

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-19/0666
of 23 December 2019

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Aestuver FPM mastic

Product family
to which the construction product belongs

Fire stopping and fire sealing products - Linear joint and
gap sealis

Manufacturer

James Hardie Europe GmbH
Bennigsen Platz 1
40474 Düsseldorf
DEUTSCHLAND

Manufacturing plant

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This European Technical Assessment
contains

13 pages including 8 annexes which form 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, Edition of September 2017

¹ Address known at DIBt

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Specific Part

1 Technical description of the product

Object of this European Technical Assessment (ETA) is the construction product "Aestuerver FPM mastic". The assessment of the construction product bases on the European assessment document (EAD) N° 350141-00-1106, edition September 2017².

"Aestuerver FPM mastic" is a sealing compound which is used for the execution of linear joint seals.

The maximum lateral stretching capability of "Aestuerver FPM mastic" is 7.4 %.

Further product characteristics of "Aestuerver FPM mastic" are presented in Annex A.

Further product properties of the components used for the execution of the tested joint seal (backfilling material) are presented in Annex A.

Details for the design of the joint seals executed by using "Aestuerver FPM mastic" as tested are presented in Annex B.

Details of the material specifications of the construction product are deposited with Deutsches Institut für Bautechnik.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The joint seal "Aestuerver FPM mastic" is intended to be used for sealing horizontal and vertical linear non-movement joints (structural joints as stepped joints and linear butt joints) between fire resistant rigid walls and floors or ceilings with a fire-separating function.

The construction product is intended to maintain or reinstate the fire resistance performance of building components/elements with a fire-separating function where they are interrupted or separated by joints.

The permitted width of the joints depending on the intended design is presented in Annex B.

The joint seal is not intended for load transmission.

The performances given in section 3 are only valid if the joint seal is used in compliance with

- the specifications and conditions given in Annex B and
- the manufacturer's instructions as stated in section 5.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of "Aestuerver FPM mastic" of at least 10 years. 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.

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

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Classes in accordance with EN 13501-1; see annex A
Resistance to fire	Classes in accordance with EN 13501-2; see annex B

² EAD 350141-00-1106 Fire stopping and fire sealing products – Linear joint and gap seals; edition 09/2017 Official Journal of the EU N° C 435/07 of 15 December 2017; p. 157

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Air permeability	No performance assessed
Depth of penetration of water under pressure	water tight up to 1 bar in accordance with EN 12390-8
Content, emission and/or release of dangerous substances	The product does not contain or release dangerous substances* according to the regulation (EC) N° 1272/2008 of European Parliament and the Council of 16 December 2008 ³ except: <ul style="list-style-type: none"> VOC, SVOC No performance assessed. A Biocide (< 1 wt%)
Use scenarios regarding to BWR	I A1/I A2

* The chemical composition of the product shall accord with those deposited with DIBt.

3.3 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Mechanical resistance and stability	Pursuant the EAD 350141-00-1106, tests to show evidence of impact resistance are not necessary because the joints have a maximum width of 110 mm. No performance assessed.
Resistance to impact/movement	
Adhesion	Adhesion is determined by determination of the movement capability.

3.4 Protection against noise (BWR 5)

No performance assessed

3.5 Energy economy and heat retention (BWR 6)

No performance assessed

3.6 General aspects

The verification of durability and movement capacity is part of testing the essential characteristics.

Durability

"Aestuver FPM mastic" was tested for climatic exposure in accordance with EAD 350141-00-1106, without any essential changes in its fire protective properties to be expected:

Type X: product intended for out-door use under the conditions of weathering (rain, UV, frost).

The evidence includes the suitability for in-door use under dry conditions or conditions of changing humidity, permanent high humidity or partial exposed to weather (roofed, without rain).

Durability is only ensured if the specifications on the intended use stated in Annex B and the manufacturer's instructions in section 5 are taken into account.

³ Official Journal of the EU N° L 353 of 31 December 2008, p 1

English translation prepared by DIBt

Mechanical properties

The following mechanical properties were determined in accordance with EN ISO 7389:2003:

Resistance to stretching:	> 95 % after load-release
Resistance to 20 % compression strain:	> 92 % 24 h after load-release (8 % plastic deformation)
Stability at 50° C permanently (without loading):	100 % (no settling/plastic deformation)

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD N° 350141-00-1106 "Fire stopping and fire sealing products – Linear joint and gap seals"² the applicable European legal act is: 1999/454/EC⁴.

The system to be applied is: 1.

The system of assessment and verification of constancy of performance (AVCP) (see Annex V and Article 65 Paragraph 2 to Regulation (EU) N° 305/2011) is given in the following table:

Product	Intended use	Level(s) or class(es) <i>resistance to fire</i>	AVCP-System
"Aestuver FPM mastic"	For sealing joints between fire-resistant separating building elements	any	1

5 Technical details necessary for the implementation of the AVCP system 1, as provided for in the applicable EAD N° 350141-00-1106

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

The manufacturer shall provide installation instructions on every construction product according to this ETA containing at least the following information:

- type, properties (minimum thickness, density) and fire resistance of the building components with a fire-separating function in which the joint system may be installed
- description or graphic presentation of the proper installation (depending on the type of the building element, the intended fire resistance and the width of the joints).

The manufacturer shall also provide instructions on processing, packaging, transport, storage and use, maintenance and repair of the construction product.

Issued in Berlin on 23 December 2019 by Deutsches Institut für Bautechnik

Maja Tiemann
Head of Department

beglaubigt:
Dr.-Ing. Dierke

⁴ Decision of the Commission N° 1999/454/EC of 22 June 1999 (OJ L 178/52 of 14/07/99, p. 3), as amended by Decision of the Commission N° 2001/596/EC of 8 January 2001 (OJ L 209/33 of 2/8/2001, p. 2)

A Information on the construction products

Table 1

No.	Designation / specification	Description / properties
Information on the sealing compound "Aestuver FPM mastic"		
	"Aestuver™ FPM mastic" James Hardie Europe GmbH Bennigsen-Platz 1 40474 Düsseldorf GERMANY	Sealing compound Bulk density: 1700 kg/m ³ ± 10 % Reaction to fire class in accordance with EN 13501-1: a) With backfilling in accordance with variant No. 1: Class B-s1, d0 ^{a)} b) With backfilling in accordance with variant No. 2: Class B-s1, d0 ^{a)} c) With backfilling in accordance with variant No. 3: Class E ^{a)} d) With backfilling in accordance with variant No. 4: Class E ^{b)}
Information on the additional components of the tested joint sealing (backfilling material)		
1	Loose fill mineral wool In accordance with EN 13162 or EN 14303 (Variant 1)	Bulk density: ≥ 50 kg/m ³ (apparent density) Thickness of the backfilling: 30 to 90 mm (depth of the filling) Reaction to fire class in accordance with EN 13501-1: Class A1 oder A2-s1, d0
2	Mineral wool board In accordance with EN 13162 or EN 14303 (Variant 2)	Bulk density: ≥ 80 kg/m ³ (nominal bulk density) Thickness of the backfilling: 30 mm to 90 mm Reaction to fire class in accordance with EN 13501-1: Class A1 oder A2-s1, d0
3	PE round cord Extruded backfilling material made of polyethylene (PE), closed-cell (Variant 3)	Bulk density: 21 bis 32 kg/m ³ (nominal bulk density) Thickness of the backfilling: Ø 10 to 50 mm Reaction to fire class in accordance with EN 13501-1: at least class E
4	Polystyrene In accordance with EN 13163 (Variant 4)	Bulk density: 35 to 42 kg/m ³ (nominal bulk density) Thickness of the backfilling: 30, 60 and 85 mm Reaction to fire class in accordance with EN 13501-1: at least class E
Assessed parameters of the joint execution:		
a)	<ul style="list-style-type: none"> – In walls / ceilings made of massive mineral construction materials or construction panels; reaction to fire class A1 or A2-s1, d0 in accordance with EN 13501-1 – Width of the joint: see Annexes B2 to B4 – Filling depth of the sealing compound: see Annexes B2 to B4 	
b)	<ul style="list-style-type: none"> – In walls / ceilings made of massive mineral construction materials or construction panels; reaction to fire class A1 or A2-s1, d0 in accordance with EN 13501-1 – Width of the joint: see Annex B5 – Filling depth of the sealing compound: 20 to 30 mm 	

Aestuver FPM mastic

Performance of the joint seal
Resistance to fire
Details to the building components

Annex A

B Fire resistance

Building components with a fire separating function

The joint sealing is used for sealing linear joints between the following separating building elements:

Rigid walls

- made of masonry, concrete, reinforced concrete or aerated concrete with a minimum density of 625 kg/m^3
- minimum thickness c_w 115 mm

Rigid floors/ceilings

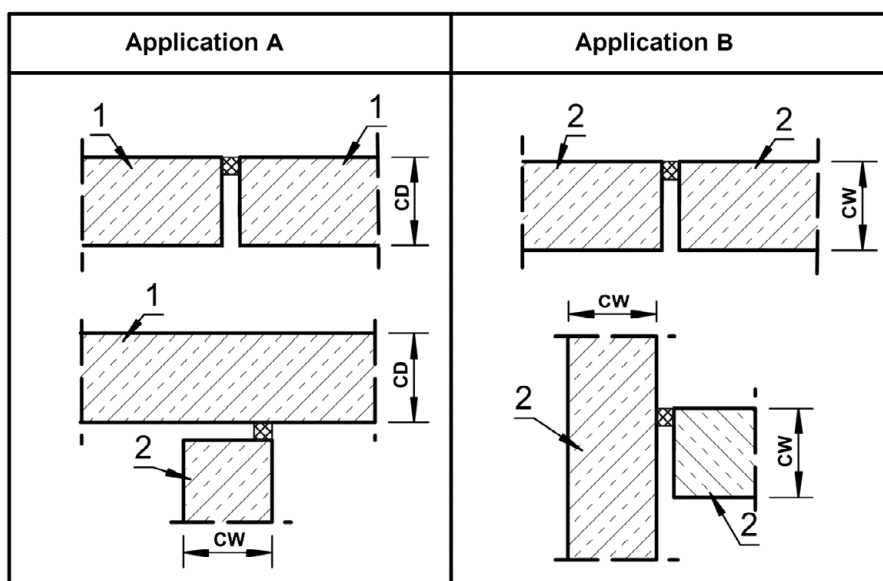
- made of concrete, reinforced concrete or aerated concrete with a minimum density of 475 kg/m^3
- minimum thickness c_D 150 mm

The separating building elements shall be classified according to EN 13501-2 for the required fire resistance period.

Application

According to the symbolic representation, the joint seal is used

- in horizontal joints between fire-resistant separating floors or between walls abutting a floor (A)
- in vertical joints between fire-resistant separating walls (B).



- 1 Rigid floor
2 Rigid wall
 c_D Minimum thickness rigid floor 150 mm
 c_W Minimum thickness rigid wall 115 mm

Aestuver FPM mastic

Performance of the joint seal
Resistance to fire
Cases of application

Annex B.1

English translation prepared by DIBt

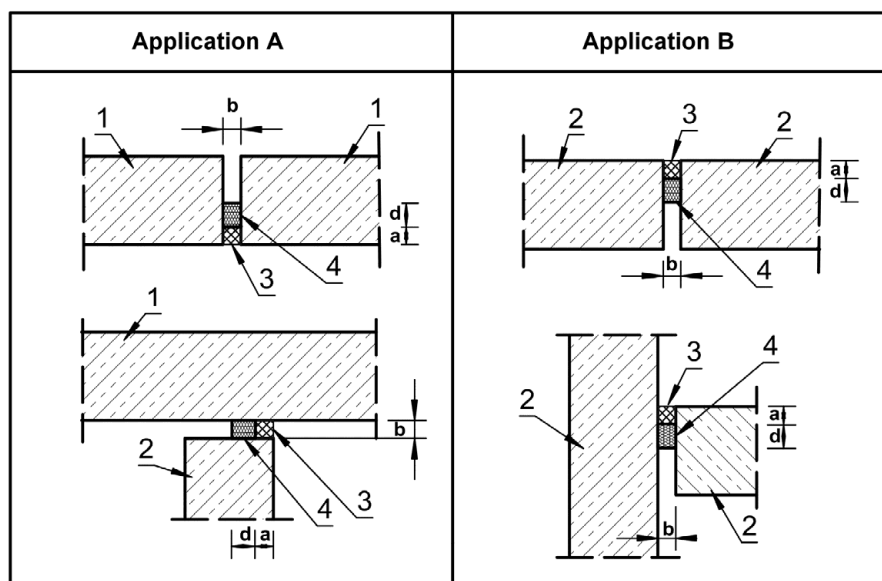
Variants

Variant 1

- Backfilling with loose mineral wool, stuffed density $\geq 50 \text{ kg/m}^3$
- Sealing one-sided
- The arrangement (top or bottom of the floor or side of the wall) is optional.

Table 2

Application	Joint width b [mm]	Filling depth a Aestuver™ FPM mastic [mm]	Filling depth d backfilling [mm]	Classification
A	15 to 30	30	40	EI 120-H-X-F-W10 to 30 E 120-H-X-F-W10 to 30
B	10 to 30	10	90	EI 120-V-X-F-W10 to 30 E 120-V-X-F-W10 to 30
	50	30	30	EI 90-V-X-F-W50 E 120-V-X-F-W50
	110	30	30	EI 90-V-X-F-W110 E 120-V-X-F-W110



- 1 Rigid floor
- 2 Rigid wall
- 3 Aestuver FPM mastic
- 4 Backfilling material

Aestuver FPM mastic

Performance of the joint seal
Resistance to fire
Variant 1 and classification

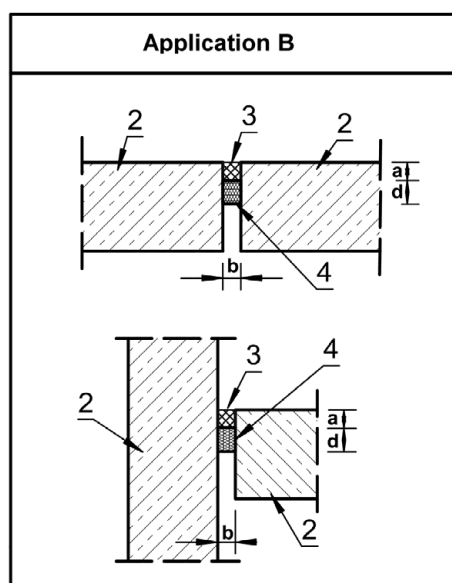
Annex B.2

Variant 2

- Backfilling with mineral wool boards, nominal bulk density $\geq 80 \text{ kg/m}^3$
- Sealing one-sided
- The arrangement (top or bottom of the floor or side of the wall) is optional.

Table 3

Application	Joint width b [mm]	Filling depth a Aestuver™ FPM mastic [mm]	Filling depth d backfilling [mm]	Classification
B	20 to 40	15	90	EI 120-V-X-F-W20 to 40 E 120-V-X-F-W20 to 40
	30	30	30	EI 30-V-X-F-W30 E 120-V-X-F-W30
	31 to 50	30	30	EI 45-V-X-F-W31 to 50 E 120-V-X-F-W31 to 50
	110	30	30	EI 90-V-X-F-W110 E 120-V-X-F-W110



- 1 Rigid floor
- 2 Rigid wall
- 3 Aestuver FPM mastic
- 4 Backfilling material

Aestuver FPM mastic

Performance of the joint seal
Resistance to fire
Variant 2 and classification

Annex B.3

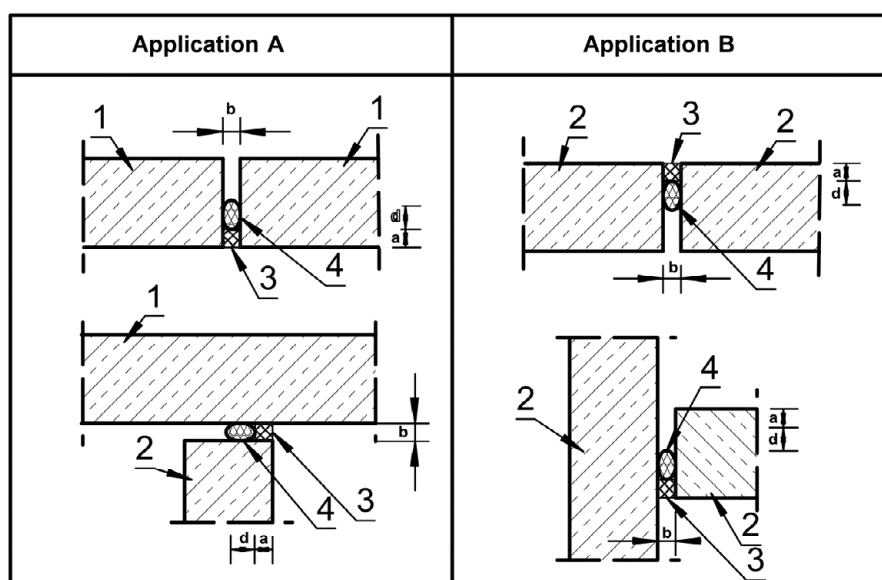
English translation prepared by DIBt

Variant 3

- Backfilling with PE round cord
- Sealing one-sided
- The arrangement (top or bottom of the floor or side of the wall) is optional.

Table 4

Application	Joint width b [mm]	Filling depth a Aestuver™ FPM mastic [mm]	Ø d backfilling [mm]	Classification
A	5	20	10	EI 120-H-X-F-W5 E 120-H-X-F-W5
	6 to 14	20	$\geq 1,4 \times b$	EI 45-H-X-F-W6 to 14 E 120-H-X-F-W6 to 14
B	10	20	20	EI 45-V-X-F-W10 E 120-V-X-F-W10
	10	30	20	EI 120-V-X-F-W10 E 120-V-X-F-W10
	11 to 14	20	$\geq 1,07 \times b$	EI 30-V-X-F-W11 to 14 E 90-V-X-F-W11 to 14
	11 to 20	30	$\geq 1,43 \times b$	EI 60-V-X-F-W11 to 20 E 120-V-X-F-W11 to 20
	21 to 30	30	$\geq 1,6 \times b$	EI 45-V-X-F-W21 to 30 E 120-V-X-F-W21 to 30
	11 to 20	40	$\geq 1,5 \times b$	EI 90-V-X-F-W11 to 20 E 120-V-X-F-W11 to 20
	21 to 30	40	$\geq 1,3 \times b$	EI 120-V-X-F-W21 to 30 E 120-V-X-F-W21 to 30



- | | |
|---------------|------------------------|
| 1 Rigid floor | 3 Aestuver FPM mastic |
| 2 Rigid wall | 4 Backfilling material |

Aestuver FPM mastic

Performance of the joint seal
Resistance to fire
Variant 3 and classification

Annex B.4

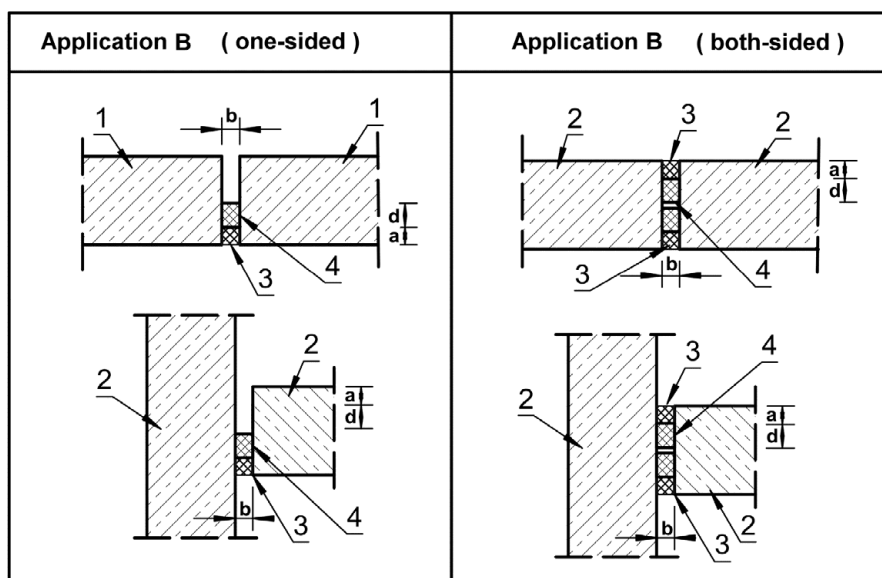
English translation prepared by DIBt

Variant 4

- Backfilling with Polystyrene
- Sealing one-sided or both-sided

Table 5

Application	Joint width b [mm]	Filling depth a Aestuver™ FPM mastic [mm]	Filling depth d backfilling [mm]	Classification
B	10	20 (one-sided)	30	EI 120-V-X-F-W10 E 120-V-X-F-W10
	11 to 14	20 (one-sided)	60	EI 45-V-X-F-W11 to 14 E 90-V-X-F-W11 to 14
	11 to 30	30 (one-sided)	30	EI 45-V-X-F-W11 to 30 E 120-V-X-F-W11 to 30
	30	2 x 15 (both-sided)	85	EI 120-V-X-F-W10 to 30 E 120-V-X-F-W10 to 30



- 1 Rigid floor
- 2 Rigid wall
- 3 Aestuver FPM mastic
- 4 Backfilling material

Aestuver FPM mastic

Performance of the joint seal
Resistance to fire
Variant 4 and classification

Annex B.5

Installation of the joint seal

The joints and surfaces, "Aestuver FPM mastic" will be applied in or on have to be cleaned of loose particles or dirt. If necessary, the edges of the joints have to be pretreated with "Aestuver FPM mastic".

The backfilling material and "Aestuver FPM mastic" are inserted into the joint. For the dimensions verified, annexes B.2 to B.5 shall be taken into account.

Already existing rests of material inside the joint do not need to be removed provided that the minimum thickness of the sealing compound will be maintained in accordance with annexes B.2 to B.5.

The ETA is issued under the assumption that the installation of the construction product is in accordance with the manufacturer's installation instructions.

Electronic copy of the ETA by DIBt: ETA-19/0666

Aestuver FPM mastic

Performance of the joint seal
Resistance to fire
Installation details of the verified joint seal

Annex B.6

Standards

EN 13501-1:2018	Fire classification of construction products and building elements, part 1: Classification using data from reaction to fire tests
EN 13501-2:2016	Fire classification of construction products and building elements, part 2: Classification using data from fire resistance tests, excluding ventilation services
EN 1363-1:2018	Fire resistance tests – Part 1: General requirements
EN 1366-4:2019	Fire resistance tests for service installations – Part 4: Linear joint seals
EN 13823:2018	Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item
EN ISO 11925-2:2018	Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2:2010)
EN 13162:2015	Thermal insulation products for buildings - Factory made mineral wool (MW) products - Specification
EN 14309:2015	Thermal insulation products for building equipment and industrial installations - Factory made products of expanded polystyrene (EPS) - Specification
EN 12390-8:2019	Testing hardened concrete - Part 8: Depth of penetration of water under pressure

Aestuver FPM mastic

List of References

Annex C