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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 2020/12/09

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, Fire Sealing & Fire Protective Products. Fire Retardant Products. |
| **Manufacturer:** | Astroflame (fireseals) Limited<br>Unit 8 The IO Centre<br>Stephenson Road<br>Segensworth,<br>Fareham<br>Hampshire<br>PO15 5RU |
| **Manufacturing plant:** | E055 |
| **This European Technical Assessment contains:** | 12 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 Fire Stopping and Fire Sealing – Penetration Seals : Issue September 2017 |
| **This version replaces:** | - |

# 1. Technical Description of the Product

1) Astro Intu Mastic is an acrylic based material, used to reinstate the fire resistance performance of wall and floor constructions where they have been provided with apertures for the penetrations of multiple services.

2) Astro Intu Mastic has slight intumescent properties that cause it to swell on heating.

3) Certain seals require the use of Astro Thermal Defense Wrap is used to insulate the service. The Defense Wrap is a 6mm thick foil faced ceramic based insulation material and is utilised externally to the Astro Intu Mastic. See Annex C.

4) Certain seals require backfilling with mineral fiber 70mm thick, with a density of 80Kg/$m^3$. See Annex C.

5) The Astro Intu Mastic is supplied in liquid form contained within 310 ml & 380ml cartridges, 600ml 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 utilising various backing materials.

# 2. Specification Of The Intended Use In Accordance With The Applicable European Assessment Document (EAD)

## 2.1 Intended Use

The intended use of Astro Intu Mastic is to reinstate the fire resistance performance of rigid and flexible wall constructions where they are penetrated by various cables and metallic pipes

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

   Rigid walls: The wall must have a minimum thickness of 150 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650 kg/$m^3$.

   Flexible walls The wall must have a minimum thickness of 120 mm and comprise timber or steel studs lined on both faces with minimum 2 layers of 12.5 mm thick, 'Type F' Gypsum boards according to EN 520. In timber stud walls, no part of the penetration shall 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, is 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.

2) The Astro Intu Mastic may be used to provide a penetration seal with pipes and cables (for details see Annex C).

3) The total amount of cross sections of services (including insulation) should not exceed 60% of the penetration area.

4) The system Astro Intu Mastic may be used to seal apertures in the separating element up to 496mm wide by 100mm high dependant on the configuration. The minimum permitted separation between adjacent seals/apertures is 200mm.

5) Pipes must be installed singular, cables require no minimum separation.

6) Services in floors shall be supported at maximum 150mm from the face of the separating element.

7) The provisions made in this European Technical Assessment are based on an assumed working life of the Astro Intu Mastic of 10 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 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.

## 2.2 Use Category

Type $Z_1$: Intended for use in internal conditions with humidity equal to or higher 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

| BWR | Characteristic | Assessment of characteristic |
|---|---|---|
| **2** | **Safety in case of fire** | |
| | Reaction to fire | See Clause 1.1<br>No performance assessed |
| | Resistance to fire | See clause 1.2 & Annex C |
| **3** | **Hygiene, Health and the Environment** | |
| | Air permeability | See clause 2.1 |
| | Dangerous substances | See clause 2.2 |
| **4** | **Safety in use** | |
| | Airborne sound insulation | Rw (C;$C_{tr}$)= 38(-2;-7) |
| | Durability and serviceability | $Z_1$ |

## 3.1 Safety in case of fire

3.1.1 Reaction to Fire

No performance assessed

3.1.2 Resistance to fire

Astro Intu Mastic has been tested in accordance with BS EN 1366-3: 2009 based upon the test results and the field of direct application specified within EN 1366-3: 2009, the system Astro Intu Mastic has been classified in accordance with EN 13501-2, as given in Annex C:

The seals may only be penetrated by the services described in Annex C; other parts or support constructions must not penetrate the seal.

The service support construction must be fixed to the building element containing the penetration seal or a suitable adjacent building element, in such a manner that in the case of fire, no additional load is imposed on the seal. Furthermore it is assumed that the unexposed face support is maintained for the required period of fire resistance.

Certain pipe configurations should be insulated with minimum 300mm long, 6mm thick Thermal Defence Wrap. See Annex C

Pipes must be perpendicular to the seal surface.

It is assumed that compressed air systems are switched off by other means in the case of fire.

The function of the pipe seal in case of pneumatic dispatch systems, pressurised air systems etc. is guaranteed only when the systems are shut off in case of fire.

The approval does not address any risks associated with leakage of dangerous liquids or gases caused by failure of the pipe(s) in case of fire.

The durability assessment does not take account of the possible effect of substances permeating through the pipe on the penetration seal.

## 3.2 Hygiene, Health and the Environment

3.2.1 Air permeability

System Astro Intu Mastic has been tested in accordance with BS EN 1314-1 to provide the following results:

| Product tested | | | | |
|---|---|---|---|---|
| | Results under positive chamber pressure | | Results under negative chamber pressure | |
| Pressure (Pa) | Leakage ($m^3/h$) | Leakage ($m^3/m^2/h$) | Leakage ($m^3/h$) | Leakage ($m^3/m^2/h$) |
| 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 |

3.2.2 Dangerous substances

Astroflame (Fireseals) Limited has presented a declaration that Astro Intu Mastic does not contain any substance of high concern with regards to REACH Regulations and are compliant with the requirements reference to http://ec.europa.eu/enterprise/construction/cpd-ds/index.cfm

Confirmation has further been declared that all dangerous chemical substances ≥1.0 % w/w as well as all toxic, carcinogenic, toxic for reproduction and mutagenic chemical substances ≥ 0.1 % w/w (Status: 29. adaption – 2004/73/EG – of the EU directive 67/548/EEC - classification, packaging and labeling of dangerous substances) are stated in the Astro Intu Mastic safety data sheets (according to91/155/EEC including amendments) and have been considered for the classification of the products according to the directive 1999/45/EG (classification of preparations, including amendments).

All dangerous chemical substances are below the classification limits of 67/548/EEC.

In addition to the specific clauses relating to dangerous substances contained in this European technical approval, 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.

## 3.3 Safety in Use

3.3.1 Airborne sound insulation

The results of the test provided the following single number rating:

Rw (C;Ctr)= 38(-2;-7)

3.3.2 Durability and serviceability

Astro Intu Mastic has been tested in accordance with EOTA Technical Report - TR024 – Edition November 2006, for the type $Z_1$ use category specified in EAD 350454-00-1104 and the results of the tests have demonstrated suitability for penetration seals intended for use in internal conditions with humidity equal to or higher than 85% RH excluding temperatures below 0°C, without exposure to rain or UV.

## 4. Assessment and Verification Of Constancy Of Performance (Hereinafter AVCP) System Applied, With References To Its Legal base

According to the decision 1999/454/EC of the European Commission the system of assessment and verification of constancy of performance (see Annex V to the Regulation (EU) No 305/2011) given in the following table apply:

| Products | Intended use/s | System |
|---|---|---|
| Fire stopping and fire sealing products | For fire compartmentation and / or fire protection or fire performance | System 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 2020-12-09 by

Thomas Bruun
Managing Director, ETA-Danmark

# Annex A

# Reference Documents

| | |
|---|---|
| EN 13501-1 | Fire classification of construction products and building elements – Part 1: Classification using test data from reaction to fire tests |
| EN 13501-2 | Fire classification of construction products and building elements – Part 2: Classification using test data from fire resistance tests |
| EOTA TR 024 | Characterization, Aspects of Durability and Factory Production Control for Reactive Materials, Components and Products |

# Annex B

# Description of Product and Product Literature

## Astro Intu Mastic

A detailed specification of the product is contained in document "Evaluation Report" relating to the European Technical Assessment ETA – 14/0049 issued on 18/12/14, of Astro Intu Mastic which is a non-public part of this ETA.

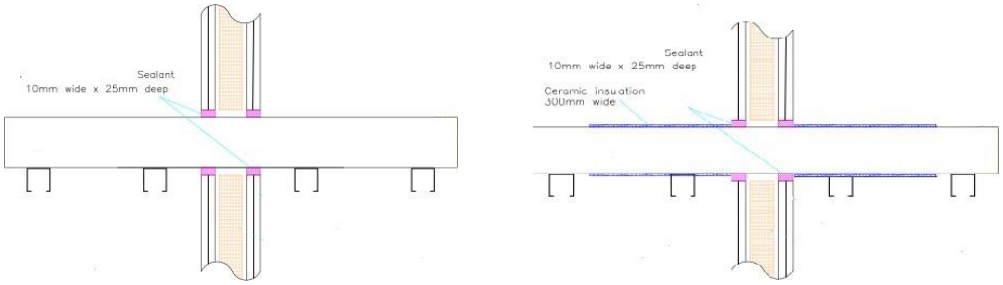
# Annex C

# Resistance to Fire Classification of Astro Intu Mastic

## C.1.1 Flexible and Rigid wall constructions according to 1.2.1 with wall thickness of minimum 120 mm

## C.1.2 Penetration seal with Astro Intu Mastic installed flush to both faces of wall

Construction details: Metallic pipes (insulated and un-insulated) penetrating through the wall construction. 25mm off Astro Intu Mastic applied flush with both faces of the wall.




## C.1.3

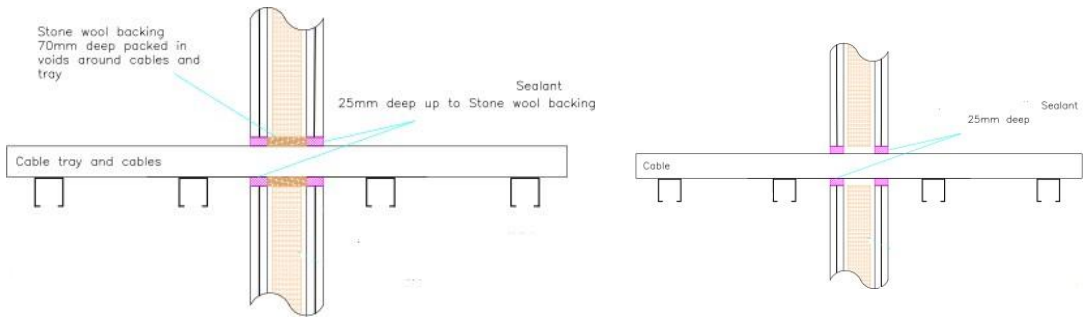
| **Astro Intu Mastic Penetration Seals. Min 120 mm Thick Flexible or Rigid Wall.** | | | |
|---|---|---|---|
| **Penetration Specification** | Astro Intu Mastic **(installed both faces)** | **Backing Material** | **Classification** |
| Copper/Steel Pipe 15mm ø, 0.8mm – 7.4mm wall thickness | 10mm annulus x 25mm deep | N/A | **E120 C/U EI20 C/U** |
| Copper/Steel Pipe 40mm ø, 0.8mm – 14.2mm wall thickness | 10mm annulus x 25mm deep | N/A | **E120 C/U EI15 C/U** |
| Copper/Steel Pipe 40-159mm ø, 1.8mm – 14.2mm wall thickness | 10mm annulus x 25mm deep | N/A | **E120 C/U** |
| Copper/Steel Pipe 40mm ø, 0.8mm – 14.2mm wall thickness* | 10mm annulus x 25mm deep | N/A | **E120 C/U EI90 C/U** |
| Copper/Steel Pipe 40-159mm ø, 1.8mm – 14.2mm wall thickness* | 10mm annulus x 25mm deep | N/A | **E120 C/U EI20 C/U** |

* Thermal defence wrap to the unexposed face 300mm long

## C.2 Flexible and Rigid wall constructions according to 1.2.1 with wall thickness of minimum 120 mm

## C.2.2 Penetration seal with Astro Intu Mastic installed flush to both faces of wall

Construction details: Electrical cables penetrating through the wall construction. 25mm off Astro Intu Mastic applied flush with both faces of the wall.




## C.2.3

| **Astro Intu Mastic Penetration Seals. Min 120 mm Thick Flexible or Rigid Wall.** | | | |
|---|---|---|---|
| **Penetration Specification** | **Astro Intu Mastic (installed both faces)** | **Backing Material** | **Classification** |
| Cables up to 21mm | 490mm long x 100mm high x 25mm deep | 70mm thick, 80Kg/$m^3$ | **E120 EI90** |
| Perforated Cable Tray 450mm x 50mm | | | |
| Cables up to 21-50mm | 200mm long x 100mm high x 25mm deep | N/A | **E90 EI60** |