

UL-EU CERTIFICATE

Certificate No. UL-EU-00914-CPR
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Date of Issue 2015-10-09
Revised 2023-03-21

Certificate Holder Polyseam Ltd
15. St. Andrews Road
Huddersfield, West Yorkshire
HD1 6SB, UK

Manufacturer Polyseam Ltd
15. St. Andrews Road
Huddersfield, West Yorkshire
HD1 6SB, UK

Certified Product Type Fire Stop – Penetration Seals
Product Trade Name Protecta FR Graphite
Trademark N/A
Rating/Classification See Appendix

Harmonised Technical Specifications EAD 350454-00-1104, September 2017 / EN 13501-2
Supporting Documentation 0843-UKTA-22/0027, UK – CERTIFICATE OF
CONSTANCY OF PERFORMANCE - 0843 – CPR – 1223,
Classification Report No. 4786457143, Classification
Report No. 4788561184 an Classification Report No.
4790591996

Additional information Additional test evidence is held on file
Expiry date 2025-10-08



A blue ink signature of Chris Johnson.

Authorized Certification Decision Maker
Chris Johnson

This is to certify that representative samples of the Certified Product listed above have been investigated by Underwriters Laboratories to the Standard(s) indicated on this Certificate, in accordance with the UL Global Services Agreement and the UL-EU Mark Service Terms and Conditions ("Agreement"). The Certificate Holder is entitled to use the UL-EU Mark for the Certified Product listed on the certificate and manufactured at the production site(s) listed, in accordance with the terms of the Agreement. Only those products bearing the UL-EU Mark for Europe should be considered as being covered by UL's UL-EU Mark Service. This Certificate shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.



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This certificate relates to the use of Protecta FR Graphite for fire stopping where there are service penetrations through floors and walls. The detailed scope is given in pages 3 to 27 of this Certificate. This shows the thickness and acceptable dimensions, substrates and orientations required to provide fire resistance periods of up to 240 minutes for differing services and wall/floor constructions.

The product is certificated on the basis of:

- i) 0843-UKTA-22/0027
- ii) UK – CERTIFICATE OF CONSTANCY OF PERFORMANCE 0843 – CPR – 1223
- iii) Inspection and surveillance of factory production control by UL
- iv) Classification in accordance with EN 13501-2
- v) Durability and Serviceability as defined in EAD 350454-00-1104, September 2017

The durability class of Protecta FR Graphite is Z₂ - intended for use at internal conditions with humidity classes other than Z₁, excluding temperatures below 0°C.

The Protecta FR Graphite is supplied in liquid form contained within 310 & 380 ml cartridges and 600 ml foil packs.



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Product-type: Sealant/Pipe closure		Intended use: Penetration Seal
Basic requirement for construction work	Basic Requirement	Performance
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	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	Use categories: IA1, S/W2 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	Z ₂
BWR 5 Protection against noise		
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation*	53 (0;-1) 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

* At 25 mm depth



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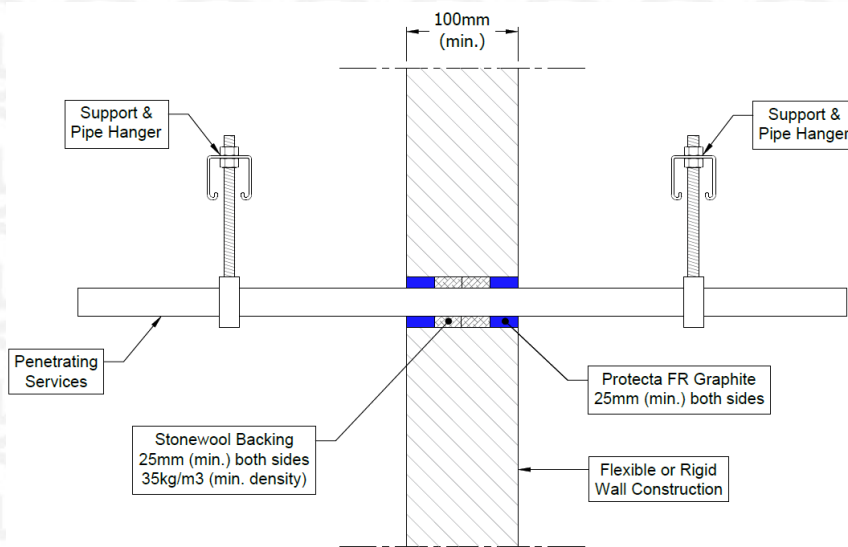
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Flexible or rigid wall constructions with wall thickness of minimum 100 mm

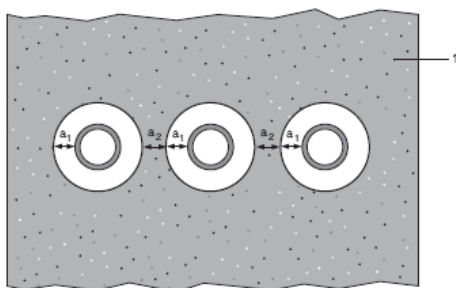
Penetration seals, in drywalls* and concrete/masonry walls

Penetration Seal: Combustible pipes sealed with Protecta FR Graphite, minimum 25 mm deep to both sides of the wall backed with Stonewool (minimum 35kg/m³ density), minimum 25 mm deep. Minimum separation between penetration seals of 30 mm (a2).

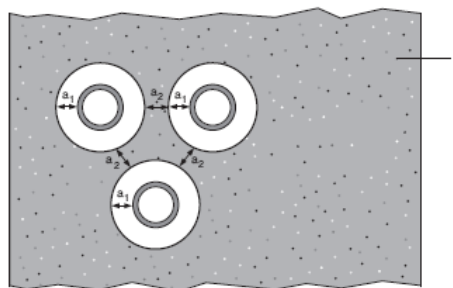
Construction details:



Configuration 1:



Configuration 2:



Key

- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals

* Partition wall must incorporate a core insulation as support for the backing material.

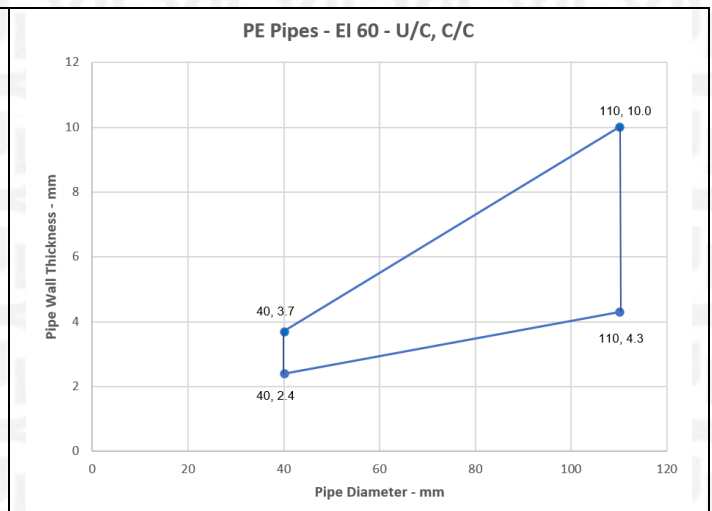
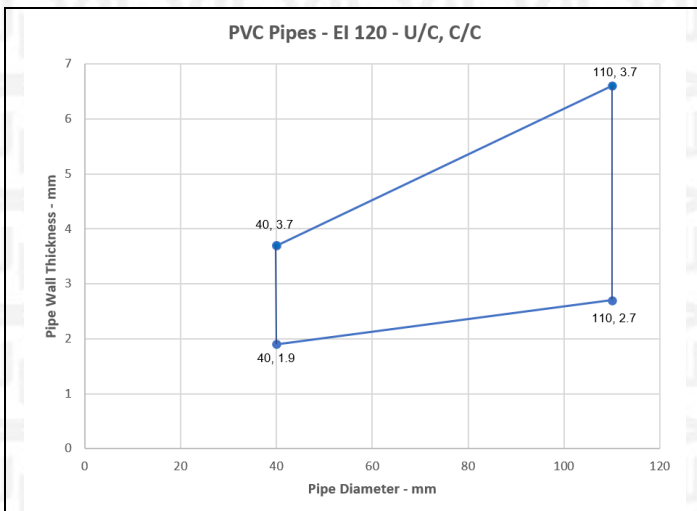


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Services	Seal & Backing width (a1)	Permitted configuration for seal separation	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1	10-30 mm	1 & 2	EI 120 U/C, EI 120 C/C
Diameter 40 mm, wall thickness 1.9 – 3.7 mm to diameter 110 mm, wall thickness 2.7-6.6 mm *			
PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1			
Diameter 40 mm, wall thickness 2.4-3.7 mm	10-30 mm	1 & 2	EI 120 U/C, EI 120 C/C
Diameter 40, wall thickness 2.4-3.7 mm to diameter 110 mm, wall thickness 4.3-10 mm *		1 & 2	EI 60 U/C, EI 60 C/C
Diameter 110 mm, wall thickness 4.3-10 mm		1	E 120 U/C, E 120 C/C EI 90 U/C, EI 90 C/C
PP pipe according to EN 1852-1: 2009 or DIN8077/8078			
Diameter 110 mm, wall thickness 6.6 mm	30 mm	1 & 2	EI 120 U/C, EI 120 C/C
Diameter 40 mm, wall thickness 1.8 -5.5 mm	10 mm	1 & 2	EI 90 U/C

*See below graph for interpolation pipe sizes



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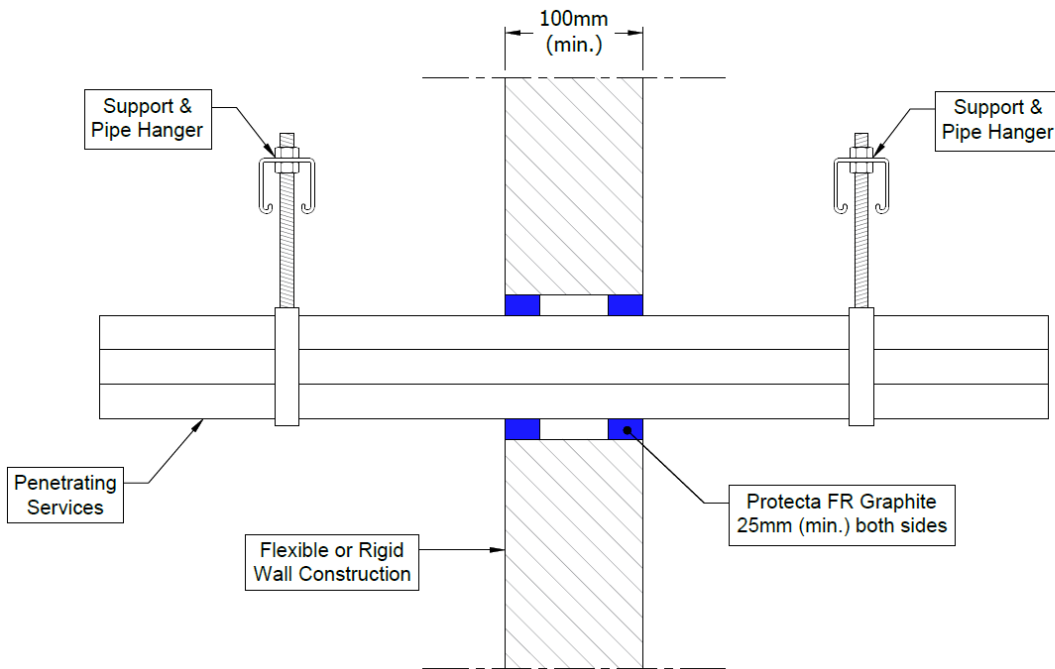
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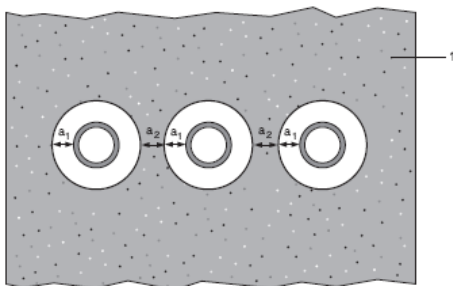
Penetration seals with no backing material, in drywalls and concrete/masonry walls

Penetration Seal: Combustible cable conduit or combustible pipes sealed with Protecta FR Graphite, minimum 25 mm deep to both sides of the wall without backing material. Minimum separation between penetration seals of 30 mm (a2).

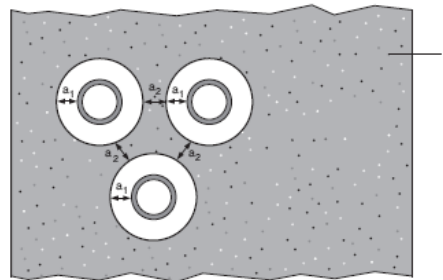
Construction details:



Configuration 1:



Configuration 2:



Key

- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals

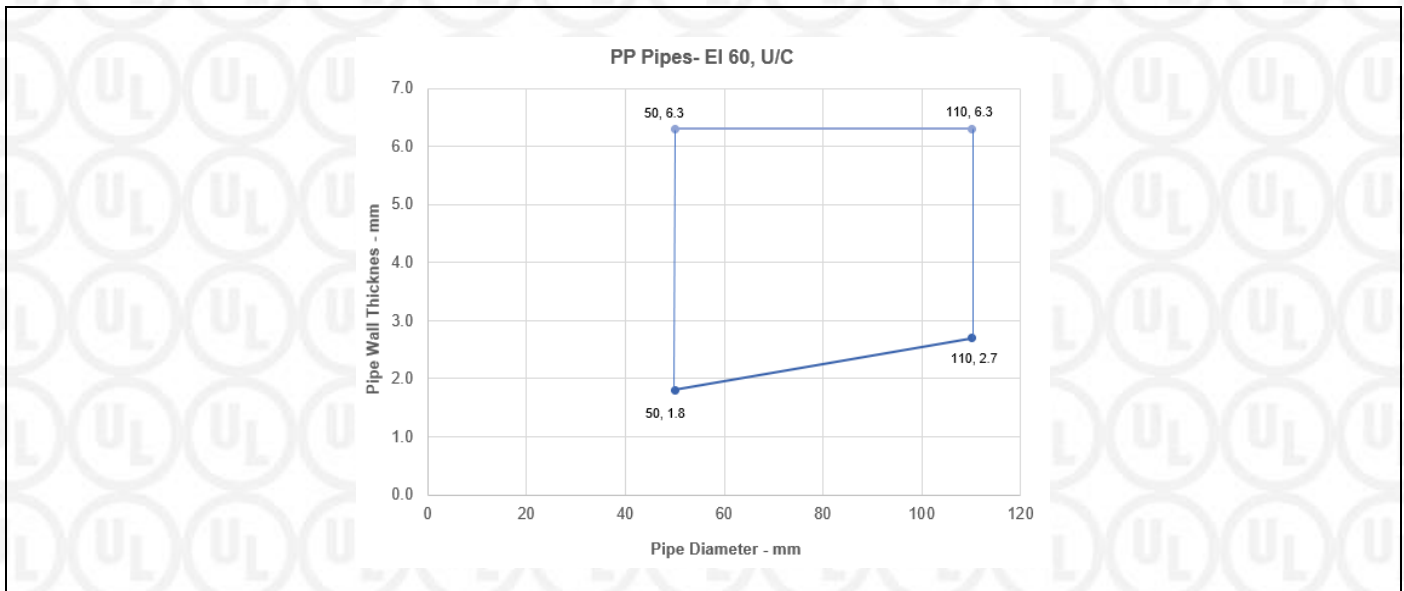


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Services	Seal width (a1)	Permitted configuration for seal separation	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1 or PP pipe according to EN 1852-1: 2009 or DIN8077/8078			
Maximum diameter 110 mm, wall thickness 1.9-6.6 mm for PVC pipes, fully or partially filled conduits with cables up to 20mm diameter	10-30 mm	1 & 2	EI 90 U/C
Maximum diameter 110 mm, wall thickness 2.7-6.6 mm for PP pipes, fully or partially filled conduits with cables up to 20mm diameter	10-30 mm	1 & 2	EI 90 U/C
PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1			
Maximum diameter 110 mm, wall thickness 2.4-10 mm, fully or partially filled conduits with cables up to 20 mm conduit	10-30 mm	1 & 2	EI 60 U/C
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1			
Maximum 160 mm diameter, wall thickness 3.2-9.5 mm	10-30 mm	1 & 2	EI 30 U/C
Maximum 160 mm diameter, wall thickness 9.5 mm	10-30 mm	1 & 2	EI 90 U/C
PP pipe according to EN 1852-1: 2009 or DIN8077/8078			
Maximum 110 mm, wall thickness 2.7 mm	10-30 mm	1 & 2	EI 60 C/C
Maximum 110 mm*	10-30 mm	1 & 2	EI 60 U/C

*See below graph for interpolation pipe sizes



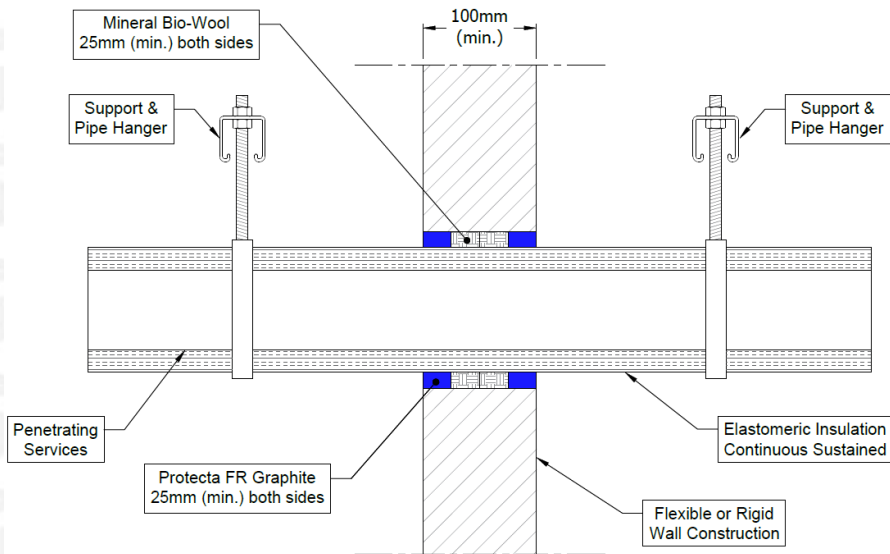
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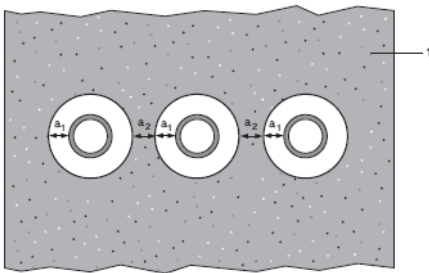
Penetration seals in drywalls and concrete/masonry walls

Penetration Seal: Metallic pipes insulated with Elastomeric insulation, Continuous Sustained (CS), sealed with Protecta FR Graphite, minimum 25 mm deep to both sides of the wall backed with Mineral Fibre BIO, minimum 25 mm deep. Minimum separation between penetration seals of 30 mm (a2).

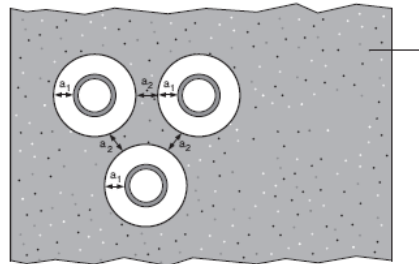
Construction details:



Configuration 1:



Configuration 2:



Key

- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals

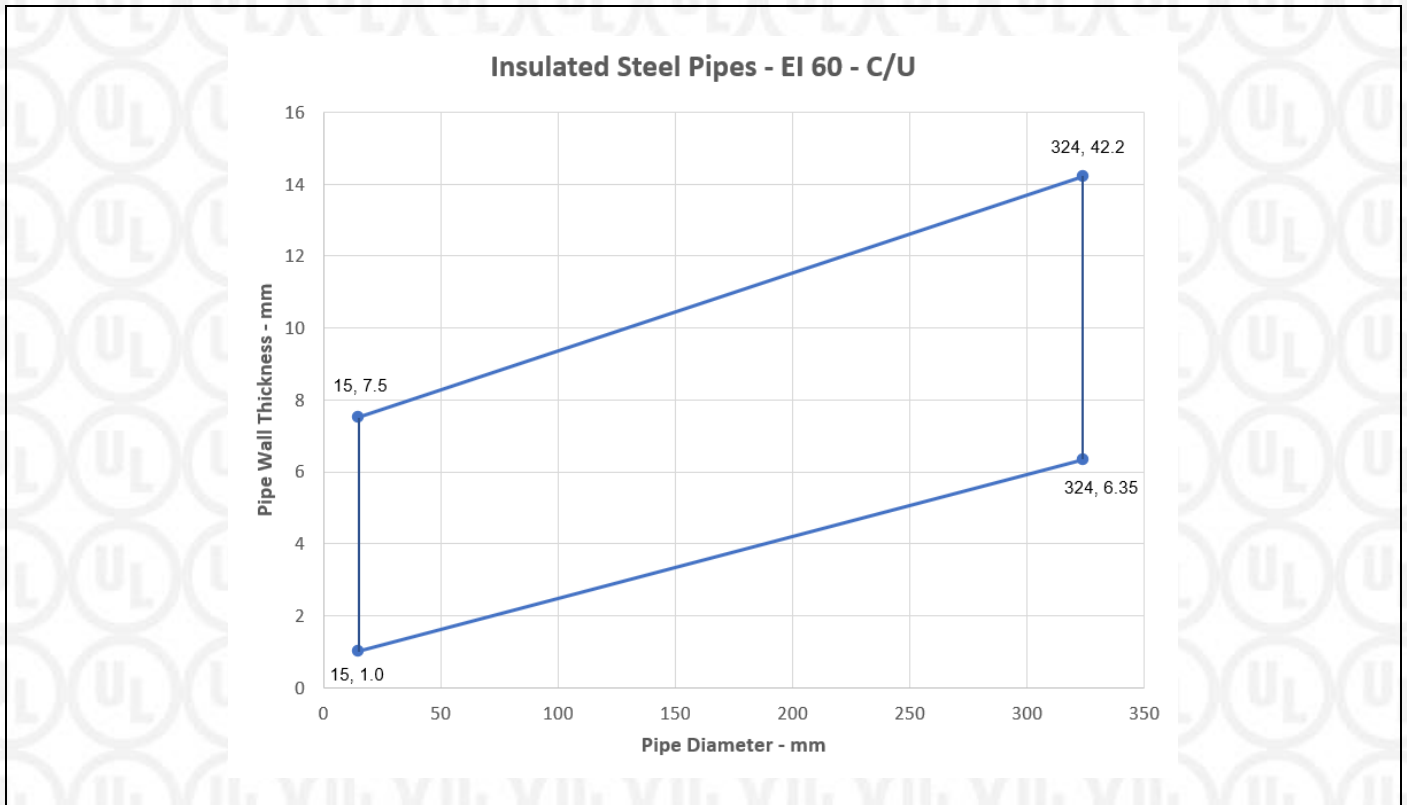


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Services	Seal & backing material width (a1)	Permitted configuration for seal separation	Insulation CS	Classification
Mild or stainless steel pipe, with Elastomeric insulation minimum class B-s3, d0				
Maximum 15 mm diameter, wall thickness minimum 1.0 mm	10 mm	1 & 2	25-50 mm Elastomeric insulation minimum class B-s3, d0	60 C/C
Maximum 324 mm diameter, wall thickness 1.0-14.2 mm*	10 mm	1 & 2	50 mm Elastomeric insulation minimum class B-s3, d0	EI 60 C/U

*See below graph for interpolation pipe sizes



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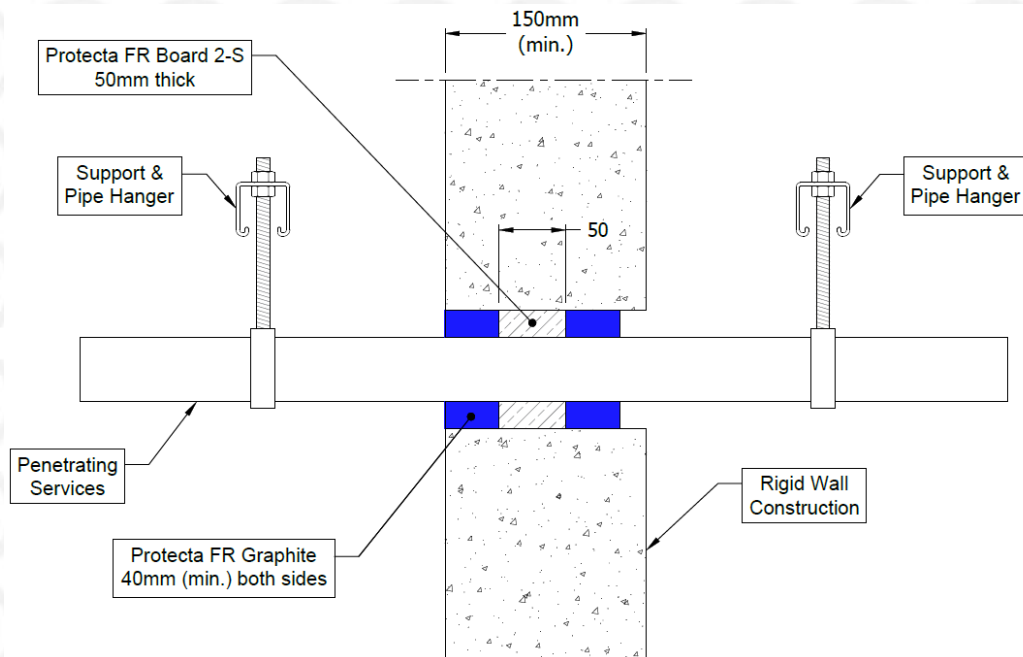
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Rigid walls constructions with wall thickness of minimum 150 mm

Penetration seals for pipes, in concrete/masonry walls

Penetration Seal: Combustible pipes sealed with minimum 40 mm deep Protecta FR Graphite, to both sides of the wall backed with Protecta FR Board 2-S, 50 mm thick. Minimum separation between penetration seals of 30 mm.

Construction details:



Services	Seal & Backing width	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1		
Diameter 48 mm, wall thickness 3.2 mm	17 mm	EI 240 U/C, EI 240 C/C
Diameter 68 mm, wall thickness 2 mm	41 mm	
Diameter 110 mm, wall thickness 3.5 mm	22 mm	
PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1		
Diameter 32 mm, wall thickness 3.2 mm	25 mm	EI 240 U/C, EI 240 C/C
ABS pipe according to EN 1455-1		
Diameter 36 mm, wall thickness 2.3 mm	23 mm	EI 240 U/C, EI 240 C/C
Diameter 110 mm, wall thickness 3.5 mm	26 mm	



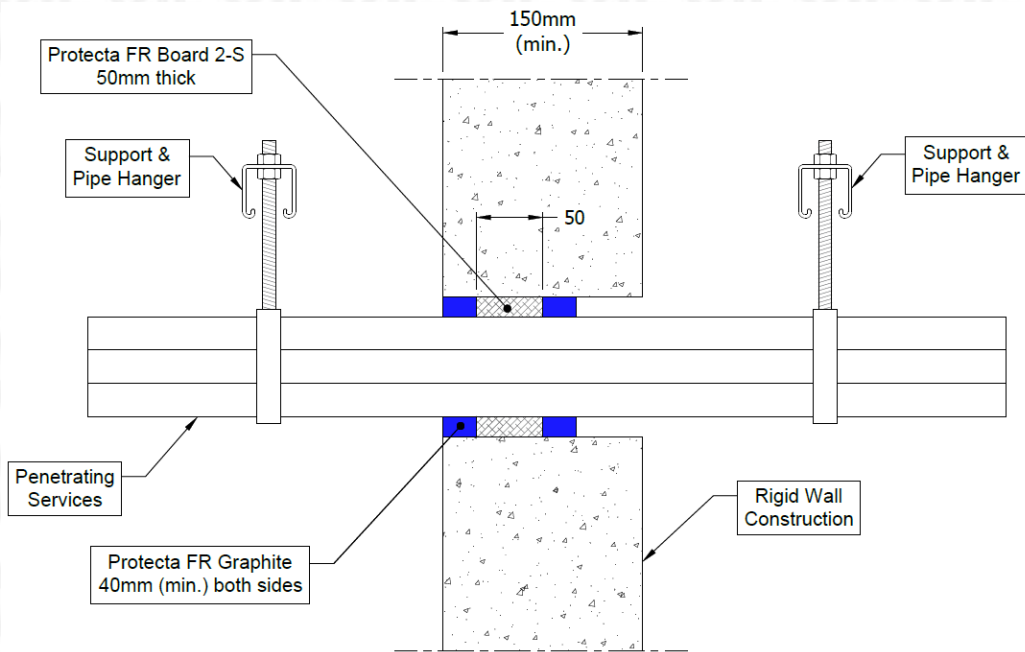
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Penetration seals for cables, in concrete/masonry walls

Penetration Seal: Cables sealed with minimum 40 mm deep Protecta FR Graphite, to both sides of the wall backed with Protecta FR Board 2S, 50 mm thick. Minimum separation between penetration seals of 30 mm.

Construction details:



Services	Seal size (WxH or diameter)	Classification
150 x 25 mm perforated steel cable tray	Maximum 200 x 100 mm	E 240, EI 180
20 mm diameter, single copper core armoured cable		
Twin/earth cable		
Ø 100 mm bundle of up to 4 no. 20mm diameter, single copper core armoured cable and 12 no. twin/earth cables	Maximum 150 mm Ø	E240, EI 60



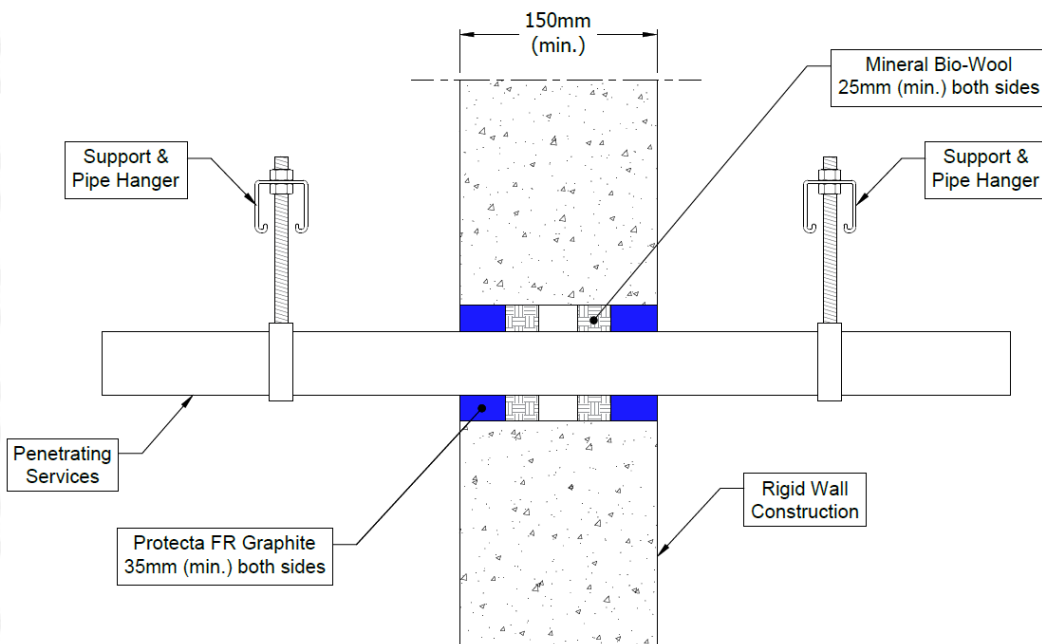
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Penetration seals for pipes, in concrete/masonry walls

Penetration Seal: Combustible pipes sealed with minimum 35 mm deep Protecta FR Graphite, to both sides of the wall backed with Mineral Bio backing material, minimum 25 mm thick. Minimum separation between penetration seals of 30 mm.

Construction details:



Services	Seal & Backing width (a1)	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1		
Maximum 160 mm diameter, wall thickness 4.0-9.5 mm	10-30 mm	EI 90 U/C
Maximum 160 mm diameter, wall thickness 9.5 mm	10-30 mm	E 240, EI 180 U/C
PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1		
Maximum 160 mm diameter, wall thickness 4.9-9.5mm	10-30 mm	EI 30 U/C
PP pipe according to EN 1852-1: 2009 or DIN8077/8078		
Maximum 160 mm diameter, wall thickness 6.2-9.1 mm	10 mm	EI 30 U/C



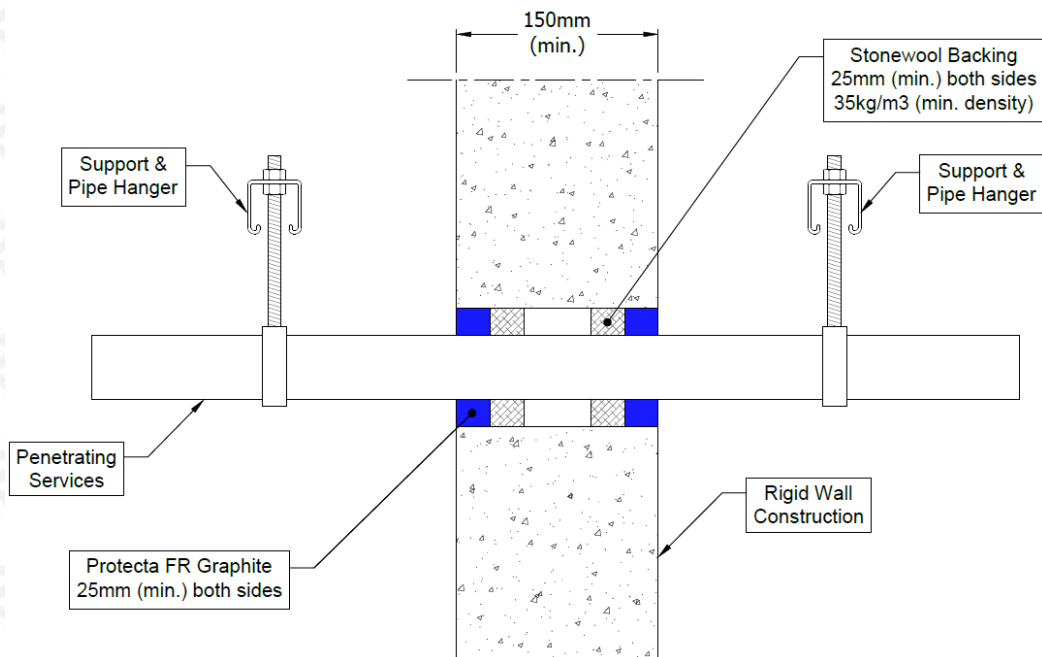
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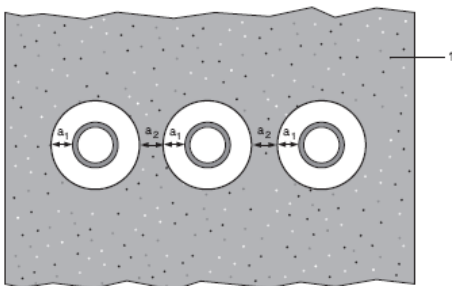
Penetration seals for pipes, in concrete/masonry walls

Penetration Seal: Combustible pipes sealed with minimum 25 mm deep Protecta FR Graphite, to both sides of the wall backed with Stonewool (minimum 35kg/m³ density), minimum 25 mm deep. Minimum separation between penetration seals of 30 mm (a2).

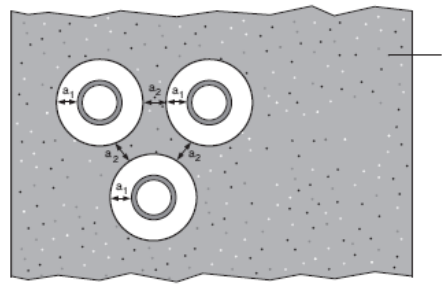
Construction details:



Configuration 1:



Configuration 2:



Key

- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals



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Services	Seal width (a1)	Permitted configuration for seal separation	Classification
PVC pipe			
Diameter 40 mm, wall thickness 1.9 – 3.7 mm to diameter 110 mm, wall thickness 2.7-6.6 mm, partially or fully filled conduits with cables up to 20 mm diameter	10-30 mm	1 & 2	EI 120 U/C
Diameter 110 mm, wall thickness 6.6 mm, fully filled conduits with cables up to 20 mm diameter	10 mm	1 & 2	EI 240 U/C
PE pipe			
Diameter 110 mm, wall thickness 4.2 mm, fully filled conduits with cables up to 20 mm diameter	10 mm	1 & 2	EI 120 U/C
PP pipe			
Diameter 110 mm, wall thickness 3.4 mm, fully filled conduits with cables up to 20 mm diameter	10 mm	1 & 2	EI 120 U/C



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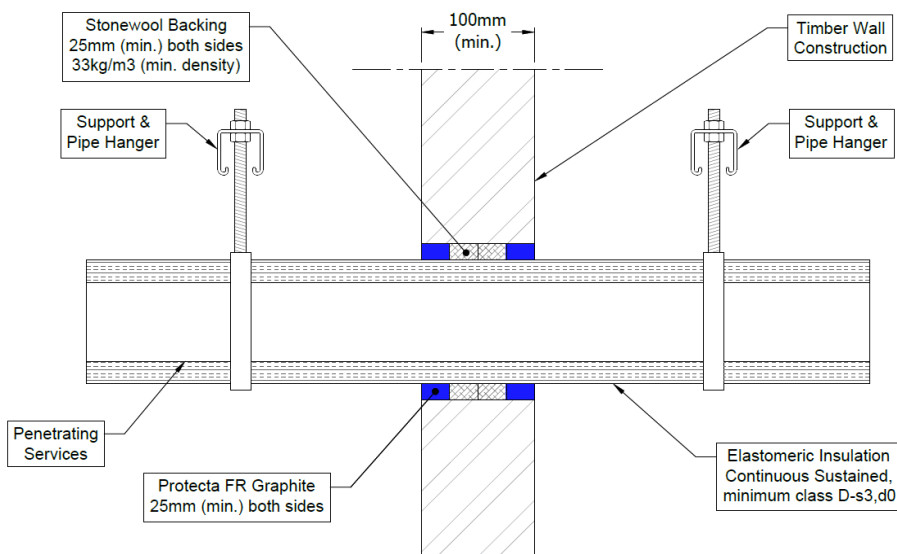
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Timber wall constructions with wall thickness of minimum 100 mm

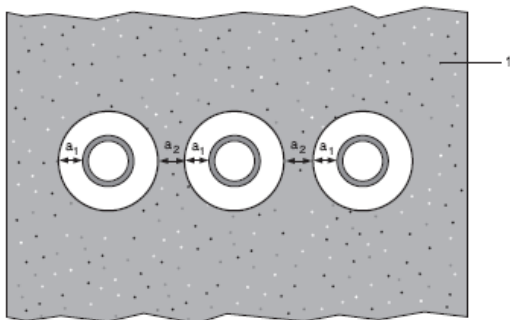
Pipe penetration seals, in timber walls

Penetration Seal: Metallic pipes insulated with Elastomeric insulation minimum class D-s3,d0, Continuous Sustained (CS), sealed with Protecta FR Graphite, minimum 25 mm deep to both sides of the wall and backed with Stonewool (minimum 33kg/m³ density), minimum 25 mm deep. Minimum separation between penetration seals of 30 mm (a₂).

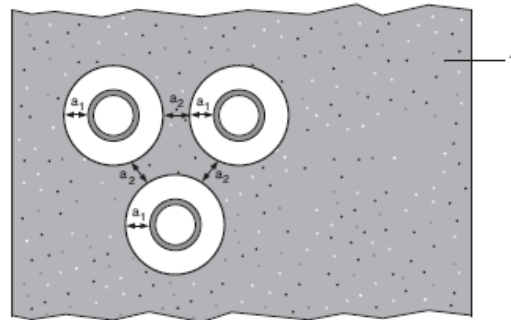
Construction details:



Configuration 1:



Configuration 2:



Key

- 1 Supporting construction
- a₁ Pipe / edge of seal separation (annular space)
- a₂ Separation between penetration seals



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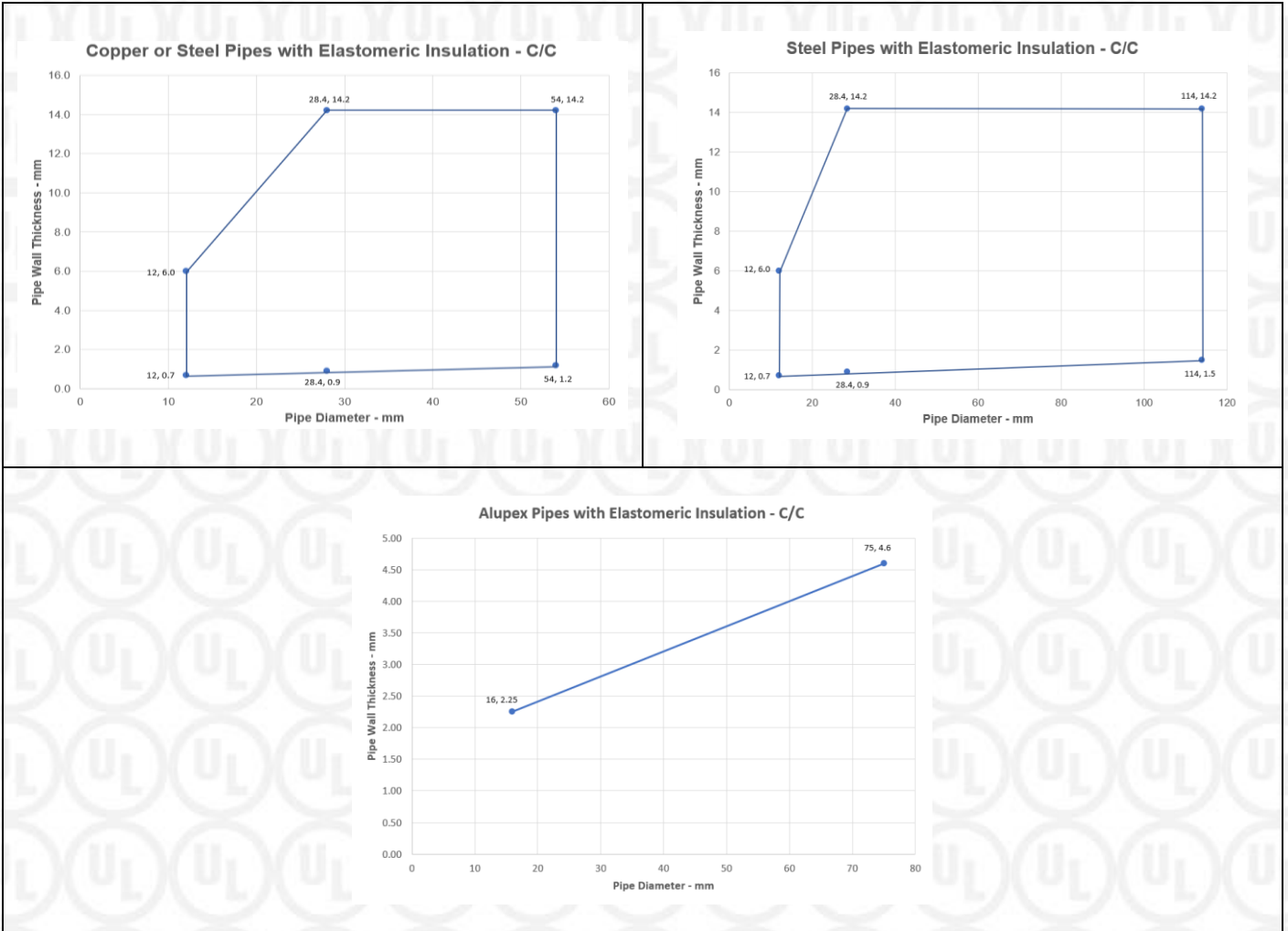
Services	Seal & backing material width (a1)	Permitted configuration for seal separation	Insulation CS	Classification
Copper, mild or stainless steel pipe				
Diameter 12 mm, wall thickness 0.7	10 mm	1	13 mm Elastomeric insulation minimum class D-s3, d0	EI 120 C/C
Diameter 12-54 mm, wall thickness*				E 120 C/C, EI 90 C/C
Diameter 12-54 mm, wall thickness*			14-25 mm Elastomeric insulation minimum class D -s3, d0	E 120 C/C, EI 30 C/C
Mild or stainless steel pipe, with Elastomeric insulation minimum class D-s3, d0				
Diameter 12-114 mm, wall thickness*	10 mm	1	13 mm Elastomeric insulation minimum class D -s3, d0	EI 90 C/C
Diameter 12-114 mm, wall thickness*			14-25 mm Elastomeric insulation minimum class D-s3, d0	E 90 C/C, EI 45 C/C
Diameter 114 mm, wall thickness 1.5-14.2			13 mm Elastomeric insulation minimum class D-s3, d0	EI 90 C/U
Diameter 114 mm, wall thickness 1.5-14.2			13-25 mm Elastomeric insulation minimum class D-s3, d0	E 90 C/U, EI 45 C/U
Alupex pipe, with Elastomeric insulation minimum class D-s3, d0				
Diameter 16 mm, wall thickness 2.25	10 mm	1	13 mm Elastomeric insulation minimum class D-s3, d0	EI 120 C/C
Diameter 16-75 mm, wall thickness*				E 120 C/C, EI 45 C/C
Diameter 16-75 mm, wall thickness*			14-24 mm Elastomeric insulation minimum class D-s3, d0	E 90 C/C, EI 45 C/C
Diameter 16-75 mm, wall thickness*			25 mm Elastomeric insulation minimum class D -s3, d0	EI 90 C/C

See below graph for interpolation pipe sizes



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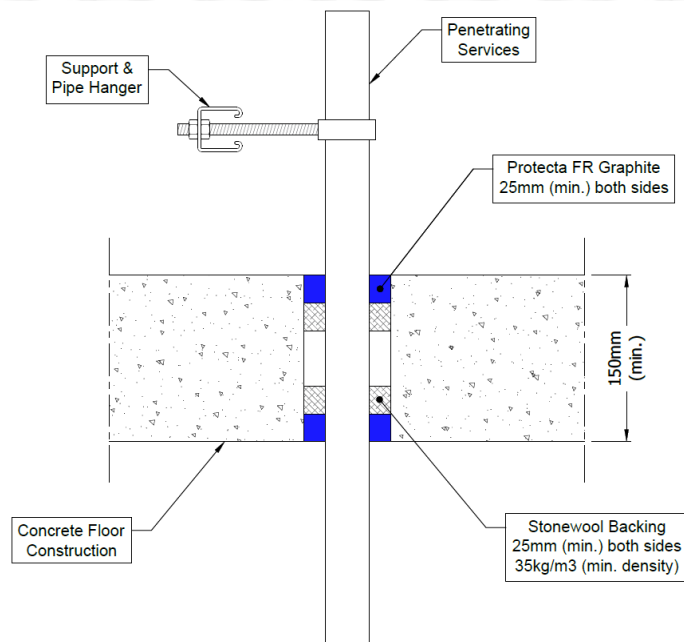
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Rigid floor constructions with floor thickness of minimum 150 mm

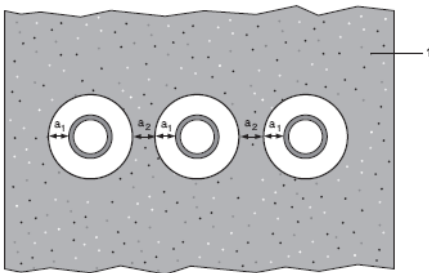
Penetration seals, surface mounted in concrete floors

Penetration Seal: Combustible pipes sealed with Protecta FR Graphite, to both sides of the floor backed with Stonewool (minimum 35kg/m³ density), minimum 25 mm deep. Minimum separation between penetration seals of 30 mm.

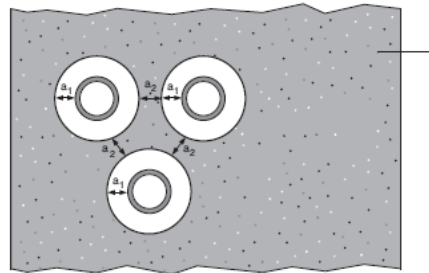
Construction details:



Configuration 1:



Configuration 2:



Key

- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals

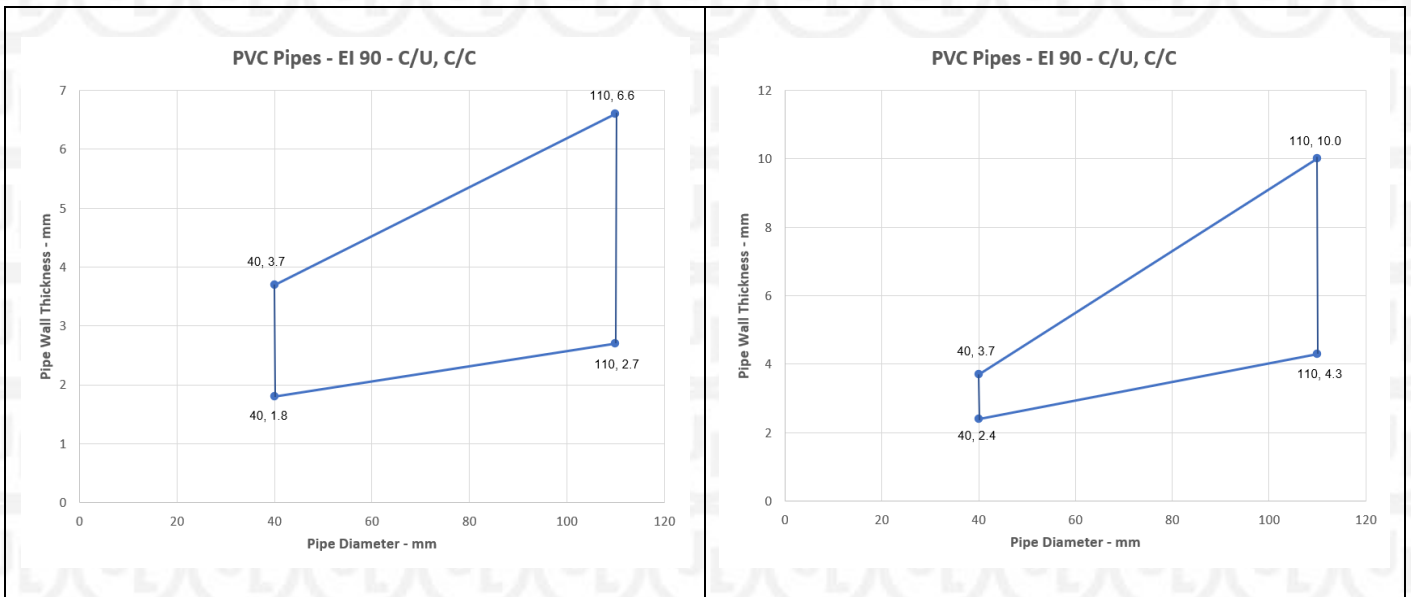


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Services	Seal & Backing width	Permitted configuration for seal separation	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1	10-30 mm	1 & 2	EI 240 U/U, EI 240 C/U, EI 240 U/C, EI 240 C/C
Diameter 40 mm, wall thickness 1.8 – 3.7 mm		1 & 2	EI 90 C/U, EI 90 C/C
Diameter 40 mm, wall thickness 1.8 – 3.7 mm to diameter 110 mm, wall thickness 2.7-6.6 mm *	10-30 mm	1 & 2	EI 60 U/U, EI 60 C/U, EI 60 U/C, EI 60 C/C EI 240 U/C, EI 240 C/C
PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1		1 & 2	EI 60 U/C, EI 60 C/C
Diameter 40 mm, wall thickness 2.4-3.7 mm		1 & 2	EI 90 U/C, EI 90 C/C
Diameter 40, wall thickness 2.4-3.7 mm to diameter 110 mm, wall thickness 4.3-10 mm *		1 & 2	EI 60 U/U, EI 60 C/U, EI 60 U/C, EI 60 C/C
Diameter 110 mm, wall thickness 4.3-10 mm	10-30 mm	1 & 2	EI 90 U/C, EI 90 C/C
Diameter 110 mm, wall thickness 10 mm			EI 60 U/U, EI 60 C/U, EI 60 U/C, EI 60 C/C

See below graph for interpolation pipe sizes



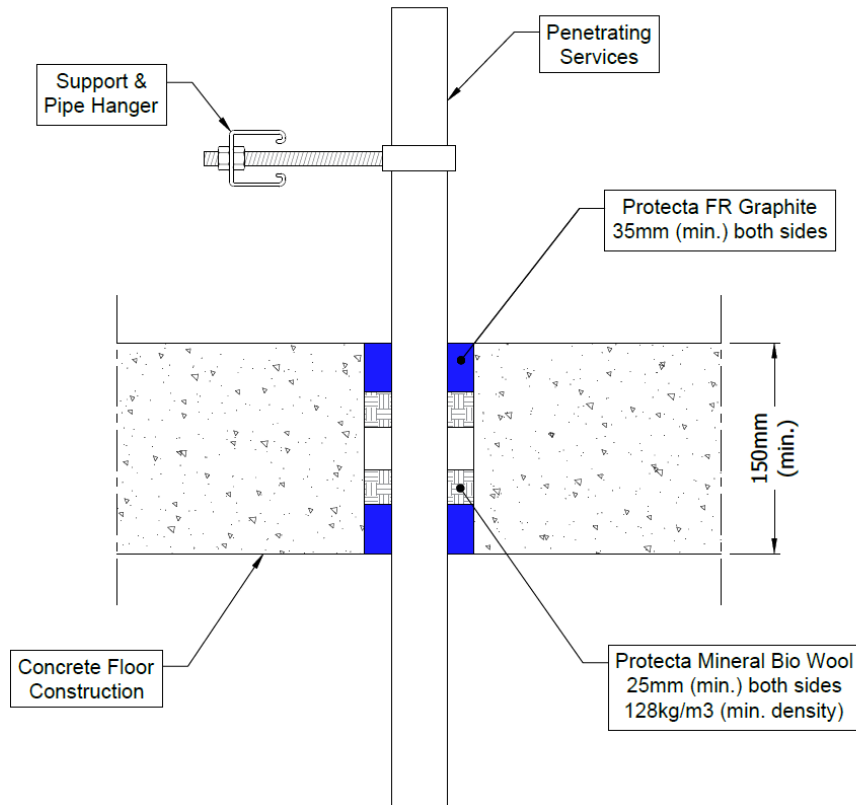
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Penetration seals, surface mounted in concrete floors

Penetration Seal: Combustible pipes sealed with Protecta FR Graphite, minimum 35 mm deep to both sides of the floor backed with Protecta Mineral Bio Wool (128kg/m³ density), minimum 25 mm deep. Minimum separation between penetration seals of 30 mm.

Construction details:



Services	Seal & Backing width (a1)	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1		
Maximum 160 mm diameter, wall thickness 4.0-9.5mm	10-30 mm	EI 60 U/C
PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1		
Maximum 160 mm diameter, wall thickness 4.9-14.6 mm	10-30 mm	EI 30 U/C
Maximum 160 mm diameter, wall thickness 14.6 mm	10-30 mm	EI 60 U/C



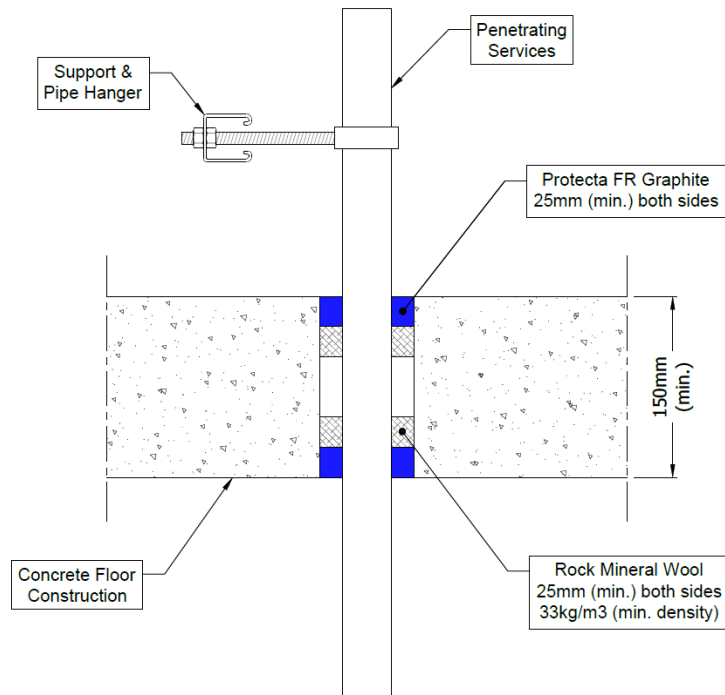
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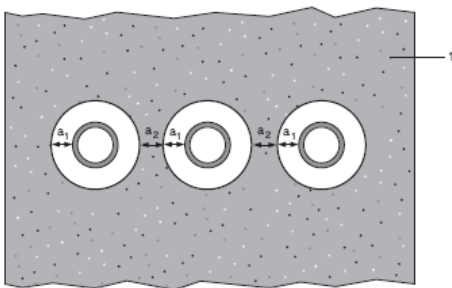
Penetration seals, surfaces mounted in concrete floors

Penetration Seal: Combustible pipes sealed with Protecta FR Graphite, minimum 25 mm deep to both sides of the floor backed with Rock mineral wool (minimum 33kg/m³ density), minimum 25 mm deep. Minimum separation between penetration seals of 30 mm (a2).

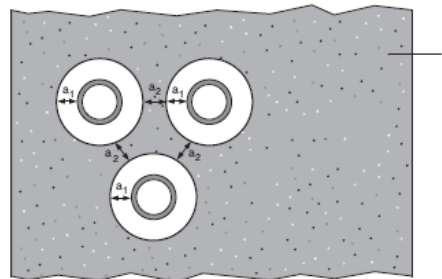
Construction details:



Configuration 1:



Configuration 2:



Key

- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals



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Services	Seal width (a1)	Permitted configuration for seal separation	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1 or PP pipe according to EN 1852-1: 2009 or DIN8077/8078			
Maximum diameter 110 mm, wall thickness 1.8-6.6 mm for PVC pipes, fully or partially filled conduits with cables up to 20 mm diameter	10-30 mm	1 & 2	EI 90 U/C
Maximum diameter 110 mm, wall thickness 2.7 mm for PP pipes, fully or partially filled conduits with cables up to 20 mm diameter	10-30 mm	1 & 2	EI 90 U/C
Maximum diameter 110 mm, wall thickness 1.8-6.3 mm for PP pipes, fully or partially filled conduits with cables up to 20 mm diameter	10-30 mm	1 & 2	EI 30 U/C
PE pipe according to EN 1519-1, EN 12201-2 and EN 12006-1, ABS according to EN 1455-1 and pipes made from SAN+PVC according to EN 1565-1			
Maximum diameter 110 mm, wall thickness 2.4-10 mm, fully or partially filled conduits with cables up to 20 mm diameter	10-30 mm	1 & 2	EI 60 U/C
PP pipe according to EN 1852-1: 2009 or DIN8077/8078			
Maximum 40 mm diameter, wall thickness 1.8 mm	10-30 mm	1 & 2	EI 120 C/C
Maximum 110 mm diameter, wall thickness 1.8-6.3 mm	10-30 mm	1 & 2	EI 30 U/C



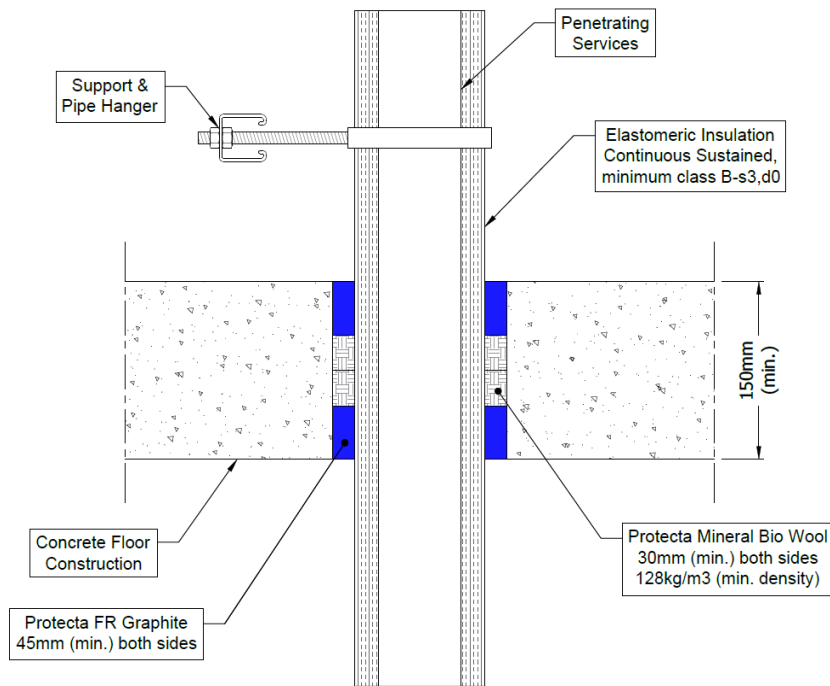
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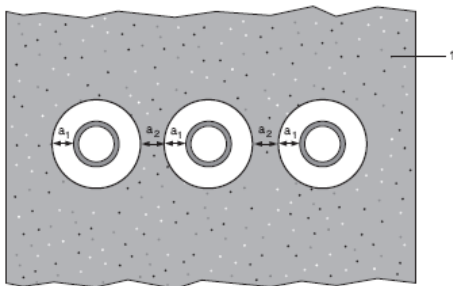
Penetration seals, surface mounted in concrete floors

Penetration Seal: Metallic pipes insulated with Elastomeric insulation minimum class B-s3, d0, Continuous Sustained (CS), sealed with Protecta FR Graphite, minimum 45 mm deep to both sides of the floor and backed with Protecta Mineral Bio Wool (128kg/m³ density), minimum 30 mm deep. Minimum separation between penetration seals of 30 mm (a2).

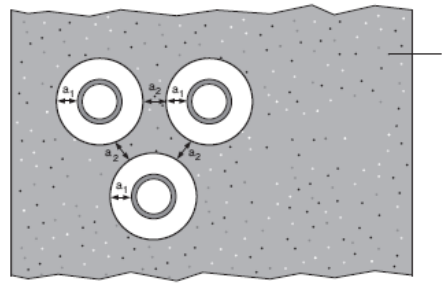
Construction details:



Configuration 1:



Configuration 2:



Key

- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals



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Services	Seal & backing material width (a1)	Permitted configuration for seal separation	Insulation CS	Classification
Mild or stainless steel pipe, with Elastomeric insulation minimum class B-s3, d0				
Maximum 324 mm diameter, wall thickness 1.0-14.2 mm	10-30 mm	1 & 2	25-50 mm Elastomeric insulation minimum class B-s3, d0	EI 60 C/U
Maximum 324 mm diameter, wall thickness 6.35-14.2 mm	10-30 mm	1 & 2	50 mm Elastomeric insulation minimum class B-s3, d0	EI 120 C/U



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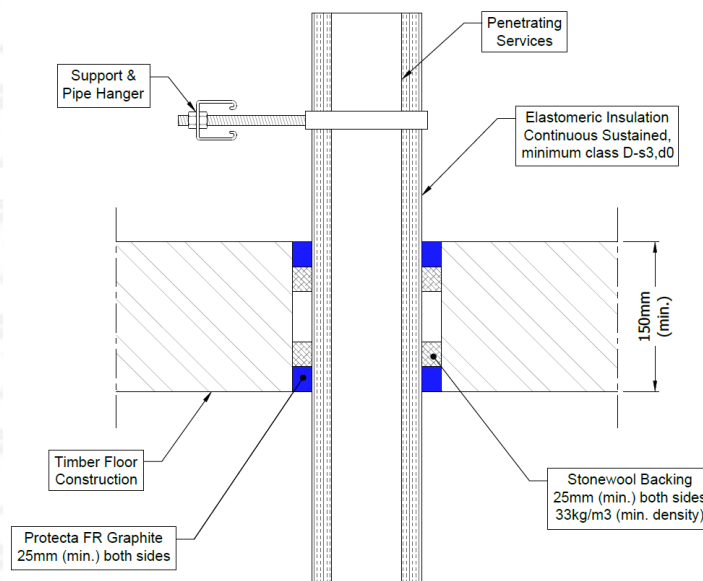
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Timber floor constructions with floor thickness of minimum 150 mm

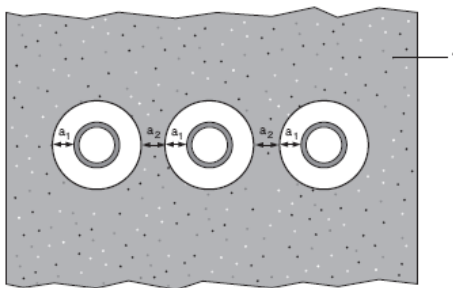
Pipe penetration seals, in timber floors

Penetration Seal: Metallic pipes insulated with Elastomeric insulation minimum class D-s3,d0, Continuous Sustained (CS), sealed with Protecta FR Graphite, minimum 25 mm deep to both sides of the floor and backed with Stonewool (minimum 33kg/m³ density), minimum 25 mm deep. Minimum separation between penetration seals of 0 mm (a2).

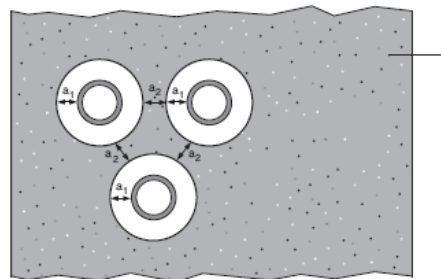
Construction details:



Configuration 1:



Configuration 2:



Key

- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals



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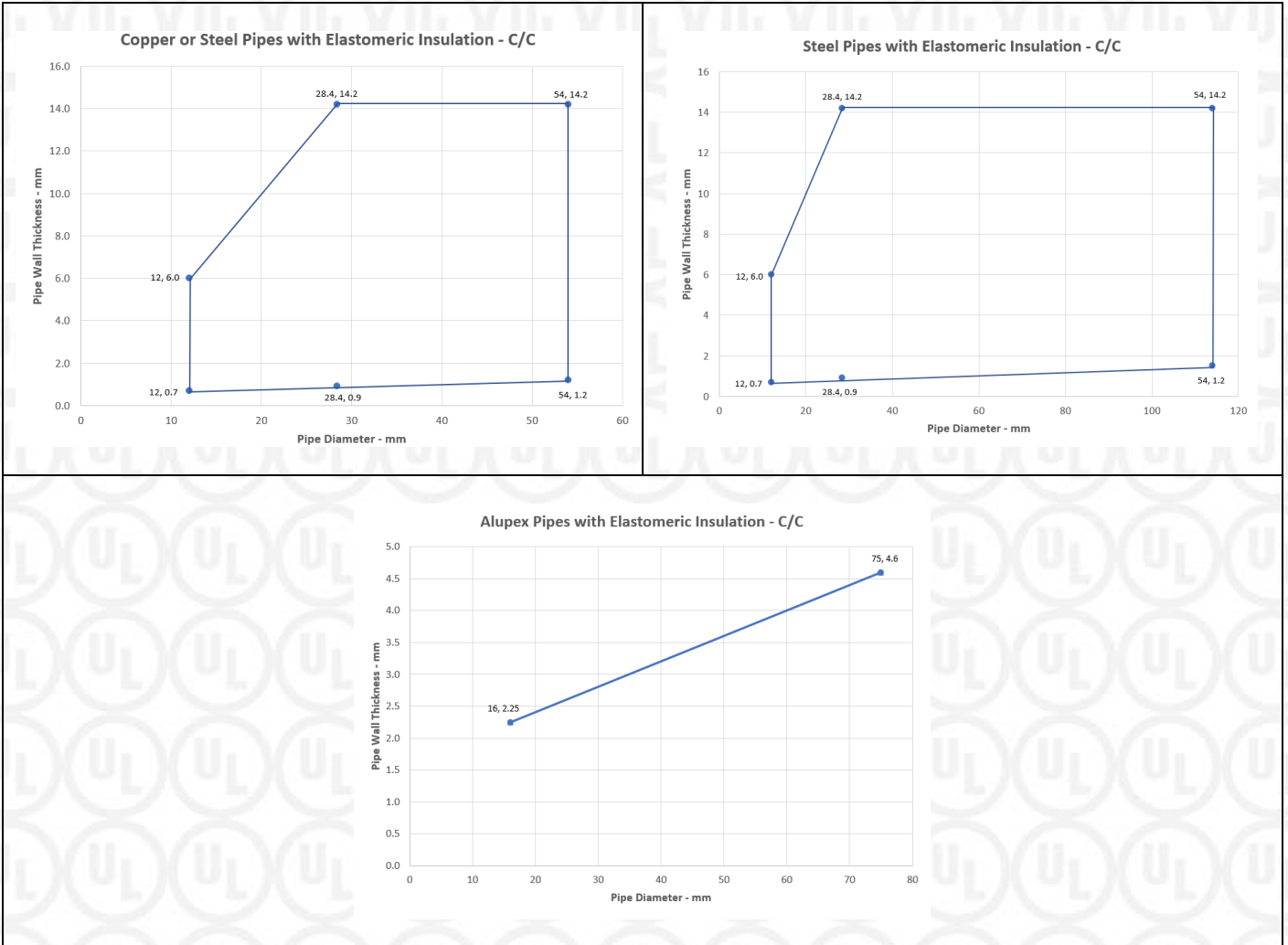
Services	Seal & backing material width (a1)	Permitted configuration for seal separation	Insulation CS	Classification
Copper, mild or stainless steel pipe				
Diameter 12 mm, wall thickness 0.7	10 mm	1	9 mm Elastomeric insulation minimum class D-s3, d0	EI 120 C/C
Diameter 12-54 mm, wall thickness*				E 120 C/C, EI 45 C/C
Diameter 12-54 mm, wall thickness*			10-25 mm Elastomeric insulation minimum class D-s3, d0	E 120 C/C, EI 30 C/C
Mild or stainless steel pipe, with Elastomeric insulation minimum class D-s3, d0				
Diameter 12-114 mm, wall thickness*	10 mm	1	9-24 mm Elastomeric insulation minimum class D-s3, d0	E 120 C/C, EI 45 C/C
Diameter 12-114 mm, wall thickness*			25 mm Elastomeric insulation minimum class D-s3, d0	E 120 C/C, EI 60 C/C
Diameter 114 mm, wall thickness 1.5-14.2			9-25 mm Elastomeric insulation minimum class D-s3, d0	E 120 C/U, EI 45 C/U
Diameter 114 mm, wall thickness 1.5-14.2			25 mm Elastomeric insulation minimum class D-s3, d0	E 120 C/U, EI 60 C/U
Alupex pipe, with Elastomeric insulation minimum class D-s3, d0				
Diameter 16 mm, wall thickness 2.25	10 mm	1	9 mm Elastomeric insulation minimum class D-s3, d0	EI 120 C/C
Diameter 16-75 mm, wall thickness*			9-24 mm Elastomeric insulation minimum class D-s3, d0	E 120 C/C, EI 60 C/C
Diameter 16-75 mm, wall thickness*			25 mm Elastomeric insulation minimum class D-s3, d0	E 120 C/C, EI 90 C/C

*See below graph for interpolation pipe sizes



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Certification Mark	UL-EU mark
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The UL-EU Mark, as displayed below, shall appear on certified products only. Minimum size is not specified, as long as the Mark is legible. The following is suggested.



The minimum height of the registered trademark symbol ® shall be 1 mm. When the overall diameter of the UL-EU Mark is less than 9.5 mm, the trademark symbol may be omitted if it is not legible to the naked eye.

The UL-EU Mark may appear on a label, nameplate, or may be cast, stamped or molded into the product. When appearing on a label or nameplate, the Manufacturer's name or trademark along with a model number are also required on that same label or nameplate. If cast, stamped or molded, the Manufacturer's name or trademark and model number shall also appear elsewhere on the product.

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