

Sikacryl-621 Fire+

LEISTUNGSERKLÄRUNG

No. 58967197

1	EINDEUTIGER KENNCODE DES PRODUKTTyps	58967197
2	VERWENDUNGSZWECK(E):	EAD 350454-00-1104:2017 Feuerschutz- und Feuerabdichtungsprodukte - Abschottungen
3	HERSTELLER:	Sika Services AG Tüffenwies 16-22 8064 Zürich
4	BEVOLLMÄCHTIGTER:	
5	SYSTEM(E) ZUR BEWERTUNG UND ÜBERPRÜFUNG DER LEISTUNGSBESTÄNDIGKEIT:	System 1
6b	EUROPÄISCHES BEWERTUNGSDOKUMENT:	EAD 350454-00-1104:2017
	Europäische Technische Bewertung:	ETA-21/0888 of 2021/10/20
	Technische Bewertungsstelle:	DBI Certification A/S
	Notifizierte Stelle(n):	2531

Leistungserklärung

Sikacryl 621 Fire
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7 ERKLÄRTE LEISTUNG(EN)

Wesentliche Merkmale	Leistung	Bewertungs- system	Harmonisierte Technische Spezifikation
Brandverhalten	B – s1, d0	System 1	EAD 350454- 00-1104:2017
Feuerwiderstand	Annex A	System 1	
Luftdurchlässigkeit	Annex B	System 1	
Wasserdurchlässigkeit	Keine Leistung festgestellt	System 1	
Freisetzung von gefährlichen Stoffen	Keine Leistung festgestellt	System 1	
Mechanischer Widerstand und Stabilität	Keine Leistung festgestellt	System 1	
Schlagwiderstand	Keine Leistung festgestellt	System 1	
Haftung	Keine Leistung festgestellt	System 1	
Haltbarkeit	Z2	System 1	
Schalldämmung	Keine Leistung festgestellt	System 1	
Thermische Eigenschaften	Keine Leistung festgestellt	System 1	
Wasserdampfdurchlässigkeit	Keine Leistung festgestellt	System 1	

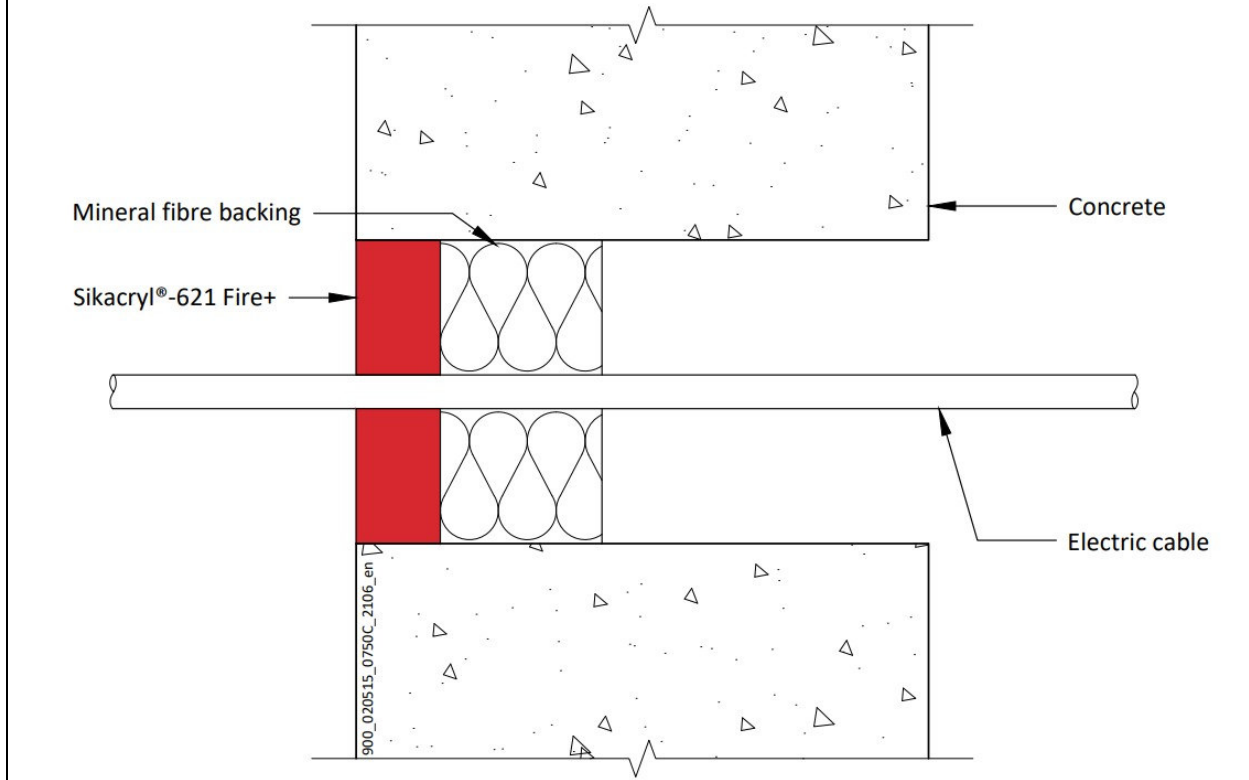
ANNEX A – Resistance to Fire Classification – Sikacryl-621 Fire+

A.1 Rigid wall constructions according to 1.2.1 with wall thickness of minimum 150 mm

A.1.1 Single side penetration seal with cables

Penetration Seal: Cables (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to either side of the wall (or at any position in between), backed with 'AES mineral fibre'. Minimum separation between cables and the edge of the seal of 7 mm.

Construction details:



A.1.1.1

Services	Sealant depth	Backing	Maximum seal size	Classification
Single electrical cables up to 21 mm \varnothing	25 mm	48 mm deep AES mineral fibre	87 mm \varnothing	E 240, EI 90
Blank seals	25 mm	48 mm AES mineral fibre insulation	300 x 300 mm	E 240, EI 60
Electric cables up to 21 mm diameter, single.			35 x 35 mm / 36 mm \varnothing	E 240, EI 120
Blank seals				
Electric cables up to 21 mm diameter, single.				

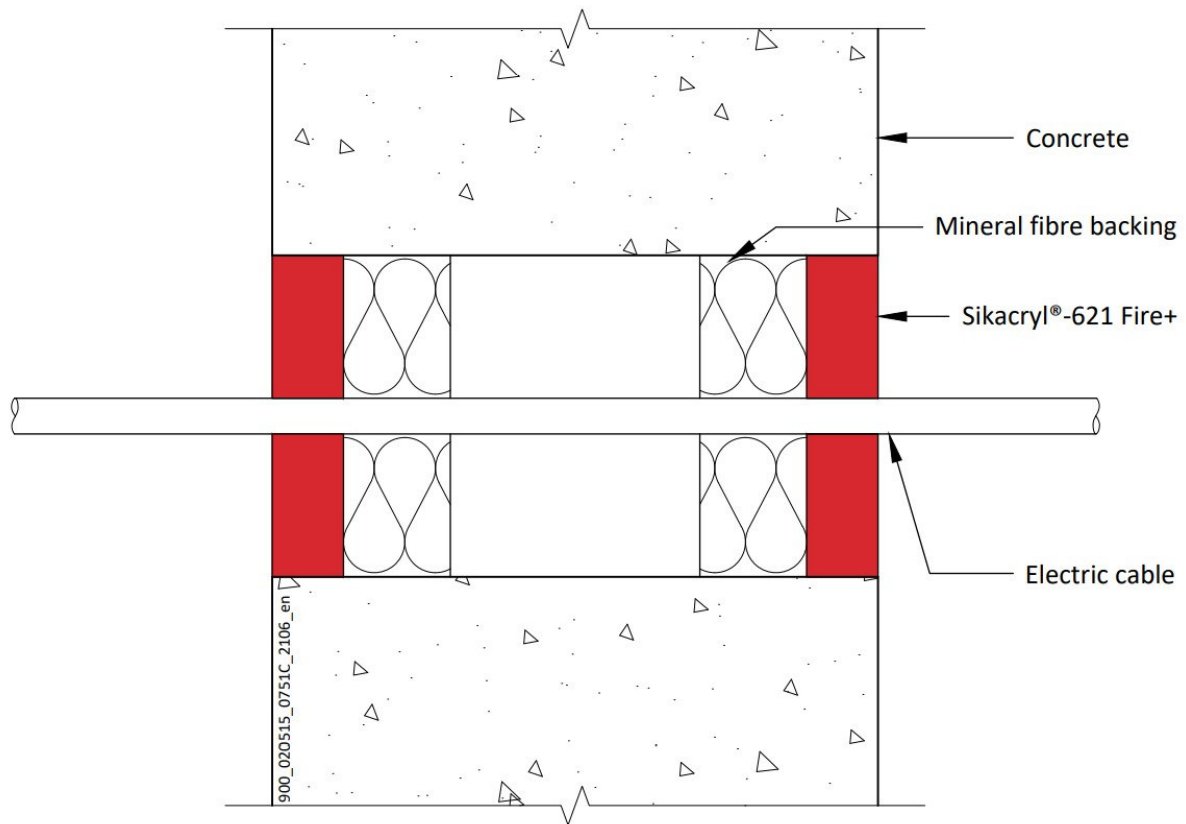
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A.1.2 Double side penetration seal with cables

Penetration Seal: Cables fitted with Sikacryl-621 Fire+ to both sides of the wall, backed with stone wool or mineral fibre insulation. Maximum seal size of 300 x 300 mm and minimum separation between cables and the edge of the seal of 10 mm.

Construction details:



A.1.2.1

Services	Sealant depth	Backing (minimum)	Insulation	Classification
Blank seals	15 mm	25 mm Stone wool 35 kg/m ³	None	EI 240
Electric cables up to 21 mm diameter, single or in a bundle.				E 240, EI 120
Electric cables 22-80 mm diameter, single or in a bundle.				E 120, EI 60
Blank seals	25 mm	48 mm AES mineral fibre		EI 240
Electric cables up to 80 mm diameter, single or in a bundle.				E 240, EI 60
Cables up to 21 mm diameter, single or in a bundle up to 100 mm diameter				EI 240

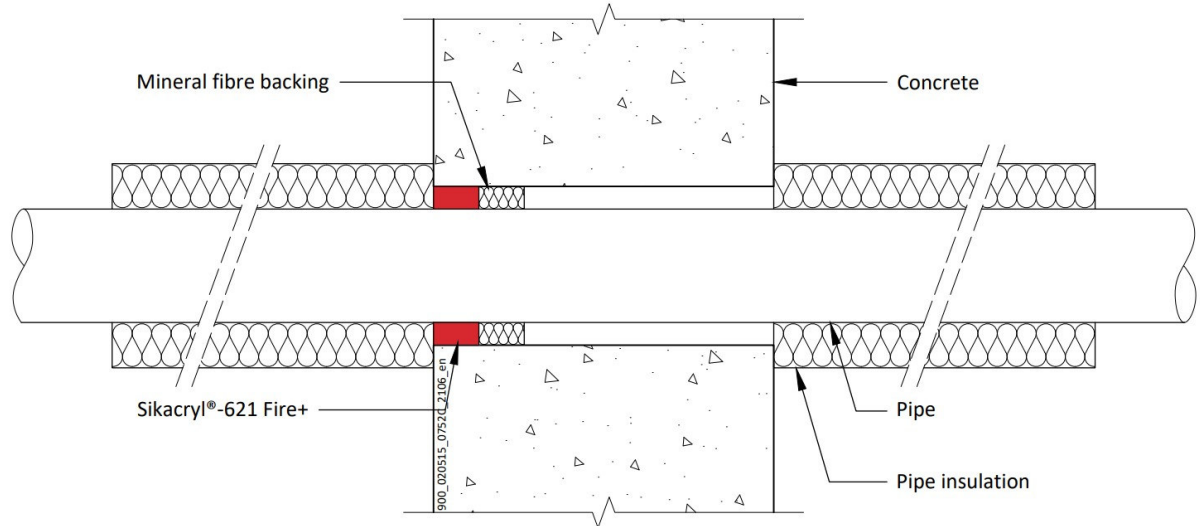
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A.1.3 Single side penetration seal with metallic (and composite) pipes

Penetration Seal: LI (Local Interrupted) of minimum length stated below or CI (Continuous Interrupted) insulated metallic and composite pipes (single) fitted at any position within the aperture, with 15 mm deep Sikacryl-621 Fire+ to either side of the wall (or at any position between), backed with 20 mm deep minimum 40 kg/m³ stone wool insulation*.

Construction details:



A.1.3.1

Services	Seal width around pipe	Insulation (minimum)	Classification
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall	8-9 mm	1000 mm length 20 mm Stone wool insulation 80 kg/m ³	E 240 C/U, EI 180 C/U
Copper or steel pipe up to 12 mm diameter/0.9-5 mm wall	8 mm		EI 240 C/U
Alupex composite pipe 75 mm diameter/7.5 mm wall	30 mm	25 mm AES mineral fibre insulation, 600 mm long (min.)	EI 120 C/U

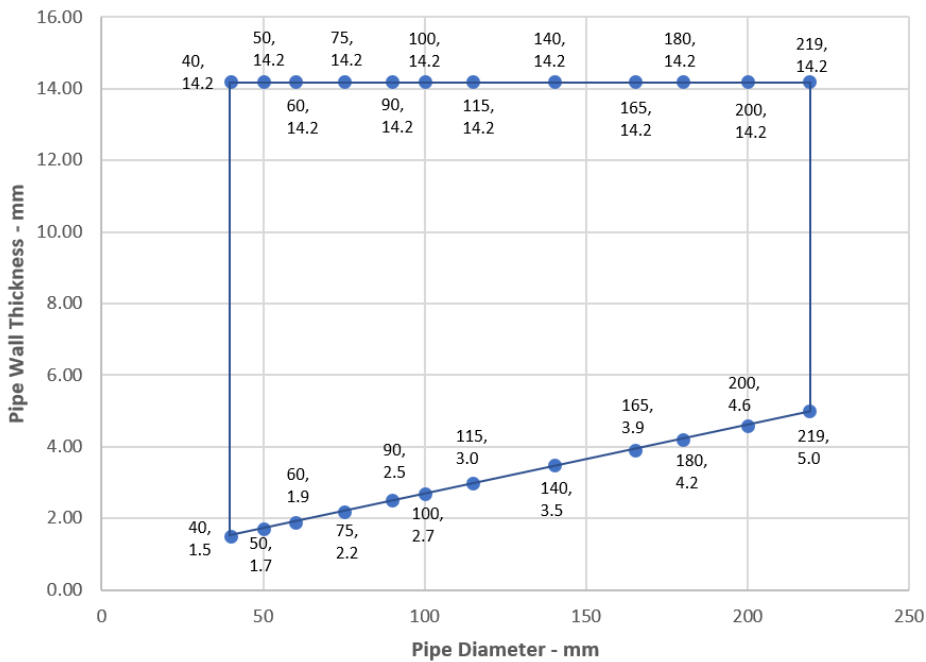
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Services	Seal width around pipe	Insulation (minimum)	Classification
Mild or stainless steel pipe			
40 mm diameter/1.5-14.2 mm wall*	6-18 mm	1000 mm length of 20 mm Stone wool insulation 80 kg/m ³	EI 240 C/U
40 mm diameter/1.5-14.2 mm wall*		1000 mm length of 30 mm Stone wool insulation 80 kg/m ³	E 180 C/U, EI 90 C/U
50 mm diameter/1.7-14.2 mm wall*			
60 mm diameter/1.9-14.2 mm wall*			
75 mm diameter/2.2-14.2 mm wall*			
90 mm diameter/2.5-14.2 mm wall*			
100 mm diameter/2.7-14.2 mm wall*			
115 mm diameter/3-14.2 mm wall*			
140 mm diameter/3.5-14.2 mm wall*			
165 mm diameter/ 3.9-14.2 mm wall*			
180 mm diameter/ 4.2-14.2 mm wall*			
200 mm diameter/ 4.6-14.2 mm wall*			
219 mm diameter/ 5.0-14.2 mm wall*			

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U

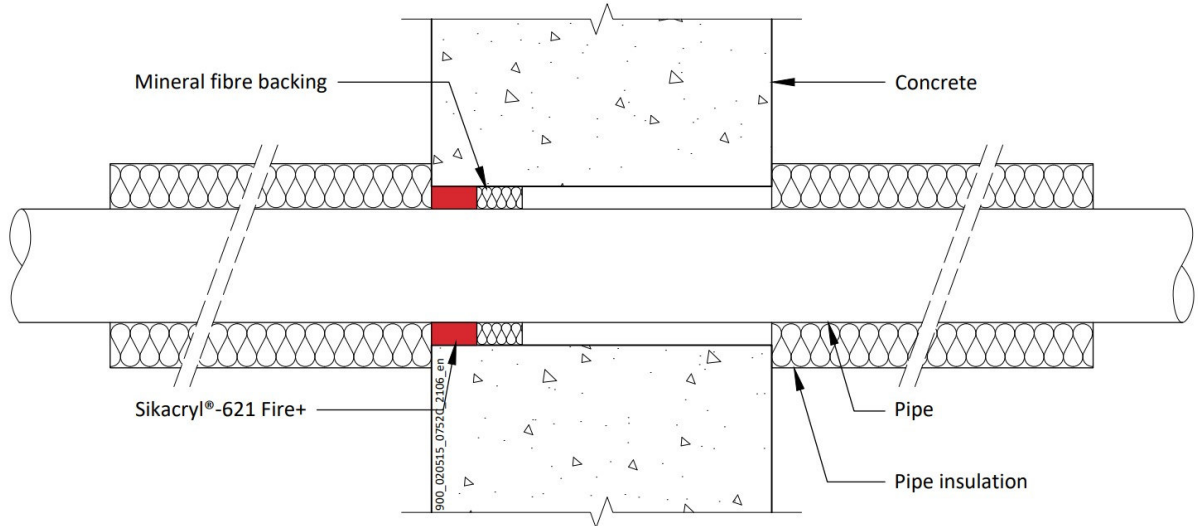


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A.1.4 Single side penetration seal with metallic (and composite) pipes

Penetration Seal: LI (Local Interrupted) of minimum length stated below or CI (Continuous Interrupted) insulated metallic and composite pipes (single) fitted at any position within the aperture, with 25 mm deep Sikacryl-621 Fire+ to either side of the wall (or at any position between), backed with 25 mm deep minimum 40 kg/m³ stone wool insulation*.

Construction details:



A.1.4.1

Services	Maximum Seal size	Insulation (minimum)	Classification
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall	300 x 300 mm	1000 mm length 20 mm Stone wool insulation 80 kg/m ³	E 240 C/U, EI 60 C/U
Alupex composite pipe 75 mm diameter/7.5 mm wall		25 mm AES mineral fibre insulation, 600 mm long (min.)	

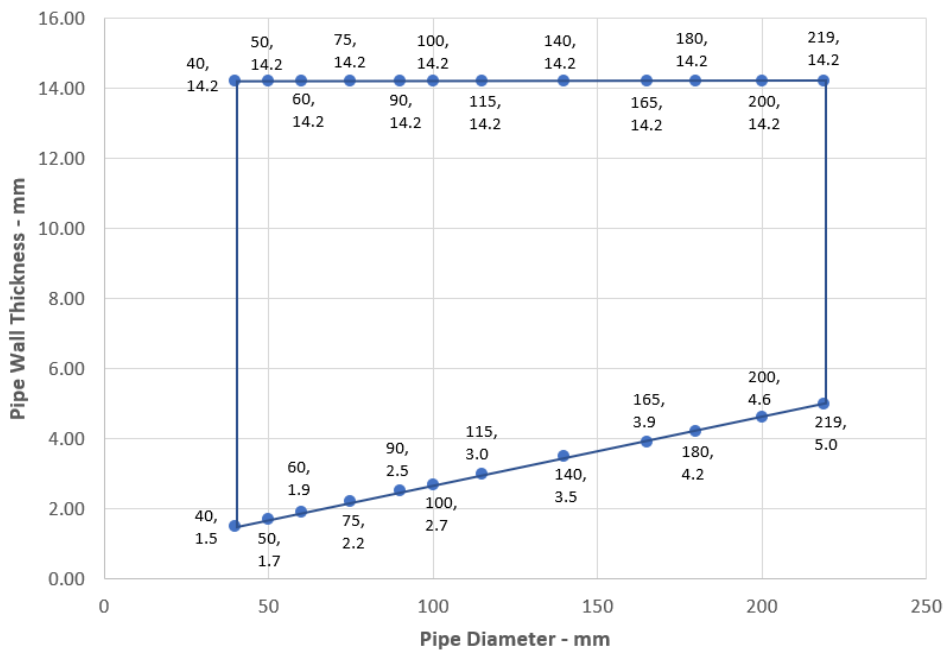
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Services	Maximum seal size	Insulation (minimum)	Classification
Mild or stainless steel pipe			
40 mm diameter/1.5-14.2 mm wall*	300 x 300 mm	1000 mm length of 20 mm Stone wool insulation 80 kg/m ³	E 240 C/U, EI 60 C/U
40 mm diameter/1.5-14.2 mm wall*		1000 mm length of 30 mm Stone wool insulation 80 kg/m ³	
50 mm diameter/1.7-14.2 mm wall*			
60 mm diameter/1.9-14.2 mm wall*			
75 mm diameter/2.2-14.2 mm wall*			
90 mm diameter/2.5-14.2 mm wall*			
100 mm diameter/2.7-14.2 mm wall*			
115 mm diameter/3-14.2 mm wall*			
140 mm diameter/3.5-14.2 mm wall*			
165 mm diameter/ 3.9-14.2 mm wall*			
180 mm diameter/ 4.2-14.2 mm wall*			
200 mm diameter/ 4.6-14.2 mm wall*			
219 mm diameter/ 5.0-14.2 mm wall*			

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U

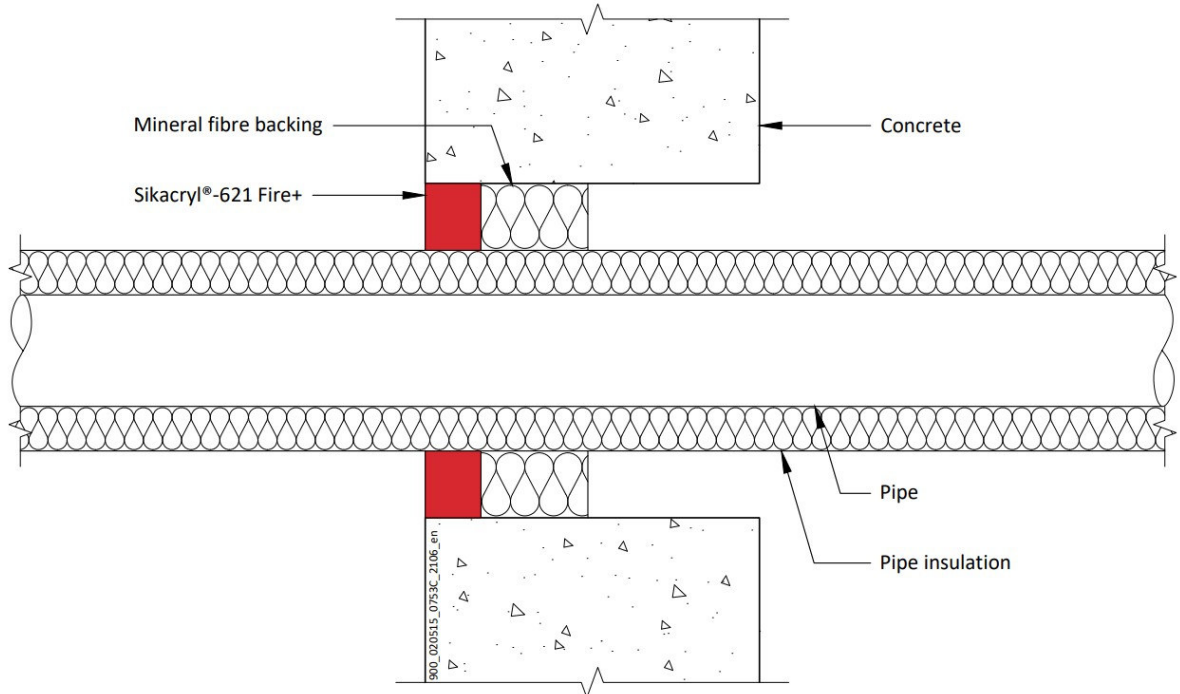


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A.1.5 Single side penetration seal with metallic pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic (single), with 25 mm deep Sikacryl-621 Fire+ to either side of the wall (or at any position between), backed with 48 mm deep AES mineral fibre insulation. Minimum annular space 10 mm and minimum separation between penetrations seals of 30 mm. Maximum seal size 300 x 300 mm or 504 mm \varnothing .

Construction details:



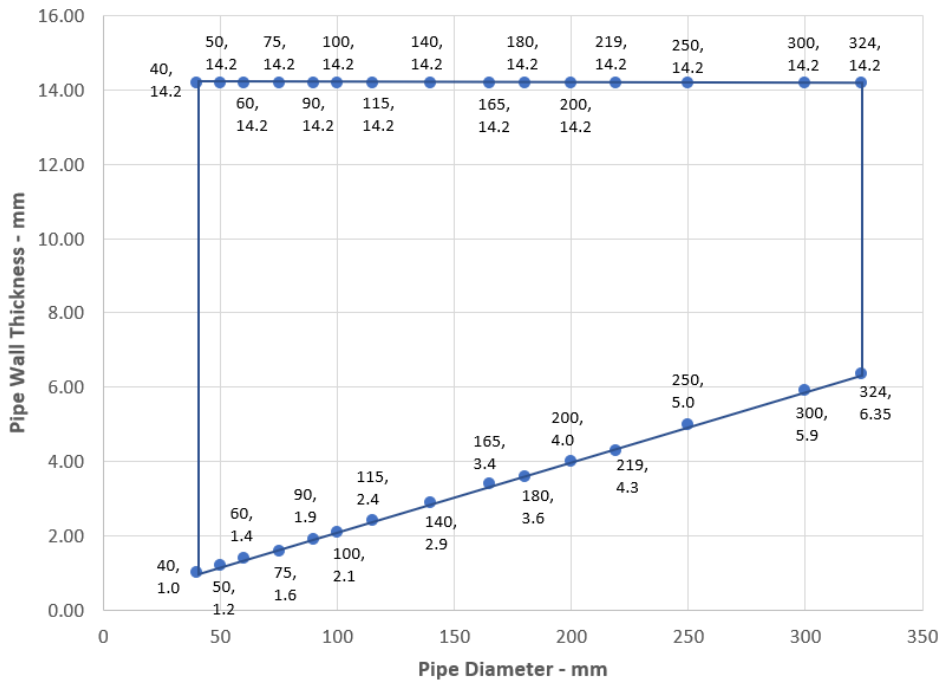
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A.1.5.1 Single side penetration seal with pipes

Services	Insulation	Classification
Mild or stainless steel pipe		
40 mm diameter/1-14.2 mm wall	20 mm thick stone, mineral wool min. 80 kg/m ³	EI 240 C/U
40 mm diameter/1-14.2 mm wall*	30-80 mm thick stone, mineral wool min. 80 kg/m ³	EI 180 C/U
50 mm diameter/1.2-14.2 mm wall*		
60 mm diameter/1.4-14.2 mm wall*		
75 mm diameter/1.6-14.2 mm wall*		
90 mm diameter/1.9-14.2 mm wall*		
100 mm diameter/2.1-14.2 mm wall*		
115 mm diameter/2.4-14.2 mm wall*		
140 mm diameter/2.9-14.2 mm wall*		
165 mm diameter/ 3.4-14.2 mm wall*		
180 mm diameter/ 3.6-14.2 mm wall*		
200 mm diameter/ 4.0-14.2 mm wall*		
219 mm diameter/ 4.3-14.2 mm wall*		
250 mm diameter/ 5.0-14.2 mm wall*		
300 mm diameter/ 5.9-14.2 mm wall*		
324 mm diameter/ 6.35-14.2 mm wall*		

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U

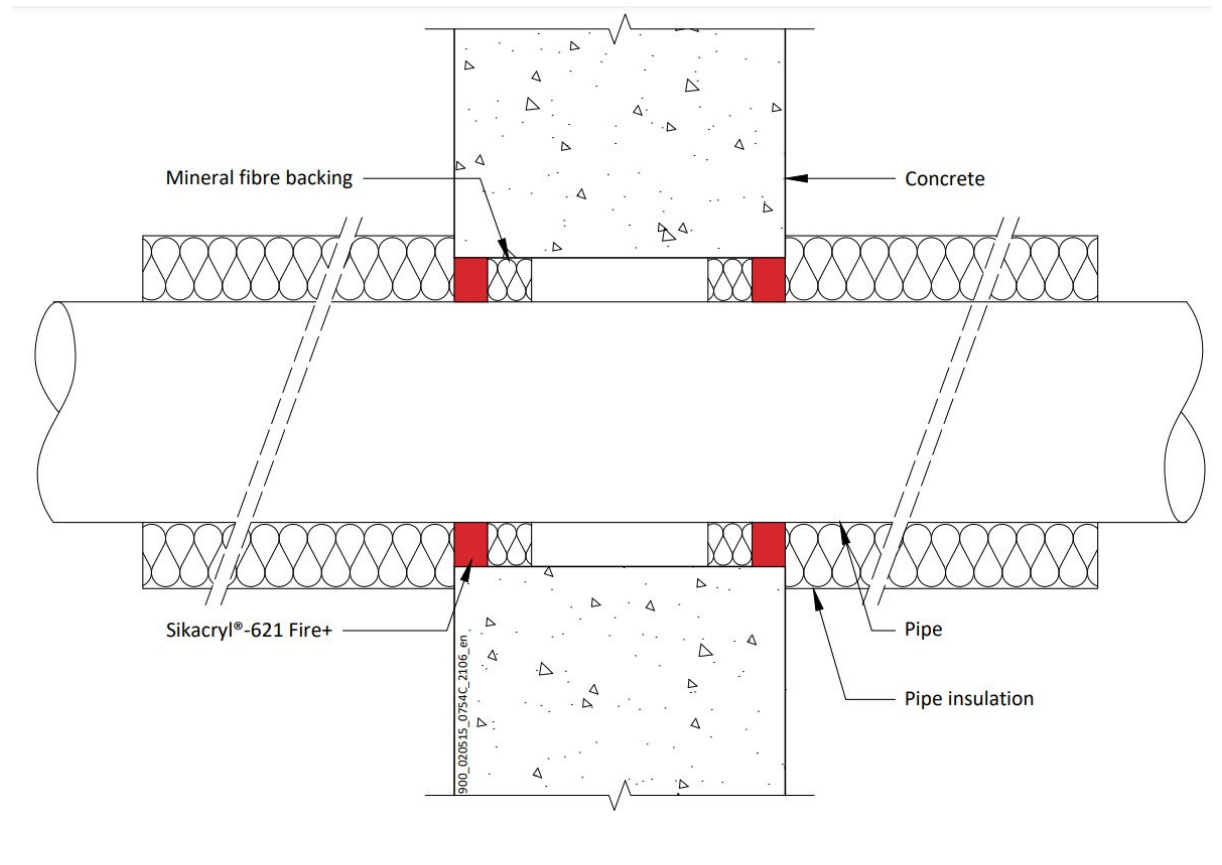


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A.1.6 Double side penetration seal with metallic pipes

Penetration Seal: 1000 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic pipes (single) fitted at any position within the aperture, with 15 mm deep Sikacryl-621 Fire+ to both sides of the wall, backed with 20 or 30 mm deep minimum 40 kg/m³ stone wool insulation.

Construction details:



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BUILDING TRUST

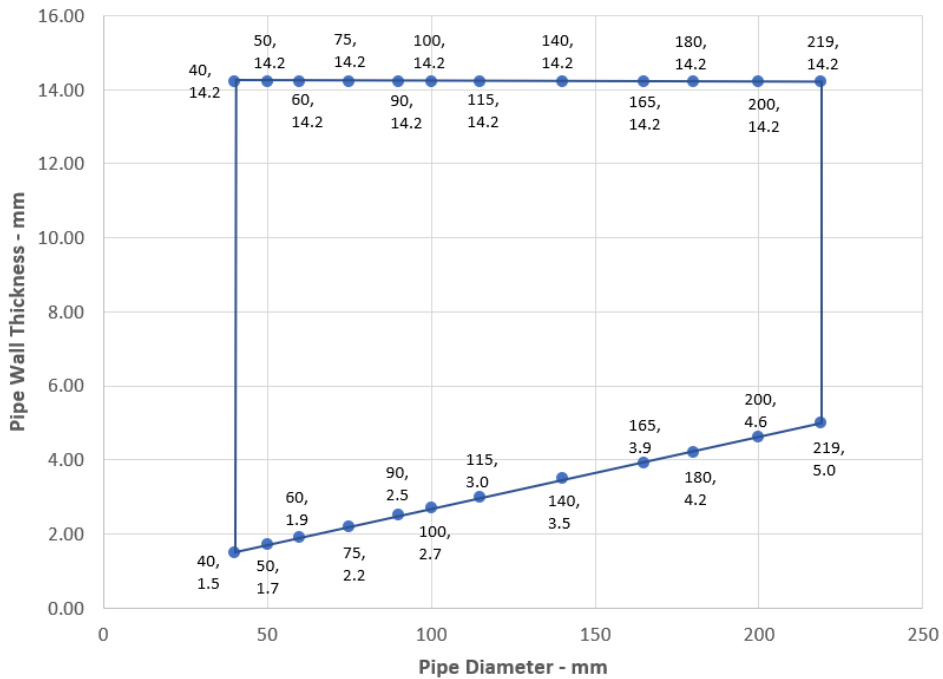


A.1.6.1

Services	Maximum seal size	Insulation (minimum)	Classification
Mild or stainless steel pipe			
40 mm diameter/1.5-14.2 mm wall*	300 x 300 mm	20 mm Stone wool insulation 80 kg/m ³	EI 240 C/U
40 mm diameter/1.5-14.2 mm wall*			
50 mm diameter/1.7-14.2 mm wall*			
60 mm diameter/1.9-14.2 mm wall*			
75 mm diameter/2.2-14.2 mm wall*			
90 mm diameter/2.5-14.2 mm wall*			
100 mm diameter/2.7-14.2 mm wall*			
115 mm diameter/3-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³	E 240, EI 120 C/U
140 mm diameter/3.5-14.2 mm wall*			
165 mm diameter/ 3.9-14.2 mm wall*			
180 mm diameter/ 4.2-14.2 mm wall*			
200 mm diameter/ 4.6-14.2 mm wall*			
219 mm diameter/ 5.0-14.2 mm wall*			

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U



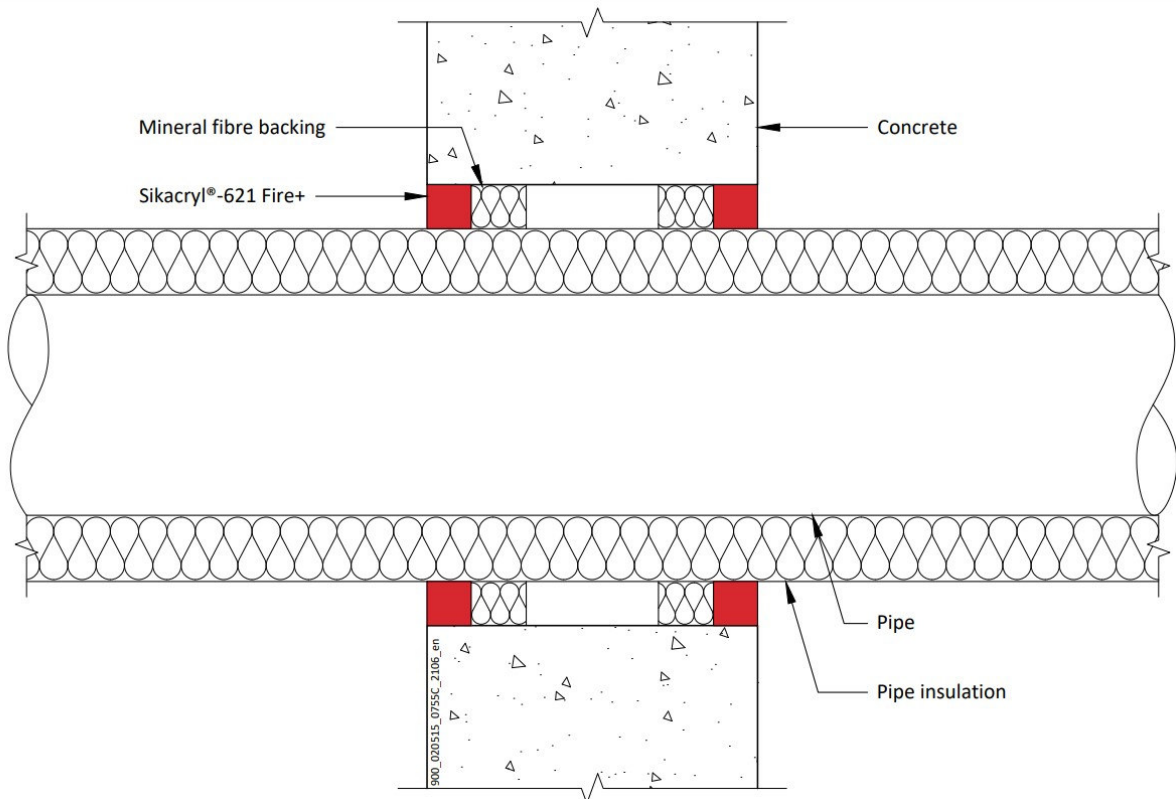
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A.1.7 Double side penetration seal with metallic pipes

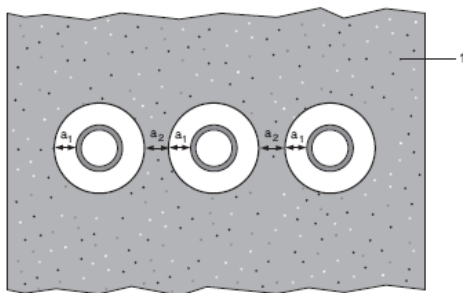
Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with 15 mm Sikacryl-621 Fire+ to both sides of the wall, backed with 25 mm deep stone wool insulation minimum 35 kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2). Maximum seal size 300 x 300 mm / 504 mm \varnothing

Construction details:



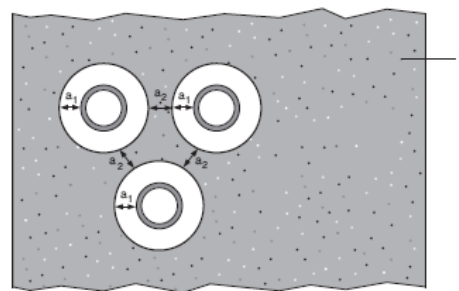
Configuration 1

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

Leistungserklärung

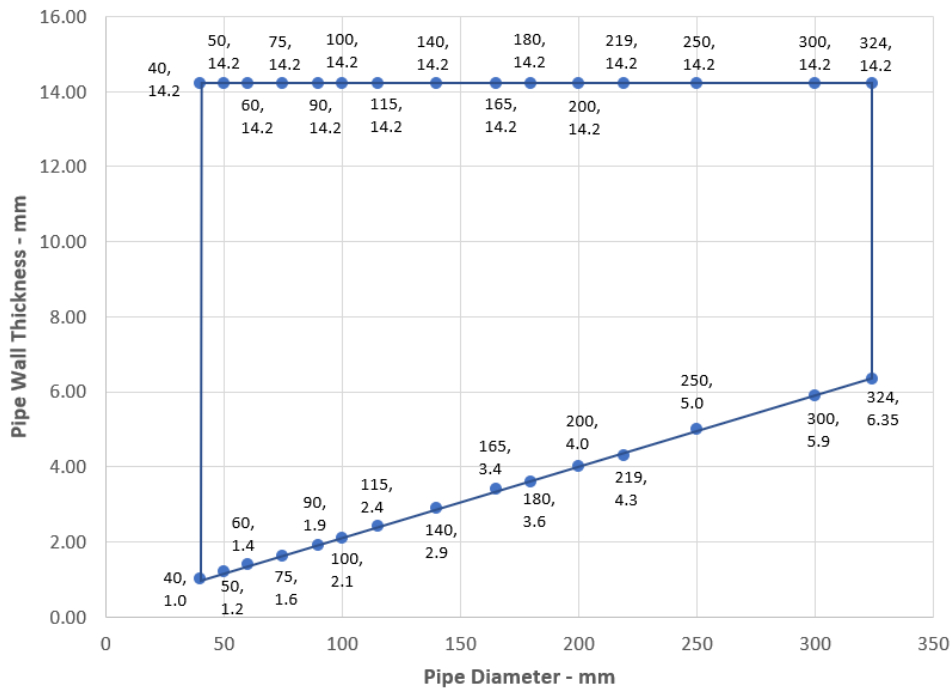
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A.1.7.1 Double side penetration seal with pipes

Services	Insulation	Classification
Mild or stainless steel pipe		
40 mm diameter/1-14.2 mm wall	20 mm thick stone, mineral wool min. 80 kg/m ³	EI 240 C/U
40 mm diameter/1-14.2 mm wall*	30-80 mm thick stone, mineral wool min. 80 kg/m ³	
50 mm diameter/1.2-14.2 mm wall*		
60 mm diameter/1.4-14.2 mm wall*		
75 mm diameter/1.6-14.2 mm wall*		
90 mm diameter/1.9-14.2 mm wall*		
100 mm diameter/2.1-14.2 mm wall*		
115 mm diameter/2.4-14.2 mm wall*		
140 mm diameter/2.9-14.2 mm wall*		
165 mm diameter/ 3.4-14.2 mm wall*		
180 mm diameter/ 3.6-14.2 mm wall*		
200 mm diameter/ 4.0-14.2 mm wall*		
219 mm diameter/ 4.3-14.2 mm wall*		
250 mm diameter/ 5.0-14.2 mm wall*		
300 mm diameter/ 5.9-14.2 mm wall*		
324 mm diameter/ 6.35-14.2 mm wall*		

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U

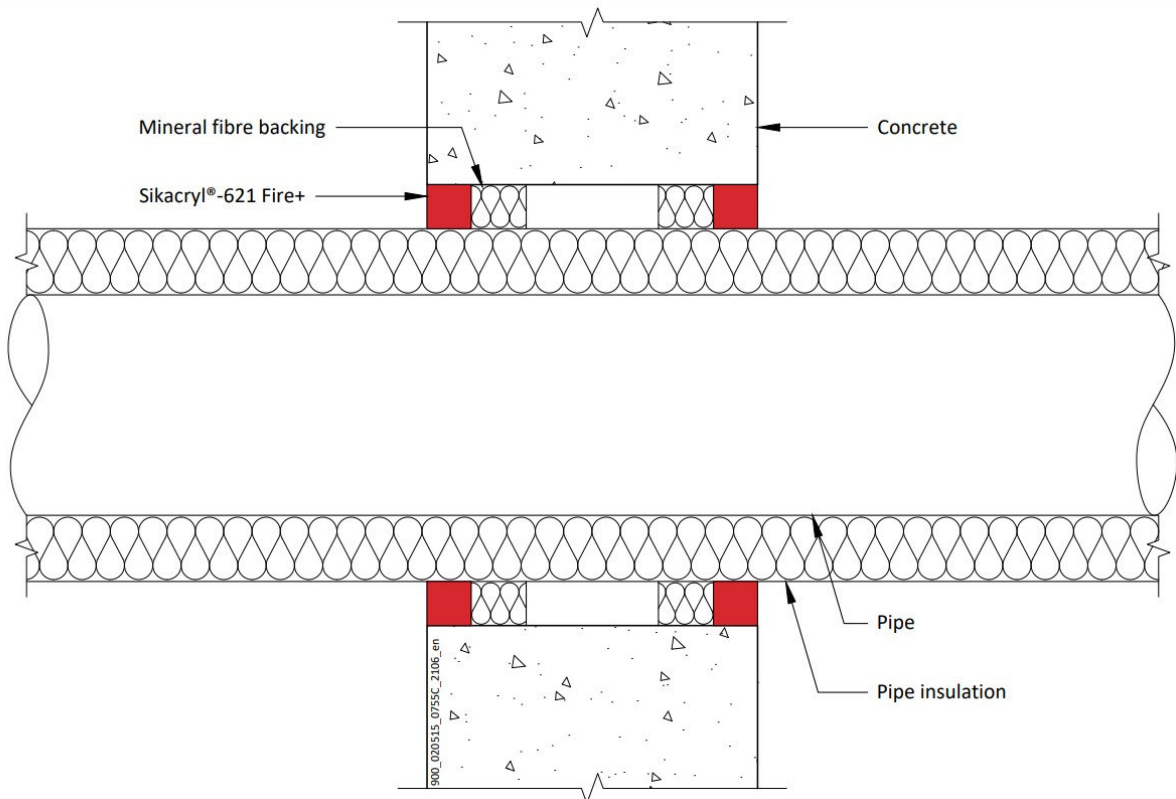


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A.1.8 Double side penetration seal with metallic pipes with combustible insulation

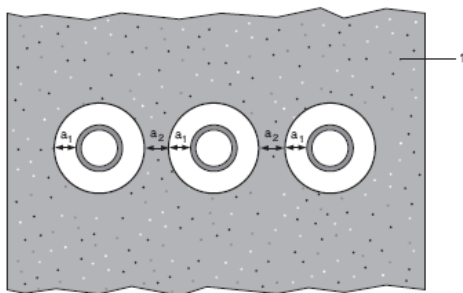
Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with 25 mm Sikacryl-621 Fire+ to both sides of the wall, backed with 25 mm deep stone wool insulation minimum 35 kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2). Maximum seal size 300 x 300 mm / 300 mm \varnothing

Construction details:



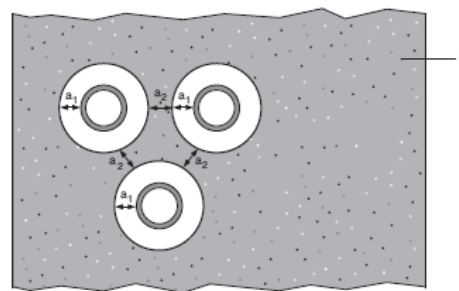
Configuration 1

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

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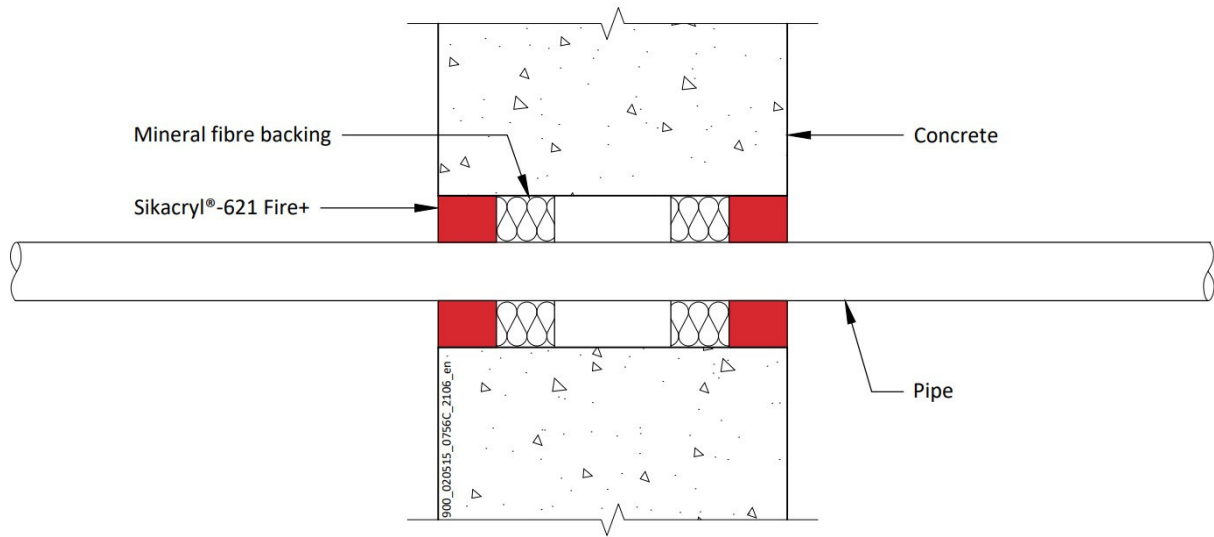
A.1.8.1 Double side penetration seal with metallic pipes with combustible insulation

Services	Insulation	Classification
Mild or stainless steel pipe		
22 mm diameter/2-11 mm wall	13 mm thick Elastomeric insulation minimum class B-s3,d0	E 240 C/U, EI 180 C/U
22-114 mm diameter/2-14.2 mm wall	13-25 mm thick Elastomeric insulation minimum class B-s3,d0	E 120 C/U, EI 90 C/U
22-114 mm diameter/2-14.2 mm wall	25-50 mm thick Elastomeric insulation minimum class B-s3,d0	EI 60 C/U

A.1.9 Double side penetration seal with plastic pipes

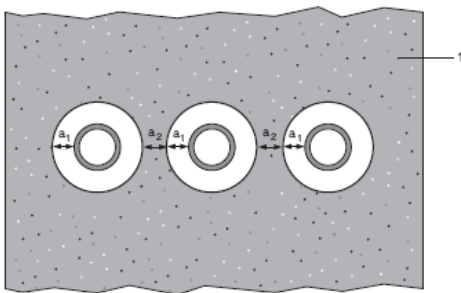
Penetration Seal: Plastic pipes (single) fitted at any position within the aperture, with 25 mm Sikacryl-621 Fire+ to both sides of the wall, backed with 25 mm deep stone wool insulation minimum 35 kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2). Maximum seal size 300 x 300 mm / 300 mm Ø

Construction details:



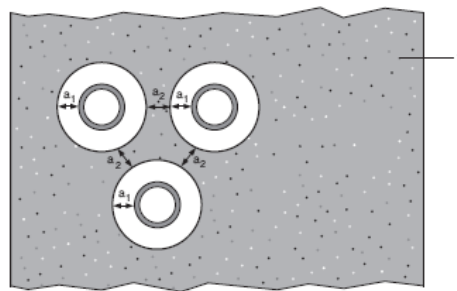
Configuration 1

Option 1



Configuration 2

Option 2



Key

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

A.1.9.1 Double side penetration seal with plastic pipes

Pipe material	Size	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	EI 240 U/C
PP pipe according to EN 1451-1 or DIN 8077/8078	32 mm diameter/2.0-4.4 mm wall	EI 180 C/U
	12-32 mm diameter/1.8-4.4 mm wall	EI 240 C/U
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 mm wall	EI 240 C/U
	20-32 mm diameter/2.0-4.4 mm wall	EI 120 C/U

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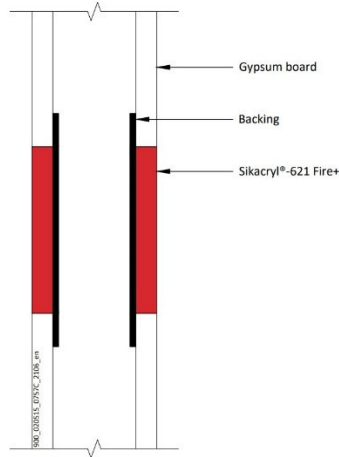
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A.2 Flexible and rigid wall constructions according to 2. 2) with wall thickness of minimum 75 mm

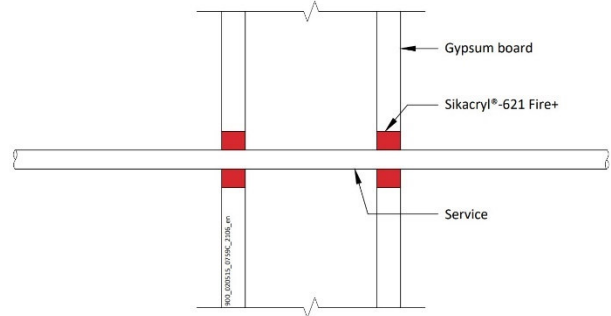
A.2.1 Double side penetration seal with cables

Penetration Seal: Cables (single or bundles up to 100 mm \varnothing) and pipes fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2), maximum seal size 150 x 150 mm / 344 mm diameter (when incorporating a pipe of seal diameter -20 mm).

Construction details:



Construction details:



A.2.1.1

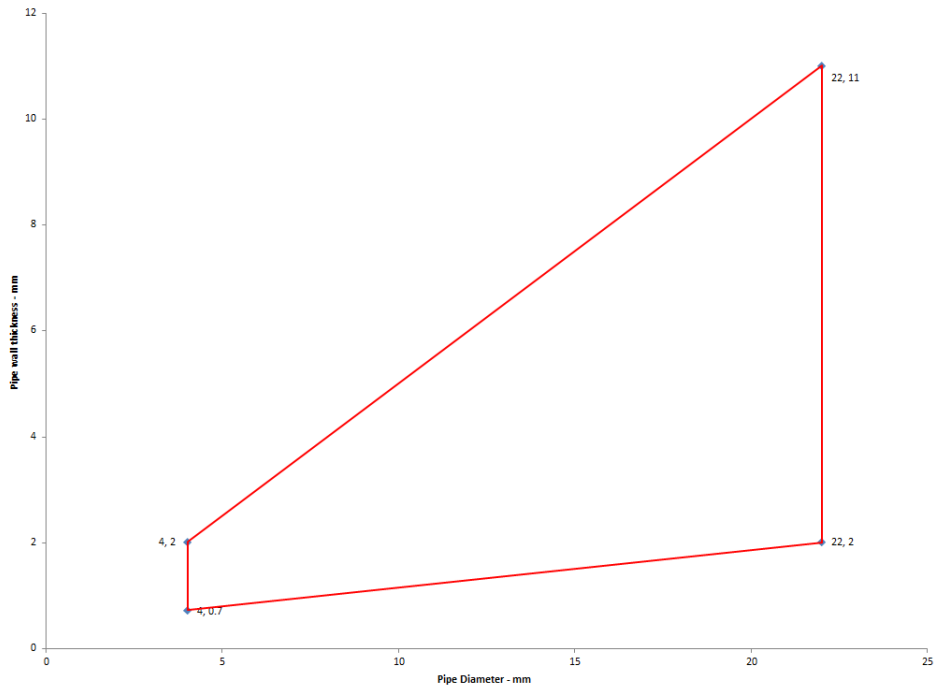
Services	Sealant depth	Backing	Classification
None (blank)	12.5 mm	Any material	EI 60
Cables up to 21 mm \varnothing , single		None	E 60, EI 45
Cables up to 21 mm \varnothing , in bundles up to 100 mm \varnothing			E 45, EI 30
Mild or stainless steel pipe			
4 mm diameter /0.7-2.0 mm wall	12.5 mm	None	E 60 C/U, EI 45 C/U
5-22 mm diameter /0.7-11 mm wall*			E 60 C/U, EI 30 C/U
Mild or stainless steel pipe with minimum 80 kg/m ³ density stone wool insulation Continuous Sustained (CS)			
40 mm diameter /1-14.2 mm wall, 20 mm insulation	12.5 mm	None	E 60 C/U, EI 45 C/U
40-324 mm diameter /1.0-14.2 mm wall, 30 mm insulation*			
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 \varnothing /1.0-1.8 mm wall, with bundle of cables up to 21 mm diameter*	12.5 mm	None	E 60 U/C, EI 45 U/C
PP pipe according to EN 1451-1 or DIN 8077/8078			
20 mm \varnothing /2.3 mm wall	12.5 mm	None	EI 45 U/C
21-32 mm \varnothing /2.3-4.4 mm wall*			EI 30 U/C
21-32 mm \varnothing /2.3-4.4 mm wall, with bundle of cables up to 21 mm diameter*			E 45 U/C, EI 30 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 mm \varnothing /2.0 mm wall	12.5 mm	None	EI 45 U/C
21-32 mm \varnothing /2.0-3.0 mm wall*			EI 30 U/C
21-32 mm \varnothing /2.0-3.0 mm wall, with bundle of cables up to 21 mm* diameter			E 45 U/C, EI 30 U/C

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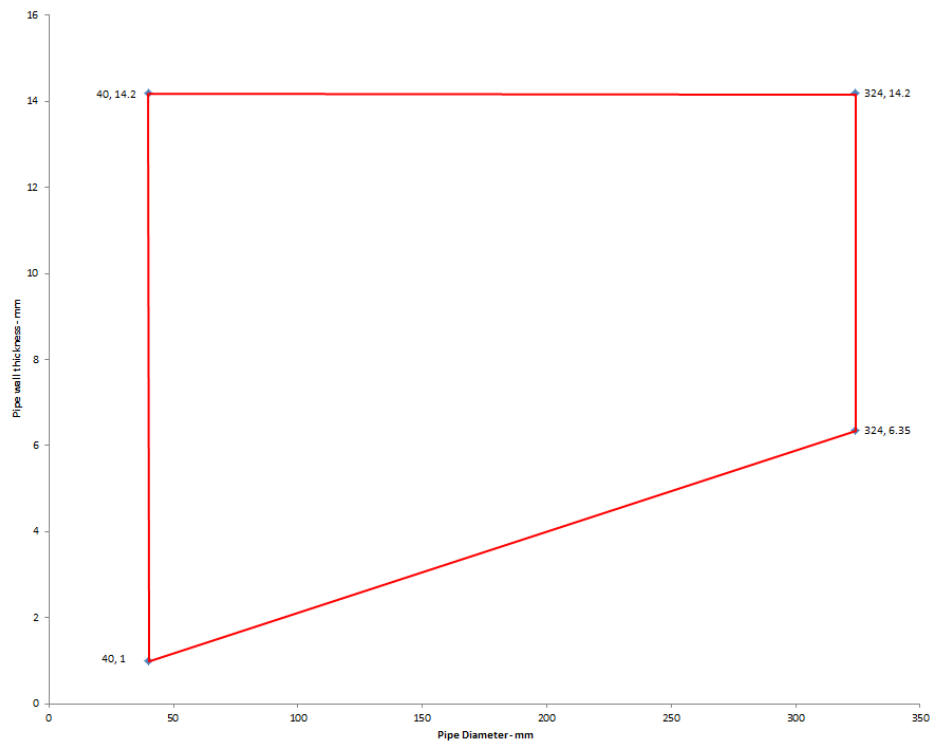
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* See below graphs for interpolated pipe sizes

Steel Pipe- E 60 U/C, EI 30 U/C

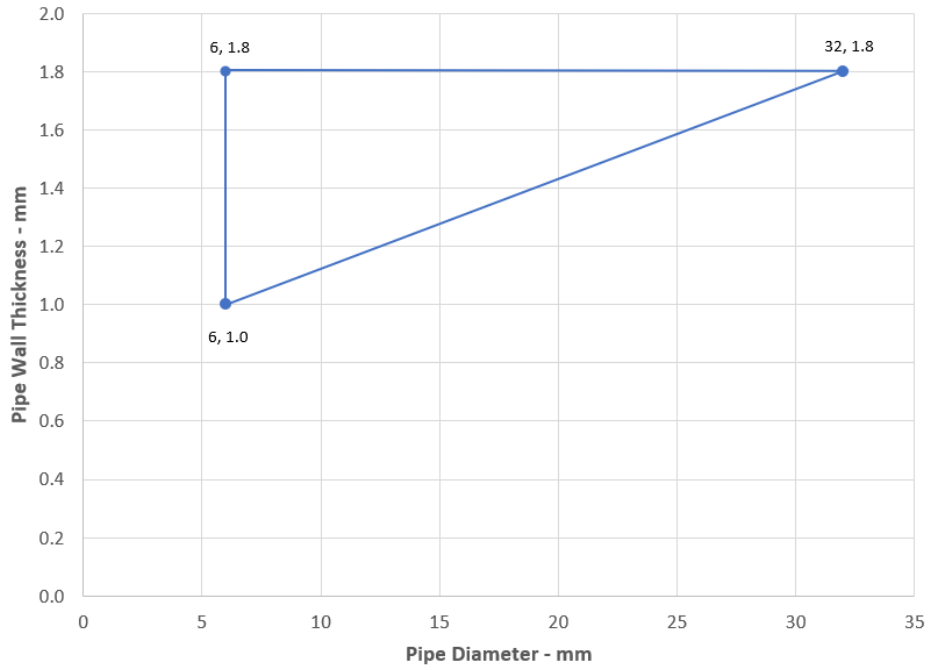


Steel pipes with 30 mm Insulation

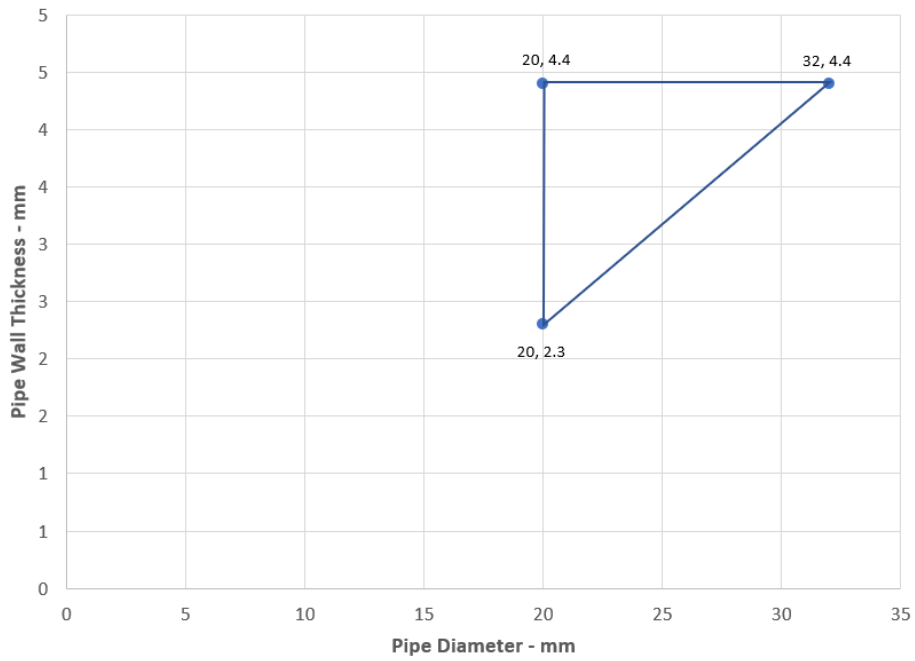


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PVC-U Pipes - U/C



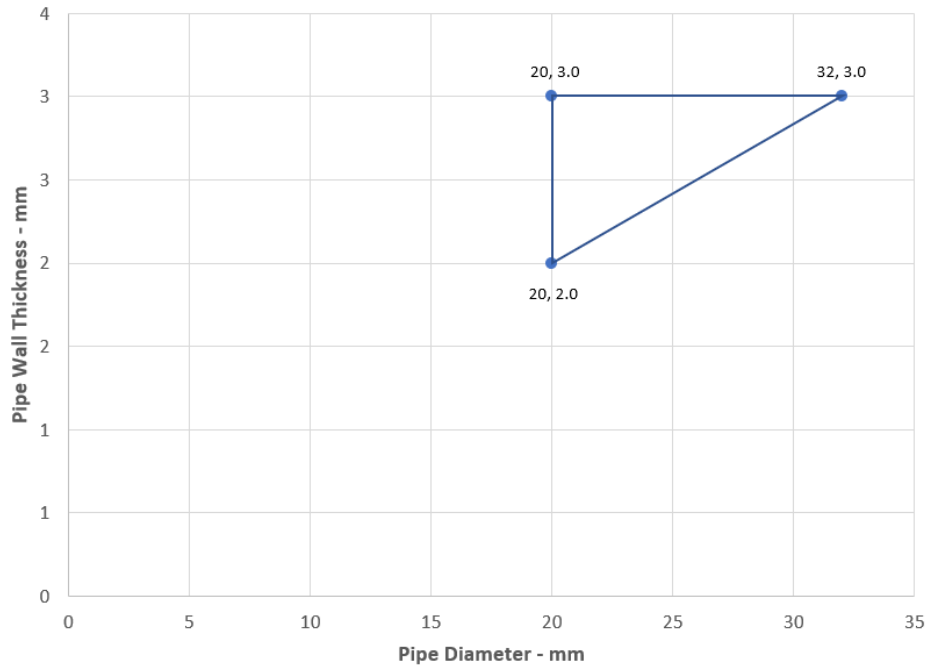
PP Pipes - EI 30 U/C



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PE Pipes - EI 30 U/C



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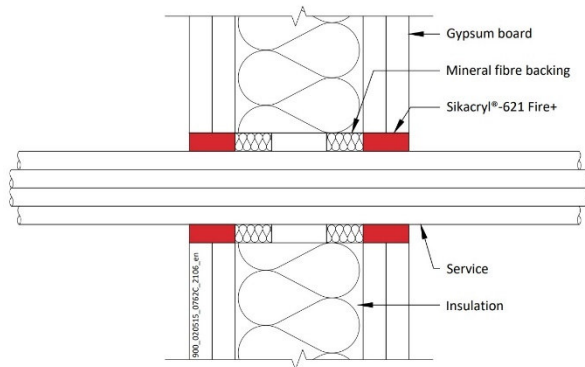


A.3 Flexible and rigid wall constructions according to 2.2) with wall thickness of minimum 100 mm

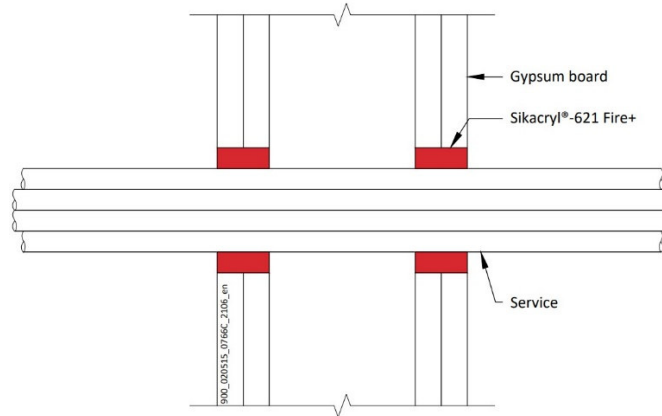
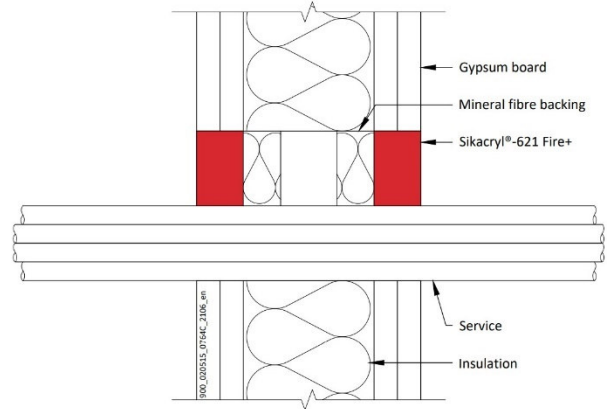
A.3.1 Double side penetration seal with cables

Penetration Seal: Cables (single or bundles up to 100 mm Ø) and conduits fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall.

Construction details:



Construction details:



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A.3.1.1

Services	Sealant depth	Backing	Maximum aperture	Classification
None (blank)	12.5 mm	Stone wool 20 mm deep 35-140 kg/m ³	300 x 300 mm*	EI 120
Cables up to 21 mm Ø, single or in bundles up to 50 mm Ø	12.5 mm	Stone wool 12.5 mm deep min. 33 kg/m ³		E 120, EI 90
Electrical cables up to 21 mm Ø, single or in bundles up to 100 mm Ø	25 mm	Stone wool 20 mm deep min. 40 kg/m ³		EI 120
Electrical cables up to 80 mm Ø, single or in bundles up to 100 mm Ø		25 mm AES mineral fibre		E 120, EI 60
Single 'E cable' - 1 x 185 mm ² core HD603.3 electrical cable with PVC insulation, PVC sheath and 23-27 mm diameter	12.5 mm	Stone wool 20 mm deep min. 140 kg/m ³		E 120, EI 60

* Or 30 mm wide x 3000 mm high for cables up to 21 mm Ø

Services	Sealant depth	Backing	Maximum Annular space	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1				
Maximum diameter 40 mm, wall thickness 1.0-1.9 mm for PVC pipes, fully or partially filled conduits with cables up to 21 mm diameter	25 mm	none	30 mm	EI 120 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 40 mm, wall thickness 2.0-3.0 mm for PE pipes, fully or partially filled conduits with cables up to 21 mm diameter	25 mm	none	30 mm	EI 90 U/C
PP pipe according to EN 1852-1: 2009 or DIN 8077/8078				
Maximum diameter 40 mm, wall thickness 1.8-2.2 mm for PP pipes, fully or partially filled conduits with cables up to 21 mm diameter	25 mm	none	30 mm	EI 90 U/C

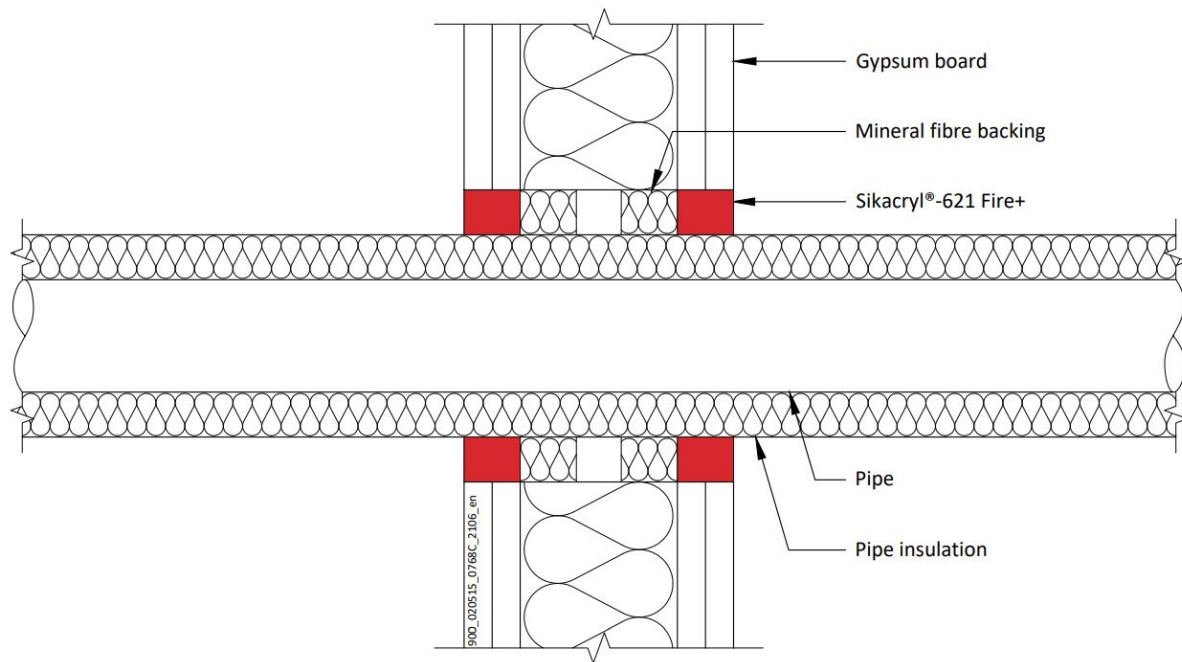
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A.3.2 Double side penetration seal with metallic pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, backed with stone wool insulation or 'AES mineral fibre', 300 x 300 mm maximum seal size.

Construction details:



A.3.2.1

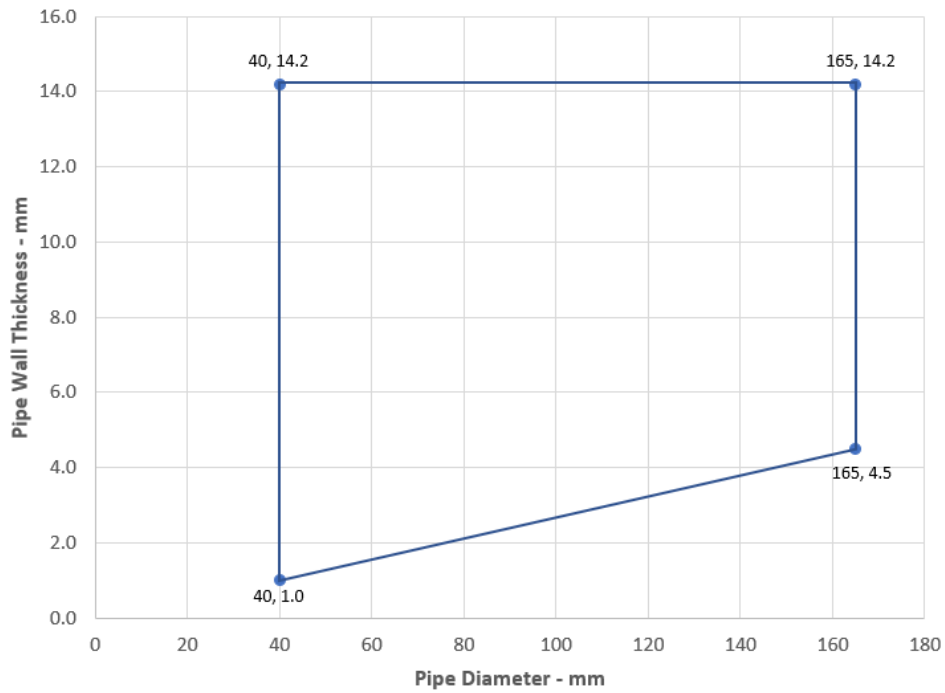
Services	Sealant depth	Backing (minimum)	Insulation	Classification
Mild or stainless steel pipe				
22 mm diameter/3-10 mm wall	25 mm	Stone wool 25 mm deep 35 kg/m ³	None	EI 120 C/C
Maximum 165 mm diameter/ wall*	12.5 mm	12.5 mm stone wool 33 kg/m ³	9 mm Elastomeric insulation minimum class D-s3, d0	E 90 C/U EI 45 C/U
			13 -25 mm Elastomeric insulation minimum class D- s3, d0	EI 60 C/U
40 mm diameter/1-14.2 mm wall*	12.5 mm	20 mm Stone wool 40 kg/m ³	13 -19 mm Elastomeric insulation minimum class B- s3,d0	EI 120 C/C
40 mm diameter/1-14.2 mm wall*	25 mm	25 mm AES mineral fibre		E 120 C/C EI 60 C/C
50 mm diameter/1.3-14.2 mm wall*				
60 mm diameter/1.6-14.2 mm wall*				
75 mm diameter/2-14.2 mm wall*				
90 mm diameter/2.4-14.2 mm wall*				
100 mm diameter/2.7-14.2 mm wall*				
115 mm diameter/3.1-14.2 mm wall*				
140 mm diameter/3.8-14.2 mm wall*				
165 mm diameter/4.5-14.2 mm wall*				

* Typical pipe diameters shown, see below graph for intermediate sizes

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Steel Pipes with Elastomeric Insulation - C/U



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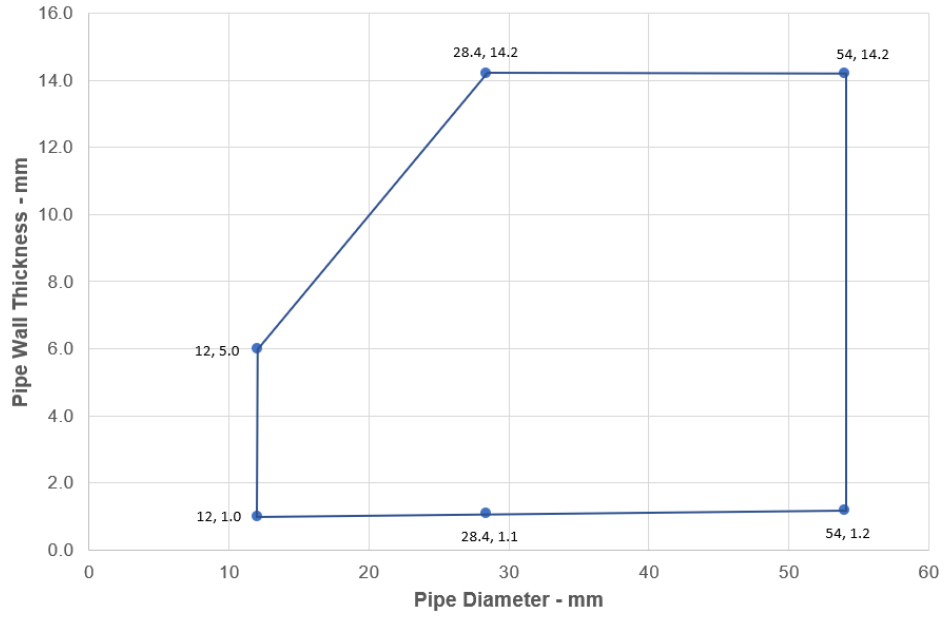
Services	Sealant depth	Backing	Insulation	Classification
Copper or steel pipe				
12 mm diameter/1-6 mm wall	25 mm	25 mm AES mineral fibre	9 mm Elastomeric insulation minimum class B-s3,d0	EI 120 C/C
12-54 mm diameter/1-14.2 mm wall*			9-13 mm Elastomeric insulation minimum class B-s3,d0	E 120 C/C, EI 60 C/C
12-54 mm diameter/1-14.2 mm wall*			13-25 mm Elastomeric insulation minimum class B-s3,d0	EI 60 C/C
Alupex Composite Pipe				
16 mm diameter/ wall*	12.5 mm	12.5 mm stone wool 33 kg/m ³	9 mm Elastomeric insulation minimum class D-s3, d0	E 120 C/C EI 90 C/C
Maximum 75 mm diameter/ wall*			13-24 mm Elastomeric insulation minimum class D-s3, d0	E 90 C/C EI 60 C/C
			25 mm Elastomeric insulation minimum class D-s3, d0	EI 90 C/C
			9 mm Elastomeric insulation minimum class B-s3,d0	EI 120 C/C
16 mm diameter/2.25 mm wall	25 mm	25 mm AES mineral fibre	9-25 mm Elastomeric insulation minimum class B-s3,d0	EI 60 C/C
16 mm diameter/2.25 mm wall				
20 mm diameter/2.5 mm wall				
26 mm diameter/3 mm wall				
32 mm diameter/3 mm wall				
40 mm diameter/3.5 mm wall				
50 mm diameter/4 mm wall				
63 mm diameter/4.5 mm wall				
75 mm diameter/4.7 mm wall				

* Typical pipe diameters shown, see below graph for intermediate sizes

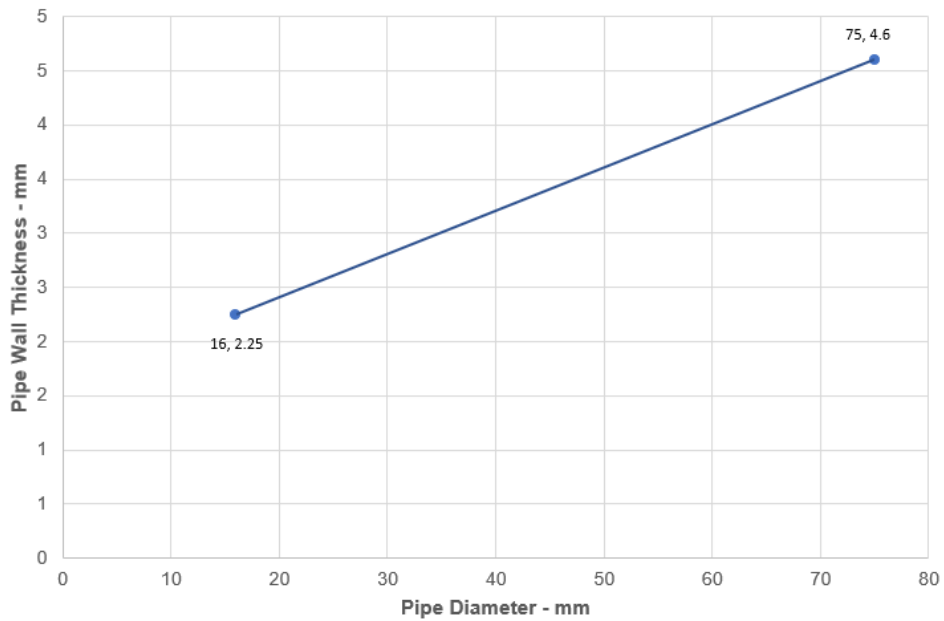
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Copper or Steel Pipes with Elastomeric Insulation - C/C



Alupex Pipes with Elastomeric Insulation - C/C



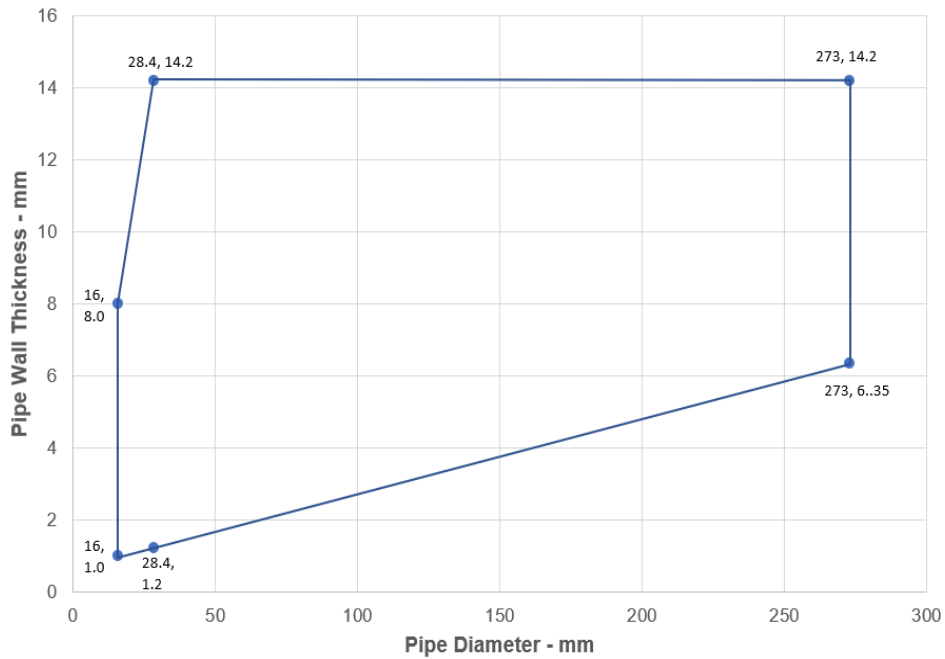
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Services	Sealant depth	Backing (minimum)	Insulation	Classification
Mild or stainless steel pipe				
16 mm diameter/ wall*	25 mm	None	15 mm thick phenolic insulation	EI 90 C/U
Maximum 273 mm/ wall*			25 mm thick phenolic insulation	E 90 C/U, EI 60 C/U
			26-100 mm thick phenolic insulation	EI 60 C/U

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Phenolic Insulation - C/U



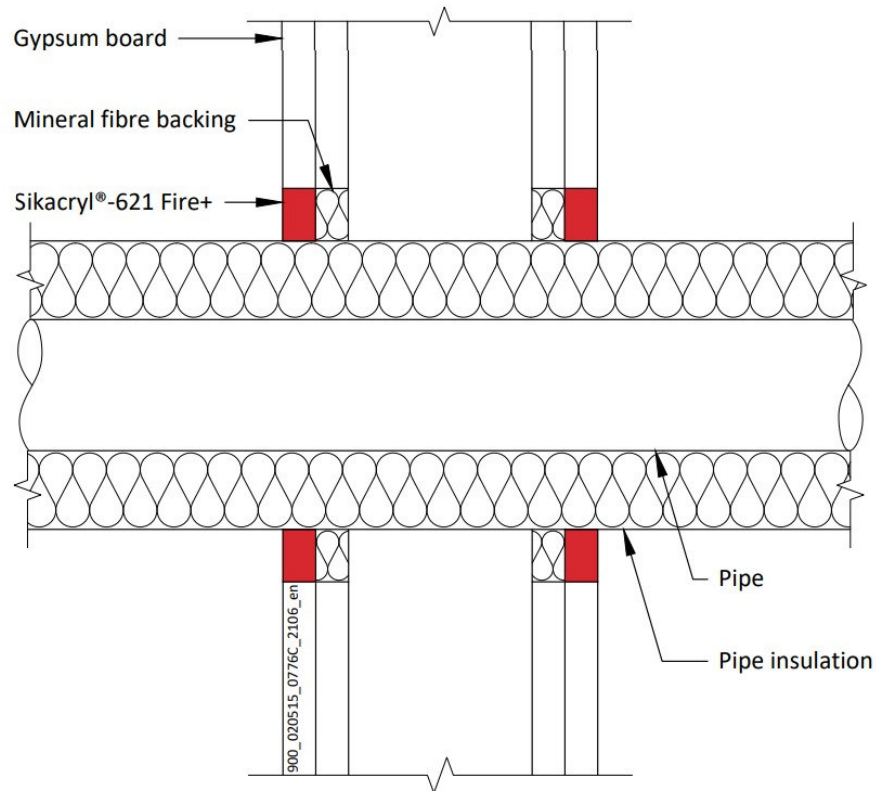
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A.3.3 Double side penetration seal with metallic pipes

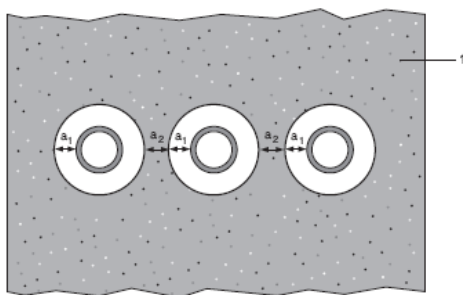
Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with 12.5 mm Sikacryl-621 Fire+ to both sides of the wall, backed with 12.5 mm deep stone wool insulation minimum 35 kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2). Maximum seal size 300 x 300 mm / 504 mm Ø

Construction details:



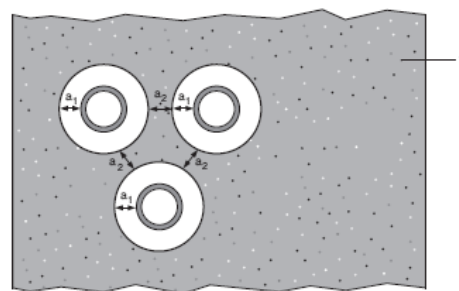
Configuration 1

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

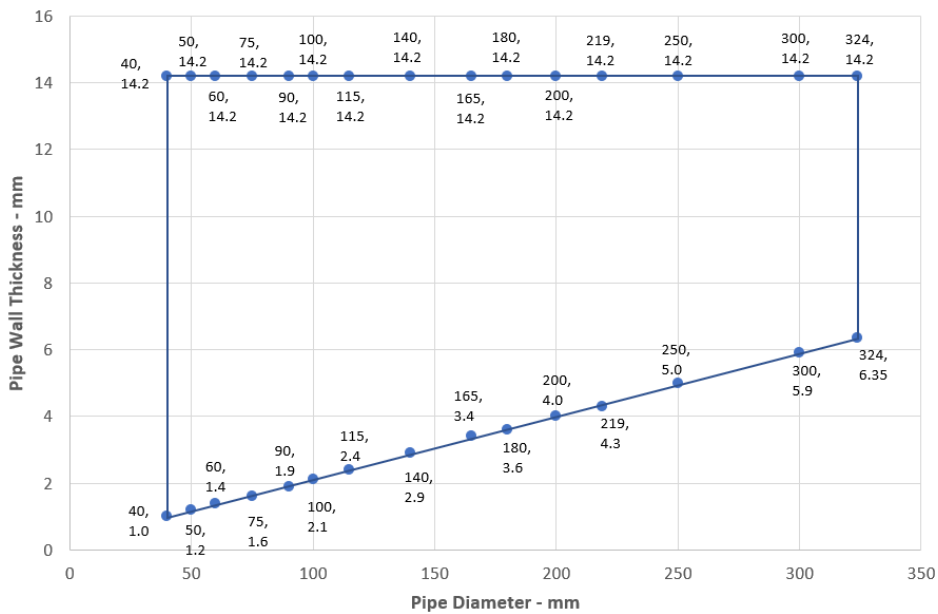
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A.3.3.1 Double side penetration seal with pipes

Services	Insulation	Classification
Mild or stainless steel pipe		
40 mm diameter/1-14.2 mm wall	20 mm thick stone, mineral wool min. 80 kg/m ³	E 120 C/U EI 90 C/U
40 mm diameter/1-14.2 mm wall*	30-80 mm thick stone, mineral wool min. 80 kg/m ³	
50 mm diameter/1.2-14.2 mm wall*		
60 mm diameter/1.4-14.2 mm wall*		
75 mm diameter/1.6-14.2 mm wall*		
90 mm diameter/1.9-14.2 mm wall*		
100 mm diameter/2.1-14.2 mm wall*		
115 mm diameter/2.4-14.2 mm wall*		
140 mm diameter/2.9-14.2 mm wall*		
165 mm diameter/ 3.4-14.2 mm wall*		
180 mm diameter/ 3.6-14.2 mm wall*		
200 mm diameter/ 4.0-14.2 mm wall*		
219 mm diameter/ 4.3-14.2 mm wall*		
250 mm diameter/ 5.0-14.2 mm wall*		
300 mm diameter/ 5.9-14.2 mm wall*		
324 mm diameter/ 6.35-14.2 mm wall*		

Steel Pipes with Mineral Wool Insulation - C/U

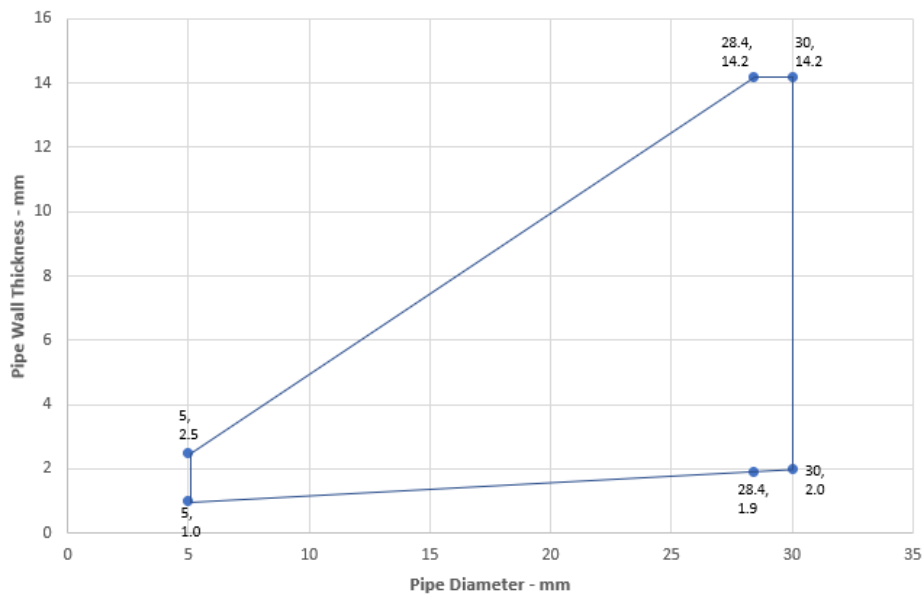


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Services	Insulation	Classification
PEX pipe in pipe system		
15 mm diameter x 2.5 mm wall inner /25mm diameter outer	None	EI 120 C/C
Alupex pipe		
16-20 mm diameter/2.0 mm wall	None	EI 120 C/C
16-75 mm diameter/2.25-4.6 mm	20-50 mm thick glass wool or stone, mineral wool min. 75 kg/m ³	EI 120 C/C
Mild or Stainless Steel pipe		
4 mm diameter/1.0-2.0 mm wall	None	EI 90 C/C
5-30 mm diameter/1.0-14.2 mm wall*		
30 mm diameter/2.0-14.2 mm wall		EI 120 C/U
Copper or Steel pipe		
6-12 mm diameter/0.7-6.0 mm wall*	None	E 90 C/C, EI 60 C/C
13-22 mm diameter/0.7-11 mm wall*		E 90 C/C, EI 30 C/C
12-54 mm diameter/0.9-14.2 mm wall*	20-80 mm thick stone, mineral wool min. 80 kg/m ³	E 120 C/C, EI 60 C/C

* See below graphs for interpolated pipe sizes

Steel Pipes - C/C



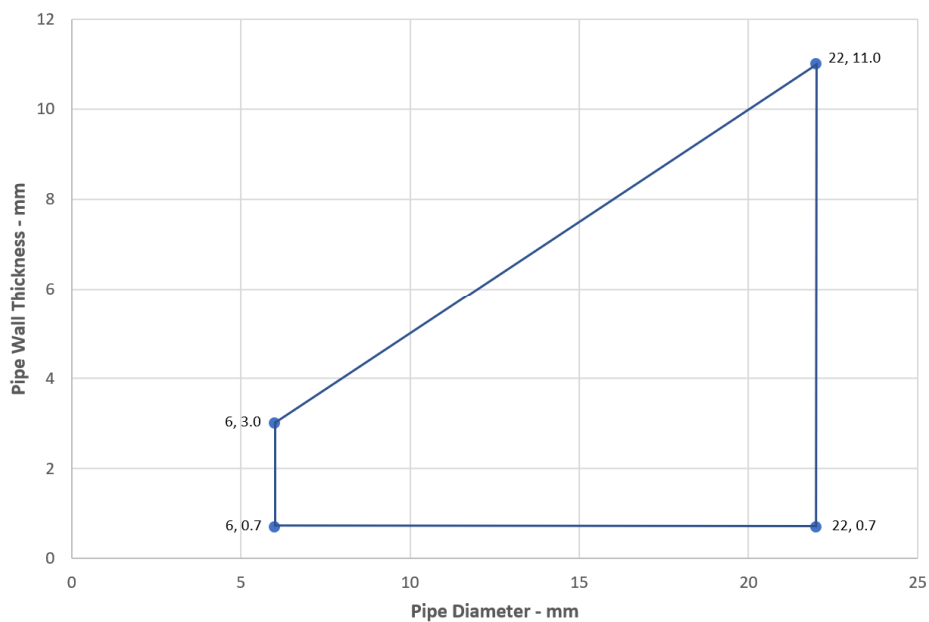
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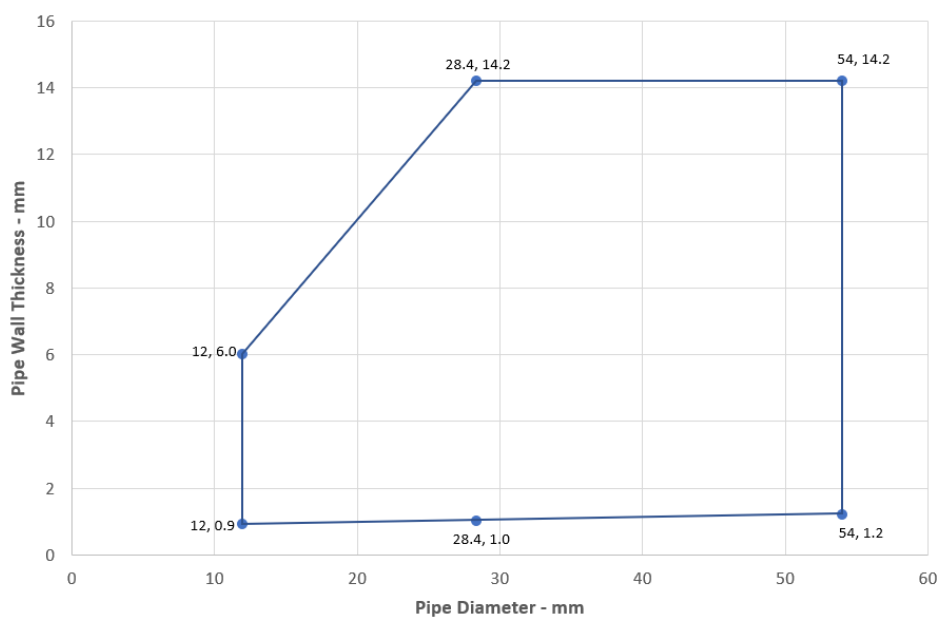
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Copper or Steel Pipes - C/C



Copper or Steel Pipes with Mineral Wool Insulation - C/C



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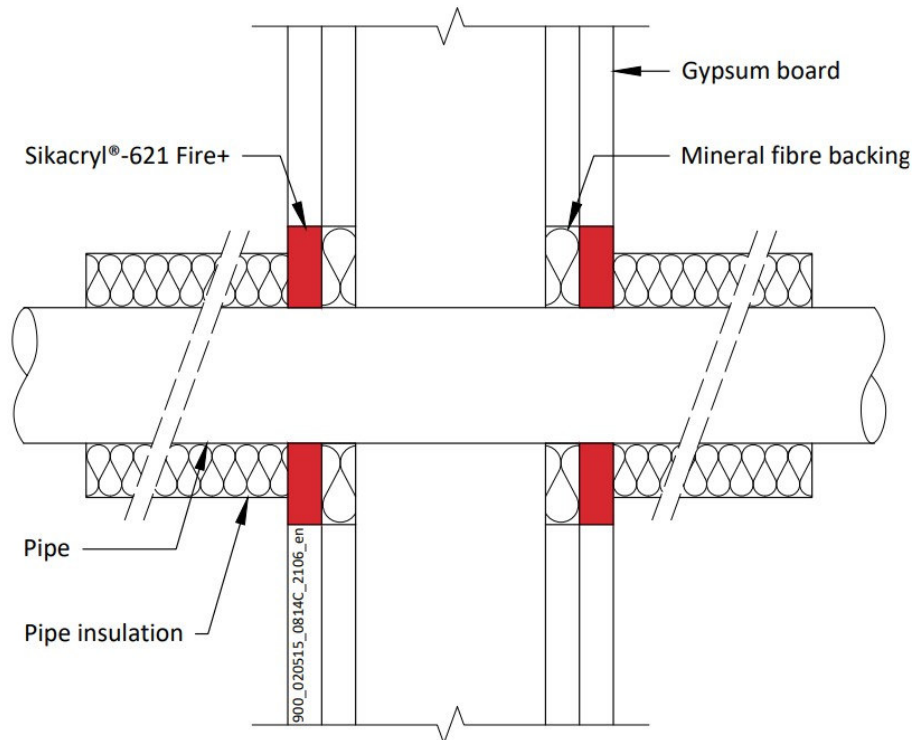
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A.3.4 Double side penetration seal with composite pipes

Penetration Seal: CI (Continuous Interrupted) or CS (Continuous Sustained) insulated composite pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, minimum 10 mm seal width around service, maximum seal size 300 x 300 mm, backed with stonewool.

Construction details:



A.3.4.1

Services	Sealant depth	Backing (minimum)	Insulation (minimum)	Classification
Alupex Composite Pipe				
16 mm diameter/2.25 mm wall	12.5 mm	12.5 mm stonewool 40 kg/m ³	20 mm stonewool 80 kg/m ³ , 500 mm length from both sides of the seal	EI 120 C/C
20 mm diameter/2.5 mm wall				
26 mm diameter/3 mm wall				
32 mm diameter/3 mm wall				
40 mm diameter/3.5 mm wall				
50 mm diameter/4 mm wall				
63 mm diameter/4.5 mm wall				
75 mm diameter/4.7 mm wall				

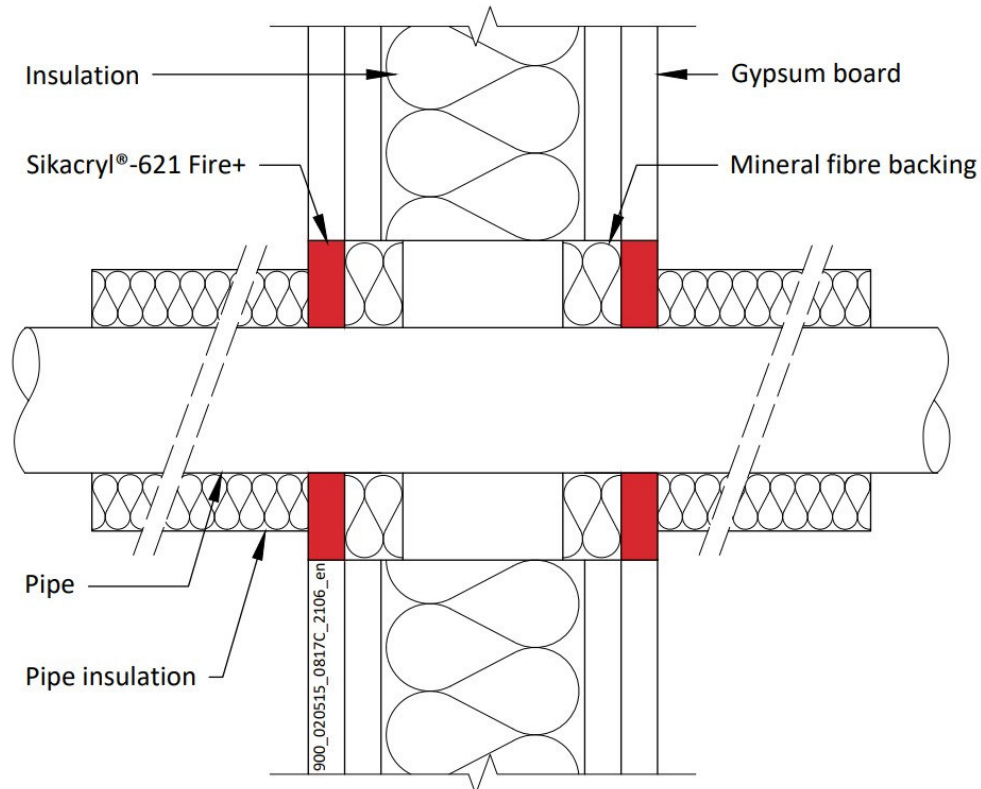
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A.3.5 Double side penetration seal with metallic (and composite) pipes

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 Sikacryl-621 Fire+ to both sides of the wall, min. 10 mm seal width around service, backed with stone wool insulation or 'AES mineral fibre'.

Construction details:



A.3.5.1

Services	Sealant depth	Backing (minimum)	Insulation (minimum)	Classification
Maximum aperture size 300 x 300 mm				
Copper or steel pipe up to 54 mm diameter/1-14.2 mm wall	12.5 mm	20 mm Stone wool 40 kg/m ³	500 mm length of 20 mm stone wool 80 kg/m ³	EI 120 C/U
Alupex composite pipe 75 mm diameter/7.5 mm wall		20 mm Stone wool 140 kg/m ³	600 mm length of 25 mm AES mineral fibre	EI 60 C/U

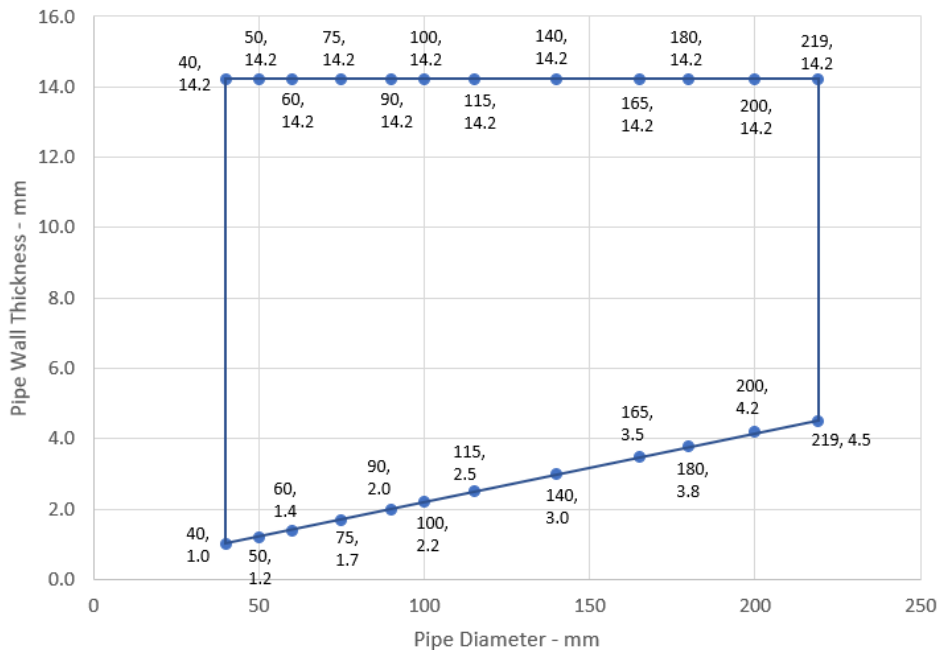
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Services	Sealant depth	Backing (minimum)	Insulation (minimum)	Classification
Mild or stainless steel pipe				
Maximum aperture size 300 x 300 mm				
40 mm diameter/1-14.2 mm wall	12.5 mm	20mm Stone wool 40 kg/m ³	500 mm length of 20 mm stone wool 80 kg/m ³	EI 120 C/U
40 mm diameter/1-14.2 mm wall*			500 mm length of 30 mm stone wool 80 kg/m ³	
50 mm diameter/1.2-14.2 mm wall*				
60 mm diameter/1.4-14.2 mm wall*				
75 mm diameter/1.7-14.2 mm wall*				
90 mm diameter/2-14.2 mm wall*				
100 mm diameter/2.2-14.2 mm wall*				
115 mm diameter/2.5-14.2 mm wall*			12.5 mm	20mm Stone wool 40 kg/m ³
140 mm diameter/3-14.2 mm wall*				
165 mm diameter/3.5-14.2 mm wall*				
180 mm diameter/3.8-14.2 mm wall*				
200 mm diameter/4.2-14.2 mm wall*	12.5 mm	20mm Stone wool 40 kg/m ³	500 mm length of 30 mm stone wool 80 kg/m ³	E 120 C/U, EI 90 C/U
219 mm diameter/4.5-14.2 mm wall*				

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U

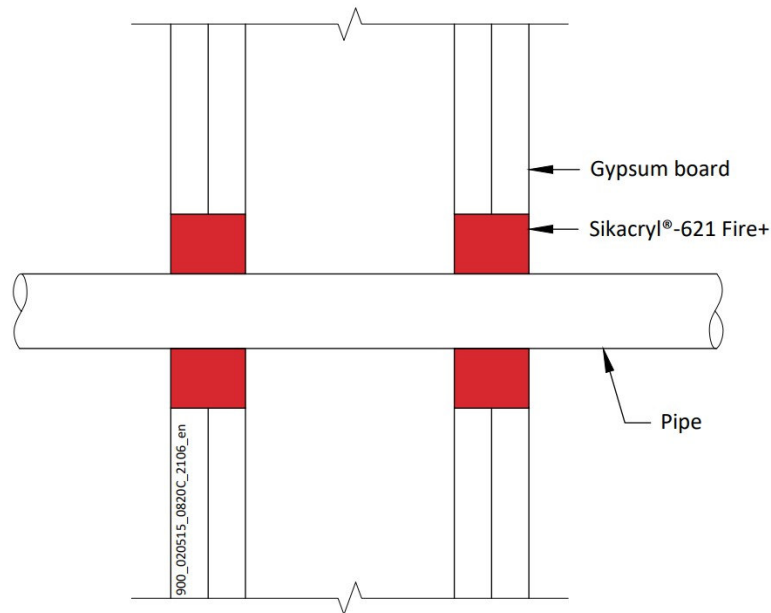


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A.3.6 Double side penetration seal with plastic pipes

Penetration Seal: Combustible pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, Minimum annular space 10 mm and minimum separation between penetration seals 30 mm (A2).

Construction details:



A.3.6.1

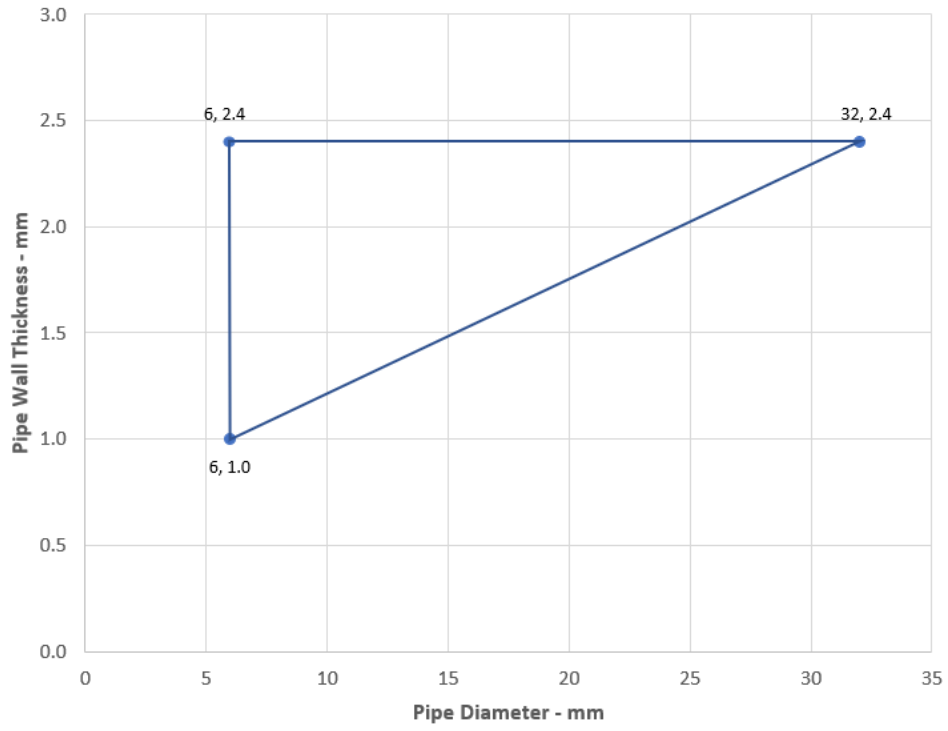
Pipe material	Sealant depth	Pipe size	Maximum Annular space	Classification
PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1	25 mm	6-32 mm \varnothing /1.0-2.4 mm wall*	10 mm	EI 120 U/C
		6-32 mm \varnothing /1.0-1.6 mm wall	30 mm	E 120 U/C, EI 90 U/C
20 mm \varnothing /2.2 mm wall		EI 120 C/C		
PP pipe according to EN 1451-1 or DIN 8077/8078		20 mm \varnothing /2.2-4.4 mm wall	30 mm	EI 120 U/C
		20-32 mm \varnothing /1.8-4.4 mm wall		EI 60 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 mm \varnothing /2.0 mm wall	30 mm	EI 60 C/C
		20-32 mm \varnothing /2.0-3.0 mm wall	30 mm	EI 120 U/C
Uponor Wirsbo PEX pipe in pipe system according to ISO 15875			Diameter up to 54 mm/0.4 mm wall thickness (outer pipe), 28 mm diameter/4.0 mm wall thickness (inner pipe)	30 mm
				E 60 C/C, EI 45 C/C

* See below graphs for interpolated pipe sizes

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PVC-U Pipes - U/C



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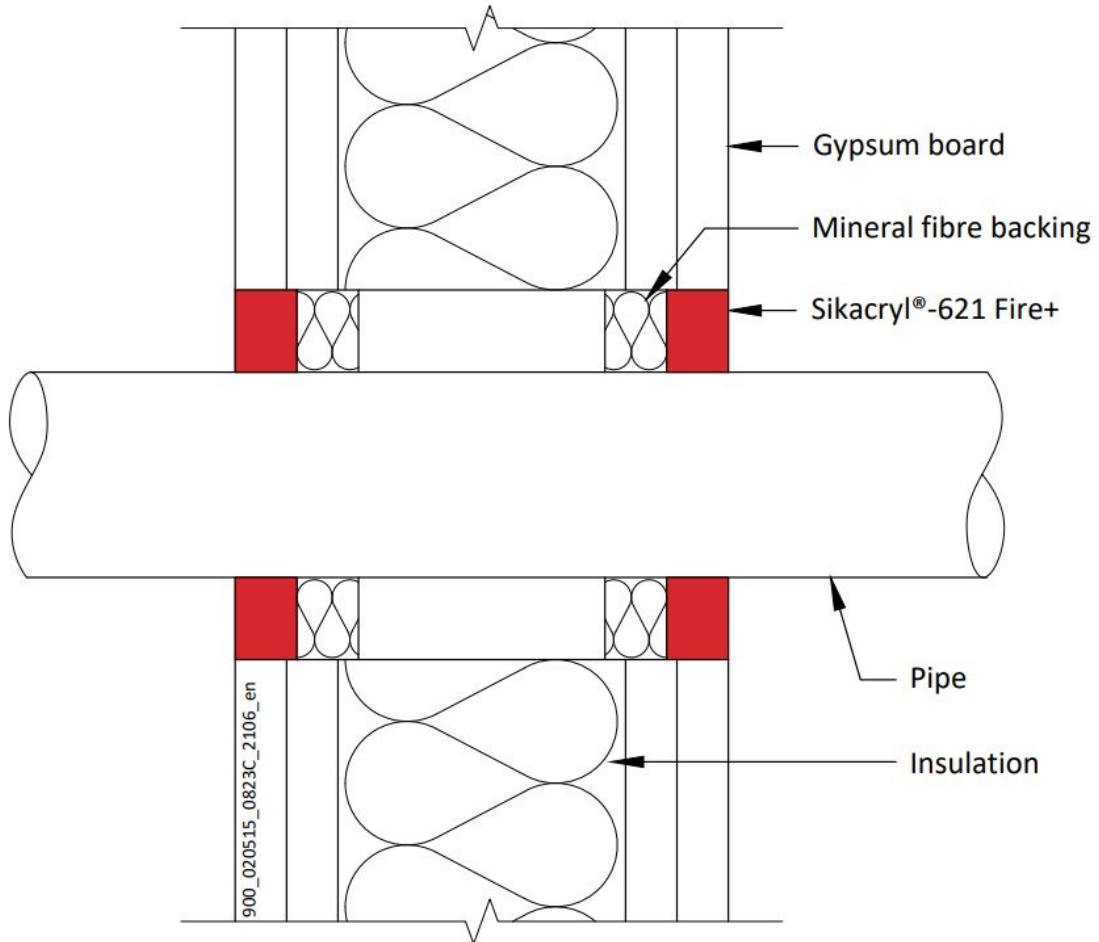


A.4 Flexible and rigid wall constructions according to 2.2) with wall thickness of minimum 120 mm

A.4.1 Double side penetration seal with cables

Penetration Seal: Non-insulated metallic pipes (single) fitted at any position within the aperture, with 15 mm deep Sikacryl-621 Fire+ to both sides of the wall, backed with stone wool insulation.

Construction details:



A.4.1.1

Services	Sealant depth	Backing	Classification
Mild or stainless steel pipe			
30 -324 mm diameter /1.6-14.2 mm wall	15 mm	15 mm stone wool	E 120 C/U
Copper or steel pipe			
12 -54 mm diameter /0.9-14.2 mm wall	15 mm	15 mm stone wool	E 120 C/C
Alupex Pipe			
16-75 mm diameter/2.0-4.6 mm wall	15 mm	15 mm stone wool	E 120 C/C, EI 30 C/C

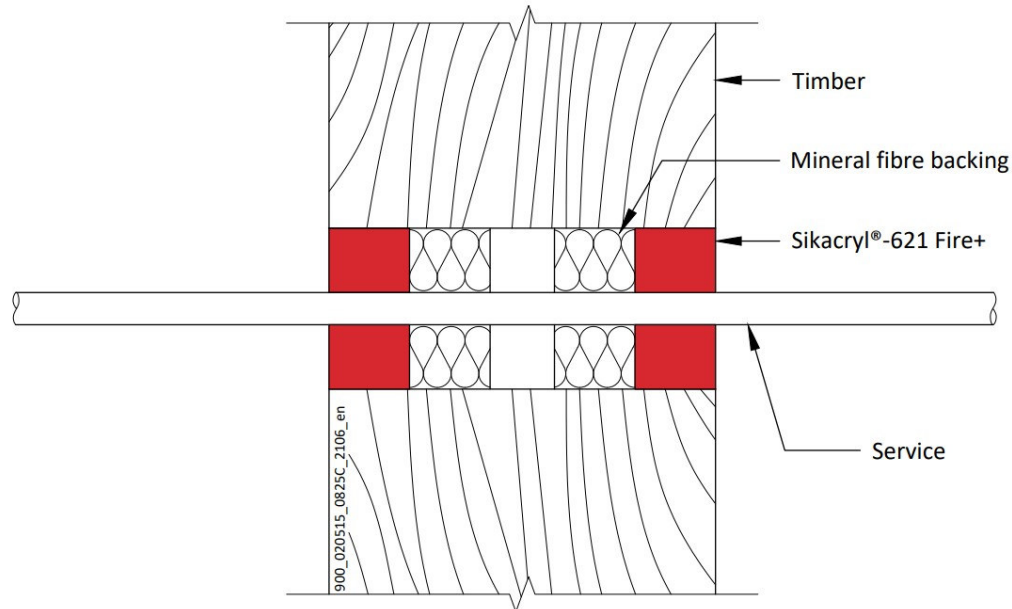
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A.5 Timber wall constructions with wall thickness of minimum 100 mm

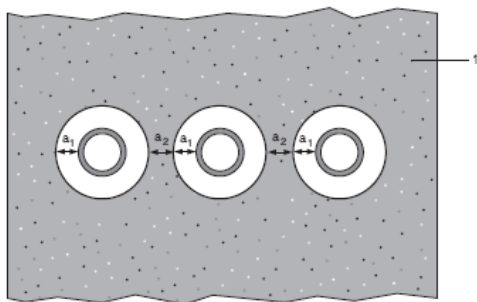
A.5.1 Double side penetration seal with cables

Penetration Seal: Cables fitted at any position within the aperture, sealed with Sikacryl-621 Fire+, minimum 25 mm deep to both sides of the wall and backed with stone wool insulation (minimum 33kg/m³), minimum 25 mm deep. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

A.5.1.1

Services	Sealant depth	Backing	Maximum aperture	Classification
None (blank)	25 mm	Stone wool 25 mm deep min. 33kg/m ³	Ø 180 mm	EI 120
Cables up to 14 mm Ø, single or in bundles up to 100 mm Ø				EI 90
Cables up to 21 mm Ø, single or in bundles up to 100 mm Ø				E 90, EI 30
Cables up to 50 mm Ø, single or in bundles up to 100 mm Ø				E 90, EI 30
Telecom cables up to 14 mm Ø, single or in bundles up to 100 mm Ø				E 90, EI 60

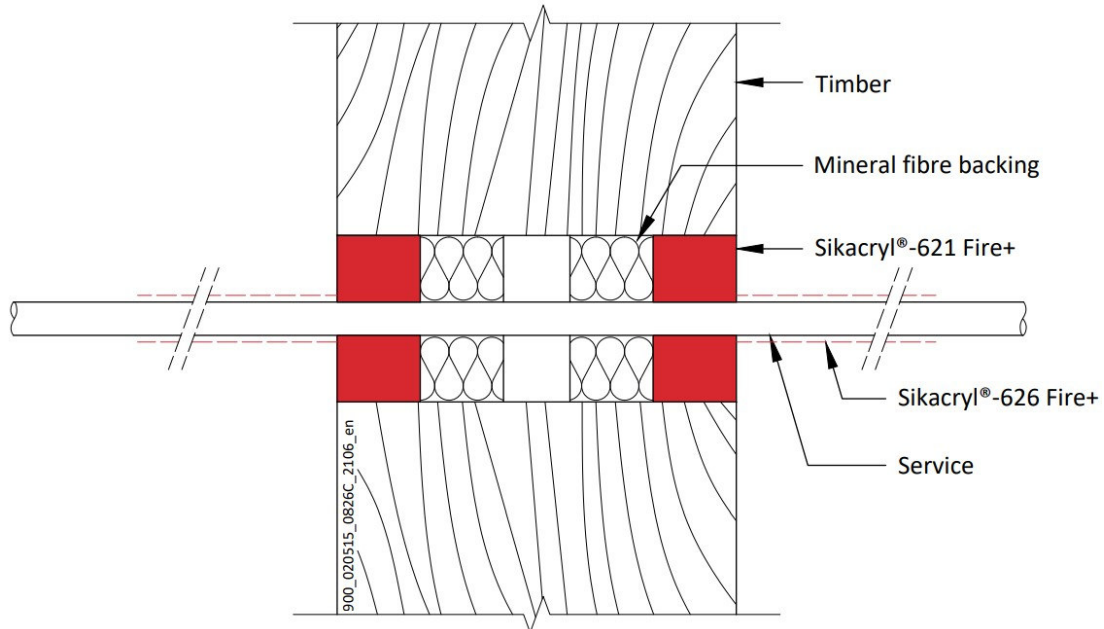
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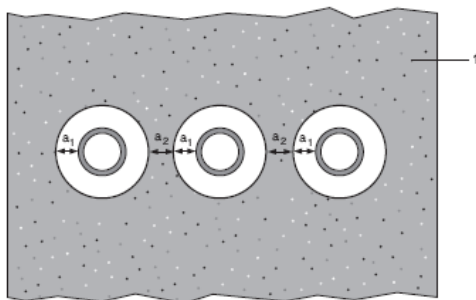
A.5.2 Double side penetration seal with cables and Sikacryl®-626 Fire+

Penetration Seal: Cables fitted at any position within the aperture with Sikacryl®-626 Fire+, sealed with Sikacryl®-621 Fire+, minimum 25 mm deep to both sides of the wall and backed with stone wool insulation (minimum 33kg/m³), minimum 25 mm deep. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

A.5.2.1

Services	Sealant depth	Backing	Maximum aperture	Insulation, minimum	Classification
None (blank)	25 mm	Stone wool 25 mm deep min. 33kg/m ³	Ø 180 mm	Sikacryl®-626 Fire+, 260-micron DFT extending 150 mm from both sides of the seal	EI 120
Cables up to 21 mm Ø, single					EI 90
Cables up to 50 mm Ø, single or in bundles up to 100 mm Ø					E 90, EI 60

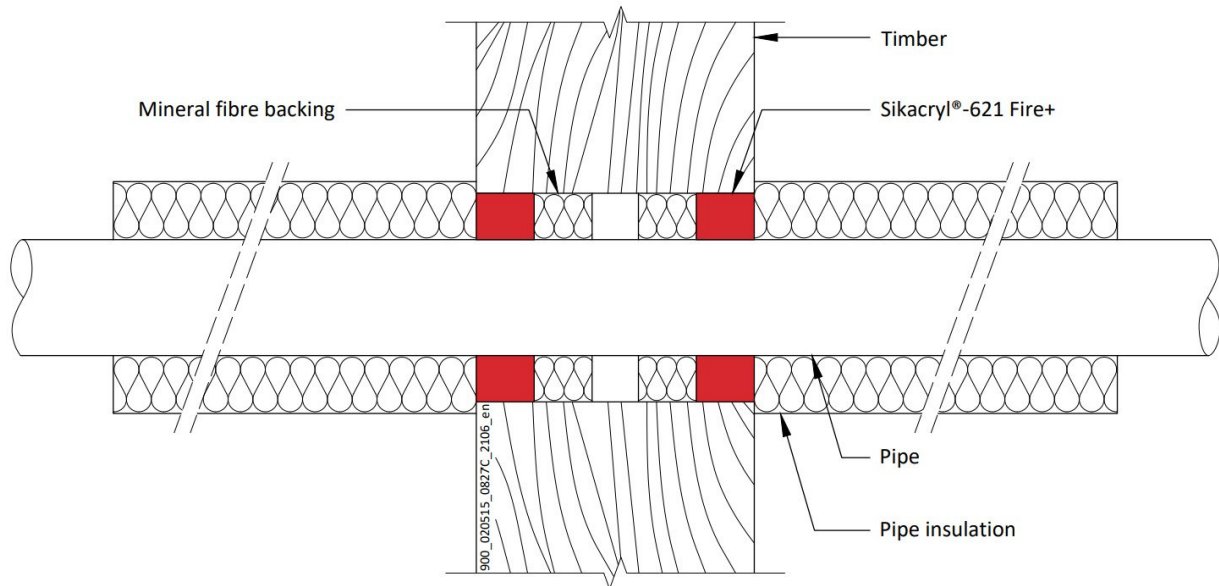
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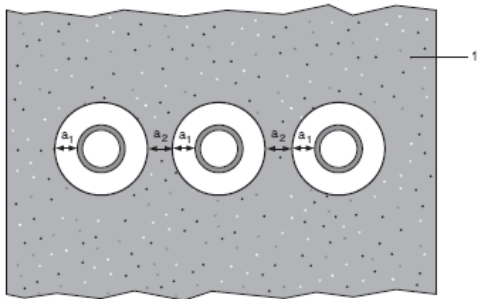
A.5.3 Double side penetration seal with metallic pipes

Penetration Seal: 500 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic pipes and composite pipes (single) with glass wool or stone, mineral wool min. 75 kg/m³, fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, backed with stone wool insulation (minimum 33kg/m³), minimum 25 mm deep. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

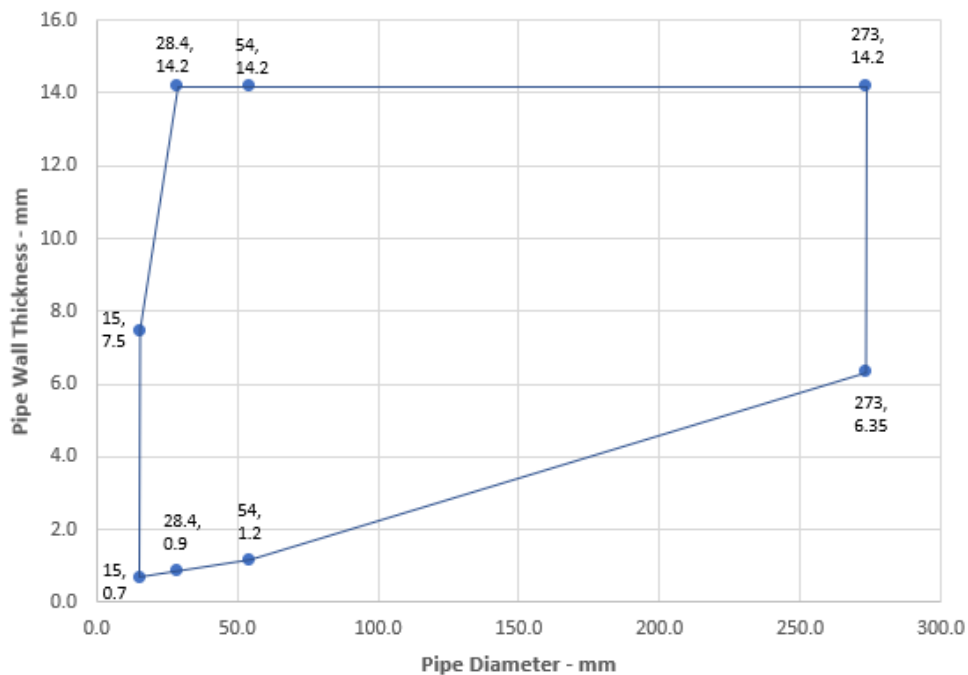
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A.5.3.1

Services	Maximum aperture	Sealant depth	Backing	Insulation, minimum	Classification
Mild or stainless steel pipe					
Maximum 273 mm diameter /6.35-14.2 mm wall*	Ø 293 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	25 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	E 90 C/C, EI 60 C/C
Copper or steel pipe					
Maximum 54 mm diameter /1.2-14.2 mm wall*	Ø 180 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	20 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	E 90 C/C, EI 60 C/C
Alupex Pipe					
Maximum 75 mm diameter/wall 2.25-4.6 mm wall*	Ø 180 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	25 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	EI 90 C/C

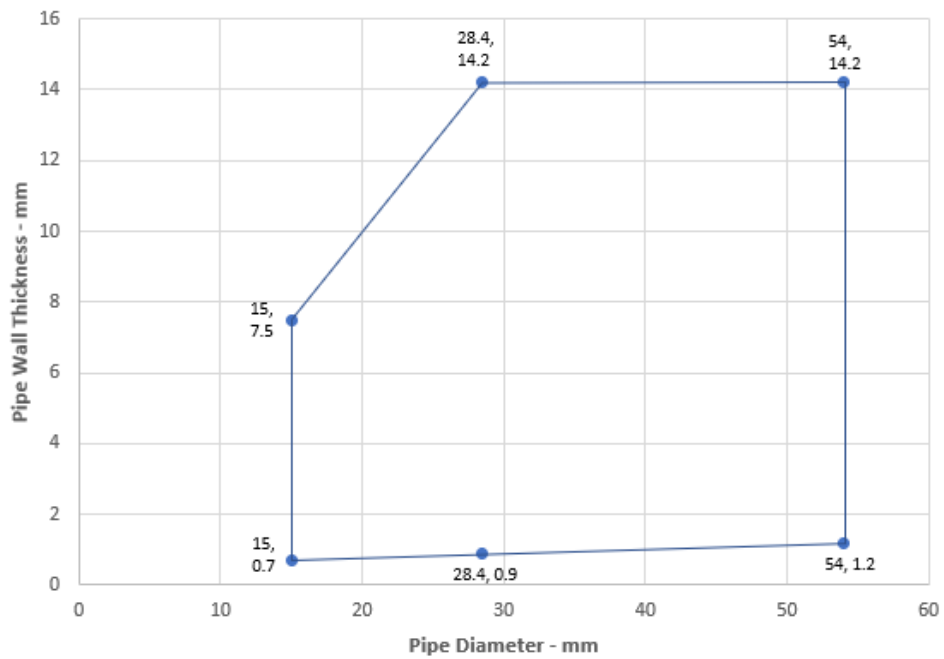
* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Glass Wool or Mineral Wool Insulation - C/C

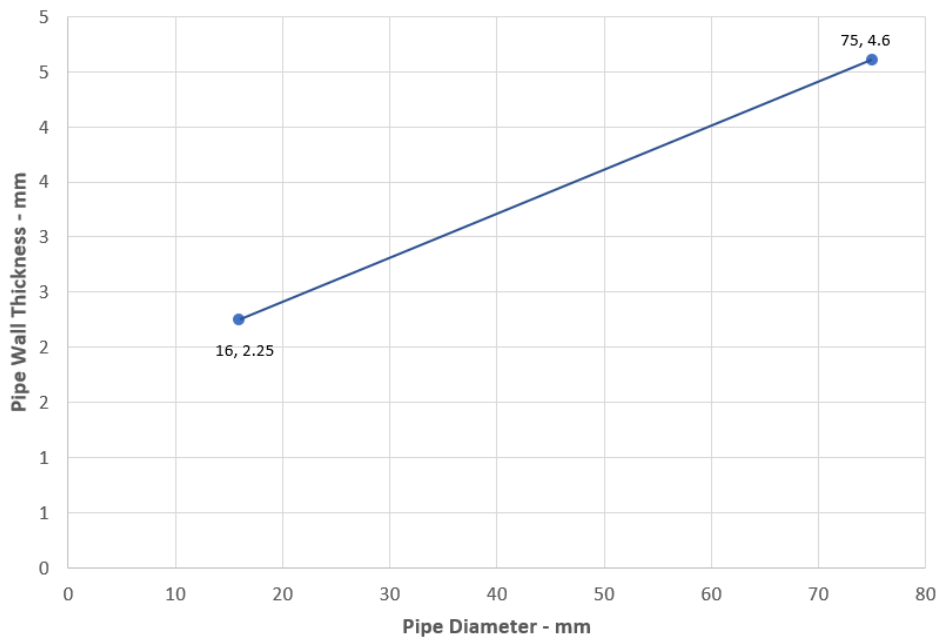


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Copper or Steel Pipes with Glass Wool or Mineral Wool Insulation - C/C



Alupex Pipes with Glass Wool or Mineral Wool Insulation - C/C



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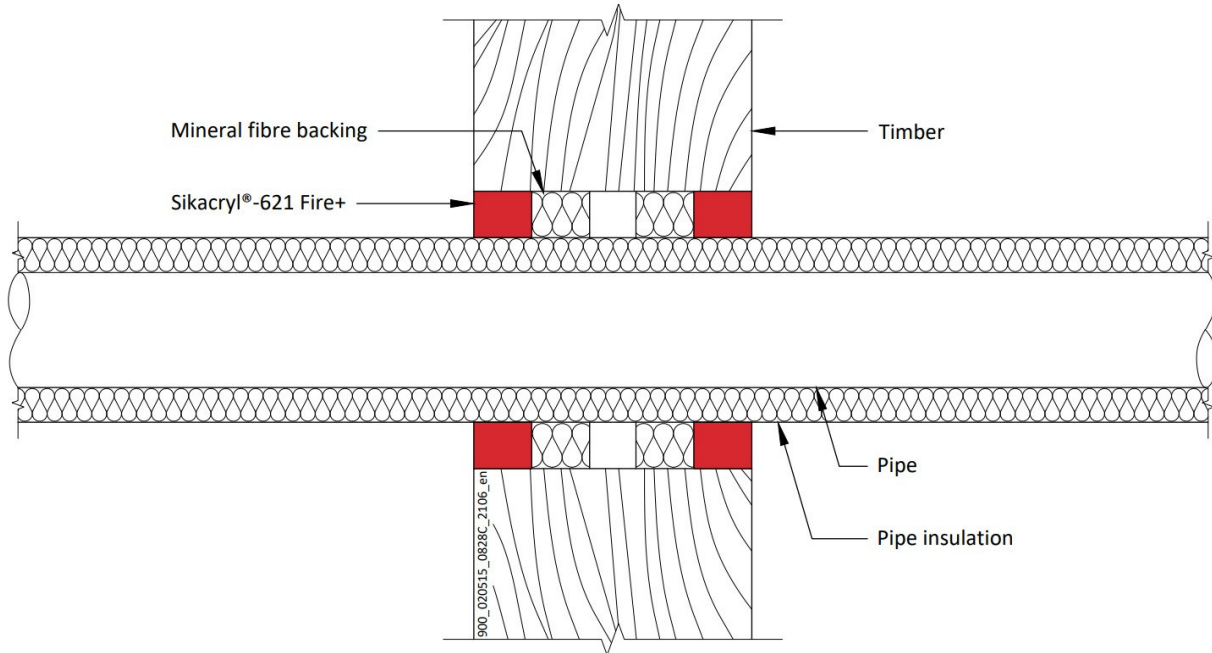
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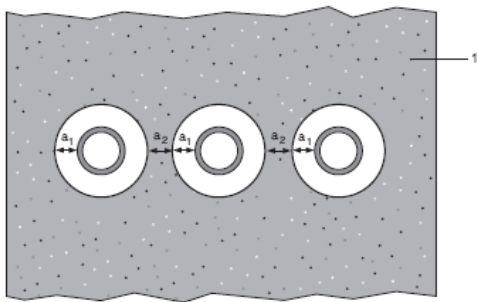
A.5.4 Double side penetration seal with metallic pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, min. 10 mm seal width around service, backed with stone, mineral wool min. 33 kg/m³. Minimum annular space 10 mm and maximum 30 mm (a1), and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

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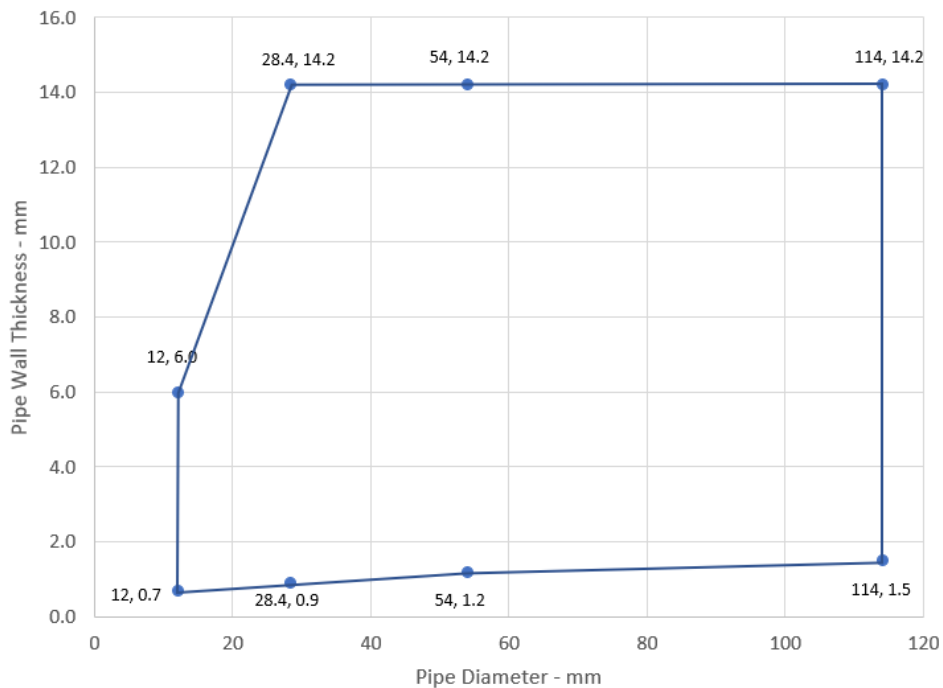


A.5.4.1

Services	Sealant depth	Backing	Insulation, minimum	Classification
Mild or stainless steel pipe				
Maximum 114 mm diameter /1.5-14.2 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	9-25 mm Elastomeric insulation minimum class D-s3, d0	EI 30 C/U
Copper or steel pipe				
Maximum 12 mm diameter /0.7-6 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	9 mm Elastomeric insulation minimum class D-s3, d0	E 90 C/C, EI 60 C/C
Maximum 54 mm diameter /1.2-14.2 mm wall*			10-25 mm Elastomeric insulation minimum class D-s3, d0	E 60 C/C, EI 30 C/C
Maximum 54 mm diameter /1.2-14.2 mm wall*				E 30 C/C, EI 20 C/C
Alupex Pipe				
Maximum 16 mm diameter/wall 2.25 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	9 mm Elastomeric insulation minimum class D-s3, d0	EI 90 C/C
Maximum 75 mm diameter/wall 4.6 mm wall*			10-25 mm Elastomeric insulation minimum class D-s3, d0	E 60 C/C, EI 45 C/C
Maximum 75 mm diameter/wall 4.6 mm wall*				EI 45 C/C

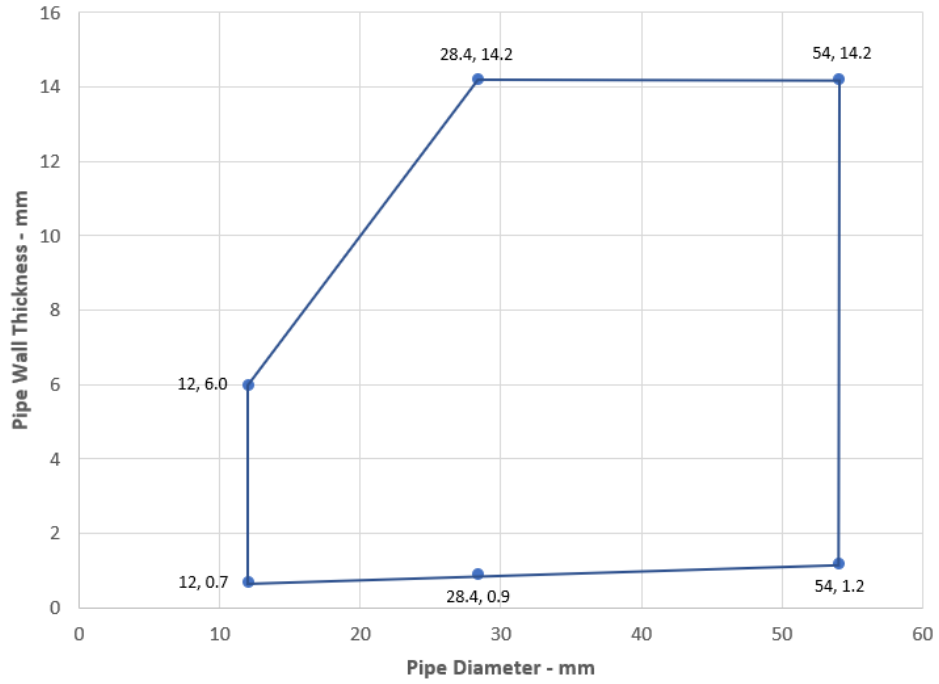
* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Elastomeric Insulation - C/C

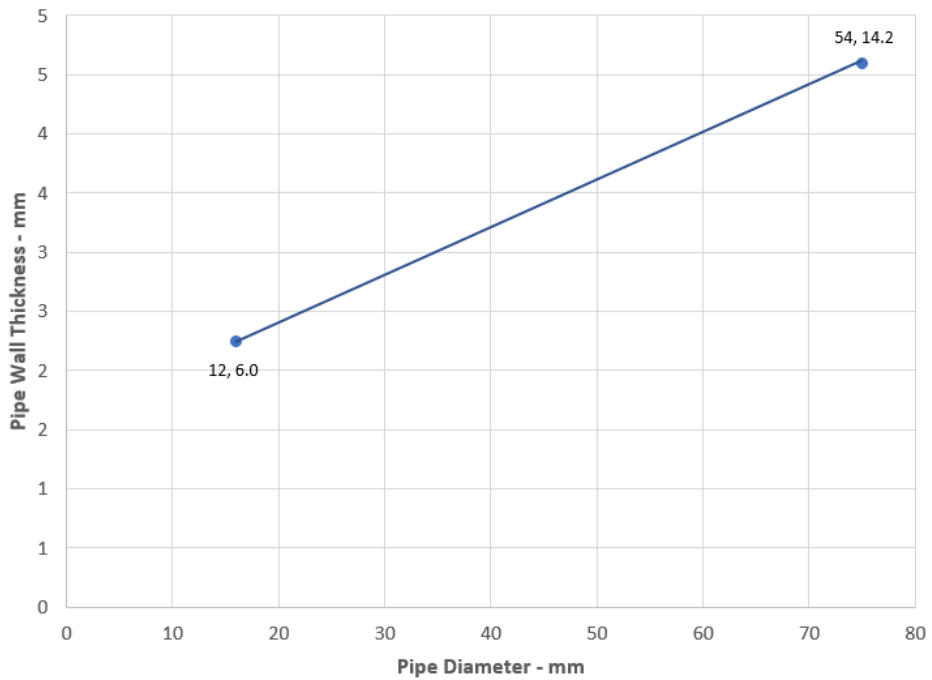


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Copper or Steel Pipes with Elastomeric Insulation - C/C



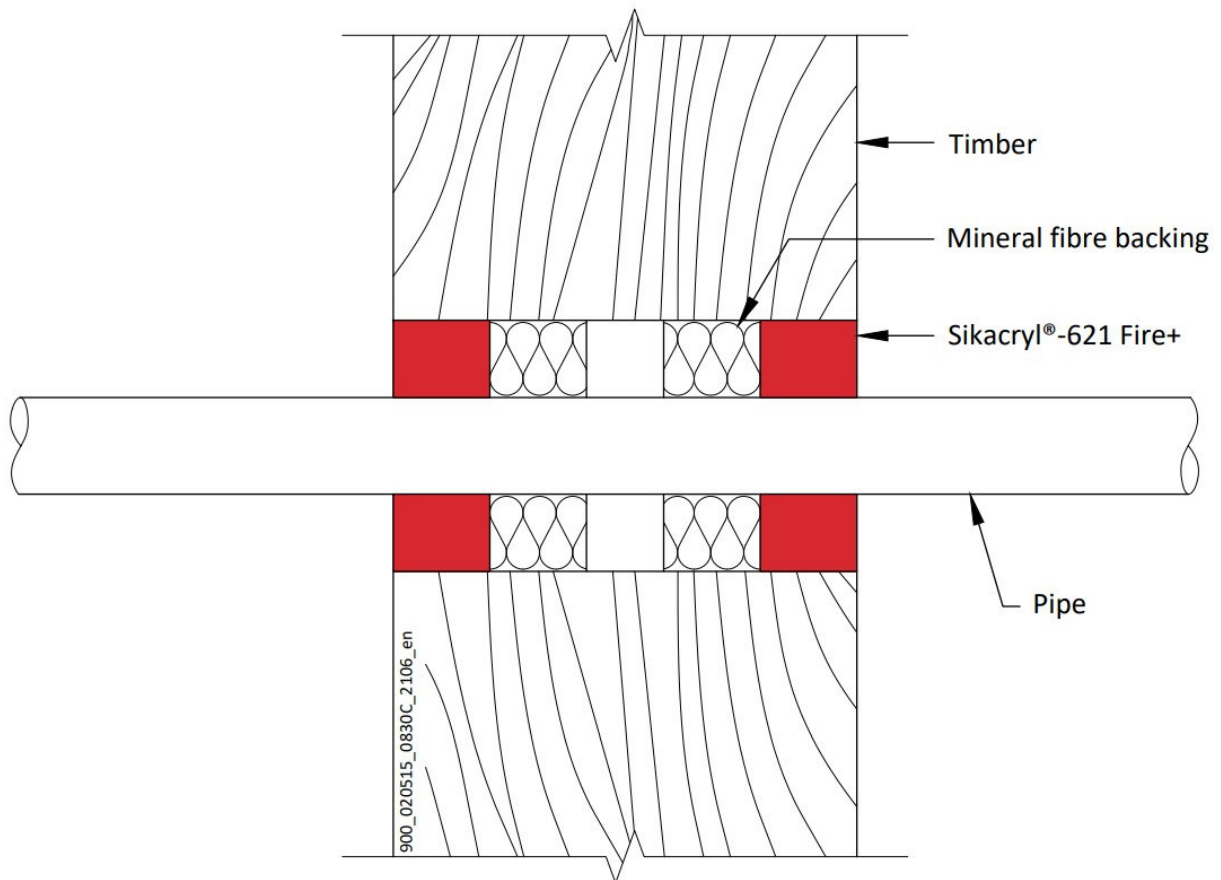
Alupex Pipes with Elastomeric Insulation - C/C



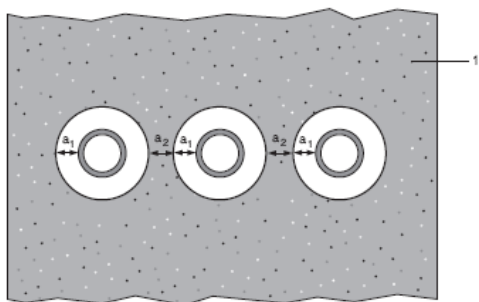
A.5.5 Double side penetration seal with plastic pipes and composite pipes

Penetration Seal: Plastic and composite pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, backed with stone, mineral wool min. 33 kg/m³. Minimum annular space 10 mm and maximum 30 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

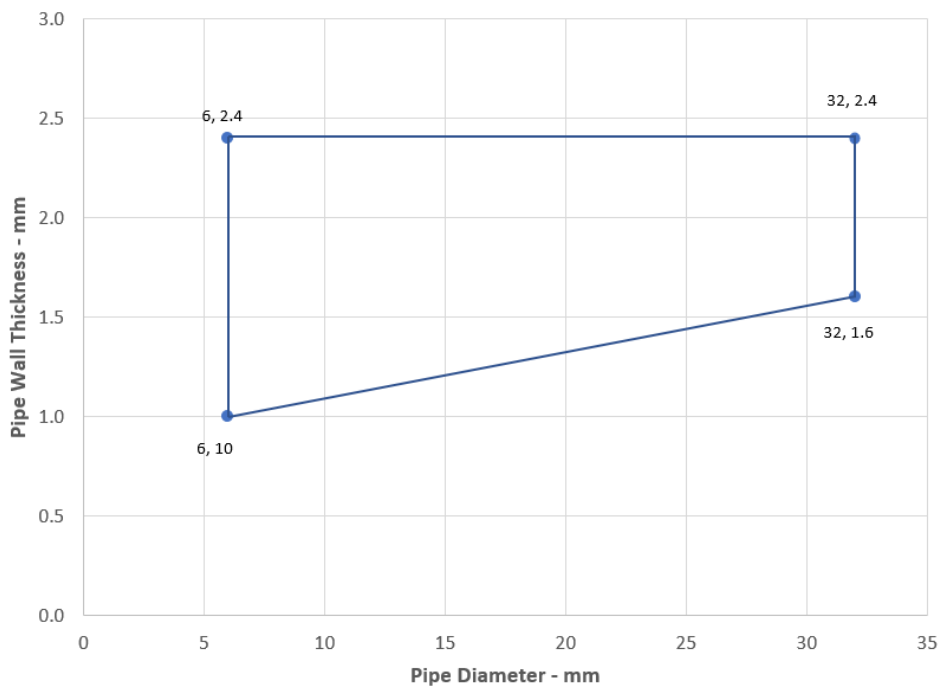
- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals

A.5.5.1

Services	Sealant depth	Backing	Classification
PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1			
Maximum 32 mm diameter/1.0-2.4 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 90 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			
Maximum 32 mm diameter/2.0-3.0 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 90 U/C
PP pipe according to EN 1451-1 or DIN 8077/8078			
Maximum 32 mm diameter/1.8-4.4 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 90 U/C
PEX pipe in pipe system			
25 mm diameter outer /15 mm diameter x 2.5 mm wall inner	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 90 C/C

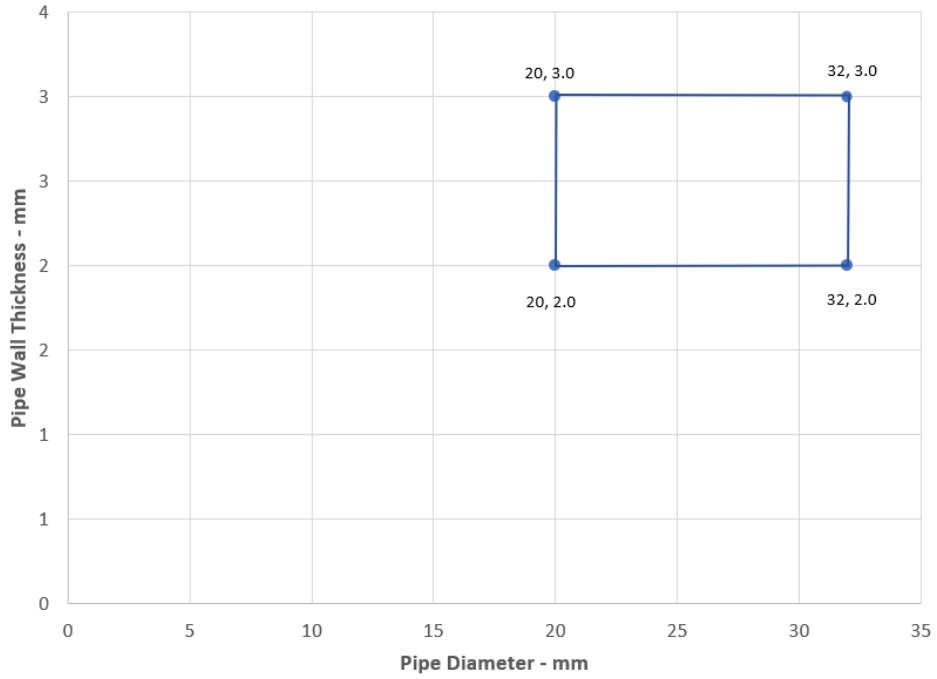
* Typical pipe diameters shown, see below graph for intermediate sizes

PVC-U Pipes EI 90 - U/C

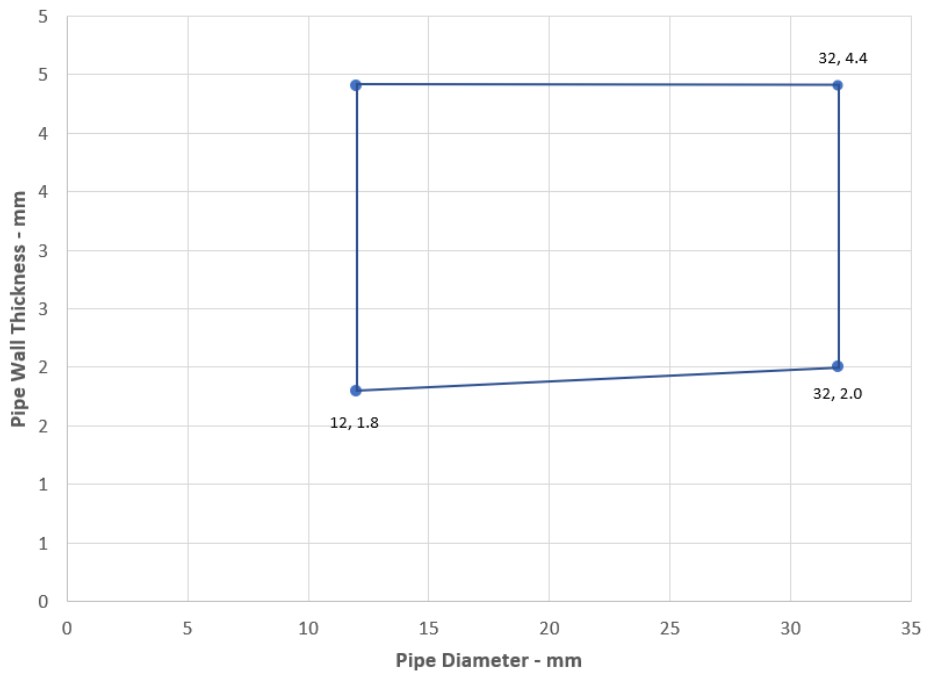


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PE Pipes EI 90 - U/C



PP Pipes EI 90 - U/C



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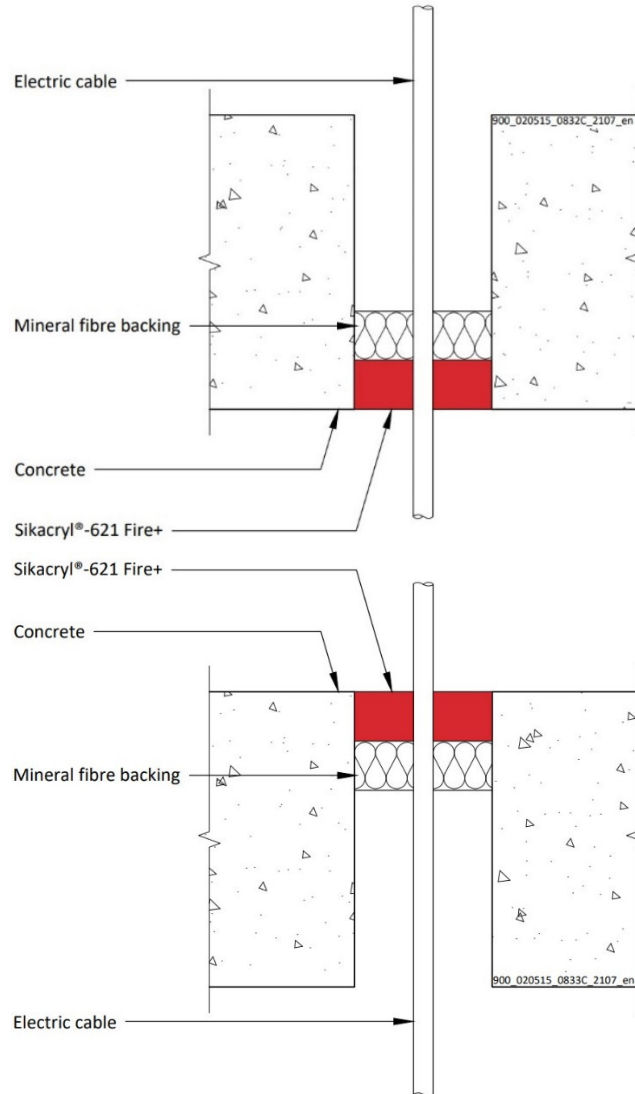


A.6 Rigid floor constructions according to 1.2.1 with floor thickness of minimum 150 mm

A.6.1 Single side penetration seal with cables

Penetration Seal: Cables (single) fitted at any position within the aperture, min. 10 mm from the edges, with Sikacryl-621 Fire+ to either side of the floor (or at any position in between), backed with 'AES mineral fibre'.

Construction details:



A.6.1.1

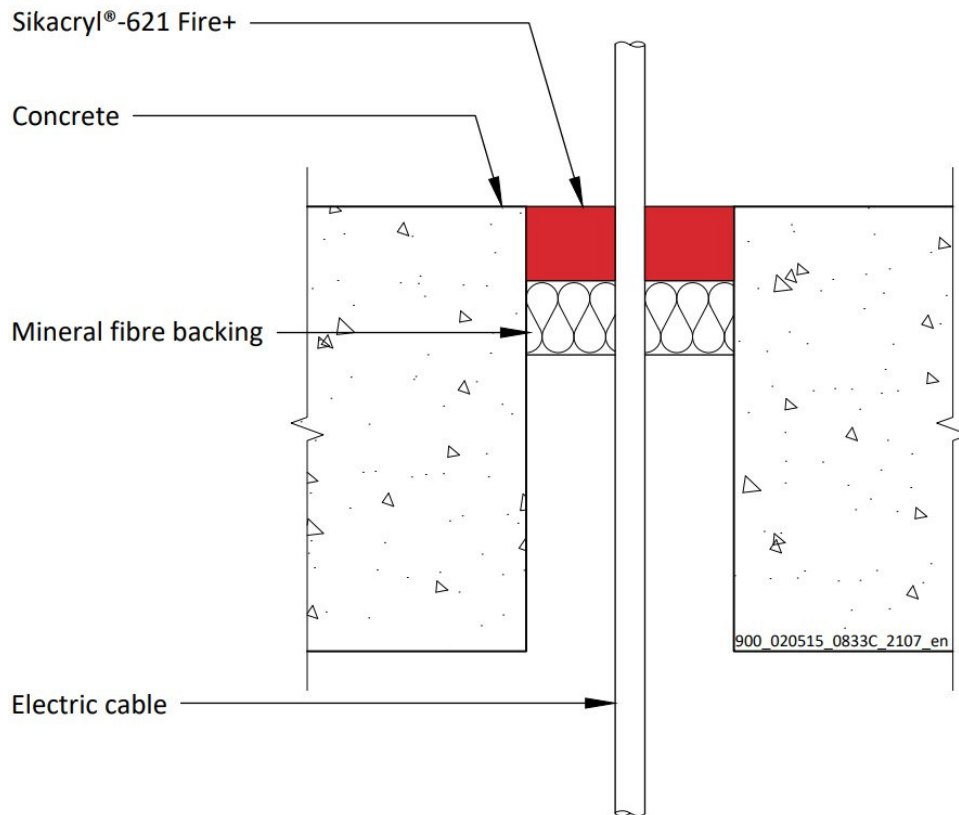
Services	Sealant depth	Backing (minimum)	Aperture (maximum)	Classification
Single electrical cables up to 21 mm Ø	25 mm	AES mineral fibre 25 mm deep	82 mm Ø or 100 x 1000 mm	E 120, EI 60

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A.6.2 Single side penetration seal with cables

Penetration Seal: Cables fitted with Sikacryl-621 Fire+ to the top side of the floor, backed with stone wool insulation minimum 35kg/m³ or AES mineral fibre. Maximum seal size of 300 x 300 mm and minimum separation between cables and the edge of the seal of 10 mm.

Construction details:



A.6.2.1

Services	Sealant depth	Backing (minimum)	Insulation	Classification
Blank seals	15 mm	20 mm Stone wool 35 kg/m ³	None	E 90, EI 60
	25 mm	25 mm Stone wool 35 kg/m ³		EI 120
48 mm AES mineral fibre		EI 240		
		E 120, EI 90		
Electric cables up to 21 mm diameter, single.	25 mm	48 mm AES mineral fibre	None	EI 240
23-27 mm diameter, 1 mm × 185 mm ² core, PVC sheath and insulation electrical cable, single				E 120, EI 90

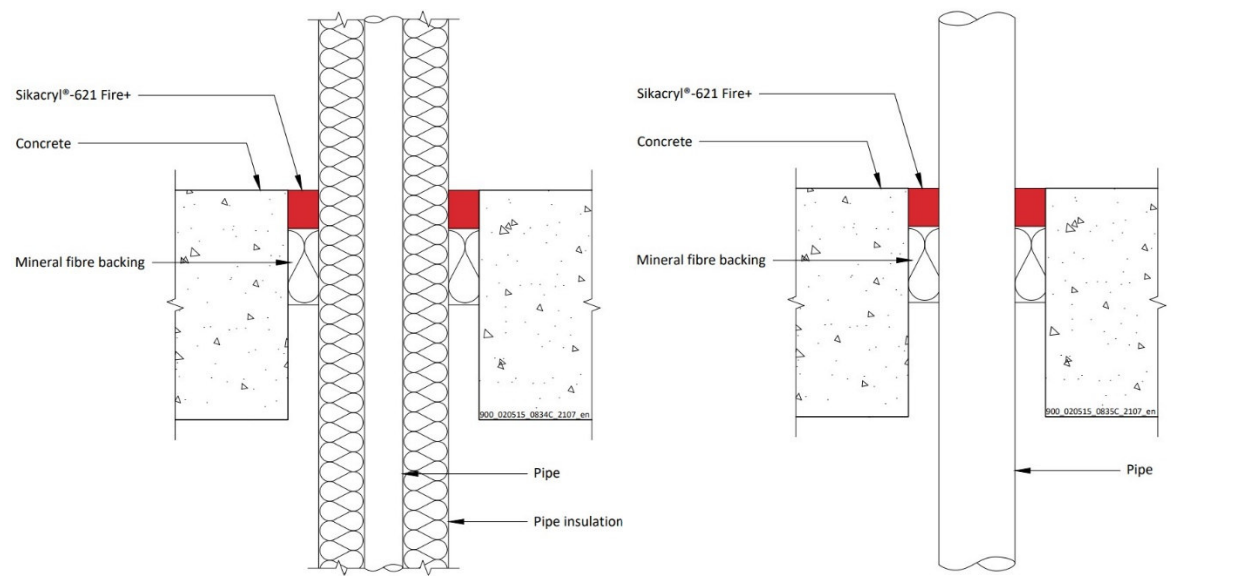
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A.6.3 Single side penetration seal with pipes

Penetration Seal: Pipes fitted at any position within the aperture, with Sikacryl-621 Fire+ to the top face of the floor, backed with 48 mm stone wool minimum 33kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2), maximum seal size 300 x 300 mm / 300 mm diameter.

Construction details:



A.6.3.1

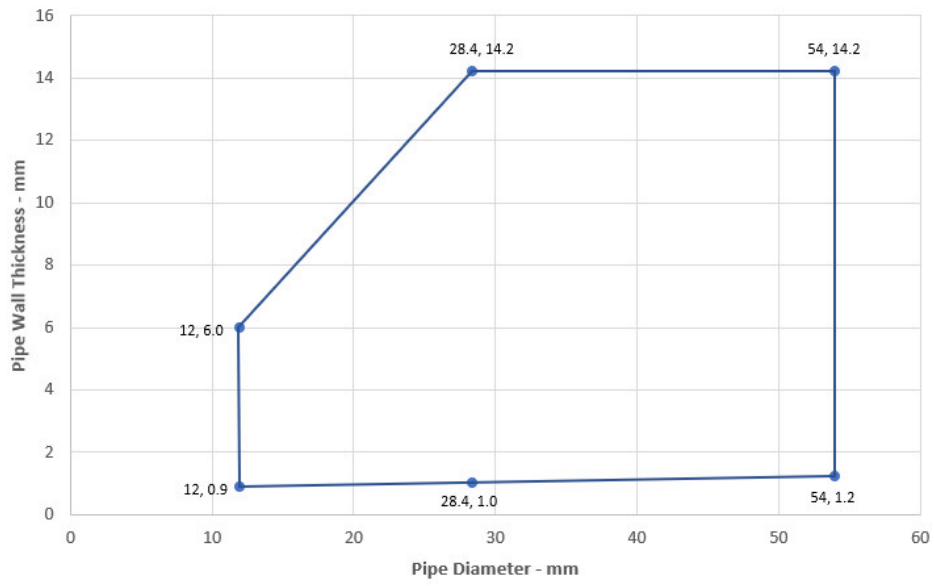
Services	Sealant depth	Backing	Classification
Mild or stainless steel pipe			
4 -16 mm diameter /1.0-8.0 mm wall	25 mm	48 mm stone wool	EI 120 C/U
17 -324 mm diameter /1.0-14.2 mm wall			E 120 C/U
Copper or steel pipe			
6 mm diameter /0.7-3.0 mm wall	25 mm	48 mm stone wool	EI 120 C/C
6 -15 mm diameter /0.7-7.5 mm wall			E 120 C/C, EI 60 C/C
16 - 54 mm diameter /0.7-14.2mm wall			E 120 C/C
Copper or steel pipe with minimum 80 kg/m³ density stone wool insulation Continuous Sustained (CS)			
12 mm diameter/0.9-6 mm wall, 20-80 mm insulation	25 mm	48 mm stone wool	EI 240 C/C
13-54 mm diameter/0.9-14.2 mm wall, 20-80 mm insulation*			E 240 C/C, EI 180 C/C
Alupex Pipe			
16 -20 mm diameter/2.0 mm wall	25 mm	48 mm stone wool	EI 120 C/C
21-75 mm diameter/2.0-4.6 mm wall			E 120 C/C, EI 90 C/C
16-75 mm diameter/2.25-4.6 mm wall with 20-50 mm thick glass wool or stone, mineral wool min. 75 kg/m ³ insulation Continuous Sustained (CS)	25 mm	48 mm stone wool	E 180 C/C, EI 120 C/C

*See below graphs for interpolated pipe sizes

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Copper or Steel Pipes with 20-80 mm stone wool Insulation CS
E 240 C/C, EI 180 C



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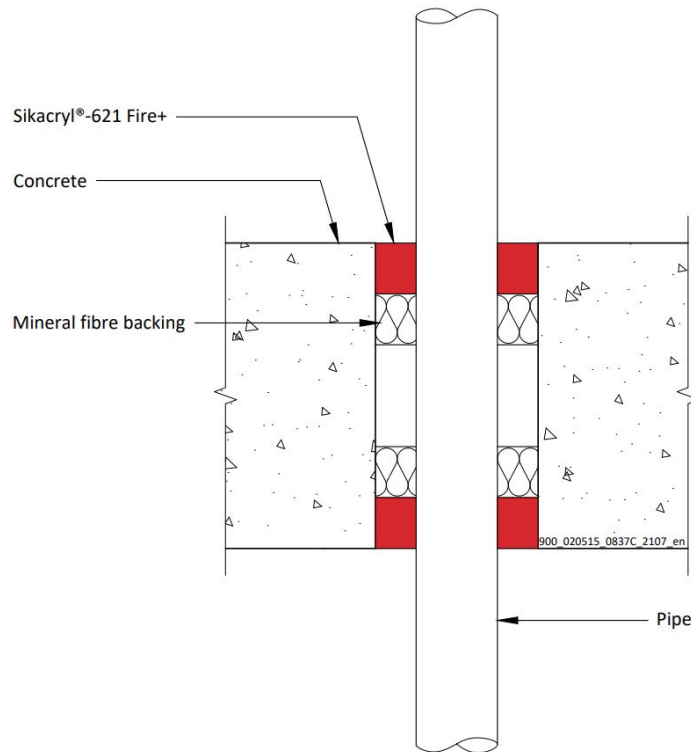
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A.6.4 Double side penetration seal with pipes

Penetration Seal: Pipes fitted at any position within the aperture, with Sikacryl-621 Fire+ to the both faces of the floor, backed with 25 mm stone wool minimum 33kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2), maximum seal size 300 x 300 mm / 300 mm diameter.

Construction details:



A.6.4.1

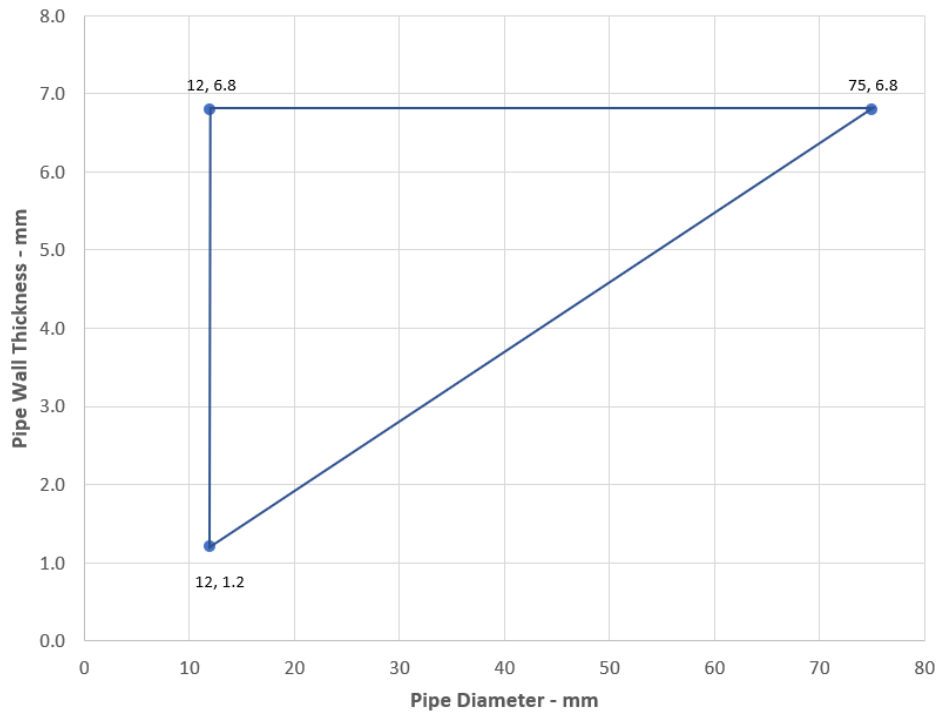
Services	Sealant depth	Backing	Classification
PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1			
Up to 50 mm Ø/1.6-3.7 mm wall	25 mm	25 mm Stone wool	EI 240 U/C
Up to 40 mm Ø/1.6-3.7 mm wall, with bundle of cables up to 21 mm diameter			
PP pipe according to EN 1451-1 or DIN 8077/8078			
12 mm Ø/1.2 mm wall	25 mm	25 mm Stone wool	EI 240 U/C
13-75 mm Ø/1.2-6.8 mm wall*			EI 90 U/C
Up to 40 mm Ø/1.2-1.8 mm wall, with bundle of cables up to 21 mm diameter			EI 180 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			
20-40 mm Ø/2.0-2.4 mm wall*	25 mm	25 mm Stone wool	EI 240 U/C
Up to 40 mm Ø/2.0-2.4 mm wall, with bundle of cables up to 21 mm diameter			EI 180 U/C

*See below graphs for interpolated pipe sizes

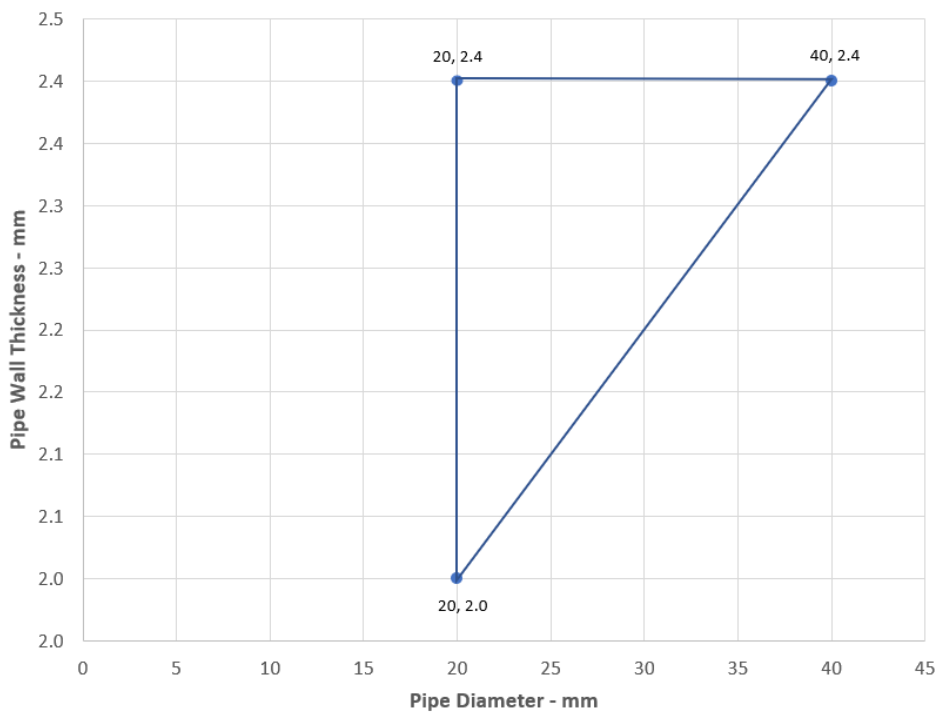
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PP Pipes - EI 190 U/C



PE Pipes - U/C



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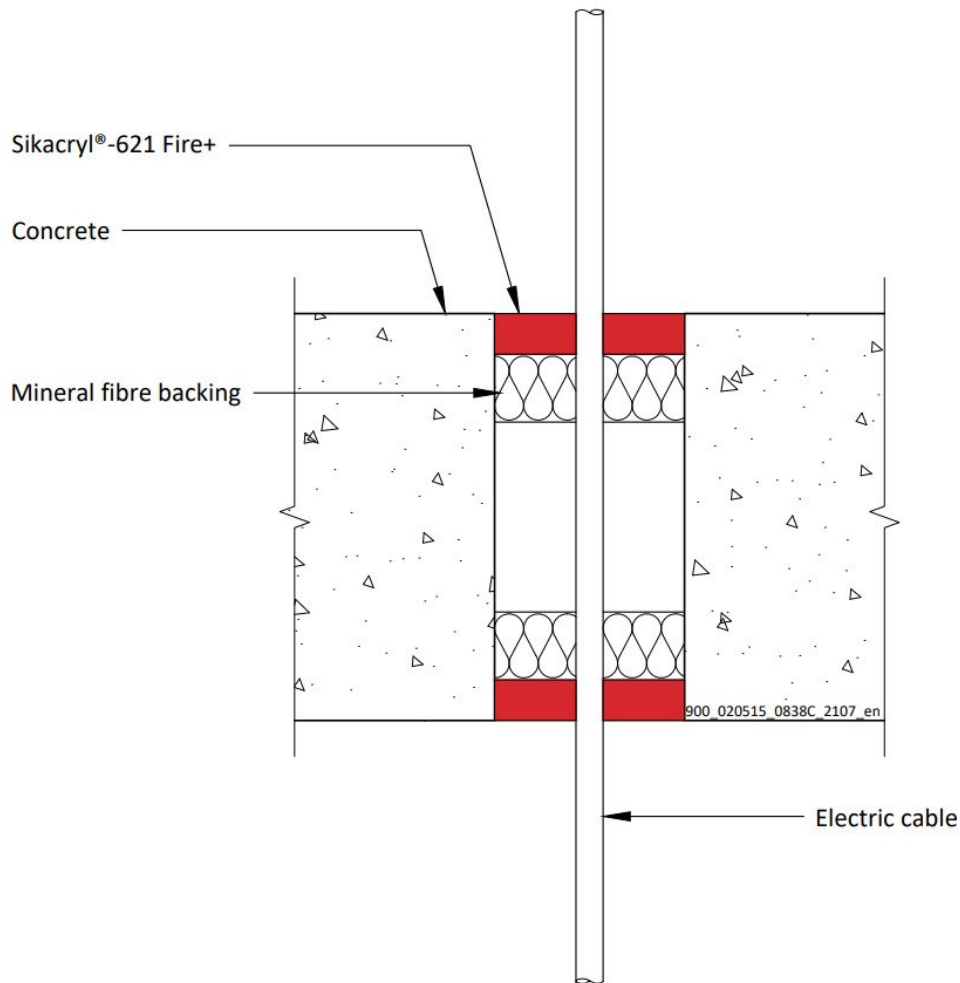
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A.6.5 Double side penetration seal with cables

Penetration Seal: Cables fitted circular apertures or min. 7 mm from the edges of rectilinear apertures, with Sikacryl-621 Fire+ to both sides of the floor, backed with stone wool insulation minimum 35kg/m³.

Construction details:



A.6.5.1

Services	Sealant depth	Backing	Maximum Aperture	Classification
Blank seals	15 mm	25 mm Stone wool 35 kg/m ³	300 x 300 mm	EI 240
Electric cables up to 21 mm diameter, single or in a bundle.				EI 120
Electric cables 22-50 mm diameter, single or in a bundle.				E 120, EI 90
Electric cables 51-80 mm diameter, single or in a bundle.				E 120, EI 60

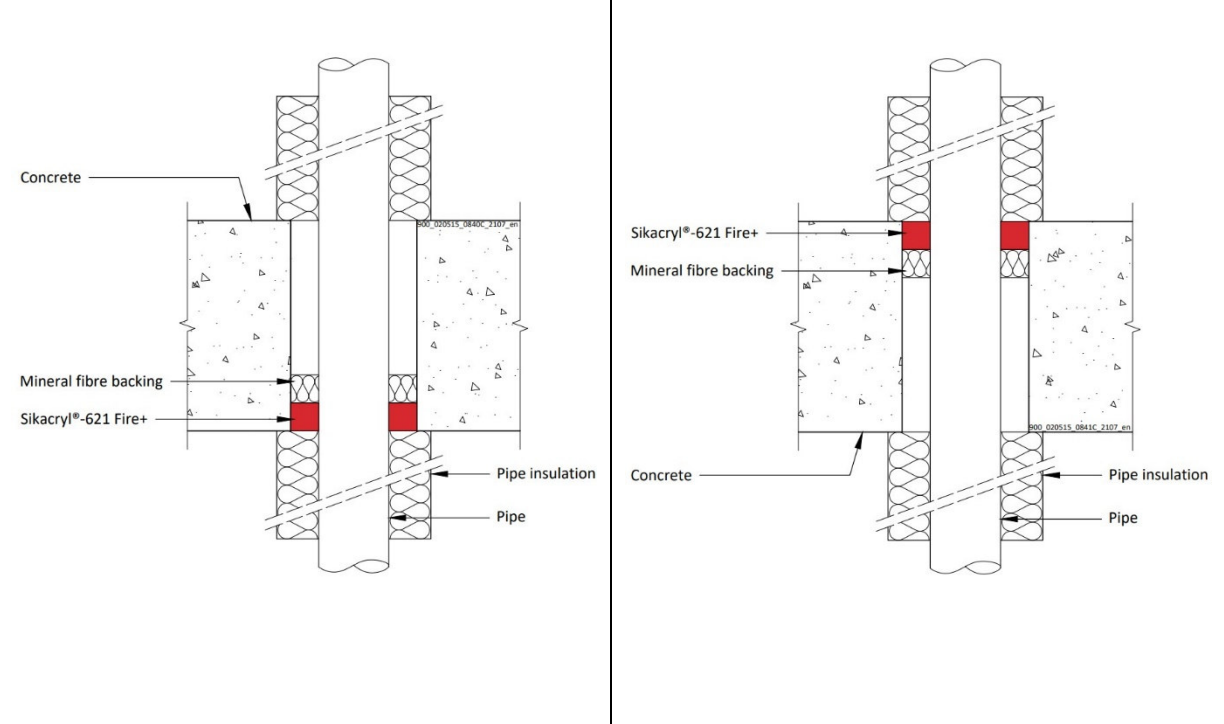
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A.6.6 Single side penetration seal with metallic pipes

Penetration Seal: 1000 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic pipes (single) fitted at any position within the aperture, with 15 or 25 mm deep Sikacryl-621 Fire+ to either side of the floor (or at any position between), backed with minimum 40 kg/m³ stone wool insulation or AES mineral fibre.

Construction details:



A.6.6.1

Services	Max. seal size	Insulation (min)	Sealant depth	Classification
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall	10 mm width around pipe	20 mm Stone wool insulation 80 kg/m ³	15 mm	E 240 C/U, EI 180 C/U
Copper or steel pipe up to 12 mm diameter/0.9-5 mm wall				EI 240 C/U
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall	Up to 100 x 1000 mm		25 mm	EI 120 C/U
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall	300 x 300 mm	20 mm Stone wool insulation 80 kg/m ³	15 mm	E 90 C/U, EI 60 C/U
Copper or steel pipe up to 12 mm diameter/0.9-5 mm wall				
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall			25 mm	EI 120 C/U

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Services	Max. Seal Size	Insulation (min)	Sealant Depth	Classification			
Mild or stainless steel pipe							
40 mm diameter/1-14.2 mm wall	10 mm width around pipe	20 mm Stone wool insulation 80 kg/m ³	15 mm	EI 240 C/U			
40 mm diameter/1-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³			E 240 C/U, EI 90 C/U		
50 mm diameter/1.2-14.2 mm wall*							
60 mm diameter/1.4-14.2 mm wall*							
75 mm diameter/1.7-14.2 mm wall*							
90 mm diameter/2-14.2 mm wall*							
100 mm diameter/2.2-14.2 mm wall*							
115 mm diameter/2.5-14.2 mm wall*							
140 mm diameter/3-14.2 mm wall*							
165 mm diameter/3.5-14.2 mm wall*							
180 mm diameter/3.8-14.2 mm wall*							
200 mm diameter/4.2-14.2 mm wall*							
219 mm diameter/4.5-14.2 mm wall*							
40 mm diameter/1-14.2 mm wall*	Up to 100 x 1000 mm	20 mm Stone wool insulation 80 kg/m ³	25 mm	E120 C/U, EI 90 C/U			
50 mm diameter/1.2-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³			E120 C/U, EI 90 C/U		
60 mm diameter/1.4-14.2 mm wall*							
75 mm diameter/1.7-14.2 mm wall*							
90 mm diameter/2-14.2 mm wall*							
100 mm diameter/2.2-14.2 mm wall*							
115 mm diameter/2.5-14.2 mm wall*							
140 mm diameter/3-14.2 mm wall*							
165 mm diameter/3.5-14.2 mm wall*							
180 mm diameter/3.8-14.2 mm wall*							
200 mm diameter/4.2-14.2 mm wall*							
219 mm diameter/4.5-14.2 mm wall*							

* Typical pipe diameters shown, see below graph for intermediate sizes

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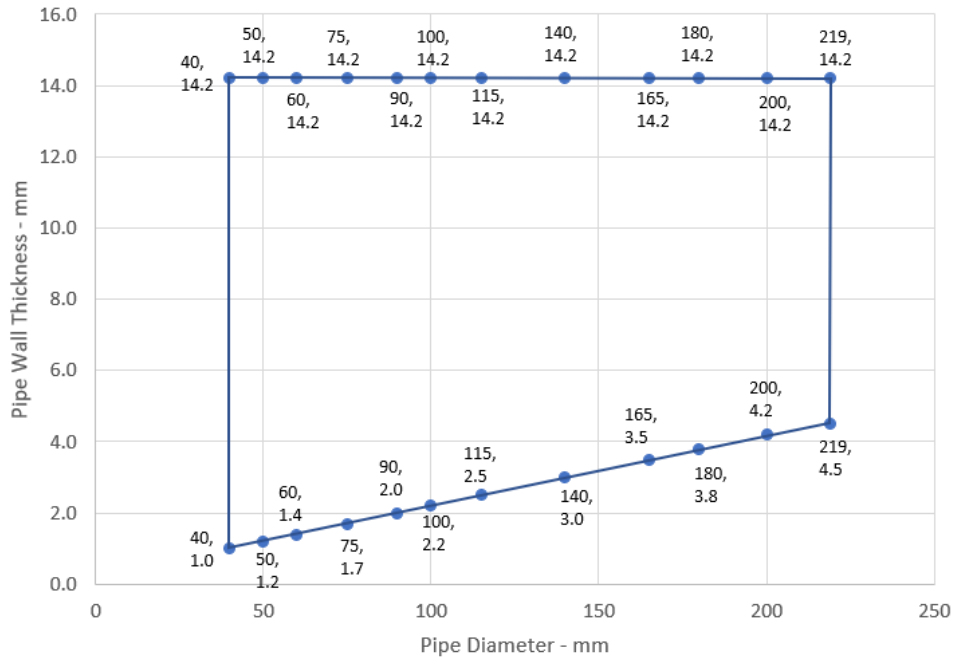
Services	Max. Seal Size	Insulation (minimum)	Sealant Depth	Classification
Mild or stainless steel pipe				
40 mm diameter/1-14.2 mm wall	300 x 300 mm	20 mm Stone wool insulation 80 kg/m ³	15 mm	E 90 C/U, EI 60 C/U
40 mm diameter/1-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³		
50 mm diameter/1.2-14.2 mm wall*				
60 mm diameter/1.4-14.2 mm wall*				
75 mm diameter/1.7-14.2 mm wall*				
90 mm diameter/2-14.2 mm wall*				
100 mm diameter/2.2-14.2 mm wall*				
115 mm diameter/2.5-14.2 mm wall*				
140 mm diameter/3-14.2 mm wall*				
165 mm diameter/3.5-14.2 mm wall*				
180 mm diameter/3.8-14.2 mm wall*				
200 mm diameter/4.2-14.2 mm wall*				
219 mm diameter/4.5-14.2 mm wall*				
40 mm diameter/1-14.2 mm wall*		20 mm Stone wool insulation 80 kg/m ³	25 mm	E120 C/U, EI 90 C/U
50 mm diameter/1.2-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³		
60 mm diameter/1.4-14.2 mm wall*				
75 mm diameter/1.7-14.2 mm wall*				
90 mm diameter/2-14.2 mm wall*				
100 mm diameter/2.2-14.2 mm wall*				
115 mm diameter/2.5-14.2 mm wall*				
140 mm diameter/3-14.2 mm wall*				
165 mm diameter/3.5-14.2 mm wall*				
180 mm diameter/3.8-14.2 mm wall*				
200 mm diameter/4.2-14.2 mm wall*				
219 mm diameter/4.5-14.2 mm wall*				

* Typical pipe diameters shown, see below graph for intermediate sizes

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Steel Pipes with Stone Wool Insulation - C/U



Leistungserklärung

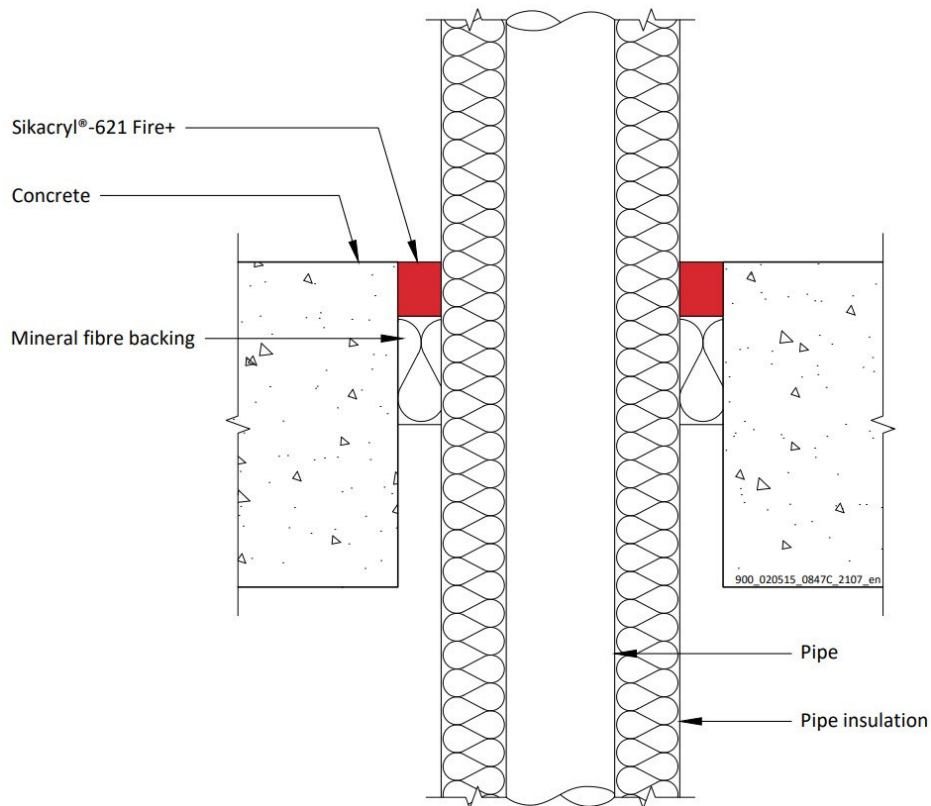
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A.6.7 Single side penetration seal with metallic pipes

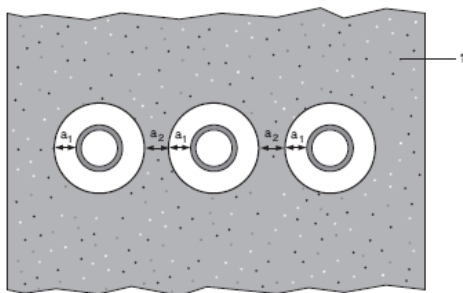
Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with 25 mm Sikacryl-621 Fire+ to the top of the floor, backed with 48 mm deep AES mineral fibre insulation. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2). Maximum seal size 300 x 300 mm / 504 mm \varnothing

Construction details:



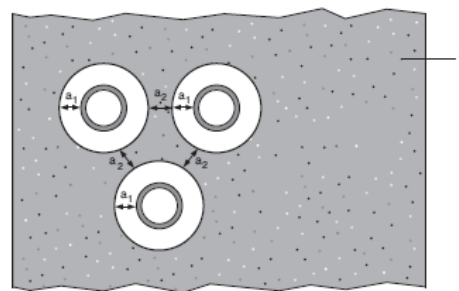
Configuration 1

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

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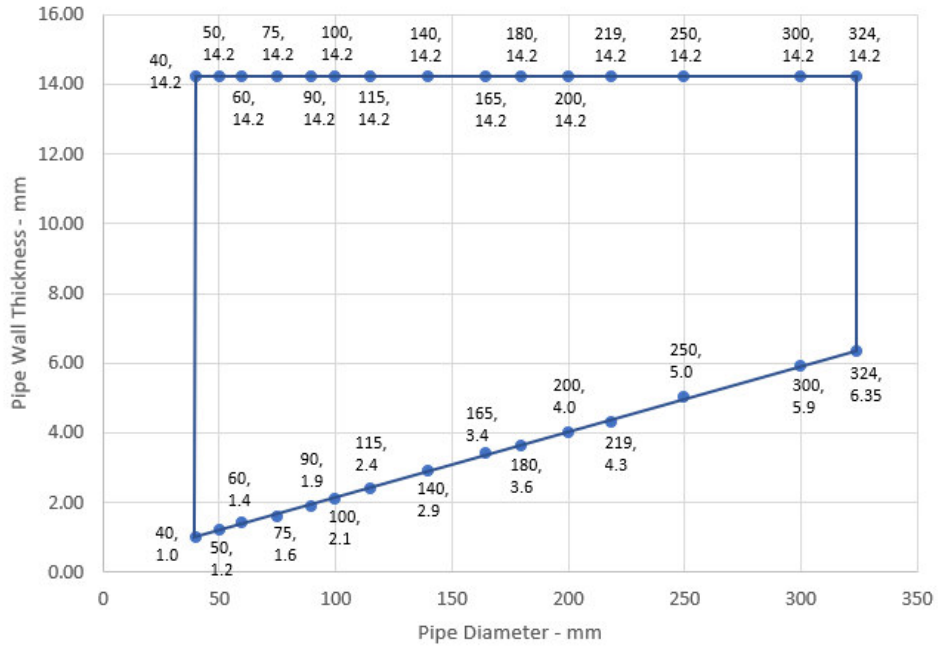
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A.6.7.1 Single side penetration seal with pipes

Services	Insulation	Classification
Mild or stainless steel pipe		
40 mm diameter/1-14.2 mm wall	20 mm thick stone, mineral wool min. 80 kg/m ³	EI 240 C/U
40 mm diameter/1-14.2 mm wall*	30-80 mm thick stone, mineral wool min. 80 kg/m ³	
50 mm diameter/1.2-14.2 mm wall*		
60 mm diameter/1.4-14.2 mm wall*		
75 mm diameter/1.6-14.2 mm wall*		
90 mm diameter/1.9-14.2 mm wall*		
100 mm diameter/2.1-14.2 mm wall*		
115 mm diameter/2.4-14.2 mm wall*		
140 mm diameter/2.9-14.2 mm wall*		
165 mm diameter/ 3.4-14.2 mm wall*		
180 mm diameter/ 3.6-14.2 mm wall*		
200 mm diameter/ 4.0-14.2 mm wall*		
219 mm diameter/ 4.3-14.2 mm wall*		
250 mm diameter/ 5.0-14.2 mm wall*		
300 mm diameter/ 5.9-14.2 mm wall*		
324 mm diameter/ 6.35-14.2 mm wall*		
PEX pipe in pipe system		
15 mm diameter x 2.5 mm wall inner /25mm diameter outer	None	EI 90 C/C

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Steel Pipes with Mineral Wool Insulation - C/U



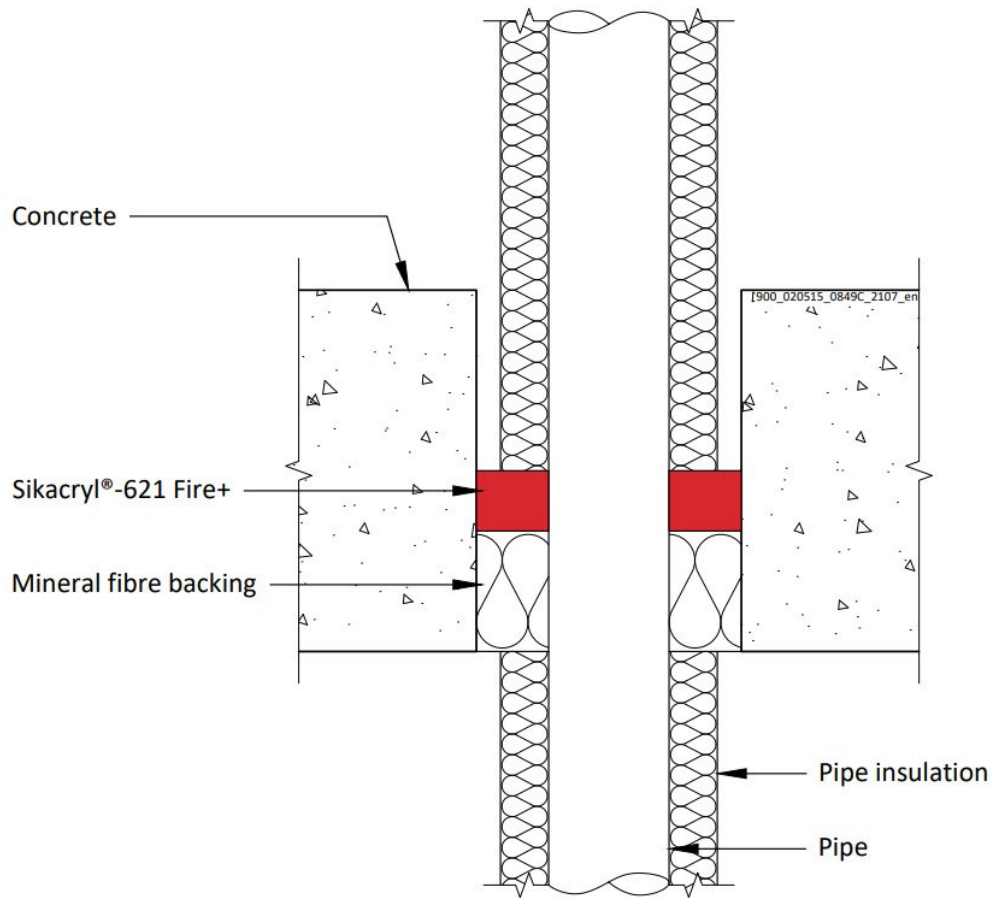
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A.6.8 Single side penetration seal with composite pipes

Penetration Seal: CI (Continuous Interrupted) insulated composite pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+, minimum 10 mm seal width around service and maximum 300 x 300 mm seal, backed with 'AES mineral fibre'.

Construction details:



A.6.8.1

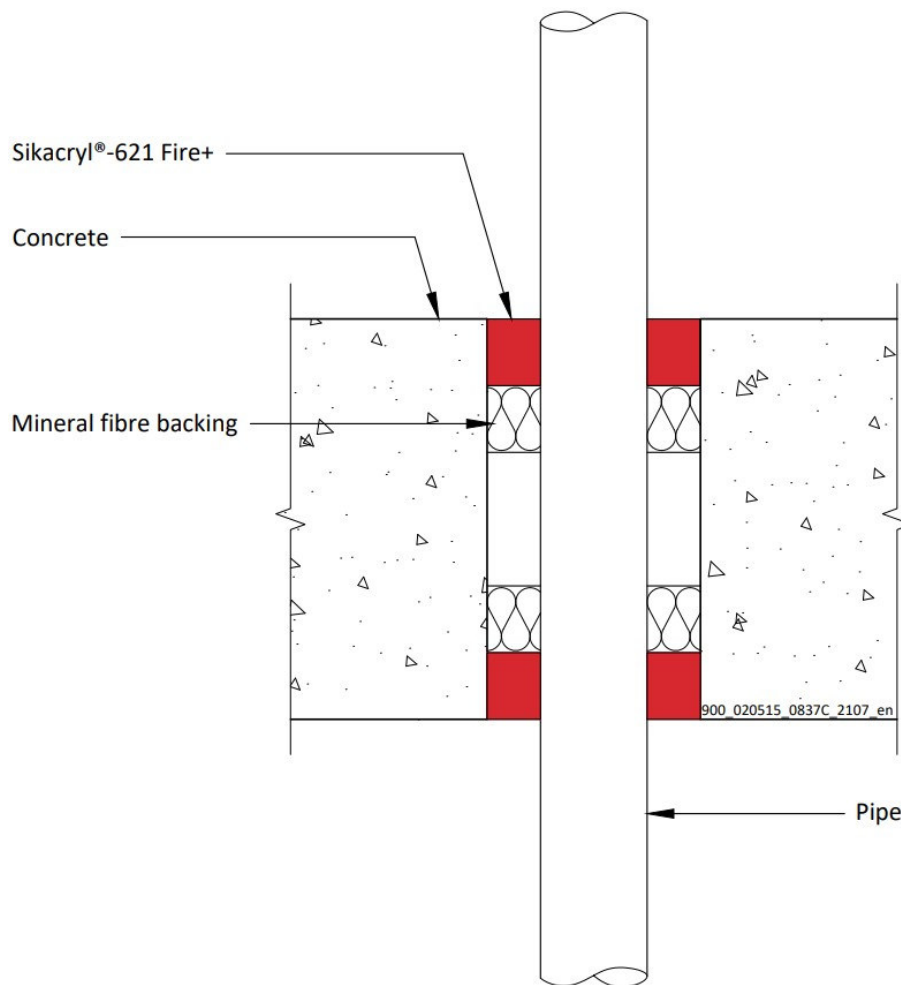
Services	Sealant depth	Backing	Insulation (minimums)	Classification
Alupex Composite Pipe	25 mm	48 mm AES mineral fibre	20 mm stonewool 80 kg/m ³ , 500 mm length from both sides of the seal	EI 240 C/C
16 mm diameter/2.25 mm wall				
20 mm diameter/2.5 mm wall				
26 mm diameter/3 mm wall				
32 mm diameter/3 mm wall				
40 mm diameter/3.5 mm wall				
50 mm diameter/4 mm wall				
63 mm diameter/4.5 mm wall				
75 mm diameter/4.7 mm wall				

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A.6.9 Double side penetration seal with metallic pipes

Penetration Seal: Non-insulated metallic pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the floor, backed with stone wool or mineral fibre insulation.

Construction details:



A.6.9.1

Services	Max. Seal Size	Insulation	Sealant depth	Backing (minimum)	Classification
Copper or steel pipe 54 mm diameter/2-14.2 mm wall	300 x 300 mm	None	25 mm	25 mm deep 140 kg/m ³ stone wool	E 120 C/U, EI 20 C/U
Mild steel pipe 16 mm diameter/1.5-7.5 mm wall			25 mm		EI 240 C/U
Mild steel pipe maximum 63 mm diameter/1.5-14.2 mm wall			15 mm	25 mm deep 35 kg/m ³ stone wool	E 240 C/U EI 30 C/U
Mild steel pipe 16 mm diameter/1.5-7.5 mm wall	Up to 100 x 1000 mm		25 mm	AES mineral fibre 25 mm deep	EI 120 C/U

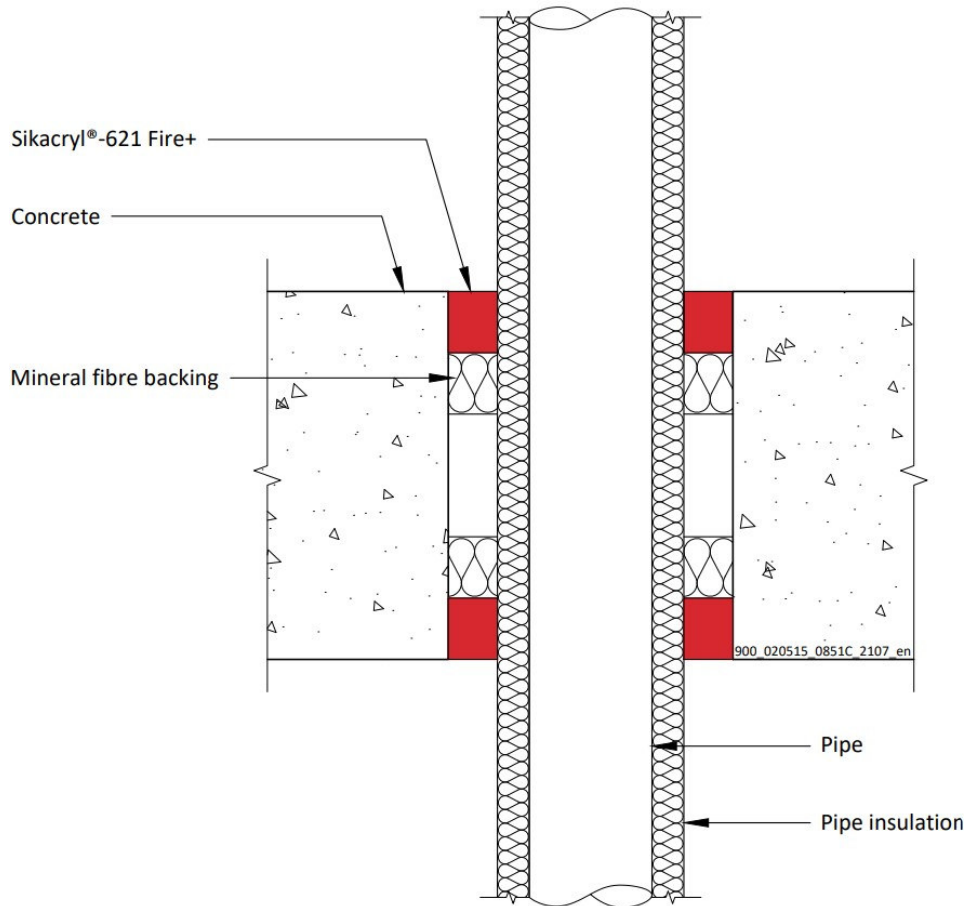
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A.6.10 Double side penetration seal with metallic pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the floor, maximum 300 x 300 mm seal width around service, backed with stone wool insulation or 'AES mineral fibre'.

Construction details:



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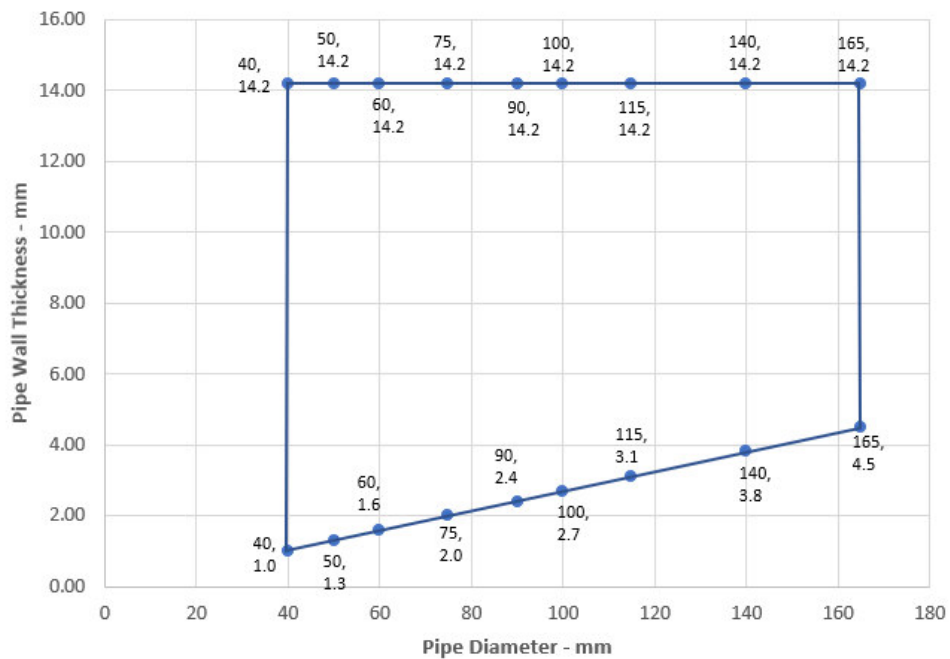


A.6.10.1

Services	Sealant depth	Backing (minimum)	Insulation	Classification
Mild or stainless steel pipe				
40 mm diameter/1-14.2 mm wall	25 mm	20 mm Stone wool 40 kg/m ³		EI 180 C/U
40 mm diameter/1-14.2 mm wall*	25 mm	25 mm AES mineral fibre	13 -19 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	EI 60 C/U
50 mm diameter/1.3-14.2 mm wall*				
60 mm diameter/1.6-14.2 mm wall*				
75 mm diameter/2-14.2 mm wall*				
90 mm diameter/2.4-14.2 mm wall*				
100 mm diameter/2.7-14.2 mm wall*				
115 mm diameter/3.1-14.2 mm wall*				
140 mm diameter/3.8-14.2 mm wall*				
165 mm diameter/4.5-14.2 mm wall*				

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with 13-19 mm Elastomeric Insulation - C/U



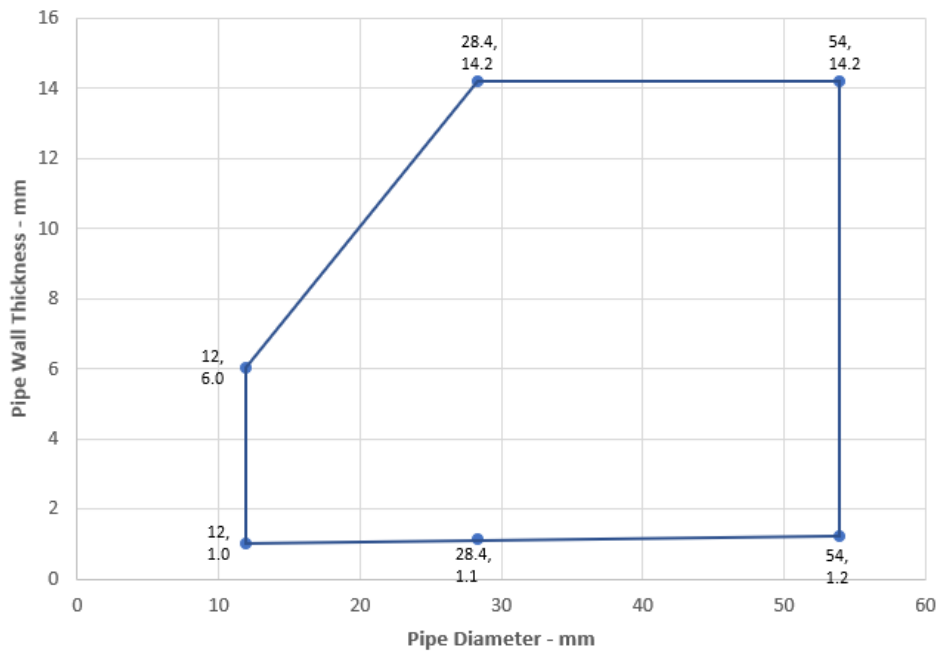
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Services	Sealant depth	Backing (minimum)	Insulation	Classification
Copper or steel pipe				
12 mm diameter/1-6 mm wall	25 mm	25 mm AES mineral fibre	9 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	E 240 C/C, EI 180 C/C
12-54 mm diameter/1-14.2 mm wall*			9-13 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	E 180 C/C, EI 120 C/C
12-54 mm diameter/1-14.2 mm wall*			13-25 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	E 90 C/C, EI 60 C/C

* Typical pipe diameters shown, see below graph for intermediate sizes

Copper or Steel Pipes with Elastomeric Insulation - C/C



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Services	Sealant depth	Backing (minimum)	Insulation	Classification
Alupex Composite Pipe				
16 mm diameter/2.25 mm wall	25 mm	25 mm AES mineral fibre	9 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	EI 180 C/C
16 mm diameter/2.25 mm wall			9-13 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	
20 mm diameter/2.5 mm wall				
26 mm diameter/3 mm wall				
32 mm diameter/3 mm wall				
40 mm diameter/3.5 mm wall				
50 mm diameter/4 mm wall				
63 mm diameter/4.5 mm wall				
75 mm diameter/4.7 mm wall			13-25 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	EI 60 C/C
16 mm diameter/2.25 mm wall				
20 mm diameter/2.5 mm wall				
26 mm diameter/3 mm wall				
32 mm diameter/3 mm wall				
40 mm diameter/3.5 mm wall				
50 mm diameter/4 mm wall				
63 mm diameter/4.5 mm wall				
75 mm diameter/4.7 mm wall				

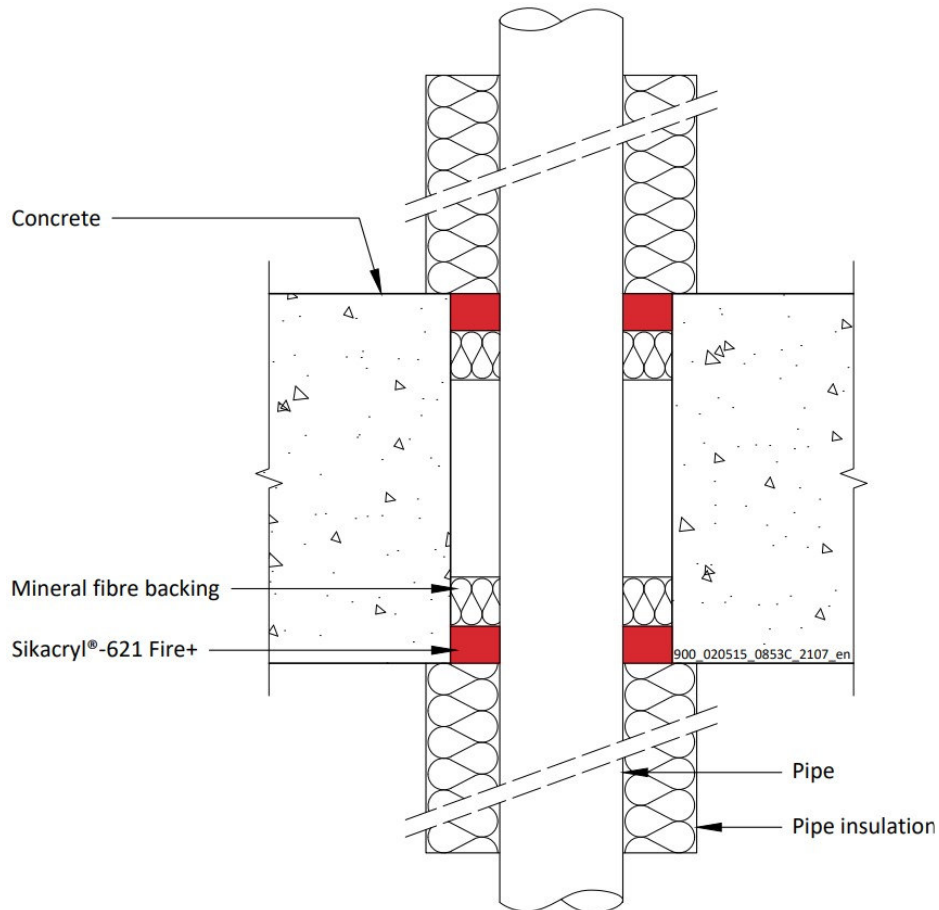
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A.6.11 Double side penetration seal with metallic pipes

Penetration Seal: 1000 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic pipes (single) fitted at any position within the aperture, with 15 mm deep Sikacryl-621 Fire+ to both sides of the floor (or at any position between), backed with 20 mm deep minimum 40 kg/m³ stone wool insulation*.

Construction details:



A.6.11.1

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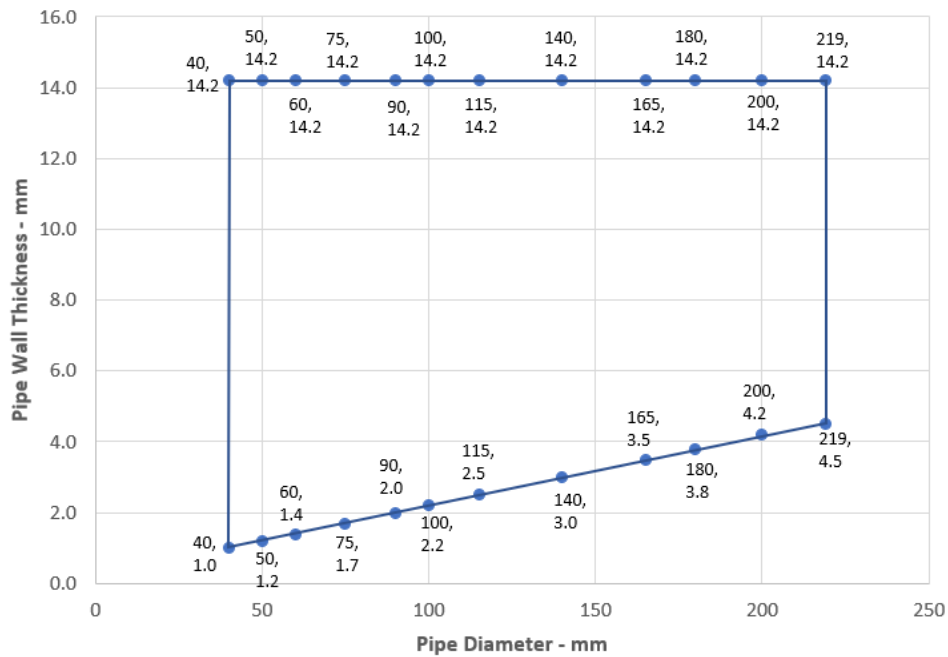


A.6.11.1

Services	Maximum seal size	Insulation (minimum)	Classification
Mild or stainless steel pipe			
40 mm diameter/1-14.2 mm wall	300 x 300 mm or 100 x 1000 mm	20 mm Stone wool insulation 80 kg/m ³	EI 240 C/U
40 mm diameter/1-14.2 mm wall*			
50 mm diameter/1.2-14.2 mm wall*			
60 mm diameter/1.4-14.2 mm wall*			
75 mm diameter/1.7-14.2 mm wall*			
90 mm diameter/2-14.2 mm wall*			
100 mm diameter/2.2-14.2 mm wall*			
115 mm diameter/2.5-14.2 mm wall*			
140 mm diameter/3-14.2 mm wall*			
165 mm diameter/3.5-14.2 mm wall*			
180 mm diameter/3.8-14.2 mm wall*			
200 mm diameter/4.2-14.2 mm wall*			
219 mm diameter/4.5-14.2 mm wall*			
		30 mm Stone wool insulation 80 kg/m ³	E 240 C/U, EI 120 C/U

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Stone Wool Insulation - C/U



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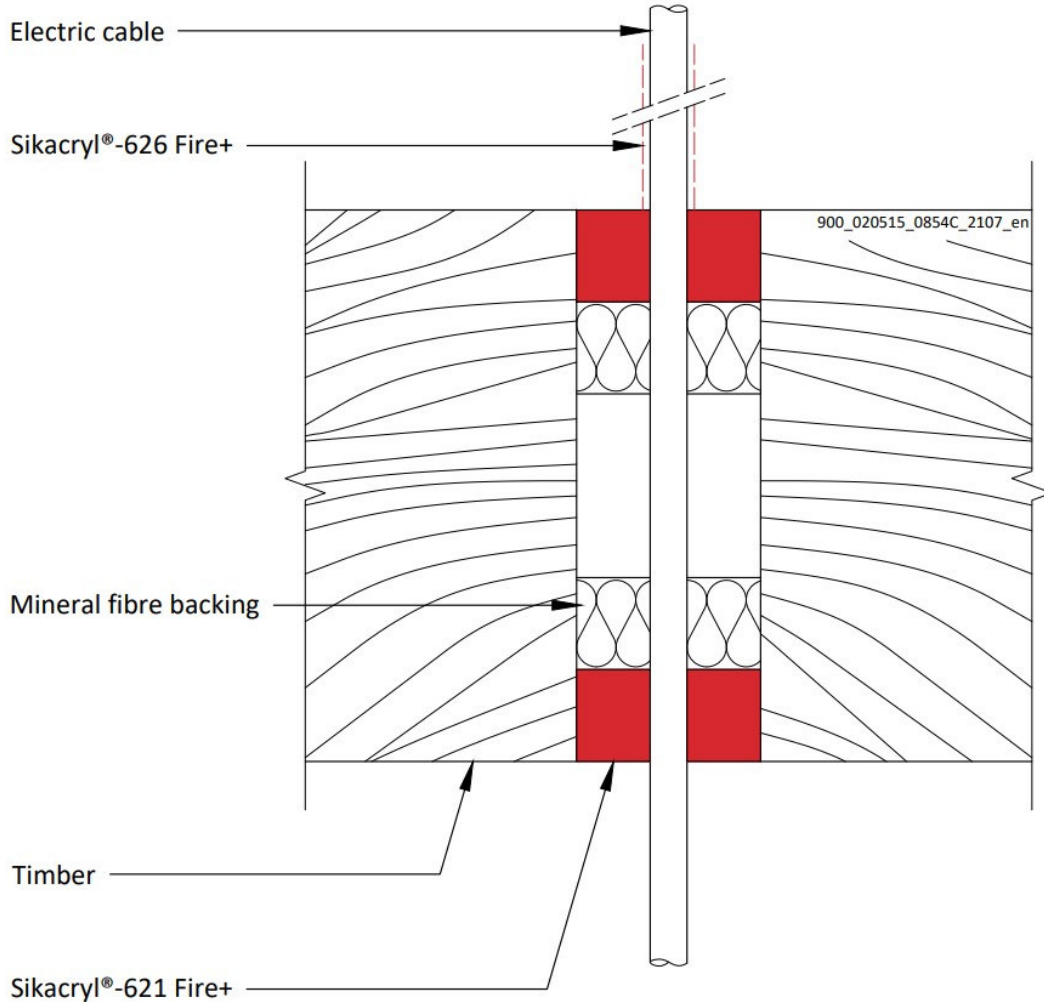


A.7 Timber floor constructions with floor thickness of minimum 150 mm

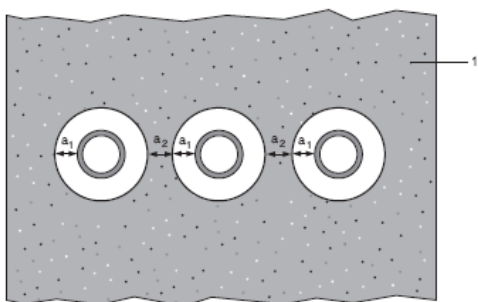
A.7.1 Double sided penetration seal with cables

Penetration Seal: Cables fitted at any position within the aperture, sealed with Sikacryl-621 Fire+, minimum 25 mm deep to both sides of the floor and backed with stone wool insulation (minimum 33kg/m³), minimum 25 mm deep. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

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A.7.1.1

Services	Sealant depth	Backing	Maximum aperture	Insulation, minimum	Classification
None (blank)	25 mm	Stone wool 25 mm deep min. 33kg/m ³	Ø 220 mm	None	EI 120
Cables up to 14 mm Ø, single or in bundles up to 100 mm Ø					EI 120
Cables up to 21 mm Ø, single or in bundles up to 100 mm Ø				Sikacryl®-626 Fire+, 260-micron DFT extending 150 mm from top side of the seal	E 120, EI 90
Cables up to 50 mm Ø, single or in bundles up to 100 mm Ø					E 120, EI 90
Telecom cables up to 14 mm Ø, single or in bundles up to 100 mm Ø					E 120, EI 90

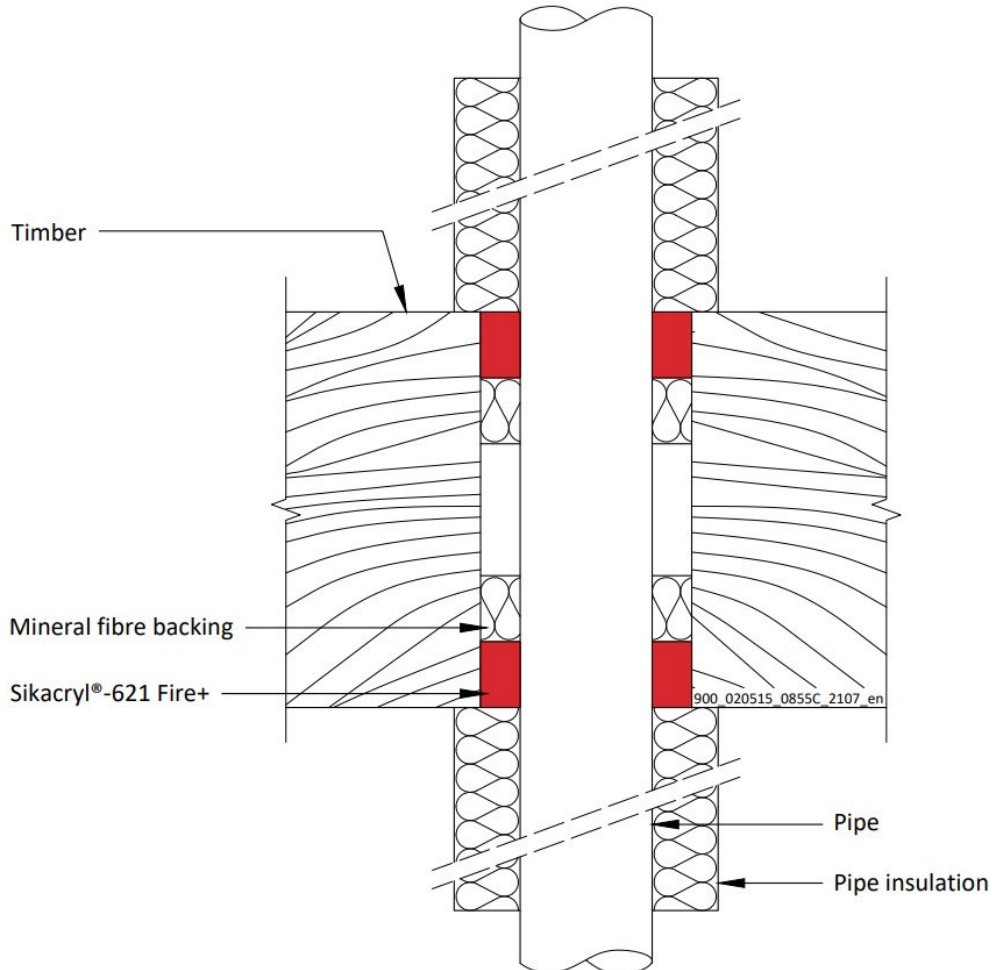
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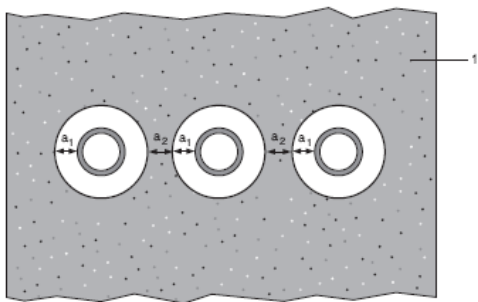
A.7.2 Double side penetration seal with metallic pipes

Penetration Seal: 500 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic pipes and composite pipes (single) with glass wool or stone, mineral wool min. 75 kg/m³, fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the floor, backed with stone wool insulation (minimum 33kg/m³), minimum 25 mm deep. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

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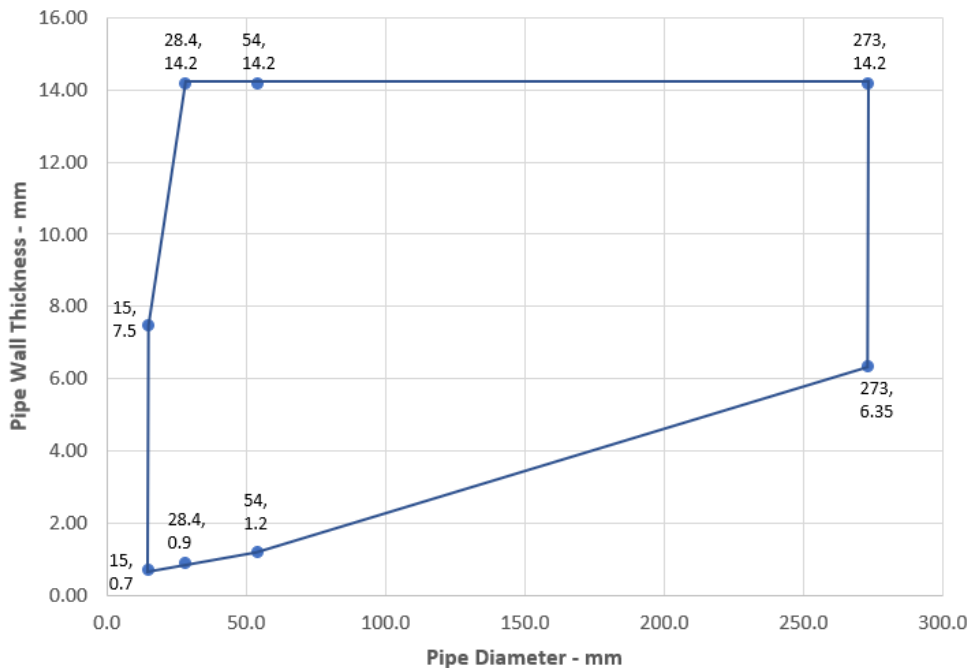


A.7.1.1

Services	Maximum aperture	Sealant depth	Backing	Insulation, minimum	Classification
Mild or stainless steel pipe					
Maximum 273 mm diameter /6.35-14.2 mm wall*	Ø 293 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	25 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	E 120 C/C, EI 60 C/C
Copper or steel pipe					
Maximum 15 mm diameter /0.7-7.5 mm wall*	Ø 220 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	20 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	EI 120 C/C
Maximum 54 mm diameter /1.2-14.2 mm wall*					E 120 C/C, EI 90 C/C
Alupex Pipe					
Maximum 16 mm diameter/ 2.25 mm wall*	Ø 220 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	20 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	EI 120 C/C
Maximum 75 mm diameter/ 4.6 mm wall*					E 120 C/C, EI 90 C/C

* Typical pipe diameters shown, see below graph for intermediate sizes

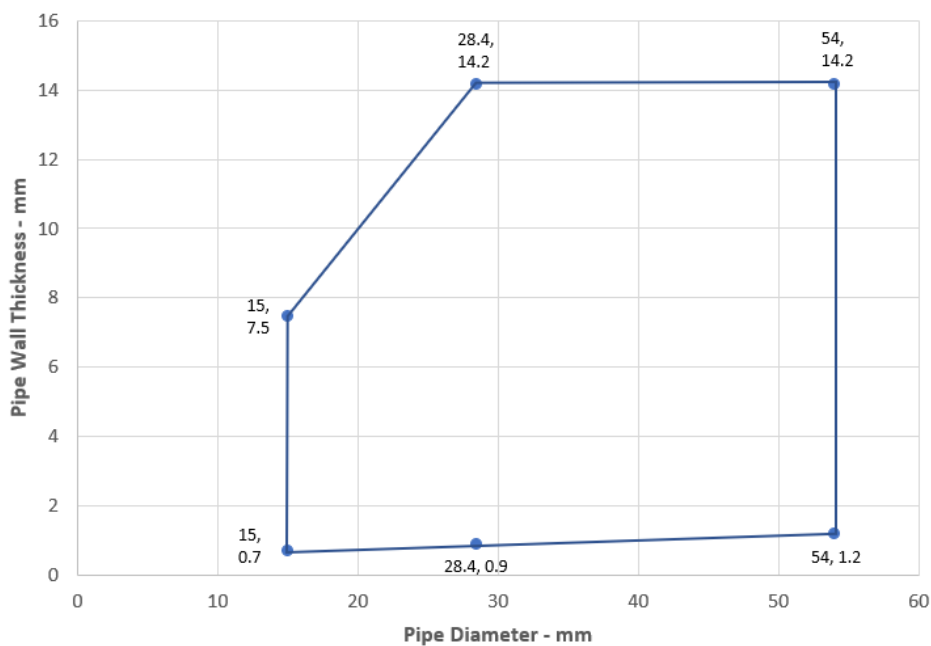
Steel Pipes with Glass Wool or Mineral Wool Insulation - C/C



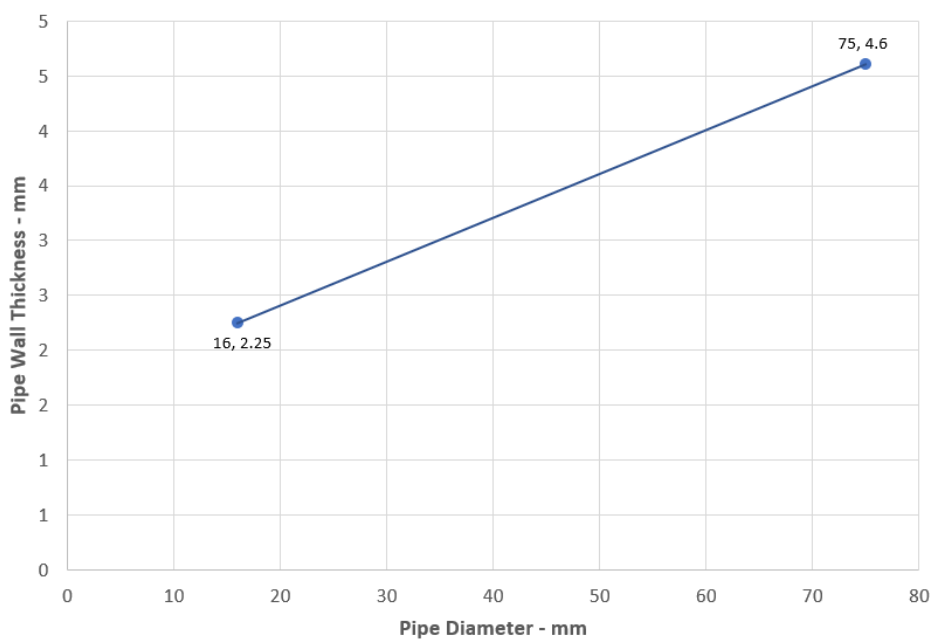
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Copper or Steel Pipes with Glass Wool or Mineral Wool Insulation - C/C



Alupex Pipes with Glass Wool or Mineral Wool Insulation - C/C



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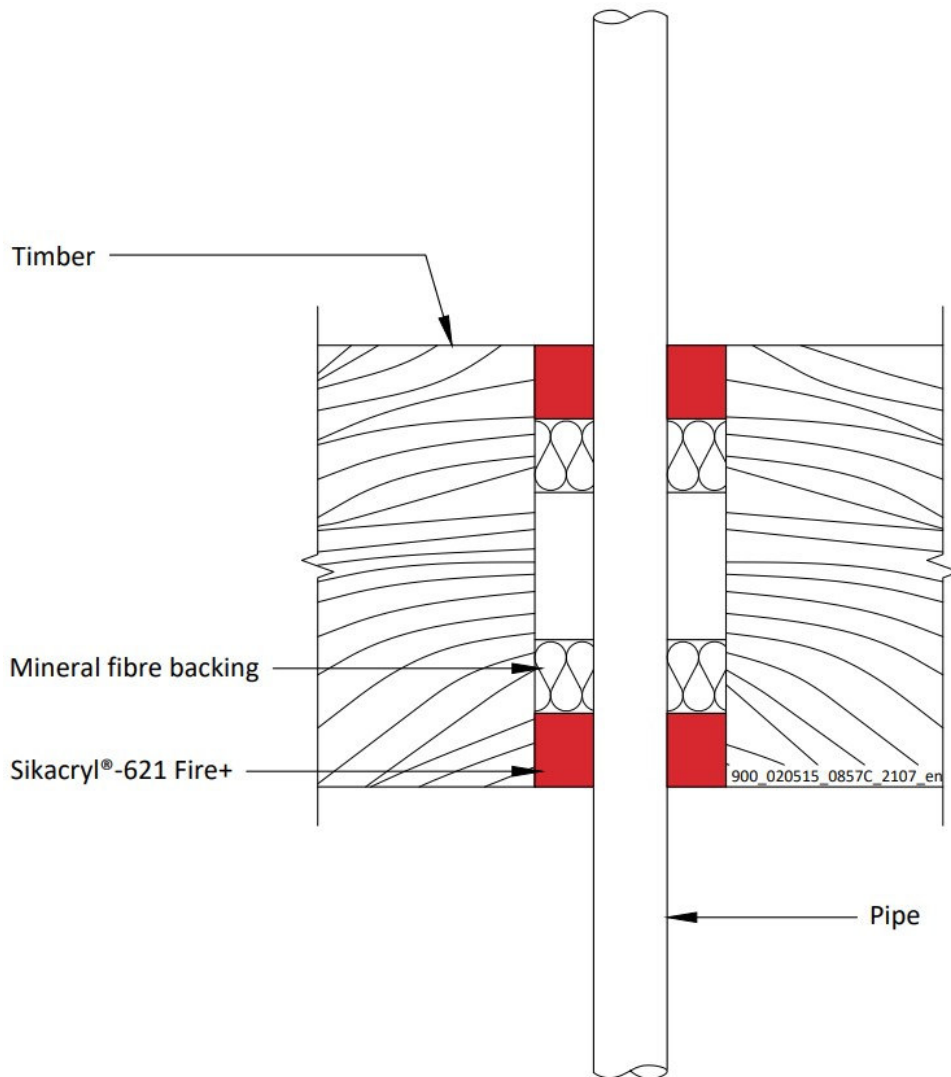
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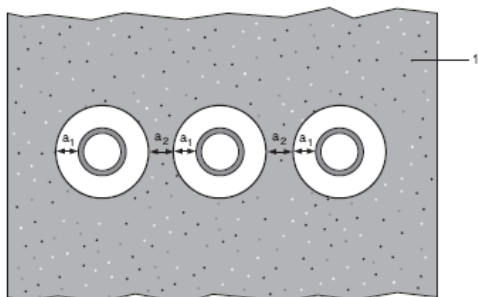
A.7.3 Double side penetration seal with plastic pipes and composite pipes

Penetration Seal: Plastic and composite pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the floor, backed with stone, mineral wool min. 33 kg/m³. Minimum annular space 10 mm and maximum 30 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

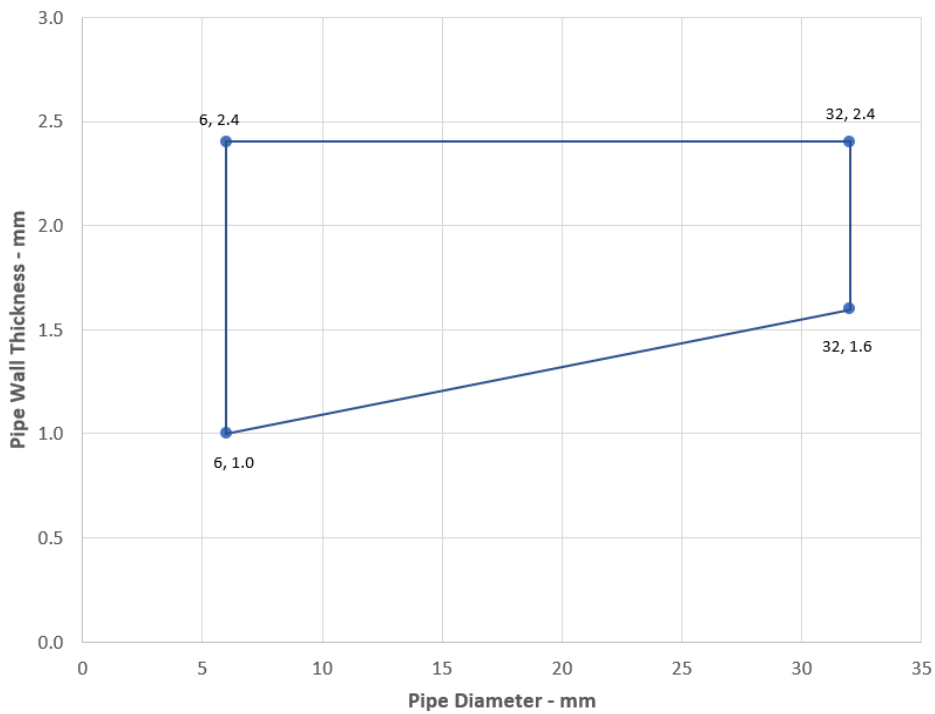
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A.7.3.1

Services	Sealant depth	Backing	Classification
PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1			
Maximum 32 mm diameter/1.0-2.4 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	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			
Maximum 32 mm diameter/2.0-3.0 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 120 U/C
PP pipe according to EN 1451-1 or DIN 8077/8078			
Maximum 32 mm diameter/1.8-4.4 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 120 U/C
PEX pipe in pipe system			
25 mm diameter outer /15 mm diameter x 2.5 mm wall inner	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 120 C/C

* Typical pipe diameters shown, see below graph for intermediate sizes

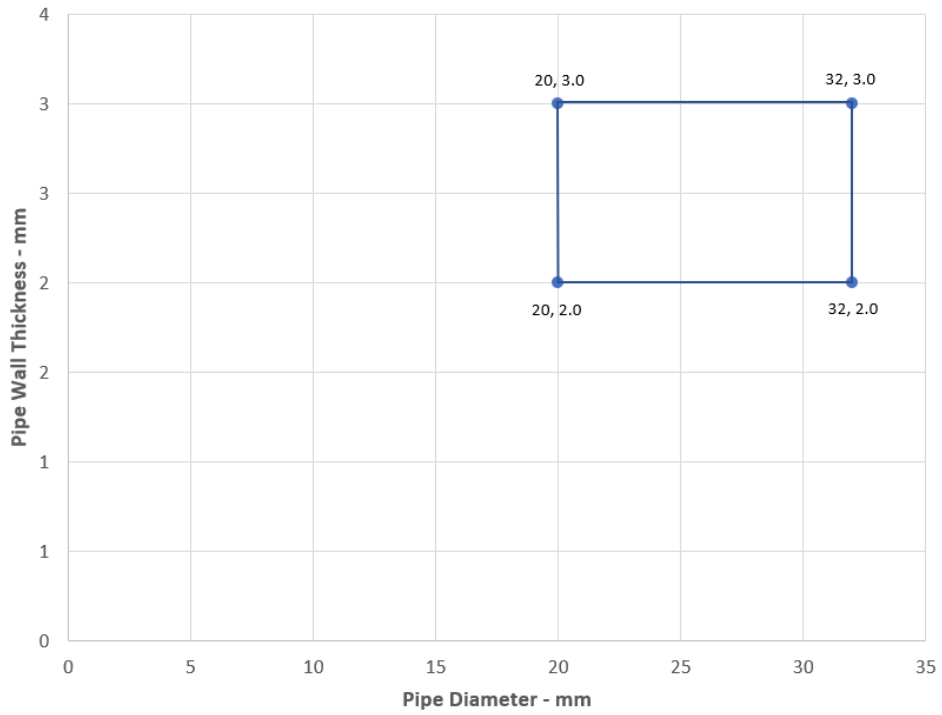
PVC-U Pipes EI 120 - U/C



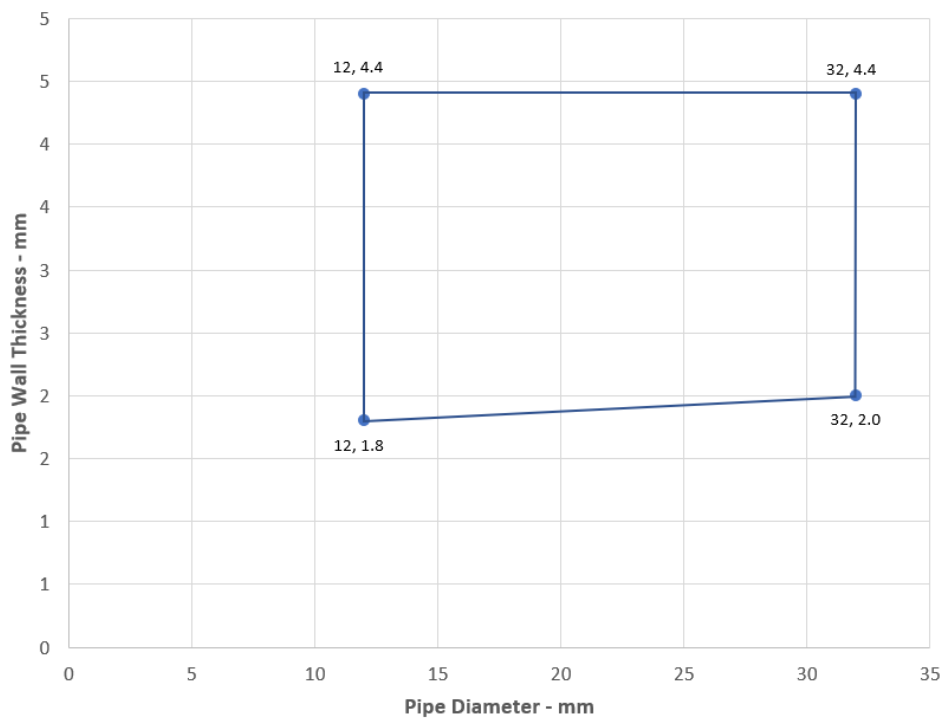
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PE Pipes EI 120 - U/C



PP Pipes EI 120 - U/C



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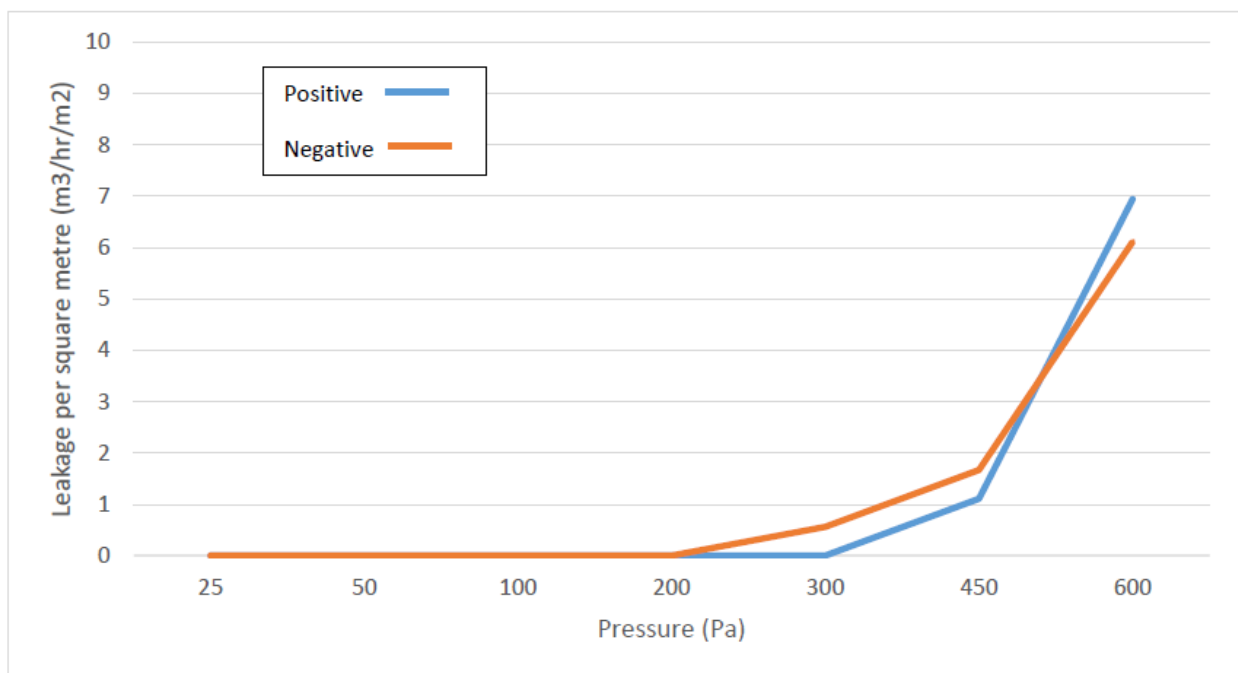
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ANNEX B – Air Permeability – Sikacryl-621 Fire+

Product tested	10mm deep x 30mm wide Sikacryl-621 Fire+		
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	0.06	1.67
	600	0.22	6.11
Results under positive chamber pressure	25	0.00	0.00
	50	0.00	0.00
	100	0.00	0.00
	200	0.00	0.00
	300	0.00	0.00
	450	0.04	1.11
	600	0.25	6.94



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8 ANGEMESSENE TECHNISCHE DOKUMENTATION UND/ODER SPEZIFISCHE TECHNISCHE DOKUMENTATION

Die Leistung des vorstehenden Produkts entspricht der erklärten Leistung/den erklärten Leistungen. Für die Erstellung der Leistungserklärung im Einklang mit der Verordnung (EU) Nr. 305/2011 ist allein der obengenannte Hersteller verantwortlich.

Unterzeichnet für den Hersteller und im Namen des Herstellers von:

Name : Frank Boldt
Funktion: Produktingenieur Kleben &
Dichten Bau
Stuttgart, den 13 December 2021

Name : Julia Michel
Funktion: Marktfeldmanager Kleben &
Dichten Bau
Stuttgart, den 13 December 2021



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Ende der Information nach Verordnung (EU) Nr 305/2011

VOLLSTÄNDIGE CE KENNZEICHNUNG



21

Sika Services AG, Zurich, Switzerland

Nr. 58967197

Brandverhalten	B – s1, d0
Feuerwiderstand	Annex A
Luftdurchlässigkeit	Annex B
Wasserdurchlässigkeit	Keine Leistung festgestellt
Freisetzung von gefährlichen Stoffen	Keine Leistung festgestellt
Mechanischer Widerstand und Stabilität	Keine Leistung festgestellt
Schlagwiderstand	Keine Leistung festgestellt
Haftung	Keine Leistung festgestellt
Haltbarkeit	Z2
Schalldämmung	Keine Leistung festgestellt
Thermische Eigenschaften	Keine Leistung festgestellt
Wasserdampfdurchlässigkeit	Keine Leistung festgestellt

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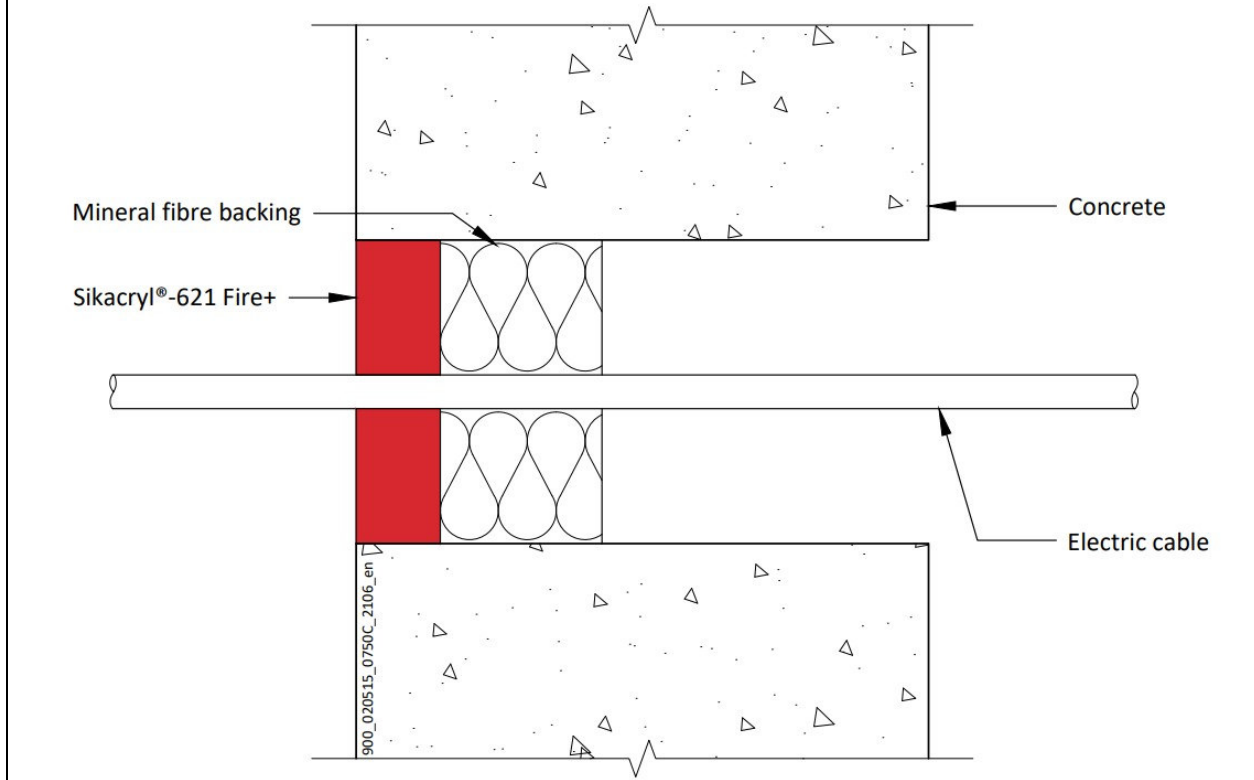
ANNEX A – Resistance to Fire Classification – Sikacryl-621 Fire+ (penetration seals)

A.1 Rigid wall constructions according to 1.2.1 with wall thickness of minimum 150 mm

A.1.1 Single side penetration seal with cables

Penetration Seal: Cables (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to either side of the wall (or at any position in between), backed with 'AES mineral fibre'. Minimum separation between cables and the edge of the seal of 7 mm.

Construction details:



A.1.1.1

Services	Sealant depth	Backing	Maximum seal size	Classification
Single electrical cables up to 21 mm \varnothing	25 mm	48 mm deep AES mineral fibre	87 mm \varnothing	E 240, EI 90
Blank seals	25 mm	48 mm AES mineral fibre insulation	300 x 300 mm	E 240, EI 60
Electric cables up to 21 mm diameter, single.			35 x 35 mm / 36 mm \varnothing	E 240, EI 120
Blank seals				
Electric cables up to 21 mm diameter, single.				

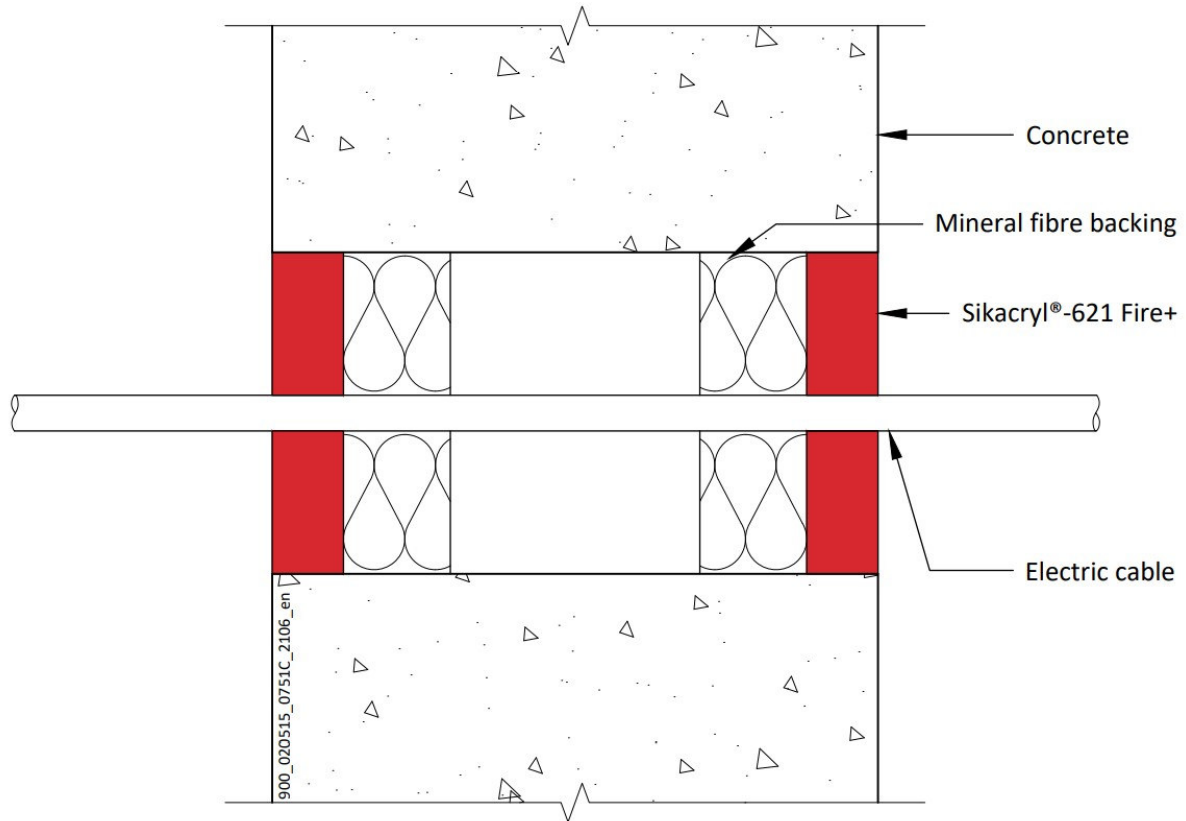
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A.1.2 Double side penetration seal with cables

Penetration Seal: Cables fitted with Sikacryl-621 Fire+ to both sides of the wall, backed with stone wool or mineral fibre insulation. Maximum seal size of 300 x 300 mm and minimum separation between cables and the edge of the seal of 10 mm.

Construction details:



A.1.2.1

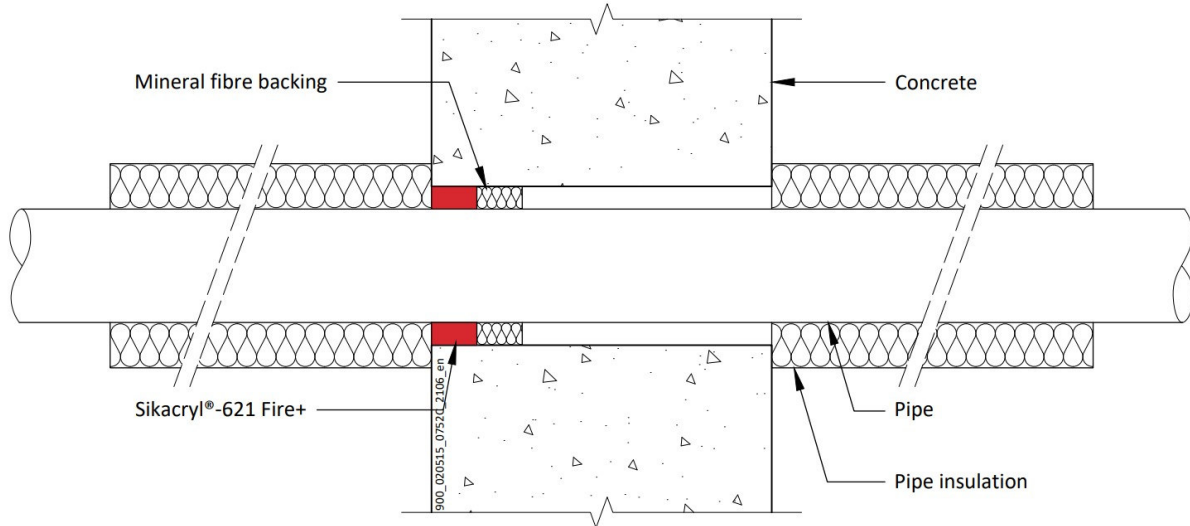
Services	Sealant depth	Backing (minimum)	Insulation	Classification
Blank seals	15 mm	25 mm Stone wool 35 kg/m ³	None	EI 240
Electric cables up to 21 mm diameter, single or in a bundle.				E 240, EI 120
Electric cables 22-80 mm diameter, single or in a bundle.				E 120, EI 60
Blank seals	25 mm	48 mm AES mineral fibre		EI 240
Electric cables up to 80 mm diameter, single or in a bundle.				E 240, EI 60
Cables up to 21 mm diameter, single or in a bundle up to 100 mm diameter				EI 240

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A.1.3 Single side penetration seal with metallic (and composite) pipes

Penetration Seal: LI (Local Interrupted) of minimum length stated below or CI (Continuous Interrupted) insulated metallic and composite pipes (single) fitted at any position within the aperture, with 15 mm deep Sikacryl-621 Fire+ to either side of the wall (or at any position between), backed with 20 mm deep minimum 40 kg/m³ stone wool insulation*.

Construction details:



A.1.3.1

Services	Seal width around pipe	Insulation (minimum)	Classification
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall	8-9 mm	1000 mm length 20 mm Stone wool insulation 80 kg/m ³	E 240 C/U, EI 180 C/U
Copper or steel pipe up to 12 mm diameter/0.9-5 mm wall	8 mm		EI 240 C/U
Alupex composite pipe 75 mm diameter/7.5 mm wall	30 mm	25 mm AES mineral fibre insulation, 600 mm long (min.)	EI 120 C/U

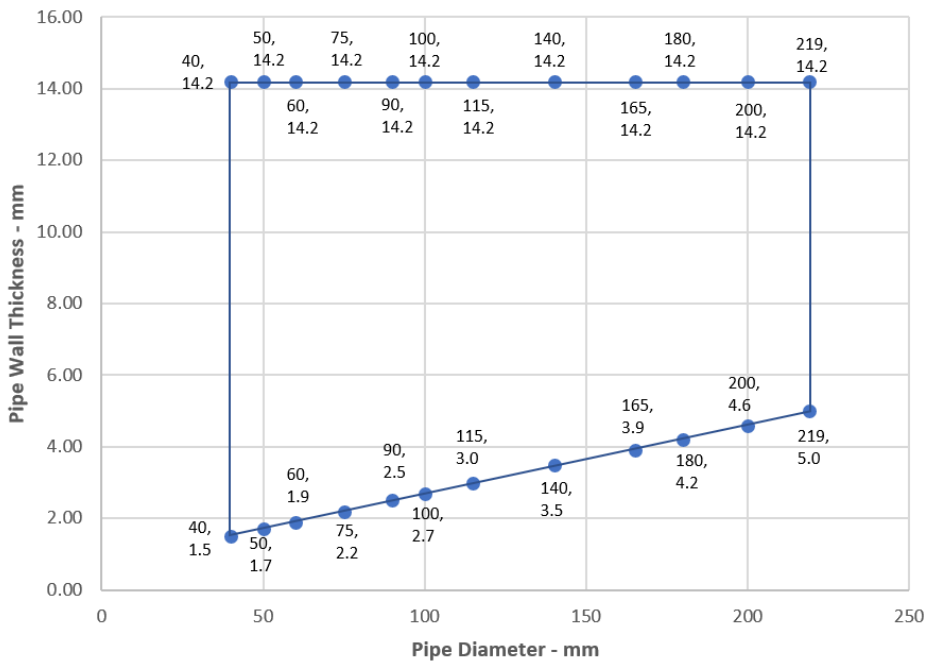
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Services	Seal width around pipe	Insulation (minimum)	Classification
Mild or stainless steel pipe			
40 mm diameter/1.5-14.2 mm wall*	6-18 mm	1000 mm length of 20 mm Stone wool insulation 80 kg/m ³	EI 240 C/U
40 mm diameter/1.5-14.2 mm wall*		1000 mm length of 30 mm Stone wool insulation 80 kg/m ³	E 180 C/U, EI 90 C/U
50 mm diameter/1.7-14.2 mm wall*			
60 mm diameter/1.9-14.2 mm wall*			
75 mm diameter/2.2-14.2 mm wall*			
90 mm diameter/2.5-14.2 mm wall*			
100 mm diameter/2.7-14.2 mm wall*			
115 mm diameter/3-14.2 mm wall*			
140 mm diameter/3.5-14.2 mm wall*			
165 mm diameter/ 3.9-14.2 mm wall*			
180 mm diameter/ 4.2-14.2 mm wall*			
200 mm diameter/ 4.6-14.2 mm wall*			
219 mm diameter/ 5.0-14.2 mm wall*			

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U



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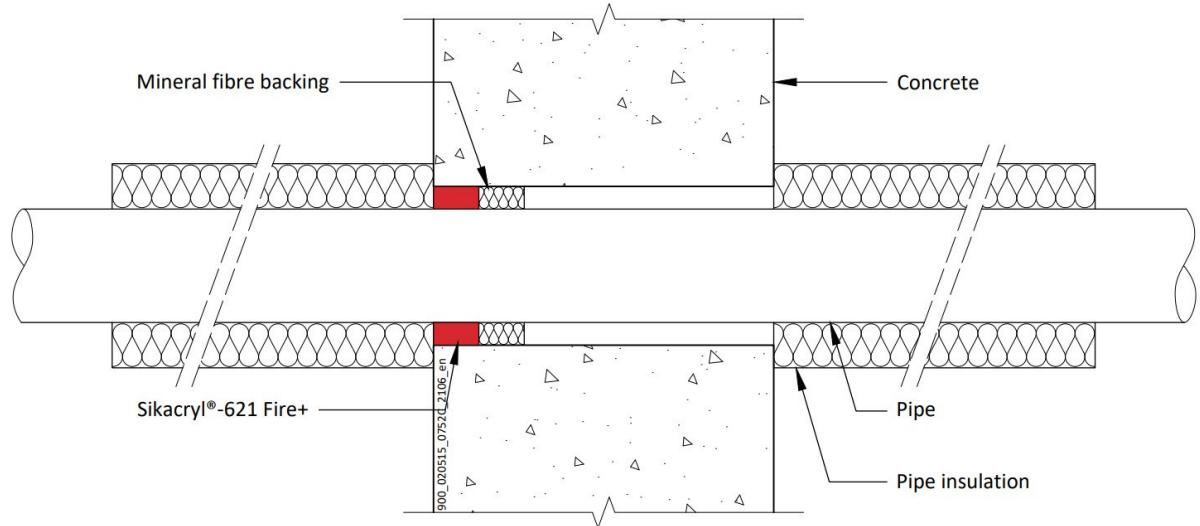
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A.1.4 Single side penetration seal with metallic (and composite) pipes

Penetration Seal: LI (Local Interrupted) of minimum length stated below or CI (Continuous Interrupted) insulated metallic and composite pipes (single) fitted at any position within the aperture, with 25 mm deep Sikacryl-621 Fire+ to either side of the wall (or at any position between), backed with 25 mm deep minimum 40 kg/m³ stone wool insulation*.

Construction details:



A.1.4.1

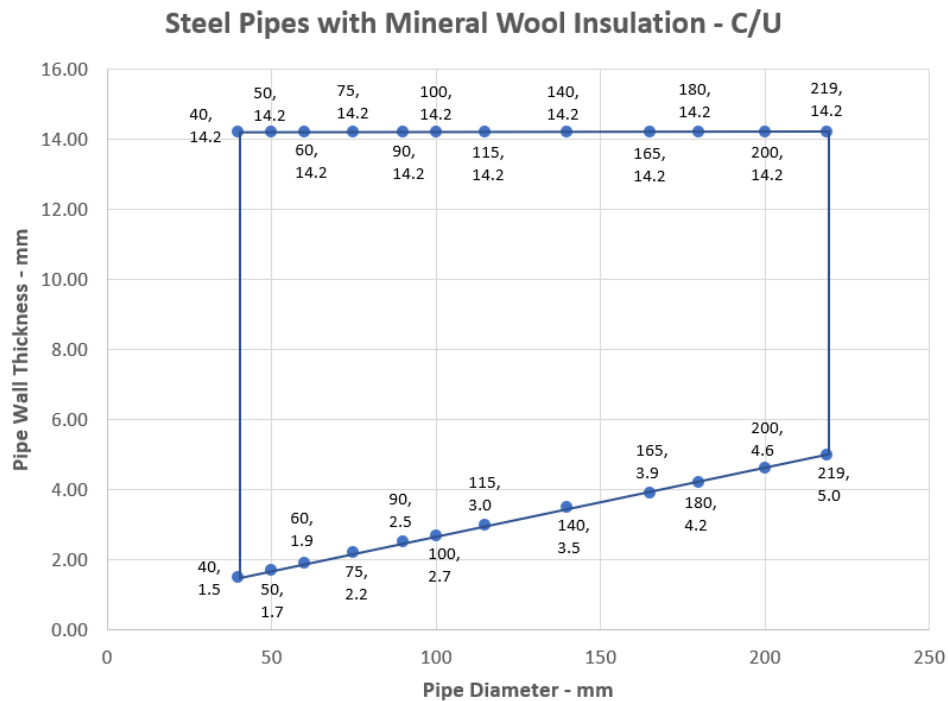
Services	Maximum Seal size	Insulation (minimum)	Classification
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall	300 x 300 mm	1000 mm length 20 mm Stone wool insulation 80 kg/m ³	E 240 C/U, EI 60 C/U
Alupex composite pipe 75 mm diameter/7.5 mm wall		25 mm AES mineral fibre insulation, 600 mm long (min.)	

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Services	Maximum seal size	Insulation (minimum)	Classification
Mild or stainless steel pipe			
40 mm diameter/1.5-14.2 mm wall*	300 x 300 mm	1000 mm length of 20 mm Stone wool insulation 80 kg/m ³	E 240 C/U, EI 60 C/U
40 mm diameter/1.5-14.2 mm wall*		1000 mm length of 30 mm Stone wool insulation 80 kg/m ³	
50 mm diameter/1.7-14.2 mm wall*			
60 mm diameter/1.9-14.2 mm wall*			
75 mm diameter/2.2-14.2 mm wall*			
90 mm diameter/2.5-14.2 mm wall*			
100 mm diameter/2.7-14.2 mm wall*			
115 mm diameter/3-14.2 mm wall*			
140 mm diameter/3.5-14.2 mm wall*			
165 mm diameter/ 3.9-14.2 mm wall*			
180 mm diameter/ 4.2-14.2 mm wall*			
200 mm diameter/ 4.6-14.2 mm wall*			
219 mm diameter/ 5.0-14.2 mm wall*			

* Typical pipe diameters shown, see below graph for intermediate sizes



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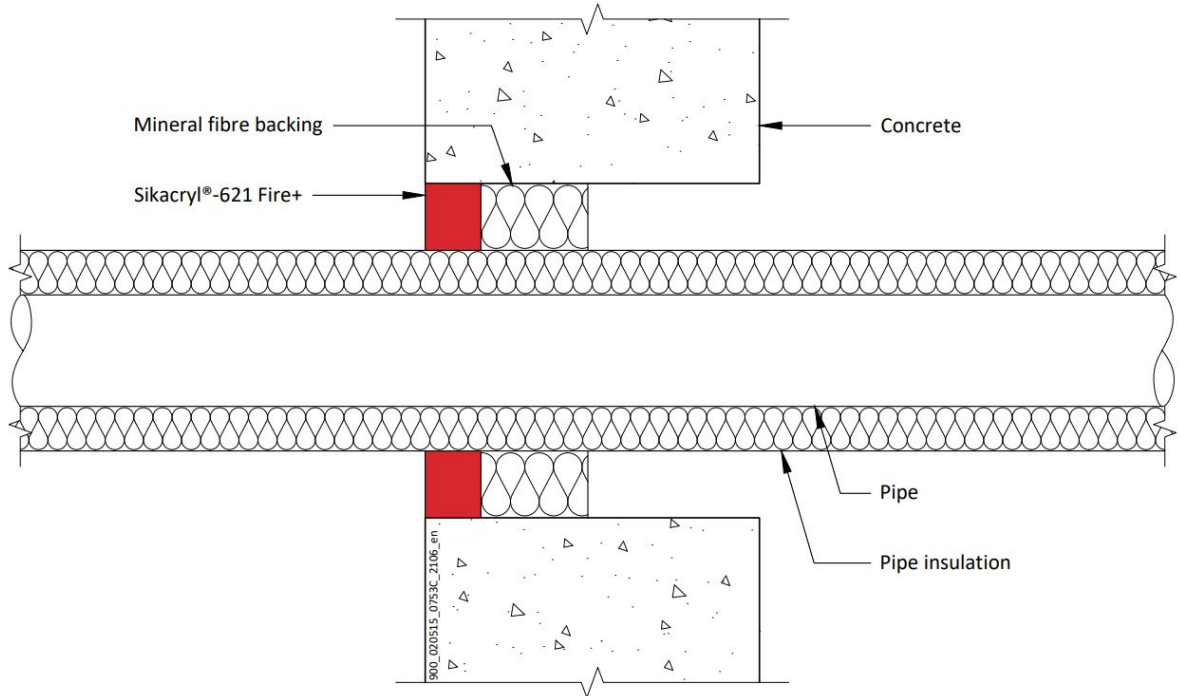
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A.1.5 Single side penetration seal with metallic pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic (single), with 25 mm deep Sikacryl-621 Fire+ to either side of the wall (or at any position between), backed with 48 mm deep AES mineral fibre insulation. Minimum annular space 10 mm and minimum separation between penetrations seals of 30 mm. Maximum seal size 300 x 300 mm or 504 mm \varnothing .

Construction details:



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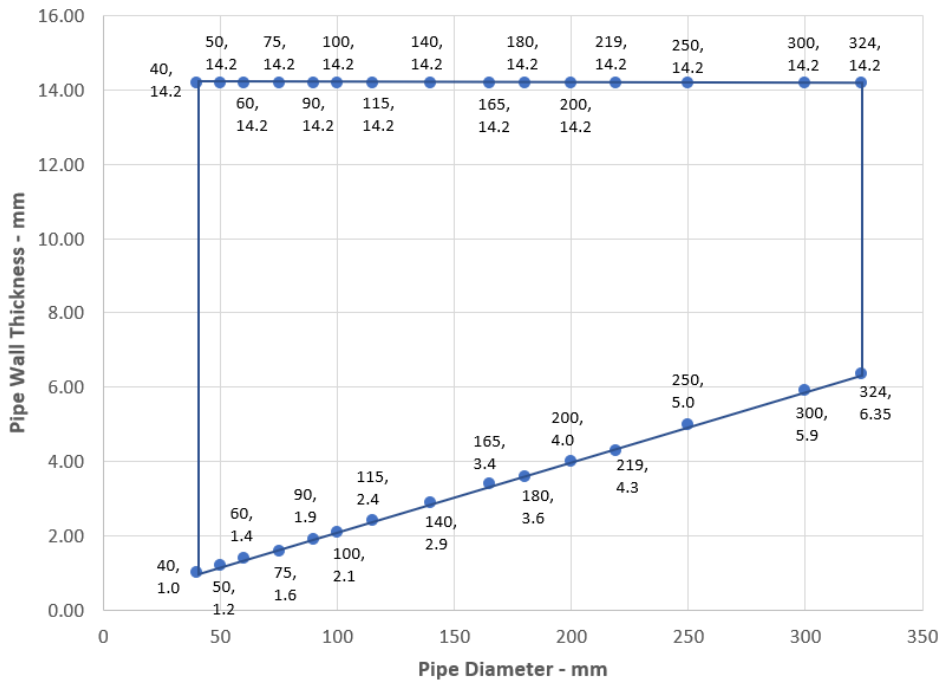


A.1.5.1 Single side penetration seal with pipes

Services	Insulation	Classification
Mild or stainless steel pipe		
40 mm diameter/1-14.2 mm wall	20 mm thick stone, mineral wool min. 80 kg/m ³	EI 240 C/U
40 mm diameter/1-14.2 mm wall*	30-80 mm thick stone, mineral wool min. 80 kg/m ³	EI 180 C/U
50 mm diameter/1.2-14.2 mm wall*		
60 mm diameter/1.4-14.2 mm wall*		
75 mm diameter/1.6-14.2 mm wall*		
90 mm diameter/1.9-14.2 mm wall*		
100 mm diameter/2.1-14.2 mm wall*		
115 mm diameter/2.4-14.2 mm wall*		
140 mm diameter/2.9-14.2 mm wall*		
165 mm diameter/ 3.4-14.2 mm wall*		
180 mm diameter/ 3.6-14.2 mm wall*		
200 mm diameter/ 4.0-14.2 mm wall*		
219 mm diameter/ 4.3-14.2 mm wall*		
250 mm diameter/ 5.0-14.2 mm wall*		
300 mm diameter/ 5.9-14.2 mm wall*		
324 mm diameter/ 6.35-14.2 mm wall*		

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U



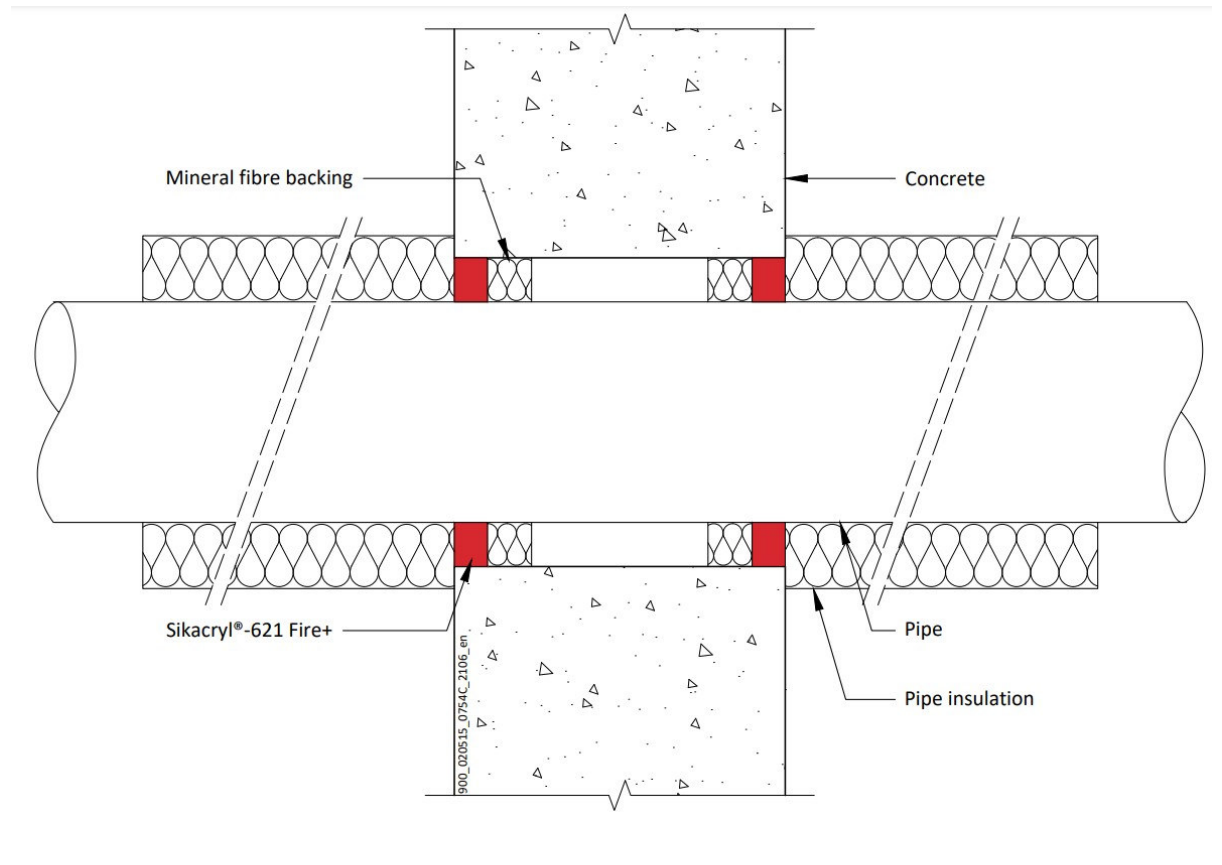
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A.1.6 Double side penetration seal with metallic pipes

Penetration Seal: 1000 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic pipes (single) fitted at any position within the aperture, with 15 mm deep Sikacryl-621 Fire+ to both sides of the wall, backed with 20 or 30 mm deep minimum 40 kg/m³ stone wool insulation.

Construction details:



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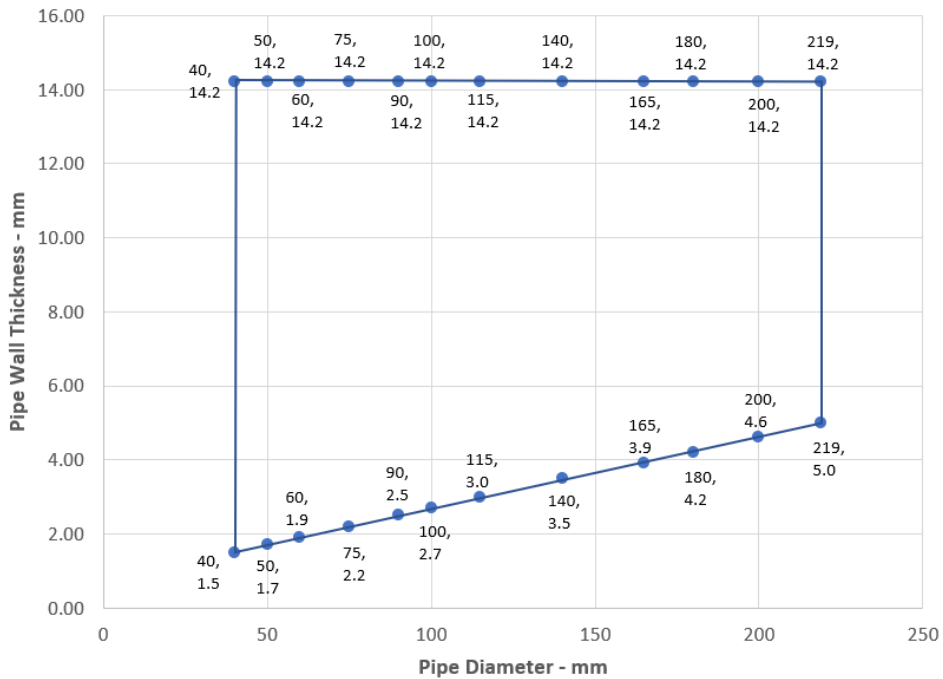


A.1.6.1

Services	Maximum seal size	Insulation (minimum)	Classification
Mild or stainless steel pipe			
40 mm diameter/1.5-14.2 mm wall*	300 x 300 mm	20 mm Stone wool insulation 80 kg/m ³	EI 240 C/U
40 mm diameter/1.5-14.2 mm wall*			
50 mm diameter/1.7-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³	E 240, EI 120 C/U
60 mm diameter/1.9-14.2 mm wall*			
75 mm diameter/2.2-14.2 mm wall*			
90 mm diameter/2.5-14.2 mm wall*			
100 mm diameter/2.7-14.2 mm wall*			
115 mm diameter/3-14.2 mm wall*			
140 mm diameter/3.5-14.2 mm wall*			
165 mm diameter/ 3.9-14.2 mm wall*			
180 mm diameter/ 4.2-14.2 mm wall*			
200 mm diameter/ 4.6-14.2 mm wall*			
219 mm diameter/ 5.0-14.2 mm wall*			

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U



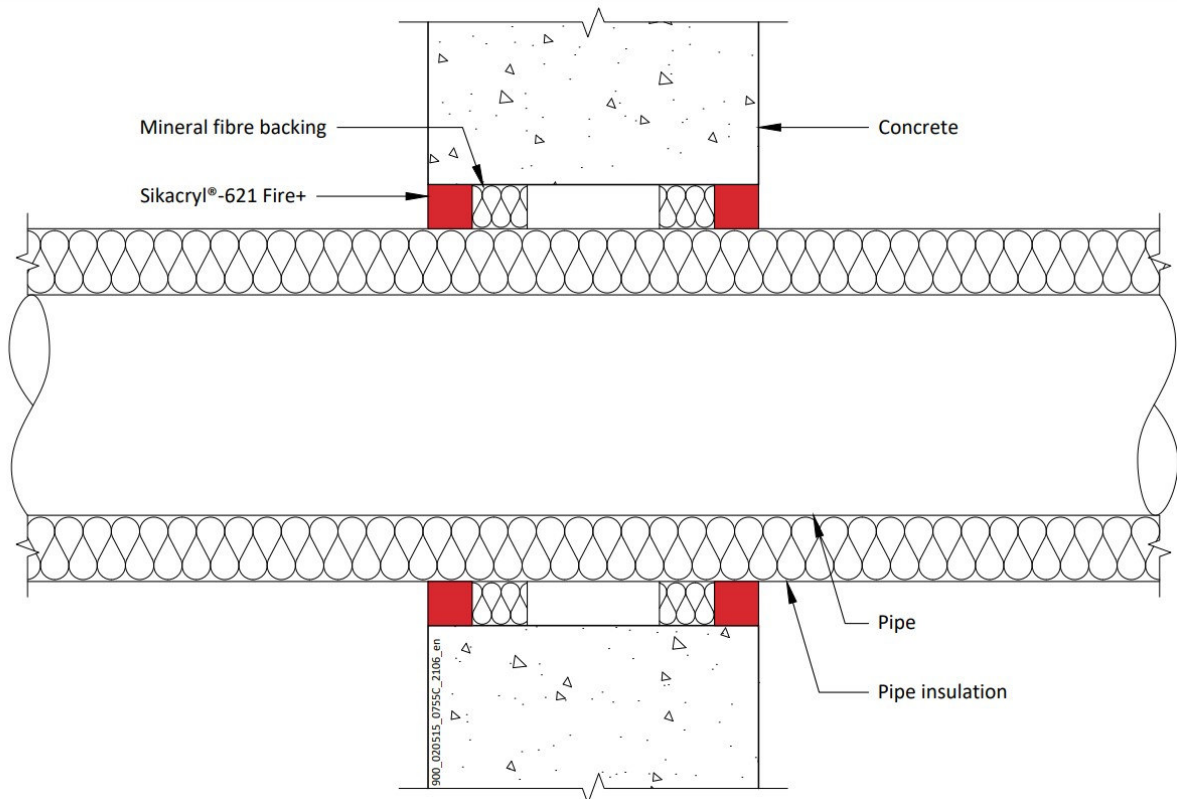
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A.1.7 Double side penetration seal with metallic pipes

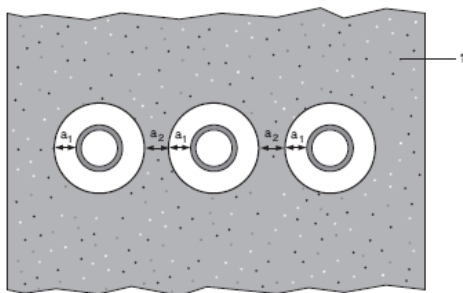
Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with 15 mm Sikacryl-621 Fire+ to both sides of the wall, backed with 25 mm deep stone wool insulation minimum 35 kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2). Maximum seal size 300 x 300 mm / 504 mm \varnothing

Construction details:



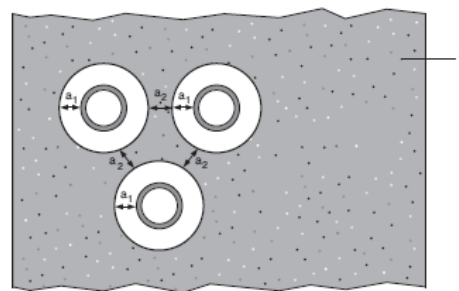
Configuration 1

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

Leistungserklärung

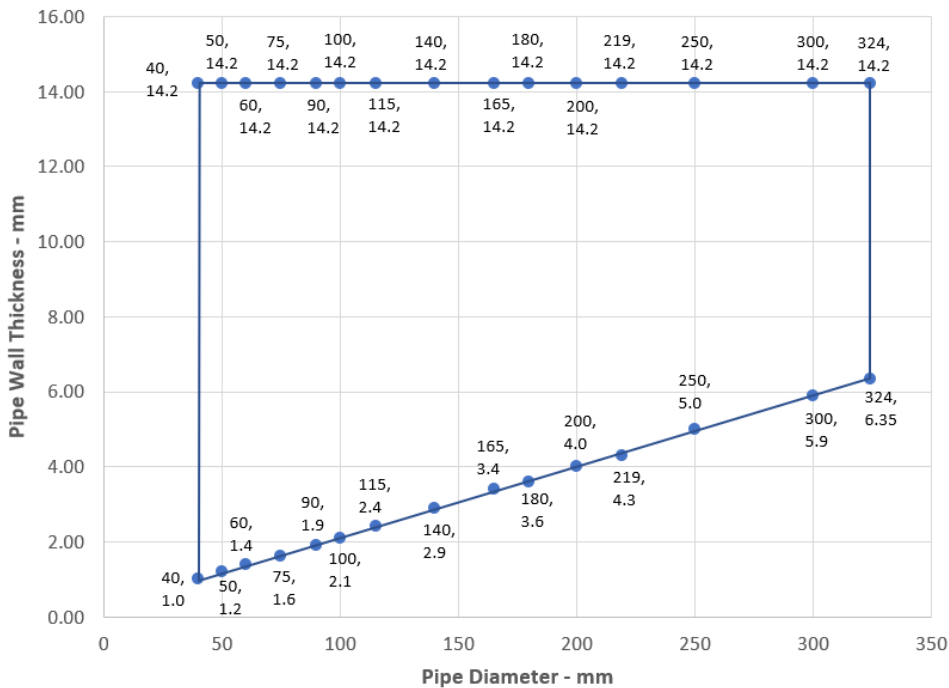
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A.1.7.1 Double side penetration seal with pipes

Services	Insulation	Classification
Mild or stainless steel pipe		
40 mm diameter/1-14.2 mm wall	20 mm thick stone, mineral wool min. 80 kg/m ³	EI 240 C/U
40 mm diameter/1-14.2 mm wall*	30-80 mm thick stone, mineral wool min. 80 kg/m ³	
50 mm diameter/1.2-14.2 mm wall*		
60 mm diameter/1.4-14.2 mm wall*		
75 mm diameter/1.6-14.2 mm wall*		
90 mm diameter/1.9-14.2 mm wall*		
100 mm diameter/2.1-14.2 mm wall*		
115 mm diameter/2.4-14.2 mm wall*		
140 mm diameter/2.9-14.2 mm wall*		
165 mm diameter/ 3.4-14.2 mm wall*		
180 mm diameter/ 3.6-14.2 mm wall*		
200 mm diameter/ 4.0-14.2 mm wall*		
219 mm diameter/ 4.3-14.2 mm wall*		
250 mm diameter/ 5.0-14.2 mm wall*		
300 mm diameter/ 5.9-14.2 mm wall*		
324 mm diameter/ 6.35-14.2 mm wall*		

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U



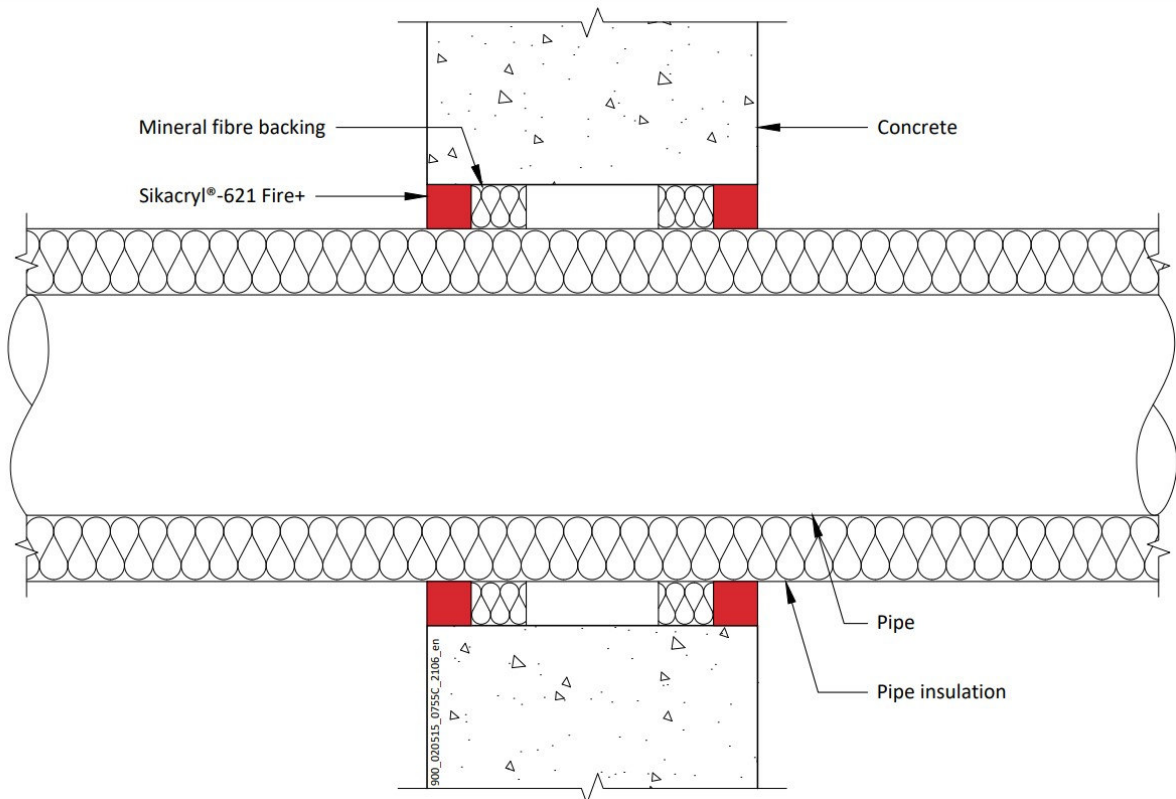
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A.1.8 Double side penetration seal with metallic pipes with combustible insulation

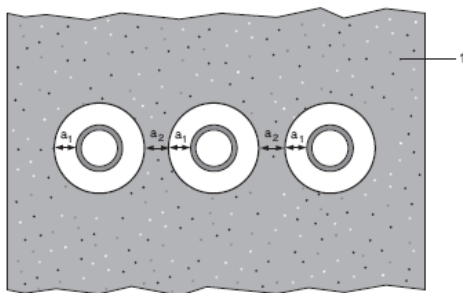
Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with 25 mm Sikacryl-621 Fire+ to both sides of the wall, backed with 25 mm deep stone wool insulation minimum 35 kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2). Maximum seal size 300 x 300 mm / 300 mm \varnothing

Construction details:



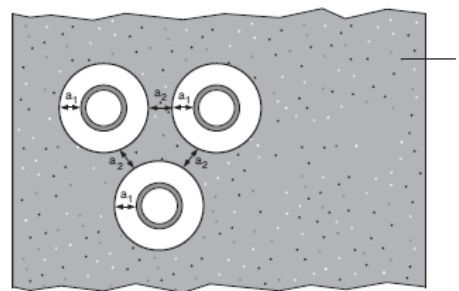
Configuration 1

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

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A.1.8.1 Double side penetration seal with metallic pipes with combustible insulation

Services	Insulation	Classification
Mild or stainless steel pipe		
22 mm diameter/2-11 mm wall	13 mm thick Elastomeric insulation minimum class B-s3,d0	E 240 C/U, EI 180 C/U
22-114 mm diameter/2-14.2 mm wall	13-25 mm thick Elastomeric insulation minimum class B-s3,d0	E 120 C/U, EI 90 C/U
22-114 mm diameter/2-14.2 mm wall	25-50 mm thick Elastomeric insulation minimum class B-s3,d0	EI 60 C/U

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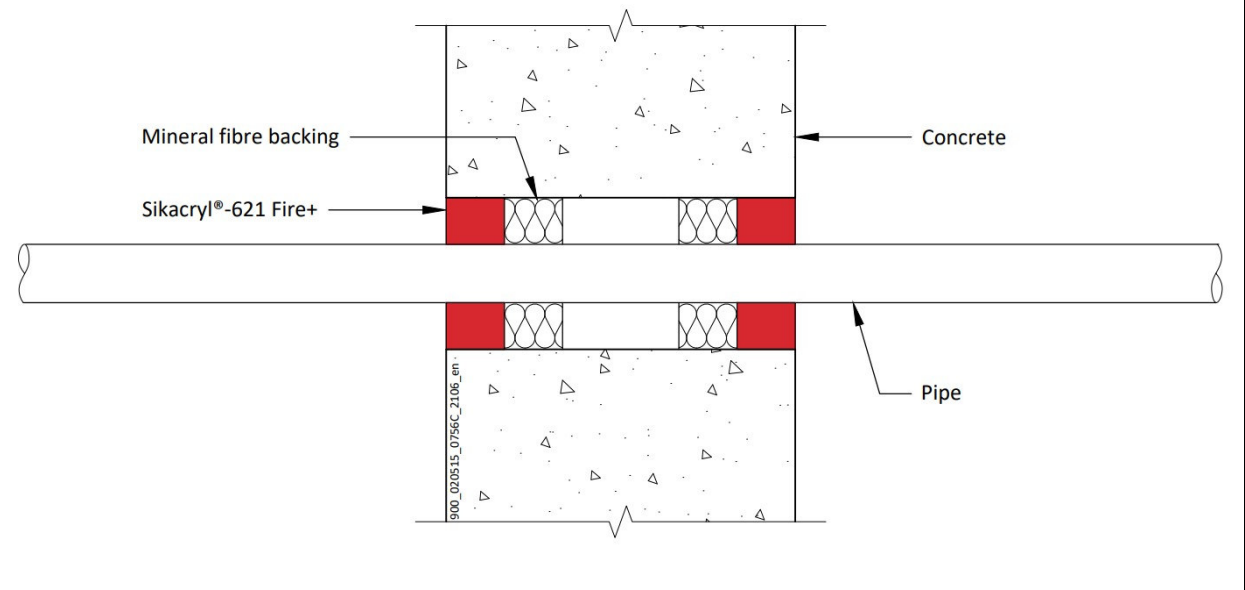
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A.1.9 Double side penetration seal with plastic pipes

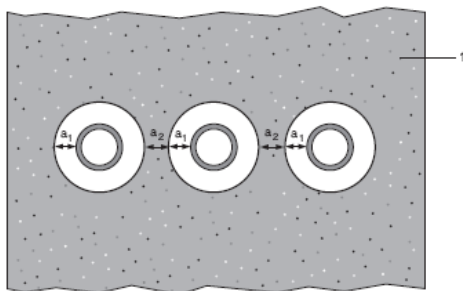
Penetration Seal: Plastic pipes (single) fitted at any position within the aperture, with 25 mm Sikacryl-621 Fire+ to both sides of the wall, backed with 25 mm deep stone wool insulation minimum 35 kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2). Maximum seal size 300 x 300 mm / 300 mm Ø

Construction details:



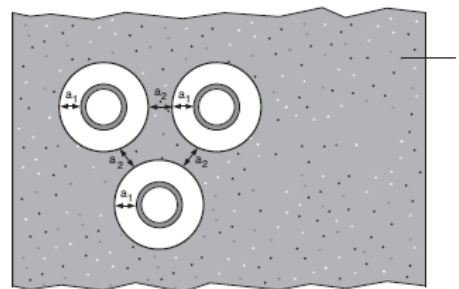
Configuration 1

Option 1



Configuration 2

Option 2



Key

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

A.1.9.1 Double side penetration seal with plastic pipes

Pipe material	Size	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	EI 240 U/C
PP pipe according to EN 1451-1 or DIN 8077/8078	32 mm diameter/2.0-4.4 mm wall	EI 180 C/U
	12-32 mm diameter/1.8-4.4 mm wall	EI 240 C/U
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 mm wall	EI 240 C/U
	20-32 mm diameter/2.0-4.4 mm wall	EI 120 C/U

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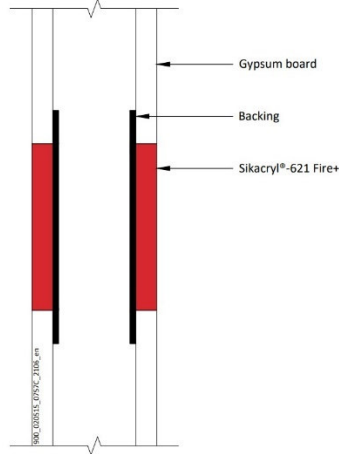


A.2 Flexible and rigid wall constructions according to 2. 2) with wall thickness of minimum 75 mm

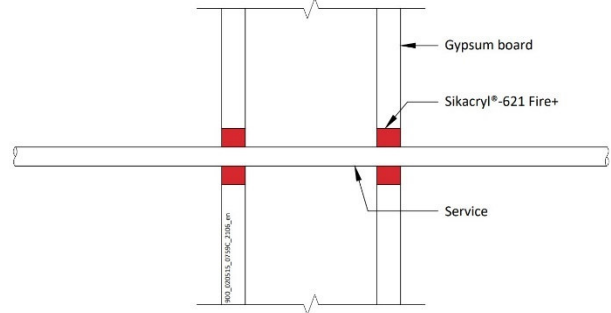
A.2.1 Double side penetration seal with cables

Penetration Seal: Cables (single or bundles up to 100 mm \varnothing) and pipes fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2), maximum seal size 150 x 150 mm / 344 mm diameter (when incorporating a pipe of seal diameter -20 mm).

Construction details:



Construction details:



A.2.1.1

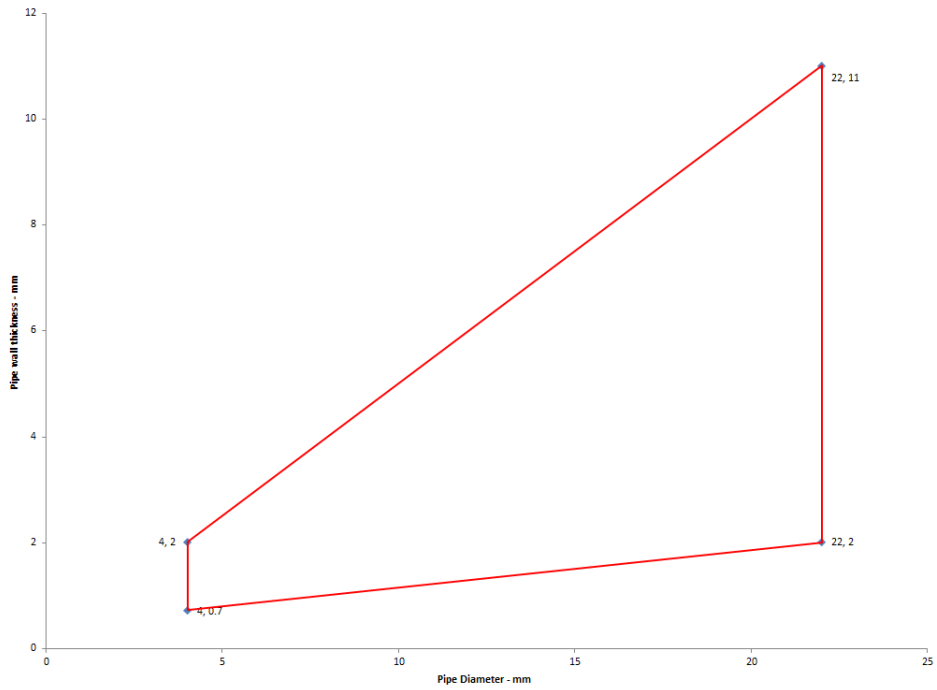
Services	Sealant depth	Backing	Classification
None (blank)	12.5 mm	Any material	EI 60
Cables up to 21 mm \varnothing , single		None	E 60, EI 45
Cables up to 21 mm \varnothing , in bundles up to 100 mm \varnothing			E 45, EI 30
Mild or stainless steel pipe			
4 mm diameter /0.7-2.0 mm wall	12.5 mm	None	E 60 C/U, EI 45 C/U
5-22 mm diameter /0.7-11 mm wall*			E 60 C/U, EI 30 C/U
Mild or stainless steel pipe with minimum 80 kg/m ³ density stone wool insulation Continuous Sustained (CS)			
40 mm diameter /1-14.2 mm wall, 20 mm insulation	12.5 mm	None	E 60 C/U, EI 45 C/U
40-324 mm diameter /1.0-14.2 mm wall, 30 mm insulation*			
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 \varnothing /1.0-1.8 mm wall, with bundle of cables up to 21 mm diameter*	12.5 mm	None	E 60 U/C, EI 45 U/C
PP pipe according to EN 1451-1 or DIN 8077/8078			
20 mm \varnothing /2.3 mm wall	12.5 mm	None	EI 45 U/C
21-32 mm \varnothing /2.3-4.4 mm wall*			EI 30 U/C
21-32 mm \varnothing /2.3-4.4 mm wall, with bundle of cables up to 21 mm diameter*			E 45 U/C, EI 30 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 mm \varnothing /2.0 mm wall	12.5 mm	None	EI 45 U/C
21-32 mm \varnothing /2.0-3.0 mm wall*			EI 30 U/C
21-32 mm \varnothing /2.0-3.0 mm wall, with bundle of cables up to 21 mm* diameter			E 45 U/C, EI 30 U/C

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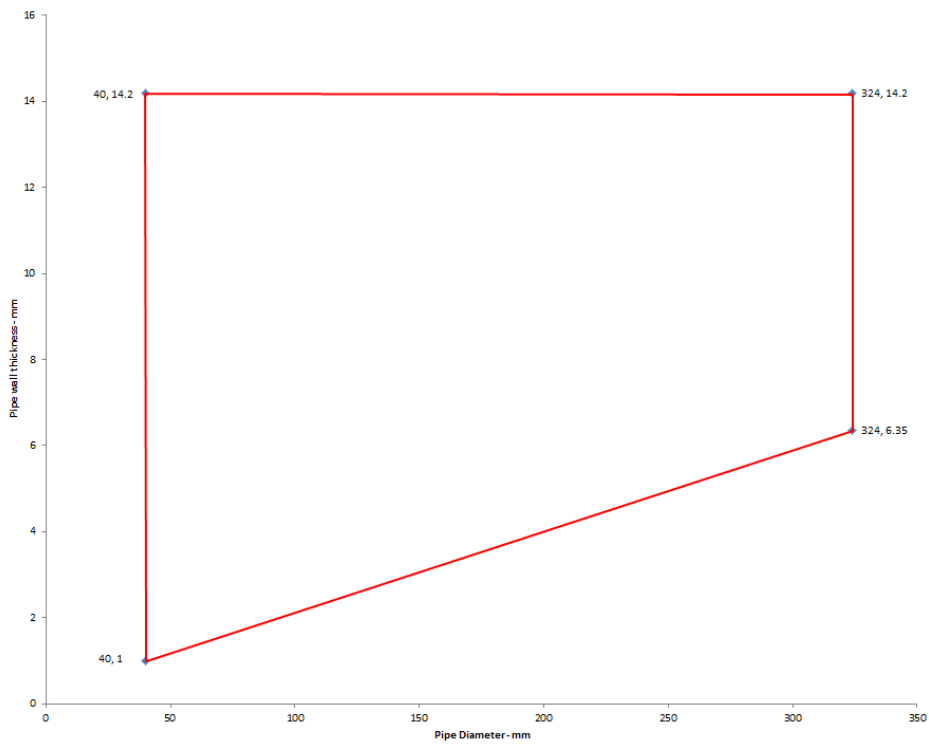
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* See below graphs for interpolated pipe sizes

Steel Pipe- E 60 U/C, EI 30 U/C



Steel pipes with 30 mm Insulation



Leistungserklärung

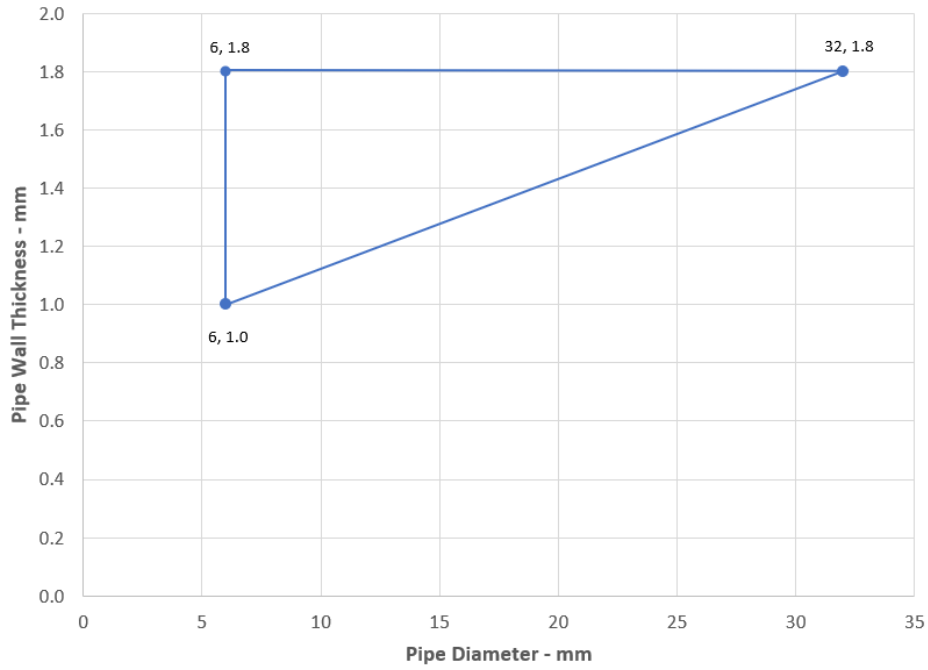
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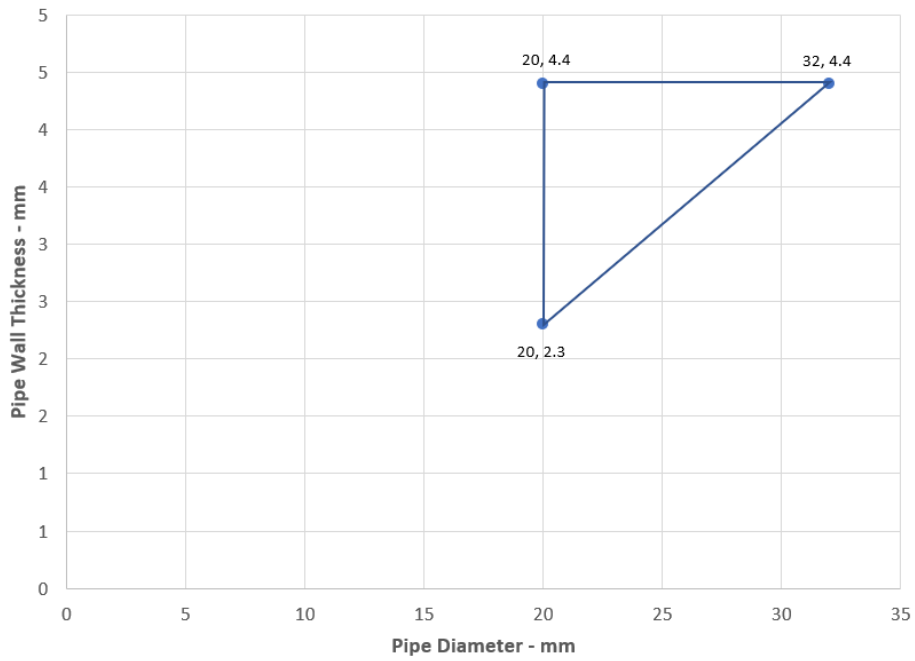
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PVC-U Pipes - U/C



PP Pipes - EI 30 U/C



Leistungserklärung

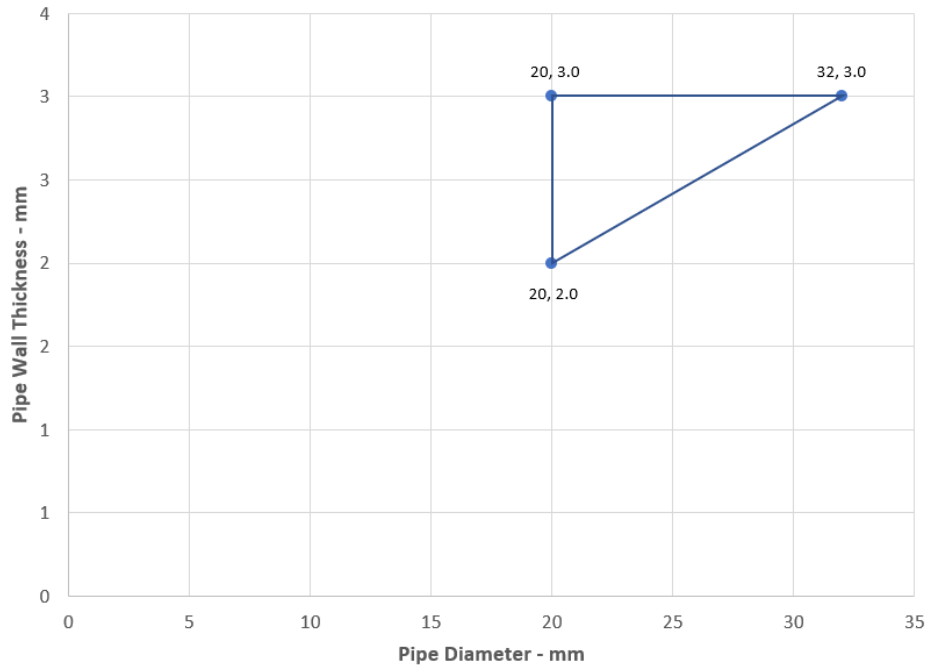
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PE Pipes - EI 30 U/C



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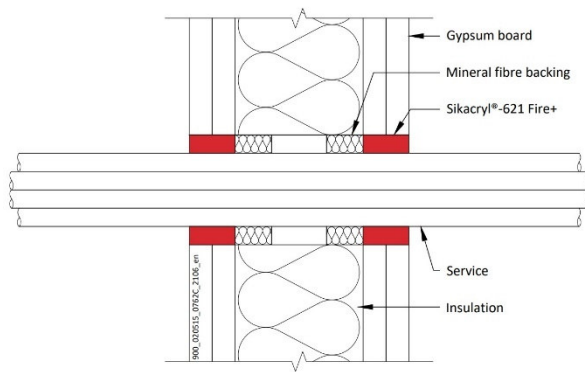


A.3 Flexible and rigid wall constructions according to 2.2) with wall thickness of minimum 100 mm

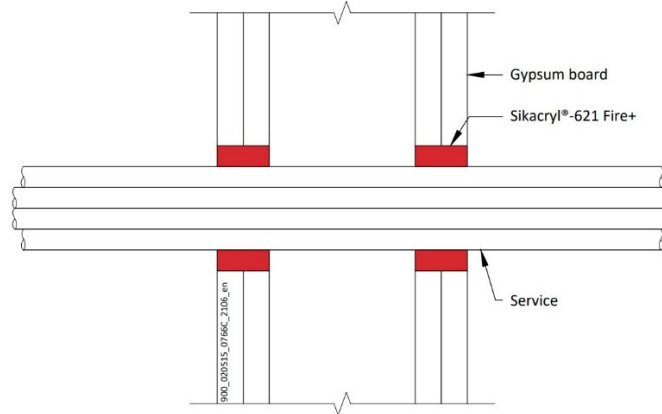
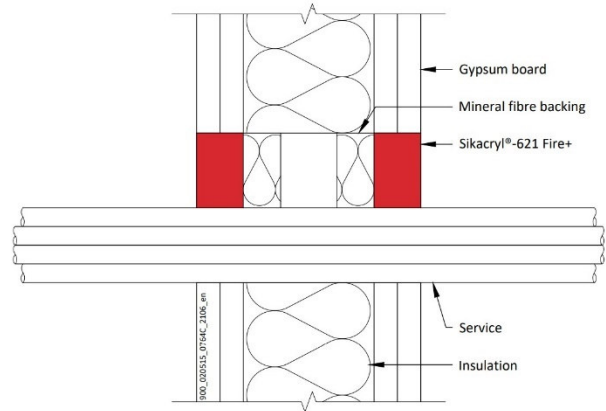
A.3.1 Double side penetration seal with cables

Penetration Seal: Cables (single or bundles up to 100 mm Ø) and conduits fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall.

Construction details:



Construction details:



A.3.1.1

Services	Sealant depth	Backing	Maximum aperture	Classification
None (blank)	12.5 mm	Stone wool 20 mm deep 35-140 kg/m ³	300 x 300 mm*	EI 120
Cables up to 21 mm Ø, single or in bundles up to 50 mm Ø	12.5 mm	Stone wool 12.5 mm deep min. 33 kg/m ³		E 120, EI 90
Electrical cables up to 21 mm Ø, single or in bundles up to 100 mm Ø	25 mm	Stone wool 20 mm deep min. 40 kg/m ³		EI 120
Electrical cables up to 80 mm Ø, single or in bundles up to 100 mm Ø		25 mm AES mineral fibre		E 120, EI 60
Single 'E cable' - 1 x 185 mm ² core HD603.3 electrical cable with PVC insulation, PVC sheath and 23-27 mm diameter	12.5 mm	Stone wool 20 mm deep min. 140 kg/m ³		E 120, EI 60

* Or 30 mm wide x 3000 mm high for cables up to 21 mm Ø

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Services	Sealant depth	Backing	Maximum Annular space	Classification
PVC-U pipe according to EN 1329-1, EN 1452-2 and EN 1453-1, PVC-C according to EN 1566-1				
Maximum diameter 40 mm, wall thickness 1.0-1.9 mm for PVC pipes, fully or partially filled conduits with cables up to 21 mm diameter	25 mm	none	30 mm	EI 120 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 40 mm, wall thickness 2.0-3.0 mm for PE pipes, fully or partially filled conduits with cables up to 21 mm diameter	25 mm	none	30 mm	EI 90 U/C
PP pipe according to EN 1852-1: 2009 or DIN 8077/8078				
Maximum diameter 40 mm, wall thickness 1.8-2.2 mm for PP pipes, fully or partially filled conduits with cables up to 21 mm diameter	25 mm	none	30 mm	EI 90 U/C

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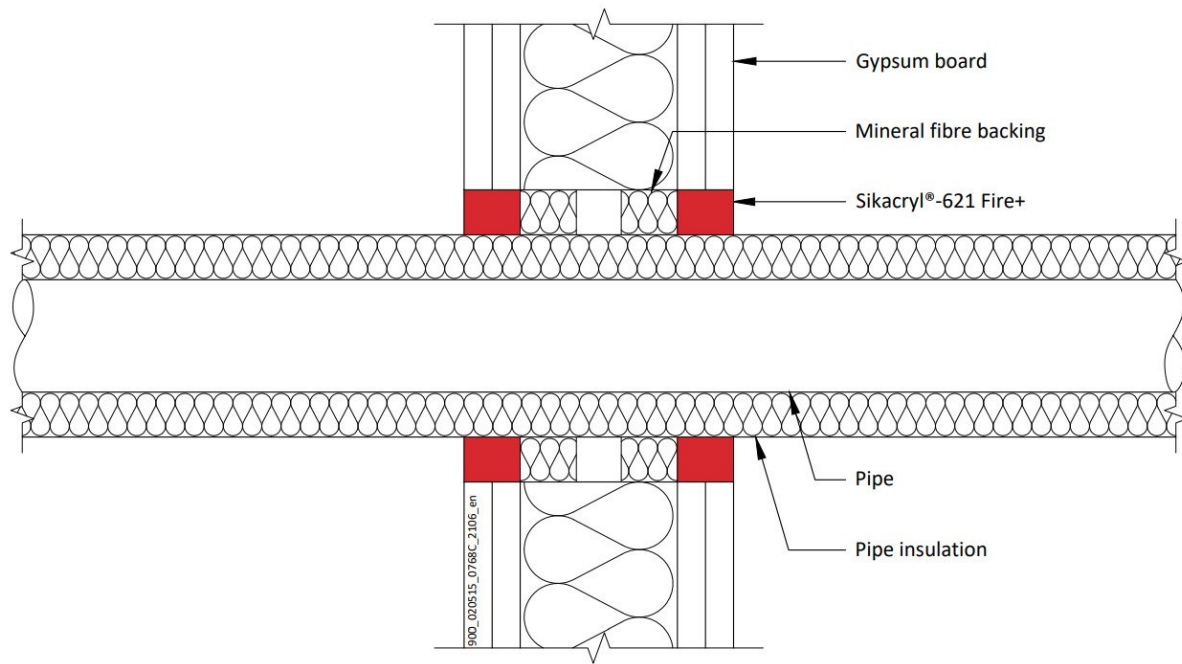
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A.3.2 Double side penetration seal with metallic pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, backed with stone wool insulation or 'AES mineral fibre', 300 x 300 mm maximum seal size.

Construction details:



A.3.2.1

Services	Sealant depth	Backing (minimum)	Insulation	Classification
Mild or stainless steel pipe				
22 mm diameter/3-10 mm wall	25 mm	Stone wool 25 mm deep 35 kg/m ³	None	EI 120 C/C
Maximum 165 mm diameter/ wall*	12.5 mm	12.5 mm stone wool 33 kg/m ³	9 mm Elastomeric insulation minimum class D-s3, d0	E 90 C/U EI 45 C/U
			13 -25 mm Elastomeric insulation minimum class D-s3, d0	EI 60 C/U
40 mm diameter/1-14.2 mm wall*	12.5 mm	20 mm Stone wool 40 kg/m ³	13 -19 mm Elastomeric insulation minimum class B-s3,d0	EI 120 C/C
40 mm diameter/1-14.2 mm wall*	25 mm	25 mm AES mineral fibre		E 120 C/C EI 60 C/C
50 mm diameter/1.3-14.2 mm wall*				
60 mm diameter/1.6-14.2 mm wall*				
75 mm diameter/2-14.2 mm wall*				
90 mm diameter/2.4-14.2 mm wall*				
100 mm diameter/2.7-14.2 mm wall*				
115 mm diameter/3.1-14.2 mm wall*				

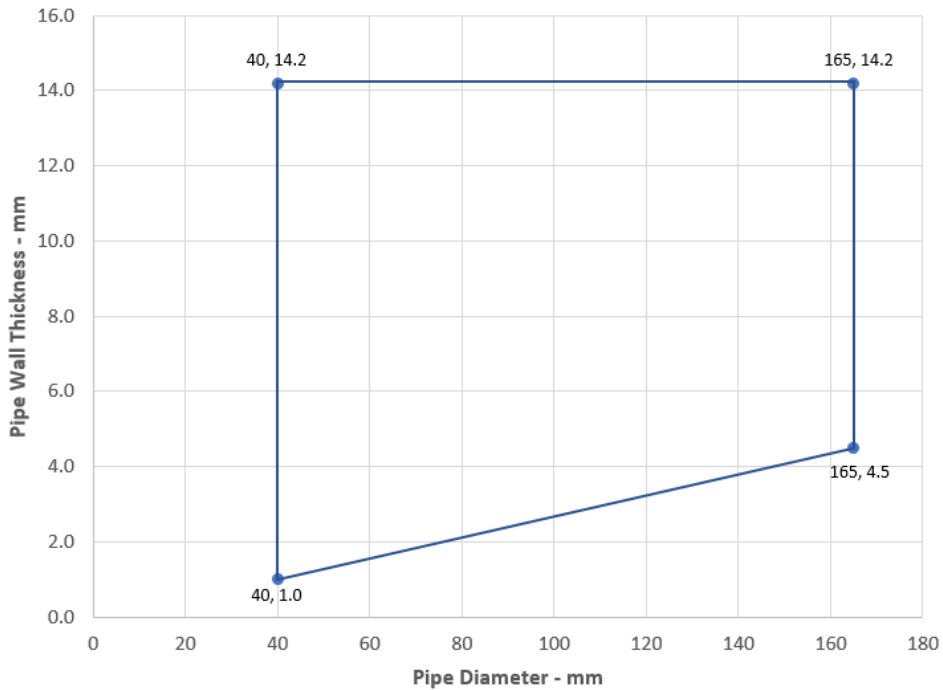
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140 mm diameter/3.8-14.2 mm wall*				
165 mm diameter/4.5-14.2 mm wall*				

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Elastomeric Insulation - C/U



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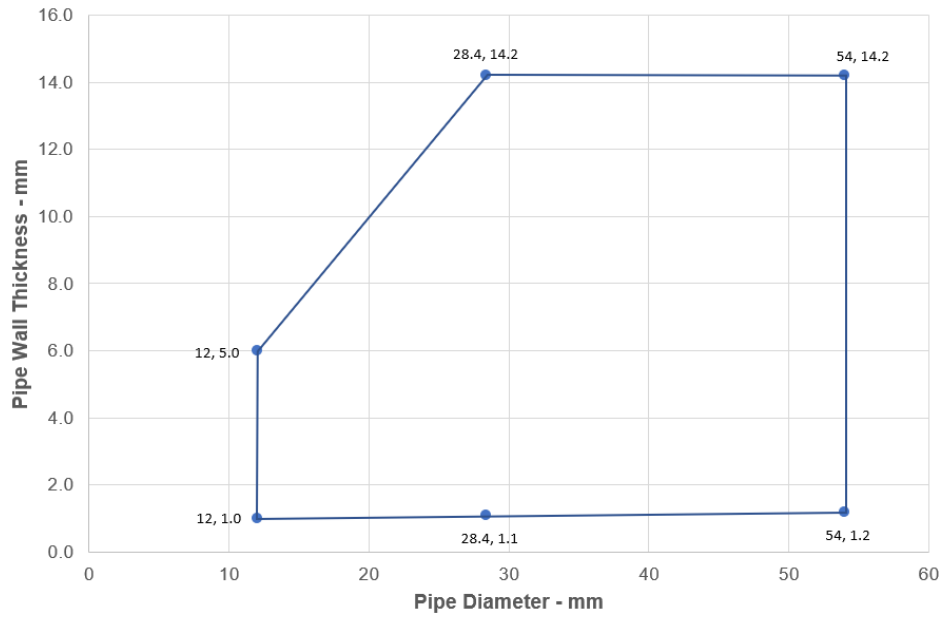
Services	Sealant depth	Backing	Insulation	Classification
Copper or steel pipe				
12 mm diameter/1-6 mm wall	25 mm	25 mm AES mineral fibre	9 mm Elastomeric insulation minimum class B-s3,d0	EI 120 C/C
12-54 mm diameter/1-14.2 mm wall*			9-13 mm Elastomeric insulation minimum class B-s3,d0	E 120 C/C, EI 60 C/C
12-54 mm diameter/1-14.2 mm wall*			13-25 mm Elastomeric insulation minimum class B-s3,d0	EI 60 C/C
Alupex Composite Pipe				
16 mm diameter/ wall*	12.5 mm	12.5 mm stone wool 33 kg/m ³	9 mm Elastomeric insulation minimum class D-s3, d0	E 120 C/C EI 90 C/C
Maximum 75 mm diameter/ wall*				13-24 mm Elastomeric insulation minimum class D-s3, d0
			25 mm Elastomeric insulation minimum class D-s3, d0	
16 mm diameter/2.25 mm wall			25 mm	25 mm AES mineral fibre
16 mm diameter/2.25 mm wall	9-25 mm Elastomeric insulation minimum class B-s3,d0	EI 60 C/C		
20 mm diameter/2.5 mm wall				
26 mm diameter/3 mm wall				
32 mm diameter/3 mm wall				
40 mm diameter/3.5 mm wall				
50 mm diameter/4 mm wall				
63 mm diameter/4.5 mm wall				
75 mm diameter/4.7 mm wall				

* Typical pipe diameters shown, see below graph for intermediate sizes

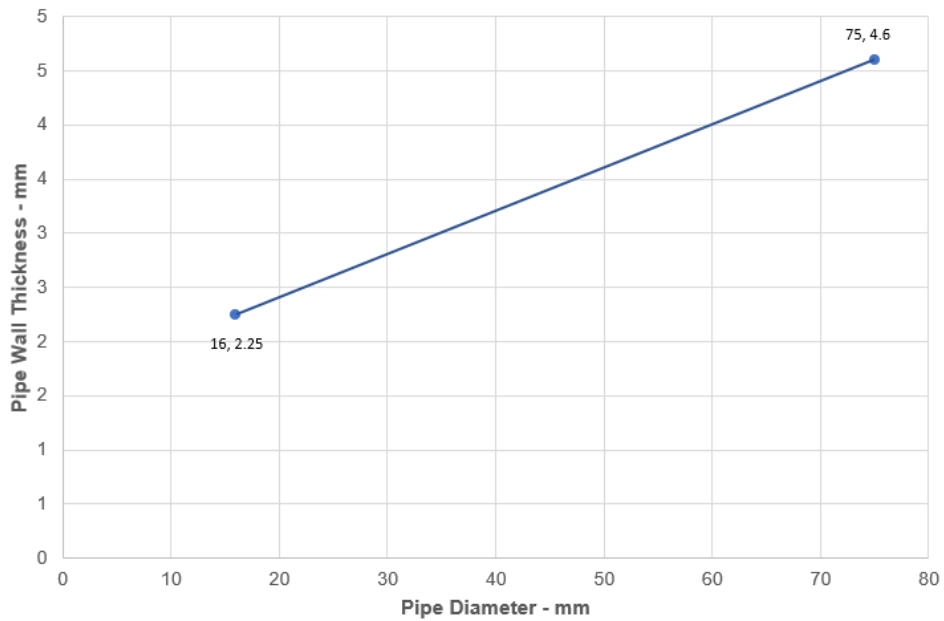
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Copper or Steel Pipes with Elastomeric Insulation - C/C



Alupex Pipes with Elastomeric Insulation - C/C



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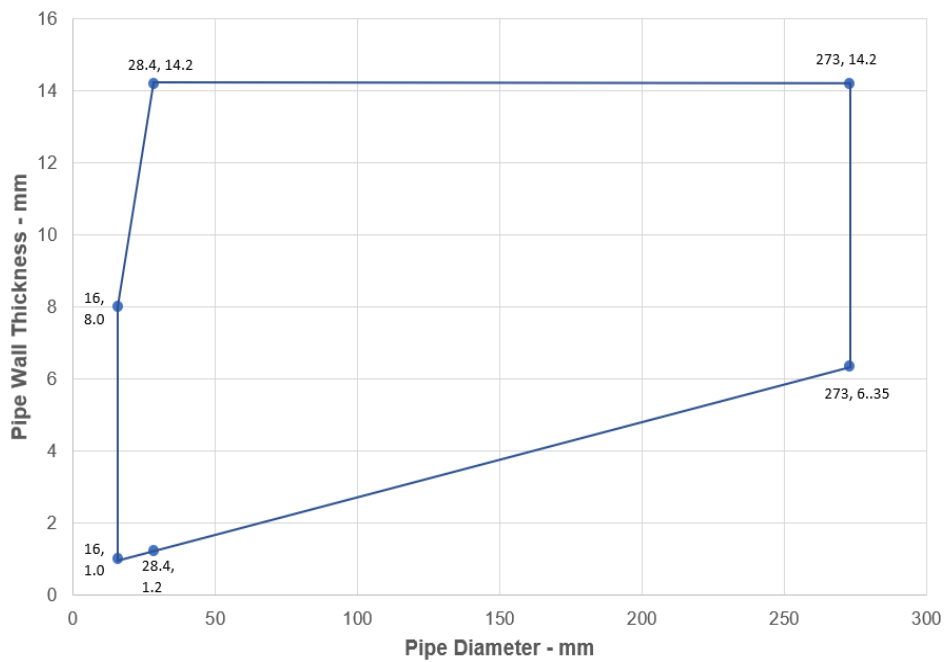


A.3.2.1

Services	Sealant depth	Backing (minimum)	Insulation	Classification
Mild or stainless steel pipe				
16 mm diameter/ wall*			15 mm thick phenolic insulation	EI 90 C/U
	25 mm	None	25 mm thick phenolic insulation	E 90 C/U, EI 60 C/U
Maximum 273 mm/ wall*			26-100 mm thick phenolic insulation	EI 60 C/U

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Phenolic Insulation - C/U



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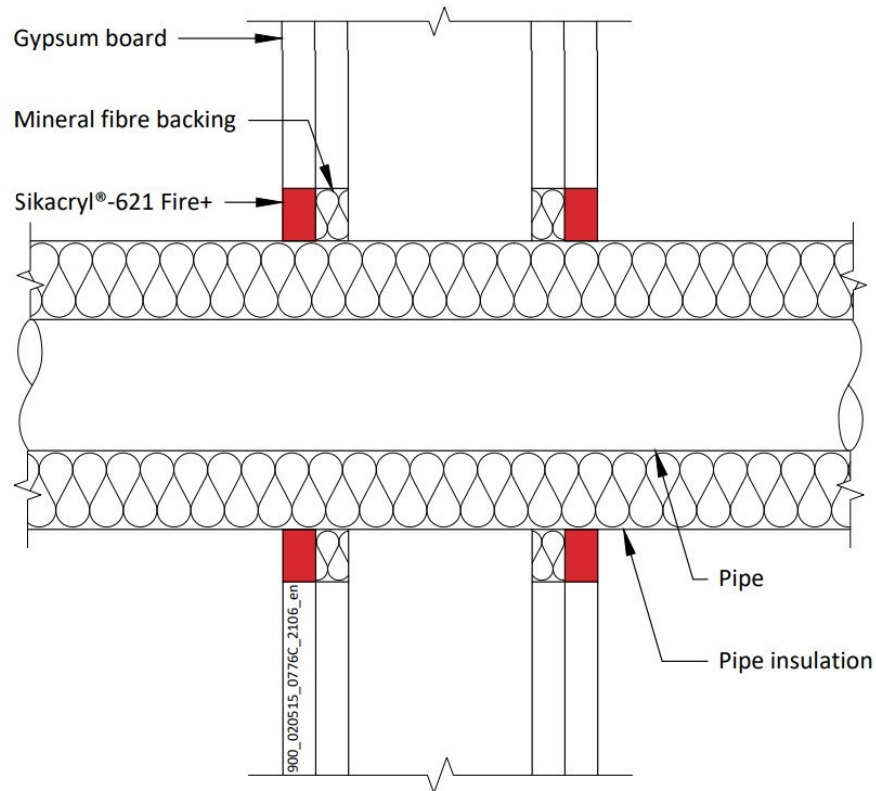
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A.3.3 Double side penetration seal with metallic pipes

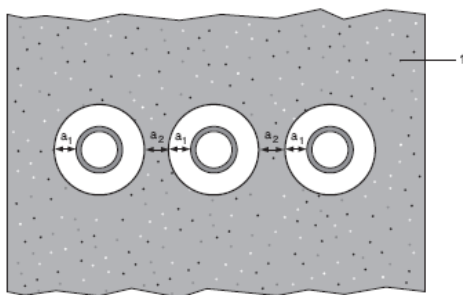
Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with 12.5 mm Sikacryl-621 Fire+ to both sides of the wall, backed with 12.5 mm deep stone wool insulation minimum 35 kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2). Maximum seal size 300 x 300 mm / 504 mm Ø

Construction details:



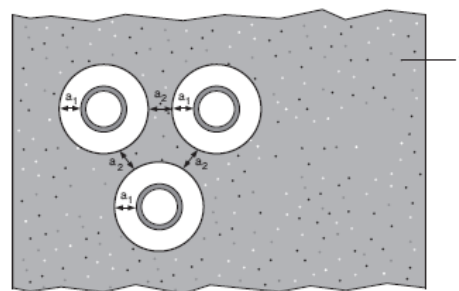
Configuration 1

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

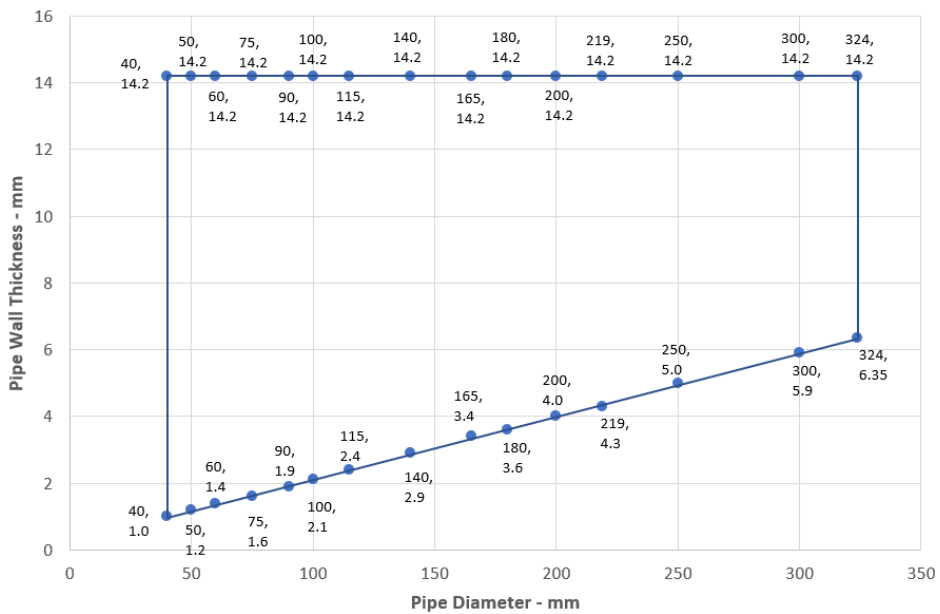
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A.3.3.1 Double side penetration seal with pipes

Services	Insulation	Classification
Mild or stainless steel pipe		
40 mm diameter/1-14.2 mm wall	20 mm thick stone, mineral wool min. 80 kg/m ³	E 120 C/U EI 90 C/U
40 mm diameter/1-14.2 mm wall*	30-80 mm thick stone, mineral wool min. 80 kg/m ³	
50 mm diameter/1.2-14.2 mm wall*		
60 mm diameter/1.4-14.2 mm wall*		
75 mm diameter/1.6-14.2 mm wall*		
90 mm diameter/1.9-14.2 mm wall*		
100 mm diameter/2.1-14.2 mm wall*		
115 mm diameter/2.4-14.2 mm wall*		
140 mm diameter/2.9-14.2 mm wall*		
165 mm diameter/ 3.4-14.2 mm wall*		
180 mm diameter/ 3.6-14.2 mm wall*		
200 mm diameter/ 4.0-14.2 mm wall*		
219 mm diameter/ 4.3-14.2 mm wall*		
250 mm diameter/ 5.0-14.2 mm wall*		
300 mm diameter/ 5.9-14.2 mm wall*		
324 mm diameter/ 6.35-14.2 mm wall*		

Steel Pipes with Mineral Wool Insulation - C/U



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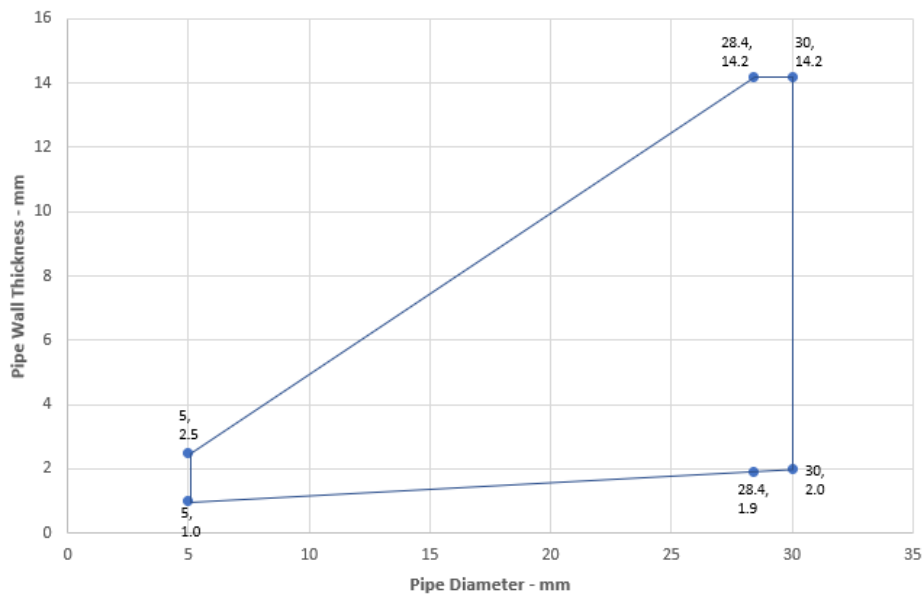
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Services	Insulation	Classification
PEX pipe in pipe system		
15 mm diameter x 2.5 mm wall inner /25mm diameter outer	None	EI 120 C/C
Alupex pipe		
16-20 mm diameter/2.0 mm wall	None	EI 120 C/C
16-75 mm diameter/2.25-4.6 mm	20-50 mm thick glass wool or stone, mineral wool min. 75 kg/m ³	EI 120 C/C
Mild or Stainless Steel pipe		
4 mm diameter/1.0-2.0 mm wall	None	EI 90 C/C
5-30 mm diameter/1.0-14.2 mm wall*		EI 120 C/U
30 mm diameter/2.0-14.2 mm wall		
Copper or Steel pipe		
6-12 mm diameter/0.7-6.0 mm wall*	None	E 90 C/C, EI 60 C/C
13-22 mm diameter/0.7-11 mm wall*		E 90 C/C, EI 30 C/C
12-54 mm diameter/0.9-14.2 mm wall*	20-80 mm thick stone, mineral wool min. 80 kg/m ³	E 120 C/C, EI 60 C/C

* See below graphs for interpolated pipe sizes

Steel Pipes - C/C



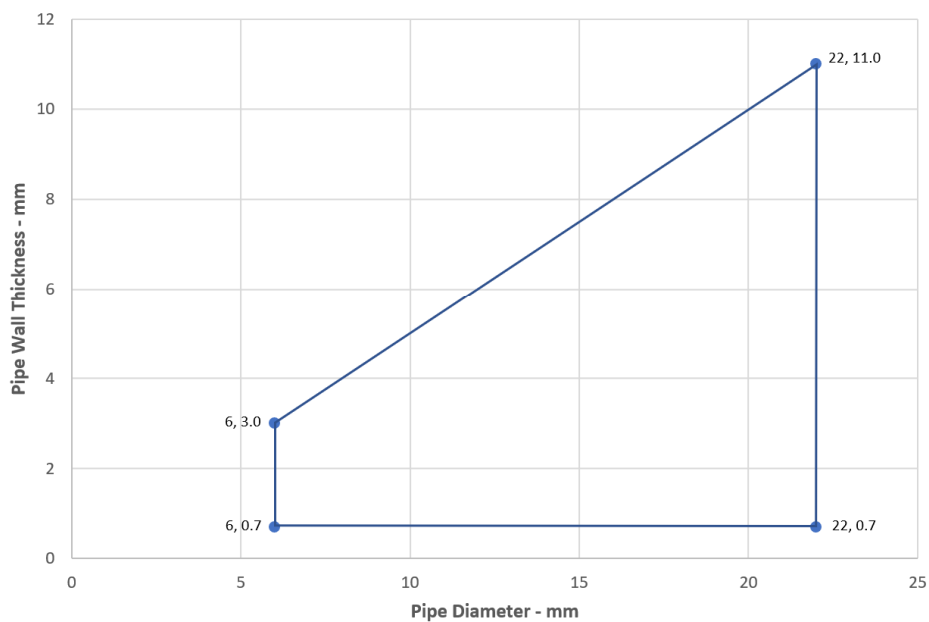
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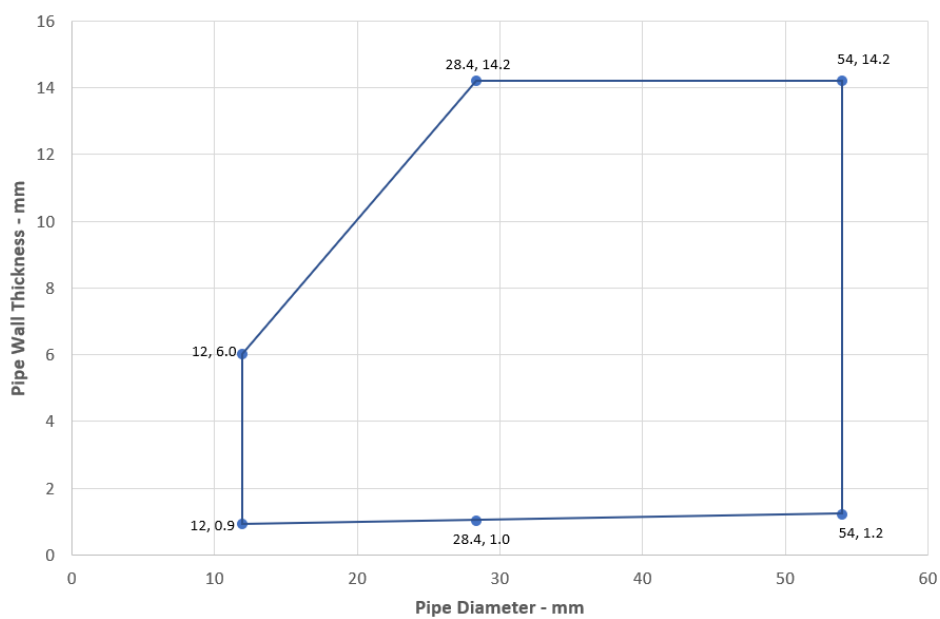
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Copper or Steel Pipes - C/C



Copper or Steel Pipes with Mineral Wool Insulation - C/C



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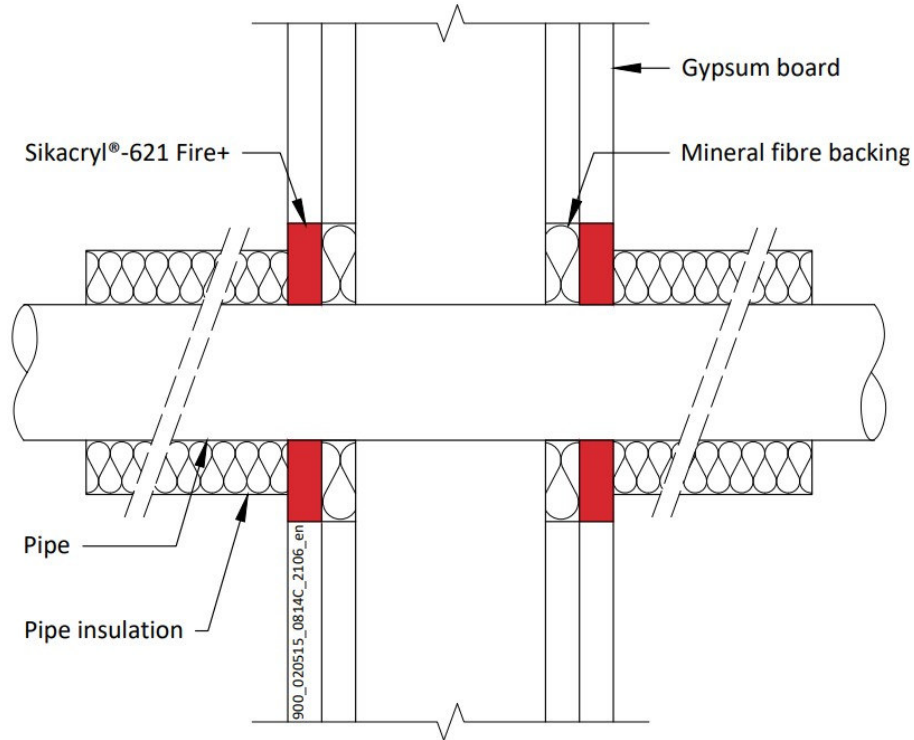
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A.3.4 Double side penetration seal with composite pipes

Penetration Seal: CI (Continuous Interrupted) or CS (Continuous Sustained) insulated composite pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, minimum 10 mm seal width around service, maximum seal size 300 x 300 mm, backed with stonewool.

Construction details:



A.3.4.1

Services	Sealant depth	Backing (minimum)	Insulation (minimum)	Classification
Alupex Composite Pipe				
16 mm diameter/2.25 mm wall	12.5 mm	12.5 mm stonewool 40 kg/m ³	20 mm stonewool 80 kg/m ³ , 500 mm length from both sides of the seal	EI 120 C/C
20 mm diameter/2.5 mm wall				
26 mm diameter/3 mm wall				
32 mm diameter/3 mm wall				
40 mm diameter/3.5 mm wall				
50 mm diameter/4 mm wall				
63 mm diameter/4.5 mm wall				
75 mm diameter/4.7 mm wall				

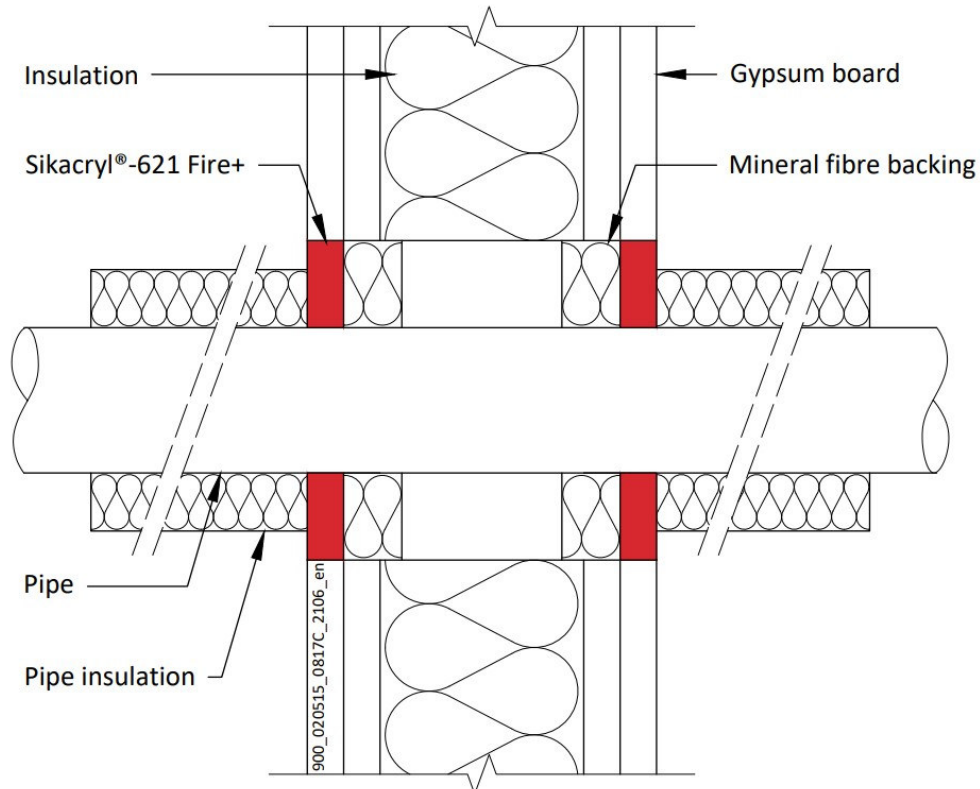
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A.3.5 Double side penetration seal with metallic (and composite) pipes

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 Sikacryl-621 Fire+ to both sides of the wall, min. 10 mm seal width around service, backed with stone wool insulation or 'AES mineral fibre'.

Construction details:



A.3.5.1

Services	Sealant depth	Backing (minimum)	Insulation (minimum)	Classification
Maximum aperture size 300 x 300 mm				
Copper or steel pipe up to 54 mm diameter/1-14.2 mm wall	12.5 mm	20 mm Stone wool 40 kg/m ³	500 mm length of 20 mm stone wool 80 kg/m ³	EI 120 C/U
Alupex composite pipe 75 mm diameter/7.5 mm wall		20 mm Stone wool 140 kg/m ³	600 mm length of 25 mm AES mineral fibre	EI 60 C/U

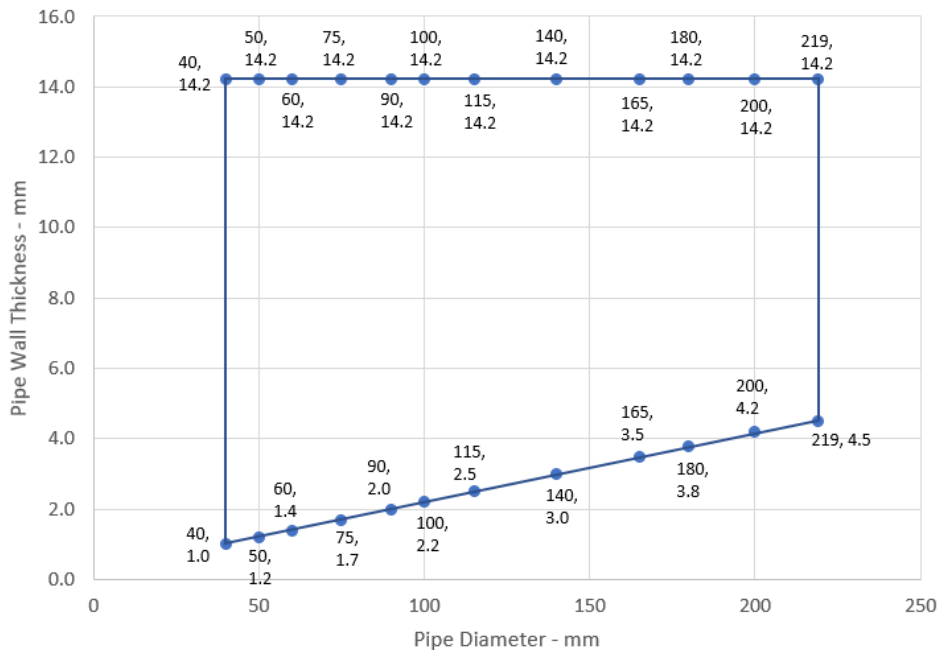
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Services	Sealant depth	Backing (minimum)	Insulation (minimum)	Classification
Mild or stainless steel pipe				
Maximum aperture size 300 x 300 mm				
40 mm diameter/1-14.2 mm wall	12.5 mm	20mm Stone wool 40 kg/m ³	500 mm length of 20 mm stone wool 80 kg/m ³	EI 120 C/U
40 mm diameter/1-14.2 mm wall*			500 mm length of 30 mm stone wool 80 kg/m ³	
50 mm diameter/1.2-14.2 mm wall*				
60 mm diameter/1.4-14.2 mm wall*				
75 mm diameter/1.7-14.2 mm wall*				
90 mm diameter/2-14.2 mm wall*				
100 mm diameter/2.2-14.2 mm wall*				
115 mm diameter/2.5-14.2 mm wall*			12.5 mm	20mm Stone wool 40 kg/m ³
140 mm diameter/3-14.2 mm wall*				
165 mm diameter/3.5-14.2 mm wall*				
180 mm diameter/3.8-14.2 mm wall*				
200 mm diameter/4.2-14.2 mm wall*	12.5 mm	20mm Stone wool 40 kg/m ³	500 mm length of 30 mm stone wool 80 kg/m ³	E 120 C/U, EI 90 C/U
219 mm diameter/4.5-14.2 mm wall*				

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Mineral Wool Insulation - C/U



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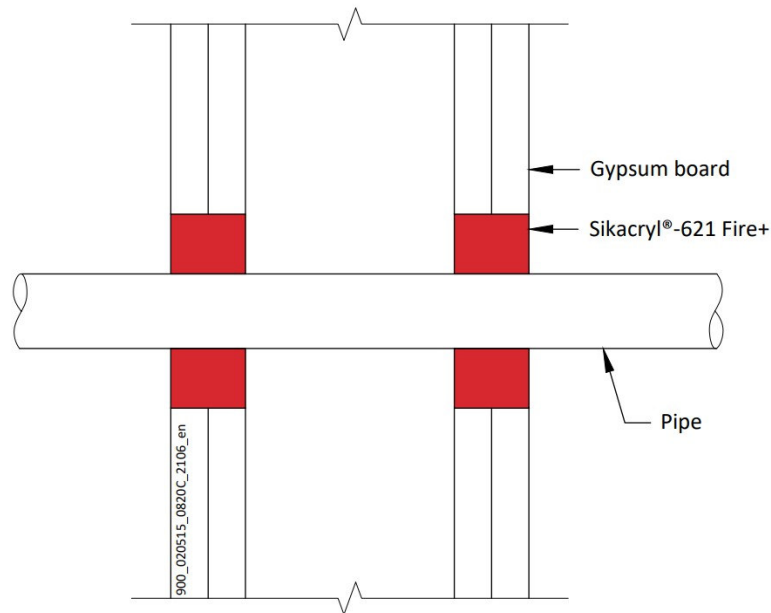
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A.3.6 Double side penetration seal with plastic pipes

Penetration Seal: Combustible pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, Minimum annular space 10 mm and minimum separation between penetration seals 30 mm (A2).

Construction details:



A.3.6.1

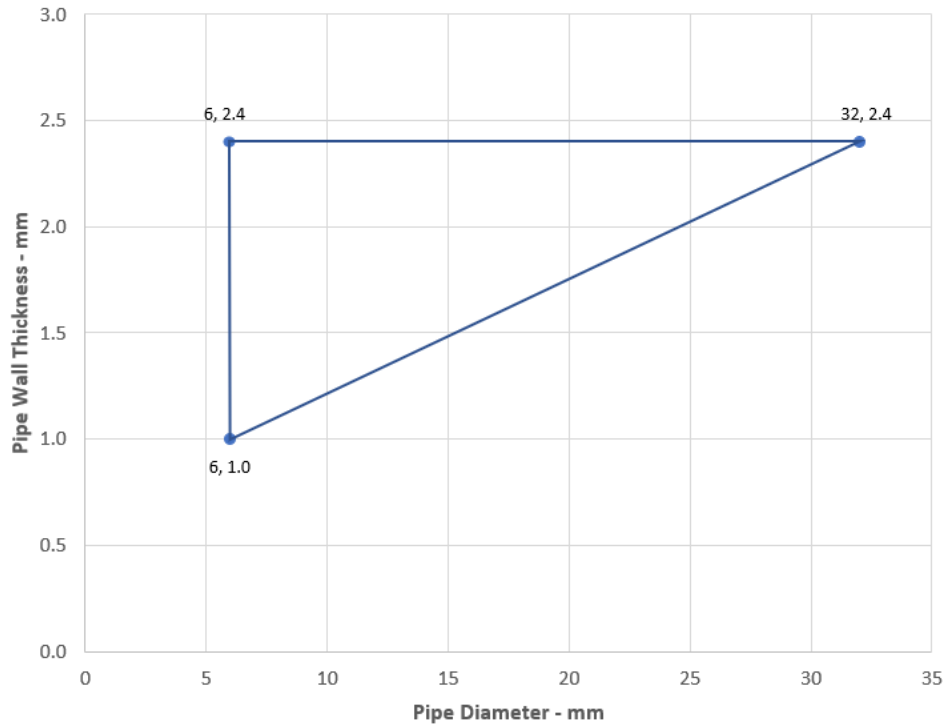
Pipe material	Sealant depth	Pipe size	Maximum Annular space	Classification
PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1	25 mm	6-32 mm \varnothing /1.0-2.4 mm wall*	10 mm	EI 120 U/C
		6-32 mm \varnothing /1.0-1.6 mm wall	30 mm	E 120 U/C, EI 90 U/C
20 mm \varnothing /2.2 mm wall		EI 120 C/C		
PP pipe according to EN 1451-1 or DIN 8077/8078		20 mm \varnothing /2.2-4.4 mm wall	30 mm	EI 120 U/C
		20-32 mm \varnothing /1.8-4.4 mm wall	30 mm	EI 60 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 mm \varnothing /2.0 mm wall	30 mm	EI 60 C/C
		20-32 mm \varnothing /2.0-3.0 mm wall	30 mm	EI 120 U/C
Uponor Wirsbo PEX pipe in pipe system according to ISO 15875			Diameter up to 54 mm/0.4 mm wall thickness (outer pipe), 28 mm diameter/4.0 mm wall thickness (inner pipe)	30 mm
				E 60 C/C, EI 45 C/C

* See below graphs for interpolated pipe sizes

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PVC-U Pipes - U/C



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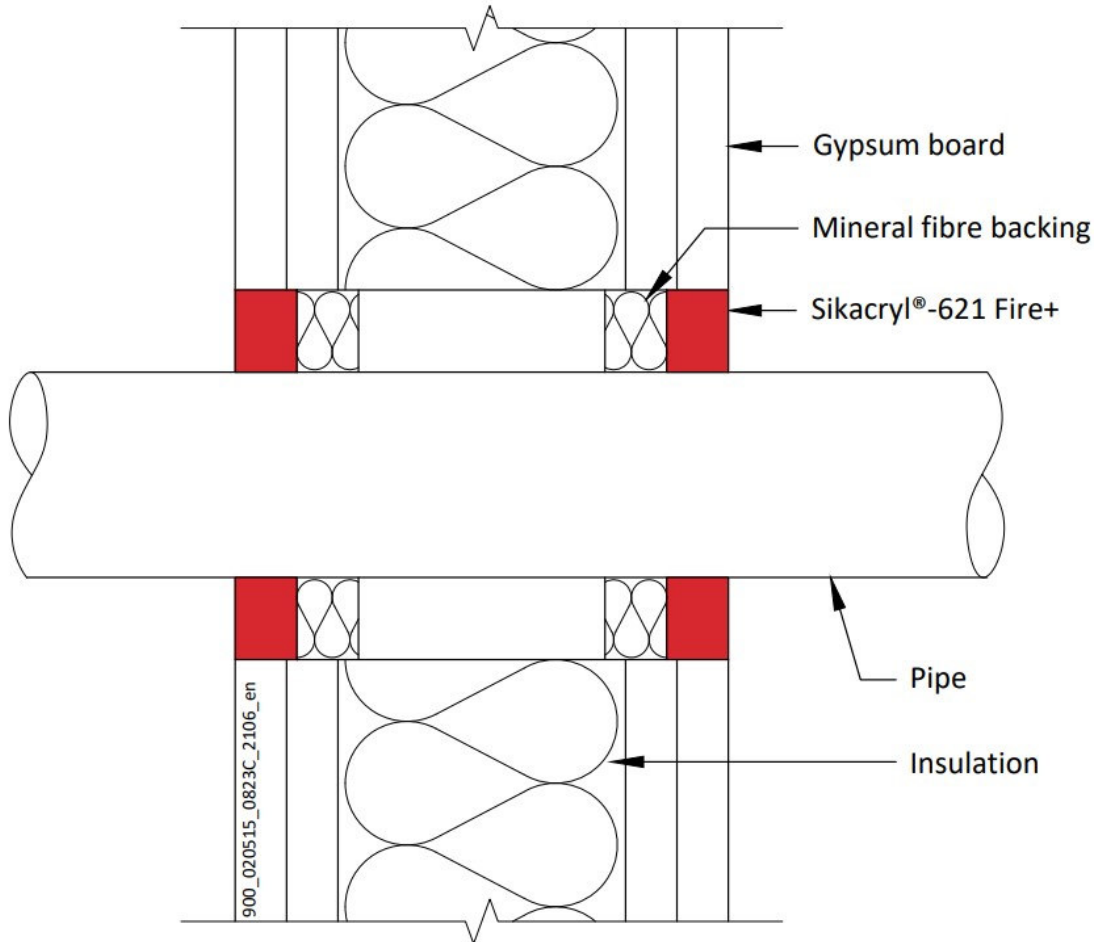


A.4 Flexible and rigid wall constructions according to 2.2) with wall thickness of minimum 120 mm

A.4.1 Double side penetration seal with cables

Penetration Seal: Non-insulated metallic pipes (single) fitted at any position within the aperture, with 15 mm deep Sikacryl-621 Fire+ to both sides of the wall, backed with stone wool insulation.

Construction details:



A.4.1.1

Services	Sealant depth	Backing	Classification
Mild or stainless steel pipe			
30 -324 mm diameter /1.6-14.2 mm wall	15 mm	15 mm stone wool	E 120 C/U
Copper or steel pipe			
12 -54 mm diameter /0.9-14.2 mm wall	15 mm	15 mm stone wool	E 120 C/C
Alupex Pipe			
16-75 mm diameter/2.0-4.6 mm wall	15 mm	15 mm stone wool	E 120 C/C, EI 30 C/C

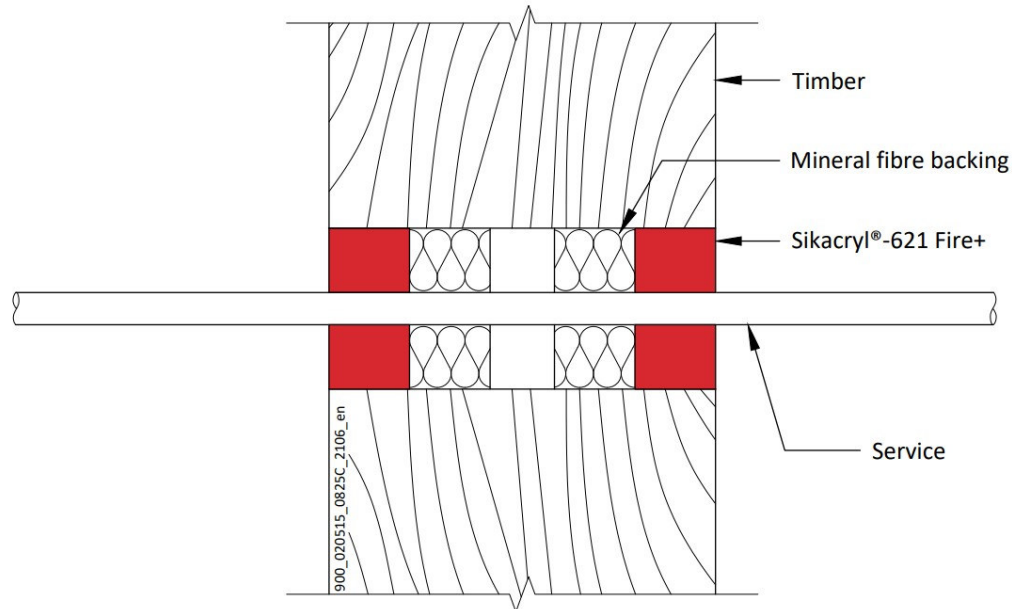
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A.5 Timber wall constructions with wall thickness of minimum 100 mm

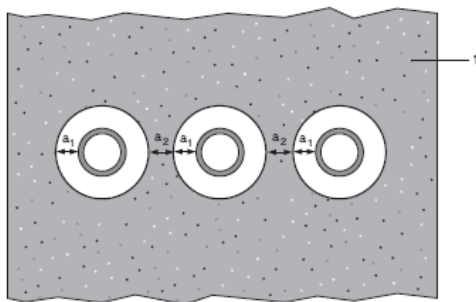
A.5.1 Double side penetration seal with cables

Penetration Seal: Cables fitted at any position within the aperture, sealed with Sikacryl-621 Fire+, minimum 25 mm deep to both sides of the wall and backed with stone wool insulation (minimum 33kg/m³), minimum 25 mm deep. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

1 Supporting construction

a1 Pipe / edge of seal separation (annular space)

a2 Separation between penetration seals

A.5.1.1

Services	Sealant depth	Backing	Maximum aperture	Classification
None (blank)	25 mm	Stone wool 25 mm deep min. 33kg/m ³	Ø 180 mm	EI 120
Cables up to 14 mm Ø, single or in bundles up to 100 mm Ø				EI 90
Cables up to 21 mm Ø, single or in bundles up to 100 mm Ø				E 90, EI 30
Cables up to 50 mm Ø, single or in bundles up to 100 mm Ø				E 90, EI 30
Telecom cables up to 14 mm Ø, single or in bundles up to 100 mm Ø				E 90, EI 60

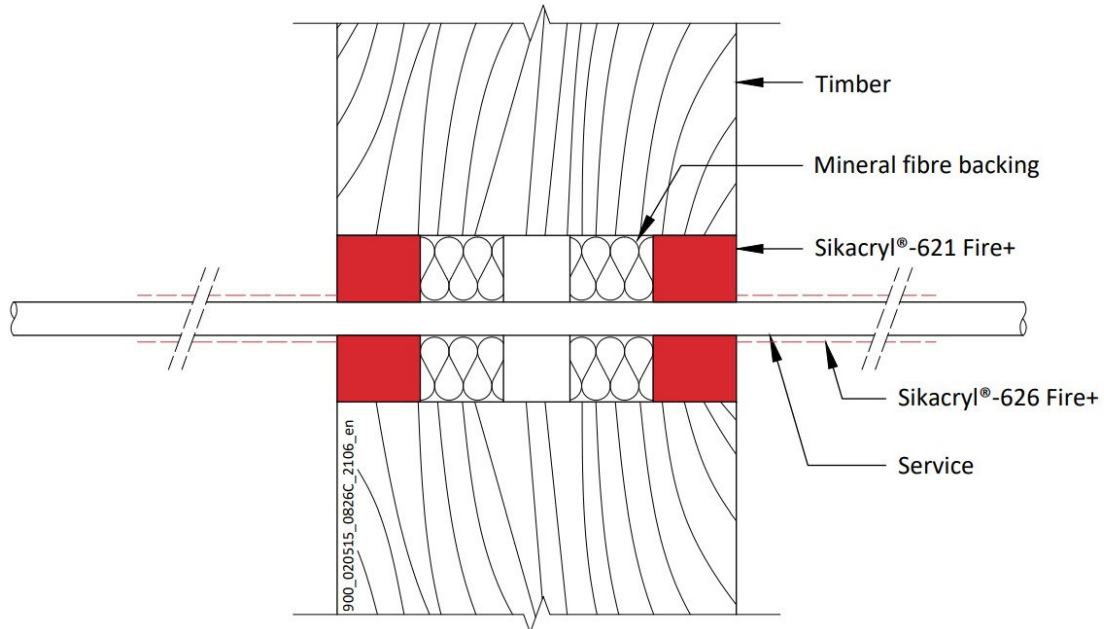
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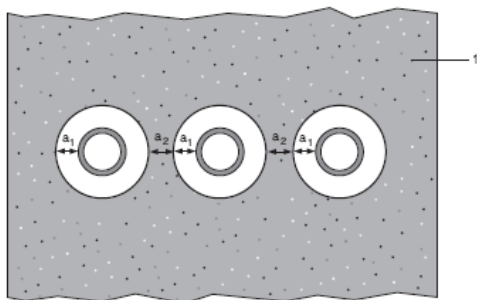
A.5.2 Double side penetration seal with cables and Sikacryl®-626 Fire+

Penetration Seal: Cables fitted at any position within the aperture with Sikacryl®-626 Fire+, sealed with Sikacryl®-621 Fire+, minimum 25 mm deep to both sides of the wall and backed with stone wool insulation (minimum 33kg/m³), minimum 25 mm deep. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

A.5.2.1

Services	Sealant depth	Backing	Maximum aperture	Insulation, minimum	Classification
None (blank)	25 mm	Stone wool 25 mm deep min. 33kg/m ³	Ø 180 mm	Sikacryl®-626 Fire+, 260-micron DFT extending 150 mm from both sides of the seal	EI 120
Cables up to 21 mm Ø, single					EI 90
Cables up to 50 mm Ø, single or in bundles up to 100 mm Ø					E 90, EI 60

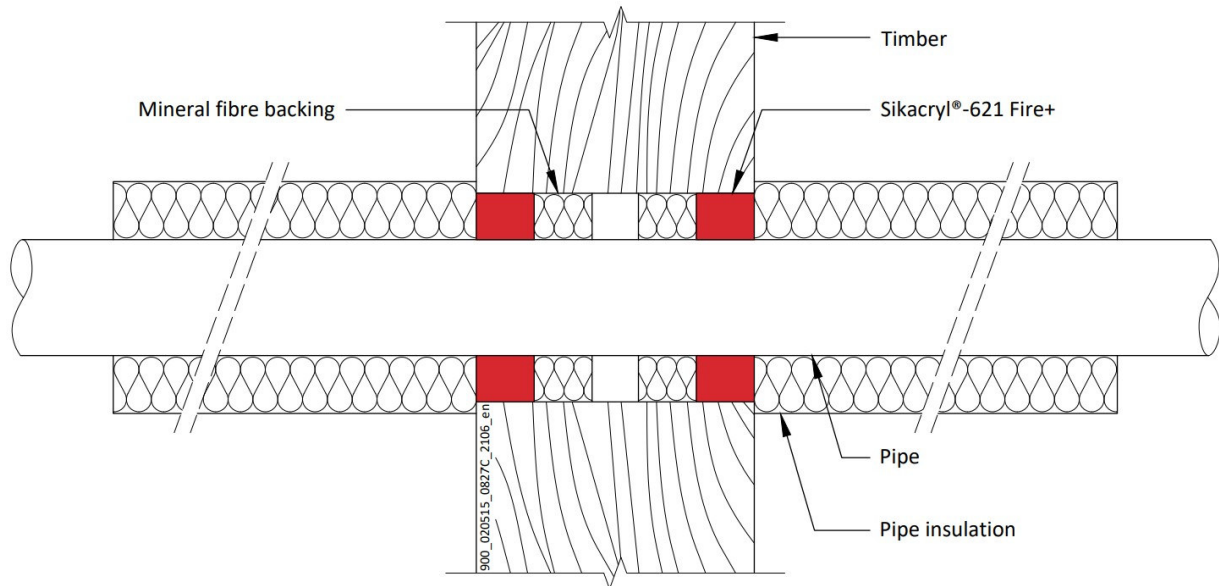
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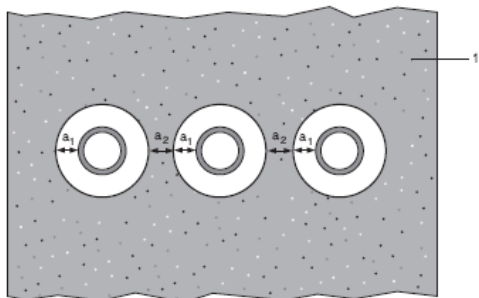
A.5.3 Double side penetration seal with metallic pipes

Penetration Seal: 500 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic pipes and composite pipes (single) with glass wool or stone, mineral wool min. 75 kg/m³, fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, backed with stone wool insulation (minimum 33kg/m³), minimum 25 mm deep. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

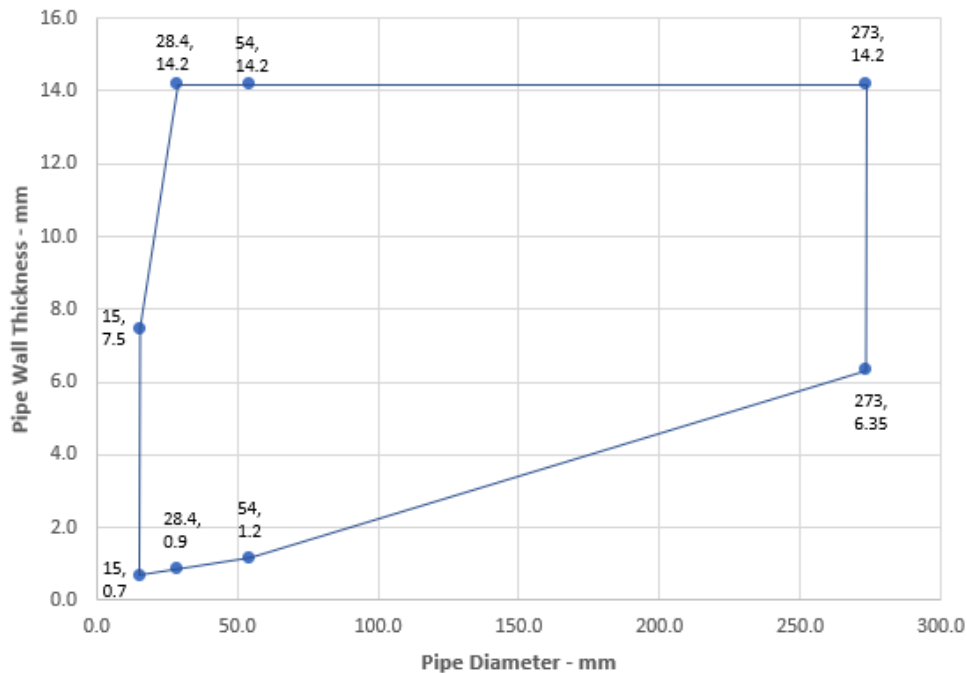
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A.5.3.1

Services	Maximum aperture	Sealant depth	Backing	Insulation, minimum	Classification
Mild or stainless steel pipe					
Maximum 273 mm diameter /6.35-14.2 mm wall*	Ø 293 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	25 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	E 90 C/C, EI 60 C/C
Copper or steel pipe					
Maximum 54 mm diameter /1.2-14.2 mm wall*	Ø 180 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	20 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	E 90 C/C, EI 60 C/C
Alupex Pipe					
Maximum 75 mm diameter/wall 2.25-4.6 mm wall*	Ø 180 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	25 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	EI 90 C/C

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Glass Wool or Mineral Wool Insulation - C/C



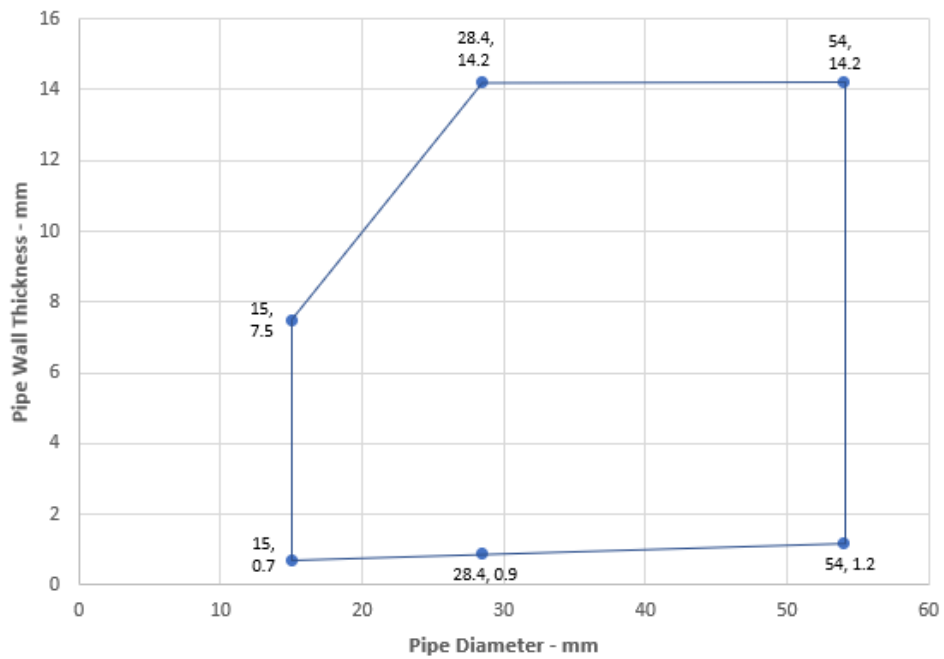
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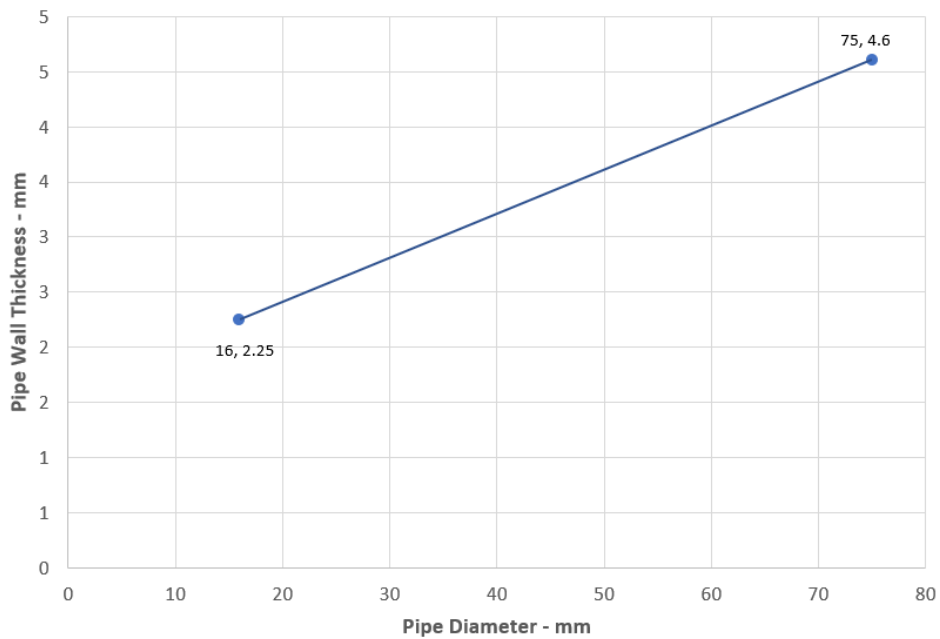
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Copper or Steel Pipes with Glass Wool or Mineral Wool Insulation - C/C



Alupex Pipes with Glass Wool or Mineral Wool Insulation - C/C



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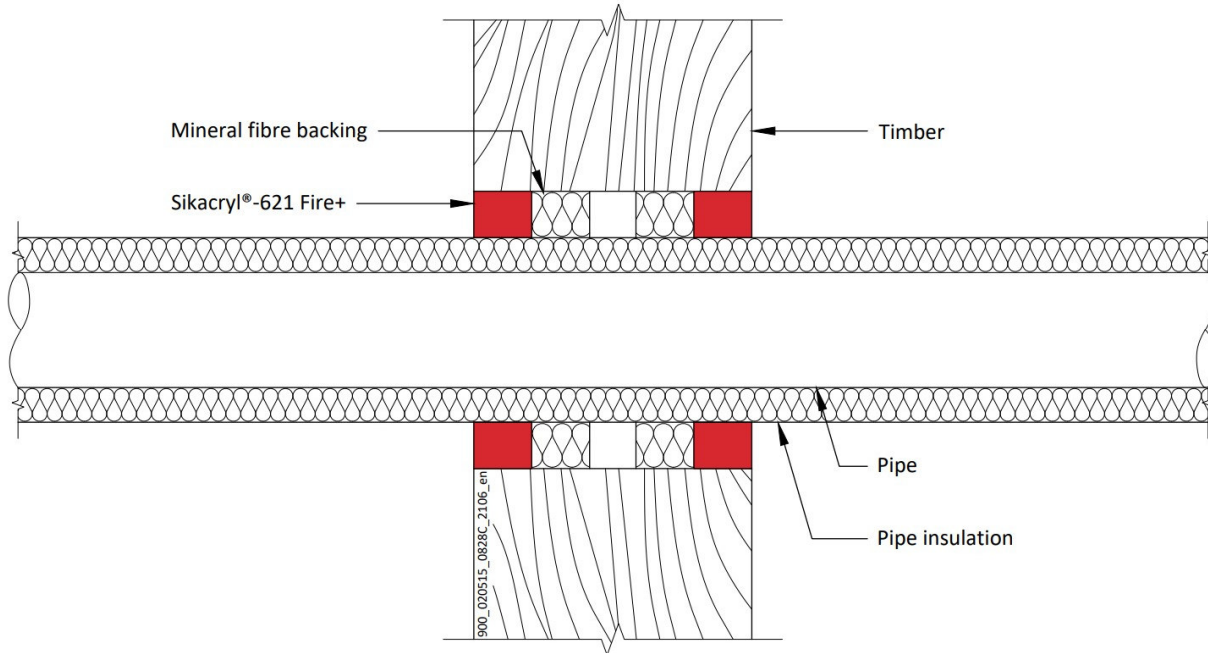
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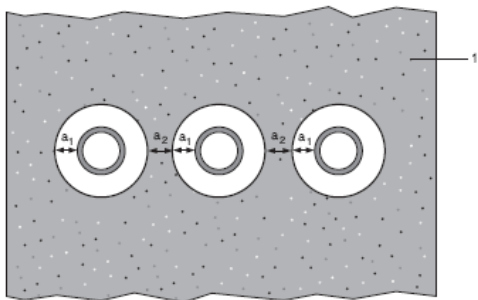
A.5.4 Double side penetration seal with metallic pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, min. 10 mm seal width around service, backed with stone, mineral wool min. 33 kg/m³. Minimum annular space 10 mm and maximum 30 mm (a1), and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

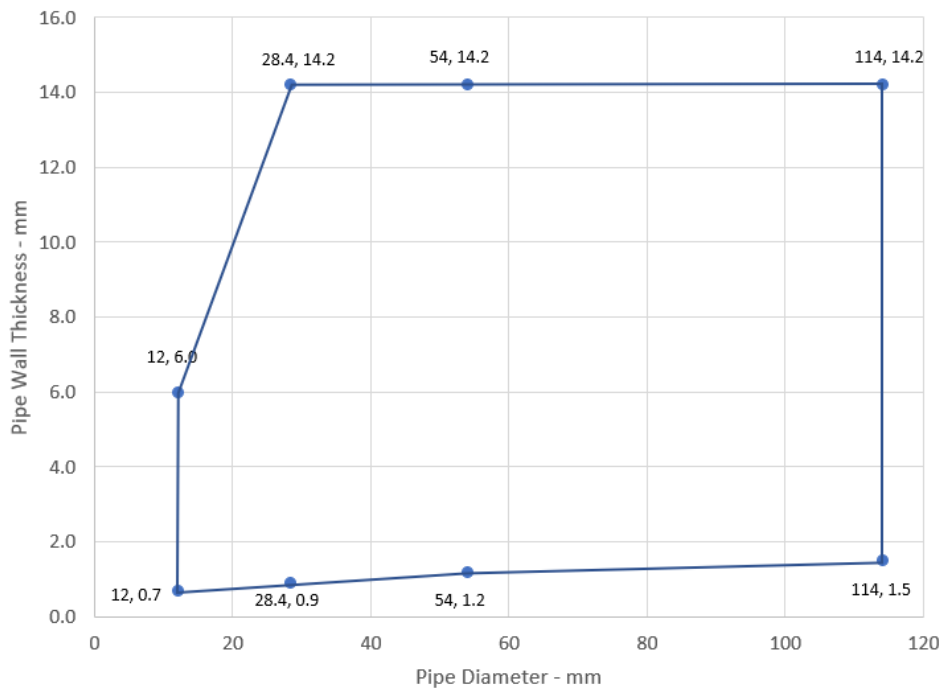
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A.5.4.1

Services	Sealant depth	Backing	Insulation, minimum	Classification
Mild or stainless steel pipe				
Maximum 114 mm diameter /1.5-14.2 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	9-25 mm Elastomeric insulation minimum class D-s3, d0	EI 30 C/U
Copper or steel pipe				
Maximum 12 mm diameter /0.7-6 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	9 mm Elastomeric insulation minimum class D-s3, d0	E 90 C/C, EI 60 C/C
Maximum 54 mm diameter /1.2-14.2 mm wall*			10-25 mm Elastomeric insulation minimum class D-s3, d0	E 60 C/C, EI 30 C/C
Maximum 54 mm diameter /1.2-14.2 mm wall*				E 30 C/C, EI 20 C/C
Alupex Pipe				
Maximum 16 mm diameter/wall 2.25 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	9 mm Elastomeric insulation minimum class D-s3, d0	EI 90 C/C
Maximum 75 mm diameter/wall 4.6 mm wall*			10-25 mm Elastomeric insulation minimum class D-s3, d0	E 60 C/C, EI 45 C/C
Maximum 75 mm diameter/wall 4.6 mm wall*				EI 45 C/C

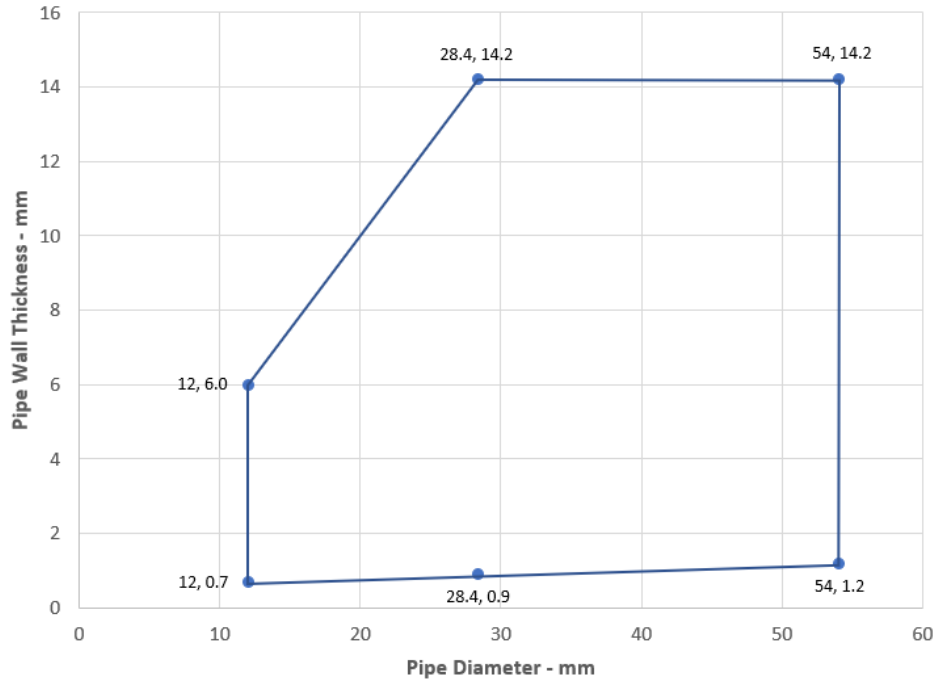
* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Elastomeric Insulation - C/C

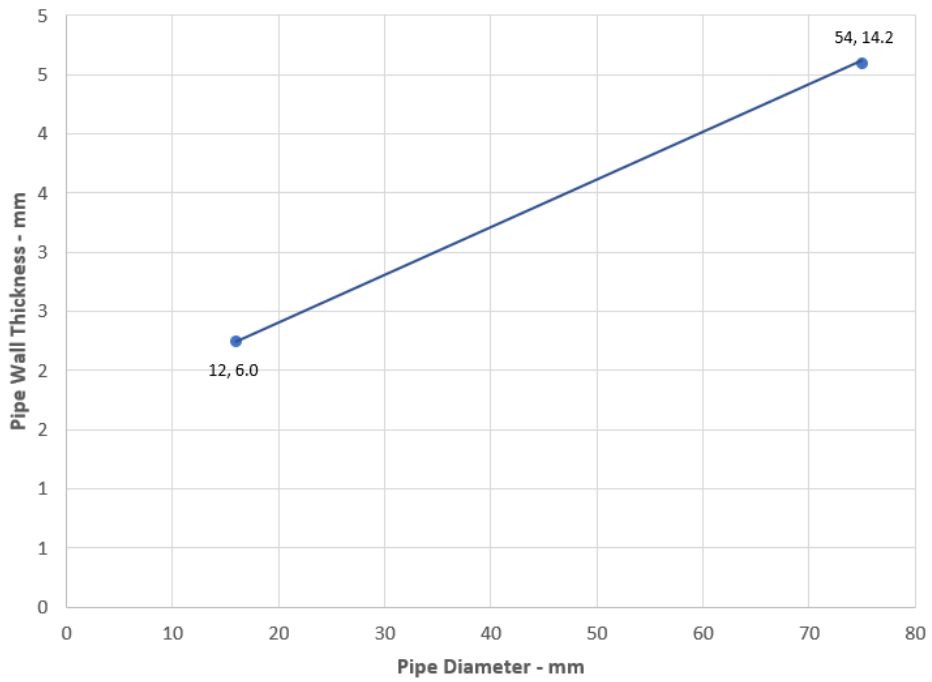


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Copper or Steel Pipes with Elastomeric Insulation - C/C



Alupex Pipes with Elastomeric Insulation - C/C



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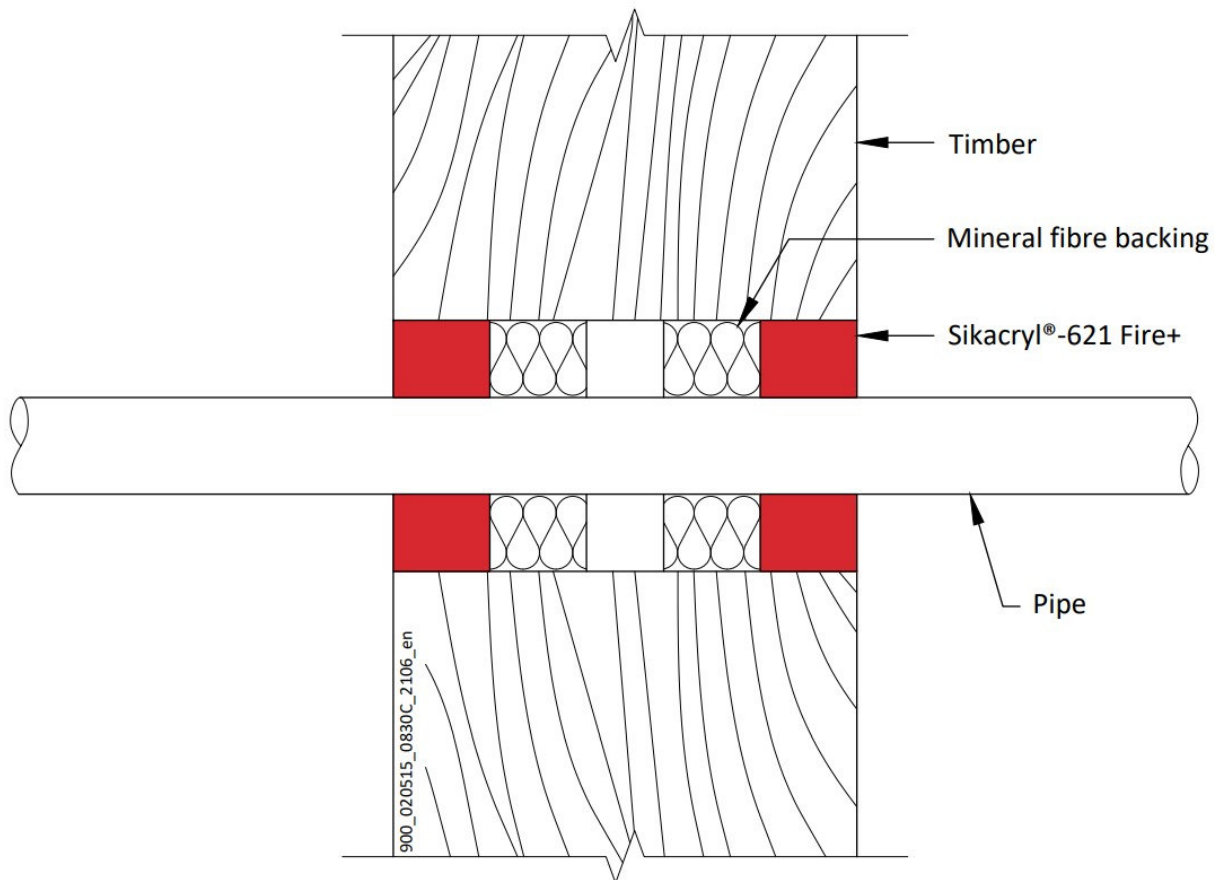
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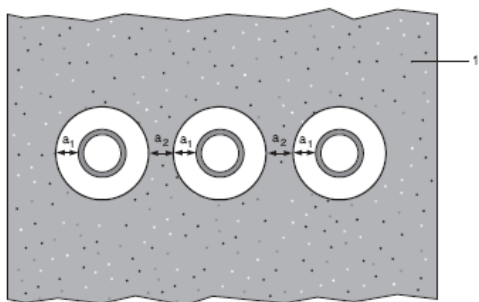
A.5.5 Double side penetration seal with plastic pipes and composite pipes

Penetration Seal: Plastic and composite pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the wall, backed with stone, mineral wool min. 33 kg/m³. Minimum annular space 10 mm and maximum 30 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

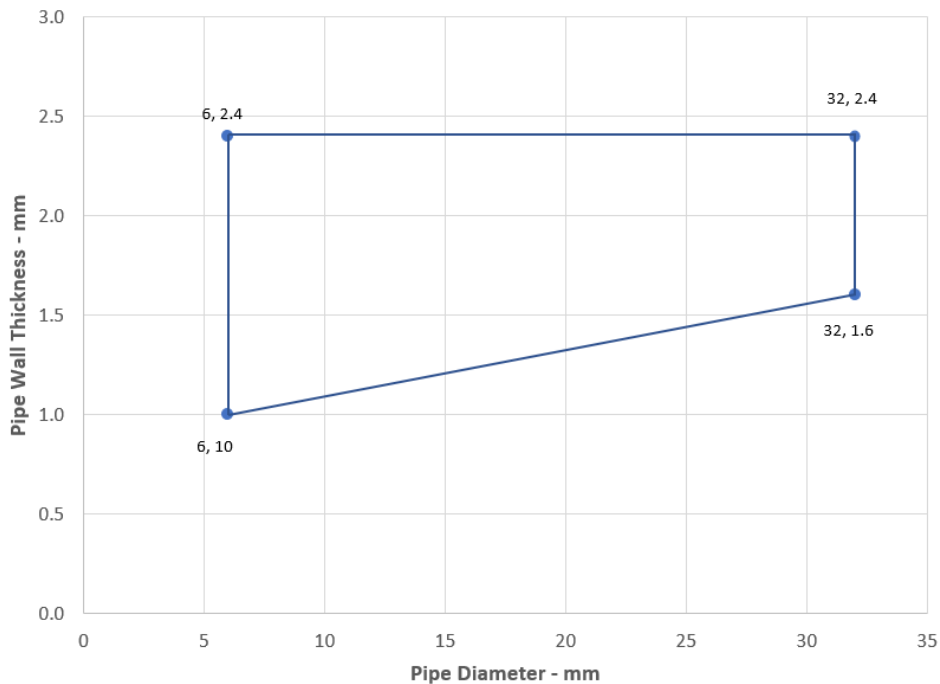
- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals

A.5.5.1

Services	Sealant depth	Backing	Classification
PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1			
Maximum 32 mm diameter/1.0-2.4 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 90 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			
Maximum 32 mm diameter/2.0-3.0 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 90 U/C
PP pipe according to EN 1451-1 or DIN 8077/8078			
Maximum 32 mm diameter/1.8-4.4 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 90 U/C
PEX pipe in pipe system			
25 mm diameter outer /15 mm diameter x 2.5 mm wall inner	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 90 C/C

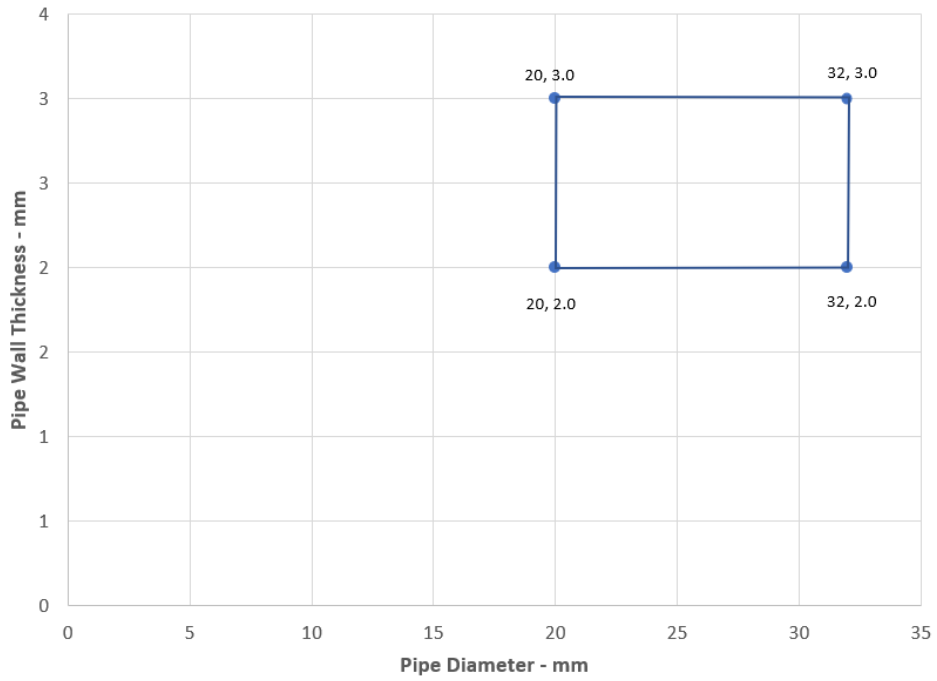
* Typical pipe diameters shown, see below graph for intermediate sizes

PVC-U Pipes EI 90 - U/C

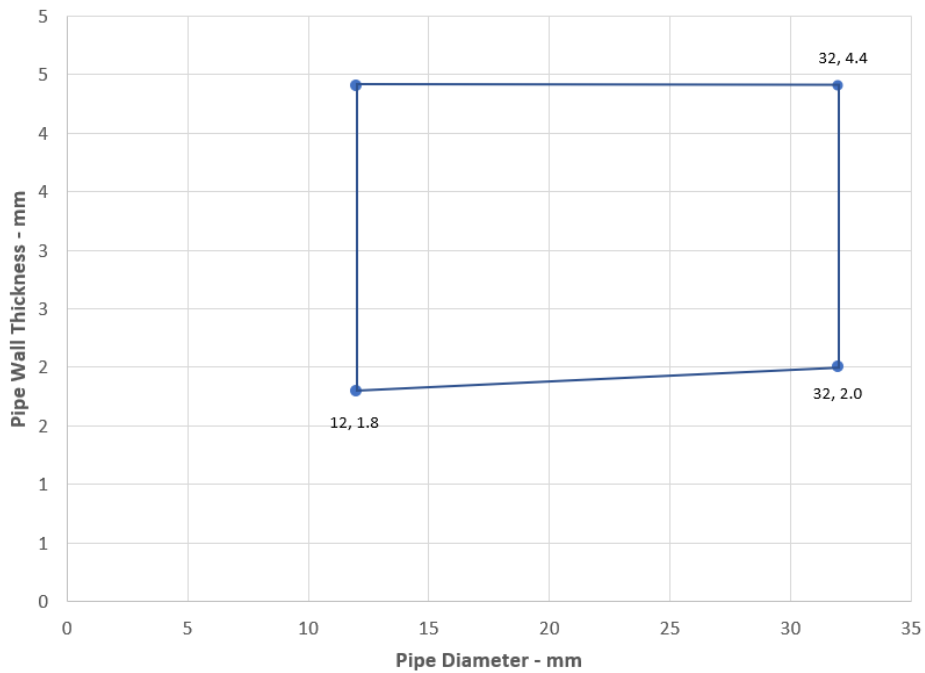


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PE Pipes EI 90 - U/C



PP Pipes EI 90 - U/C



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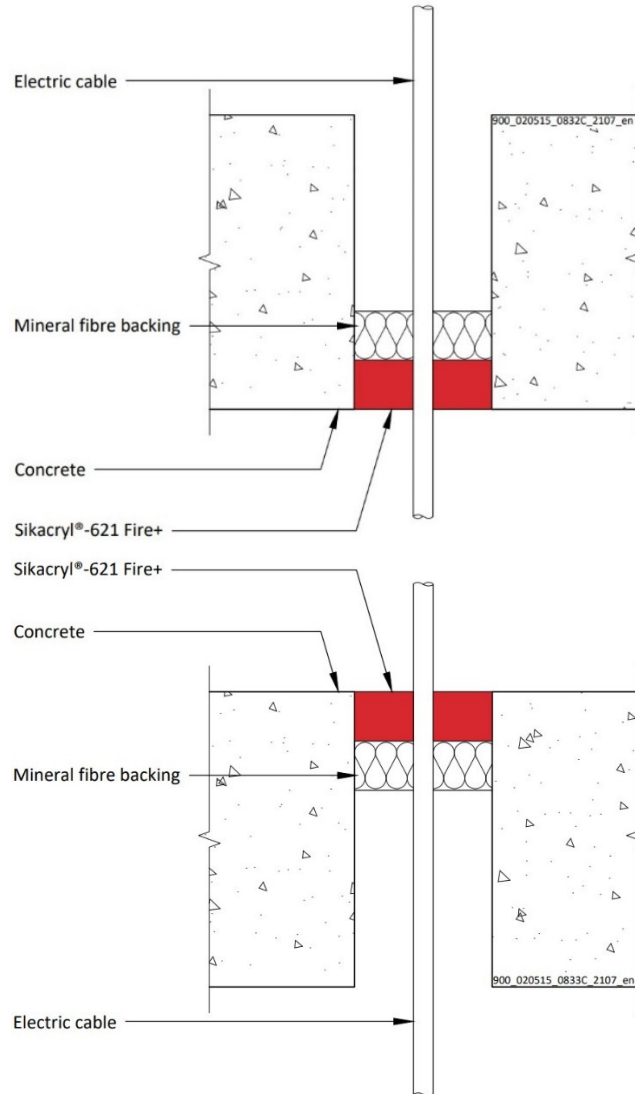


A.6 Rigid floor constructions according to 1.2.1 with floor thickness of minimum 150 mm

A.6.1 Single side penetration seal with cables

Penetration Seal: Cables (single) fitted at any position within the aperture, min. 10 mm from the edges, with Sikacryl-621 Fire+ to either side of the floor (or at any position in between), backed with 'AES mineral fibre'.

Construction details:



A.6.1.1

Services	Sealant depth	Backing (minimum)	Aperture (maximum)	Classification
Single electrical cables up to 21 mm Ø	25 mm	AES mineral fibre 25 mm deep	82 mm Ø or 100 x 1000 mm	E 120, EI 60

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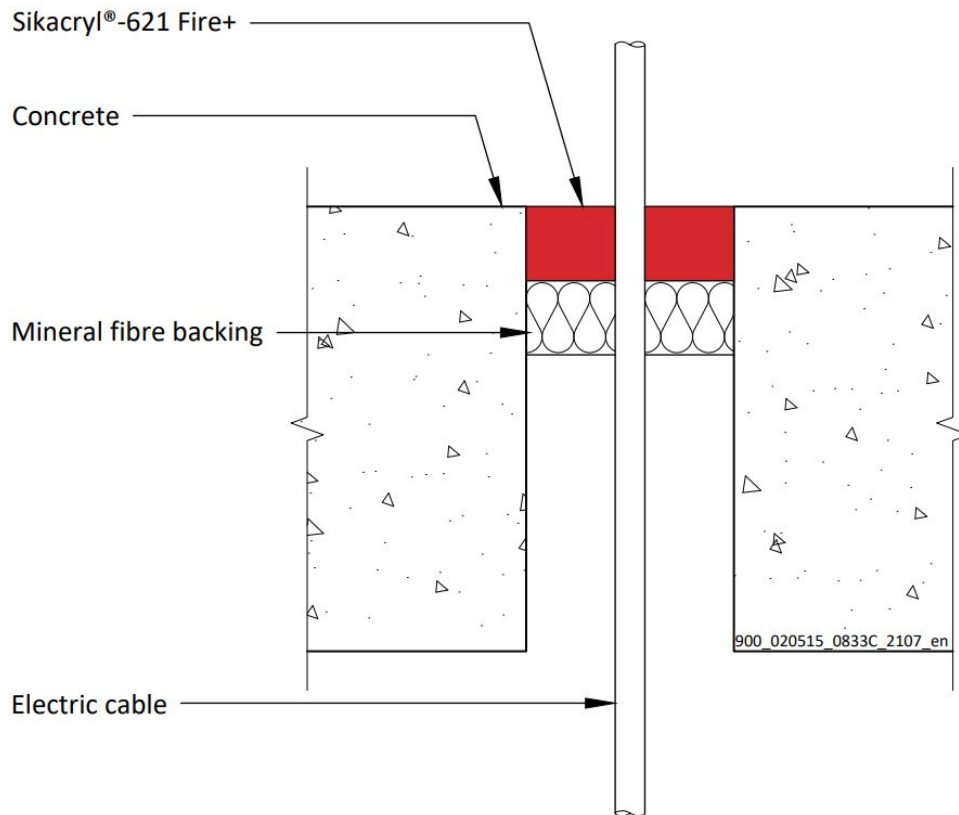
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A.6.2 Single side penetration seal with cables

Penetration Seal: Cables fitted with Sikacryl-621 Fire+ to the top side of the floor, backed with stone wool insulation minimum 35kg/m³ or AES mineral fibre. Maximum seal size of 300 x 300 mm and minimum separation between cables and the edge of the seal of 10 mm.

Construction details:



A.6.2.1

Services	Sealant depth	Backing (minimum)	Insulation	Classification
Blank seals	15 mm	20 mm Stone wool 35 kg/m ³	None	E 90, EI 60
	25 mm	25 mm Stone wool 35 kg/m ³		EI 120
48 mm AES mineral fibre		EI 240		
		E 120, EI 90		
Electric cables up to 21 mm diameter, single.	25 mm	48 mm AES mineral fibre	None	EI 240
23-27 mm diameter, 1 mm × 185 mm ² core, PVC sheath and insulation electrical cable, single				E 120, EI 90

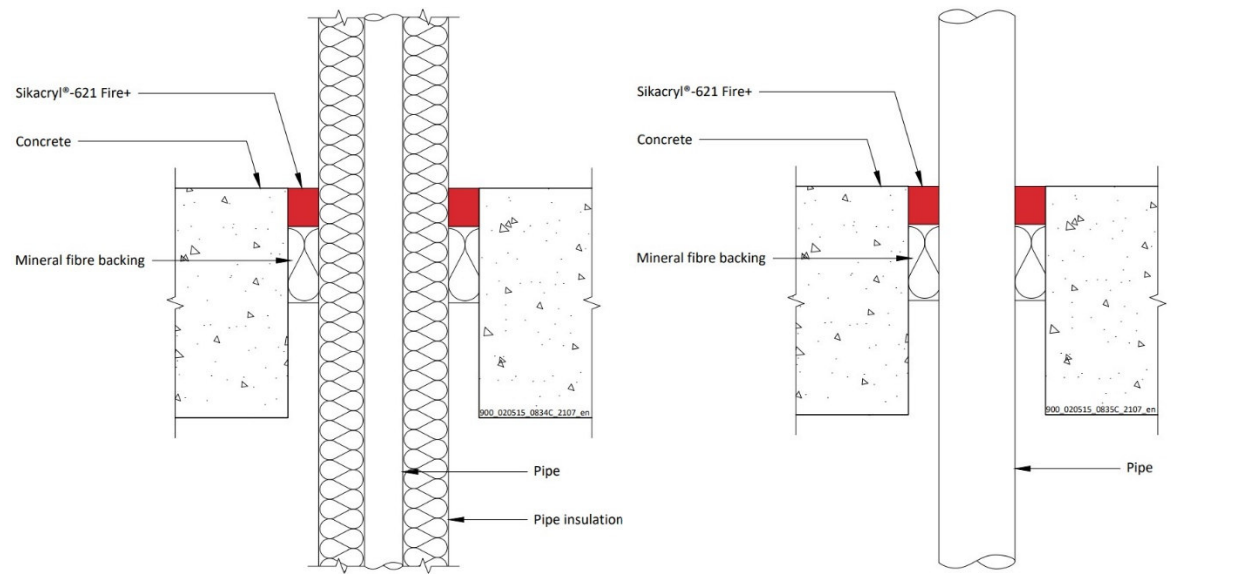
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A.6.3 Single side penetration seal with pipes

Penetration Seal: Pipes fitted at any position within the aperture, with Sikacryl-621 Fire+ to the top face of the floor, backed with 48 mm stone wool minimum 33kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2), maximum seal size 300 x 300 mm / 300 mm diameter.

Construction details:



A.6.3.1

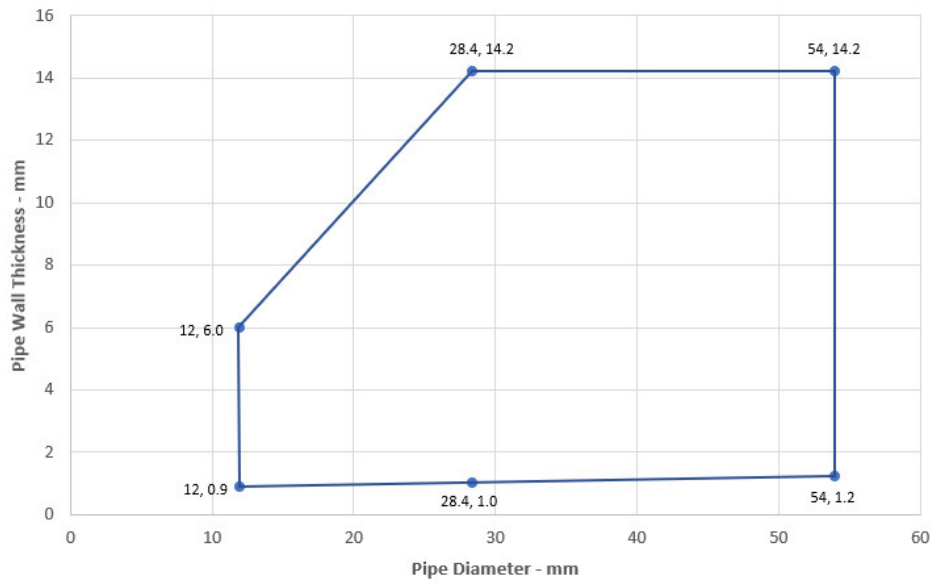
Services	Sealant depth	Backing	Classification
Mild or stainless steel pipe			
4 -16 mm diameter /1.0-8.0 mm wall	25 mm	48 mm stone wool	EI 120 C/U
17 -324 mm diameter /1.0-14.2 mm wall			E 120 C/U
Copper or steel pipe			
6 mm diameter /0.7-3.0 mm wall	25 mm	48 mm stone wool	EI 120 C/C
6 -15 mm diameter /0.7-7.5 mm wall			E 120 C/C, EI 60 C/C
16 - 54 mm diameter /0.7-14.2mm wall			E 120 C/C
Copper or steel pipe with minimum 80 kg/m³ density stone wool insulation Continuous Sustained (CS)			
12 mm diameter/0.9-6 mm wall, 20-80 mm insulation	25 mm	48 mm stone wool	EI 240 C/C
13-54 mm diameter/0.9-14.2 mm wall, 20-80 mm insulation*			E 240 C/C, EI 180 C/C
Alupex Pipe			
16 -20 mm diameter/2.0 mm wall	25 mm	48 mm stone wool	EI 120 C/C
21-75 mm diameter/2.0-4.6 mm wall			E 120 C/C, EI 90 C/C
16-75 mm diameter/2.25-4.6 mm wall with 20-50 mm thick glass wool or stone, mineral wool min. 75 kg/m ³ insulation Continuous Sustained (CS)	25 mm		E 180 C/C, EI 120 C/C

*See below graphs for interpolated pipe sizes

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Copper or Steel Pipes with 20-80 mm stone wool Insulation CS
E 240 C/C, EI 180 C



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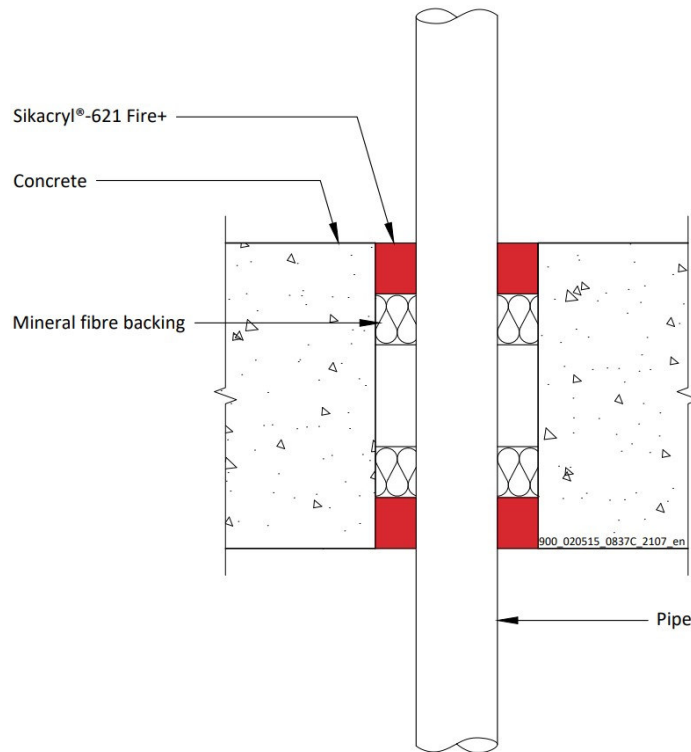
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A.6.4 Double side penetration seal with pipes

Penetration Seal: Pipes fitted at any position within the aperture, with Sikacryl-621 Fire+ to the both faces of the floor, backed with 25 mm stone wool minimum 33kg/m³. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2), maximum seal size 300 x 300 mm / 300 mm diameter.

Construction details:



A.6.4.1

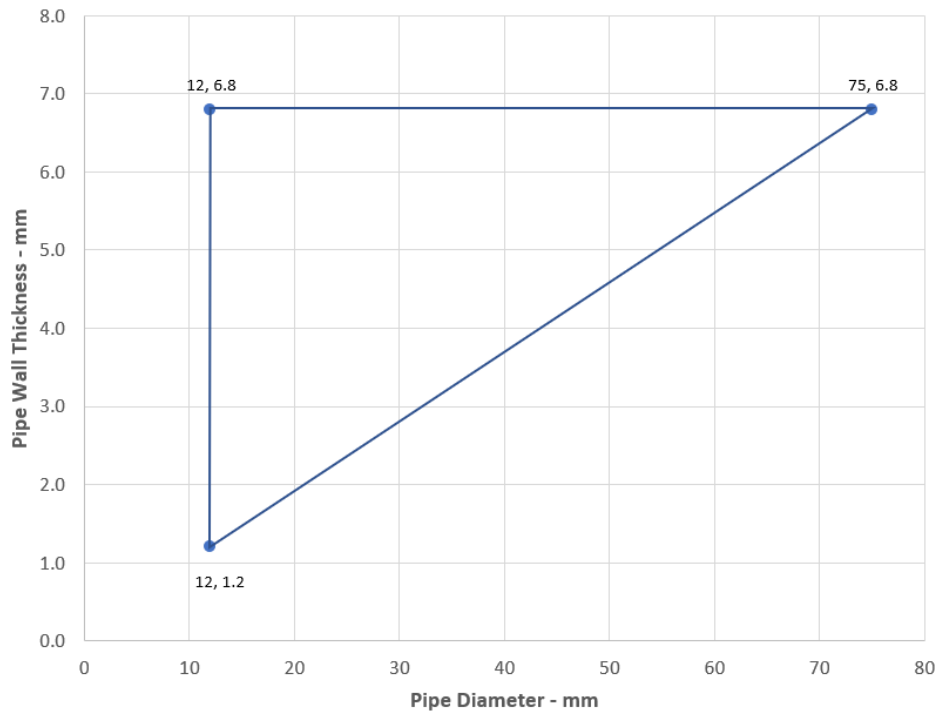
Services	Sealant depth	Backing	Classification
PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1			
Up to 50 mm \varnothing /1.6-3.7 mm wall	25 mm	25 mm Stone wool	EI 240 U/C
Up to 40 mm \varnothing /1.6-3.7 mm wall, with bundle of cables up to 21 mm diameter			
PP pipe according to EN 1451-1 or DIN 8077/8078			
12 mm \varnothing /1.2 mm wall	25 mm	25 mm Stone wool	EI 240 U/C
13-75 mm \varnothing /1.2-6.8 mm wall*			EI 90 U/C
Up to 40 mm \varnothing /1.2-1.8 mm wall, with bundle of cables up to 21 mm diameter			EI 180 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			
20-40 mm \varnothing /2.0-2.4 mm wall*	25 mm	25 mm Stone wool	EI 240 U/C
Up to 40 mm \varnothing /2.0-2.4 mm wall, with bundle of cables up to 21 mm diameter			EI 180 U/C

*See below graphs for interpolated pipe sizes

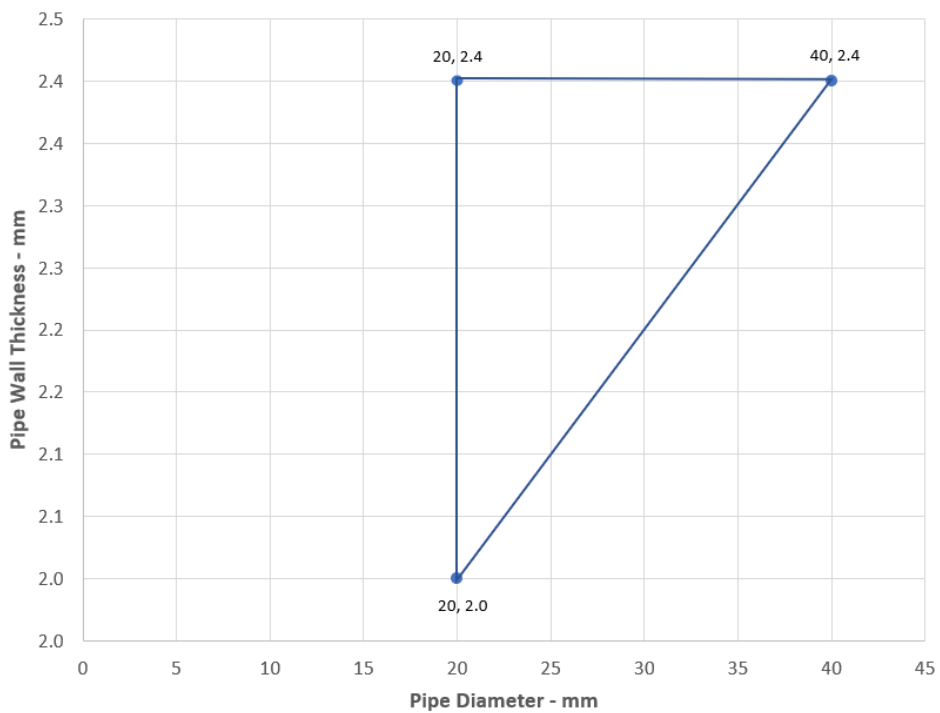
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PP Pipes - EI 190 U/C



PE Pipes - U/C



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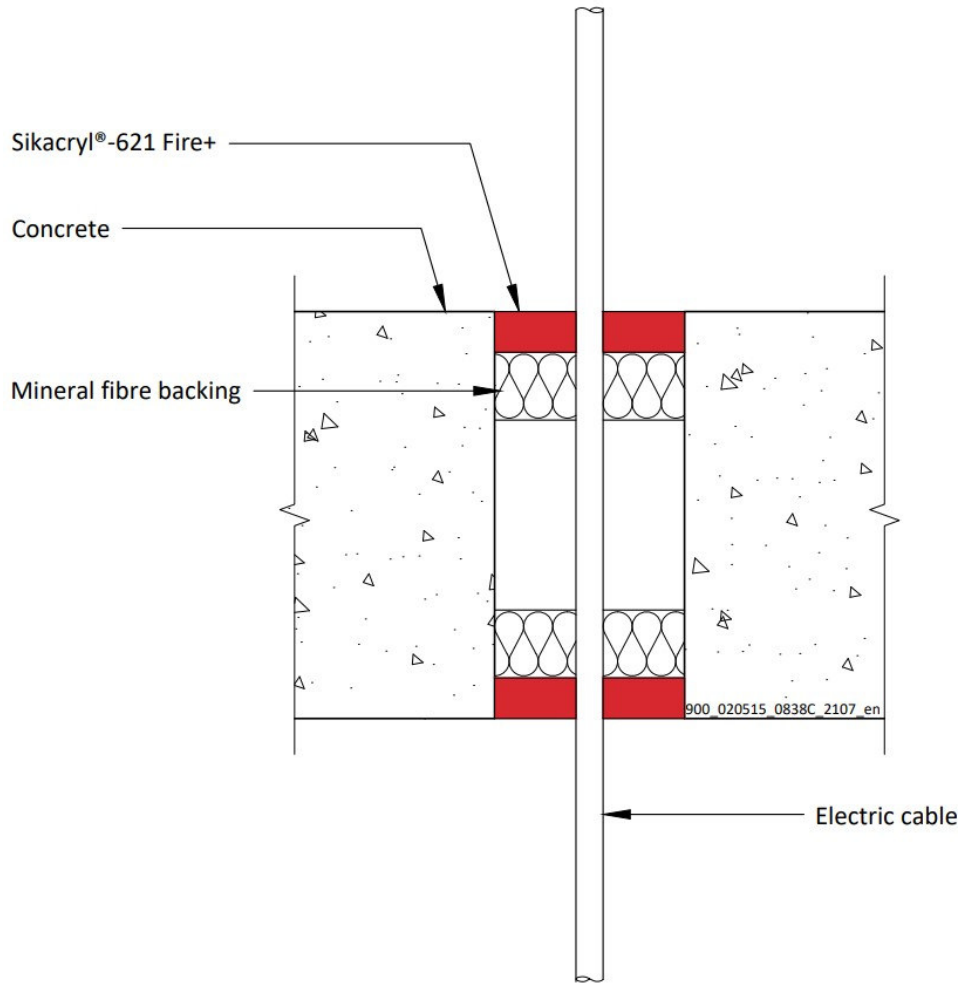
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A.6.5 Double side penetration seal with cables

Penetration Seal: Cables fitted circular apertures or min. 7 mm from the edges of rectilinear apertures, with Sikacryl-621 Fire+ to both sides of the floor, backed with stone wool insulation minimum 35kg/m³.

Construction details:



A.6.5.1

Services	Sealant depth	Backing	Maximum Aperture	Classification
Blank seals	15 mm	25 mm Stone wool 35 kg/m ³	300 x 300 mm	EI 240
Electric cables up to 21 mm diameter, single or in a bundle.				EI 120
Electric cables 22-50 mm diameter, single or in a bundle.				E 120, EI 90
Electric cables 51-80 mm diameter, single or in a bundle.				E 120, EI 60

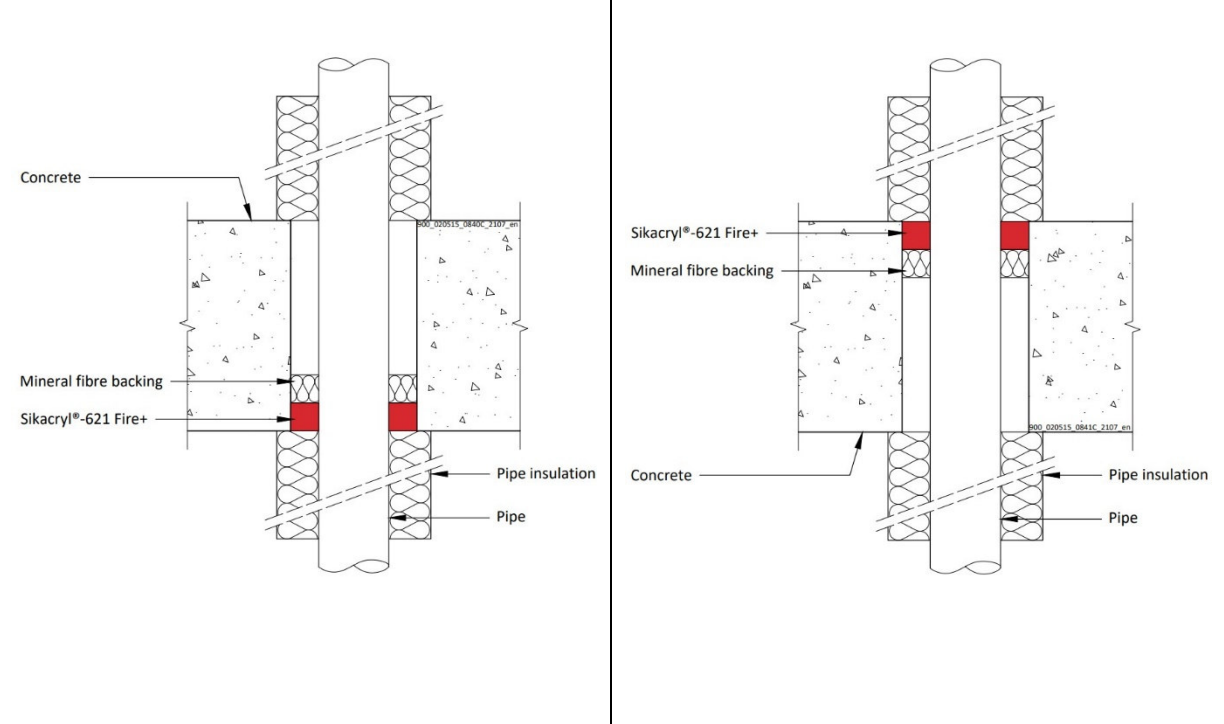
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A.6.6 Single side penetration seal with metallic pipes

Penetration Seal: 1000 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic pipes (single) fitted at any position within the aperture, with 15 or 25 mm deep Sikacryl-621 Fire+ to either side of the floor (or at any position between), backed with minimum 40 kg/m³ stone wool insulation or AES mineral fibre.

Construction details:



A.6.6.1

Services	Max. seal size	Insulation (min)	Sealant depth	Classification
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall	10 mm width around pipe	20 mm Stone wool insulation 80 kg/m ³	15 mm	E 240 C/U, EI 180 C/U
Copper or steel pipe up to 12 mm diameter/0.9-5 mm wall				EI 240 C/U
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall	Up to 100 x 1000 mm		25 mm	EI 120 C/U
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall	300 x 300 mm	20 mm Stone wool insulation 80 kg/m ³	15 mm	E 90 C/U, EI 60 C/U
Copper or steel pipe up to 12 mm diameter/0.9-5 mm wall				
Copper or steel pipe up to 54 mm diameter/0.9-14.2 mm wall			25 mm	EI 120 C/U

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Services	Max. Seal Size	Insulation (min)	Sealant Depth	Classification
Mild or stainless steel pipe				
40 mm diameter/1-14.2 mm wall	10 mm width around pipe	20 mm Stone wool insulation 80 kg/m ³	15 mm	EI 240 C/U
40 mm diameter/1-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³		E 240 C/U, EI 90 C/U
50 mm diameter/1.2-14.2 mm wall*				
60 mm diameter/1.4-14.2 mm wall*				
75 mm diameter/1.7-14.2 mm wall*				
90 mm diameter/2-14.2 mm wall*				
100 mm diameter/2.2-14.2 mm wall*				
115 mm diameter/2.5-14.2 mm wall*				
140 mm diameter/3-14.2 mm wall*				
165 mm diameter/3.5-14.2 mm wall*				
180 mm diameter/3.8-14.2 mm wall*				
200 mm diameter/4.2-14.2 mm wall*				
219 mm diameter/4.5-14.2 mm wall*				
40 mm diameter/1-14.2 mm wall*	Up to 100 x 1000 mm	20 mm Stone wool insulation 80 kg/m ³	25 mm	E120 C/U, EI 90 C/U
50 mm diameter/1.2-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³		
60 mm diameter/1.4-14.2 mm wall*				
75 mm diameter/1.7-14.2 mm wall*				
90 mm diameter/2-14.2 mm wall*				
100 mm diameter/2.2-14.2 mm wall*				
115 mm diameter/2.5-14.2 mm wall*				
140 mm diameter/3-14.2 mm wall*				
165 mm diameter/3.5-14.2 mm wall*				
180 mm diameter/3.8-14.2 mm wall*				
200 mm diameter/4.2-14.2 mm wall*				
219 mm diameter/4.5-14.2 mm wall*				

* Typical pipe diameters shown, see below graph for intermediate sizes

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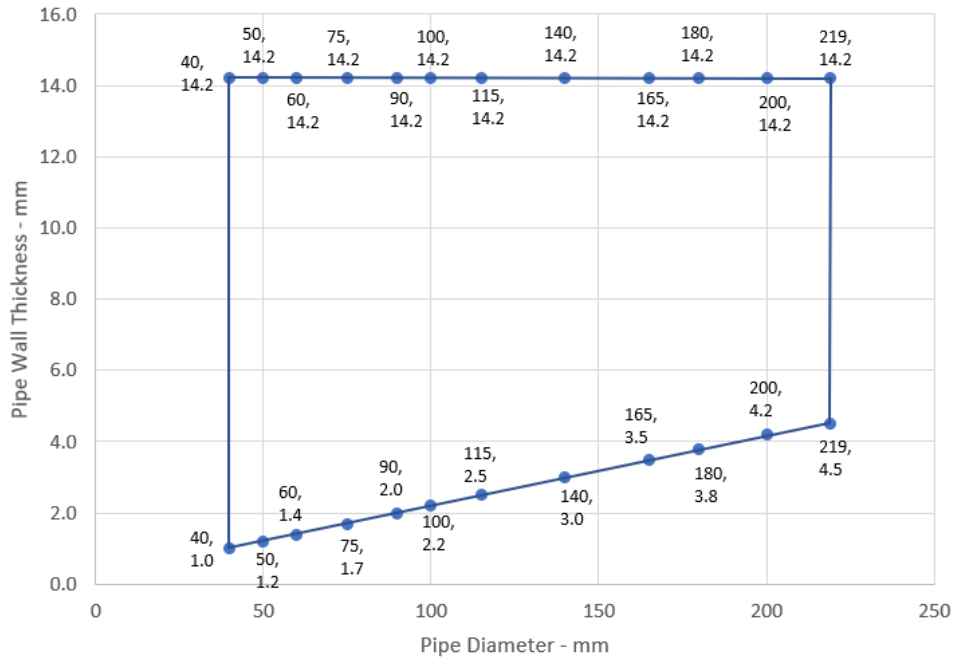
Services	Max. Seal Size	Insulation (minimum)	Sealant Depth	Classification
Mild or stainless steel pipe				
40 mm diameter/1-14.2 mm wall	300 x 300 mm	20 mm Stone wool insulation 80 kg/m ³	15 mm	E 90 C/U, EI 60 C/U
40 mm diameter/1-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³		
50 mm diameter/1.2-14.2 mm wall*				
60 mm diameter/1.4-14.2 mm wall*				
75 mm diameter/1.7-14.2 mm wall*				
90 mm diameter/2-14.2 mm wall*				
100 mm diameter/2.2-14.2 mm wall*				
115 mm diameter/2.5-14.2 mm wall*				
140 mm diameter/3-14.2 mm wall*				
165 mm diameter/3.5-14.2 mm wall*				
180 mm diameter/3.8-14.2 mm wall*				
200 mm diameter/4.2-14.2 mm wall*				
219 mm diameter/4.5-14.2 mm wall*				
40 mm diameter/1-14.2 mm wall*		20 mm Stone wool insulation 80 kg/m ³	25 mm	E120 C/U, EI 90 C/U
50 mm diameter/1.2-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³		
60 mm diameter/1.4-14.2 mm wall*				
75 mm diameter/1.7-14.2 mm wall*				
90 mm diameter/2-14.2 mm wall*				
100 mm diameter/2.2-14.2 mm wall*				
115 mm diameter/2.5-14.2 mm wall*				
140 mm diameter/3-14.2 mm wall*				
165 mm diameter/3.5-14.2 mm wall*				
180 mm diameter/3.8-14.2 mm wall*				
200 mm diameter/4.2-14.2 mm wall*				
219 mm diameter/4.5-14.2 mm wall*				

* Typical pipe diameters shown, see below graph for intermediate sizes

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Steel Pipes with Stone Wool Insulation - C/U



Leistungserklärung

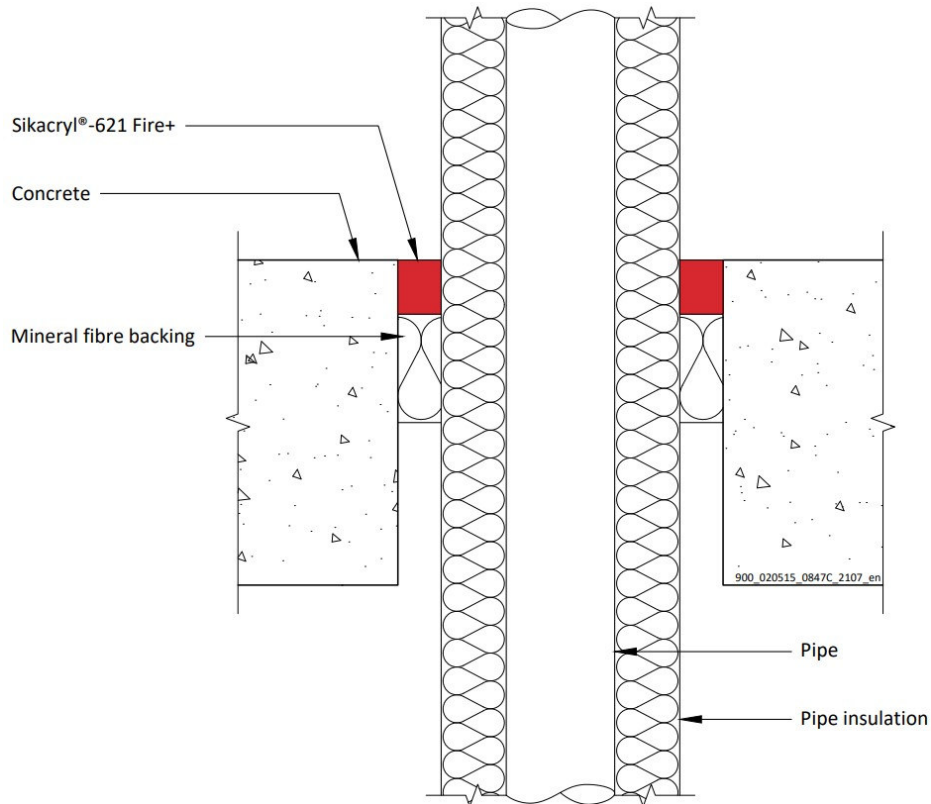
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A.6.7 Single side penetration seal with metallic pipes

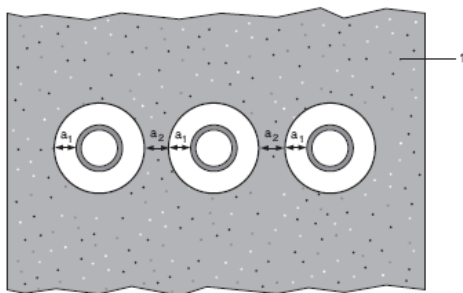
Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with 25 mm Sikacryl-621 Fire+ to the top of the floor, backed with 48 mm deep AES mineral fibre insulation. Minimum annular space 10 mm (A1) and minimum separation between penetration seals 30 mm (A2). Maximum seal size 300 x 300 mm / 504 mm \varnothing

Construction details:



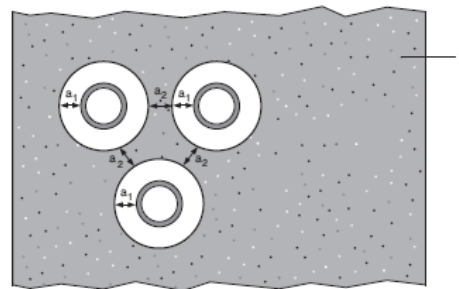
Configuration 1

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

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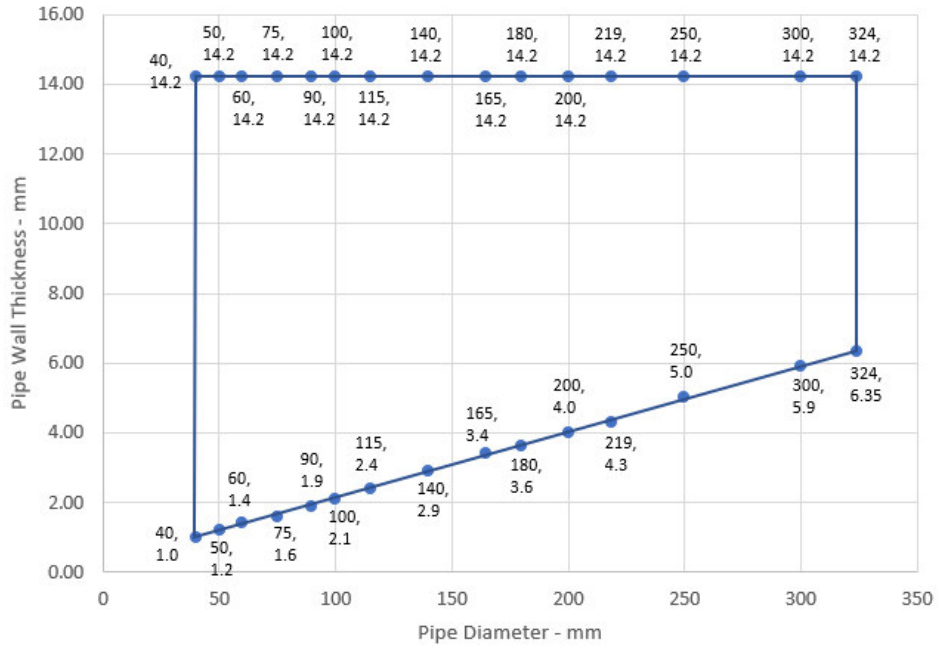
A.6.7.1 Single side penetration seal with pipes

Services	Insulation	Classification
Mild or stainless steel pipe		
40 mm diameter/1-14.2 mm wall	20 mm thick stone, mineral wool min. 80 kg/m ³	EI 240 C/U
40 mm diameter/1-14.2 mm wall*	30-80 mm thick stone, mineral wool min. 80 kg/m ³	
50 mm diameter/1.2-14.2 mm wall*		
60 mm diameter/1.4-14.2 mm wall*		
75 mm diameter/1.6-14.2 mm wall*		
90 mm diameter/1.9-14.2 mm wall*		
100 mm diameter/2.1-14.2 mm wall*		
115 mm diameter/2.4-14.2 mm wall*		
140 mm diameter/2.9-14.2 mm wall*		
165 mm diameter/ 3.4-14.2 mm wall*		
180 mm diameter/ 3.6-14.2 mm wall*		
200 mm diameter/ 4.0-14.2 mm wall*		
219 mm diameter/ 4.3-14.2 mm wall*		
250 mm diameter/ 5.0-14.2 mm wall*		
300 mm diameter/ 5.9-14.2 mm wall*		
324 mm diameter/ 6.35-14.2 mm wall*		
PEX pipe in pipe system		
15 mm diameter x 2.5 mm wall inner /25mm diameter outer	None	EI 90 C/C

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Steel Pipes with Mineral Wool Insulation - C/U



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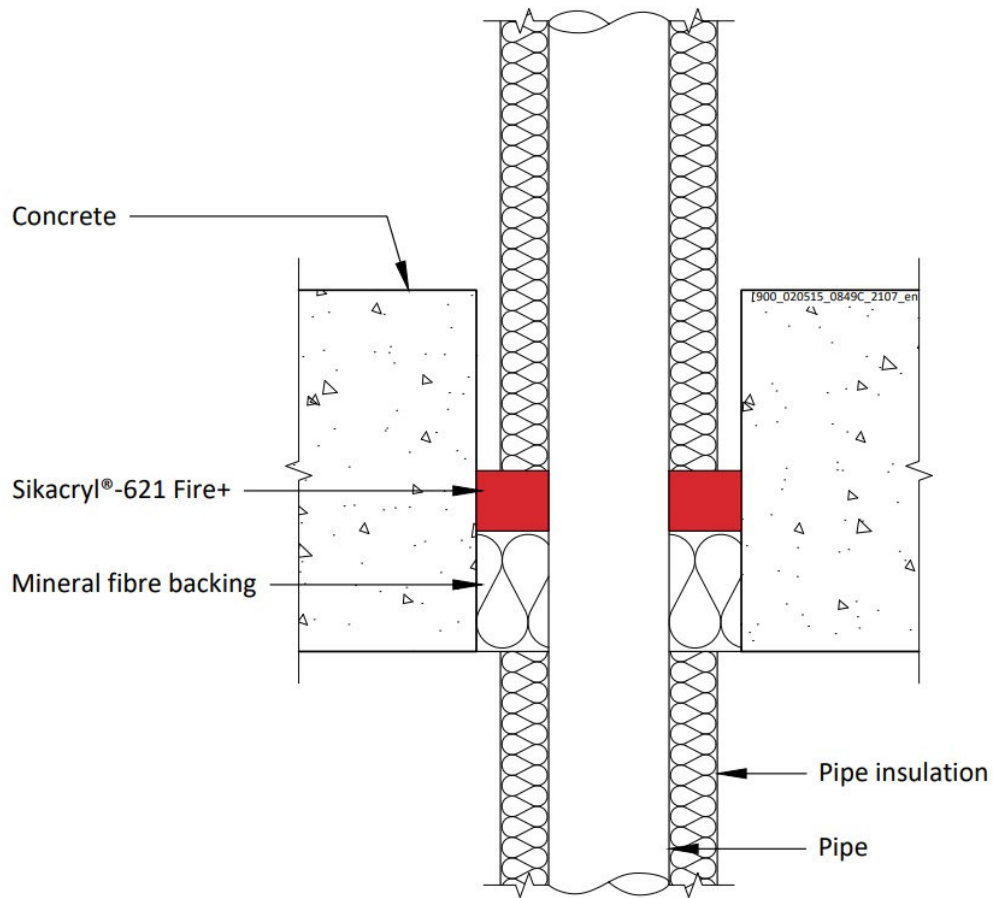
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A.6.8 Single side penetration seal with composite pipes

Penetration Seal: CI (Continuous Interrupted) insulated composite pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+, minimum 10 mm seal width around service and maximum 300 x 300 mm seal, backed with 'AES mineral fibre'.

Construction details:



A.6.8.1

Services	Sealant depth	Backing	Insulation (minimums)	Classification
Alupex Composite Pipe	25 mm	48 mm AES mineral fibre	20 mm stonewool 80 kg/m ³ , 500 mm length from both sides of the seal	EI 240 C/C
16 mm diameter/2.25 mm wall				
20 mm diameter/2.5 mm wall				
26 mm diameter/3 mm wall				
32 mm diameter/3 mm wall				
40 mm diameter/3.5 mm wall				
50 mm diameter/4 mm wall				
63 mm diameter/4.5 mm wall				
75 mm diameter/4.7 mm wall				

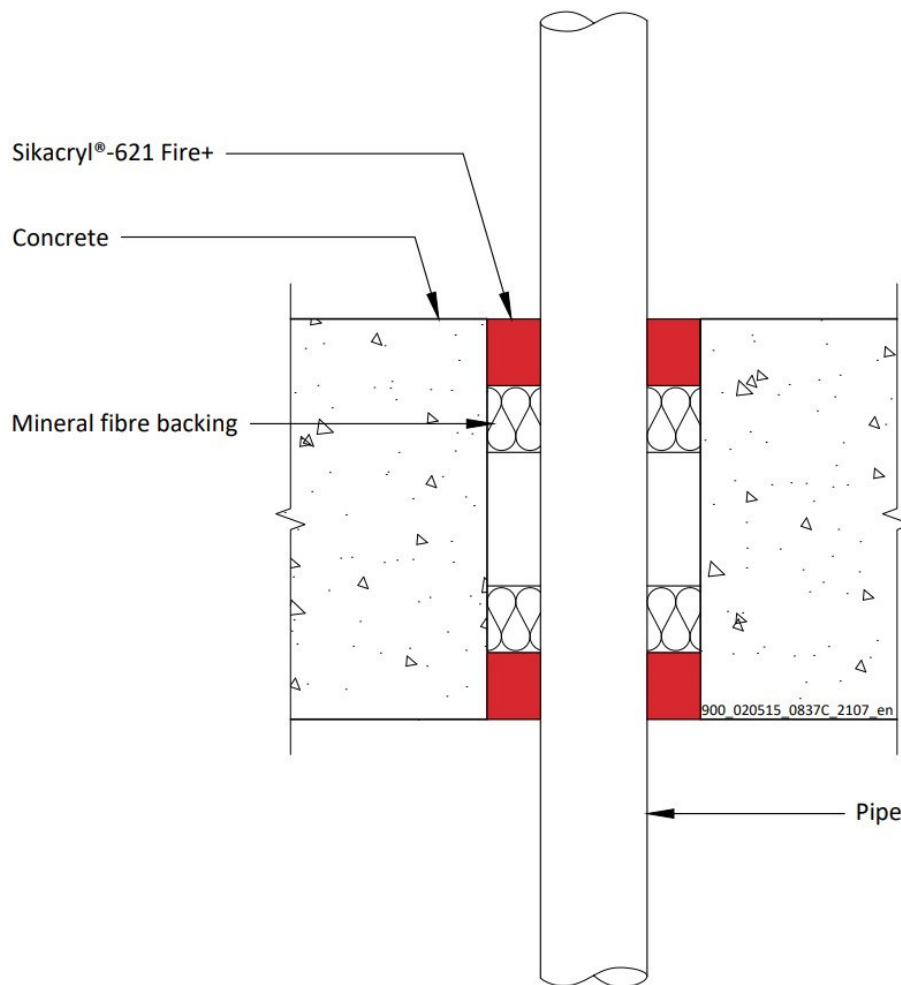
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A.6.9 Double side penetration seal with metallic pipes

Penetration Seal: Non-insulated metallic pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the floor, backed with stone wool or mineral fibre insulation.

Construction details:



A.6.9.1

Services	Max. Seal Size	Insulation	Sealant depth	Backing (minimum)	Classification
Copper or steel pipe 54 mm diameter/2-14.2 mm wall	300 x 300 mm	None	25 mm	25 mm deep 140 kg/m ³ stone wool	E 120 C/U, EI 20 C/U
Mild steel pipe 16 mm diameter/1.5-7.5 mm wall			25 mm		EI 240 C/U
Mild steel pipe maximum 63 mm diameter/1.5-14.2 mm wall			15 mm	25 mm deep 35 kg/m ³ stone wool	E 240 C/U EI 30 C/U
Mild steel pipe 16 mm diameter/1.5-7.5 mm wall	Up to 100 x 1000 mm		25 mm	AES mineral fibre 25 mm deep	EI 120 C/U

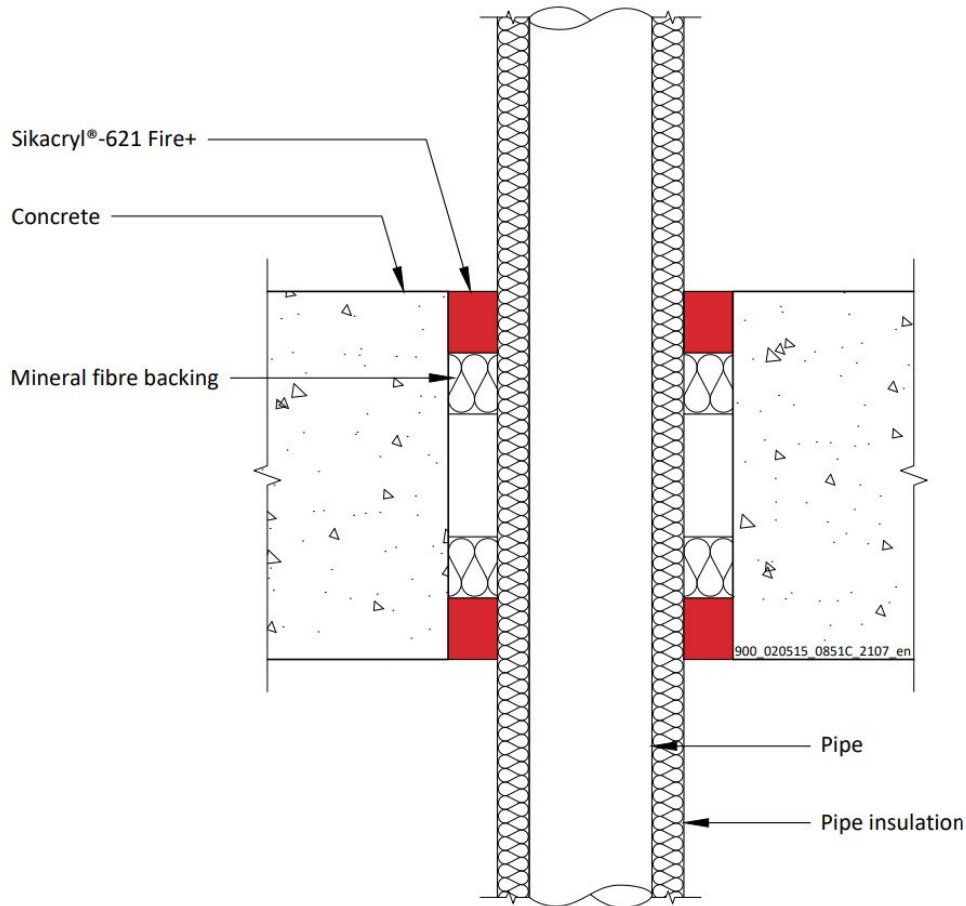
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A.6.10 Double side penetration seal with metallic pipes

Penetration Seal: CS (Continuous Sustained) insulated metallic pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the floor, maximum 300 x 300 mm seal width around service, backed with stone wool insulation or 'AES mineral fibre'.

Construction details:



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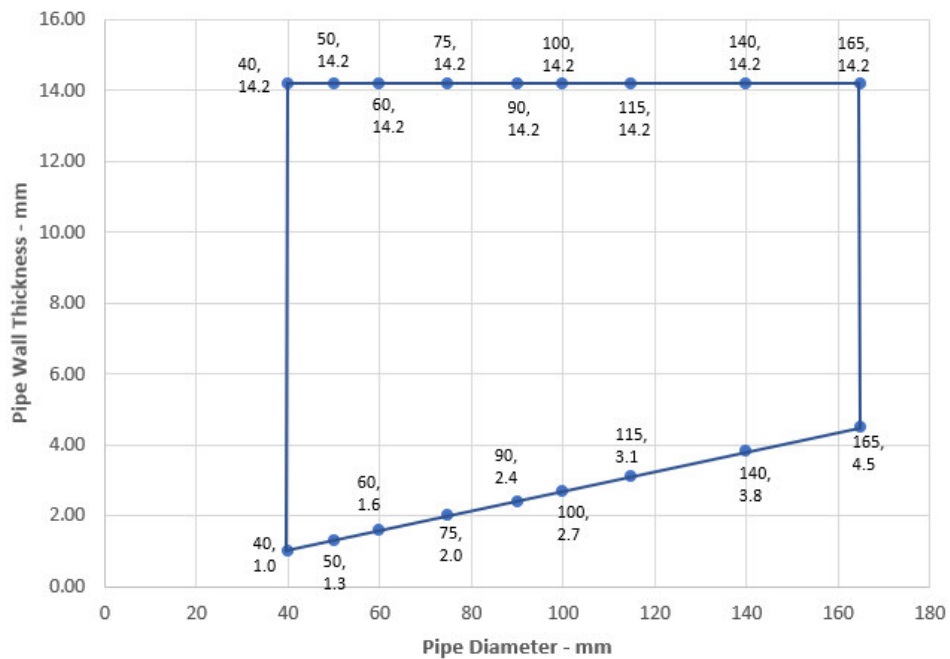


A.6.10.1

Services	Sealant depth	Backing (minimum)	Insulation	Classification
Mild or stainless steel pipe				
40 mm diameter/1-14.2 mm wall	25 mm	20 mm Stone wool 40 kg/m ³		EI 180 C/U
40 mm diameter/1-14.2 mm wall*	25 mm	25 mm AES mineral fibre	13 -19 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	EI 60 C/U
50 mm diameter/1.3-14.2 mm wall*				
60 mm diameter/1.6-14.2 mm wall*				
75 mm diameter/2-14.2 mm wall*				
90 mm diameter/2.4-14.2 mm wall*				
100 mm diameter/2.7-14.2 mm wall*				
115 mm diameter/3.1-14.2 mm wall*				
140 mm diameter/3.8-14.2 mm wall*				
165 mm diameter/4.5-14.2 mm wall*				

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with 13-19 mm Elastomeric Insulation - C/U



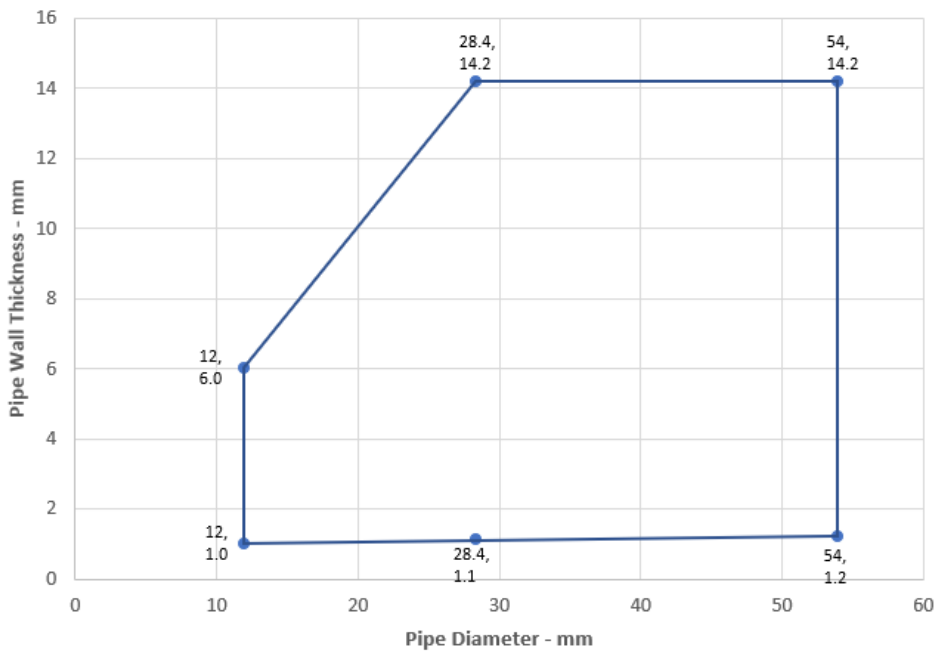
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Services	Sealant depth	Backing (minimum)	Insulation	Classification
Copper or steel pipe				
12 mm diameter/1-6 mm wall	25 mm	25 mm AES mineral fibre	9 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	E 240 C/C, EI 180 C/C
12-54 mm diameter/1-14.2 mm wall*			9-13 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	E 180 C/C, EI 120 C/C
12-54 mm diameter/1-14.2 mm wall*			13-25 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	E 90 C/C, EI 60 C/C

* Typical pipe diameters shown, see below graph for intermediate sizes

Copper or Steel Pipes with Elastomeric Insulation - C/C



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Services	Sealant depth	Backing (minimum)	Insulation	Classification
Alupex Composite Pipe				
16 mm diameter/2.25 mm wall	25 mm	25 mm AES mineral fibre	9 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	EI 180 C/C
16 mm diameter/2.25 mm wall			9-13 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	
20 mm diameter/2.5 mm wall				
26 mm diameter/3 mm wall				
32 mm diameter/3 mm wall				
40 mm diameter/3.5 mm wall				
50 mm diameter/4 mm wall				
63 mm diameter/4.5 mm wall				
75 mm diameter/4.7 mm wall				
16 mm diameter/2.25 mm wall			13-25 mm Elastomeric insulation minimum class B-s3,d0 or phenolic foam insulation	EI 60 C/C
20 mm diameter/2.5 mm wall				
26 mm diameter/3 mm wall				
32 mm diameter/3 mm wall				
40 mm diameter/3.5 mm wall				
50 mm diameter/4 mm wall				
63 mm diameter/4.5 mm wall				
75 mm diameter/4.7 mm wall				

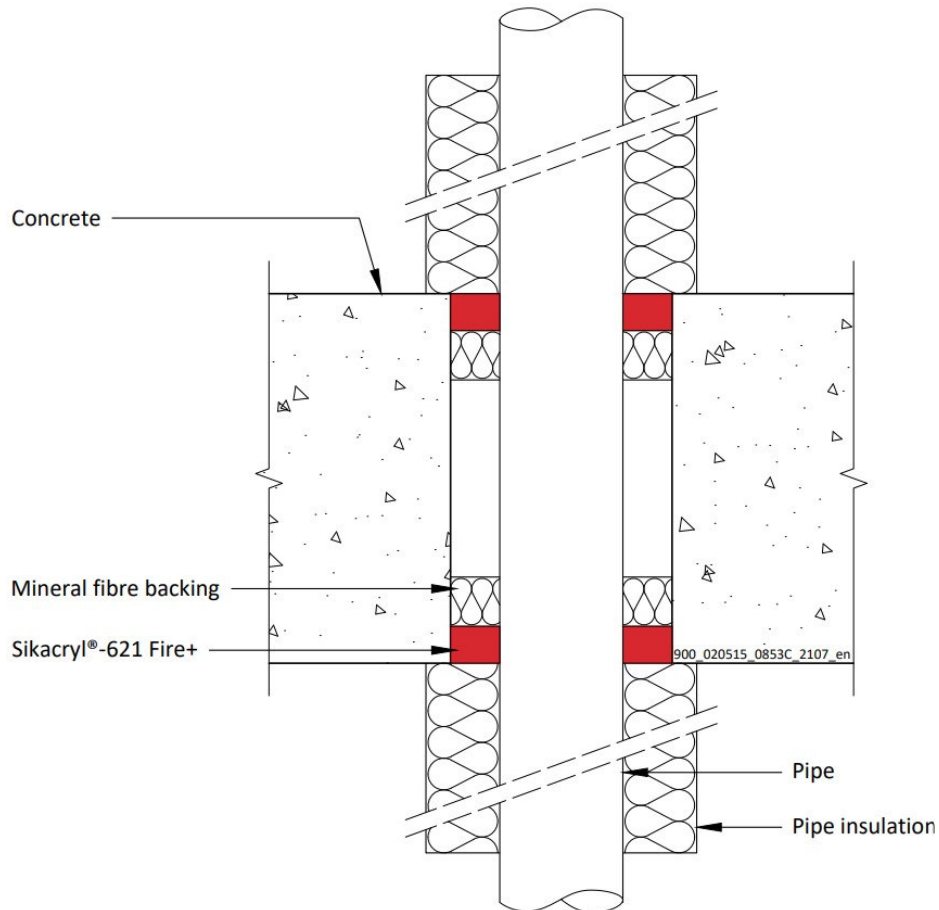
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A.6.11 Double side penetration seal with metallic pipes

Penetration Seal: 1000 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic pipes (single) fitted at any position within the aperture, with 15 mm deep Sikacryl-621 Fire+ to both sides of the floor (or at any position between), backed with 20 mm deep minimum 40 kg/m³ stone wool insulation*.

Construction details:



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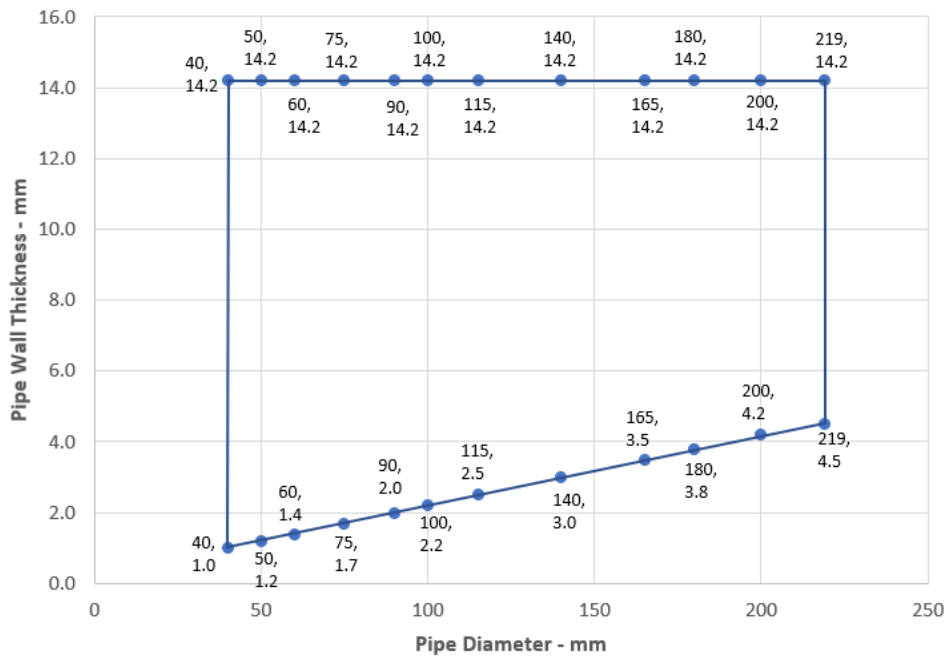


A.6.11.1

Services	Maximum seal size	Insulation (minimum)	Classification
Mild or stainless steel pipe			
40 mm diameter/1-14.2 mm wall	300 x 300 mm or 100 x 1000 mm	20 mm Stone wool insulation 80 kg/m ³	EI 240 C/U
40 mm diameter/1-14.2 mm wall*			
50 mm diameter/1.2-14.2 mm wall*			
60 mm diameter/1.4-14.2 mm wall*			
75 mm diameter/1.7-14.2 mm wall*			
90 mm diameter/2-14.2 mm wall*			
100 mm diameter/2.2-14.2 mm wall*		30 mm Stone wool insulation 80 kg/m ³	E 240 C/U, EI 120 C/U
115 mm diameter/2.5-14.2 mm wall*			
140 mm diameter/3-14.2 mm wall*			
165 mm diameter/3.5-14.2 mm wall*			
180 mm diameter/3.8-14.2 mm wall*			
200 mm diameter/4.2-14.2 mm wall*			
219 mm diameter/4.5-14.2 mm wall*			

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Stone Wool Insulation - C/U



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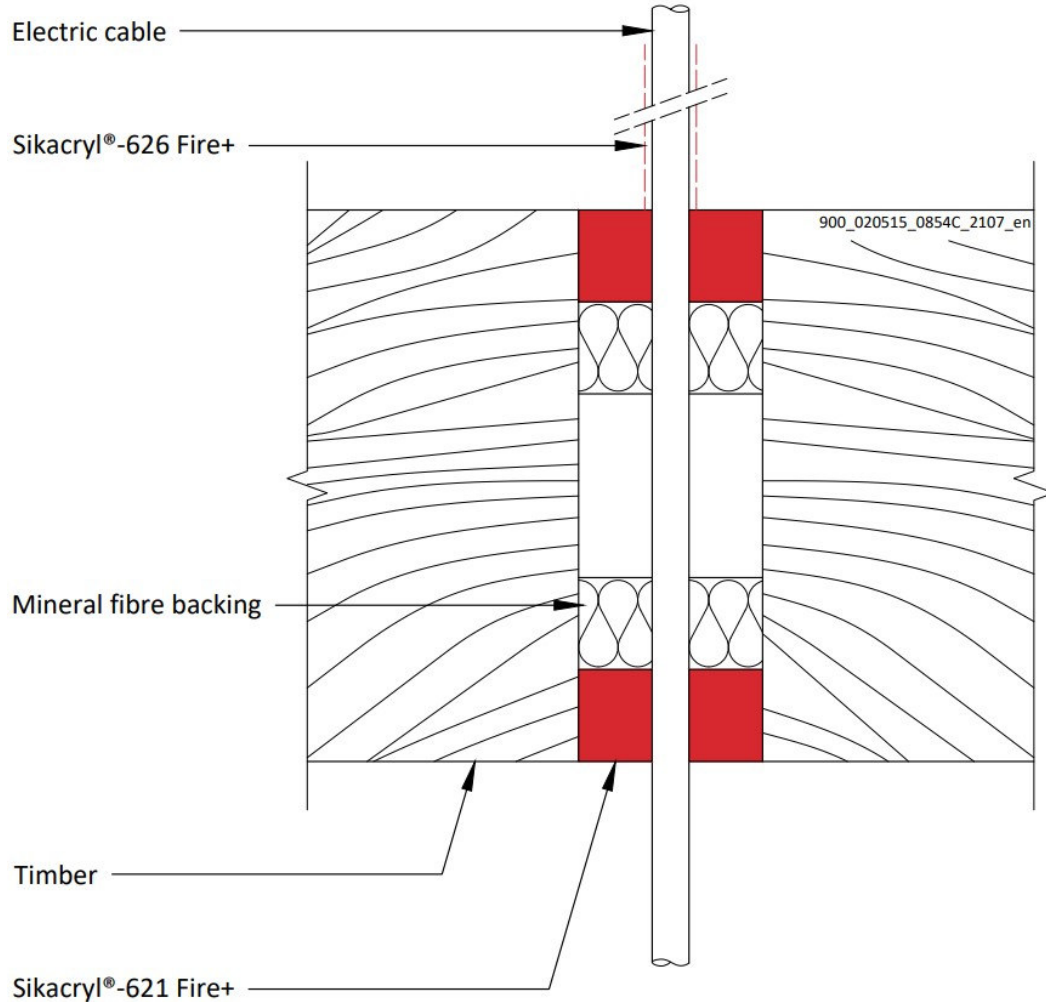


A.7 Timber floor constructions with floor thickness of minimum 150 mm

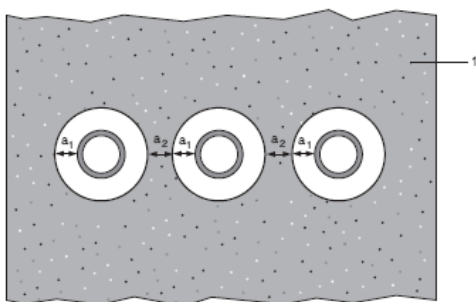
A.7.1 Double sided penetration seal with cables

Penetration Seal: Cables fitted at any position within the aperture, sealed with Sikacryl-621 Fire+, minimum 25 mm deep to both sides of the floor and backed with stone wool insulation (minimum 33kg/m³), minimum 25 mm deep. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

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A.7.1.1

Services	Sealant depth	Backing	Maximum aperture	Insulation, minimum	Classification
None (blank)	25 mm	Stone wool 25 mm deep min. 33kg/m ³	Ø 220 mm	None	EI 120
Cables up to 14 mm Ø, single or in bundles up to 100 mm Ø					EI 120
Cables up to 21 mm Ø, single or in bundles up to 100 mm Ø				Sikacryl®-626 Fire+, 260-micron DFT extending 150 mm from top side of the seal	E 120, EI 90
Cables up to 50 mm Ø, single or in bundles up to 100 mm Ø					E 120, EI 90
Telecom cables up to 14 mm Ø, single or in bundles up to 100 mm Ø					E 120, EI 90

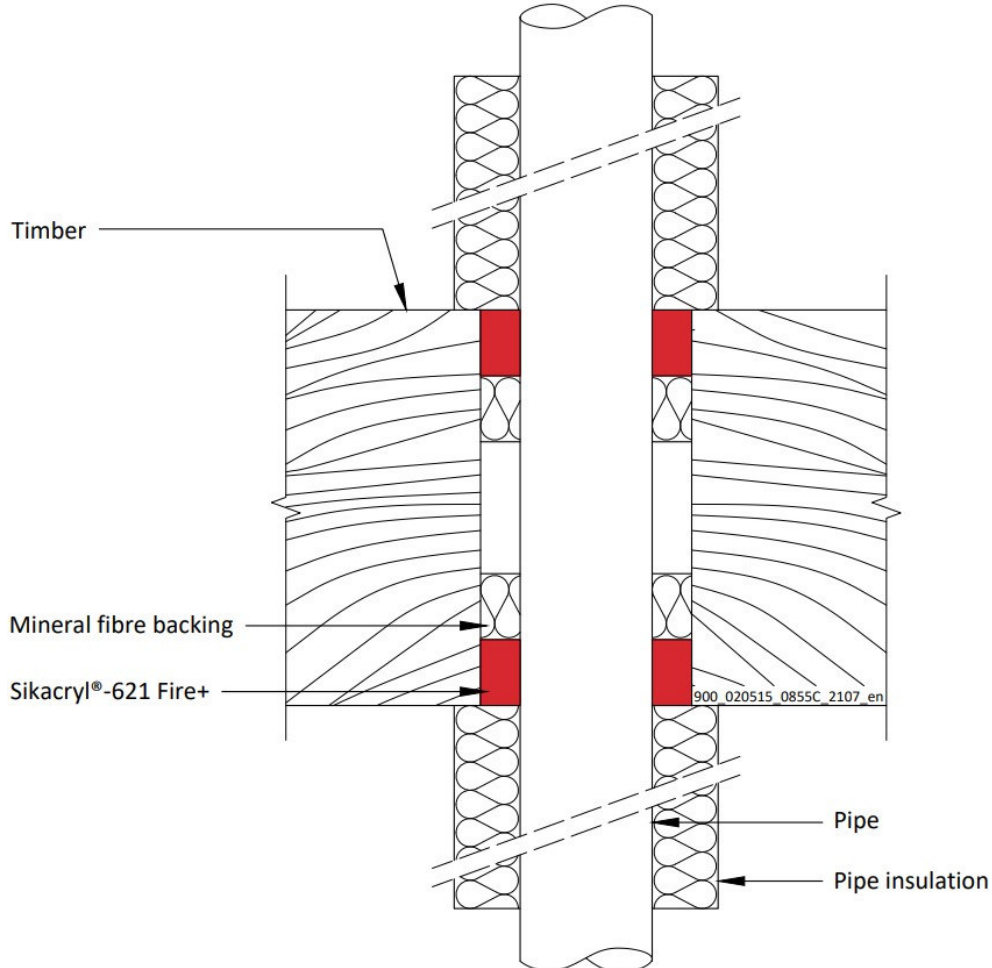
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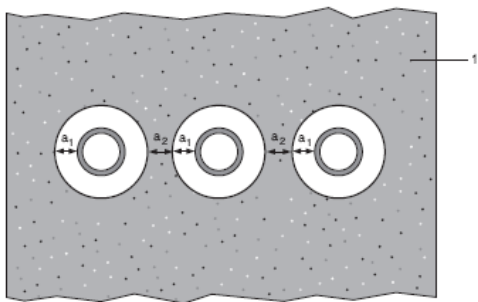
A.7.2 Double side penetration seal with metallic pipes

Penetration Seal: 500 mm (min.) LI (Local Interrupted) or CI (Continuous Interrupted) insulated metallic pipes and composite pipes (single) with glass wool or stone, mineral wool min. 75 kg/m³, fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the floor, backed with stone wool insulation (minimum 33kg/m³), minimum 25 mm deep. Minimum annular space 10 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

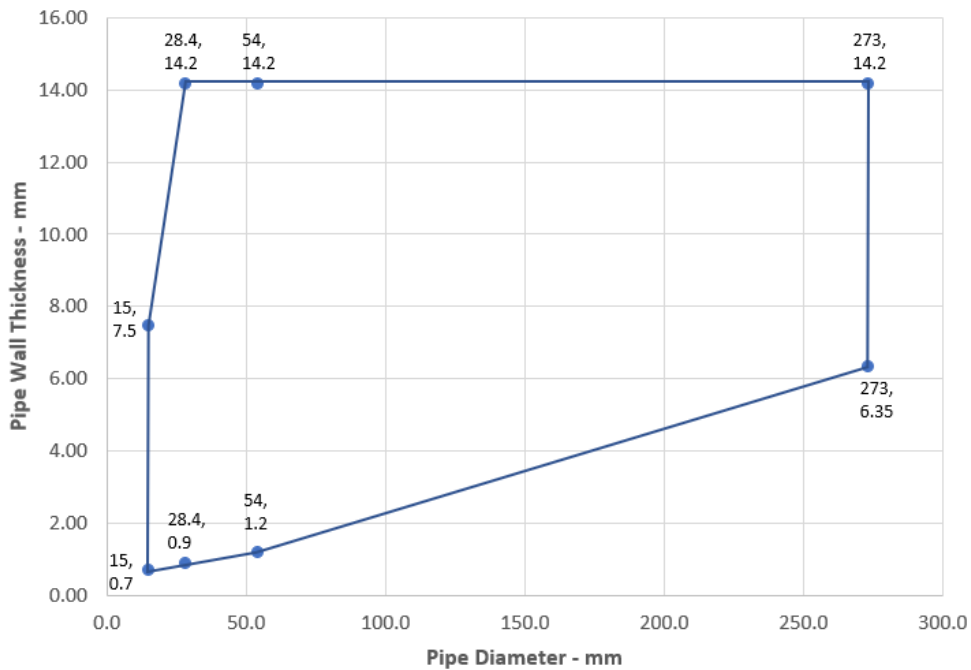
- 1 Supporting construction
- a1 Pipe / edge of seal separation (annular space)
- a2 Separation between penetration seals

A.7.1.1

Services	Maximum aperture	Sealant depth	Backing	Insulation, minimum	Classification
Mild or stainless steel pipe					
Maximum 273 mm diameter /6.35-14.2 mm wall*	Ø 293 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	25 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	E 120 C/C, EI 60 C/C
Copper or steel pipe					
Maximum 15 mm diameter /0.7-7.5 mm wall*	Ø 220 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	20 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	EI 120 C/C
Maximum 54 mm diameter /1.2-14.2 mm wall*					E 120 C/C, EI 90 C/C
Alupex Pipe					
Maximum 16 mm diameter/ 2.25 mm wall*	Ø 220 mm	25 mm	Stone wool 25 mm deep min. 33kg/m ³	20 mm glass wool or stone, mineral wool min. 75 kg/m ³ , 500 mm length from both sides of the seal	EI 120 C/C
Maximum 75 mm diameter/ 4.6 mm wall*					E 120 C/C, EI 90 C/C

* Typical pipe diameters shown, see below graph for intermediate sizes

Steel Pipes with Glass Wool or Mineral Wool Insulation - C/C

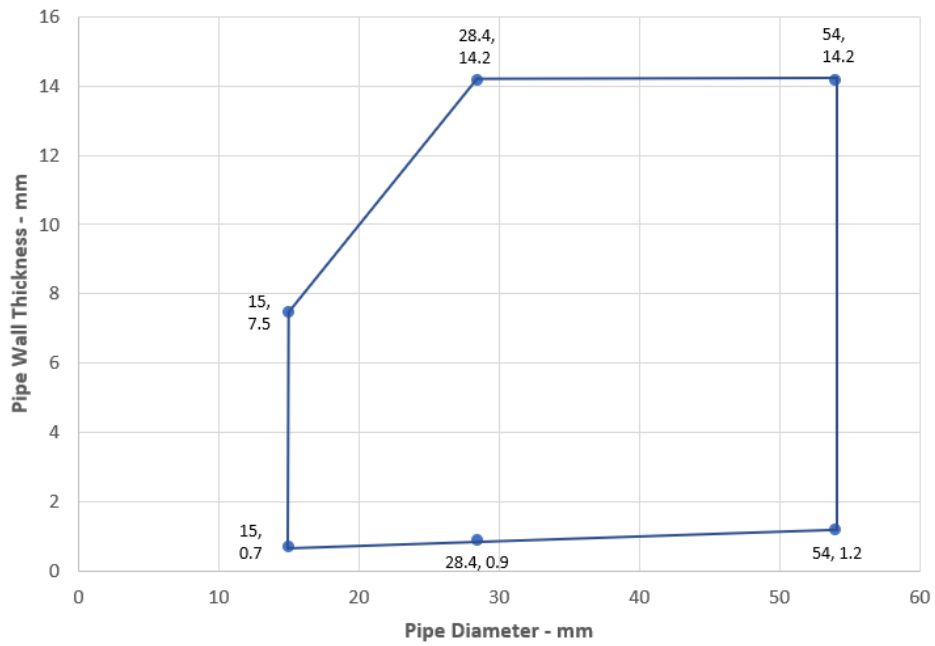


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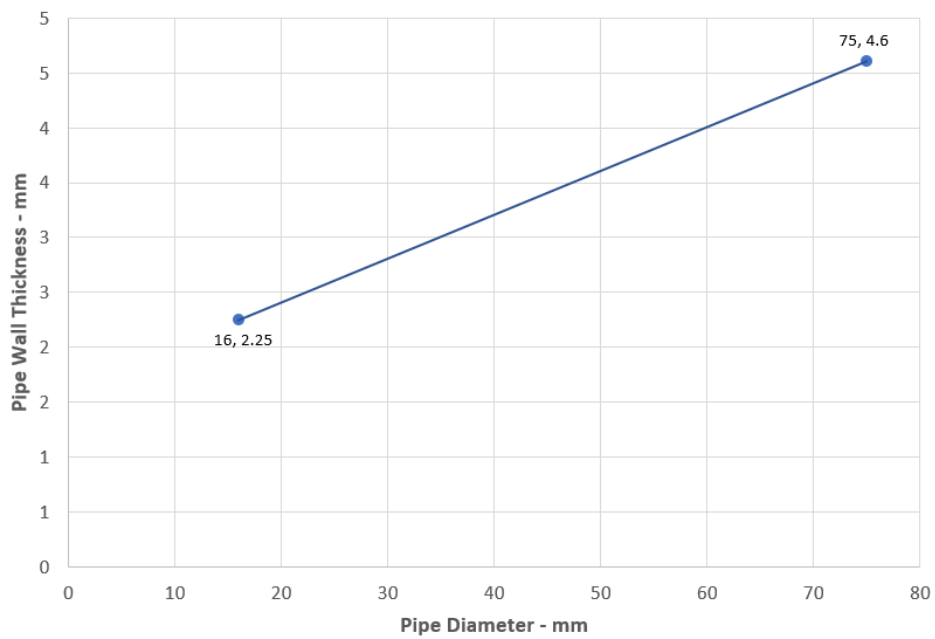
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Copper or Steel Pipes with Glass Wool or Mineral Wool Insulation - C/C



Alupex Pipes with Glass Wool or Mineral Wool Insulation - C/C



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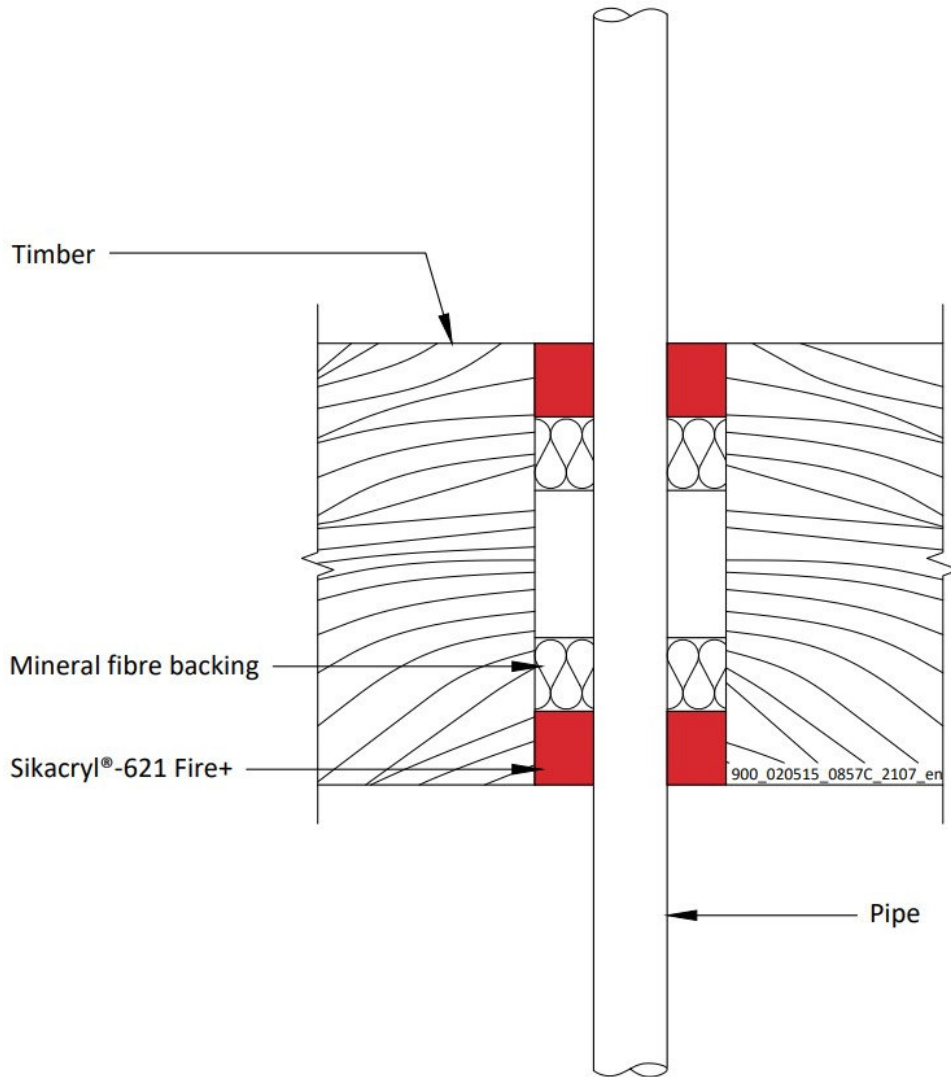
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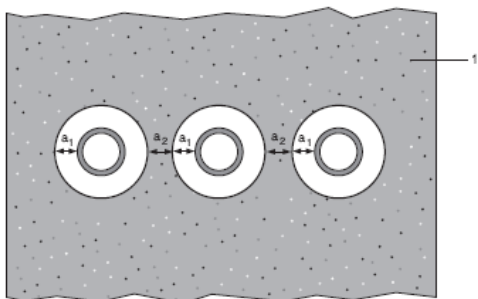
A.7.3 Double side penetration seal with plastic pipes and composite pipes

Penetration Seal: Plastic and composite pipes (single) fitted at any position within the aperture, with Sikacryl-621 Fire+ to both sides of the floor, backed with stone, mineral wool min. 33 kg/m³. Minimum annular space 10 mm and maximum 30 mm (a1) and minimum separation between penetration seals 0 mm (a2).

Construction details:



Configuration 1



Key

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

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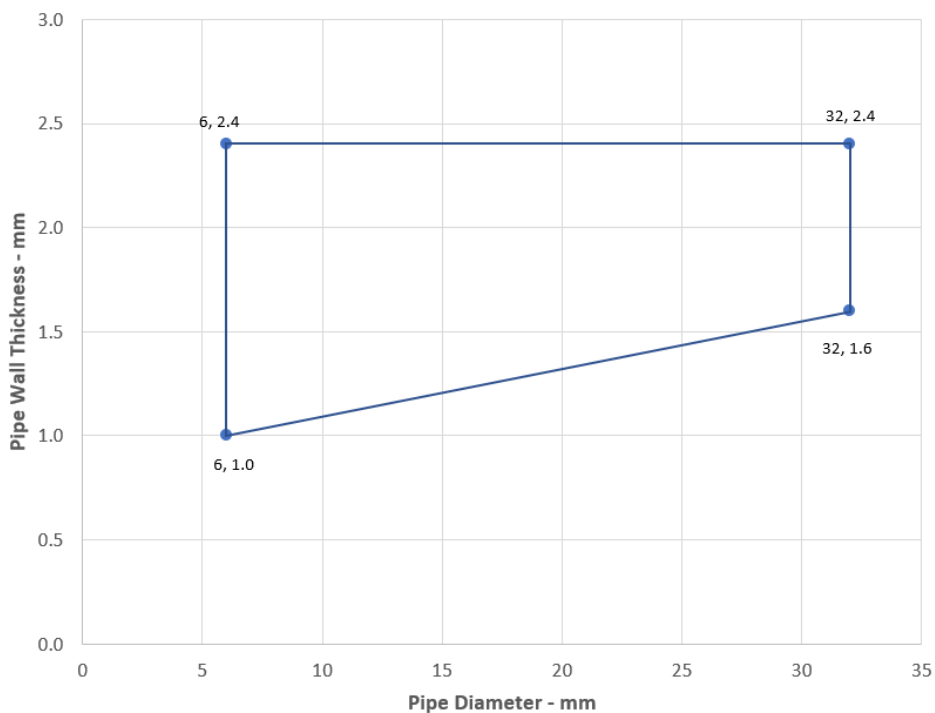


A.7.3.1

Services	Sealant depth	Backing	Classification
PVC-U pipe according to EN 1329-1, EN 1452-1 and EN 1453-1, PVC-C according to EN 1566-1			
Maximum 32 mm diameter/1.0-2.4 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	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			
Maximum 32 mm diameter/2.0-3.0 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 120 U/C
PP pipe according to EN 1451-1 or DIN 8077/8078			
Maximum 32 mm diameter/1.8-4.4 mm wall*	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 120 U/C
PEX pipe in pipe system			
25 mm diameter outer /15 mm diameter x 2.5 mm wall inner	25 mm	Stone wool 25 mm deep min. 33kg/m ³	EI 120 C/C

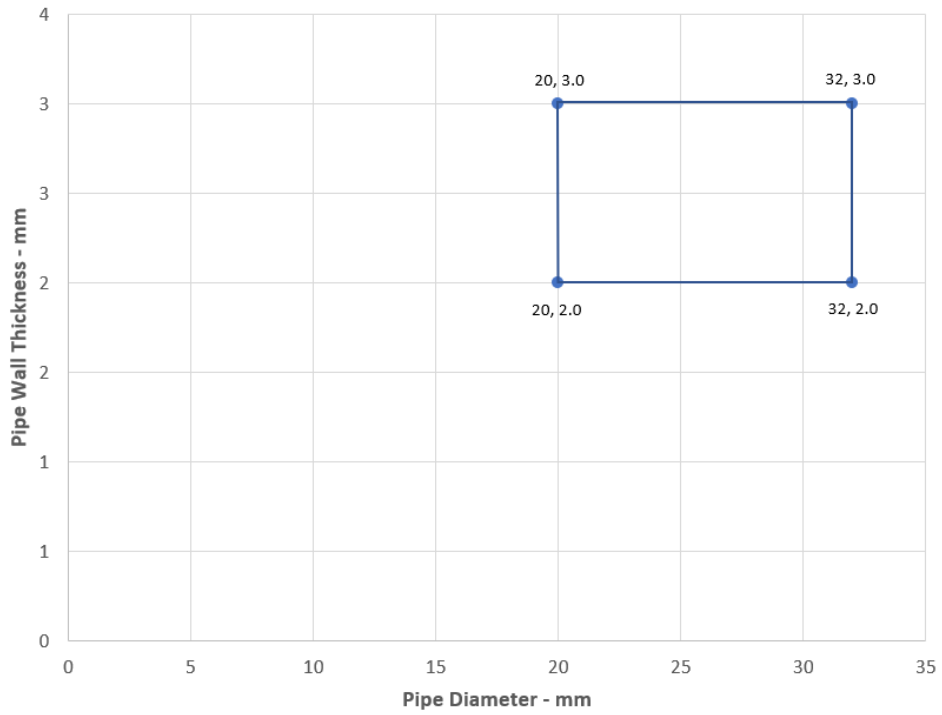
* Typical pipe diameters shown, see below graph for intermediate sizes

PVC-U Pipes EI 120 - U/C

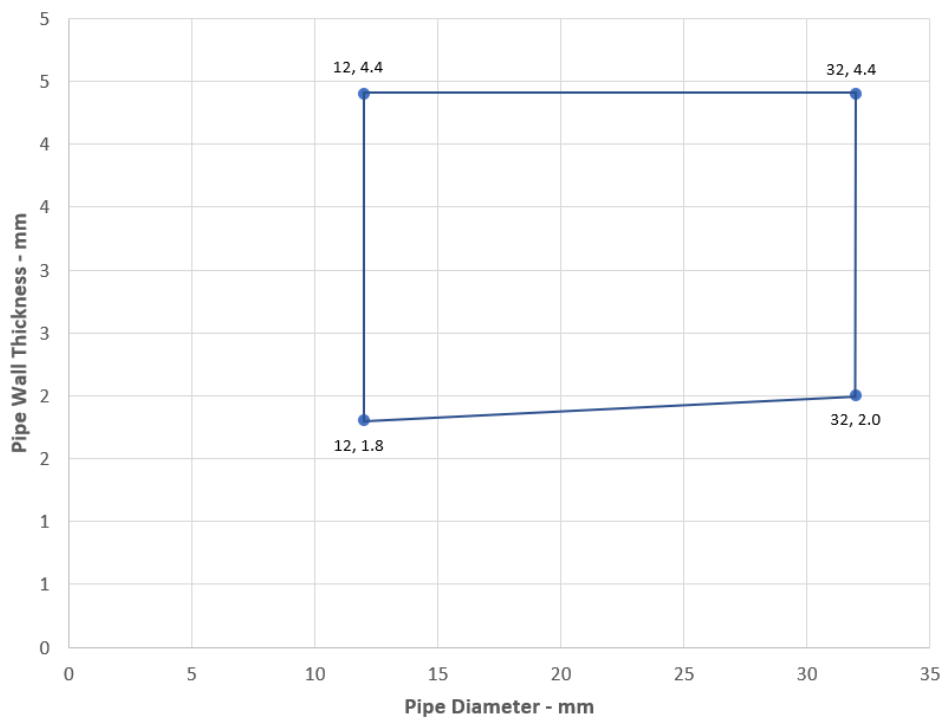


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PE Pipes EI 120 - U/C



PP Pipes EI 120 - U/C



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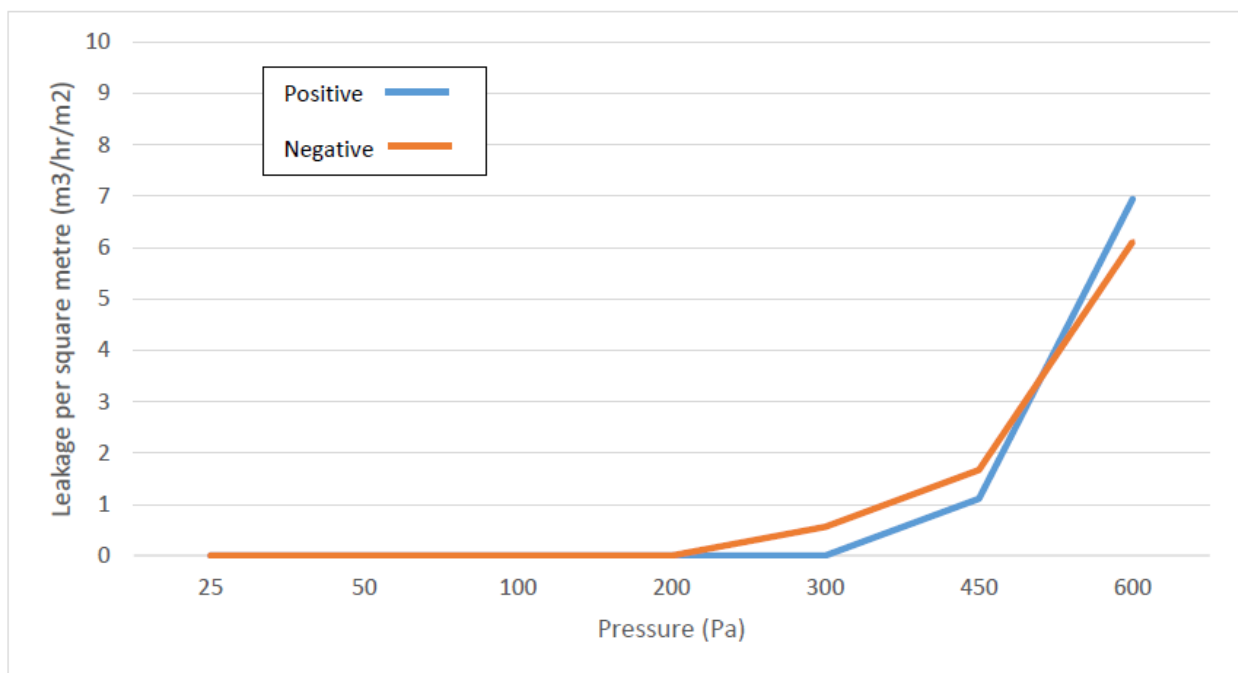
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ANNEX B – Air Permeability – Sikacryl-621 Fire+

Product tested	10mm deep x 30mm wide Sikacryl-621 Fire+		
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	0.06	1.67
	600	0.22	6.11
Results under positive chamber pressure	25	0.00	0.00
	50	0.00	0.00
	100	0.00	0.00
	200	0.00	0.00
	300	0.00	0.00
	450	0.04	1.11
	600	0.25	6.94



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