ASTROFLAME
PASSIVE FIRE STOP SYSTEMS

Technical Data Sheet

Astro Intu Mastic - Trowel Grade (Linear Joint & Gap Seals)

UIC of product-type: INTUM

Revision 16 - 17th October 2024



0843-UKTA-24/0037 | 24/0038
0843-CPR-1385

CE-ETA - 20-1088/20-1089
CE-2531-CPR-CXO10294

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

MEMBER OF EOTA

European Technical Assessment ETA-20/1089 of 2023/11/23

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:	Astro Intu Mastic
Product family to which the above construction product belongs:	Fire Stopping and Sealing Product: • Linear Joint and Gap Seals
Manufacturer:	Astroflame (fireseals) Limited Unit 8 The IO Centre Stephenson Road Segensworth, Fareham Hampshire PO15 5RU
Manufacturing plant:	E055
This European Technical Assessment contains:	34 pages including 3 annexes which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:	EAD 350141-00-1106
This version replaces:	-

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I. SPECIFIC PARTS OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of the product

1) Astro Intu Mastic is an acrylic based sealant used to form linear gap seals where gaps are presented in wall and floor constructions and linear joint seals where wall and floor constructions abut.

2) Astro Intu Mastic is supplied in liquid form contained within 310 ml & 380 ml cartridges, 600 ml foils or in 5, 10, 20 or 25 litre tubs. The sealant is gunned or trowelled into the aperture in or between the separating element/elements to a specified depth using various backing materials.

3) The applicant has submitted a written declaration that Astro Intu Mastic does not contain substances which have to be classified as dangerous according to article 59 (1, 10) of the Regulation (EC) No 1907/2006 (REACH).

   In addition to the specific clauses relating to dangerous substances contained in this European technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

4) The use category of Astro Intu Mastic in relation to BWR 3 (Hygiene, health and environment) is IA2

2 Specification of the intended uses of the product in accordance with the applicable European Assessment Document (Hereinafter EAD)

Detailed information and data is given in Annex A.

1) The intended use of system Astro Intu Mastic is to reinstate the fire resistance performance of gaps in and joints in and between flexible and rigid wall constructions, gaps in and joints between rigid floor constructions.

2) The specific elements of construction that the system Astro Intu Mastic may be used to provide a gap or joint seal in, are as follows:

   a. Flexible walls: The wall must have a minimum thickness of 75 mm and comprise steel studs or timber studs lined on both faces with minimum 1 layer of 12.5 mm thick boards.
   b. Rigid walls: The wall must have a minimum thickness of 75 mm and comprise concrete, aerated concrete or masonry with a minimum density of 650 kg/m^3.
   c. Rigid floors: The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m^3.

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

3) The System Astro Intu Mastic may be used to provide a linear joint or gap seal with specific supporting constructions and substrates (for details see Annex A).

4) The maximum permitted joint/gap width for system Astro Intu Mastic is 60 mm.

5) The maximum movement capability of system Astro Intu Mastic is ≤ 7.5% depending on the application and installation (for details see Annex A).

6) The provisions made in this European Technical Assessment are based on an assumed working life of the Astro Intu Mastic of 25 years, provided that the conditions laid down in the product datasheet for the packaging/transport/ storage/installation/use/repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer or the Technical Assessment Body, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

7) Type X: Intended for use in conditions exposed to weathering and all lower classes.

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

Product-type: Intumescent sheet	Intended use: Penetration Seal
Essential characteristic	Product performance
BWR 2 Safety in case of fire	
Reaction to fire	No performance assessed
Resistance to fire	Annex A
BWR 3 Hygiene, health and environment	
Content, emission and/or release of dangerous substances	Use categories: IA2 Declaration of manufacturer
Air permeability (material property)	Annex B
Water permeability (material property)	No performance assessed
BWR 4 Safety in use	
Mechanical resistance and stability	No performance assessed
Resistance to impact/movement	No performance assessed
Adhesion	7.5P
Durability	Type X
Movement capacity	Annex A
Cycling of perimeter seals for curtain walls	No performance assessed
Compression set	No performance assessed
Linear expansion on setting	No performance assessed
BWR 5 Protection against noise	
Airborne sound insulation	Annex C
BWR 6 Energy economy and heat retention	
Thermal properties	No performance assessed
Water vapour permeability	No performance assessed

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

According to the decision 1999/454/EC – Commission Decision of date 22nd June 1999 on the procedure for attesting the conformity of construction products pursuant to Article 20(2) of Council Directive 89/106/EEC as regards fire stopping, fire sealing and fire protective products, published in the Official Journal of the European Union (OJEU) L178/52 of 14/07/1999, (see https://eur-lex.europa.eu/oj/direct-access.html) of the European Commission[1], as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table(s) applies (apply).

Product(s)	Intended use(s)	Level(s) or class(es)	System(s)
Fire stopping and Fire Sealing Products	For fire compartmentation and/or fire protection or fire performance	Any	1

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

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

Issued in Copenhagen on 2023-11-23 by

Thomas Bruun

Managing Director, ETA-Danmark

[1] Official Journal of the European Communities L178/52 of 14/7/1999

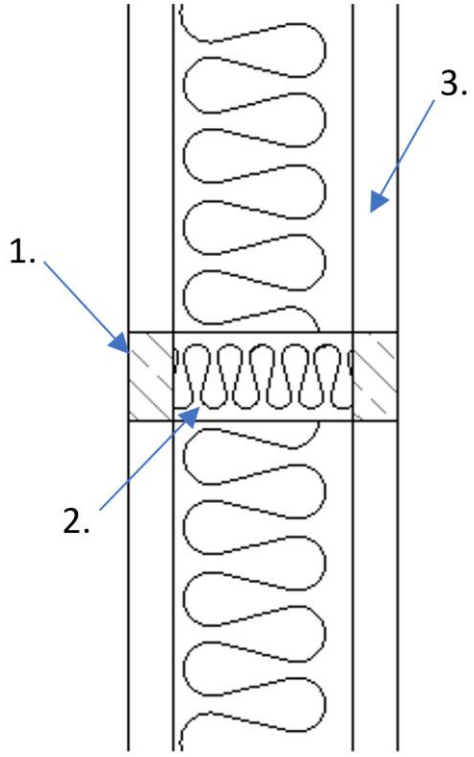
ANNEX A – Resistance to Fire Classification – Astro Intu Mastic

A.1 Flexible and rigid wall constructions with wall thickness of minimum 75 mm

A.1.1 Double sided linear joint seal

Joint Seal: Astro Intu Mastic sealant to both sides of the wall, backed with a 50 mm depth of stone wool or ceramic wool (45kg/m³), joint widths up to 25 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Flexible Wall

A.1.1.1

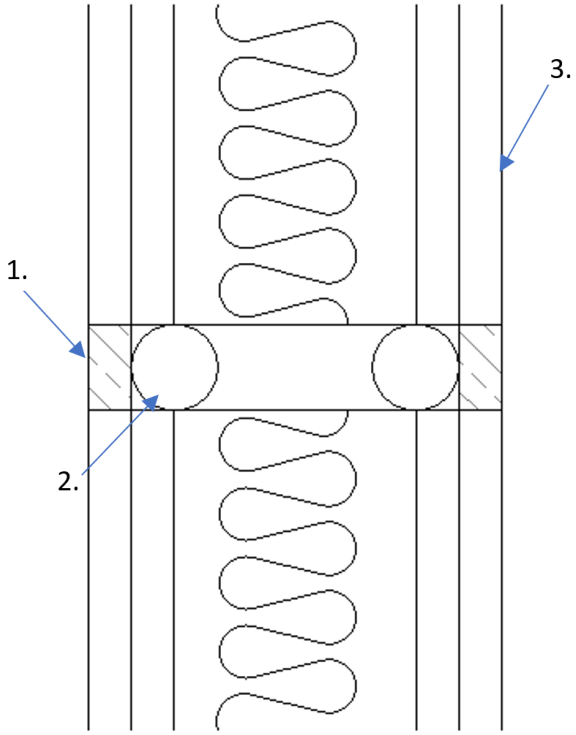
Substrate	Depth (mm)	Backing Material	Classification
Flexible / flexible	12.5	Stone wool or ceramic wool (50mm 45kg/m³)	**E 60 – V – X – F – W 00 to W 25** **EI 45 – V – X – F – W 00 to W 25**
Masonry / masonry			

A.2 Flexible and rigid wall constructions with wall thickness of minimum 120 mm

A.2.1 Double sided linear joint seal

Joint Seal: Astro Intu Mastic sealant to both sides of the wall, backed with PE backing rod, glass wool, stone wool or ceramic wool, joint widths up to 20 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Flexible Wall

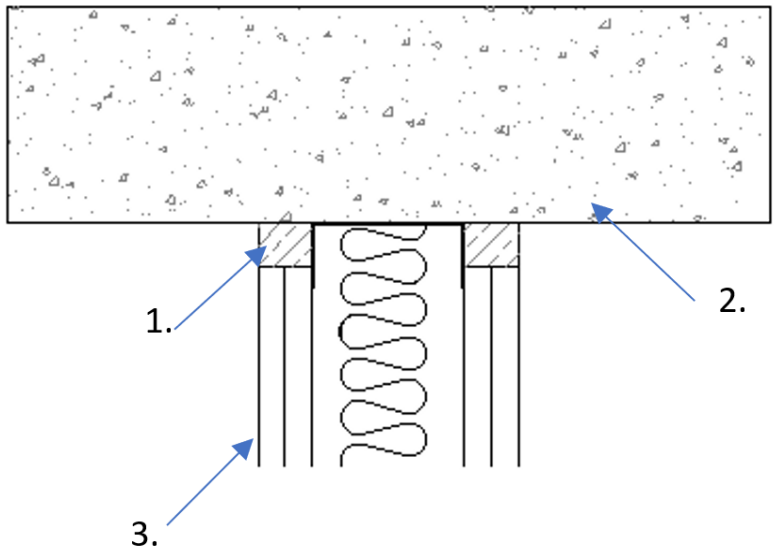
A.2.1.1

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			

A.2.2 Double sided head of wall joint seal

Joint Seal: Astro Intu Mastic sealant to both sides of the wall, joint widths up to 20 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Rigid Floor
3. Flexible Wall

A.2.2.1

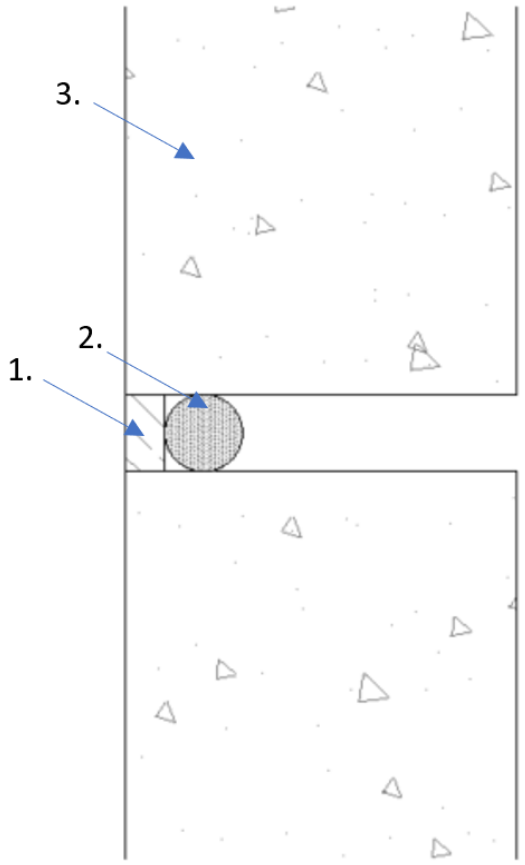
Substrate	Depth (mm)	Backing Material	Classification
Flexible / concrete	25	Steel head track	**EI 120 – T – X – F – W 00 to W 20**
Masonry / concrete			

A.3 Rigid wall constructions with wall thickness of minimum 100 mm

A.3.1 Single sides linear joint seal

Joint Seal: Astro Intu Mastic sealant to either side of the wall, joint widths up to 50 mm.

Construction details:



Key:

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

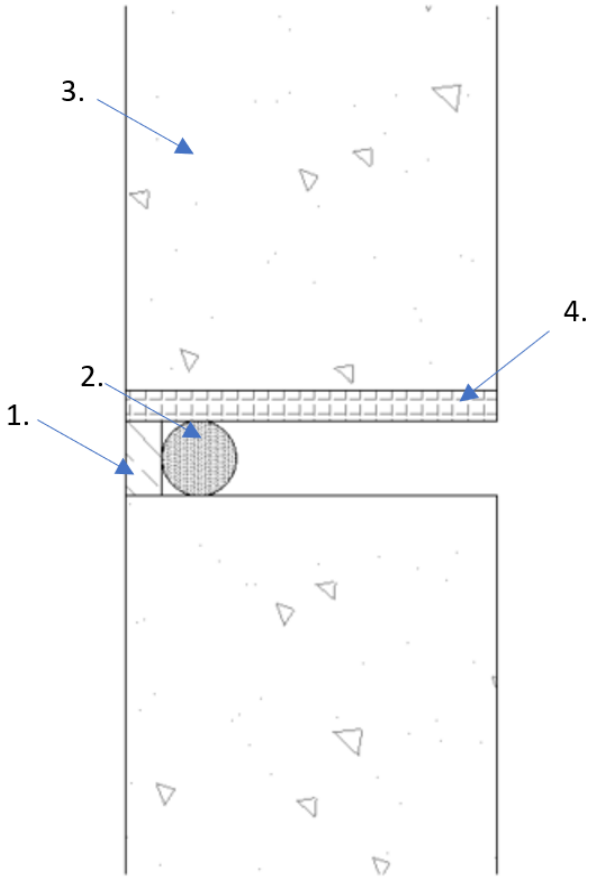
A.3.1.1

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**

A.3.2 Single sided linear joint seal with steel faced wall

Joint Seal: Astro Intu Mastic sealant to either side of the wall.

Construction details:



Key:

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

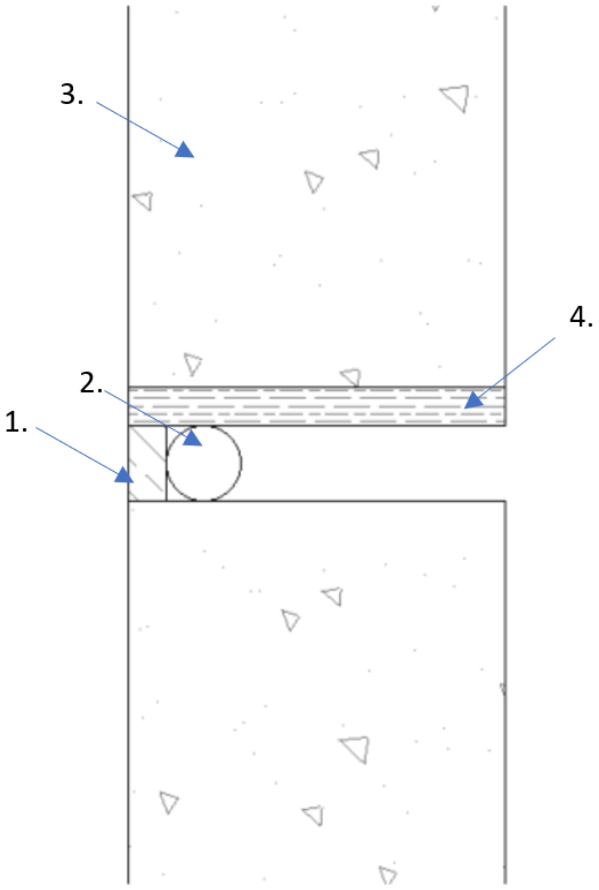
A.3.2.1

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**

A.3.3 Single sided linear joint seal with timber faced wall

Joint Seal: Astro Intu Mastic sealant to either side of the wall, joint widths up to 50 mm.

Construction details:



Key:

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

A.3.3.1

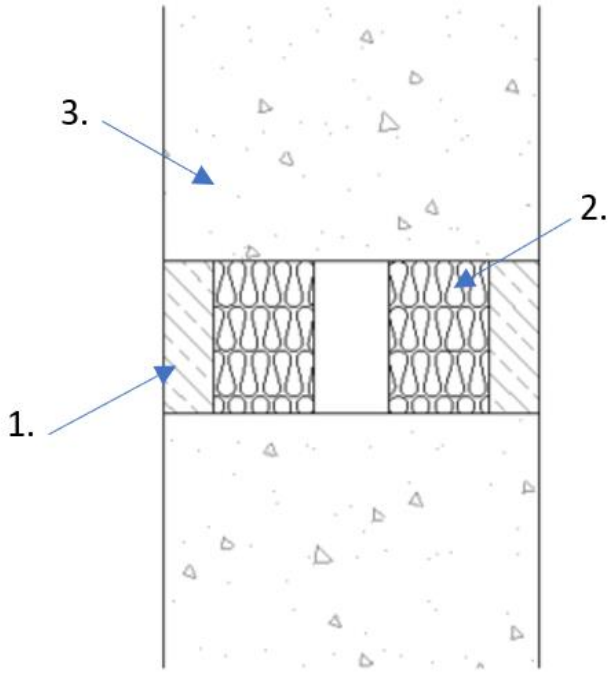
Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / timber	2:1 ratio (width:depth) & Min. 10	PE backing rod, glass wool, stone wool or ceramic wool	**E 30 – V – X – F – W 00 to W 50** **EI 20 – V – X – F – W 00 to W 50**
	25		**EI 45 – V – X – F – W 00 to W 50**

A.4 Rigid wall constructions with wall thickness of minimum 150 mm

A.4.1 Double sided linear joint seal

Joint Seal: Astro Intu Mastic sealant to both sides of the wall, joint widths up to 60 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Wall

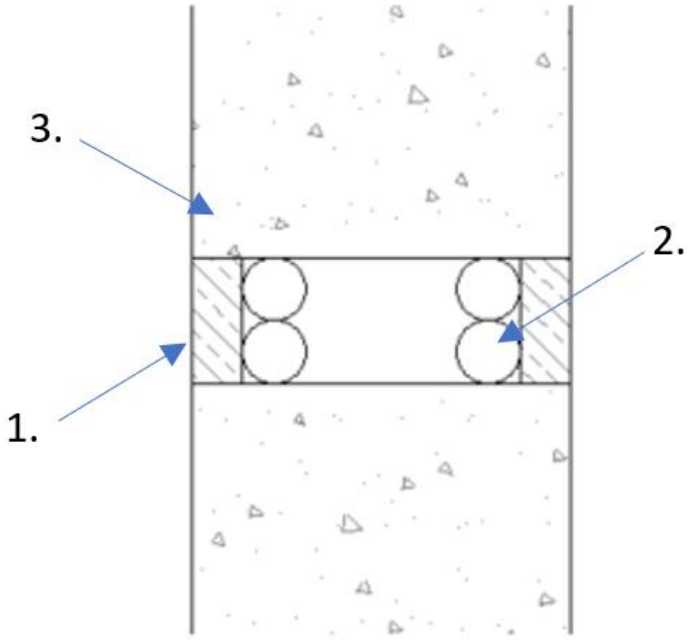
A.4.1.1

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	30	Stone wool or ceramic wool (≥40mm ≥45kg/m³)	**EI 240 – V – X – F – W 00 to W 60**

A.4.2 Double sided linear joint seal

Joint Seal: Astro Intu Mastic sealant to both sides of the wall, joint widths up to 50 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Wall

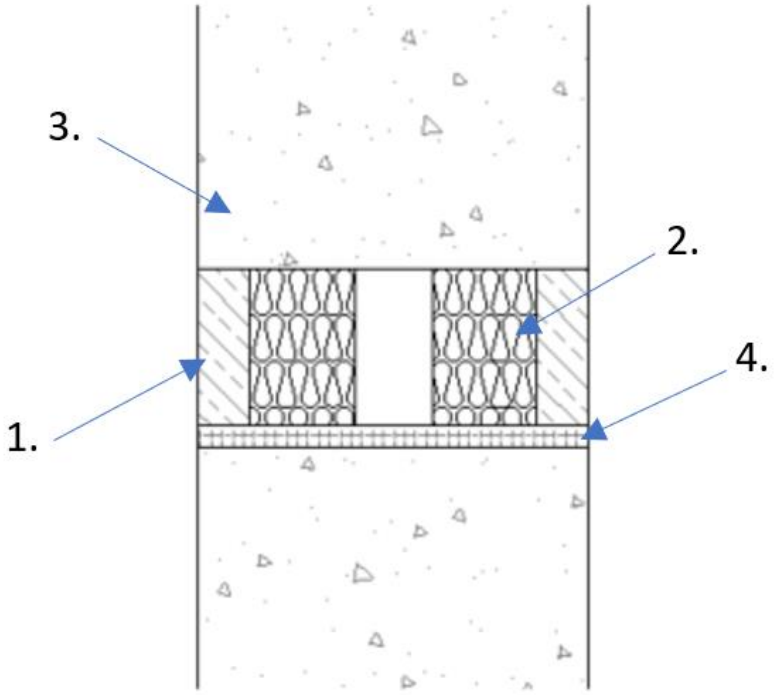
A.4.2.1

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**

A.4.3 Double sided linear joint seal with steel faced wall

Joint Seal: Astro Intu Mastic sealant to both sides of the wall, joint widths up to 60 mm.

Construction details:



Key:

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

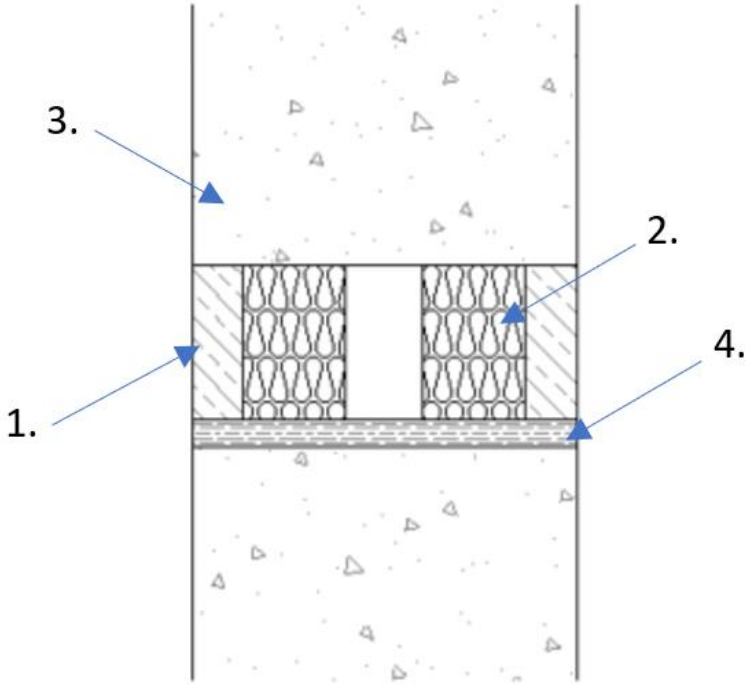
A.4.3.1

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / steel	30	Stone wool or ceramic wool (≥40mm ≥45kg/m³)	**E 240 – V – X – F – W 00 to W 60** **EI 60 – V – X – F – W 00 to W 60**

A.4.4 Double sided linear joint seal with timber faced wall

Joint Seal: Astro Intu Mastic sealant to both sides of the wall, joint widths up to 60 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Wall
4. Timber

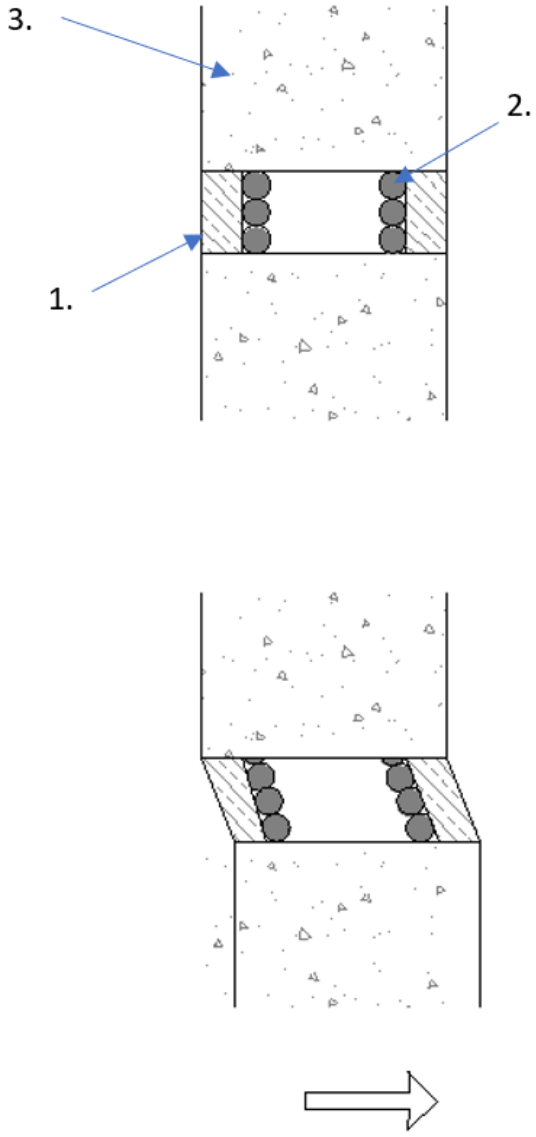
A.4.4.1

Substrate	Depth (mm)	Backing Material	Classification
Concrete or masonry / timber	30	Stone wool or ceramic wool (≥40mm ≥45kg/m³)	**EI 60 – V – X – F – W 00 to W 60**

A.4.5 Double sided linear joint seal with movement

Joint Seal: Astro Intu Mastic sealant to both sides of the wall, joint widths up to 60 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Wall

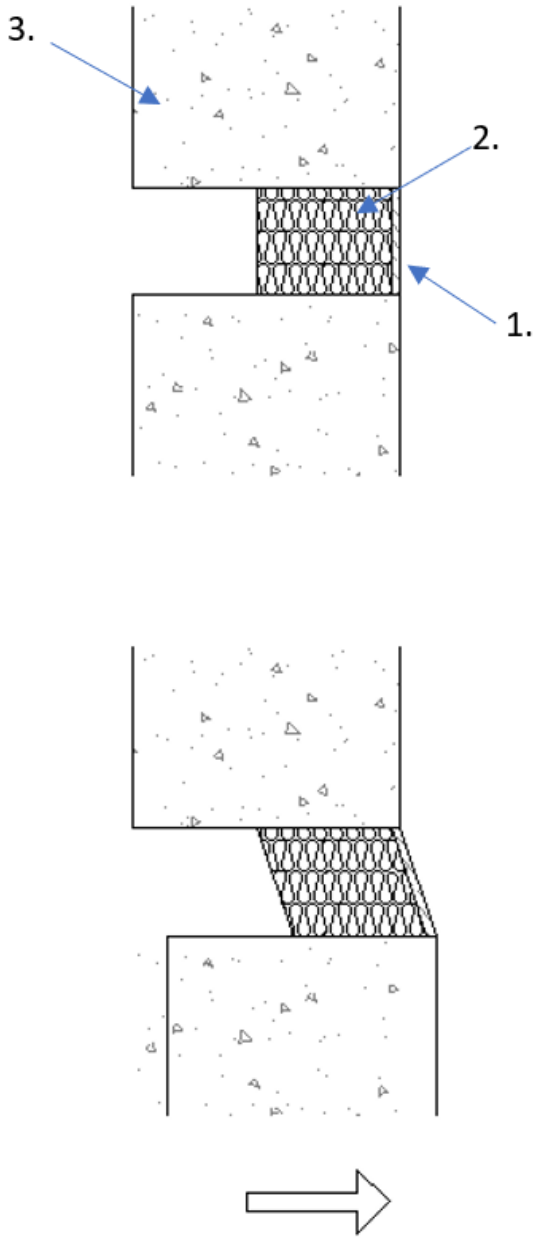
A.4.5.1

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**

A.4.6 Single sided linear joint seal with movement

Joint Seal: Astro Intu Mastic sealant either side of the wall, joint widths up to 60 mm.

Construction details:



Key:

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

A.4.6.1

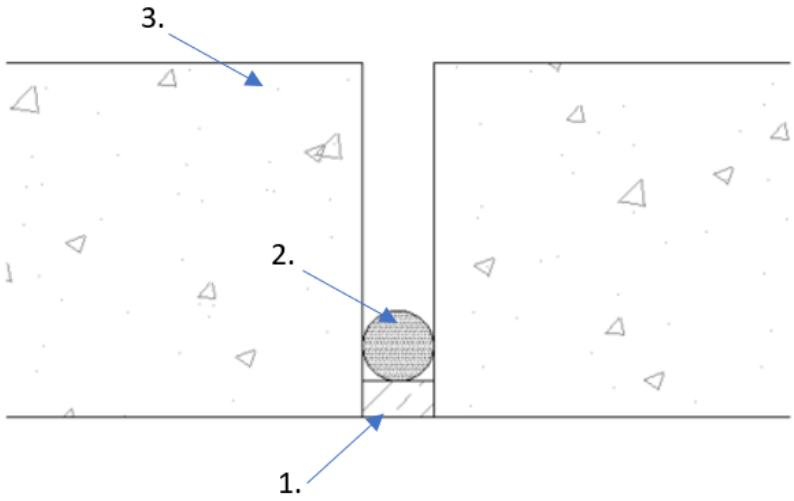
Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	5	Stone wool or ceramic wool (≥75mm ≥60kg/m³, compressed to 60%)	**E 240 – V – M 25 – F – W 00 to W 60** **EI 120 – V – M 25 – F – W 00 to W 60**

A.5 Rigid floor constructions with floor depth of minimum 150 mm

A.5.1 Single sided linear joint seal in floor from underside

Joint Seal: Astro Intu Mastic sealant flush to the underside of the floor, joint widths up to 50 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Floor

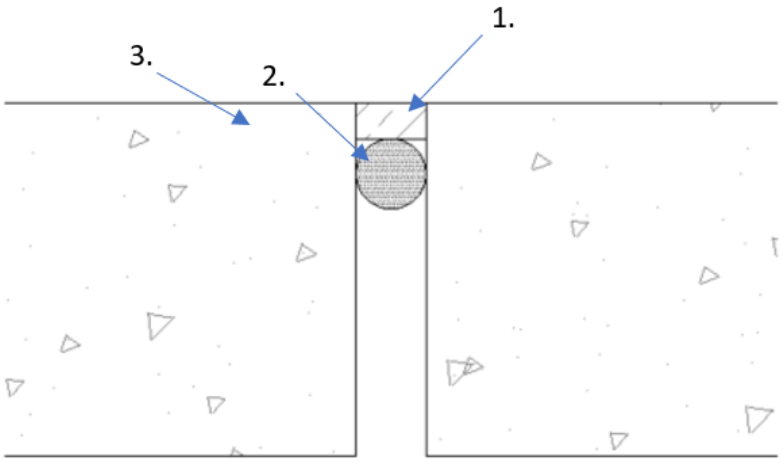
A.5.1.1

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**

A.5.2 Single sided linear joint seal in floor from top side

Joint Seal: Astro Intu Mastic sealant flush to the top side of the floor, joint widths up to 50 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Floor

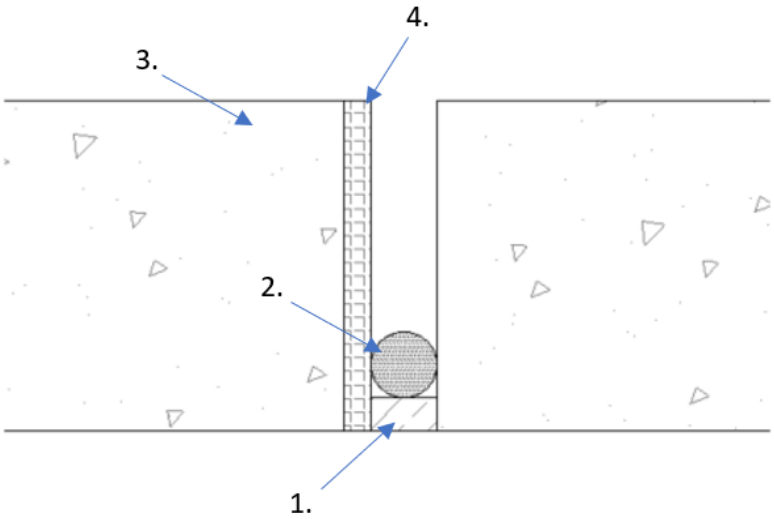
A.5.2.1

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**

A.5.3 Single sided linear joint seal in steel faced floor from underside

Joint Seal: Astro Intu Mastic sealant flush to the underside of the floor, joint widths up to 50 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Floor
4. Steel

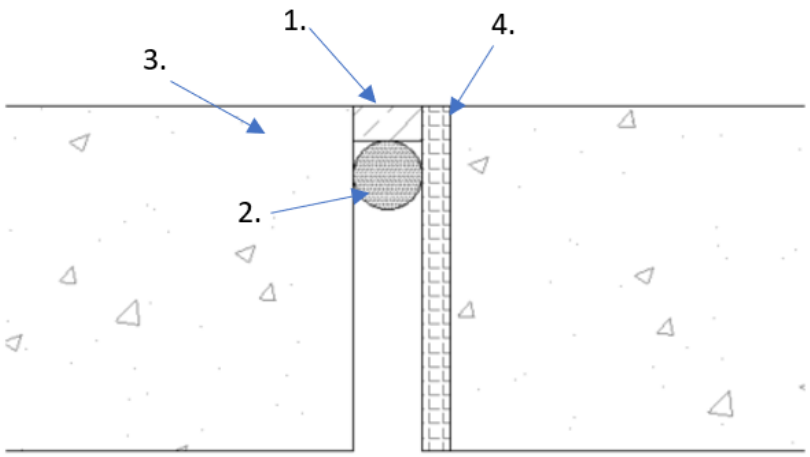
A.5.3.1

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**

A.5.4 Single sided linear joint seal in steel faced floor from top side

Joint Seal: Astro Intu Mastic sealant flush to the top side of the floor, joint widths up to 50 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Floor
4. Steel

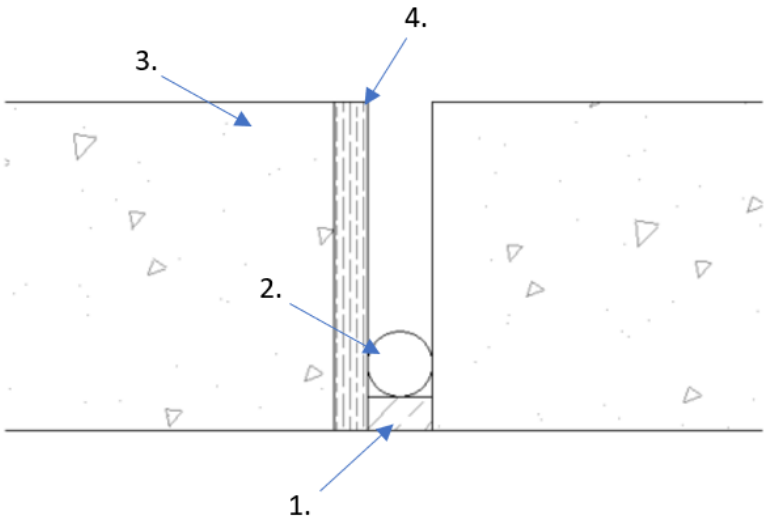
A.5.4.1

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**

A.5.5 Single sided linear joint seal in timber faced floor from underside

Joint Seal: Astro Intu Mastic sealant flush to the underside of the floor, joint widths up to 50 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Floor
4. Timber

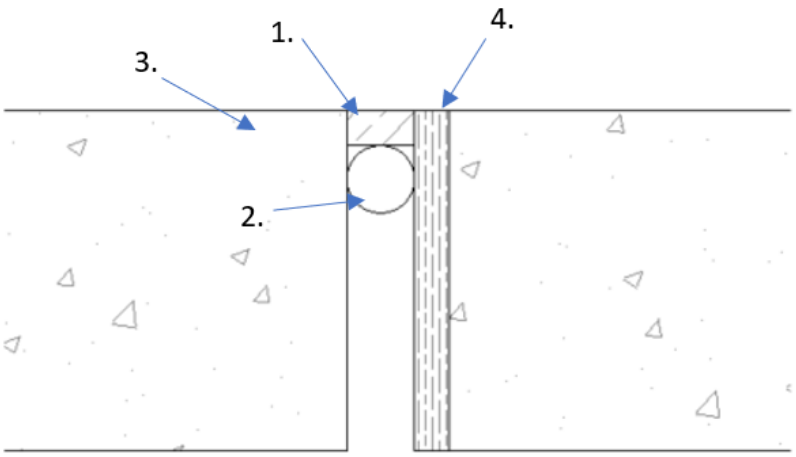
A.5.5.1

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**

A.5.6 Single sided linear joint seal in timber faced floor from top side

Joint Seal: Astro Intu Mastic sealant flush to the top side of the floor, joint widths up to 50 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Floor
4. Timber

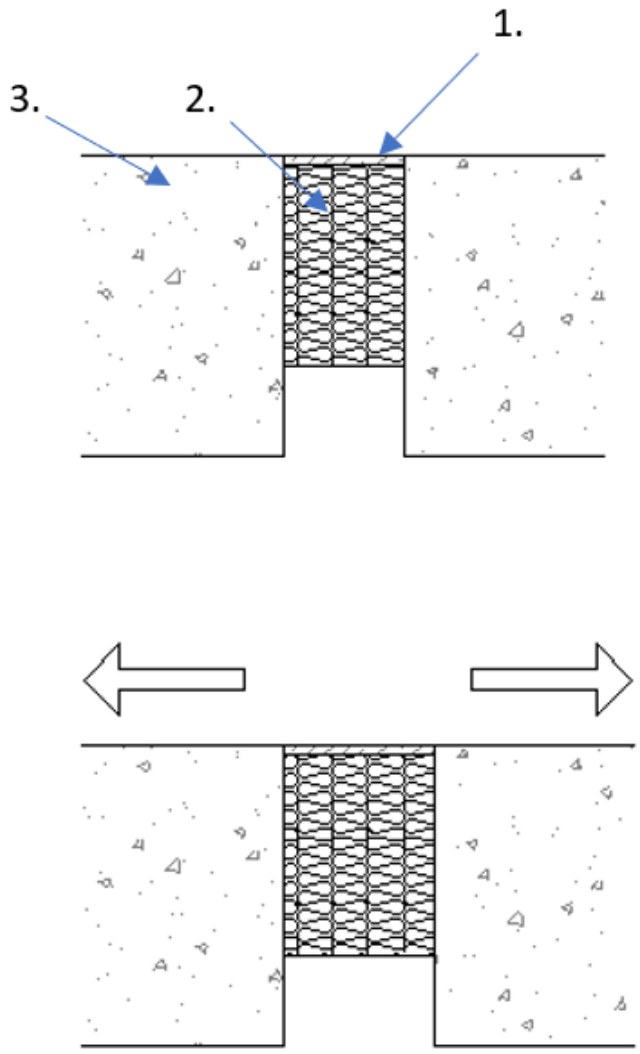
A.5.6.1

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**

A.5.7 Single sided linear joint seal in floor from top side with movement

Joint Seal: Astro Intu Mastic sealant flush to the top side of the floor, joint widths up to 60 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Floor

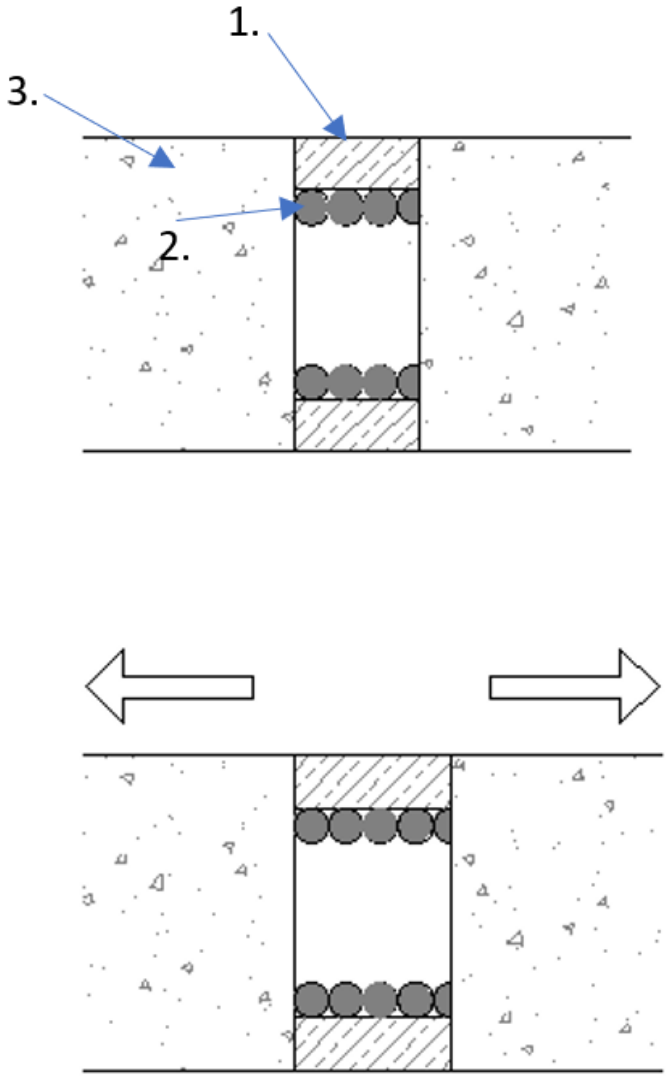
A.5.7.1

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	5	Stone wool or ceramic wool (≥100mm ≥60kg/m³, compressed to 60%)	**EI 240 – H – M 25 – F – W 00 to W 60**

A.5.8 Double sided linear joint seal in floor with movement

Joint Seal: Astro Intu Mastic sealant to both sides of the floor, joint widths up to 60 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Floor

A.5.8.1

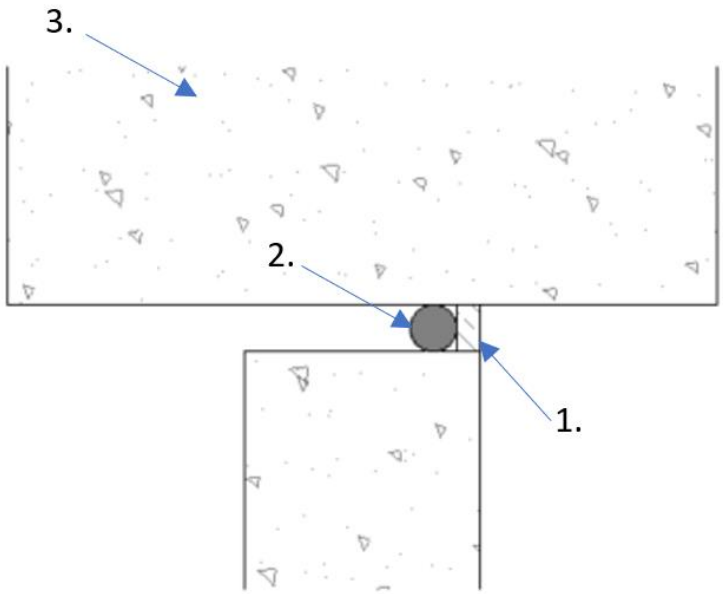
Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	20	PE backing rod, glass wool, stone wool or ceramic wool	**E 240 – H – M 17 – F – W 00 to W 60** **EI 60 – H – M 17 – F – W 00 to W 60**

A.6 Head of wall with thickness of minimum 150 mm

A.6.1 Single sided head of wall joint in floor

Joint Seal: Astro Intu Mastic sealant to either side of the wall, joint widths up to 50 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant Installed Either Side of Wall
2. Backing Material
3. Rigid Floor

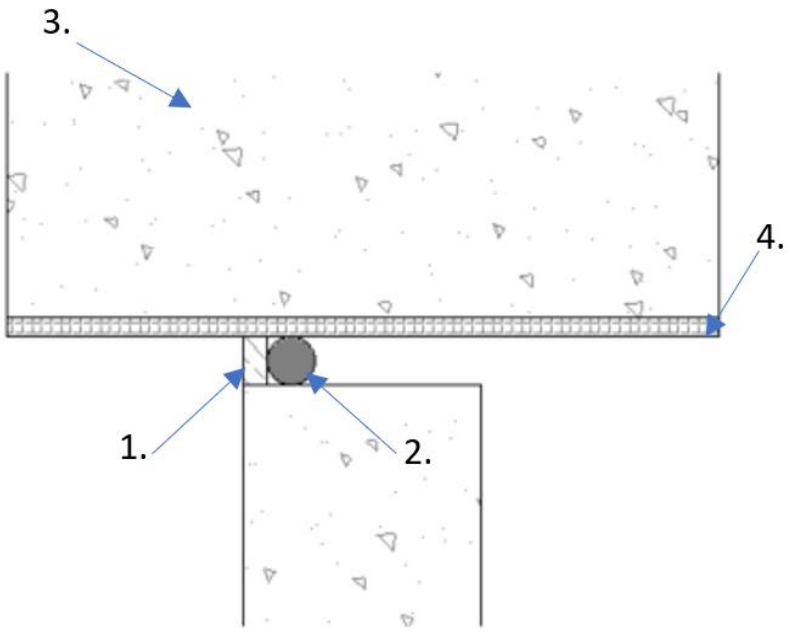
A.6.1.1

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**

A.6.2 Single sided head of wall joint with steel face

Joint Seal: Astro Intu Mastic sealant to either side of the wall, joint widths up to 50 mm.

Construction details:



Key:

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

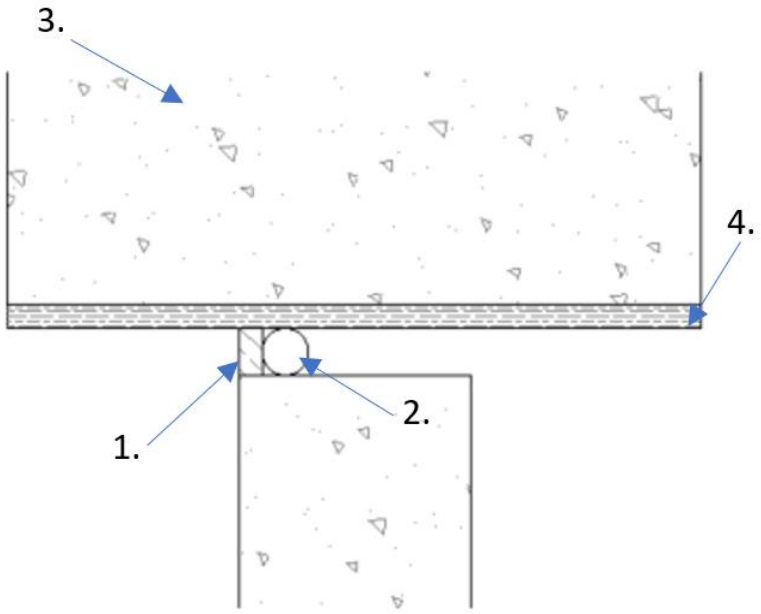
A.6.2.1

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 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 30 – T – X – F – W 00 to W 50**

A.6.3 Single sided head of wall joint with timber face

Joint Seal: Astro Intu Mastic sealant to either side of the wall, joint widths up to 50 mm.

Construction details:



Key:

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

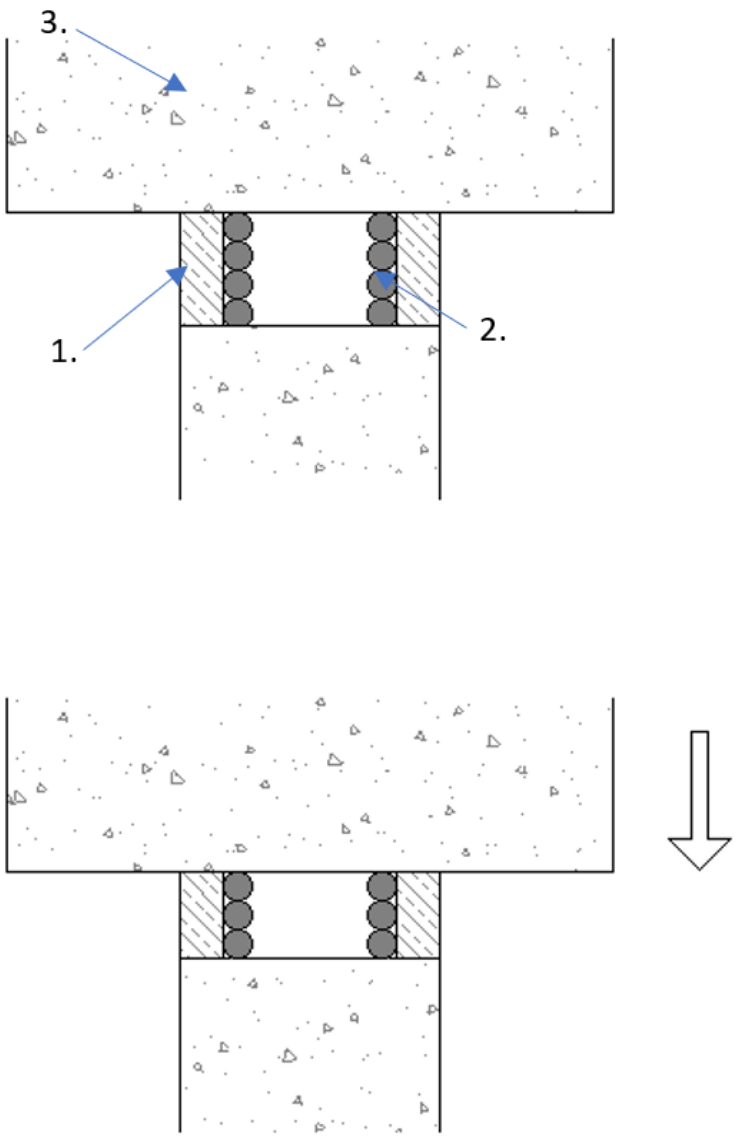
A.6.3.1

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**

A.6.4 Double sided head of wall joint with movement

Joint Seal: Astro Intu Mastic sealant to both sides of the wall, joint widths up to 60 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Floor

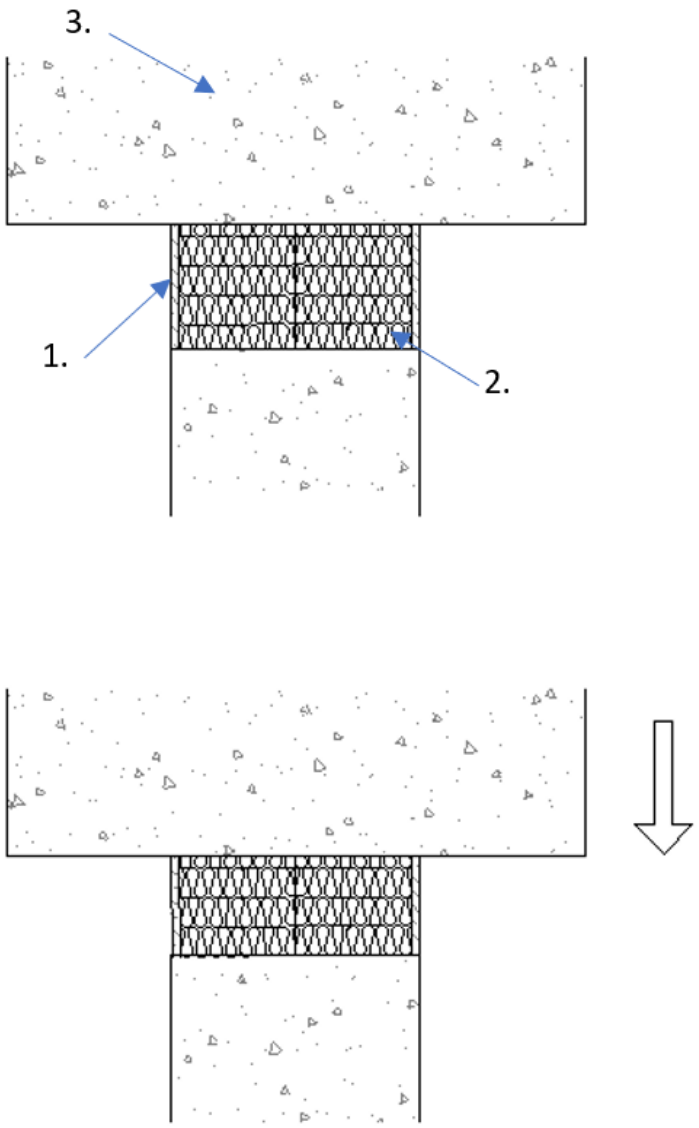
A.6.4.1

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**

A.6.5 Double sided head of wall joint with movement

Joint Seal: Astro Intu Mastic sealant to both sides of the wall, joint widths up to 60 mm.

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Backing Material
3. Rigid Floor

A.6.5.1

Substrate	Depth (mm)	Backing Material	Classification
Concrete / masonry	5	Stone wool or ceramic wool (≥70mm (x2) ≥60kg/m³, compressed to 60%)	**EI 240 – T – M 25 – F – W 00 to W 60**

ANNEX B – Air Permeability - Astro Intu Mastic

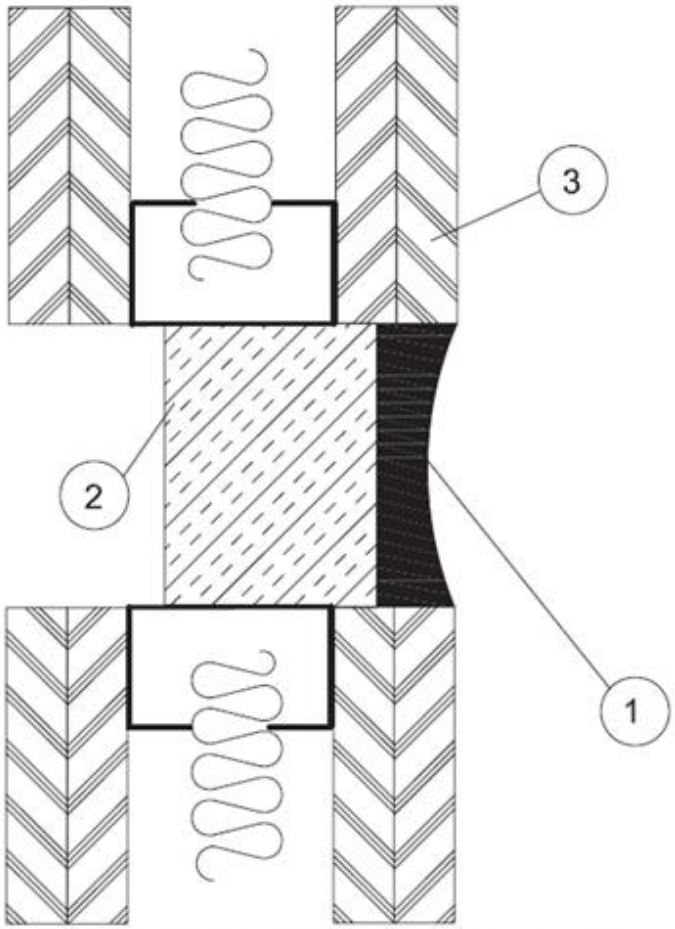
Product tested	**25 mm thick x 30 mm wide Astro Intu Mastic intumescent sealant**		
Summary of testing procedure			**Result**
	Pressure (Pa)	**Leakage (m^3/h)**	**Leakage ($m^3/m^2/h$)**
Results under negative chamber pressure	**50**	**0.0**	**0.0**
	100	**0.0**	**0.0**
	150	**0.1**	**2.8**
	200	**0.1**	**2.8**
	250	**0.1**	**2.8**
	300	**0.0**	**0.0**
	450	**0.1**	**2.8**
	600	**0.1**	**2.8**
Results under positive chamber pressure	**50**	**0.0**	**0.0**
	100	**0.0**	**0.0**
	150	**0.0**	**0.0**
	200	**0.0**	**0.0**
	250	**0.0**	**0.0**
	300	**0.0**	**0.0**
	450	**0.1**	**2.8**
	600	**0.1**	**2.8**

ANNEX C – Airborne Sound Insulation - Astro Intu Mastic

C.1 Astro Intu Mastic sealant at 15 mm deep in the following configuration

Astro Intu Mastic SEALANT TESTED TO EN 10140-2:2010
THROUGH A FLEXIBLE CONSTRUCTION

ACOUSTIC TEST RESULTS	
Partition & Sealant Result	63 Rw dB
Sealant Result	51 Rw dB
Sealant Result	61 Dnew dB



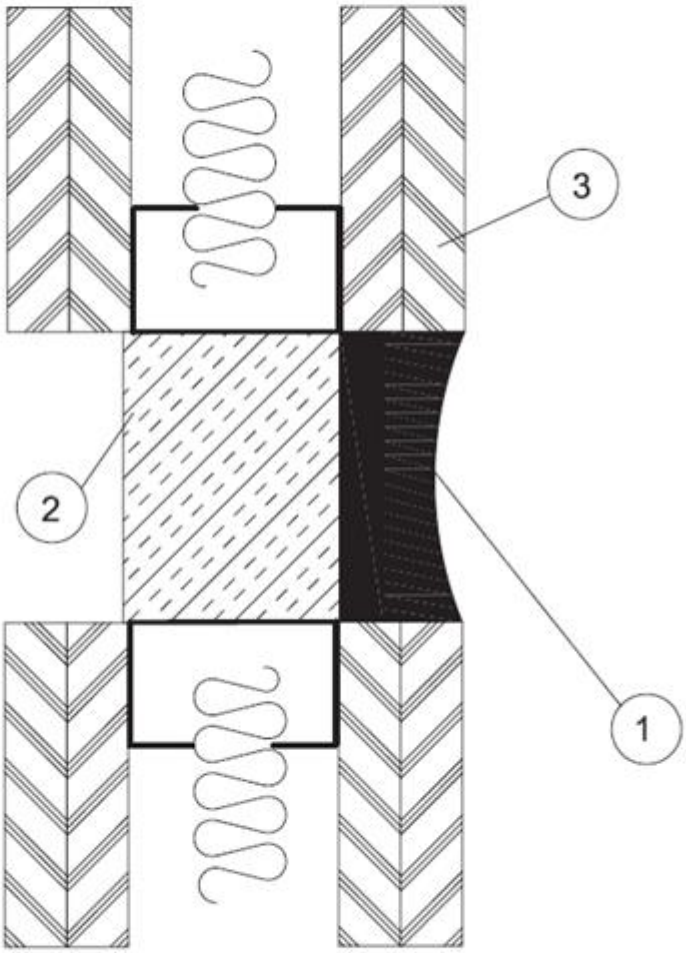
1 - Astro Intu Mastic SEALANT TO ONE SIDE OF WALL 15mm DEPTH
2 - 55mm DEPTH STONE WOOL 60kg DENSITY
3 - CONSTRUCTING ELEMENT RATED TO 65 dB

BWR 5 Protection against noise		
Assessment method	Essential characteristic	Product performance
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	Rw (C;Ctr)= 63(-1;-7)

C.2 Astro Intu Mastic sealant at 25 mm deep in the following configuration

Astro Intu Mastic SEALANT TESTED TO EN 10140-2:2010
THROUGH A FLEXIBLE CONSTRUCTION

ACOUSTIC TEST RESULTS	
Partition & Sealant Result	63 Rw dB
Sealant Result	51 Rw dB
Sealant Result	61 Dnew dB



1 - Astro Intu Mastic SEALANT TO ONE SIDE OF WALL 25mm DEPTH
2 - 55mm DEPTH STONE WOOL 60kg DENSITY
3 - CONSTRUCTING ELEMENT RATED TO 65 dB

BWR 5 Protection against noise		
Assessment method	Essential characteristic	Product performance
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	Rw (C;Ctr)= 63(-1;-7)

ASTROFLAME
PASSIVE FIRE STOP SYSTEMS

Technical Data Sheet

Astro Intu Mastic - Trowel Grade (Penetration Seals)

UIC of product-type: INTUM

Revision 16 - 17th October 2024



0843-UKTA-24/0037 | 24/0038
0843-CPR-1385

CE-ETA - 20-1088/20-1089
CE-2531-CPR-CXO10294

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

MEMBER OF EOTA

European Technical Assessment ETA-20/1088 of 2023/11/23

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:	Astro Intu Mastic
Product family to which the above construction product belongs:	Fire Stopping and Sealing Product: • Penetration Seals
Manufacturer:	Astroflame (fireseals) Limited Unit 8 The IO Centre Stephenson Road Segensworth, Fareham Hampshire PO15 5RU
Manufacturing plant:	E055
This European Technical Assessment contains:	27 pages including 3 annexes which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:	EAD 350454-00-1104, September 2017.
This version replaces:	The ETA with the same number issued on 2020-12-09

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I. SPECIFIC PARTS OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of the product

1) Astro Intu Mastic is an acrylic based sealant used to form a penetration seal around insulated or uninsulated metallic pipes and electrical cables, to reinstate the fire resistance performance of wall and floor constructions where they have been provided with apertures for the penetration of services.

2) Astro Intu Mastic is supplied in liquid form contained within 310 ml & 380 ml cartridges, 600 ml foils or in 5, 10, 20 or 25 litre tubs. The sealant is gunned or trowelled into the aperture in or between the separating element/elements to a specified depth using various backing materials.

3) Certain seals require Astro Thermal defense wrap in addition, used to insulate the service. The Astro Thermal defense wrap is a 6 mm thick foil faced ceramic based insulation material, installed externally to the Astro Intu Mastic sealant as detailed in Annex A.

4) The applicant has submitted a written declaration that Astro Intu Mastic does not contain substances which have to be classified as dangerous according to article 59 (1, 10) of the Regulation (EC) No 1907/2006 (REACH).

   In addition to the specific clauses relating to dangerous substances contained in this European technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

5) The use category of Astro Intu Mastic in relation to BWR 3 (Hygiene, health and environment) is IA2

2 Specification of the intended uses of the product in accordance with the applicable European Assessment Document (Hereinafter EAD): EAD 350454-00-1104

Detailed information and data is given in Annex A.

1) The intended use of system Astro Intu Mastic is to reinstate the fire resistance performance of flexible and rigid wall constructions and rigid floor constructions where they are penetrated by insulated or uninsulated metallic pipes and electrical cables.

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

a.	Flexible walls:	The wall must have a minimum thickness of 75 mm and comprise steel studs or timber studs* lined on both faces with minimum 1 layer of 12.5 mm thick boards.
b.	Rigid walls:	The wall must have a minimum thickness of 75 mm and comprise concrete, aerated concrete or masonry with a minimum density of 650 kg/m^3.
c.	Rigid floors:	The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m^3.

* no part of the penetration seal may be closer than 100 mm to a stud, the cavity must be closed between the penetration seal and the stud, and minimum 100 mm of insulation of class A1 or A2 according to EN 13501-1 must be provided within the cavity between the penetration seal and the stud.

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

3) The System Astro Intu Mastic may be used to provide a penetration seal with specific single insulated metal pipes, uninsulated metal pipes and with specific electrical cables, single or in a bundle (for details see Annex A).

4) Apertures in the separating element shall be maximum Ø 350 mm or 300 x 300 mm. The annular space/gap around the services shall be infilled with Astro Intu Mastic sealant and in some cases utilising various backing materials. For full details, see Annex A.

5) The provisions made in this European Technical Assessment are based on an assumed working life of the Astro Intu Mastic of 25 years, provided that the conditions laid down in the product datasheet for the packaging/transport/ storage/installation/use/repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer or the Technical Assessment Body, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

6) Type X: Intended for use in conditions exposed to weathering and all lower classes.

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

Product-type: Intumescent sheet	Intended use: Penetration Seal
Essential characteristic	Product performance
BWR 2 Safety in case of fire	
Reaction to fire	No performance assessed
Resistance to fire	Annex A
BWR 3 Hygiene, health and environment	
Air permeability	Annex B
Water permeability	No performance assessed
Content, emission and/or release of dangerous substances	Use categories: IA2 Declaration of manufacturer
BWR 4 Safety in use	
Mechanical resistance and stability	No performance assessed
Resistance to impact/movement	No performance assessed
Adhesion	No performance assessed
Durability	Type X
BWR 5 Protection against noise	
Airborne sound insulation	Annex C
BWR 6 Energy economy and heat retention	
Thermal properties	No performance assessed
Water vapour permeability	No performance assessed

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

According to the decision 1999/454/EC – Commission Decision of date 22nd June 1999 on the procedure for attesting the conformity of construction products pursuant to Article 20(2) of Council Directive 89/106/EEC as regards fire stopping, fire sealing and fire protective products, published in the Official Journal of the European Union (OJEU) L178/52 of 14/07/1999, (see https://eur-lex.europa.eu/oj/direct-access.html) of the European Commission[1], as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table(s) applies (apply).

Product(s)	Intended use(s)	Level(s) or class(es)	System(s)
Fire stopping and Fire Sealing Products	For fire compartmentation and/or fire protection or fire performance	Any	1

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

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

Issued in Copenhagen on 2023-11-23 by



Thomas Bruun
Managing Director, ETA-Danmark

[1] Official Journal of the European Communities L178/52 of 14/7/1999

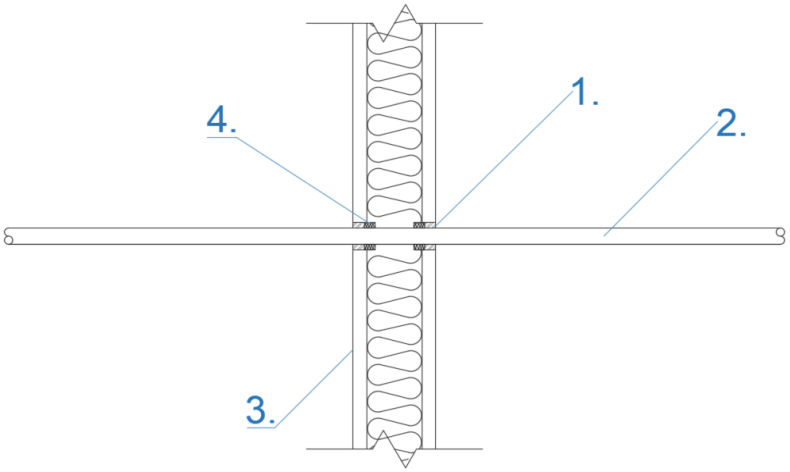
ANNEX A – Resistance to Fire Classification – Astro Intu Mastic

A.1 Flexible and rigid wall constructions with wall thickness of minimum 75 mm

A.1.1 Double sided penetration seal with cables

Penetration Seal: Cables (single) fitted centrally within the aperture, sealed with Astro Intu Mastic sealant to both sides of the wall, backed with various backing materials. Minimum separation between penetration seals 200 mm (a2).

Construction details:



Key:

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

A.1.1.1

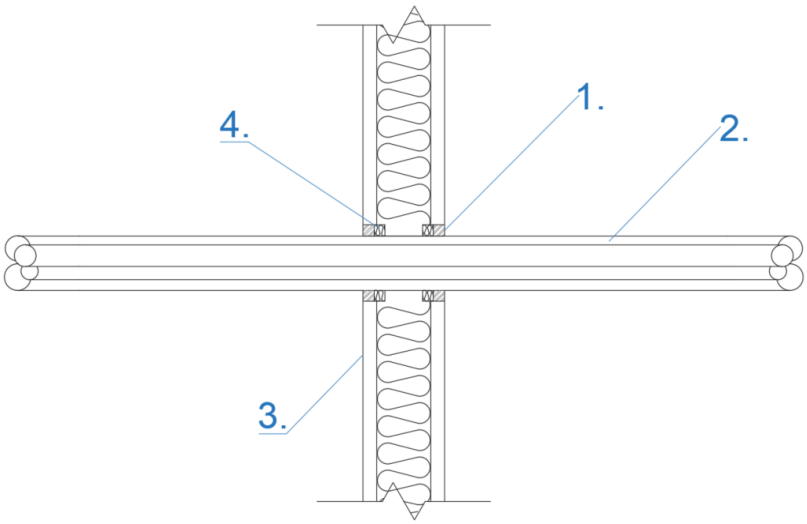
Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Classification
D1 cable*	10	100 Ø	PE backing rod, glass wool, stone wool or ceramic wool	**E 60, EI 45**
B cable*	12	25 Ø	Stone wool or ceramic wool (10 mm 45kg/m³)	**E 90, EI 60**

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

A.1.2 Double sided penetration seal with cables bunches

Penetration Seal: Cables bunches fitted centrally within the aperture, sealed with Astro Intu Mastic sealant to both sides of the wall, backed with various backing materials. Minimum separation between penetration seals 200 mm (a2).

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Single Bunch
3. Flexible Wall
4. Backing Material

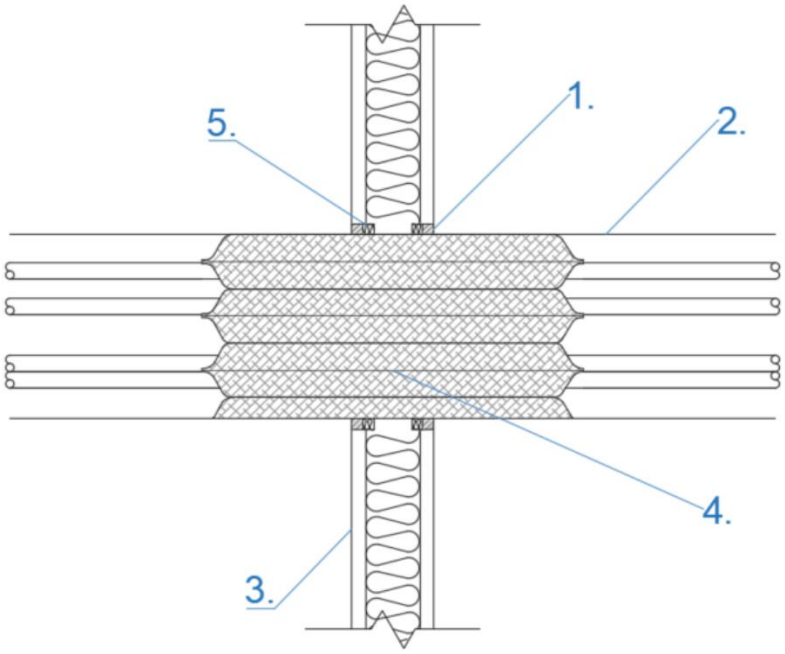
A.1.2.1

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Classification
Telecoms cables ≤21 mm Ø in cable bunch ≤100 mm Ø	10	120 Ø	PE backing rod, glass wool, stone wool or ceramic wool	**E 60, EI 45**

A.1.3 Double sided penetration seal with cable trunking

Penetration Seal: Cables trunkings filled with cables penetrating through an aperture through a flexible or rigid wall construction. The aperture is filled with S-Line Pillows and sealed with Astro Intu Mastic sealant to both sides of the wall, backed with various backing materials. Minimum separation between penetration seals 200 mm (a2).

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Metal Trunking filled with cables
3. Flexible Wall
4. Astro X Series Pillows
5. Backing Material

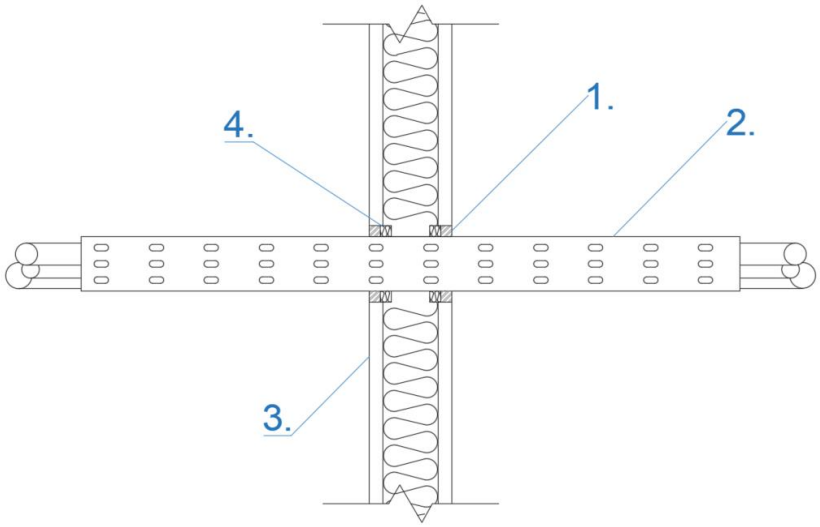
A.1.3.1

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

A.1.4 Double sided penetration seal with cable trays

Penetration Seal: Cables trays with cables penetrating through a flexible or rigid wall construction and sealed with Astro Intu Mastic sealant to both sides of the wall, backed with various backing materials. Minimum separation between penetration seals 200 mm (a2).

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Cable Tray
3. Flexible Wall
4. Backing Material

A.1.4.1

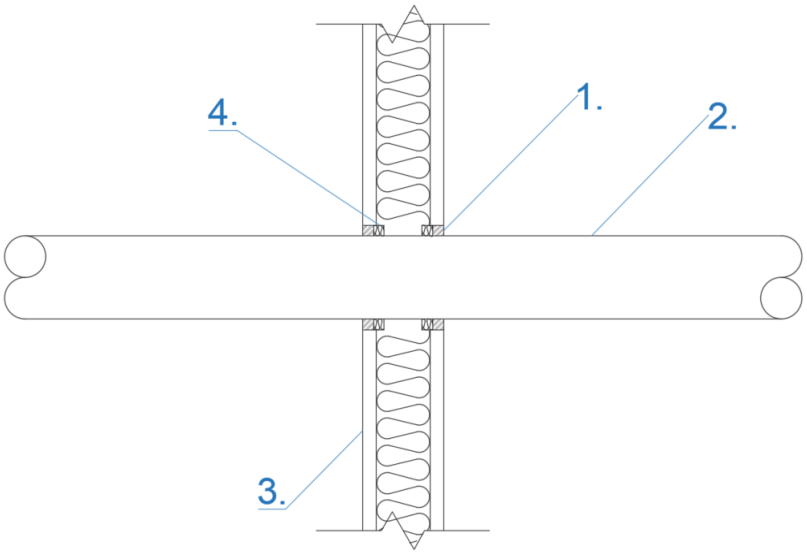
Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Steel cable tray ≤450 mm wide loaded with cables ≤21 mm Ø + C1, C2, C3 cables*	10	470 x 100	PE backing rod, glass wool, stone wool or ceramic wool	0	**E 60, EI 20**
Steel cable tray ≤450 mm wide loaded with cables ≤21 mm Ø + C1, C2, C3 cables*with insulation ≤40 mm thick ≤45kg/m³, ≤400 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

A.1.5 Double side penetration seal with metallic pipes

Penetration Seal: Metallic pipes (single) fitted centrally within the aperture, sealed with Astro Intu Mastic sealant to both sides of the wall, backed with various backing materials. Minimum separation between penetration seals 200 mm (a2).

Construction details:



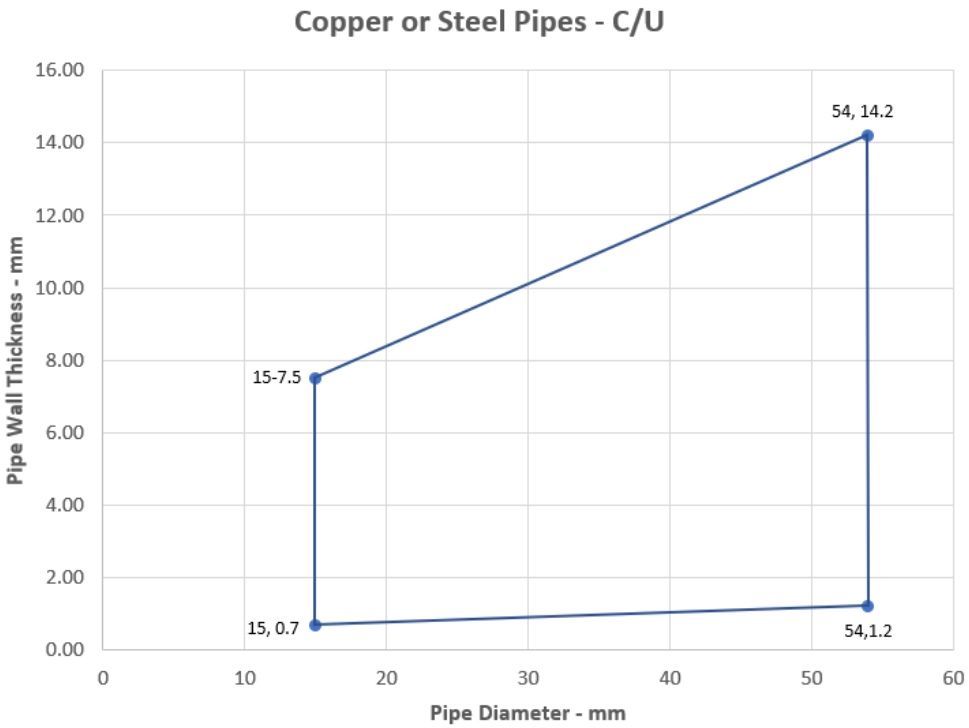
Key:

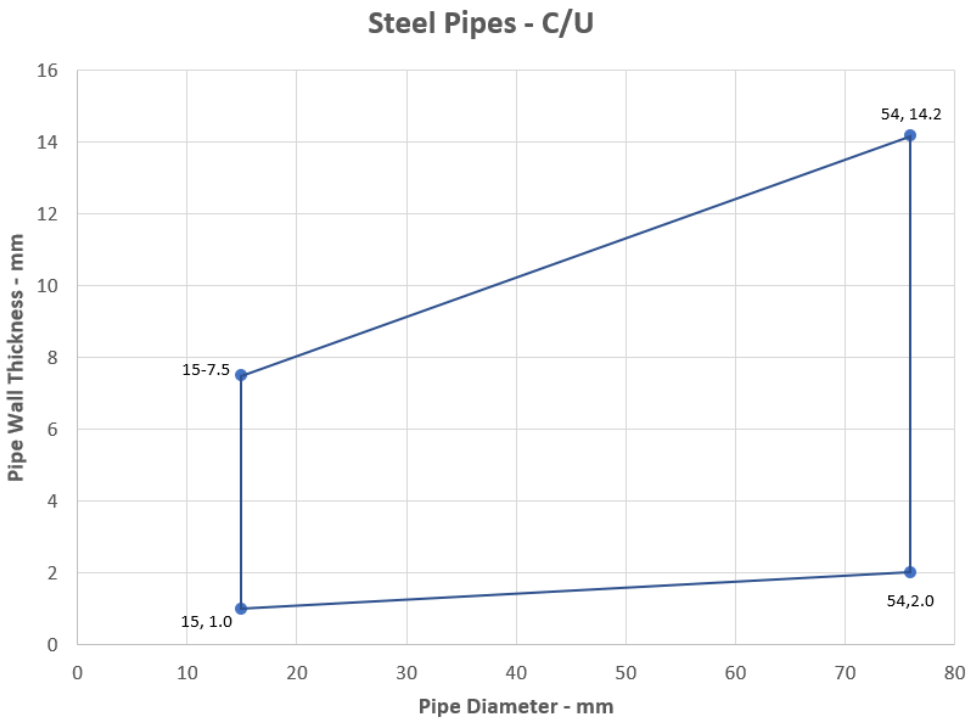
1. Astro Intu Mastic Sealant
2. Metal Pipe
3. Flexible Wall
4. Backing Material

A.1.5.1

Penetration Service	Depth (mm)	Annular (mm)	Backing Material	Classification
Copper pipe ≤15 mm diameter/ 0.7-14.2 mm wall thickness	12	5-10	Stone wool or ceramic wool (≥10mm ≥45kg/m³)	**E 90 C/U, C/C, EI 60 C/U, C/C**
Copper or Steel pipe 15-54 mm diameter/ 1.2-14.2 mm wall thickness*				**E 90 C/U, C/C**
Steel pipe 15 mm diameter/ 1-14.2 mm wall thickness				**EI 90 C/U, C/C**
Steel pipe 15-76 mm diameter/ 2-14.2 mm wall thickness*				**E 90 C/U, C/C, EI 20 C/U, C/C**
Steel pipe 325 mm diameter/ 17.5 mm wall thickness, insulated with stone wool ≥40 mm thick, ≥45kg/m³ (LI) min. 400 mm 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**

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

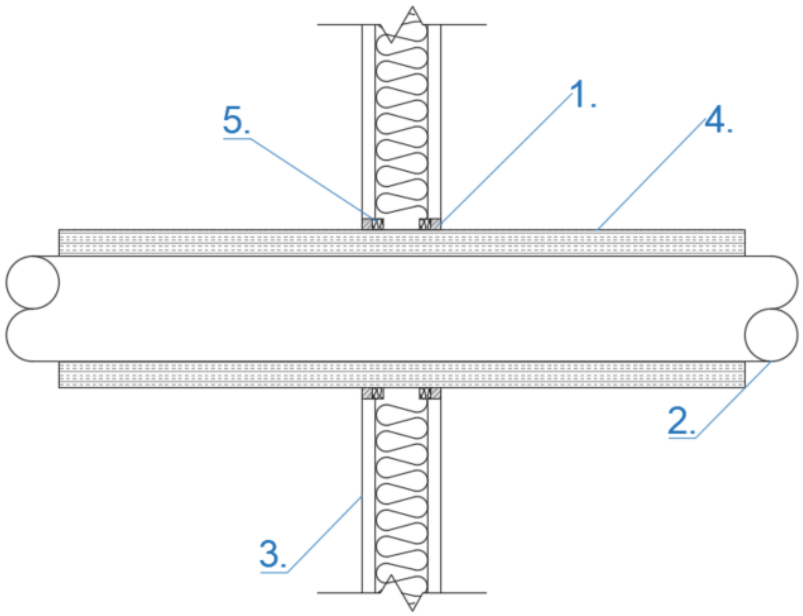

Copper or Steel Pipes - C/U
Pipe Wall Thickness - mm
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
10
20
30
40
50
60
Pipe Diameter - mm
54, 14.2
15-7.5
15, 0.7
54,1.2


Steel Pipes - C/U
Pipe Wall Thickness - mm
16
14
12
10
8
6
4
2
0
0
10
20
30
40
50
60
70
80
Pipe Diameter - mm
54, 14.2
15-7.5
15, 1.0
54,2.0

A.1.6 Double side penetration seal with insulated metallic pipes

Penetration Seal: Insulated metallic pipes (single) fitted at any position within the aperture, sealed with Astro Intu Mastic sealant to both sides of the wall, backed with various backing materials. Minimum separation between penetration seals 200 mm (a2).

Construction details:



Key:

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

A.1.6.1

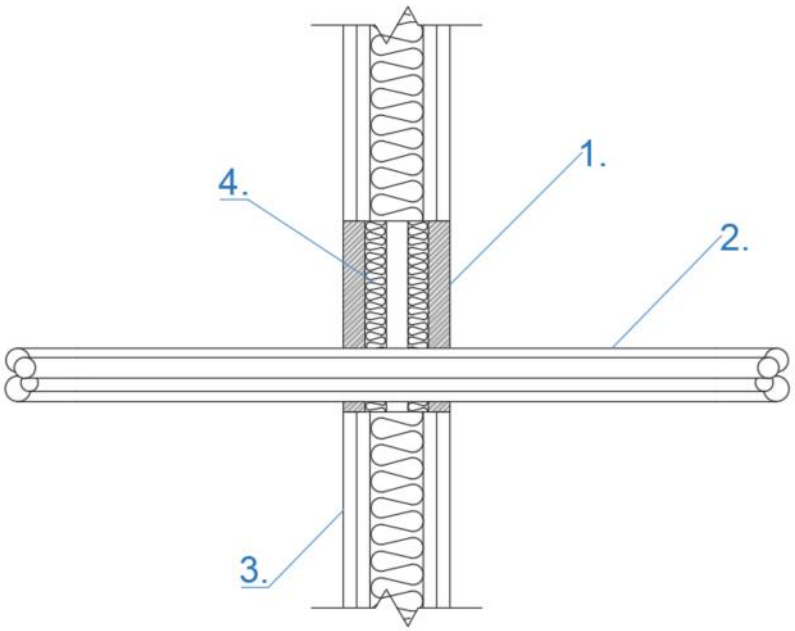
Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Copper or steel pipe 159 mm diameter/ 2-14.2 mm wall thickness insulated with stone wool ≥50 mm thick, ≥90kg/m³ (C/S)	10	10	PE backing rod, glass wool, stone wool or ceramic wool	0	**E 60 C/U, C/C, EI 45 C/U, C/C**

A.2 Flexible and rigid wall constructions with wall thickness of minimum 100 mm

A.2.1 Double sided penetration seal with cables and conduits

Penetration Seal: Cables and conduits fitted within the aperture, sealed with Astro Intu Mastic sealant to both sides of the wall, backed with Stone wool or ceramic wool (20 mm 45kg/m³). Minimum separation between penetration seals 200 mm (a2).

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Cables
3. Flexible Wall
4. Backing Material

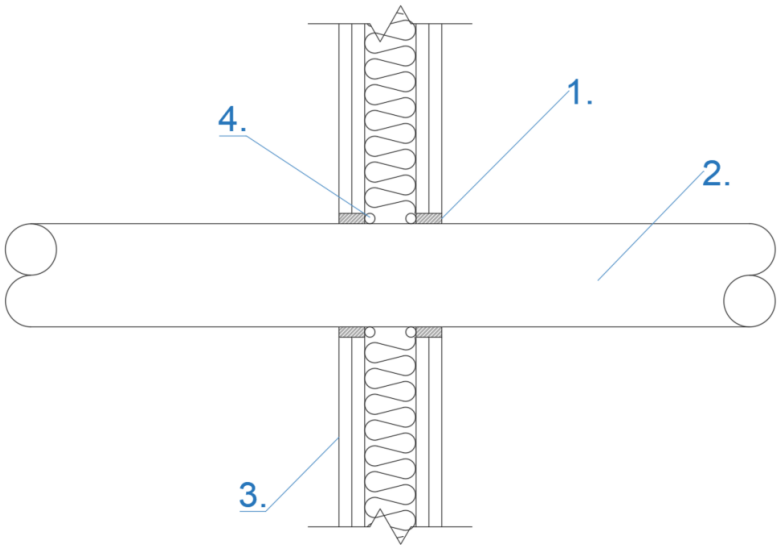
A.2.1.1

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Cable bunch ≤100 mm Ø	20	180 x 180	Stone wool or ceramic wool (20 mm 45kg/m³)	10	**EI 120**
PVC conduits ≤16 mm Ø					**EI 120**
Steel/Copper conduits ≤16 mm Ø					**E 120, EI 20**
Cables ≤50 mm Ø					**E 90, EI 60**
Cables ≤21 mm Ø					**EI 120**

A.2.2 Double sided penetration seal with metallic pipes

Penetration Seal: Metallic pipes (single) fitted centrally within the aperture, sealed with Astro Intu Mastic sealant to both sides of the wall, backed with various backing materials. Minimum separation between penetration seals 200 mm (a2).

Construction details:



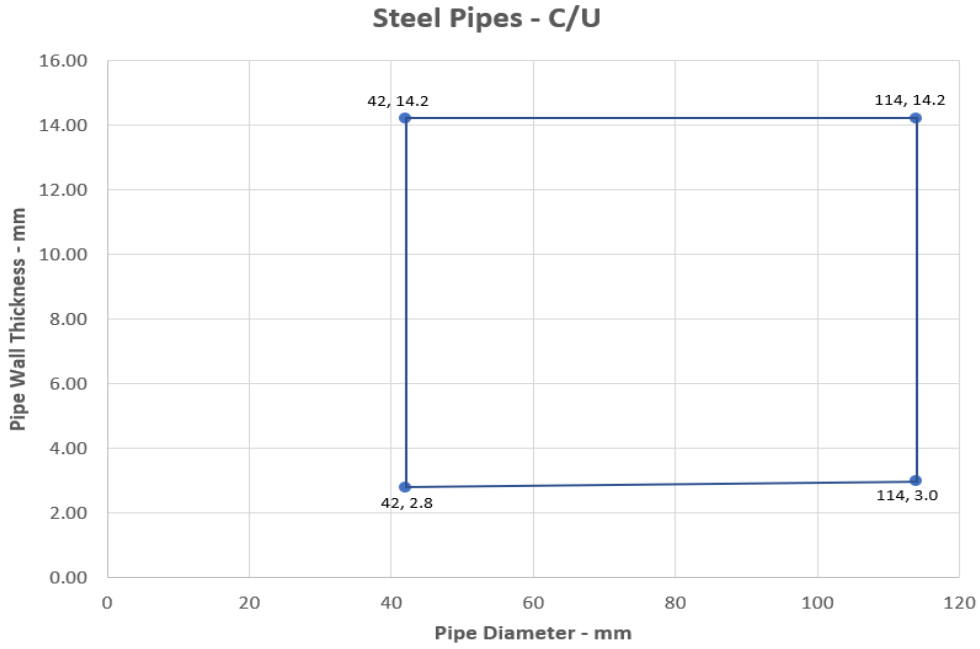
Key:

1. Astro Intu Mastic Sealant
2. Metal Pipe
3. Flexible Wall
4. Backing Material

A.2.2.1

Penetration Service	Depth (mm)	Annular (mm)	Backing Material	Classification
Steel pipe 42 mm diameter/ 2.8-14.2 mm 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 diameter/ 3-14.2mm wall thickness*				**E 120 C/U, C/C, EI 20 C/U, C/C**

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

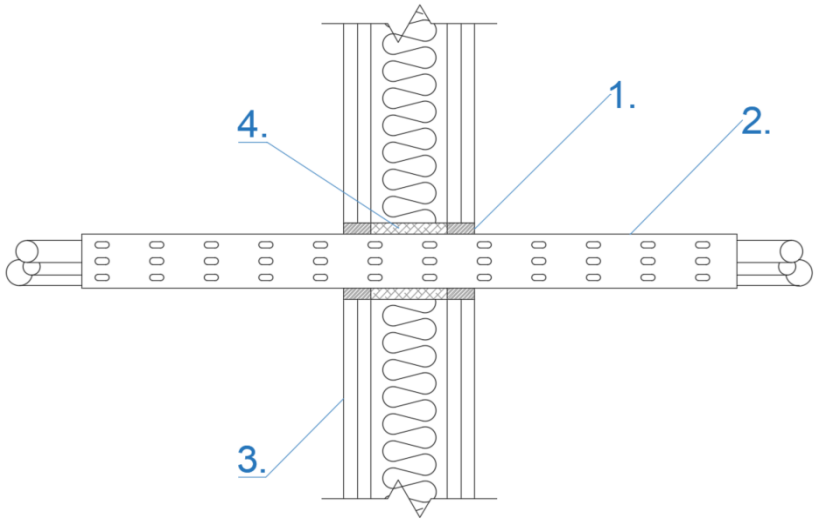


A.3 Flexible and rigid wall constructions with wall thickness of minimum 120 mm

A.3.1 Double sided penetration seal with cable trays

Penetration Seal: Cables trays with cables penetrating through a flexible or rigid wall construction and sealed with Astro Intu Mastic sealant to both sides of the wall, backed with various backing materials. Minimum separation between penetration seals 200 mm (a2).

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Cable Tray/Cables
3. Flexible Wall
4. Backing Material

A.3.1.1

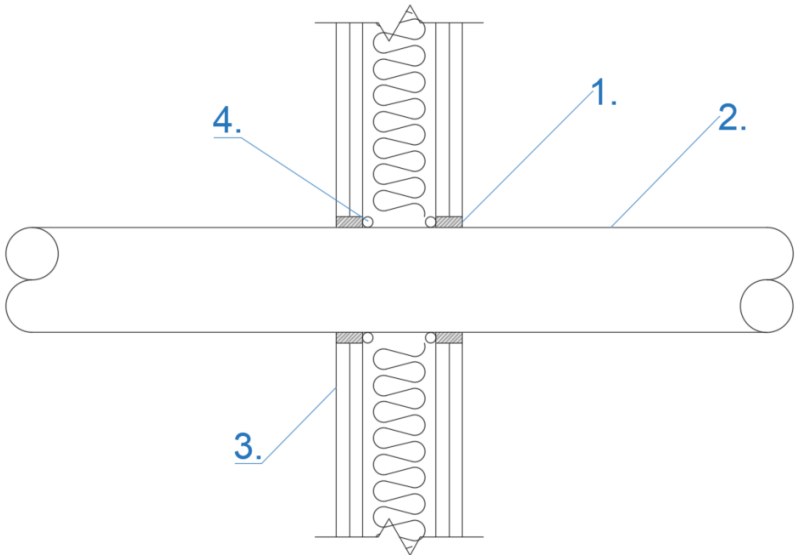
Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Steel cable tray ≤450 mm wide loaded with cables ≤21 mm Ø	25	490 x 100	Stone wool or ceramic wool (≥35 mm ≥80kg/m³)	20	**E 120, EI 90**
C1, C2, D1 and D2 Cables*	25	200 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

A.3.2 Double sided penetration seal with metallic pipes

Penetration Seal: Metallic pipes (single) fitted centrally within the aperture, sealed with Astro Intu Mastic sealant to both sides of the wall, backed with various backing materials. Minimum separation between penetration seals 200 mm (a2).

Construction details:



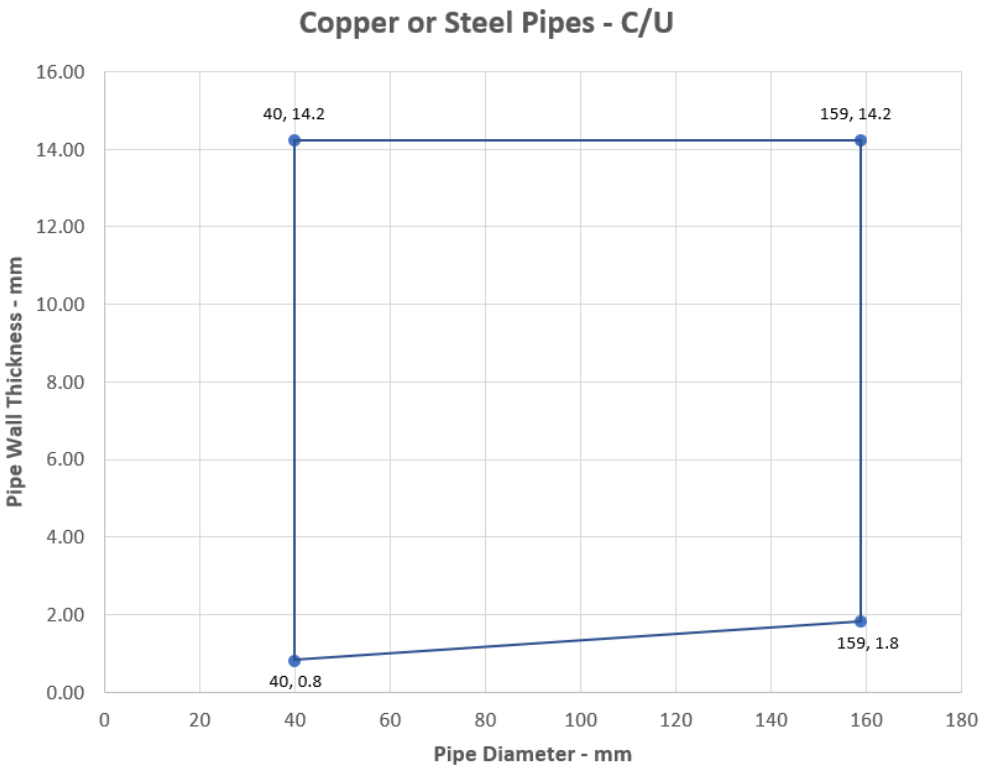
Key:

1. Astro Intu Mastic Sealant
2. Metal Pipe
3. Flexible Wall
4. Backing Material

A.3.2.1

Penetration Service	Depth (mm)	Annular (mm)	Backing Material	Classification
Copper or steel pipe 15-40 mm diameter/ 0.8-14.2 mm 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 or steel pipe 40-159 mm diameter/ 1.8-14.2 mm wall thickness*				**E 120 C/U, C/C,**
Copper or steel pipe 40 mm diameter/ 0.8-14.2mm wall thickness insulated with Astro Thermal defense wrap to both sides of the wall at 300 mm (L/I)				**E 120 C/U, C/C, EI 90 C/U, C/C**
Copper or steel pipe 40-159 mm diameter/ 1.8-14.2 mm wall thickness insulated with Astro Thermal defense wrap to both sides of the wall at 300 mm (L/I)*				**E 120 C/U, C/C, EI 20 C/U, C/C**

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

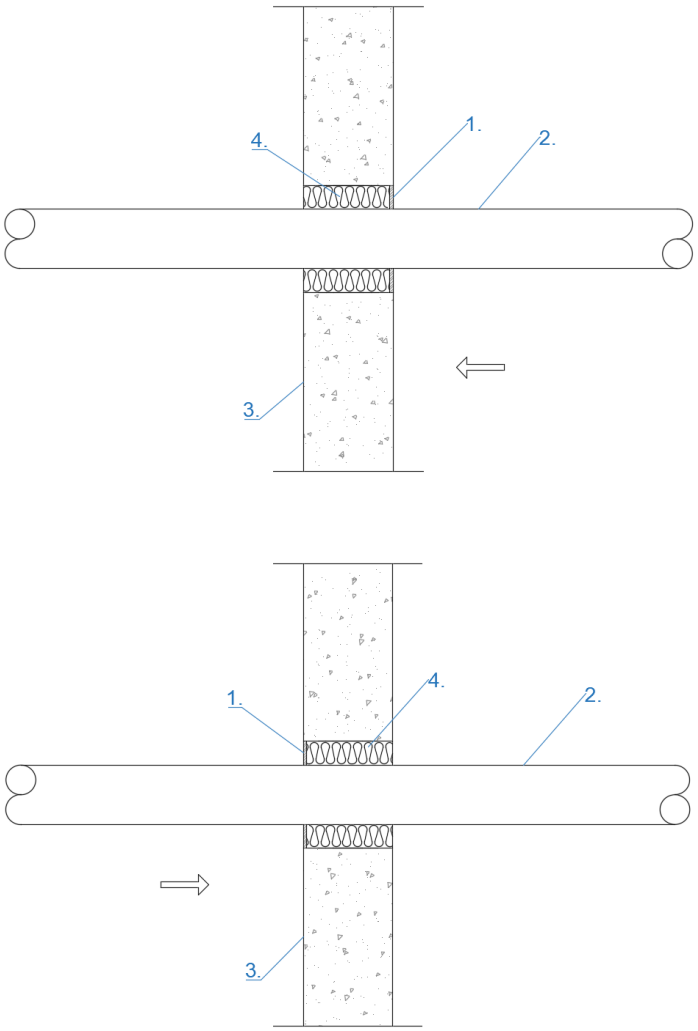

Copper or Steel Pipes - C/U
Pipe Wall Thickness - mm
Pipe Diameter - mm
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
20
40
60
80
100
120
140
160
180
40, 14.2
159, 14.2
159, 1.8
40, 0.8

A.4 Rigid wall constructions with wall thickness of minimum 150 mm

A.4.1 Double side penetration seal with metallic pipes

Penetration Seal: Metallic pipes (single) fitted at any position within the aperture, sealed with Astro Intu Mastic sealant to either side of the wall, backed with Stone wool or ceramic wool (≥144 mm ≥80kg/m³). Minimum separation between penetration seals 200 mm (a2).

Construction details:



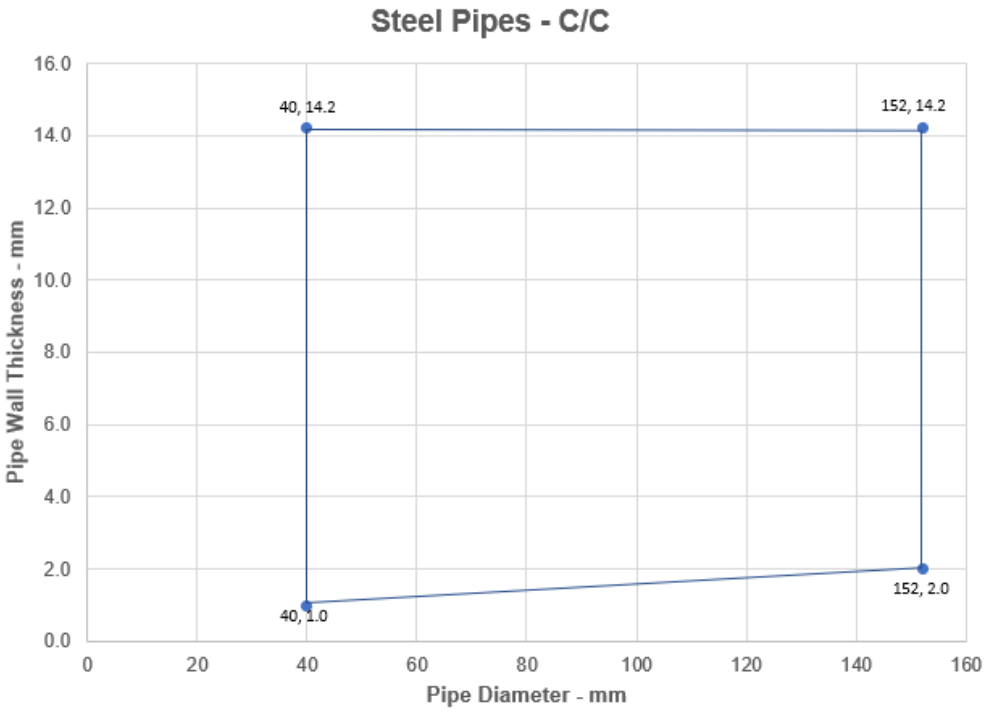
Key:

1. Astro Intu Mastic Sealant
2. Metal Pipe
3. Rigid Wall
4. Backing Material

A.4.1.1

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Steel pipe 40-152 mm diameter/ 2.5-14.2mm wall thickness*	6	Pipe Ø + 50 mm	Stone wool or ceramic wool (≥144 mm ≥80kg/m³)	0	**E 240 C/C**
Steel pipe 40 mm diameter/ 1.5-14.2 mm wall thickness	6	Pipe Ø + 50 mm	Stone wool or ceramic wool (≥144 mm ≥80kg/m³)	0	**E 240 C/C, EI 120 C/C**

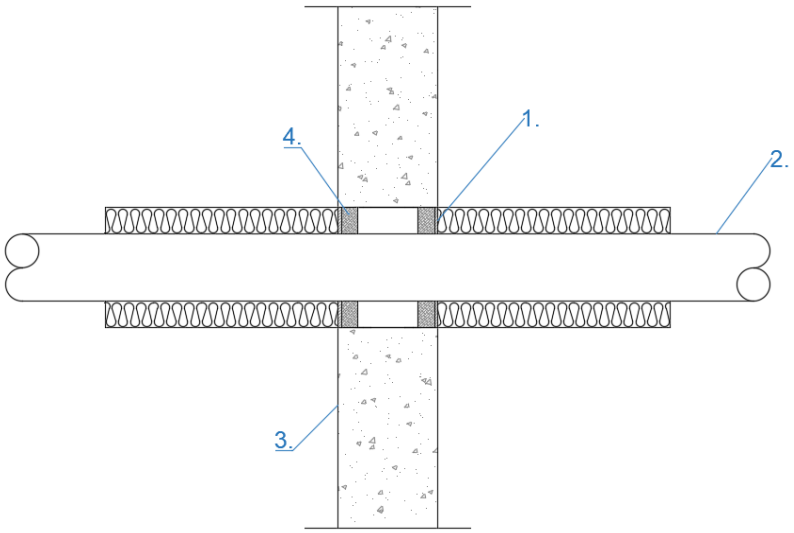
* See below graphs for interpolated pipe sizes and permitted wall thicknesses


Steel Pipes - C/C
Pipe Wall Thickness - mm
Pipe Diameter - mm
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0
20
40
60
80
100
120
140
160
40, 14.2
152, 14.2
40, 1.0
152, 2.0

A.4.2 Double side penetration seal with insulated metallic pipes

Penetration Seal: Insulated metallic pipes (single) fitted at any position within the aperture, sealed with Astro Intu Mastic sealant to both sides of the wall, backed with various backing materials. Minimum separation between penetration seals 200 mm (a2).

Construction details:



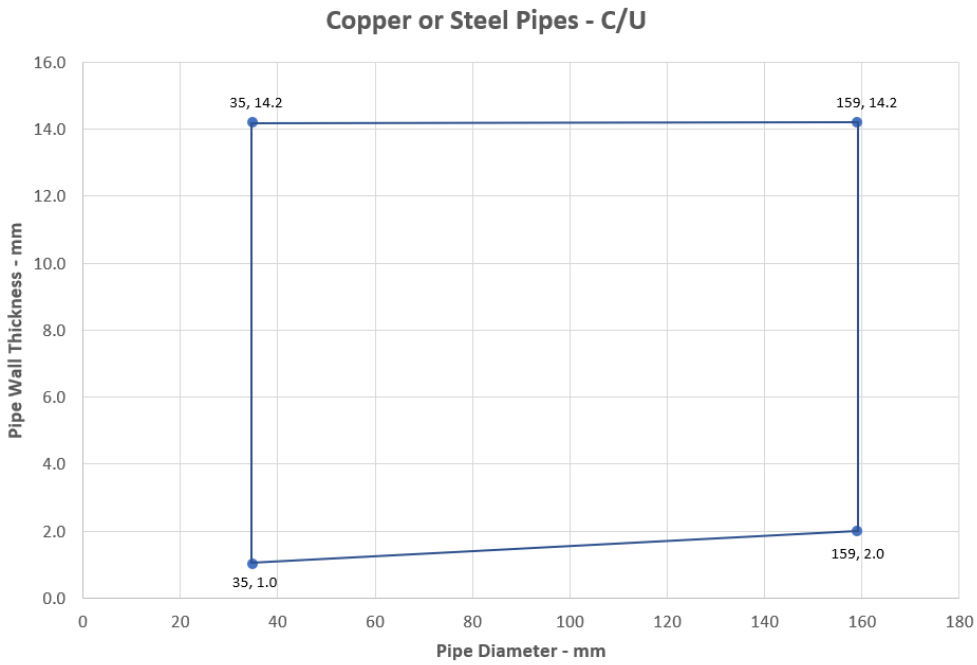
Key:

1. Astro Intu Mastic Sealant
2. Metal Pipe
3. Rigid Wall
4. Backing Material

A.4.2.1

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Copper or steel pipe 35-159mm diameter/ 2-14.2 mm wall thickness insulated with stone wool 50 mm thick 100kg/m³ (C/I)*	5	Pipe Ø + 55 mm	PE backing rod, glass wool, stone wool or ceramic wool	0	**EI 240 C/U, C/C**

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

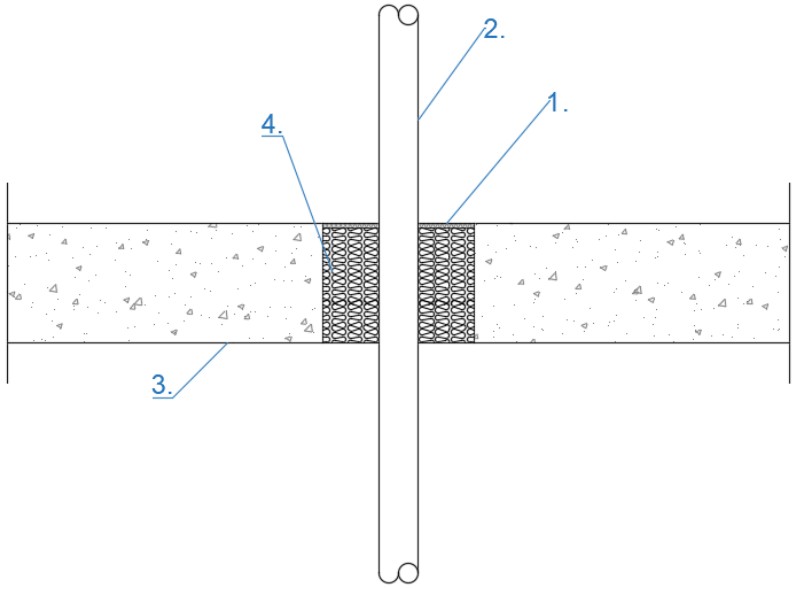

Copper or Steel Pipes - C/U
Pipe Wall Thickness - mm
Pipe Diameter - mm
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
0
20
40
60
80
100
120
140
160
180
35, 14.2
159, 14.2
159, 2.0
35, 1.0

A.5 Rigid floor constructions with floor depth of minimum 150 mm

A.5.1 Penetration seal with metallic pipes

Penetration Seal: Metallic pipes (single) fitted within the aperture, sealed with Astro Intu Mastic sealant on the top side of the floor, backed with Stone wool or ceramic wool (≥145 mm ≥45kg/m³). Minimum separation between penetration seals 200 mm (a2).

Construction details:



Key:

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

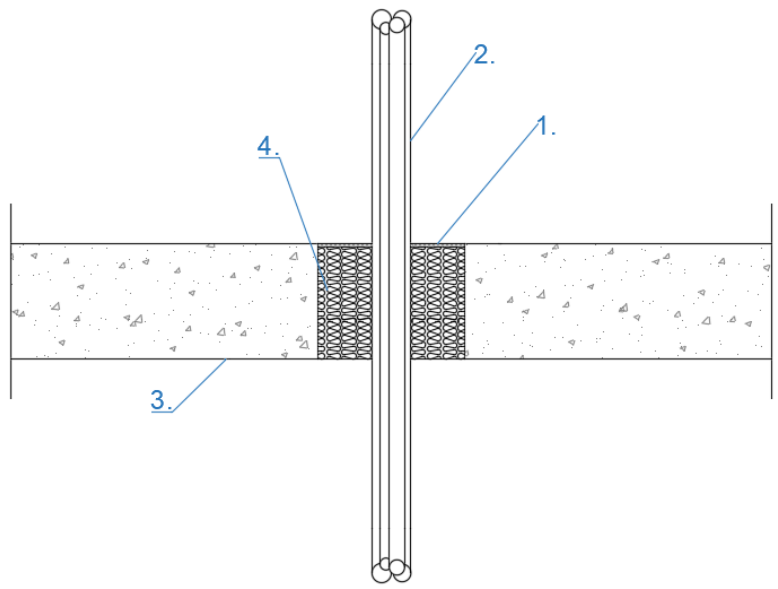
A.5.1.1

Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Copper or steel pipe 42-159 mm diameter/ 1-14.2 mm wall thickness	5	200 x 200	Stone wool or ceramic wool (≥145 mm ≥45kg/m³)	20	**E 180 C/U, C/C**
Copper or steel pipe 42 mm diameter/ 1-14.2 mm wall thickness					**E 240 C/U, C/C**

A.5.2 Penetration seal with cables

Penetration Seal: Cables and conduits fitted at any position within the aperture, sealed with Astro Intu Mastic sealant to the top side of the floor, backed with Stone wool or ceramic wool (≥145 mm ≥45kg/m³). Minimum separation between penetration seals 200 mm (a2).

Construction details:



Key:

1. Astro Intu Mastic Sealant
2. Cables
3. Rigid Floor
4. Backing Material

A.5.2.1

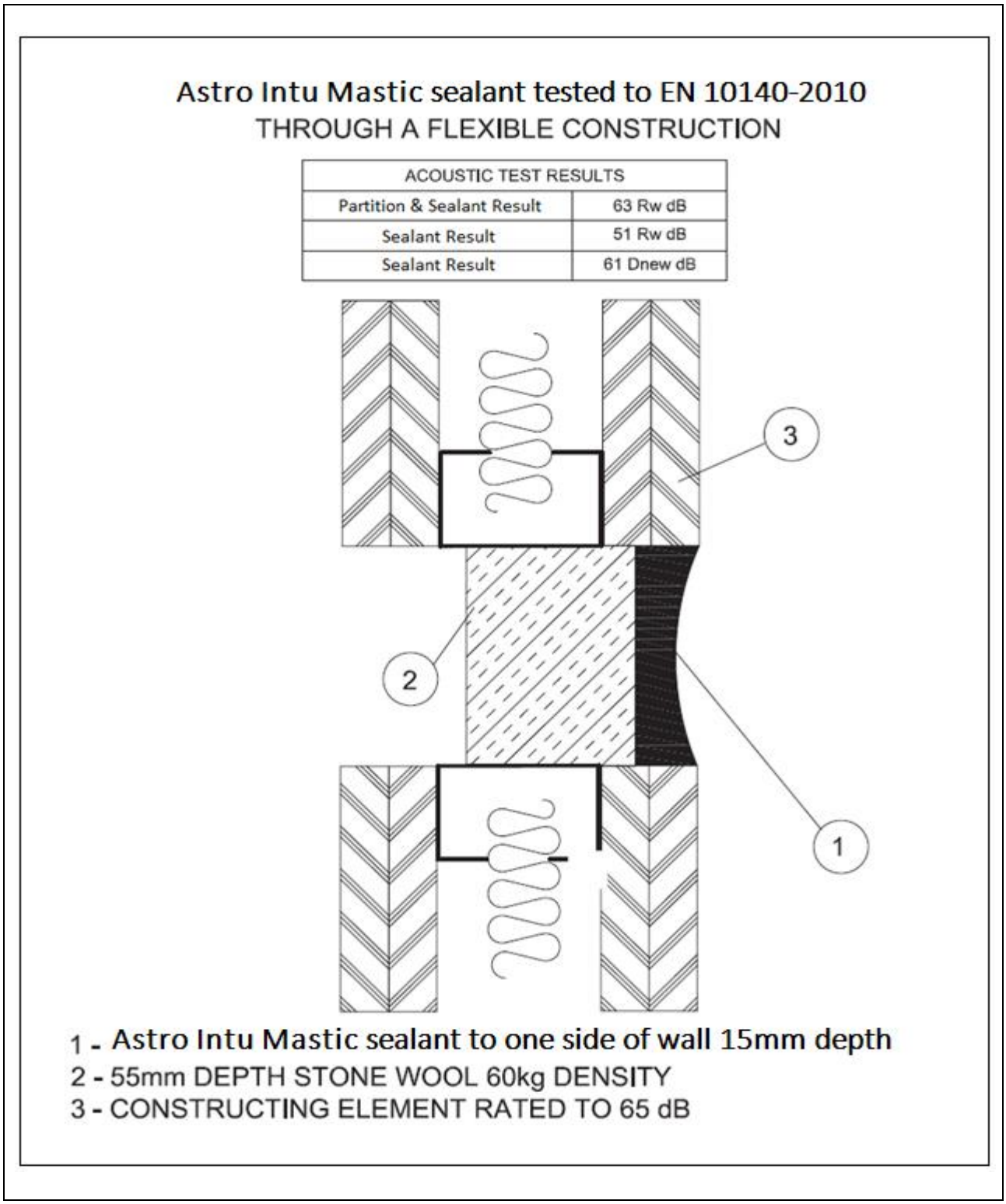
Penetration Service	Depth (mm)	Maximum Aperture Size (mm)	Backing Material	Minimum Distance to Edge of Aperture (mm)	Classification
Telecoms cables ≤21 mm diameter in cable bunch ≤100 mm diameter	5	200 x 200	Stone wool or ceramic wool (≥145 mm ≥45kg/m³)	0	**E 45, EI 15**
PVC conduits ≤16 mm diameter					**E 45, EI 15**
Steel or copper conduits ≤16 mm diameter					**E 45, EI 15**
Cables ≤80 mm diameter					**E 90, EI 45**
Cables ≤50 mm diameter					**E 90, EI 45**
Cables ≤21 mm diameter					**E 240, EI 90**

ANNEX B – Air Permeability - Astro Intu Mastic

Product tested	**25 mm thick x 30 mm wide Astro Intu Mastic intumescent sealant**		
Summary of testing procedure			**Result**
	Pressure (Pa)	**Leakage (m^3/h)**	**Leakage ($m^3/m^2/h$)**
Results under negative chamber pressure	**50**	**0.0**	**0.0**
	100	**0.0**	**0.0**
	150	**0.1**	**2.8**
	200	**0.1**	**2.8**
	250	**0.1**	**2.8**
	300	**0.0**	**0.0**
	450	**0.1**	**2.8**
	600	**0.1**	**2.8**
Results under positive chamber pressure	**50**	**0.0**	**0.0**
	100	**0.0**	**0.0**
	150	**0.0**	**0.0**
	200	**0.0**	**0.0**
	250	**0.0**	**0.0**
	300	**0.0**	**0.0**
	450	**0.1**	**2.8**
	600	**0.1**	**2.8**

ANNEX C – Airborne Sound Insulation - Astro Intu Mastic

C.1 Astro Intu Mastic sealant at 15 mm deep in the following configuration



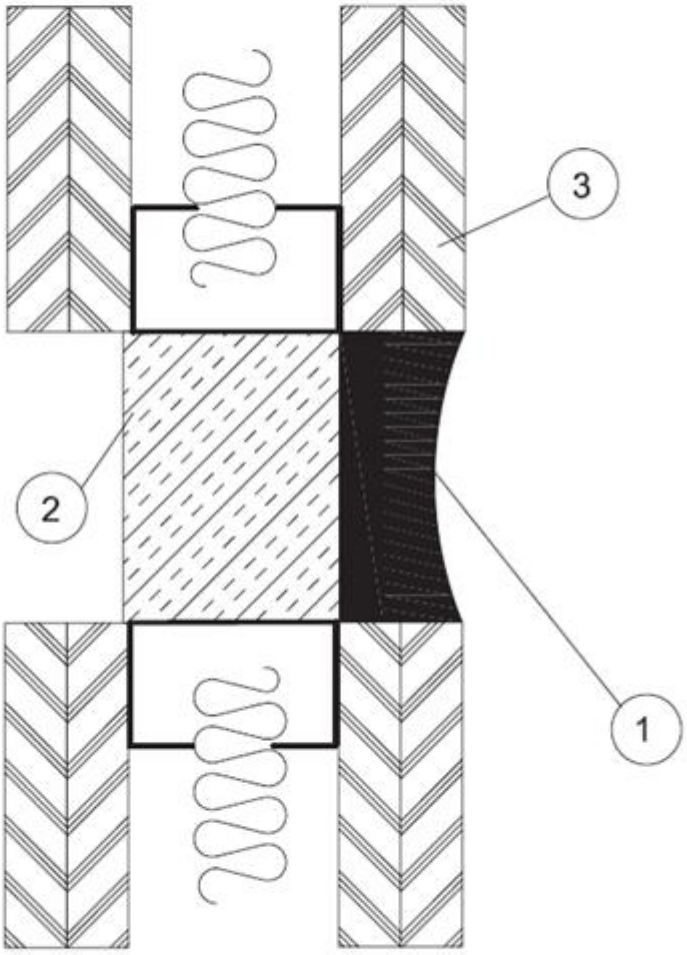
BWR 5 Protection against noise		
Assessment method	Essential characteristic	Product performance
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	Rw (C;Ctr)= 63(-1;-7)

C.2 Astro Intu Mastic sealant at 25 mm deep in the following configuration

Astro Intu Mastic sealant tested to EN 10140-2010

THROUGH A FLEXIBLE CONSTRUCTION

ACOUSTIC TEST RESULTS	
Partition & Sealant Result	63 Rw dB
Sealant Result	51 Rw dB
Sealant Result	61 Dnew dB



1 - Astro Intu Mastic sealant to one side of wall 25mm depth

2 - 55mm DEPTH STONE WOOL 60kg DENSITY

3 - CONSTRUCTING ELEMENT RATED TO 65 dB

BWR 5 Protection against noise		
Assessment method	Essential characteristic	Product performance
EN 10140-1,2,4,5/ EN ISO 717-1	Airborne sound insulation	Rw (C;Ctr)= 63(-1;-7)