

# UL-EU CERTIFICATE

**Certificate No.** UL-EU-00838-A1-CPR  
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**Date of Issue** 2015-09-09  
**Revision** 2021-12-16

**Certificate Holder** Astroflame Fireseals LTD  
Unit 8, I.O Centre,  
Stephenson Road,  
Segensworth,  
Fareham,  
PO15 5RU

**Manufacturer** A/008

**Certified Product Type** Fire Stop - Sealant  
**Product Trade Name** Astro intu mastic  
**Trademark** N/A  
**Rating/Classification** See Appendix

**Harmonised Technical Specifications** EAD 350454-00-1104, September 2017/ EAD 350141-00-1106, September 2017 / EN 13501-2  
**Expiry date** 2025-07-01



A handwritten signature in black ink, appearing to be 'Chris Miles', written over a horizontal line.

**Authorized Certification Decision Maker**  
Chris Miles

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shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.



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This certificate relates to the use of Astro intu mastic sealant for fire stopping where there are joints in or between walls & floors or service penetrations through floors and walls. The detailed scope is given in pages 3 to 44 of this Certificate. This shows the thickness and acceptable dimensions, substrates and orientations required to provide fire resistance periods of up to 240 minutes for differing services and wall/floor constructions.

The product is certificated on the basis of:

- i) Inspection and surveillance of factory production control by UL
- ii) Fire resistance test data in accordance with EN 1366-3: 2009 and 1366-4: 2006
- iii) Classification in accordance with EN 13501-2
- iv) Durability and Servicability as defined in EAD 350454-00-1104 and EAD 350141-00-1106

The movement capability of Astro intu mastic joint seals is restricted to  $\leq 7.5\%$  unless specifically stated within the tables below

The durability class of Astro intu mastic is Type X - Intended for use in conditions exposed to weathering and all lower classes



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Product-type: Sealant		Intended use: Linear Joint & Gap Seal / Penetration Seal	
Assessment method	Essential characteristic	Product Performance	
<b>BWR 2 Safety in case of fire</b>			
EN 13501-1	Reaction to fire	No performance determined	
EN 13501-2	Resistance to fire	See pages 6 - 44	
<b>BWR 3 Hygiene, health and environment</b>			
Declaration of manufacturer & EN 16516	Content, emission and/or release of dangerous substances	Use categories: IA2 Declaration of manufacturer	
EN 1026:2000	Air permeability (material property)	See page 4	
EAD 350141-00-1106, Annex C & EN 12390-8	Water permeability (material property)	No performance determined	
<b>BWR 4 Safety in use</b>			
EOTA TR 001:2003	Mechanical resistance and stability	No performance determined	
EOTA TR 001:2003	Resistance to impact/movement	No performance determined	
EOTA TR 001:2003 ISO 11600 & EAD 350141-00-1106, Clause 2.2.13	Adhesion	7.5P*	
EAD 350141-00-1106, Clause 2.2.12	Durability	Type X	
EAD 350141-00-1106, Clause 2.2.13	Movement capacity	See pages 13, 14, 21, 22, 26 & 27	
EAD 350141-00-1106, Clause 2.2.14	Cycling of perimeter seals for curtain walls	No performance determined	
EAD 350141-00-1106, Clause 2.2.15	Compression set	No performance determined	
EAD 350141-00-1106, Clause 2.2.16	Linear expansion on setting	No performance determined	
<b>BWR 5 Protection against noise</b>			
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	Rw(C;Ctr)= 63 (-1;-7) dB	
<b>BWR 6 Energy economy and heat retention</b>			
EN 12664, EN 12667, EN 12939, EN ISO 8990, EN ISO 6946, EN ISO 10456	Thermal properties	No performance determined	
EN ISO 12572, EN 12086, EN ISO 10456	Water vapour permeability	No performance determined	
* Applicable only to linear joint and gap seals			



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Astro intu mastic: Air Permeability according to BS EN 1026				
Pressure (Pa)	Results under positive chamber pressure		Results under negative chamber pressure	
	Leakage (m <sup>3</sup> /h)	Leakage (m <sup>3</sup> /m <sup>2</sup> / h)	Leakage (m <sup>3</sup> /h)	Leakage (m <sup>3</sup> /m <sup>2</sup> / h)
50	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0
150	0.0	0.0	0.1	2.8
200	0.0	0.0	0.1	2.8
250	0.0	0.0	0.1	2.8
300	0.0	0.0	0.0	0.0
450	0.1	2.8	0.1	2.8
600	0.1	2.8	0.1	2.8

Astro intu mastic: Analytical VOC Results				
Solid content % mass	Water content, % mass	Exempt compounds, % mass	VOC less water less exempt compounds, g/l	VOC limit g/l
76.8	2**	0***	350	750*

\* VOC limit for other sealants

\*\* Given by client

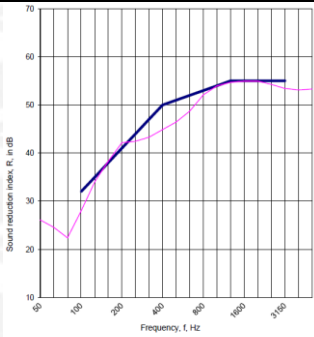
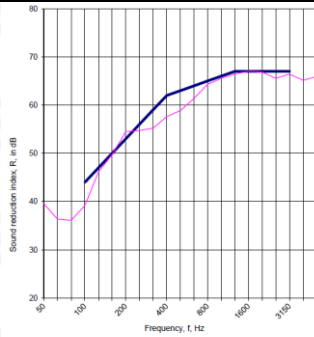
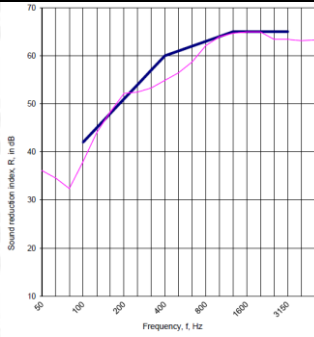
\*\*\* No information about exempt compounds. Set to zero.



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## Astro intu mastic: Acoustic performance according to BS EN ISO 10140-2:2010

Configuration	$R_w(C; C_{tr})$ Specimen only, 1m <sup>2</sup>	$R_w(C; C_{tr})$ Partition & Specimen, 14.2m <sup>2</sup>	$D_{new}$ Partition & Specimen, 14.2m <sup>2</sup>
Astro intu mastic sealant on source room side of wall, 15mm deep x 60mm wide x 2000mm high, with 55mm deep Stonewool (60kg/m <sup>3</sup> )	51 (-1; -6)	63 (-1; -7)	61 (-1; -6)
			
Astro intu mastic sealant on source room side of wall, 25mm deep x 60mm wide x 2000mm high, with 55mm deep Stonewool (60kg/m <sup>3</sup> )	51 (-1; -6)	63 (-1; -7)	61 (-1; -6)



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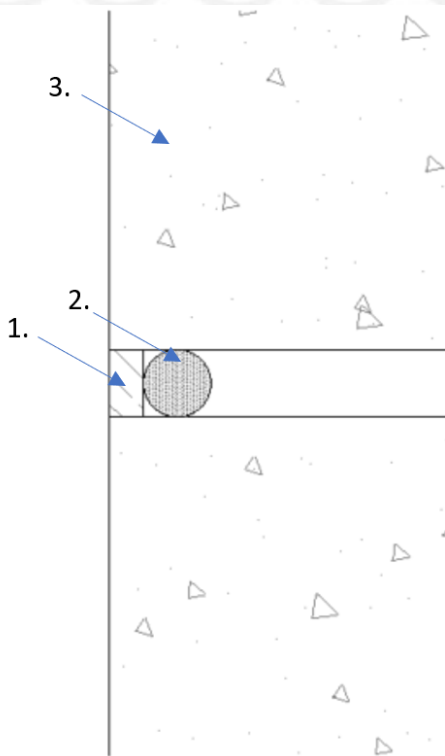
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## Linear Joint Seals

Rigid Walls Minimum Thickness 100mm

Single sided linear joint in wall

Concrete or masonry walls  $\geq 100\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



### Key

1. Astro intu mastic Sealant Installed Either Side of Wall
2. Backing Material
3. Rigid Wall

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	25	PE backing rod, glass wool, stone wool or ceramic wool	E 120 – V – X – F – W 00 to W 50, EI 60 – V – X – F – W 00 to W 50
	2:1 ratio (width:depth) & Min. 10		E 120 – V – X – F – W 00 to W 50, EI 45 – V – X – F – W 00 to W 50



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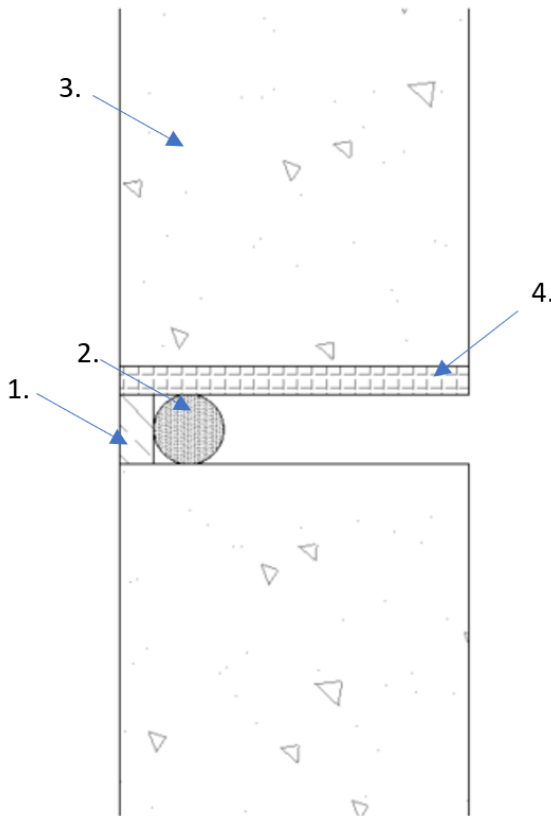
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Single sided linear joint in steel faced wall

Steel - Concrete or masonry walls  $\geq 100\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intumescible Mastic Sealant Installed Either Side of Wall
2. Backing Material
3. Rigid Wall
4. Steel

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / steel	10	PE backing rod, glass wool, stone wool or ceramic wool	E 120 - V - X - F - W 00 to W 20, EI 20 - V - X - F - W 00 to W 20
	2:1 ratio (width:depth) & Min. 10		E 45 - V - X - F - W 00 to W 50, EI 20 - V - X - F - W 00 to W 50



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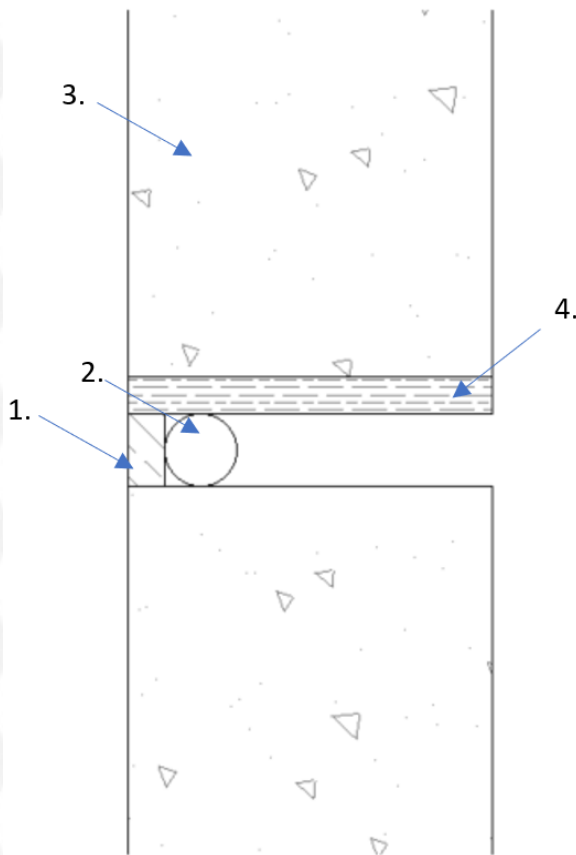
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Single sided linear joint in timber faced wall

Timber - Concrete or masonry walls  $\geq 100\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intu mastic Sealant Installed Either Side of Wall
2. Backing Material
3. Rigid Wall
4. Timber

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / timber	2:1 ratio (width:depth) & Min. 10	PE backing rod, glass wool, stone wool or ceramic wool	E 30 – V – X – F – W 00 to W 50, EI 20 – V – X – F – W 00 to W 50
	25		EI 45 – V – X – F – W 00 to W 50





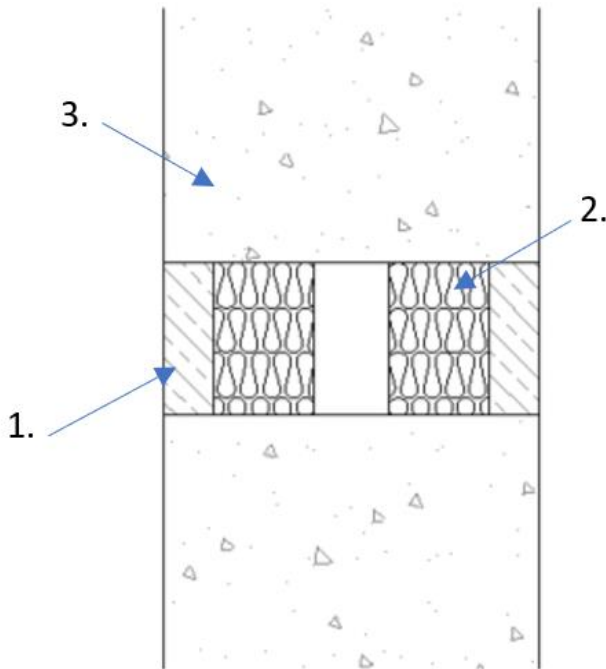
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## Rigid Walls Minimum Thickness 150mm

Double sided linear joint seal in wall

Concrete or masonry walls  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



### Key

1. Astro intumescible Sealant
2. Backing Material
3. Rigid Wall

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	30	Stone wool or ceramic wool ( $\geq 40\text{mm}$ $\geq 45\text{kg/m}^3$ )	EI 240 - V - X - F - W 00 to W 60

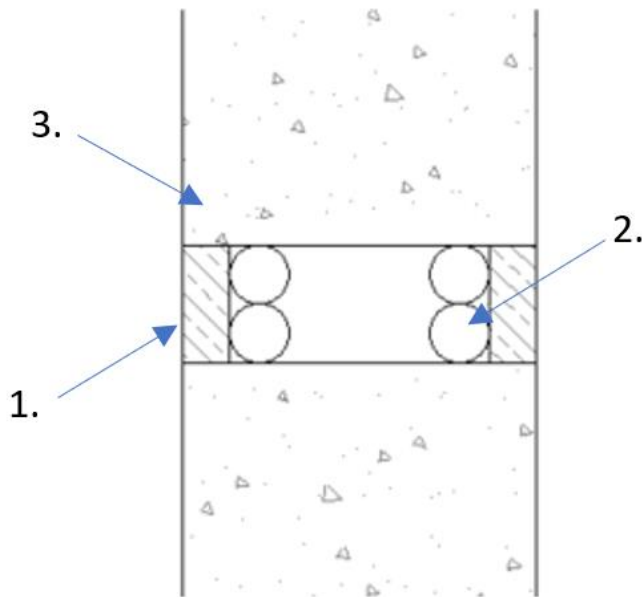


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Double sided linear joint seal in wall

Concrete or masonry walls  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intu mastic Sealant
2. Backing Material
3. Rigid Wall

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	25	PE backing rod, glass wool, stone wool or ceramic wool	EI 240 – V – X – F – W 00 to W 50



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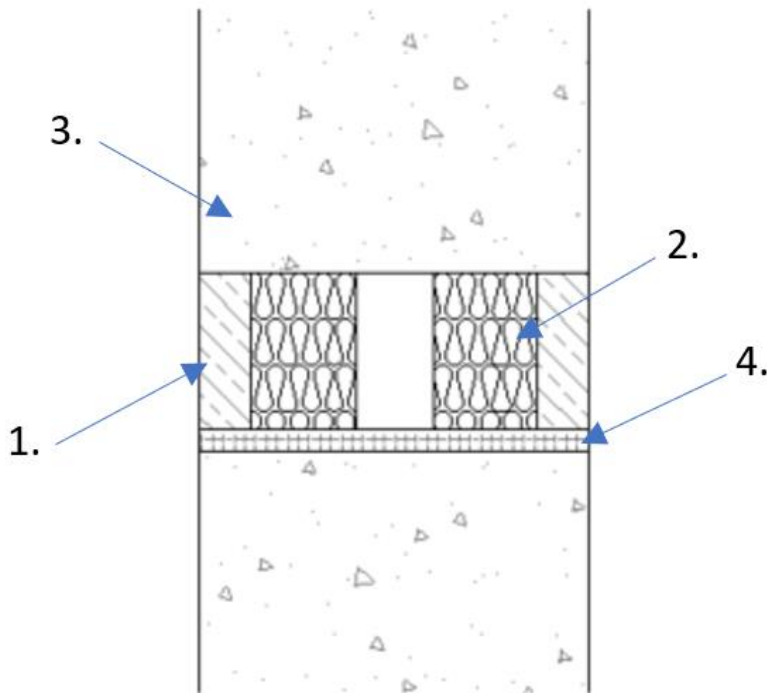
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Double sided linear joint seal in steel faced wall

Steel - Concrete or masonry walls  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



## Key

1. Astro intumescible Sealant
2. Backing Material
3. Rigid Wall
4. Steel

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / steel	30	Stone wool or ceramic wool ( $\geq 40\text{mm} \geq 45\text{kg/m}^3$ )	E 240 – V – X – F – W 00 to W 60, EI 60 – V – X – F – W 00 to W 60



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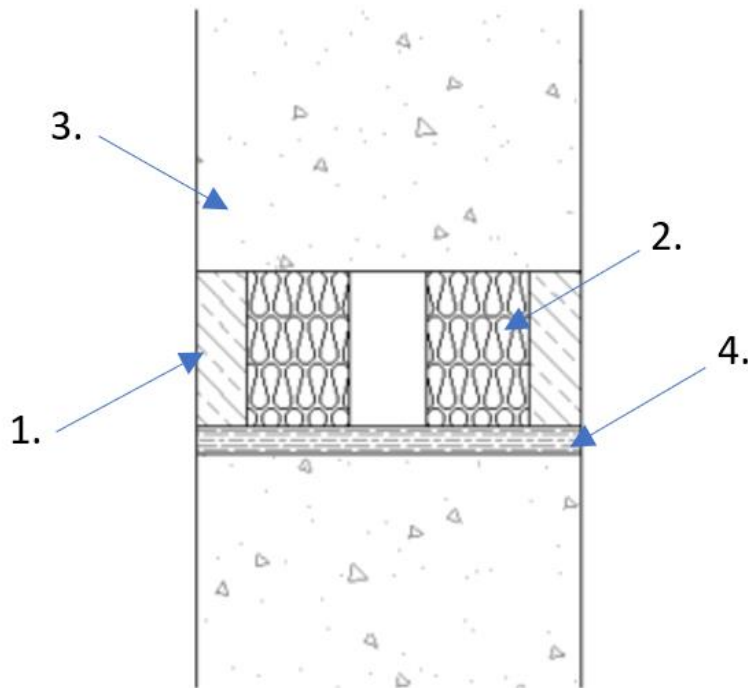
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Double sided linear joint seal in timber faced wall

Timber - Concrete or masonry walls  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

- 1. Astro intu mastic Sealant
- 2. Backing Material
- 3. Rigid Wall
- 4. Timber

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / timber	30	Stone wool or ceramic wool ( $\geq 40\text{mm}$ $\geq 45\text{kg/m}^3$ )	EI 60 – V – X – F – W 00 to W 60



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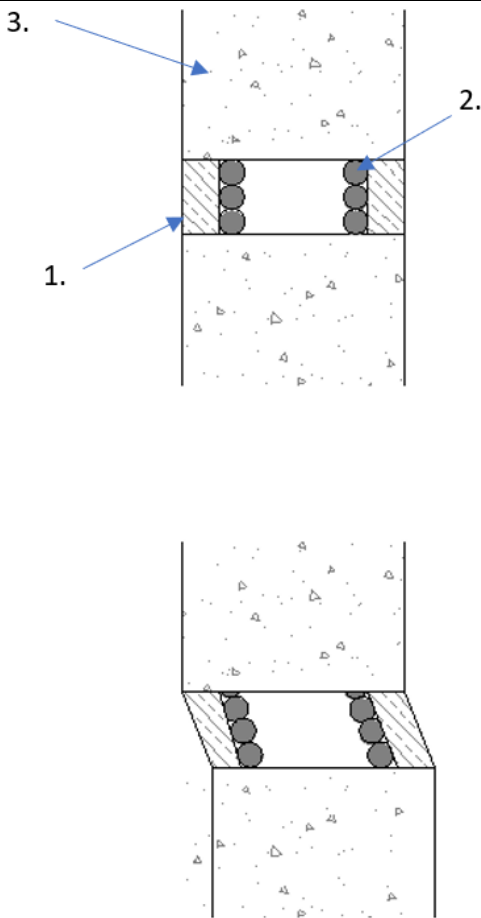
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Double sided seal in wall with movement

Concrete or masonry walls  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



## Key

1. Astro intu mastic Sealant
2. Backing Material
3. Rigid Wall

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	20	PE backing rod, glass wool, stone wool or ceramic wool	E 240 – V – M 25 – F – W 00 to W 60, EI 120 – V – M 25 – F – W 00 to W 60

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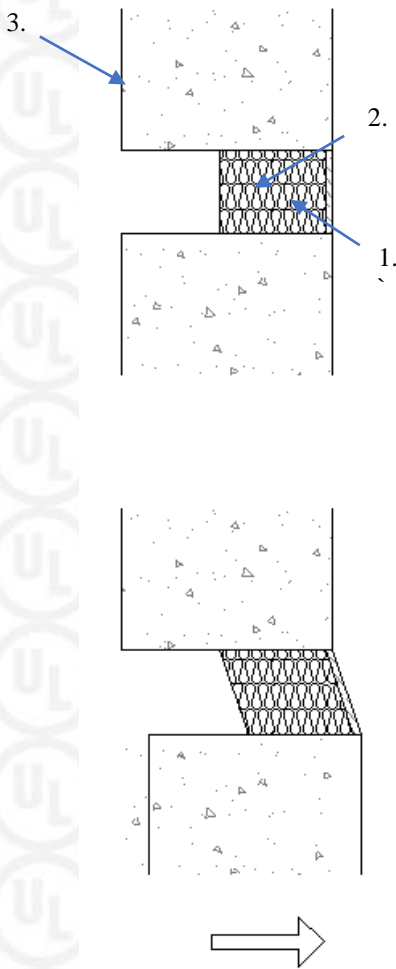


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Single sided linear joint in wall with movement

Concrete or masonry walls  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



## Key

1. Astro intumescible Sealant Installed Either Side of Wall
2. Backing Material
3. Rigid Wall

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	5	Stone wool or ceramic wool ( $\geq 75\text{mm}$ $\geq 60\text{kg/m}^3$ , compressed to 60%)	E 240 – V – M 25 – F – W 00 to W 60, EI 120 – V – M 25 – F – W 00 to W 60



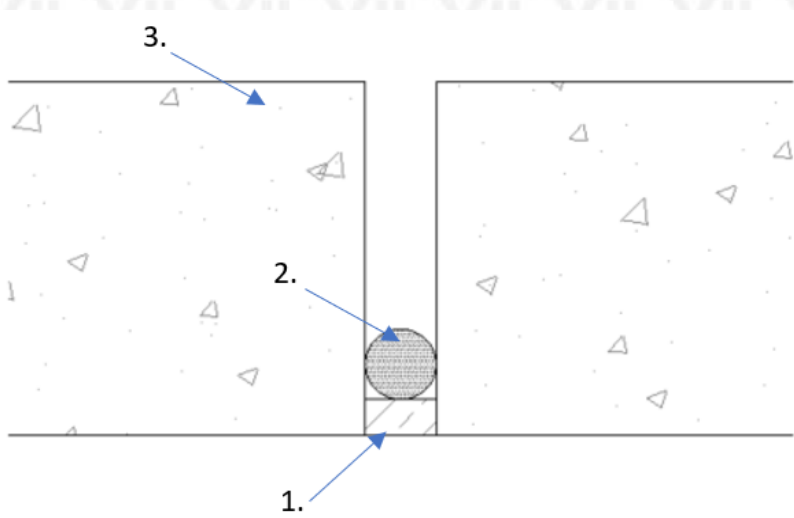
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## Rigid Floors Minimum Thickness 150mm

Single sided linear joint in floor from under side

Concrete or masonry floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$

		<p><b>Key</b></p> <ol style="list-style-type: none"> <li><u>Astro intu mastic Sealant</u></li> <li><u>Backing Material</u></li> <li><u>Rigid Floor</u></li> </ol>	
Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	25	PE backing rod, glass wool, stone wool or ceramic wool	E 240 – H – X – F – W 00 to W 50, EI 90 – H – X – F – W 00 to W 50
	2:1 ratio (width:depth) & Min. 10		E 240 – H – X – F – W 00 to W 50, EI 45 – H – X – F – W 00 to W 50

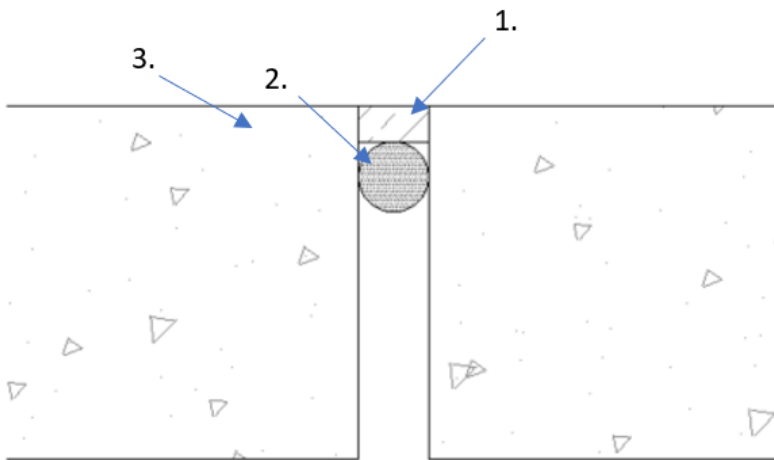


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Single sided linear joint in floor from top side

Concrete or masonry floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intu mastic Sealant
2. Backing Material
3. Rigid Floor

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	25	PE backing rod, glass wool, stone wool or ceramic wool	E 240 – H – X – F – W 00 to W 50, EI 90 – H – X – F – W 00 to W 50
	2:1 ratio (width:depth) & Min. 10		E 240 – H – X – F – W 00 to W 50, EI 45 – H – X – F – W 00 to W 50





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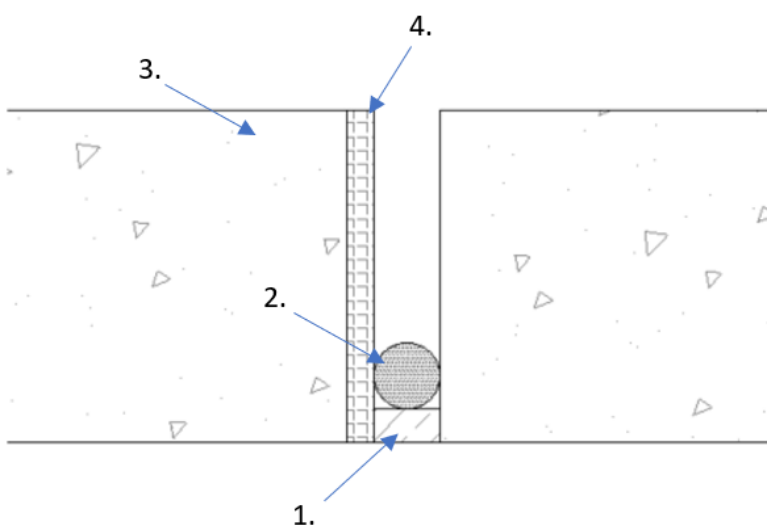
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Single sided linear joint in steel faced floor from underside

Steel - Concrete or masonry floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intu mastic Sealant
2. Backing Material
3. Rigid Floor
4. Steel

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / steel	25	PE backing rod, glass wool, stone wool or ceramic wool	E 240 – H – X – F – W 00 to W 50, EI 90 – H – X – F – W 00 to W 50
	2:1 ratio (width:depth) & Min. 10		E 120 – H – X – F – W 00 to W 50, EI 30 – H – X – F – W 00 to W 50



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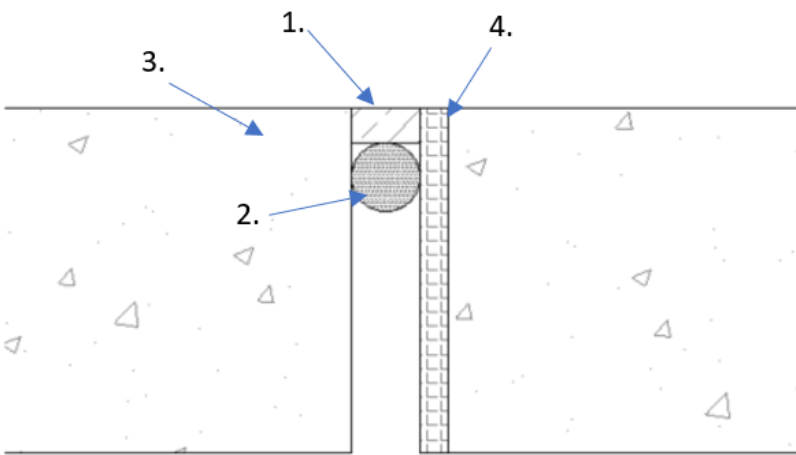
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Single sided linear joint in steel faced floor from top side

Steel - Concrete or masonry floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intu mastic Sealant
2. Backing Material
3. Rigid Floor
4. Steel

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / steel	25	PE backing rod, glass wool, stone wool or ceramic wool	E 240 – H – X – F – W 00 to W 50, EI 90 – H – X – F – W 00 to W 50
	2:1 ratio (width:depth) & Min. 10		E 120 – H – X – F – W 00 to W 50, EI 30 – H – X – F – W 00 to W 50



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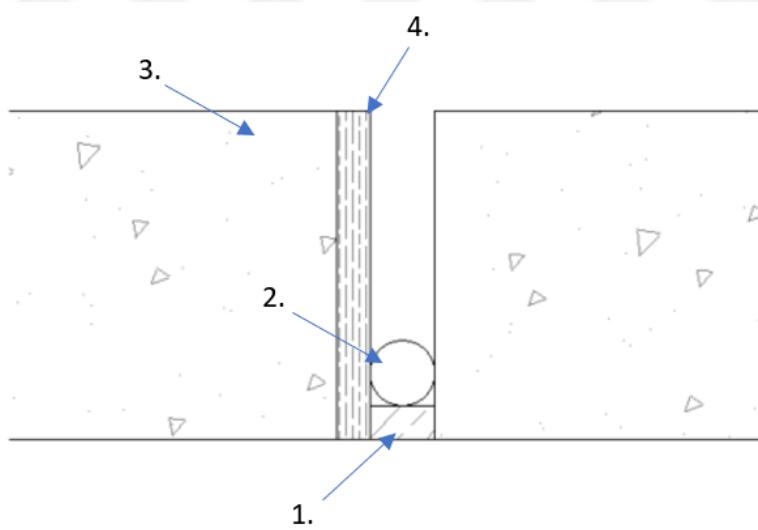
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Single sided linear joint seal in timber faced floor from underside

Timber - Concrete or masonry floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



## Key

1. Astro intu mastic Sealant
2. Backing Material
3. Rigid Floor
4. Timber

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / timber	25	PE backing rod, glass wool, stone wool or ceramic wool	EI 45 – H – X – F – W 00 to W 50
	2:1 ratio (width:depth) & Min. 10		EI 30 – H – X – F – W 00 to W 50



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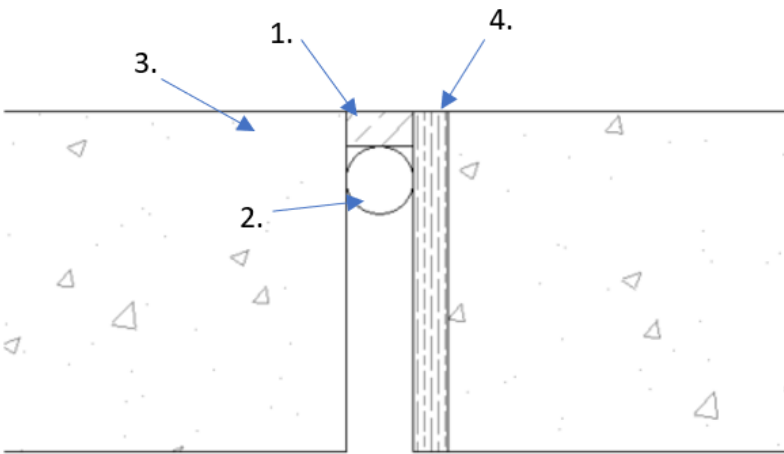
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Single sided linear joint seal in timber faced floor from top side

Timber - Concrete or masonry floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$

Key

1. Astro intu mastic Sealant
2. Backing Material
3. Rigid Floor
4. Timber



Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / timber	25	PE backing rod, glass wool, stone wool or ceramic wool	EI 45 – H – X – F – W 00 to W 50
	2:1 ratio (width:depth) & Min. 10		EI 30 – H – X – F – W 00 to W 50

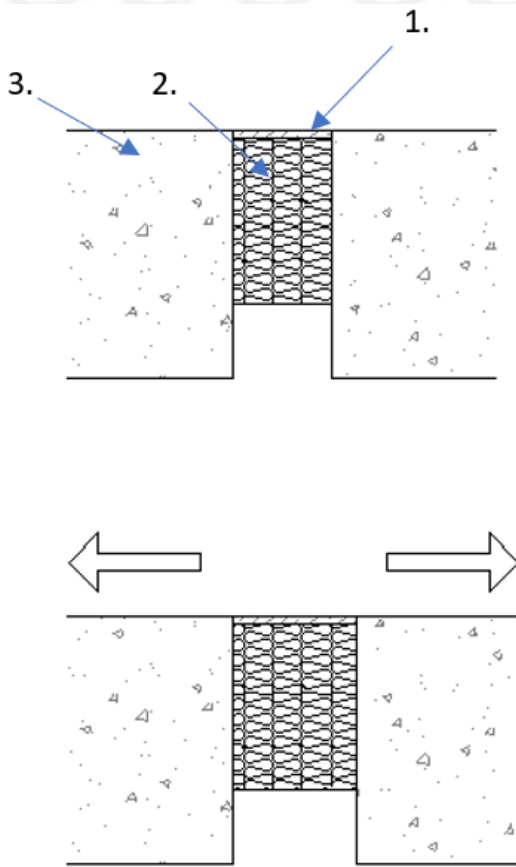


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Single sided linear joint in floor from top side with movement

Concrete or masonry floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intu mastic Sealant
2. Backing Material
3. Rigid Floor

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	5	Stone wool or ceramic wool ( $\geq 100\text{mm}$ $\geq 60\text{kg/m}^3$ , compressed to 60%)	EI 240 – H – M 25 – F – W 00 to W 60

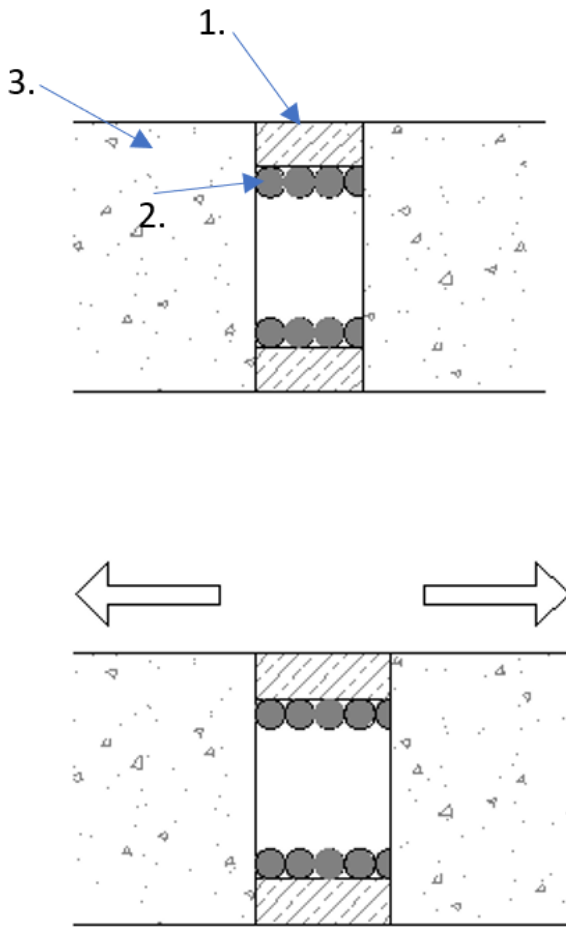


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Double sided linear joint seal in floor with movement

Concrete or masonry floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

- 1. Astro intu mastic Sealant
- 2. Backing Material
- 3. Rigid Floor

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	20	PE backing rod, glass wool, stone wool or ceramic wool	E 240 – H – M 17 – F – W 00 to W 60, EI 60 – H – M 17 – F – W 00 to W 60



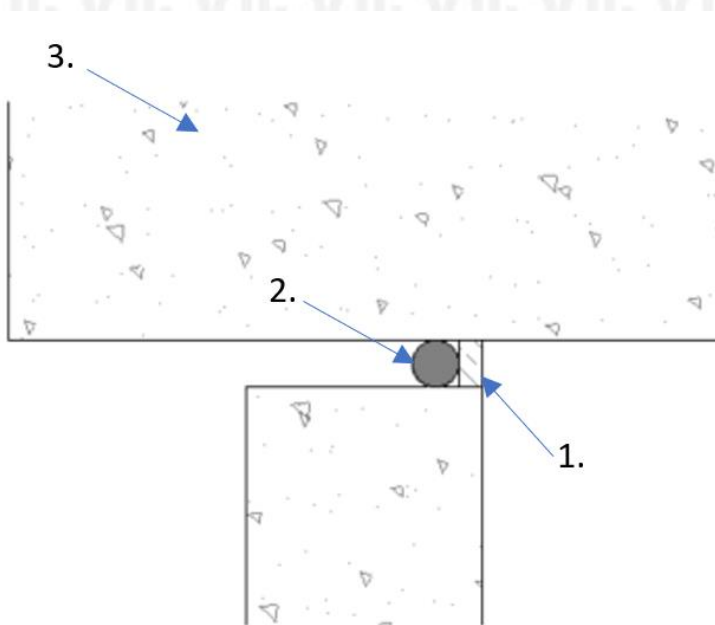
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## Head of Wall Minimum Thickness 150mm

Single sided head of wall joint in floor

Concrete or masonry walls & floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



### Key

1. Astro intu mastic Sealant Installed Either Side of Wall
2. Backing Material
3. Rigid Floor

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	25	PE backing rod, glass wool, stone wool or ceramic wool	E 240 – T – X – F – W 00 to W 50, EI 90 – T – X – F – W 00 to W 50
	2:1 ratio (width:depth) & Min. 10		E 240 – T – X – F – W 00 to W 50, EI 45 – T – X – F – W 00 to W 50

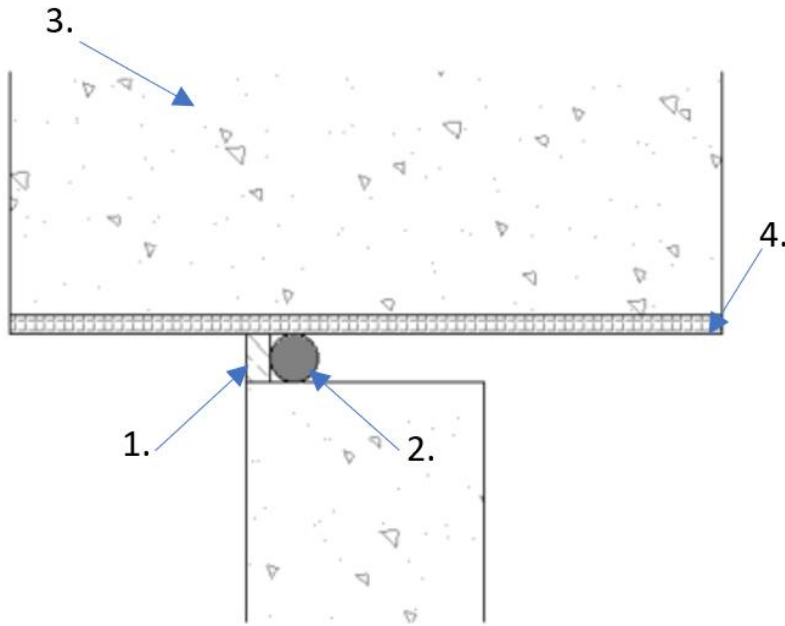


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Single sided head of wall joint with steel face

Steel - Concrete or masonry walls & floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intu mastic Sealant Installed Either Side of Wall
2. Backing Material
3. Rigid Floor
4. Steel

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / steel	25	PE backing rod, glass wool, stone wool or ceramic wool	E 240 - T - X - F - W 50, EI 90 - T - X - F - W 50
	2:1 ratio (width:depth) & Min. 10		E 240 - T - X - F - W 00 to W 50, EI 30 - T - X - F - W 00 to W 50



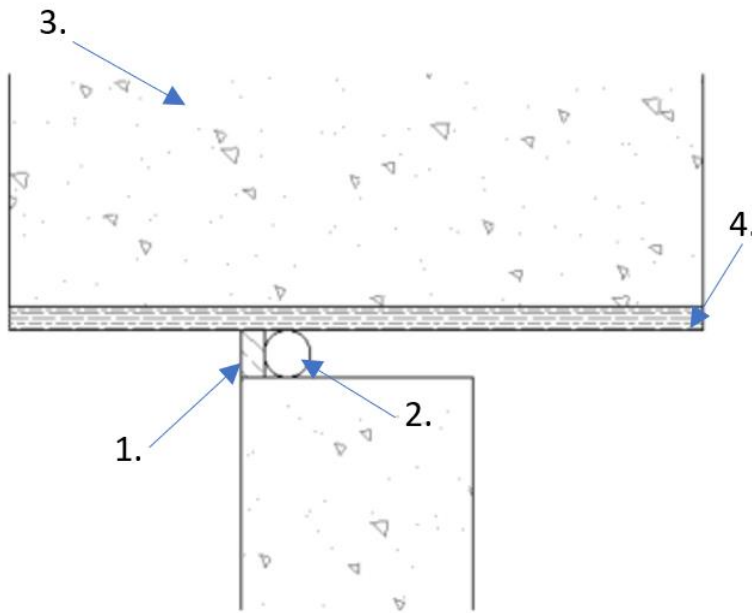


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Single sided head of wall joint in timber face

Timber - Concrete or masonry walls & floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intu mastic Sealant Installed Either Side of Wall
2. Backing Material
3. Rigid Floor
4. Timber

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / timber	25	PE backing rod, glass wool, stone wool or ceramic wool	EI 45 - T - X - F - W 00 to W 50
	2:1 ratio (width:depth) & Min. 10		EI 30 - T - X - F - W 00 to W 50

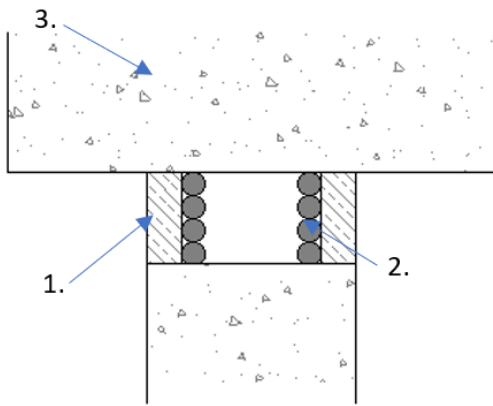


# Appendix UL-EU CERTIFICATE

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Double sided head of wall joint with movement

Concrete or masonry walls & floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

- 1. Astro intu mastic Sealant
- 2. Backing Material
- 3. Rigid Floor

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	20	PE backing rod, glass wool, stone wool or ceramic wool	E 240 – T – M 17 – F – W 00 to W 60, EI 60 – T – M 17 – F – W 00 to W 60

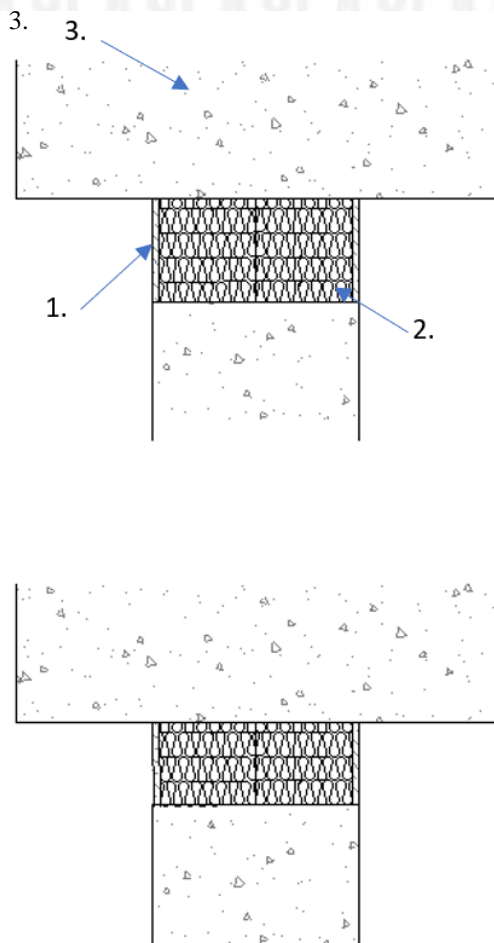


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Double sided head of wall joint with movement

Concrete or masonry walls & floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intu mastic Sealant
2. Backing Material
3. Rigid Floor

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	5	Stone wool or ceramic wool ( $\geq 70\text{mm}$ (x2) $\geq 60\text{kg/m}^3$ , compressed to 60%)	EI 240 – T – M 25 – F – W 00 to W 60



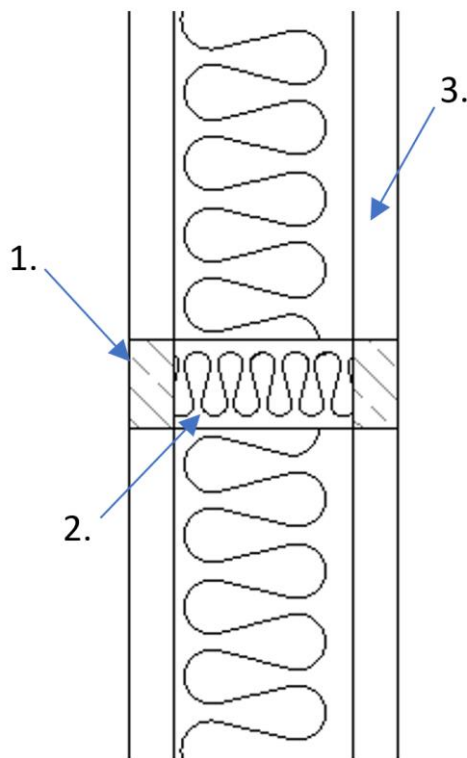
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## Flexible or Rigid Walls Minimum Thickness 75mm

Double sided linear joint in wall

Flexible or Rigid Walls  $\geq 75$ mm



### Key

1. Astro intu mastic Sealant
2. Backing Material
3. Flexible wall

Substrate	Depth (mm)	Backing Material	Classification
Flexible / Flexible	12.5	Stone wool or ceramic wool (50mm 45kg/m <sup>3</sup> )	E 60 – V – X – F – W 00 to W 25, EI 45– V – X – F – W 00 to W 25
Masonry / masonry			



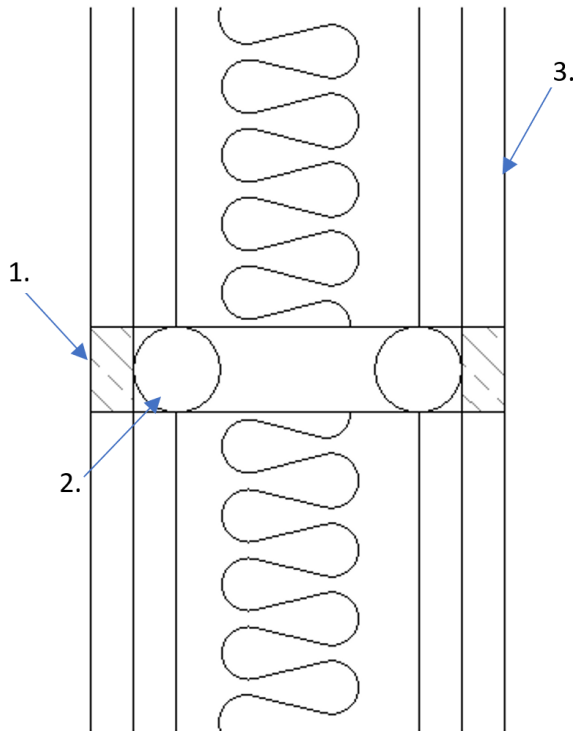
# Appendix UL-EU CERTIFICATE

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## Flexible or Rigid Walls Minimum Thickness 120mm

Double sided linear joint in wall

Flexible or Rigid Walls  $\geq 120\text{mm}$



### Key

1. Astro intu mastic Sealant
2. Backing Material
3. Flexible Wall

Substrate	Depth (mm)	Backing Material	Classification
Flexible / Flexible	12.5	PE backing rod, glass wool, stone wool or ceramic wool	EI 120 – V – X – F – W 00 to W 20
Masonry / masonry			



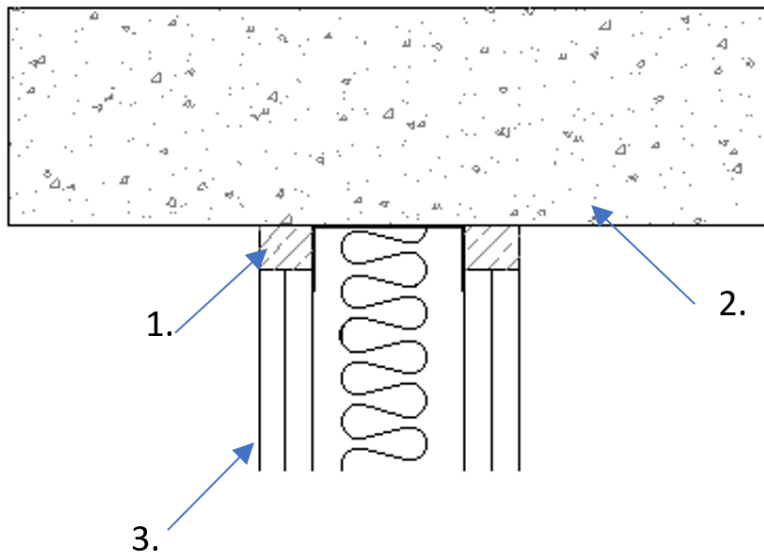
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## Flexible Head of Walls Minimum Thickness 120mm

Double sided head of wall joint

Flexible or Rigid Walls  $\geq 120\text{mm}$



### Key

1. Astro intu mastic Sealant
2. Rigid Floor
3. Flexible Wall

Substrate	Depth (mm)	Backing Material	Classification
Flexible / concrete	25	Steel head track	EI 120 – T – X – F – W 00 to W 20
Masonry / concrete			



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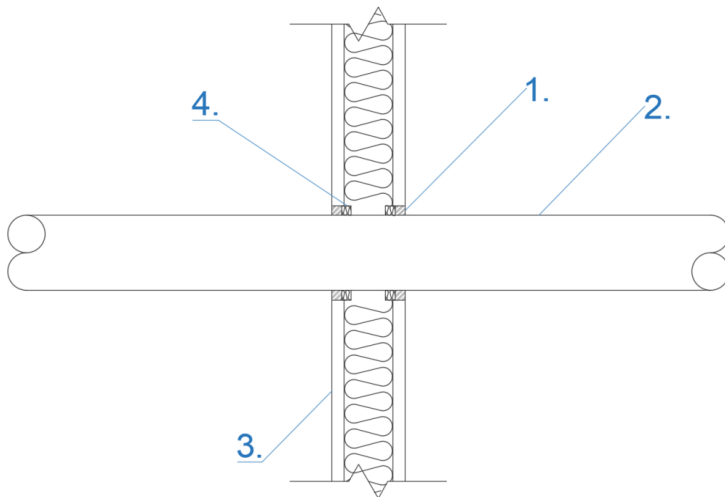
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## Penetration Seals

Flexible or Rigid Walls Minimum Thickness 75mm

Metallic pipes

Flexible or Rigid Walls  $\geq 75$ mm Lined/Unlined – Insulated/Uninsulated



### Key

1. Astro intu mastic Sealant
2. Metallic Pipe
3. Flexible Wall
4. Backing Material

Penetration Service	Depth (mm)	Annular (mm)	Backing Material	Classification
Copper pipe $\leq 15$ mm $\varnothing$ , 0.7 – 14.2mm wall thickness	12	5-10	Stone wool or ceramic wool ( $\geq 10$ mm $\geq 45$ kg/m <sup>3</sup> )	E 90 C/U, C/C, EI 60 C/U, C/C
Copper/Steel pipe 15 – 54mm $\varnothing$ , 1.2 – 14.2mm wall thickness				E 90 C/U, C/C
Steel pipe 15mm $\varnothing$ , 1 – 14.2mm wall thickness				EI 90 C/U, C/C
Steel pipe 15 - 76mm $\varnothing$ , 2 – 14.2mm wall thickness				E 90 C/U, C/C, EI 20 C/U, C/C
Steel pipe 325mm $\varnothing$ , 17.5mm wall thickness, insulated with stone wool $\geq 40$ mm thick, $\geq 45$ kg/m <sup>3</sup> (LI) min. 400mm length to both faces	10	25 (0 distance from aperture edge)	PE backing rod, glass wool, stone wool or ceramic wool	E 60 C/U, C/C, EI 30 C/U, C/C

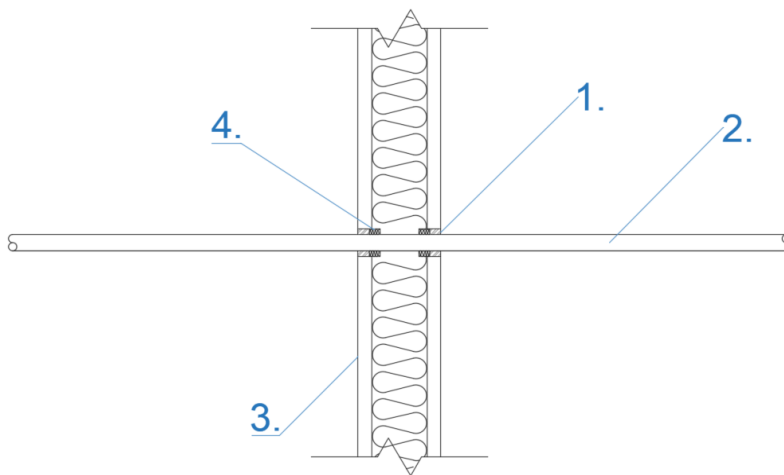


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Single cables

Flexible or Rigid Walls  $\geq 75\text{mm}$  Lined/Unlined – Insulated/Uninsulated



## Key

1. Astro intumescible Sealant
2. Single Cable
3. Flexible Wall
4. Backing Material

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Classification
D1 cable*	10	100 Ø	PE backing rod, glass wool, stone wool or ceramic wool	E 60, EI 45
B cable*	12	25 Ø	Stone wool or ceramic wool (10mm 45kg/m <sup>3</sup> )	E 90, EI 60

\* As defined in EN 1366-3: 2009, Annex A





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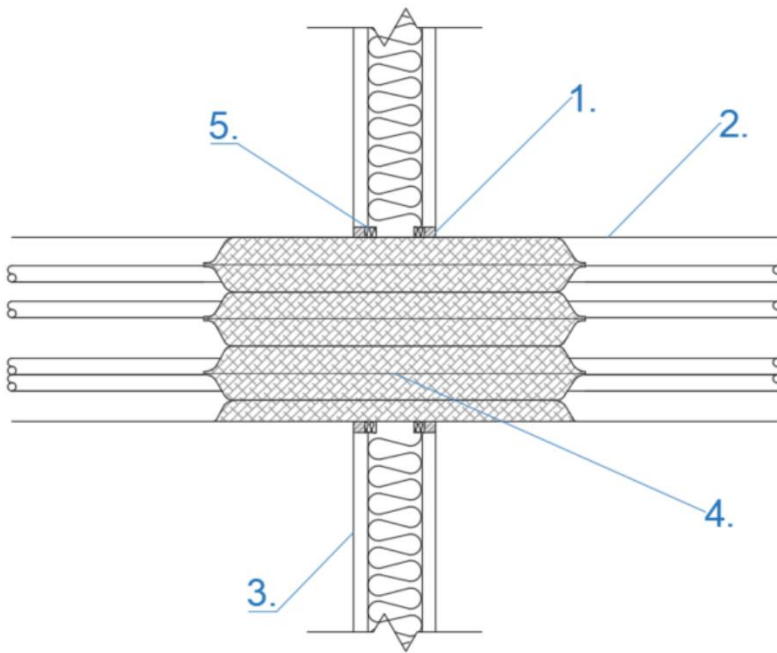
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Cable trunking

Flexible or Rigid Walls  $\geq 75\text{mm}$  – Lined/Unlined – Insulated/Uninsulated



## Key

1. Astro intumescible mastic Sealant
2. Metal Trunking Filled with Cables
3. Flexible Wall
4. Astro X Series Pillow
5. Backing Material

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Steel trunking up to 150mm x 150mm	10	170 x 170	PE backing rod, glass wool, stone wool or ceramic wool	0	E 60, EI 20
Steel trunking up to 50mm x 50mm	10	70 x 70	PE backing rod, glass wool, stone wool or ceramic wool	0	E 60, EI 45



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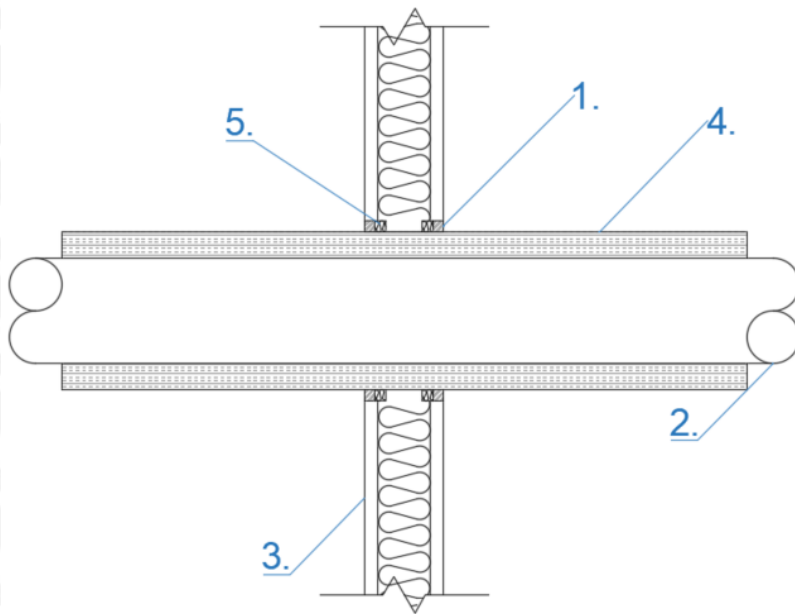
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Insulated metallic pipes

Flexible or Rigid Walls  $\geq 75\text{mm}$  – Lined/Unlined – Insulated/Uninsulated



Key

1. Astro intu mastic Sealant
2. Metal Pipe
3. Flexible Wall
4. Stone Wool Insulation
5. Backing Material

Penetration Service	Depth (mm)	Maximum Annular (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Copper/Steel Pipe 159mm $\varnothing$ , 2-14.2mm wall thickness insulated with stone wool $\geq 50\text{mm}$ thick, $\geq 90\text{kg/m}^3$ (C/S)	10	10	PE backing rod, glass wool, stone wool or ceramic wool	0	E 60 C/U, C/C, EI 45 C/U, C/C

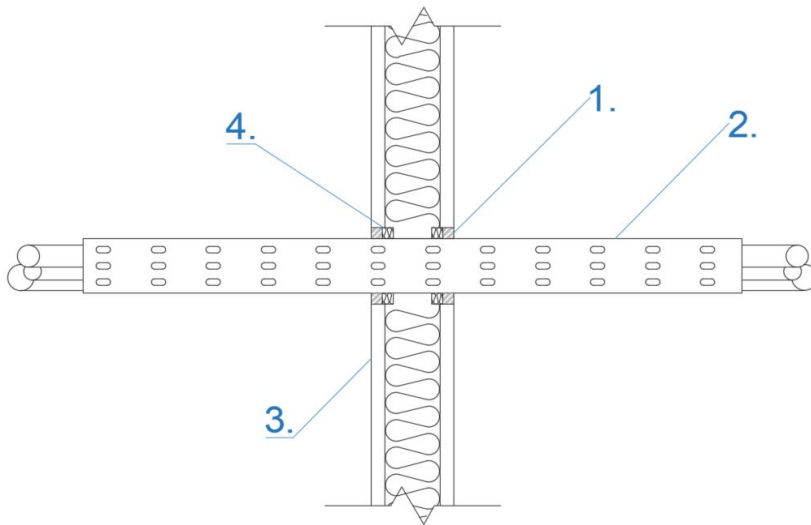


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Cable trays

Flexible or Rigid Walls  $\geq 75\text{mm}$  – Lined/Unlined – Insulated/Uninsulated



Key

1. Astro intu mastic Sealant
2. Cable Tray
3. Flexible Wall
4. Backing Material

Penetration Service	Depth (mm)	Maximum Aperture Size (mm) (h x w)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Steel cable tray $\leq 450\text{mm}$ wide loaded with cables $\leq 21\text{mm } \varnothing + \text{C1, C2, C3 cables}^*$	10	470 x 100	PE backing rod, glass wool, stone wool or ceramic wool	0	E 60, EI 20
Steel cable tray $\leq 450\text{mm}$ wide loaded with cables $\leq 21\text{mm } \varnothing + \text{C1, C2, C3 cables}^*$ with insulation $\leq 40\text{mm}$ thick $\leq 45\text{kg/m}^3$ , $\leq 400\text{mm}$ either side of the wall (L/I)	10	470 x 100	PE backing rod, glass wool, stone wool or ceramic wool	0	EI 45

\* As defined in EN 1366-3: 2009, Annex A

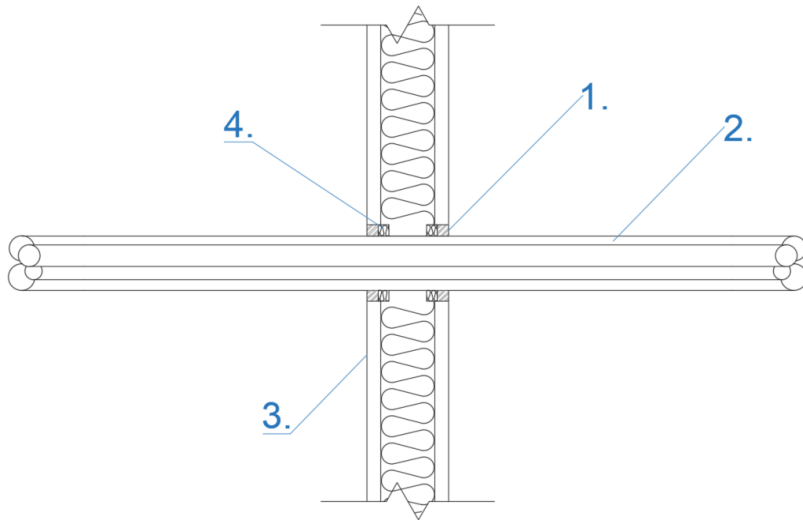


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Cable bunches

Flexible or Rigid Walls  $\geq 75\text{mm}$  – Lined/Unlined – Insulated/Uninsulated



Key

1. Astrointumastic Sealant
2. Single Bunch
3. Flexible Wall
4. Backing Material

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Telecoms cables $\leq 21\text{mm}$ $\varnothing$ in cable bunch $\leq 100\text{mm}$ $\varnothing$	10	120 $\varnothing$	PE backing rod, glass wool, stone wool or ceramic wool	0	E 60, EI 45



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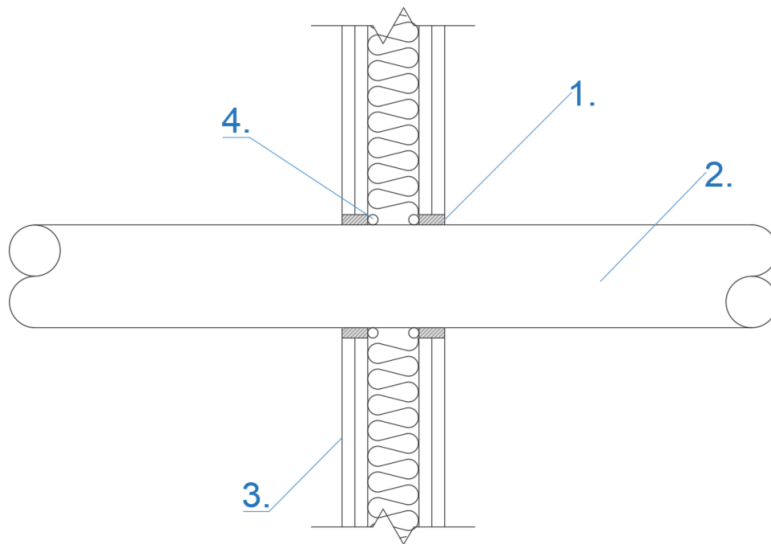
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## Flexible or Rigid Walls Minimum Thickness 100mm

Metallic pipes

Flexible or Rigid Walls  $\geq 100\text{mm}$



### Key

1. Astrointu mastic Sealant
2. Metallic Pipe
3. Flexible Wall
4. Backing Material

Penetration Service	Depth (mm)	Annular (mm)	Backing Material	Classification
Steel pipe 42mm Ø, 2.8 – 14.2mm wall thickness	25	10	PE backing rod, glass wool, stone wool or ceramic wool	E 120 C/U, C/C, EI 45 C/U, C/C
Steel pipe 42 – 114mm Ø, 3 – 14.2mm wall thickness				E 120 C/U, C/C, EI 20 C/U, C/C

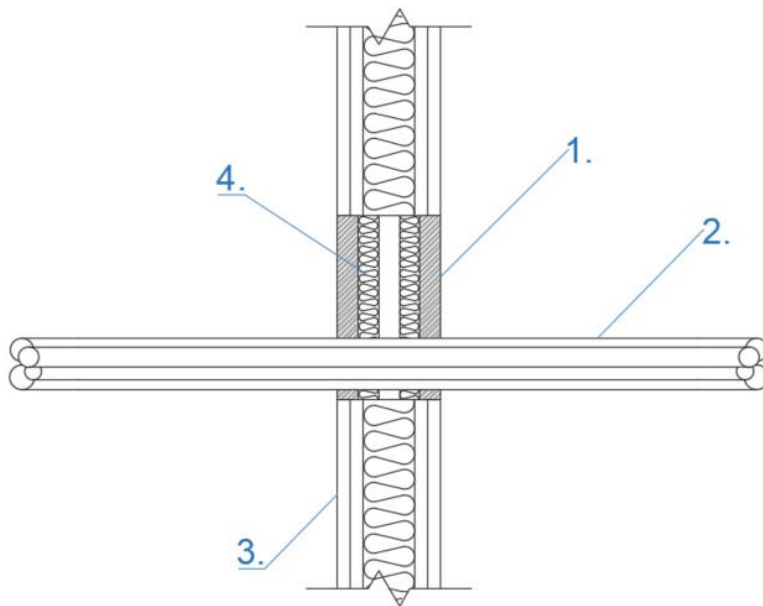


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Cables and conduits

Flexible or Rigid Walls  $\geq 100\text{mm}$  – Lined/Unlined – Insulated



Key

1. Astro intu mastic Sealant
2. Cables
3. Flexible Wall
4. Backing Material

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Cable bunch $\leq 100\text{mm } \varnothing$	20	180 x 180	Stone wool or ceramic wool (20mm 45kg/m <sup>3</sup> )	10	EI 120
PVC conduits $\leq 16\text{mm } \varnothing$					EI 120
Steel/Copper conduits $\leq 16\text{mm } \varnothing$					E 120, EI 20
Cables $\leq 50\text{mm } \varnothing$					E 90, EI 60
Cables $\leq 21\text{mm } \varnothing$					EI 120



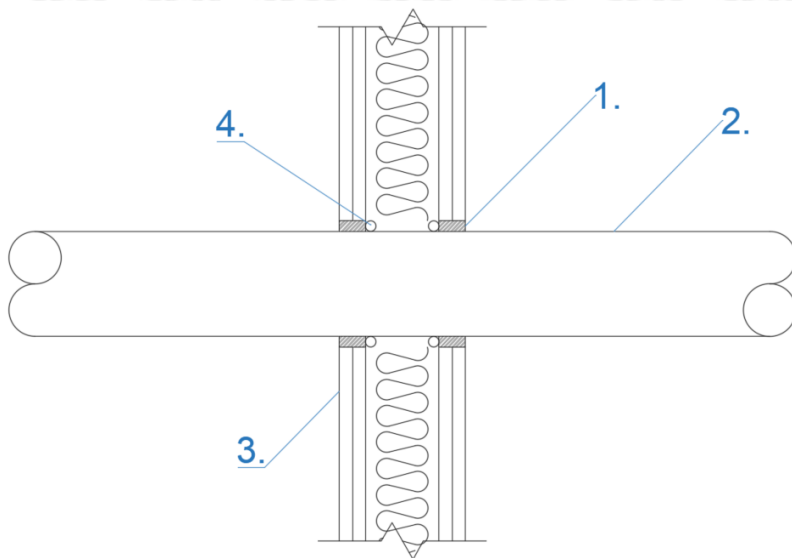
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## Flexible or Rigid Walls Minimum Thickness 120mm

Metal pipes

Flexible or Rigid Walls  $\geq 120\text{mm}$  – Lined/Unlined – Insulated



### Key

1. Astro intumescible mastic Sealant
2. Metal Pipe
3. Flexible Wall
4. Backing Material

Penetration Service	Depth (mm)	Annular Space (mm)	Backing Material	Classification
Copper/Steel pipe 15-40mm Ø, 0.8 – 14.2mm wall thickness	25	10	PE backing rod, glass wool, stone wool or ceramic wool	E 120 C/U, C/C, EI 15 C/U, C/C
Copper/Steel pipe 40-159mm Ø, 1.8 – 14.2mm wall thickness				E 120 C/U, C/C
Copper/Steel pipe 40mm Ø, 0.8 – 14.2mm wall thickness insulated with Astro Thermal Defense Wrap to both sides of the wall at 300mm (L/I)				E 120 C/U, C/C, EI 90 C/U, C/C
Copper/Steel pipe 40-159mm Ø, 1.8 – 14.2mm wall thickness insulated with Astro Thermal Defense Wrap to both sides of the wall at 300mm (L/I)				E 120 C/U, C/C, EI 20 C/U, C/C

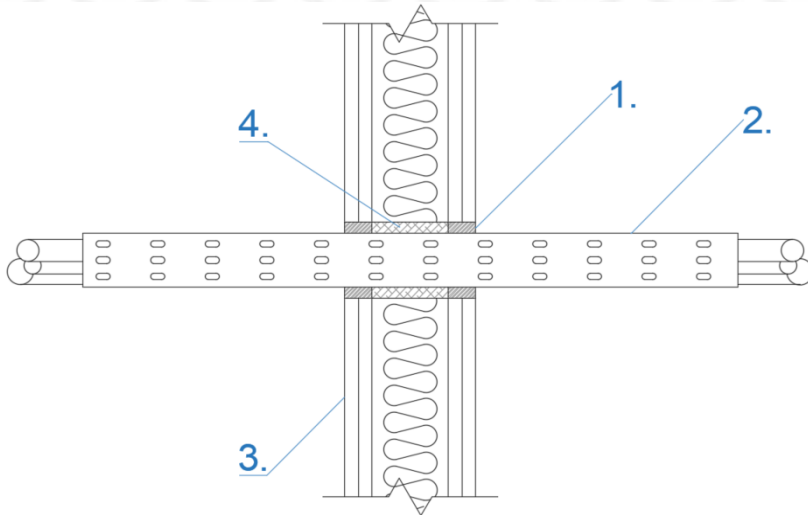


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Cable trays

Flexible or Rigid Walls  $\geq 120\text{mm}$  – Lined/Unlined – Insulated



Key

1. Astro intu mastic Sealant
2. Cable Tray/Cables
3. Flexible Wall
4. Backing Material

Penetration Service	Depth (mm)	Maximum Aperture Size (mm) (w x h)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Steel cable tray $\leq 450\text{mm}$ wide loaded with cables $\leq 21\text{mm } \varnothing$	25	490 x 100	Stone wool or ceramic wool ( $\geq 35\text{mm}$ $\geq 80\text{kg/m}^3$ )	20	E 120, EI 90
C1, C2, D1 and D2 Cables*	25	200 x 100	PE backing rod, glass wool, stone wool or ceramic wool	20	E 90, EI 60

\* As defined in EN 1366-3: 2009, Annex A





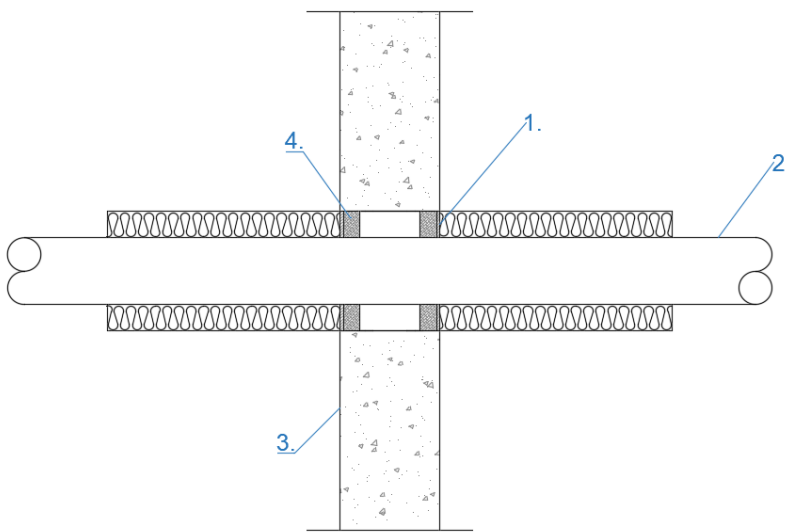
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## Rigid walls Minimum Thickness 150mm

Metal pipes

Rigid Walls  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



### Key

1. Astro intu mastic Sealant
2. Metal Pipe
3. Rigid Wall
4. Backing Material

Penetration Service	Depth (mm)	Maximum Aperture Size	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Copper/Steel pipe 35 - 159mm $\varnothing$ , 2 - 14.2mm wall thickness insulated with stone wool 50mm thick 100kg/m <sup>3</sup> (C/I)	5	Pipe $\varnothing$ + 55mm	PE backing rod, glass wool, stone wool or ceramic wool	0	EI 240 C/U, C/C

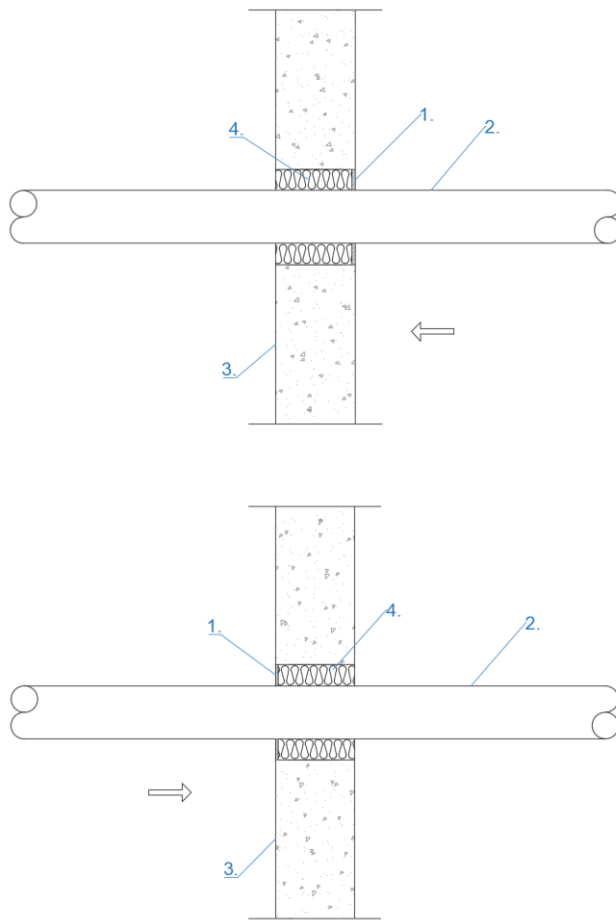


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Metal pipes with single sided access

Rigid Walls  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



Key

1. Astro intu mastic Sealant
2. Metal Pipe
3. Rigid Wall
4. Backing Material

Penetration Service	Depth (mm)	Maximum Aperture Size	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Steel pipe 40 -152mm $\varnothing$ , 2.5 – 14.2mm wall thickness	6	Pipe $\varnothing$ + 50mm	Stone wool or ceramic wool ( $\geq 144\text{mm} \geq 80\text{kg/m}^3$ )	0	E 240 C/C
Steel pipe 40mm $\varnothing$ , 1.5 – 14.2mm wall thickness	6	Pipe $\varnothing$ + 50mm	Stone wool or ceramic wool ( $\geq 144\text{mm} \geq 80\text{kg/m}^3$ )	0	E 240 C/C, EI 120 C/C

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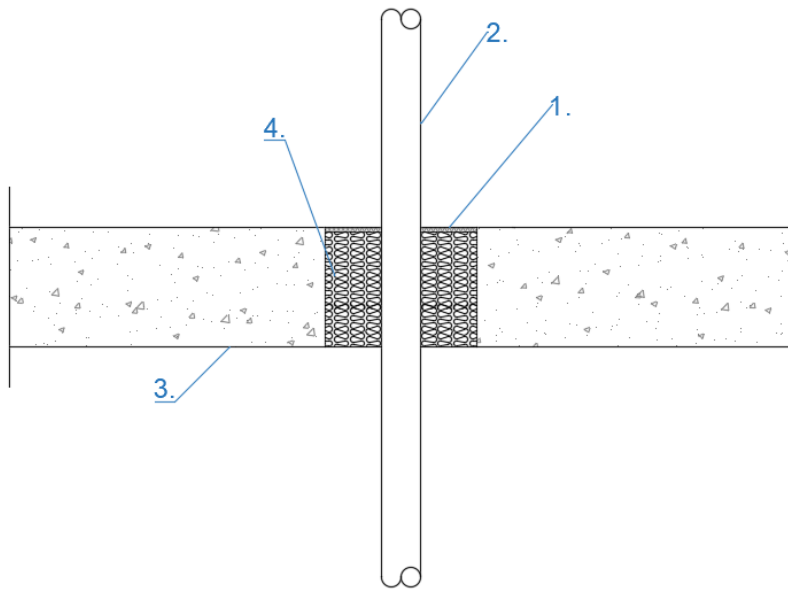
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## Rigid Floors Minimum Thickness 150mm

Metal pipes

Rigid Floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



### Key

1. Astro intumescible Sealant
2. Metal Pipe
3. Rigid Floor
4. Backing Material

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Copper/Steel pipe 42 – 159mm Ø, 1 – 14.2mm wall thickness	5	200 x 200	Stone wool or ceramic wool ( $\geq 145\text{mm}$ $\geq 45\text{kg/m}^3$ )	20	E 180 C/U, C/C
Copper/Steel pipe 42mm Ø, 1 – 14.2mm wall thickness					E 240 C/U, C/C

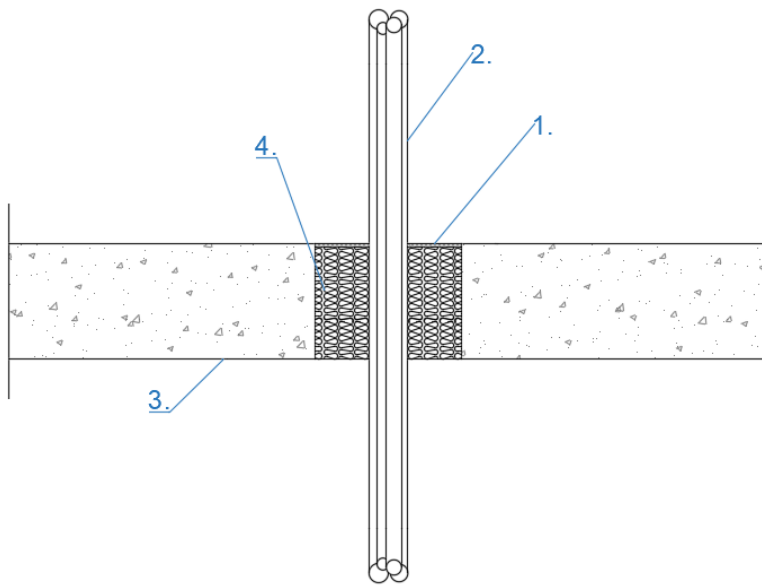


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Cables

Rigid Floors  $\geq 150\text{mm}$  with a density of  $\geq 650\text{kg/m}^3$



## Key

1. Astro intu mastic Sealant
2. Cables
3. Rigid Floor
4. Backing Material

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Telecoms cables $\leq 21\text{mm}$ $\varnothing$ in cable bunch $\leq 100\text{mm}$ $\varnothing$	5	200 x 200	Stone wool or ceramic wool ( $\geq 145\text{mm}$ $\geq 45\text{kg/m}^3$ )	0	E 45, EI 15
PVC conduits $\leq 16\text{mm}$ $\varnothing$					E 45, EI 15
Steel/Copper conduits $\leq 16\text{mm}$ $\varnothing$					E 45, EI 15
Cables $\leq 80\text{mm}$ $\varnothing$					E 90, EI 45
Cables $\leq 50\text{mm}$ $\varnothing$					E 90, EI 45
Cables $\leq 21\text{mm}$ $\varnothing$					E 240, EI 90



# Appendix UL-EU Certificate

<b>Certification Mark</b>	<b>UL-EU mark</b>
<b>Certificate No.</b>	UL-EU-00838-A1-CPR
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<b>Date of Issue</b>	2015-09-09

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



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