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designated according to Article 29 of the Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment, www.eota.eu)

European Technical Assessment

ETA 20/0057 of 26/03/2020

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: **UL International (UK) Ltd**

Trade name of the construction product

Astro PFP FR Acrylic

Product family to which the construction product belongs

Fire Stopping and Sealing Product:
 • Linear Joint and Gap Seals

Manufacturer

Astroflame Fireseals Ltd
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 Stephenson Road,
 Segensworth,
 Fareham,
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 PO15 5RU

Manufacturing plant(s)

A/003

This European Technical Assessment contains

16 pages including 1 Annex which forms an integral part of this assessment.

This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of

EAD 350141-00-1106, September 2017.

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I. SPECIFIC PARTS OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of the product

- 1) Astro PFP FR Acrylic is an intumescent acrylic sealant used to form linear gap seals where gaps are present in wall and floor constructions and linear joint seals where wall and floor constructions abut.
- 2) The Astro PFP FR Acrylic is supplied in liquid form contained within 310 & 380 ml cartridges and 600 ml foil packs. The sealant is gunned into the aperture in the separating element/elements and around the service or services, to a specified depth utilising a backing material.
- 3) Astro PFP FR Acrylic contains no carcinogenic substances or mutagenic substances, flame retardants or antimicrobiological agents.
- 4) The applicant has submitted a written declaration that Astro PFP FR Acrylic does not contain substances which have to be classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No 1272/2008 and listed in the "Indicative list on dangerous substances" of the EGDS - taking into account the installation conditions of the construction product and the release scenarios resulting from there.

In addition to the specific clauses relating to dangerous substances contained in this 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 PFP FR Acrylic in relation to BWR 3 (Hygiene, health and environment) is IA1.

2 Specification of the intended uses of the product in accordance with the applicable European Assessment Document (Hereinafter EAD): EAD 350141-00-1106, September 2017

Detailed information and data is given in Annex A.

The intended use of system Astro PFP FR Acrylic is to reinstate the fire resistance performance of gaps in and joints in and between flexible wall and rigid wall constructions, gaps in and joints between rigid floor constructions.

- 1) The specific elements of construction that the system Astro PFP FR Acrylic may be used to provide a gap or joint seal in, are as follows:

Flexible walls: The wall must have a minimum thickness of 75 mm and comprise steel or wooden studs lined on both faces with minimum 1 layers of 12.5 mm thick boards. The wall is permitted with or without insulation material between the boards.

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/m³.

Rigid floors: The floor must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m³.

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

- 2) The system Astro PFP FR Acrylic may be used to provide a linear joint or gap seal with specific supporting constructions and substrates (for details see Annex A).

Astroflame Fireseals Ltd Fire Protection Systems which involve linear seals on both sides of a flexible wall may also be used in the situation where the linear seal is on one side of the wall only and the remaining side of the wall is not punctured at the same point. All fire integrity and thermal insulation ratings for such single-sided linear seals remain the same as for the equivalent double-sided linear seal.

- 3) The maximum permitted joint/gap width for system Astro PFP FR Acrylic is 100 mm.
- 4) The maximum movement capability of system Astro PFP FR Acrylic is $\leq 7.5\%$ (not tested to EAD 350141-00-1106).
- 5) The provisions made in this European Technical Assessment are based on an assumed working life of the Astro PFP FR Acrylic of 30 years, provided that the conditions laid down in sections 4.2/5.1/5.2 for the packaging/transport/ storage/installation/use/repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.
- 6) Type Z₂: Intended for uses in internal conditions with humidity lower than 85 % RH excluding temperatures below 0°C, without exposure to rain or UV.

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

| Product-type: Sealant | | Intended use: Linear Joint & Gap Seal |
|--|--|--|
| Basic requirement for construction work | Essential characteristic | Performance |
| BWR 2 Safety in case of fire | | |
| EN 13501-1 | Reaction to fire | Class D-s1, d1 |
| EN 13501-2 | Resistance to fire | Annex A |
| BWR 3 Hygiene, health and environment | | |
| Declaration of manufacturer & EN 16516 | Content, emission and/or release of dangerous substances | Use categories: IA1 Declaration of manufacturer |
| EN 1026:2000 | Air permeability (material property) | No performance determined |
| EAD 350141-00-1106, Annex C & EN 12390-8 | Water permeability (material property) | No performance determined |
| BWR 4 Safety in use | | |
| EOTA TR 001:2003 | Mechanical resistance and stability | No performance determined |
| EOTA TR 001:2003 | Resistance to impact/movement | No performance determined |
| EOTA TR 001:2003 ISO 11600 & EAD 350141-00-1106, Clause 2.2.13 | Adhesion | No performance determined |
| EAD 350141-00-1106, Clause 2.2.12 | Durability | Z ₂ |
| EAD 350141-00-1106, Clause 2.2.13 | Movement capacity | No performance determined |
| 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 |
| BWR 5 Protection against noise | | |
| EN 10140-1,2,4,5/ EN ISO 717-1 | Airborne sound insulation | Rw(C;Ctr)= 62 (-1;-5) dB* |
| BWR 6 Energy economy and heat retention | | |
| 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 |

* At 12 mm depth

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 <http://eur-lex.europa.eu/JOIndex.do> of the European Commission¹, 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

Tasks of the manufacturer:

Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall ensure that the product is in conformity with this European technical Assessment.

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

The factory production control shall be in accordance with the Control Plan of 5th January 2017 relating to the European technical assessment ETA 20/0057 issued on 26/03/2020 which is part of the technical documentation of this European technical approval. The "Control Plan" is laid down in the context of the factory production control system operated by the manufacturer and deposited at UL International (UK) Ltd.

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the Control Plan.

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

Other tasks of the manufacturer

Additional information

The manufacturer shall provide a technical data sheet and an installation instruction with the following minimum information:

(a) Technical data sheet:

- Field of application:
- Building elements for which the linear joint seal or penetration seal is suitable, type and properties of the building elements like minimum thickness, density, and - in case of lightweight constructions – the construction requirements.
- Limits in size, minimum thickness etc. of the joint or penetration seal
- Construction of the linear joint seal or penetration seal including the necessary components and additional products (e.g. backfilling material) with clear indication whether they are generic or specific.
- Services which the penetration seal is suitable, type and properties of the services like material, diameter, thickness etc. in case of pipes including insulation materials; necessary/allowed supports/fixings (e.g. cable trays)

(b) Installation instruction:

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

6 Issued on:

26th March 2020

Report by:



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Reviewed by:



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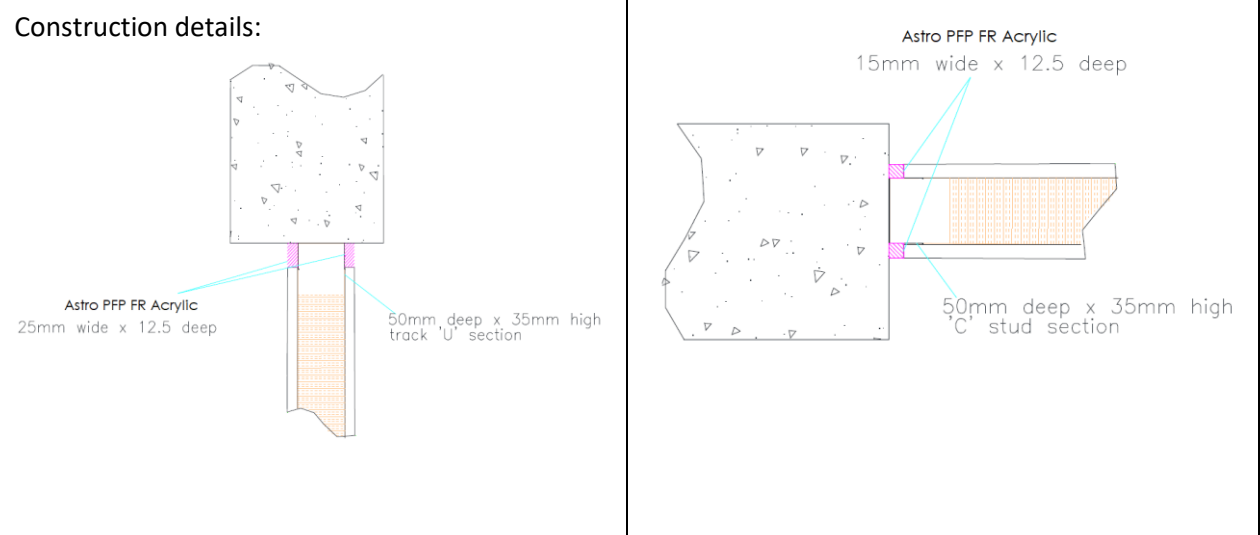
For and on behalf of UL International (UK) Ltd.

ANNEX A – Resistance to Fire Classification – Astro PFP FR Acrylic

A.1 Flexible wall constructions according to 2 1) with wall thickness of minimum 75 mm and minimum 1 x layer of 12.5 mm board per side

A.1.1 Linear joint seals, between head of flexible wall and soffit of concrete floor and vertical end of flexible wall and concrete wall

Joint Seal: Astro PFP FR Acrylic to both sides of the wall, joint widths up to 30 mm

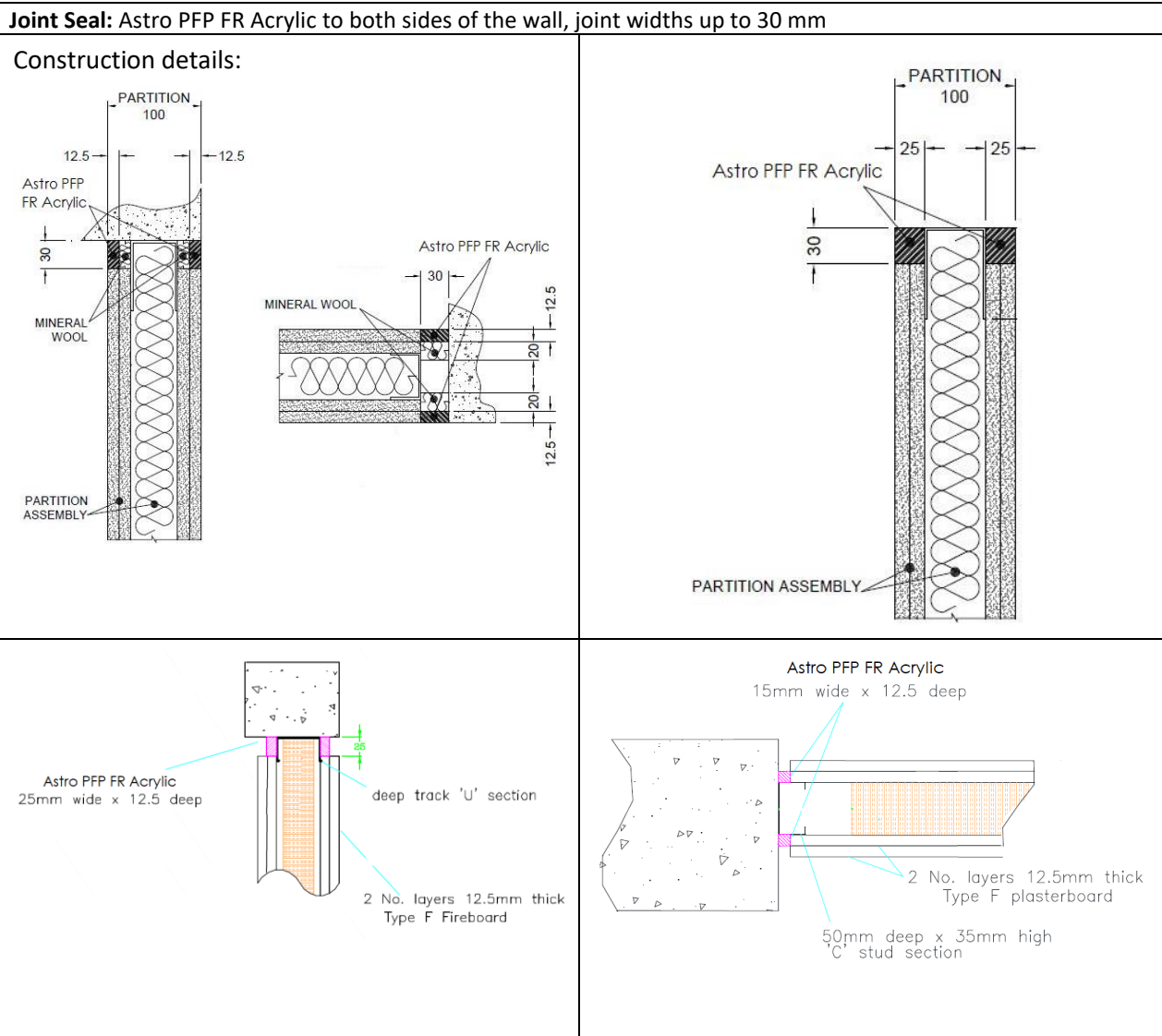


A.1.1.1

| Substrate | Depth (mm) | Backing (minimum) | Classification |
|-------------------------|------------|--|---|
| Plasterboard / concrete | 12.5 min. | 50 mm steel partition head track/ stud | E 60 – T – X – F – W 25 EI 45 – T – X – F – W 25 |
| | | | E 60 – V – X – F – W 15 EI 45 – V – X – F – W 15 |

A.2 Flexible wall constructions according to 1.2.1 with wall thickness of minimum 100 mm and minimum 2 x layer of 12.5 mm board per side

A.2.1 Linear joint seals, between head of flexible wall and soffit of concrete floor and vertical end of flexible wall and concrete wall



A.2.1.1

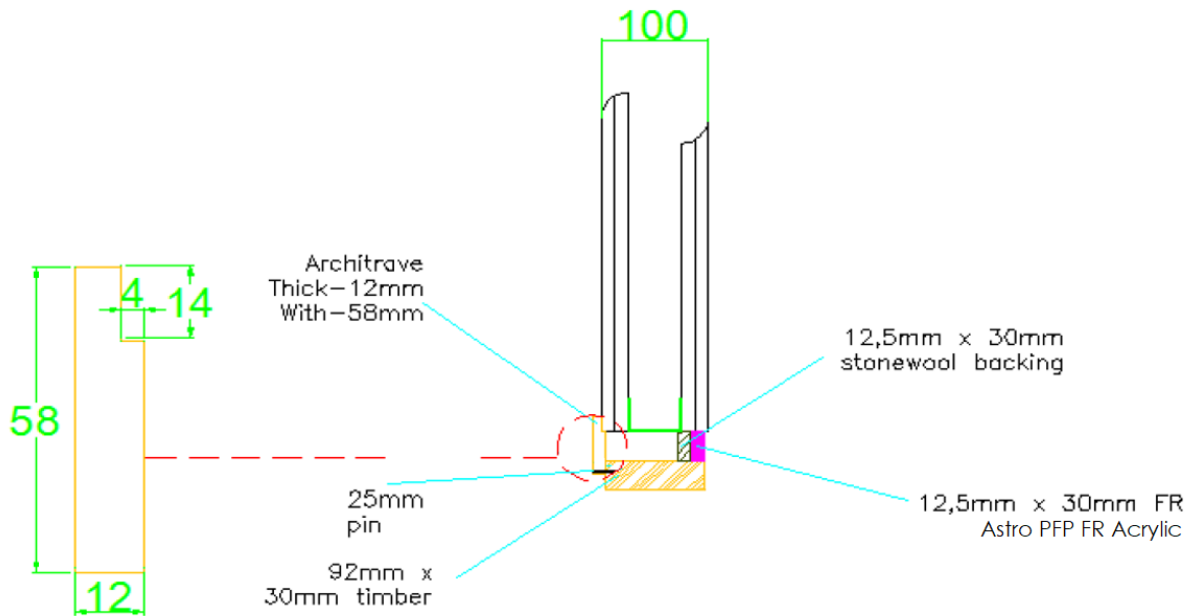
| Substrate | Depth (mm) | Backing (minimum) | Classification |
|-------------------------|------------|---|----------------------------------|
| Plasterboard / concrete | 12.5 min. | 12.5 mm Stone wool 35 kg/m ³ plus 50 mm steel partition head track | EI 120 – T – X – F – W 30 |
| | | 20 mm Stone wool 35 kg/m ³ | EI 120 – V – X – F – W 30 |
| | 25 min. | 50 mm steel partition head track /stud | EI 120 – T – X – F – W 30 |
| | 12.5 min. | | EI 90 – T – X – F – W 25 |
| | | | EI 90 – V – X – F – W 15 |

A.2.2 Flexible or rigid wall construction with wall thickness of minimum 100 mm and timber substrates and architraves

A.2.2.1 Linear joint or gap seals, vertically or horizontal orientated with backing materials

Joint Seal: Astro PFP FR Acrylic to one side of the wall, joint widths up to 30 mm

Construction details:



A.2.2.2

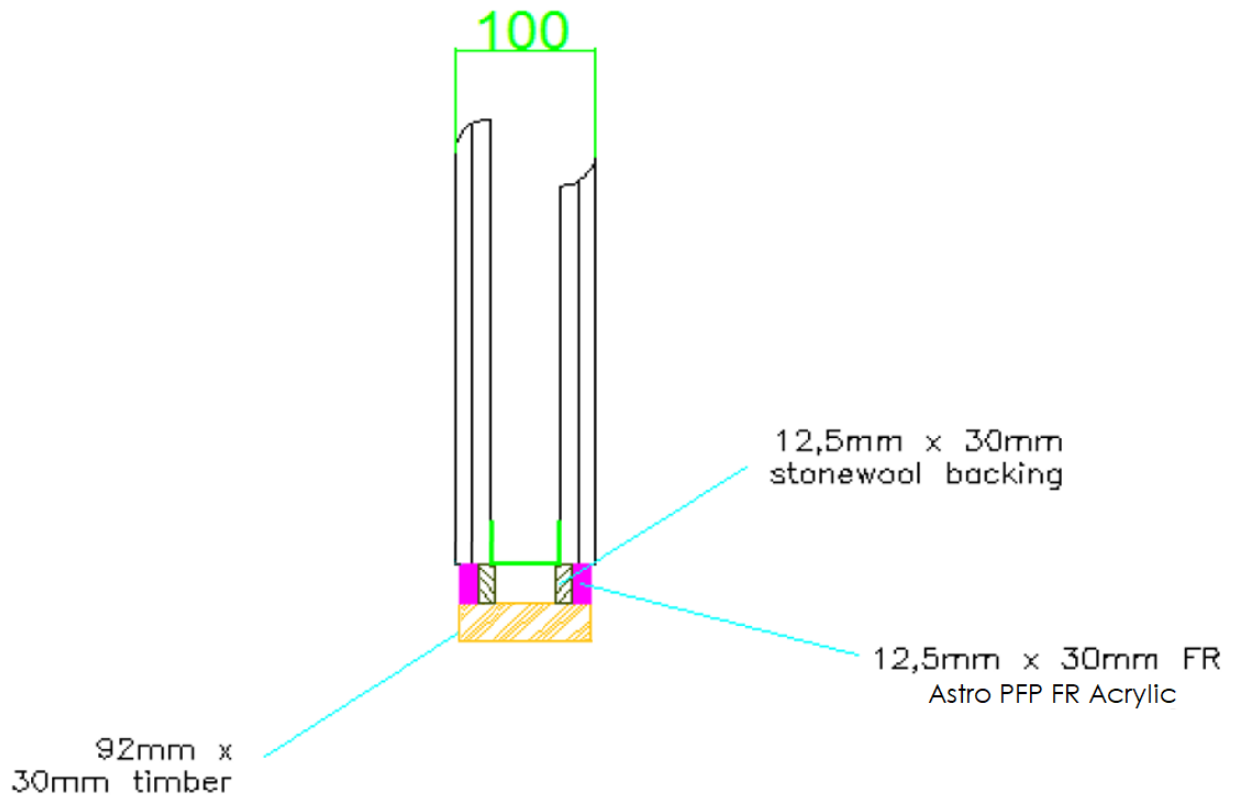
| Substrate | Depth (mm) | Facing (minimum) | Backing | Classification |
|---------------------------------|------------|--|---|--------------------------|
| Flexible or rigid wall / Timber | 12.5 min. | Single sided linear seals in flexible or rigid walls against wooden frames covered with architraves on the other side fixed with 25 mm steel pins at nominal 300 mm centres. | Stonewool, 12.5 mm deep min. 35 kg/m ³ | EI 60 – V – X – F – W 30 |
| | | | | EI 60 – T – X – F – W 30 |

A.2.3 Flexible or rigid wall construction with wall thickness of minimum 100 mm and timber substrates

A.2.3.1 Linear joint or gap seals, vertically or horizontal orientated with backing materials

Joint Seal: Astro PFP FR Acrylic to both sides of the wall, joint widths up to 30 mm

Construction details:



A.2.3.2

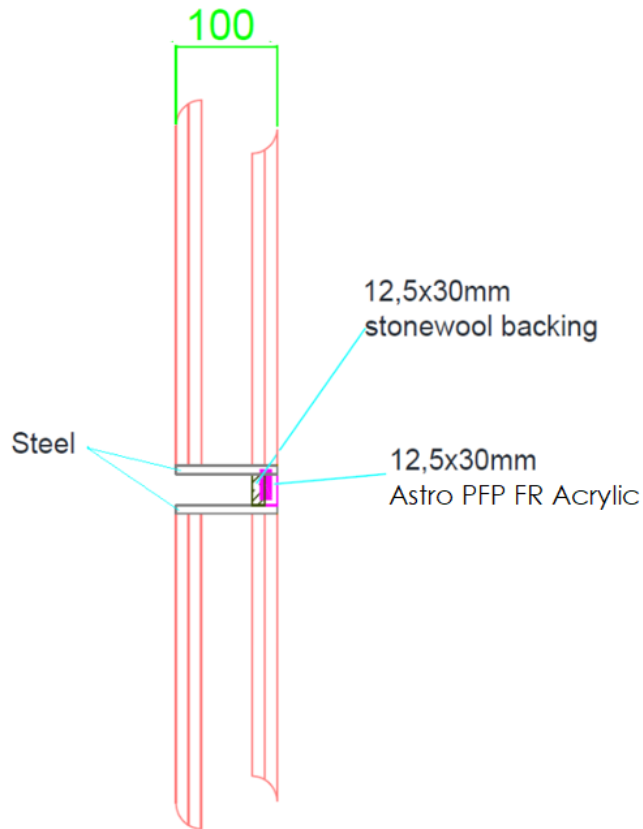
| Substrate | Depth (mm) | Backing | Classification |
|---------------------------------|------------|---|--------------------------|
| Flexible or rigid wall / Timber | 12.5 min. | Stonewool, 12.5 mm deep min. 35 kg/m ³ | E 90 – V – X – F – W 30 |
| | | | EI 60 – V – X – F – W 30 |
| | | | E 90 – T – X – F – W 30 |
| | | | EI 60 – T – X – F – W 30 |

A.2.4 Flexible or rigid wall construction with wall thickness of minimum 100 mm and steel substrates

A.2.4.1 Linear joint or gap seals, vertically or horizontal orientated with backing materials

Joint Seal: Astro PFP FR Acrylic to one side of the wall, with joint widths up to 30 mm.

Construction details:



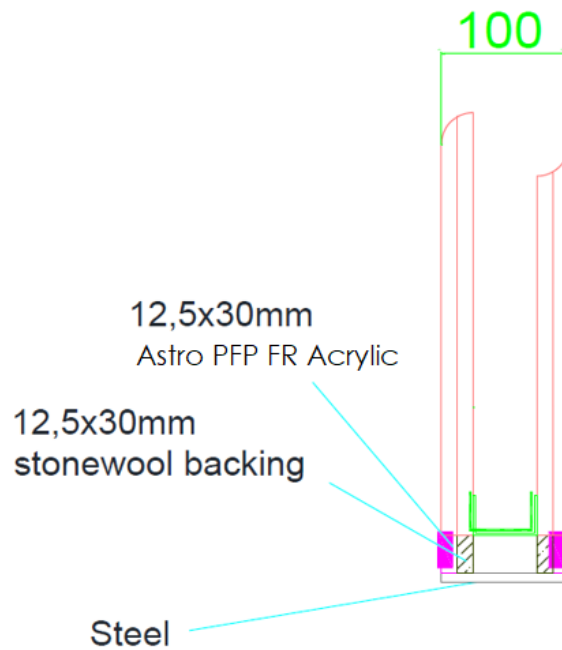
A.2.4.2

| Substrate | Depth (mm) | Backing | Classification |
|---------------|------------|---|--------------------------|
| Steel / steel | 12.5 min. | Stonewool, 12.5 mm deep min. 35 kg/m ³ | E 120 – V – X – F – W 30 |
| | | | EI 30 – V – X – F – W 30 |
| | | | E 120 – T – X – F – W 30 |
| | | | EI 30 – T – X – F – W 30 |

A.2.5 Linear joint or gap seals, vertically or horizontal orientated with backing materials

Joint Seal: Astro PFP FR Acrylic to both sides of the wall, with joint widths up to 30 mm.

Construction details:



A.2.5.1

| Substrate | Depth (mm) | Backing | Classification |
|--------------------------------|------------|---|--|
| Flexible or rigid wall / Steel | 12.5 min. | Stonewool, 12.5 mm deep min. 35 kg/m ³ | E 120 – V – X – F – W 30 ¹ EI 30 – V – X – F – W 30 ² |
| | | | E 120 – T – X – F – W 30 ³ EI 45 – T – X – F – W 30 ⁴ |

*Additional and for information only.

The classifications provided in Table A.2.5.1 consider the insulation performance of all components within the firestopping system as per the requirements of EN 1366-4. This includes temperature evaluation of the steel substrate.

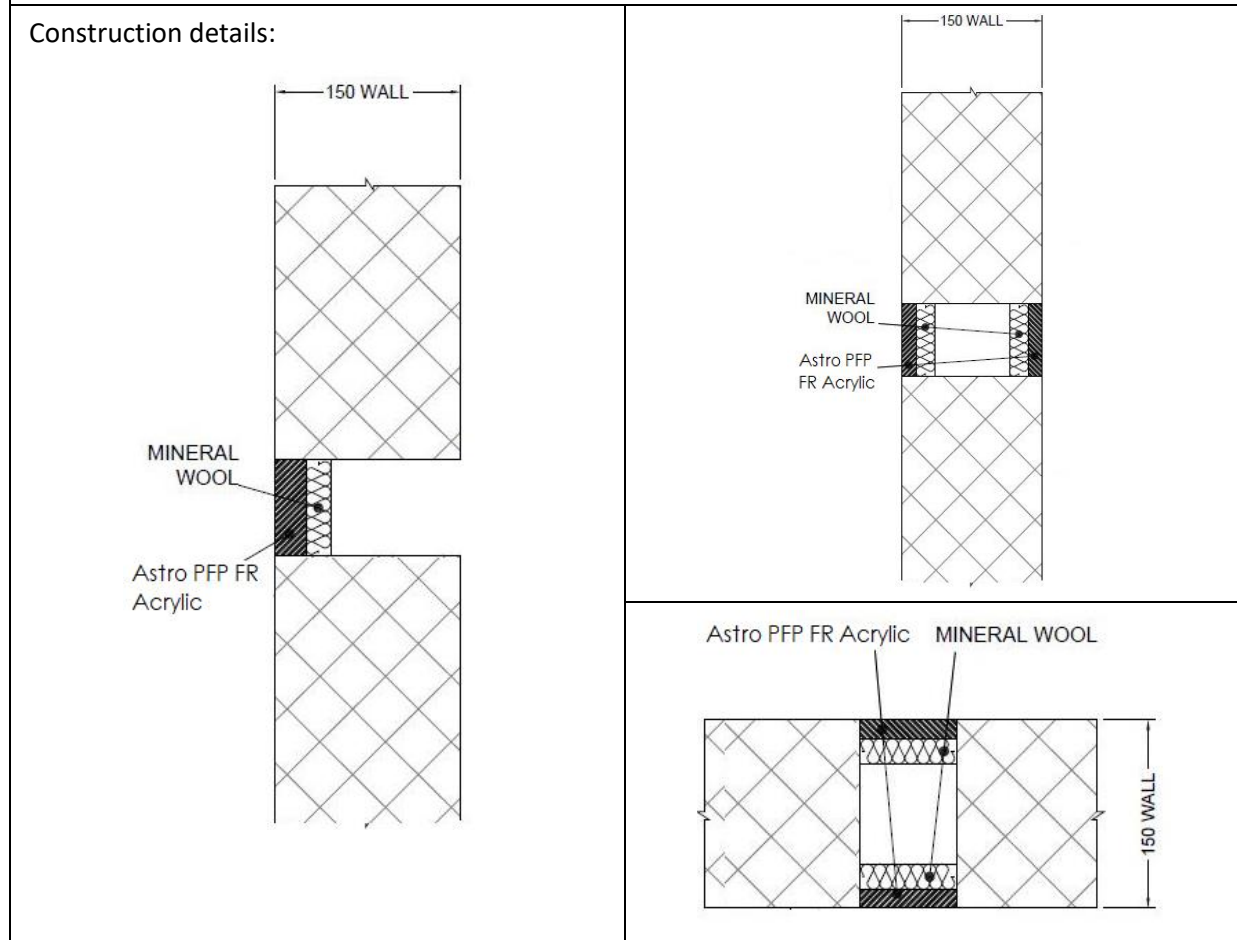
In relation to each of the above classifications, temperatures recorded on the seal (exclusive of the supporting construction) exceeded the maximum allowable after the following times (rounded down):

¹ 120, ² 90, ³ 120, ⁴ 60

A.3 Rigid wall constructions according to 1.2.1 with wall thickness of minimum 150 mm

A.3.1 Linear joint or gap seal, between head of rigid wall and soffit of concrete floor / between rigid walls

Joint Seal: Astro PFP FR Acrylic to either side (or any position between) or both sides of the wall, joint widths up to 30 mm



A.3.1.1

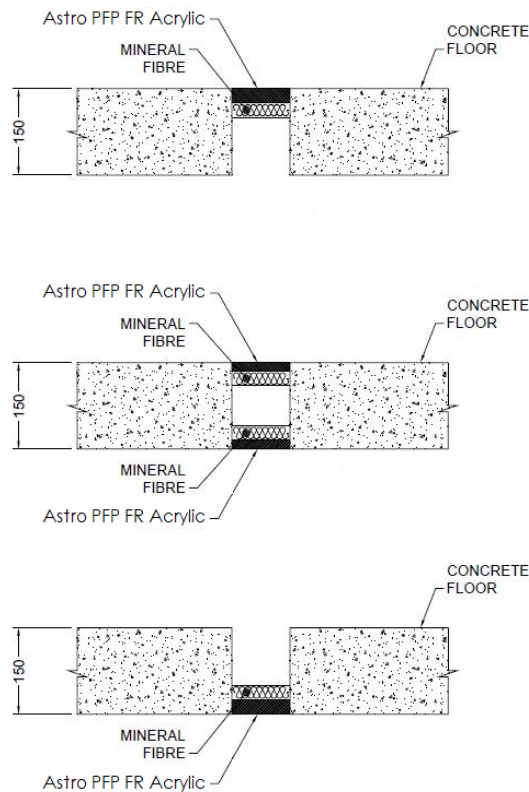
| Substrate | Depth (mm) | Backing (minimum) | Classification |
|----------------------|-------------------------|--|--|
| masonry/ concrete | 25 min. (one side) | 20 mm Stone wool 40 kg/m ³ | E 240 – T – X – F – W 30 EI 60 – T – X – F – W 30 |
| | 15 min. (both sides) | | EI 240 – V – X – F – W 30 EI 240 – T – X – F – W 30 |
| | 10 min. (one side) | 60 mm Stone wool 33 kg/m ³ | E 240 – T – X – F – W 50 EI 60 – T – X – F – W 50 EI 120 – V – X – F – W 50 |
| | 25 min. (one side) | 48 mm AES Fibre ≥ 128kg/m ³ | E 240 – T – X – F – W 30 EI 120 – T – X – F – W 30 |

A.4 Rigid floor constructions according to 1.2.1 with floor thickness of minimum 150 mm

A.4.1 Linear joint or gap seal, between floor slabs or between floor slab and wall with sealant to the top face of the floor only

Joint Seal: Astro PFP FR Acrylic to either side (or any position between) or both sides of the floor, joint widths up to 100 mm

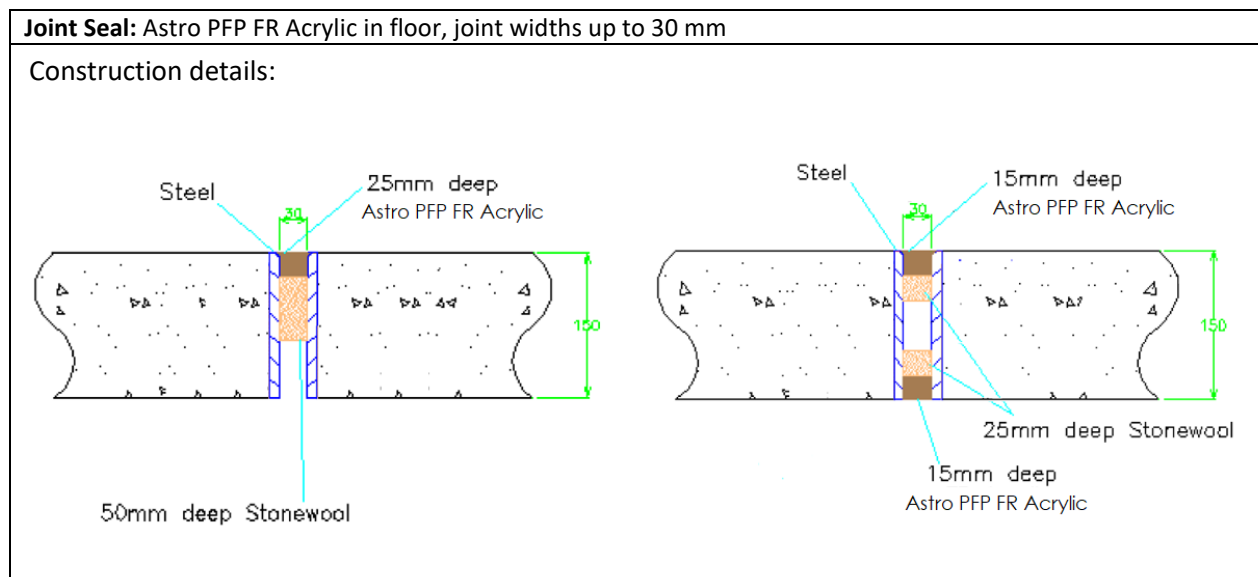
Construction details:



A.4.1.1

| Substrate | Depth (mm) | Backing (minimum) | Classification |
|----------------------|---------------------------|--|--|
| masonry/ concrete | 25 min. (any position) | 25 mm AES Fibre $\geq 128\text{kg/m}^3$ | E 120 – H – X – F – W 100 EI 60 – H – X – F – W 100 |
| | 25 min (top face) | | EI 180 – H – X – F – W 100 |
| | 15 min. (both sides) | 25 mm Stone wool 40 kg/m^3 | EI 120 – H – X – F – W 100 |
| | | 25 mm Stone wool 140 kg/m^3 | EI 180 – H – X – F – W 100 |
| | 15 min. (both sides) | 25 mm stone wool 35 kg/m^3 insulation | EI 240 – H – X – F – W 30 |
| | 10 min. (top face) | 90 mm Stone wool 33 kg/m^3 | EI 240 – H – X – F – W 100 |

A.4.2 Linear joint or gap seals, in or between rigid floors



A.4.2.1

| Substrate | Depth (mm) | Backing | Position | Classification |
|---------------------------------|------------|---|----------|--|
| Steel/ steel or Steel/ concrete | 25 min. | Stonewool, 50 mm deep min. 35 kg/m ³ | Top | E 240 – H – X – F – W 30 ¹ EI 30 – H – X – F – W 30 ² |
| | 15 min. | Stonewool, 25 mm deep min. 35 kg/m ³ | Both | E 240 – H – X – F – W 30 ³ EI 45 – H – X – F – W 30 ⁴ |
| Aluminium / concrete | 25 min. | Stonewool, 50 mm deep min. 35 kg/m ³ | Top | E 180 – H – X – F – W 30 ⁵ EI 20 – H – X – F – W 30 ⁶ |

*Additional and for information only.

The classifications provided in Table A.4.2.1 consider the insulation performance of all components within the firestopping system as per the requirements of EN 1366-4. This includes temperature evaluation of the steel substrate.

In relation to each of the above classifications, temperatures recorded on the seal (exclusive of the supporting construction) exceeded the maximum allowable after the following times (rounded down):

¹ 240, ² 60, ³ 240, ⁴ 120, ⁵ 180, ⁶ 60