.5 mm deep Protecta FR IPT Sealant to both sides of the wall, backed with 12.5 mm deep stone wool insulation minimum 33kg/m^3. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

Construction details:



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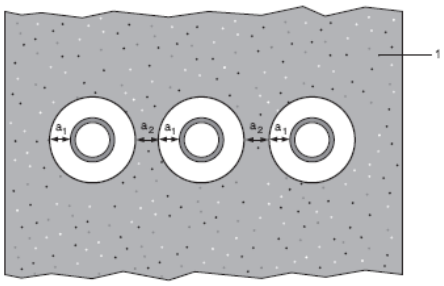
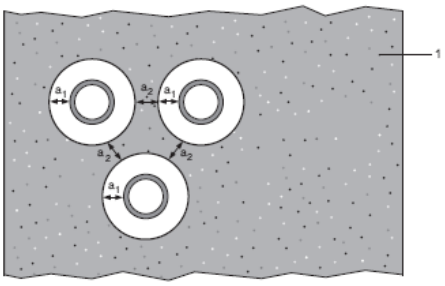
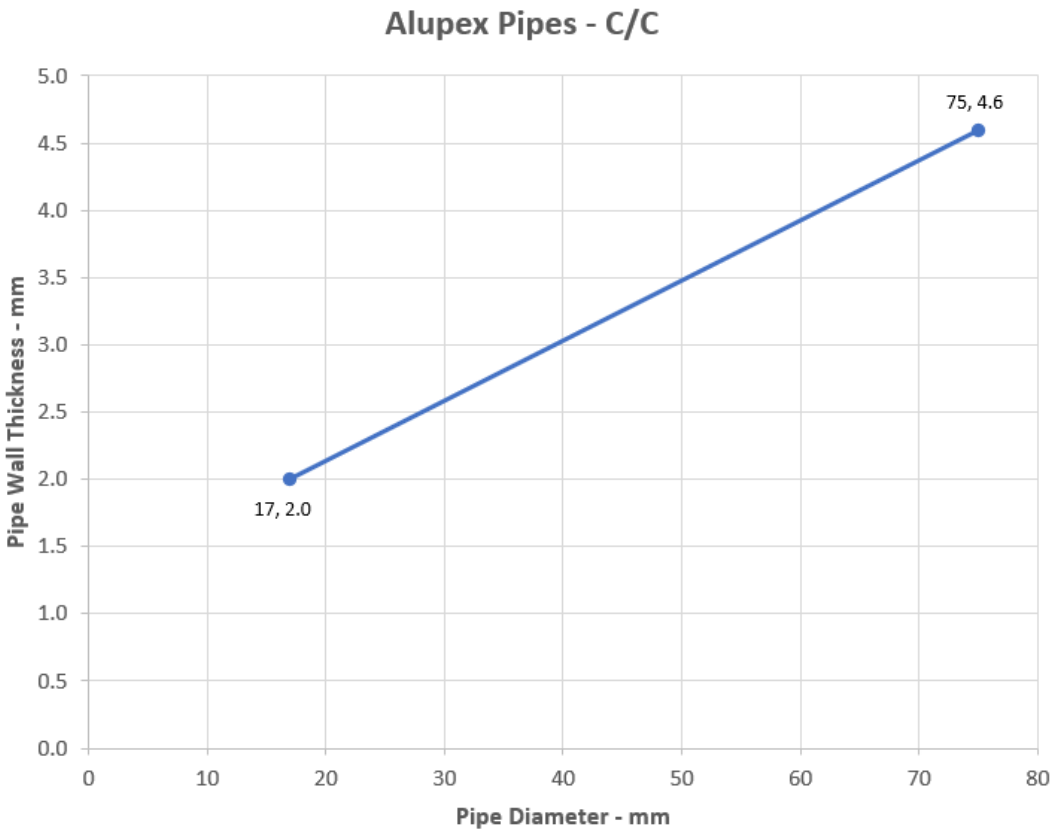
Option 1 	*Option 2* 

Key
1 Supporting construction
a1 Pipe / top edge of seal separation
a2 Pipe / side edge of seal separation
a3 Pipe / pipe separation

A.1.2.1

Services	Sealant depth (min.)	Backing (min.)	Aperture Ø	Classification
Alupex composite pipe 16-20 mm diameter/2.0 mm wall	12.5 mm	Stone wool 12.5 mm deep 33 kg/m^3	Maximum annular ring width 30 mm	**EI 120 C/C**
Alupex composite pipe 17-75 mm diameter/ *				**E 90, EI 15 C/C**
Steel pipe 4-22 mm diameter/1.0-11.0 mm wall				**EI 120 C/U**
Copper or steel pipe 6-12 mm diameter/0.8-6.0 mm wall				**E 120, EI 60 C/C**
Copper or steel pipe 13-54 mm diameter/0.8-14.2 mm wall				**E 90 C/C**

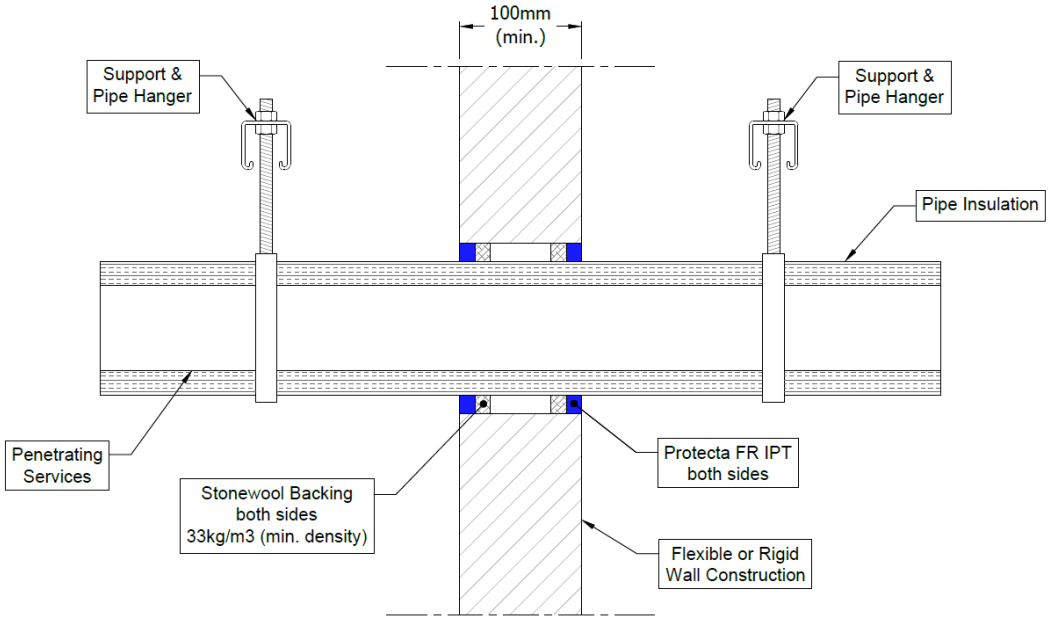
* See below graphs for interpolated pipe sizes



A.1.3 Double side penetration seal with metallic pipes

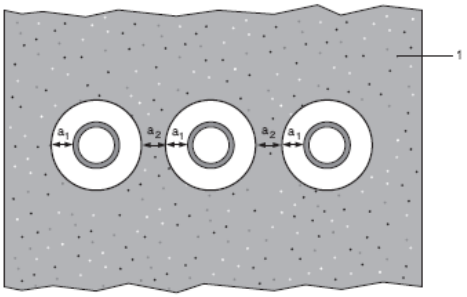
Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with minimum 12.5 mm Protecta FR IPT to both sides of the wall, backed with minimum 12.5 mm deep stone wool insulation minimum 33 kg/m^3. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2). Maximum annular ring width 30 mm.

Construction details:



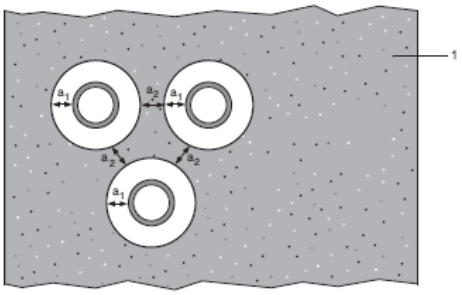
Configuration 1:

Option 1



Configuration 2:

Option 2

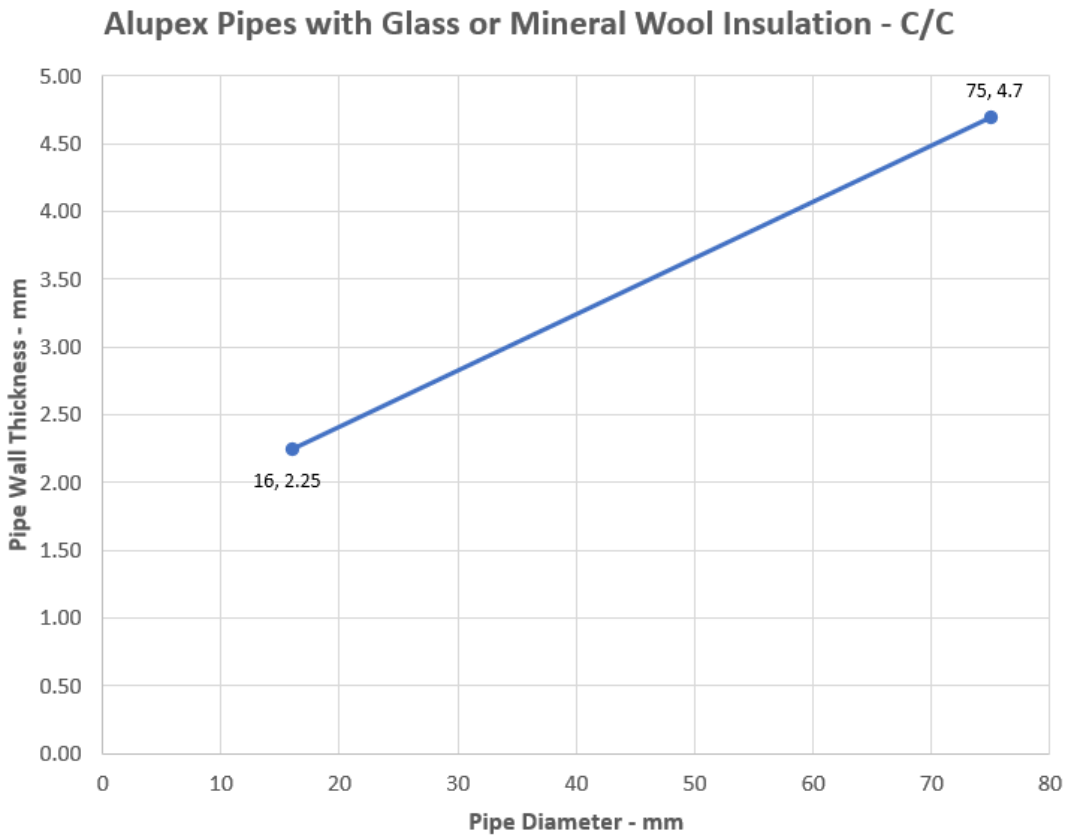


Key
1 Supporting construction
a1 Pipe / top edge of seal separation
a2 Pipe / side edge of seal separation
a3 Pipe / pipe separation

A.1.3.1 Double sided penetration seal with pipes

Services	Insulation	Classification
Copper or steel pipe maximum 54 mm diameter/0.7-14.2 mm wall *	20 mm thick glass or stone, mineral wool min. 75 kg/m^3	**EI 90 C/U**
Copper or steel pipe maximum 54 mm diameter/0.7-14.2 mm wall *	20-40 mm thick glass or stone, mineral wool min. 75 kg/m^3	**E 90, EI 60 C/U**
Alupex composite pipe 75 mm diameter/ 4.7 mm wall	60 mm thick glass or stone, mineral wool min. 75 kg/m^3	**EI 120 C/C**
Alupex composite pipe maximum 75 mm diameter/ *	20-60 mm thick glass or stone, mineral wool min. 75 kg/m^3	**EI 90 C/C**

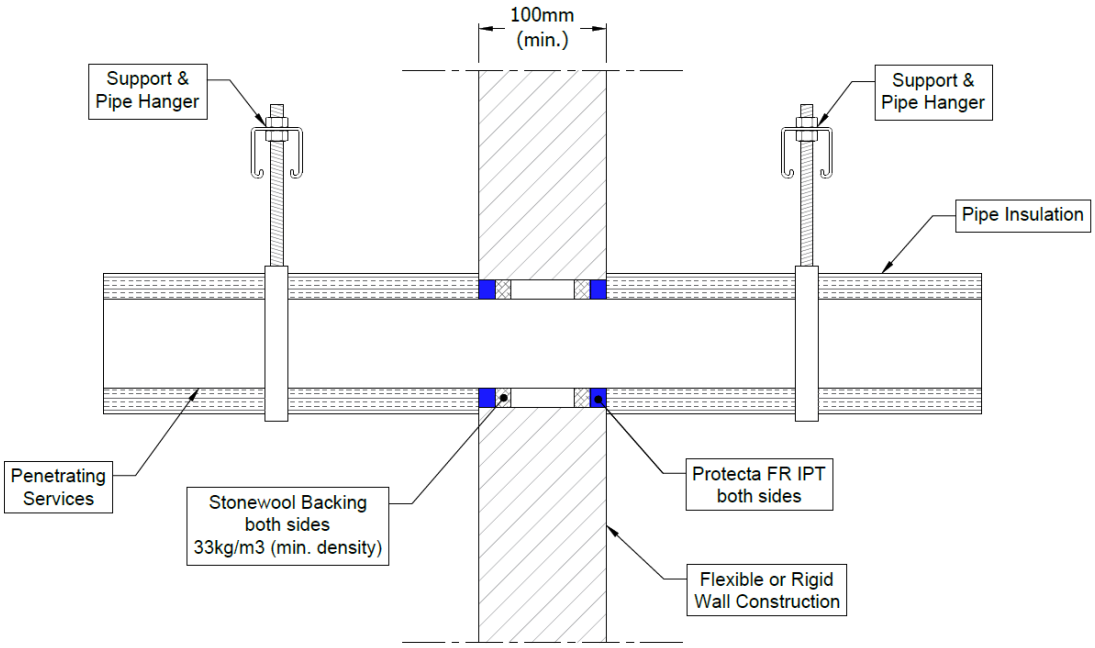
* See below graphs for interpolated pipe sizes


Alupex Pipes with Glass or Mineral Wool Insulation - C/C
Pipe Wall Thickness - mm
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0
10
20
30
40
50
60
70
80
Pipe Diameter - mm
75, 4.7
16, 2.25

A.1.4 Double side penetration seal with metallic (and composite) pipes

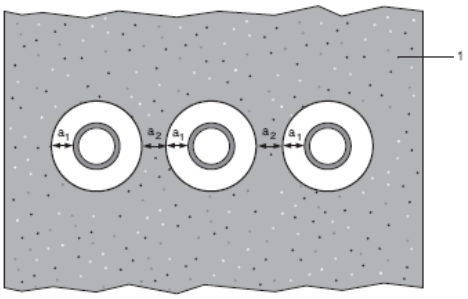
Penetration Seal: LI (Local Interrupted) of minimum length stated below or CI (Continuous Interrupted) insulated metallic pipes and composite (single) fitted at any position within the aperture, with minimum 12.5 mm Protecta FR IPT to both sides of the wall, backed with minimum 12.5 mm deep stone wool insulation minimum 33 kg/m^3. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2). Maximum annular ring width 30 mm.

Construction details:



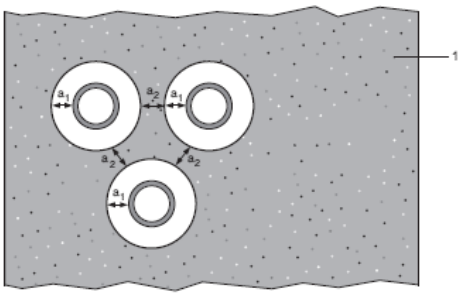
Configuration 1:

Option 1



Configuration 2:

Option 2



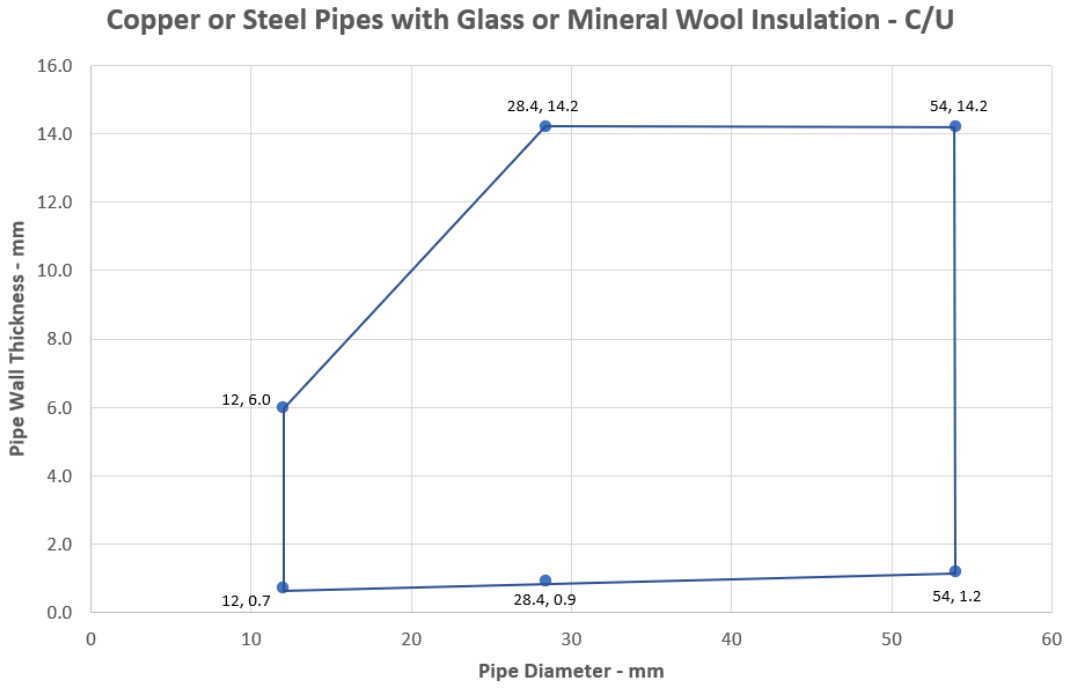
Key

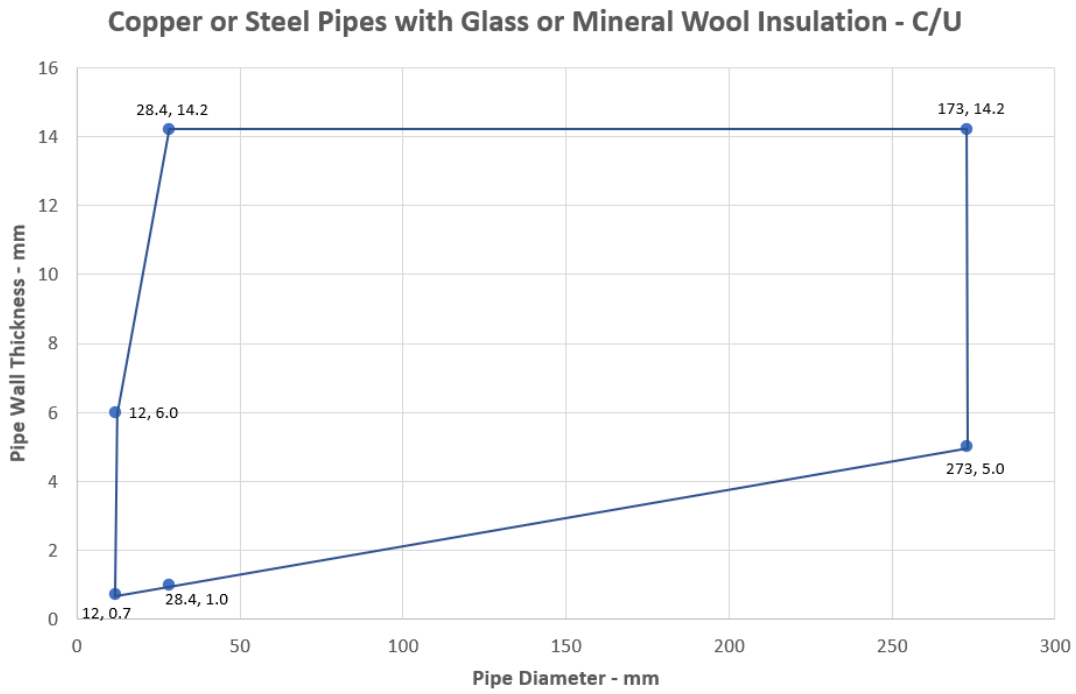
1 Supporting construction
a1 Pipe / top edge of seal separation
a2 Pipe / side edge of seal separation
a3 Pipe / pipe separation

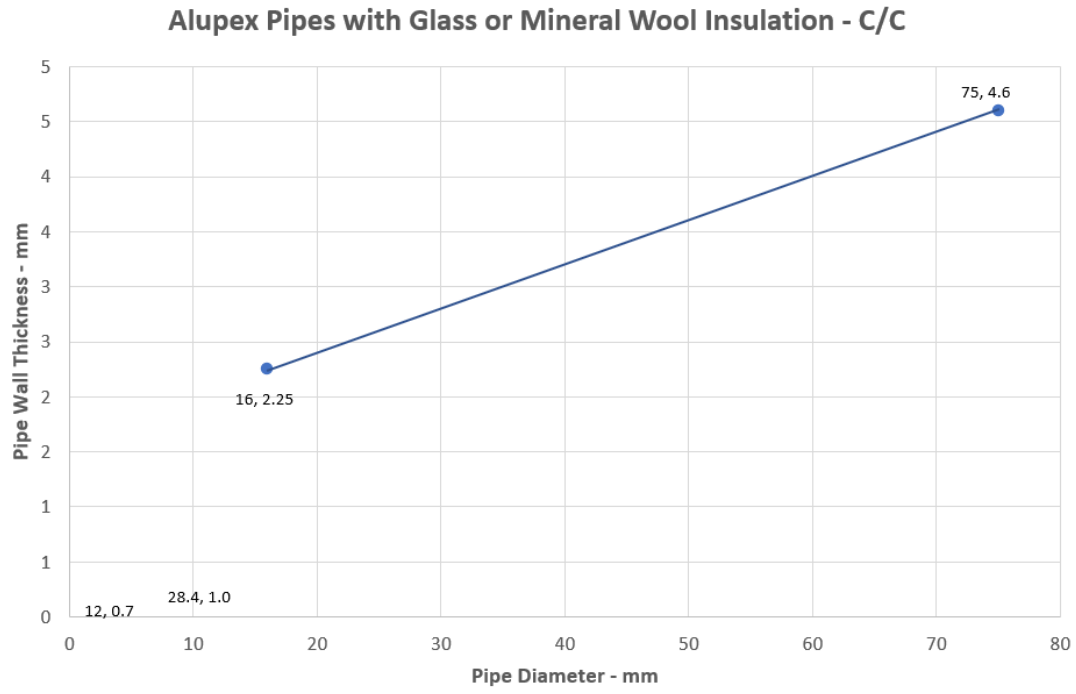
A.1.4.1 Double sided penetration seal with pipes

Services	Insulation (minimum)	Classification
Copper or steel pipe maximum 54 mm diameter/0.7-14.2 mm wall *	500 mm length of 20 mm thick glass or stone, mineral wool 75 kg/m^3	**E 90, EI 60 C/U**
Steel pipe maximum 273 mm diameter/0.7-14.2 mm wall *	500 mm length of 30 mm thick glass or stone, mineral wool 75 kg/m^3	**E 90, EI 60 C/U**
Alupex composite pipe 16 mm diameter/ 2.25 mm wall	500 mm length of 20 mm thick glass or stone, mineral wool 75 kg/m^3	**EI 120 C/C**
Alupex composite pipe maximum 75 mm diameter/ *	500 mm length of 25 mm thick glass or stone, mineral wool 75 kg/m^3	**E 120, EI 90 C/C**

* See below graphs for interpolated pipe sizes



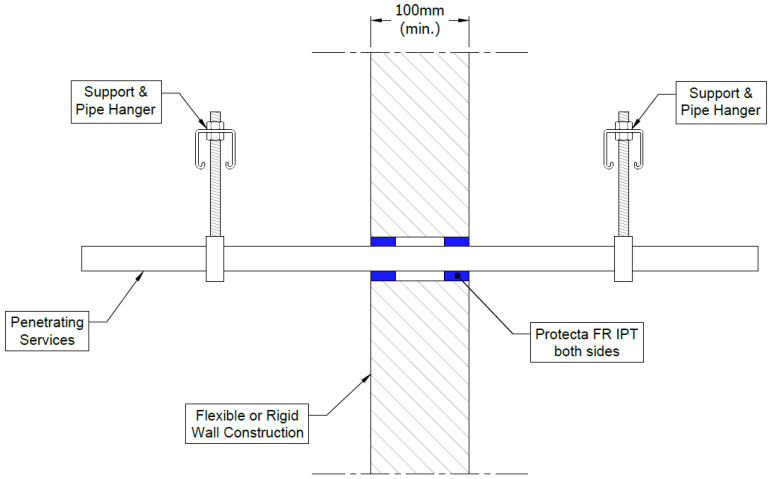

Copper or Steel Pipes with Glass or Mineral Wool Insulation - C/U
Pipe Wall Thickness - mm
Pipe Diameter - mm
28.4, 14.2
173, 14.2
12, 6.0
273, 5.0
28.4, 1.0
12, 0.7
0
2
4
6
8
10
12
14
16
0
50
100
150
200
250
300

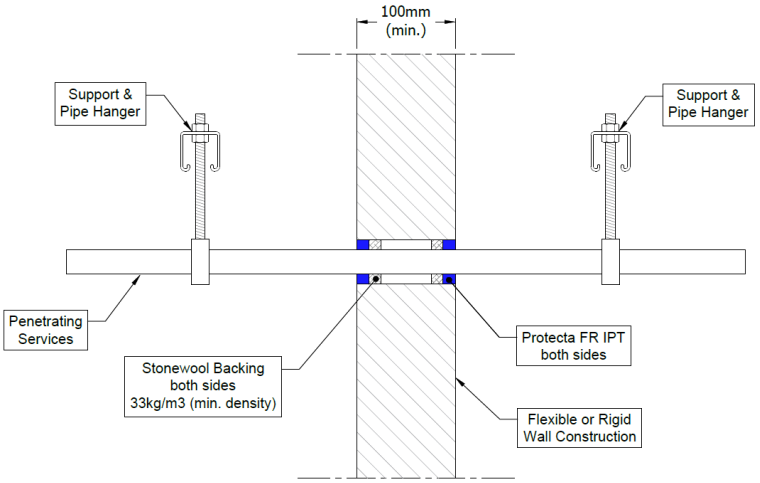

Alupex Pipes with Glass or Mineral Wool Insulation - C/C
Pipe Wall Thickness - mm
Pipe Diameter - mm
75, 4.6
16, 2.25
28.4, 1.0
12, 0.7
0
1
1
2
2
3
3
4
4
5
5
0
10
20
30
40
50
60
70
80

A.1.5 Double side penetration seal with plastic pipes

Penetration Seal: Plastic pipes (single) fitted at any position within the aperture, with 25 mm Protecta FR IPT to both sides of the wall. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

Construction details:





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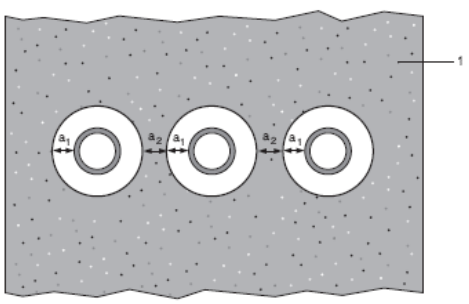
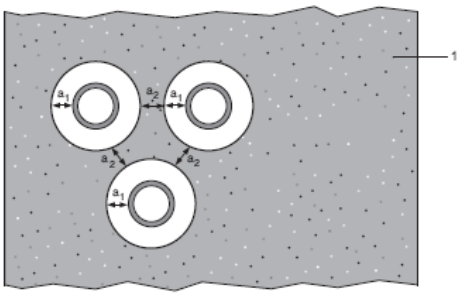
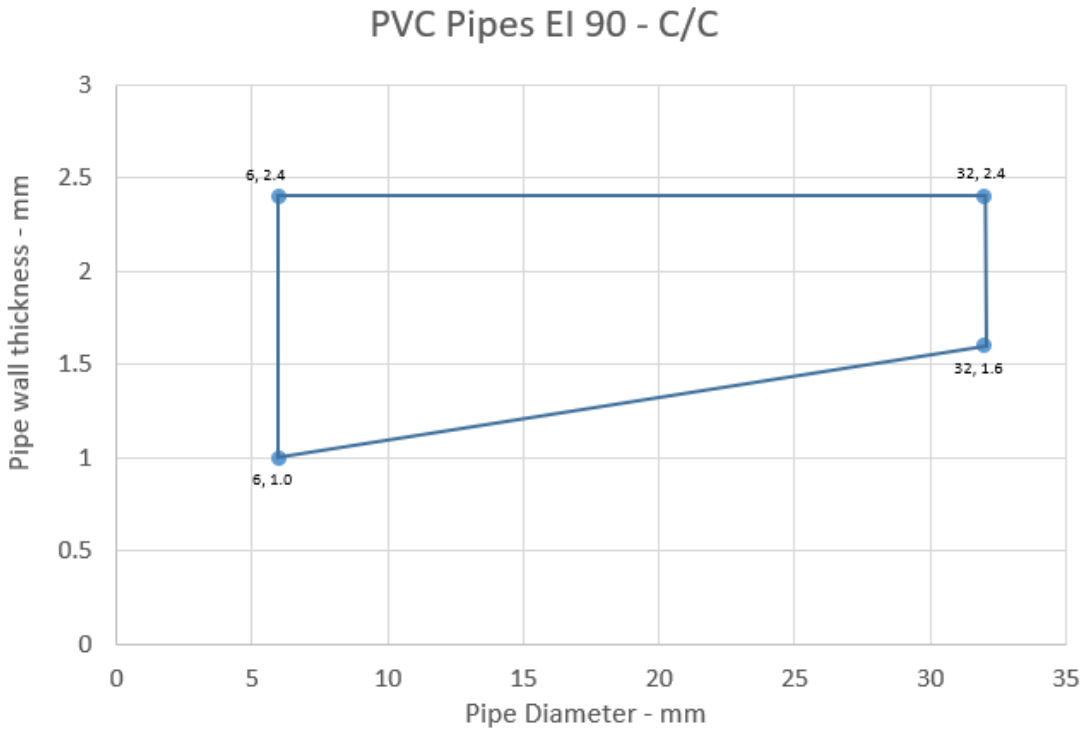
Option 1 	*Option 2* 

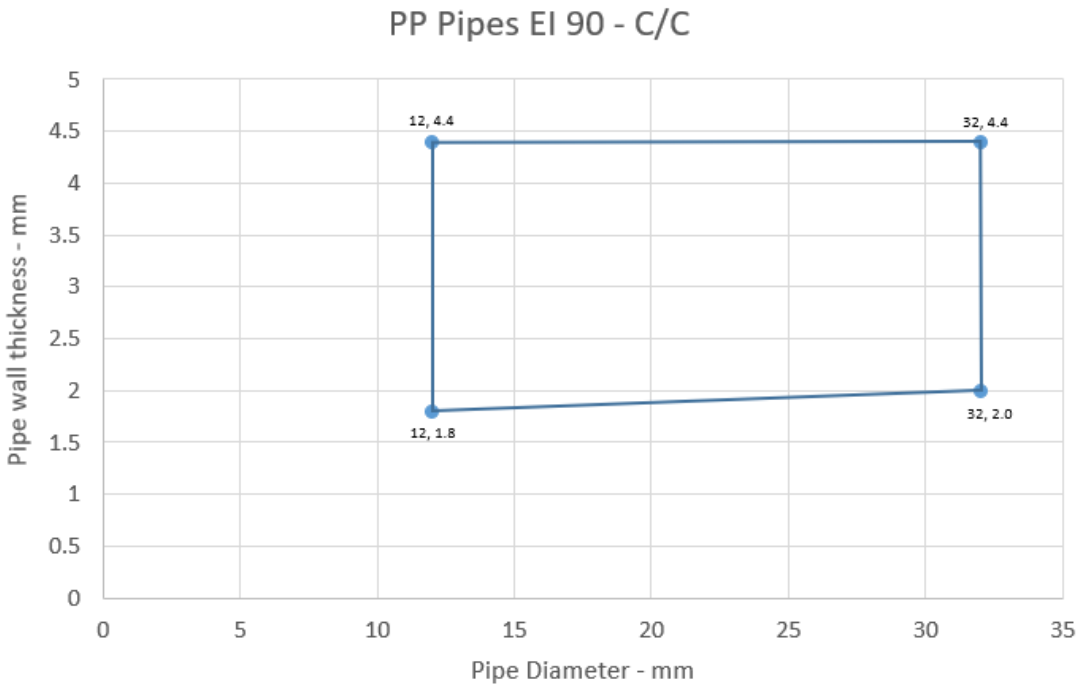
Key
1 Supporting construction
a1 Pipe / top edge of seal separation
a2 Pipe / side edge of seal separation
a3 Pipe / pipe separation

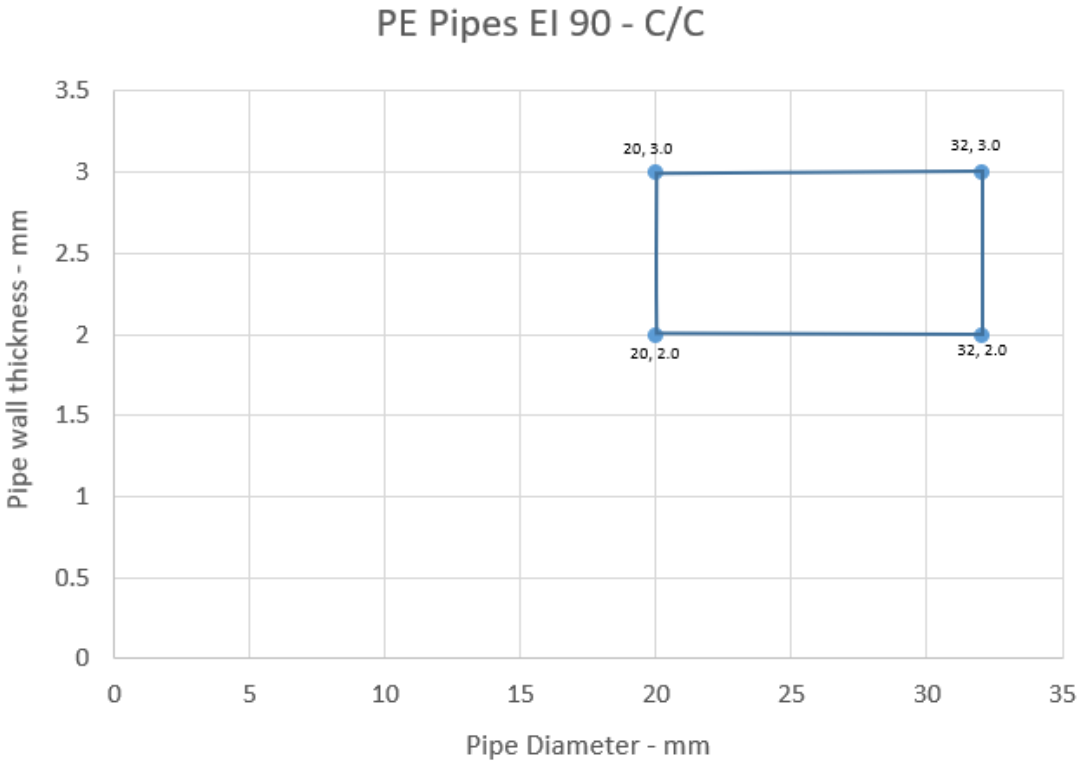
A.1.5.1

Services	Sealant depth (minimum)	Backing (minimum)	Classification
PVC pipe			
32 mm Ø/1.6 mm wall	12.5 mm	Stone wool 12.5 mm deep 33 kg/m^3	**E 90, EI 60 C/C**
6-32 mm Ø/1.0-2.4 mm wall*	25 mm	None	**EI 90 C/C**
PP pipe			
32 mm Ø/4.4 mm wall	12.5 mm	Stone wool 12.5 mm deep 33 kg/m^3	**E 90, EI 60 C/C**
12-32 mm Ø/1.8-4.4 mm wall*	25 mm	None	**EI 90 C/C**
PE pipe			
20-32 mm Ø/2.0-3.0 mm wall*	25 mm	None	**EI 90 C/C**

*See below graphs for interpolated pipe sizes and permitted pipe wall thicknesses




PP Pipes EI 90 - C/C
Pipe wall thickness - mm
Pipe Diameter - mm
12, 4.4
32, 4.4
12, 1.8
32, 2.0
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0
5
10
15
20
25
30
35

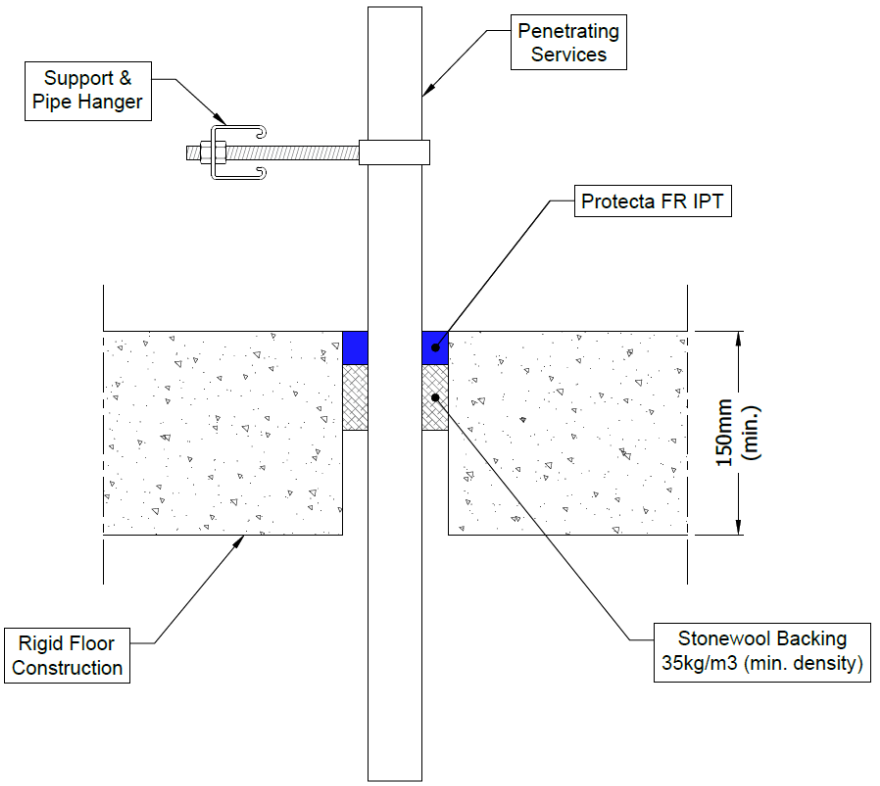

PE Pipes EI 90 - C/C
Pipe wall thickness - mm
Pipe Diameter - mm
20, 3.0
32, 3.0
20, 2.0
32, 2.0
0
0.5
1
1.5
2
2.5
3
3.5
0
5
10
15
20
25
30
35

A.2 Rigid floor constructions according to 1.2.1 with floor thickness of minimum 150 mm

A.2.1 Single side penetration seal with pipes

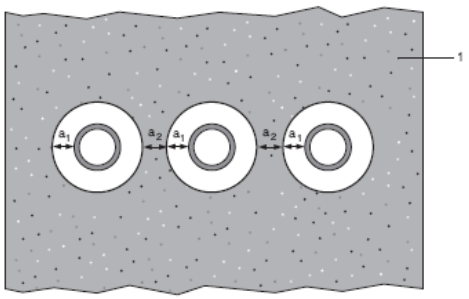
Penetration Seal: Pipes fitted at any position within the aperture, with Protecta FR IPT to the top face of the floor, backed with 48 mm stone wool minimum 35kg/m^3. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 30 mm (a2).

Construction details:



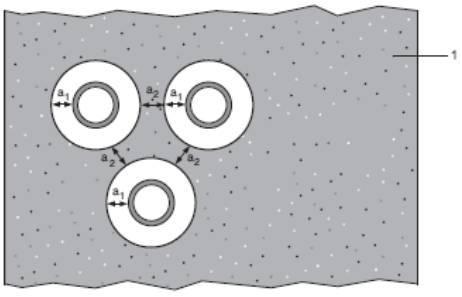
Configuration 1:

Option 1



Configuration 2:

Option 2



Key

1 Supporting construction

a1 Pipe / top edge of seal separation

a2 Pipe / side edge of seal separation

a3 Pipe / pipe separation

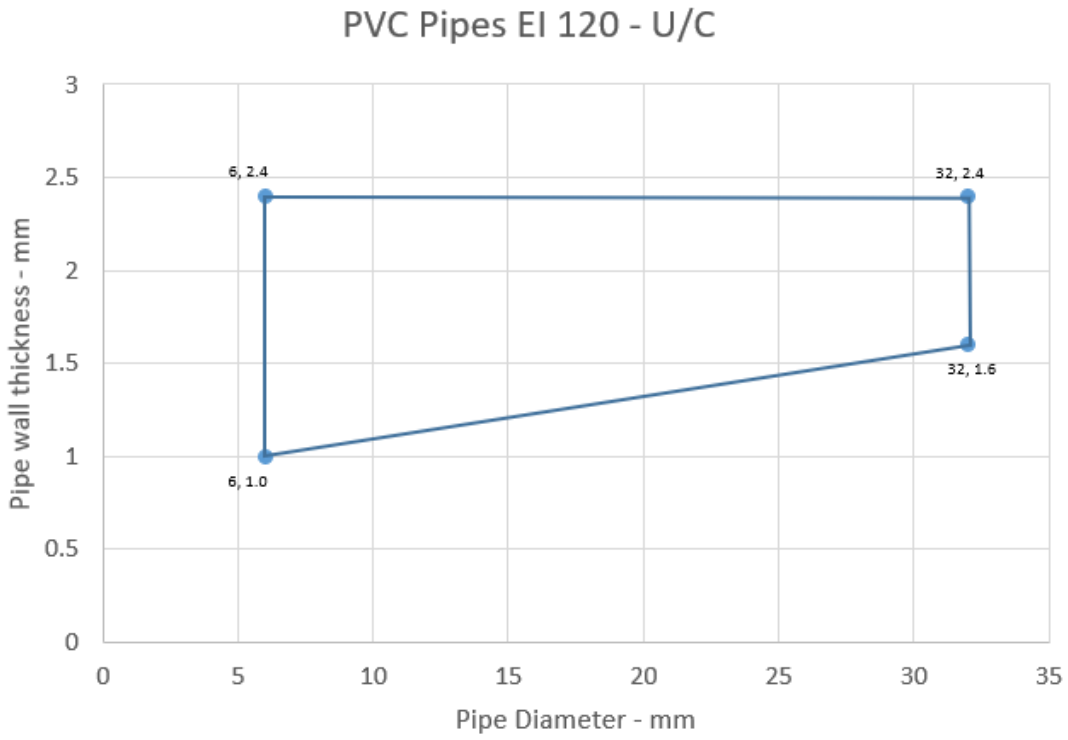
A.2.1.1

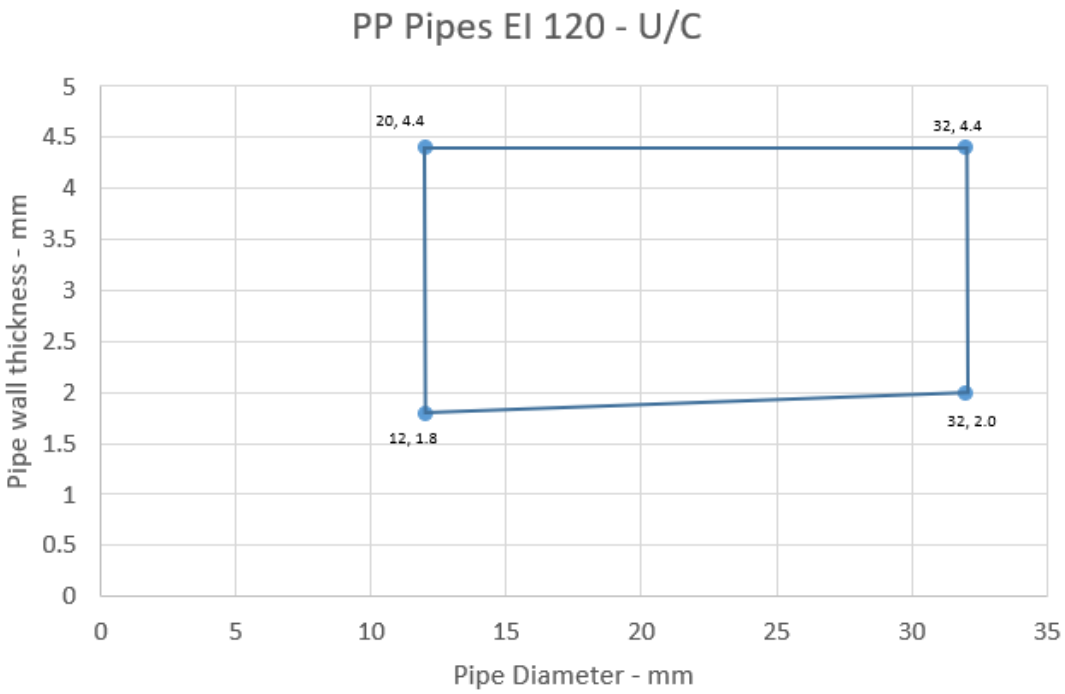
Services	Sealant depth (min.)	Backing (min.)	Aperture (max.)	Classification
Mild or stainless steel pipe				
4-16 mm diameter/1.0-8.0 mm wall	25 mm	48 mm stone wool	Annular ring width 30 mm	**EI 120 C/U**
Copper or steel pipe				
Up to 10 mm diameter/0.7-5.0 mm wall	25 mm	48 mm stone wool	Annular ring width 30 mm	**EI 120 C/C**
11-15 mm diameter/0.7 -7.5 mm wall	25 mm	48 mm stone wool	Annular ring width 30 mm	**E 120, EI 45 C/C**
Alupex composite pipe				
16-20 mm diameter/2.0 mm wall	25 mm	48 mm stone wool	Annular ring width 30 mm	**EI 120 C/C**

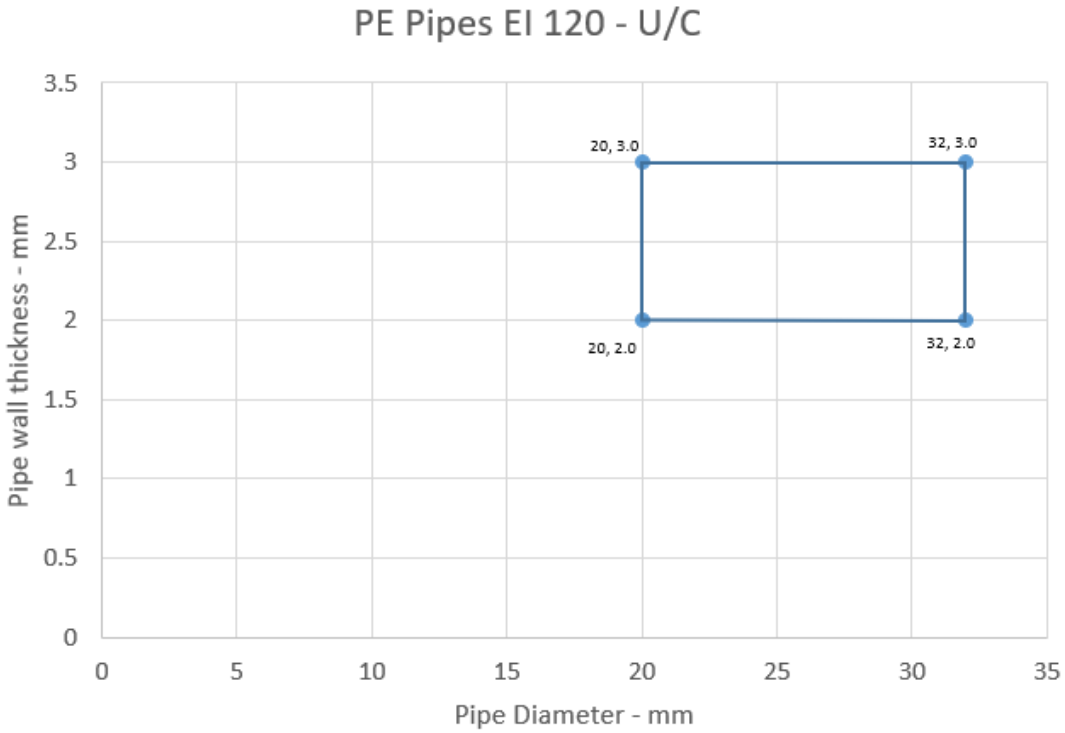
A.2.1.2

Services	Sealant depth (minimum)	Backing (minimum)	Classification
PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1			
6-32 mm diameter/1.0-2.4 mm wall*	25 mm	48 mm stone wool	**EI 120 U/C**
PP pipe according to EN 1451-1			
12-32 mm diameter/1.8-4.4 mm wall*	25 mm	48 mm stone wool	**EI 120 U/C**
PE pipe according to EN 1519-1, EN 12201-2 and EN 12666-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1			
20-32 mm diameter/2.0-3.0 mm wall*	25 mm	48 mm stone wool	**EI 120 U/C**

*See below graphs for interpolated pipe sizes and permitted pipe wall thicknesses




PP Pipes EI 120 - U/C
Pipe wall thickness - mm
Pipe Diameter - mm
20, 4.4
32, 4.4
12, 1.8
32, 2.0
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0
5
10
15
20
25
30
35


PE Pipes EI 120 - U/C
Pipe wall thickness - mm
Pipe Diameter - mm
20, 3.0
32, 3.0
20, 2.0
32, 2.0
0
0.5
1
1.5
2
2.5
3
3.5
0
5
10
15
20
25
30
35

ANNEX B – Air Permeability – Protecta FR IPT

Product tested	10mm deep x 30mm wide Protecta FR IPT		
Summary of testing procedure			Result
	Pressure (Pa)	Leakage (m^3/h)	Leakage ($m^3/m^2/h$)
Results under negative chamber pressure	25	0.00	0.00
	50	0.00	0.00
	100	0.00	0.00
	200	0.00	0.00
	300	0.02	0.56
	450	0.03	0.83
	600	0.1	2.78
Results under positive chamber pressure	25	0.00	0.00
	50	0.00	0.00
	100	0.00	0.00
	200	0.01	0.28
	300	0.03	0.83
	450	0.06	1.67
	600	0.11	3.06