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## European Technical Assessment

**ETA 17/0504**  
**of 25/08/2017**

### General Part

<b>Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: Kiwa Nederland B.V.</b>	
<b>Trade name of the construction product</b>	NOFIRNO
<b>Product family to which the construction product belongs</b>	Product area code: 35 Fire Stopping and Sealing Product: linear joint and gap seals
<b>Manufacturer</b>	Beele Engineering B.V. Beunkdijk 11, 7122 NZ Aalten The Netherlands <a href="http://www.beele.com">www.beele.com</a>
<b>Manufacturing plant</b>	Vierde Broekdijk 12, 7122 JD Aalten The Netherlands
<b>This European Technical Assessment contains</b>	11 pages including 3 Annexes which form an integral part of this assessment.
<b>This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of</b>	ETAG 026 part 3, edition 2011, used as European Assessment Document (EAD).

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full (excepted the confidential Annex(es) referred to above). However, partial reproduction may be made, with the written consent of the issuing Technical Assessment Body. Any partial reproduction has to be identified as such.

## SPECIFIC PARTS OF THE EUROPEAN TECHNICAL ASSESSMENT

### 1. Technical description of the product

This European Technical Approval applies to a sealing system for fire safe linear joints and gaps in or between concrete walls and floors.

The sealing system consists of a combination of rubber filler sleeves and a sealant. The linear joint or gap is filled with filler sleeves 22/15 and 18/12.

Table 1. Dimensions of filler sleeves

Sleeve type outer/inner diameter [mm]	Sleeve length [mm]	Wall thickness [mm]
18/12	60 – 110 – 140 – 160 – 210	3
22/15	60 – 110 – 140 – 160 – 210	3,5

On both sides the joint or gap is sealed with a 20 mm thick layer of sealant.

The material of the filler sleeves is a cured rubber compound. The colour of the compound is terracotta.

The sealant is delivered in standard 310 ml plastic cartridges. The material of the sealant is a room temperature curing sealant. For the polymer base two different types are used. The colour of the sealant is terracotta. The sealant is also available in blue, black and white.

### 2. Specification of the intended uses in accordance with the applicable European Assessment Document (hereinafter EAD): ETAG 026 part 3

The sealing system is intended to be used for the sealing of linear joints and gaps in rigid walls or floors, vertical wall joints abutting a wall, horizontal wall joints abutting a floor, ceiling or roof or horizontal floor joints abutting a wall.

Rigid walls: The wall must have a minimum thickness of 100 or 200 mm (see Annex B) and comprise concrete, aerated concrete or masonry, with a minimum dry density of 600 kg/m<sup>3</sup>.

Rigid floors: The floor must have a minimum thickness of 200 mm and comprise aerated concrete or concrete with a minimum dry density of 600 kg/m<sup>3</sup>.

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

The provisions made in this European Technical Assessment are based on an assumed working life of the NOFIRNO sealing system of 25 years, provided that the conditions laid down in the manufacturers datasheet and instructions 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.

The real working life might be, in normal use conditions, considerable longer without major degradation affecting the Basic Requirements for construction works.

## Durability and Serviceability

The use category of the sealing system is:

Category type X : intended for use at conditions exposed to weathering.

This includes use at external and internal conditions, temperatures below 0 °C, exposure to UV and exposure to rain.

## Installation

The product shall be installed and used as described in this European Technical Assessment (for further details see Annex A of the ETA) as well as the ETA-holder's installation instructions.

Additional marking of the seal shall be done in case of national requirements.

The indications of the manufacturer regarding transport and storage (minimum and maximum storage temperature, maximum duration of storage) have to be followed.

The joint and gap seals described in this European Technical Assessment are basically maintenance free under the conditions that the installation has been carried out properly according to the manufacturer's instructions. The fire resistance of the seal shall not be negatively affected by future changes to buildings or building elements.

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

<b>Product type: Sealing kit</b>		<b>Intended use: Joint and gap seal</b>
<b>Essential characteristic</b>	<b>Method of verification</b>	<b>Performance</b>
BWR 1 Mechanical resistance and stability		
	<b>None</b>	<b>Not relevant</b>
BWR 2 Safety in case of fire		
Reaction to fire	EN 13501-1	Class E
Resistance to fire	EN 13501-2	See Annex B
BWR 3 Hygiene, health and environment		
Air permeability (material property)	EN 1026:2000	No performance determined
Water permeability (material property)	ETAG 026-3, Annex C	No performance determined
Dangerous substances		Use categories: IA1, S/W3 The applicant has stated in a written declaration that the materials do not contain dangerous substances according to the European and national regulations of the Member States.
BWR 4 Safety in use		
Mechanical resistance and stability	EOTA TR 001:2003	No performance determined
Resistance to impact/movement	EOTA TR 001:2003	No performance determined
Adhesion	EOTA TR 001:2003	No performance determined
BWR 5 Protection against noise		
Airborne sound insulation	EN 10140-2/ EN ISO 717-1	No performance determined
Impact sound insulation	EN 10140-3/ EN ISO 717-2	No performance determined
BWR 6 Energy economy and heat retention		
Thermal properties	EN 12664, EN 12667 or EN 12939	No performance determined
Water vapour permeability	EN ISO 12572 EN 12086	No performance determined
General aspects relating to fitness for use		
Durability and serviceability	EOTA TR 024:2009, clause 3.1.11 & 3.1.12	Use category X
BWR 7 Sustainable use of natural resources		
		No performance determined

The applicant has stated in a written declaration that the materials contain no dangerous substances according to the European and national regulations of the Member States.

According to the manufacturer's declaration the components of the CONTROFIL sealing system do not contain dangerous substances detailed in Council 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 ETA, 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 Product Regulation, these requirements need also to be complied with, when and where they apply.

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, amended by Decision 2001/596/EC of the European Commission the system of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table applies:

<b>Product(s)</b>	<b>Intended use(s)</b>	<b>Level(s) or class(es)</b> (resistance to fire)	<b>System</b> of assessment and verification of constancy of performance
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

**Factory production control**

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be recorded 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 Approval.

The manufacturer may only use constituent materials stated in the technical documentation of the European Technical Approval.

The factory production control shall be in accordance with the *Control Plan* of February 8, 2013 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 Kiwa Nederland B.V.

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

**Other tasks of the manufacturer**

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 joint and gap sealing system is suitable, type and properties of the building elements like thickness, density, and – in case of lightweight construction – the construction elements.
- Services for which the penetration sealing system is suitable, type and properties of the services like material, diameter, thickness, etcetera. and, in case applicable, including insulation materials.
- Limits in size, minimum thickness etc. of the joint and gap sealing system.
- Construction of the joint and gap sealing system including the necessary components and additional products with clear indication whether they are generic or specific.

(b) Installation instruction:

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

The manufacturer shall, on the basis of a contract, involve a body which is notified for the tasks referred to in section 3.1 in the field of fire safe joint and gap seals in order to allow the manufacturer to undertake the actions laid down in section 3.3. For this purpose, the *Control Plan* referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the notified body involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European Technical Approval.

Tasks of the notified certification body

Due to the level 1 of the assessment and verification of constancy of performance system, the notified certification body involved by the manufacturer shall perform the:

- initial inspection of factory and of factory production control,
  - continuous surveillance, assessment and approval of factory production control,
- in accordance with the provisions laid down in the *Control Plan*.

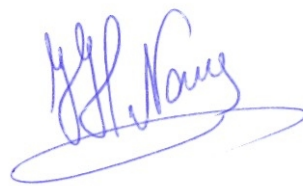
The notified certification body shall retain the essential points of its actions referred to above and state of results obtained and conclusions drawn in a written report.

The notified body involved by the manufacturer shall issue an EC certificate of constancy of performance of the product stating the conformity with the provisions of this European Technical Approval.

In cases where the provisions of the European Technical Approval and its *Control Plan* are no longer fulfilled the notified certification body shall withdraw the certificate of constancy of performance and inform Kiwa Nederland B.V. without delay.

Issued in Rijswijk (NL) on 25.08.2017

By Kiwa Nederland B.V.



Hans Naus, assessment engineer

## Annex A Installation procedure NOFIRNO SEALING system

- Remove any dirt, loose concrete or oil from the linear gap or joint
- Remove any sharp edges from the linear gap or joint
- Fill the gap or joint with filler sleeves; preferably use sleeve size 22/15; for a tightly fit use also sleeves with size 18/12. A small quantity of other filler sleeves sizes may be used in order to enable a tight fitting of the sealing system. The length of the filler sleeves should be minimal 40 mm shorter than the depth of the gap and on both sides a free space of minimum 20 mm should be available. The whole set of filler sleeves should tightly fit to provide sufficient mechanical stability
- Apply a  $\geq 20$  mm thick layer of sealant at each side of the conduit opening. There should be an overfill
- Smooth the sealant surface with a cloth sprayed with water and press the overfill into the conduit opening to become a higher tightness of the sealant

The curing of the top layer needs a curing time of 0,5 to 1 hour; the complete curing of the sealant needs a curing time of several days.

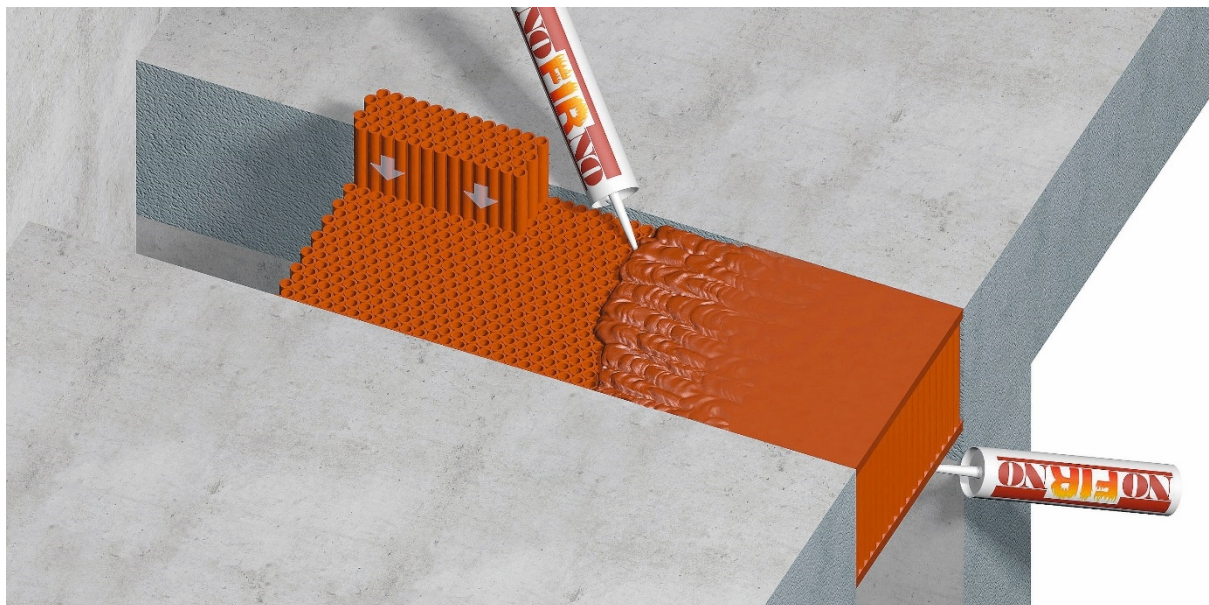


Figure 1. Installation of the NOFIRNO sealing system in a floor

**Annex B Resistance to fire classification of NOFIRNO system for joint and gap seals**

**B 1. Rigid concrete, aerated concrete or masonry vertical walls, minimum dry density 600 kg/m<sup>3</sup>**

Linear joint or gap seals, in the wall or between wall and floor or between two walls

	<p>Classification  EN 13501-2: 2016  E= integrity, I = insulation  H = horizontal supporting construction  V = vertical supporting construction–vertical joint  T = vertical supporting construction–horizontal joint  X = no movement capability  F = type of splices 'field'  W = Joint widths range (in mm)</p>
Minimum wall thickness of 100 mm	
Horizontal joint or gap seal, minimum depth 100 mm joint width range from 20 to 60 mm sealant 20 mm on both sides of gap backing minimum 60 mm filler sleeves	<p><b>EI 240 - T - X - F - W 20 to 60</b>  <b>E 240 - T - X - F - W 20 to 60</b></p>
Vertical joint or gap seal, minimum depth 100 mm joint width range from 20 to 60 mm sealant 20 mm on both sides of gap backing minimum 60 mm filler sleeves	<p><b>EI 240 - V - X - F - W 20 to 60</b>  <b>E 240 - V - X - F - W 20 to 60</b></p>
Minimum wall thickness of 200 mm	
Horizontal joint or gap seal, minimum depth 200 mm joint width range from 20 to 300 mm sealant 20 mm on both sides of gap backing minimum 160 mm filler sleeves	<p><b>EI 240 - T - X - F - W 20 to 300</b>  <b>E 240 - T - X - F - W 20 to 300</b></p>
Vertical joint or gap seal, minimum depth 200 mm joint width range from 20 to 300 mm sealant 20 mm on both sides of gap backing minimum 160 mm filler sleeves	<p><b>EI 240 - V - X - F - W 20 to 300</b>  <b>E 240 - V - X - F - W 20 to 300</b></p>

**B 2. Rigid concrete, aerated concrete or masonry horizontal floor minimum dry density 600 kg/m<sup>3</sup>**

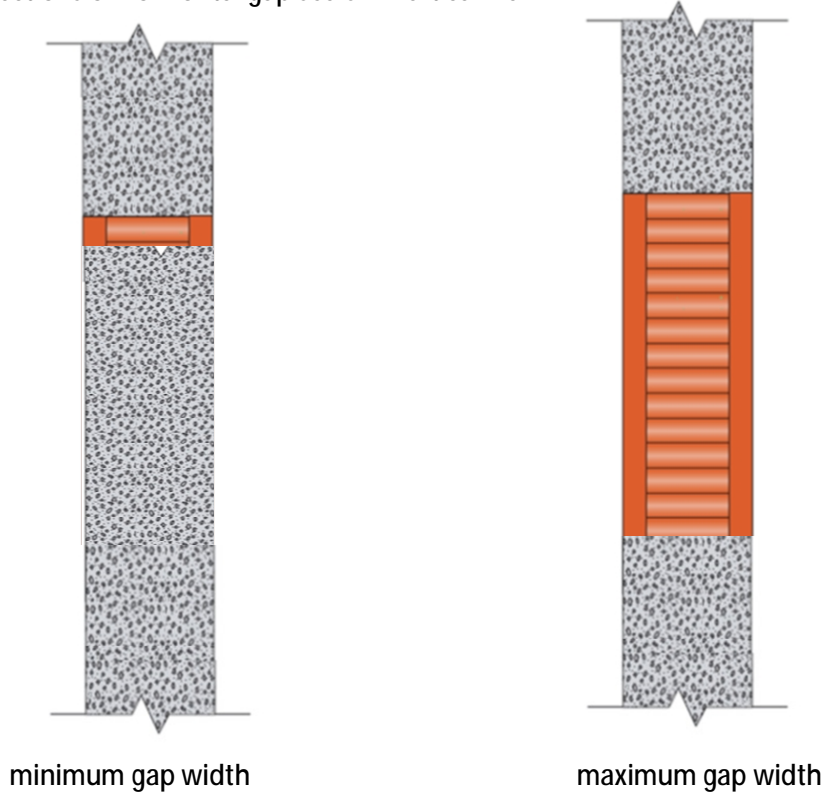
Linear joint or gap seal, in the floor or between wall and floor

	<p>Classification  EN 13501-2: 2016  E= integrity  I = insulation  H = horizontal supporting construction  V = vertical supporting construction–vertical joint  T = vertical supporting construction–horizontal joint  X = no movement capability  F = type of splices 'field'  W = Joint widths range (in mm)</p>
Minimum floor thickness of 200 mm	
Horizontal joint or gap seal, minimum depth 200 mm joint width range from 20 to 300 mm sealant 20 mm on both sides of gap backing minimum 160 mm filler sleeves	<p><b>EI 240 - H - X - F - W 20 to 300</b>  <b>E 240 - H - X - F - W 20 to 300</b></p>

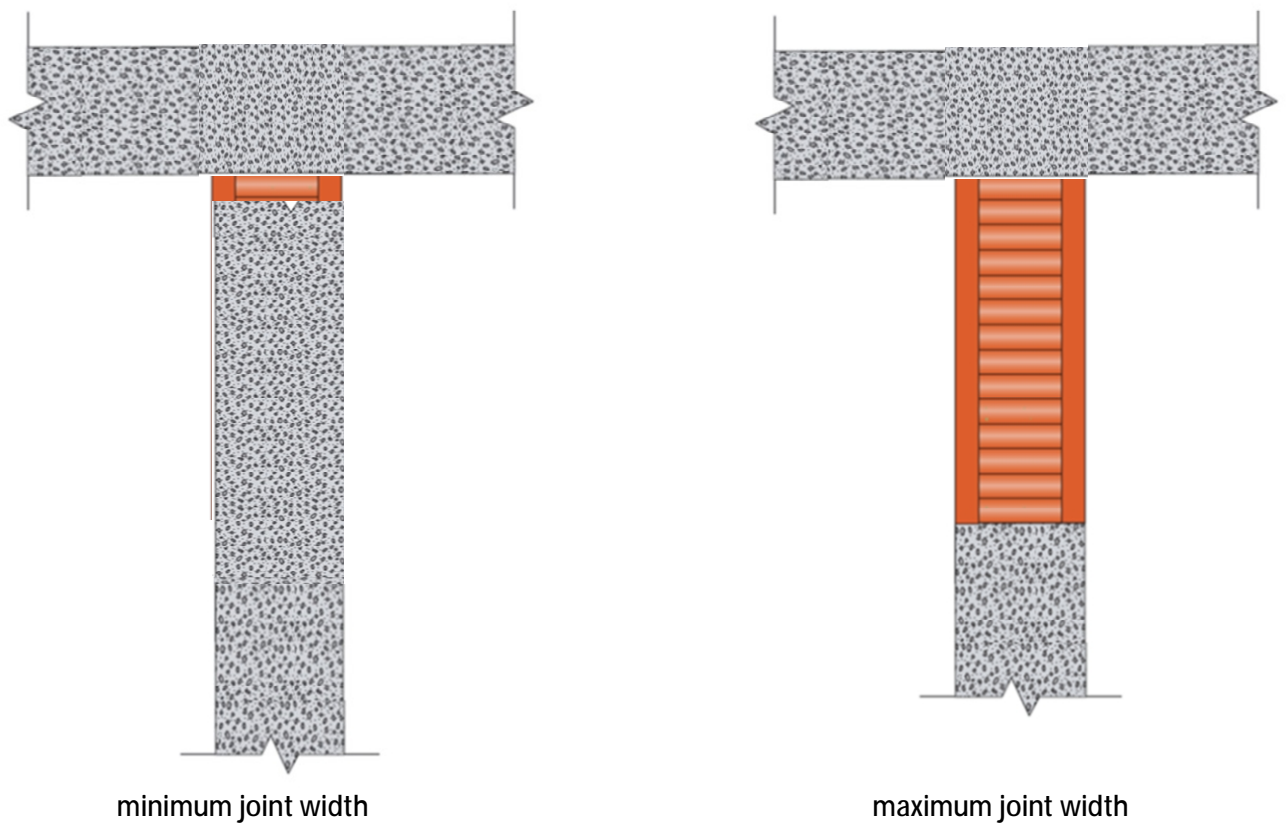


## Annex C Construction principles

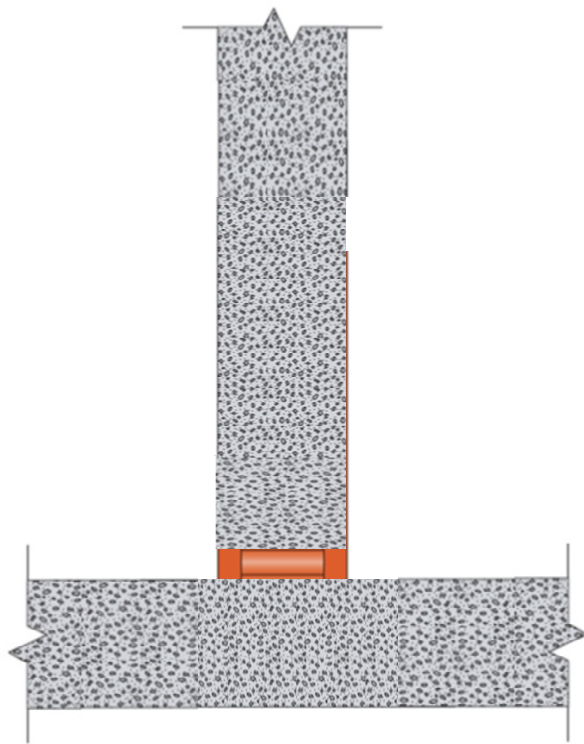
Cross sections of horizontal gap seals in vertical wall



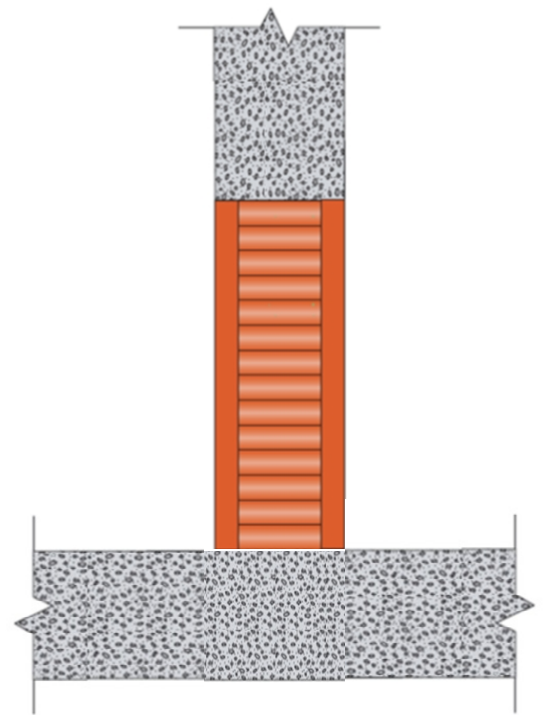
Cross sections of horizontal joint seals in vertical wall abutting a ceiling



Cross sections of horizontal joint seals in vertical wall abutting a floor

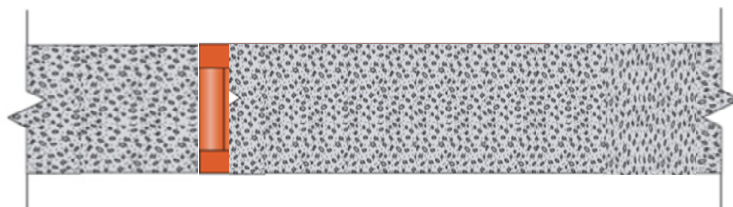


minimum gap width

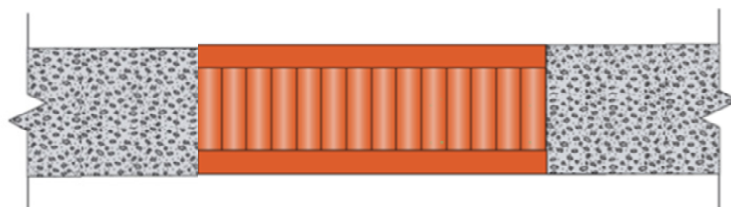


maximum gap width

Cross sections of horizontal gap seals in horizontal floor

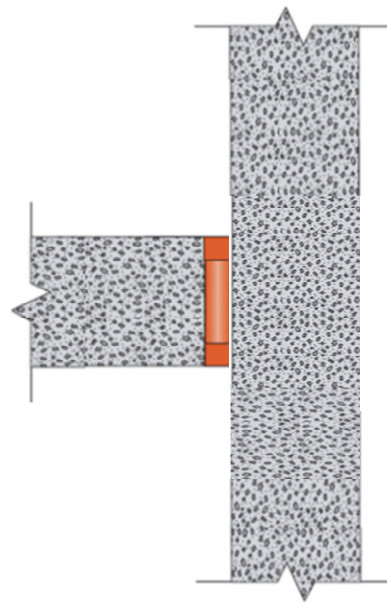


minimum gap width

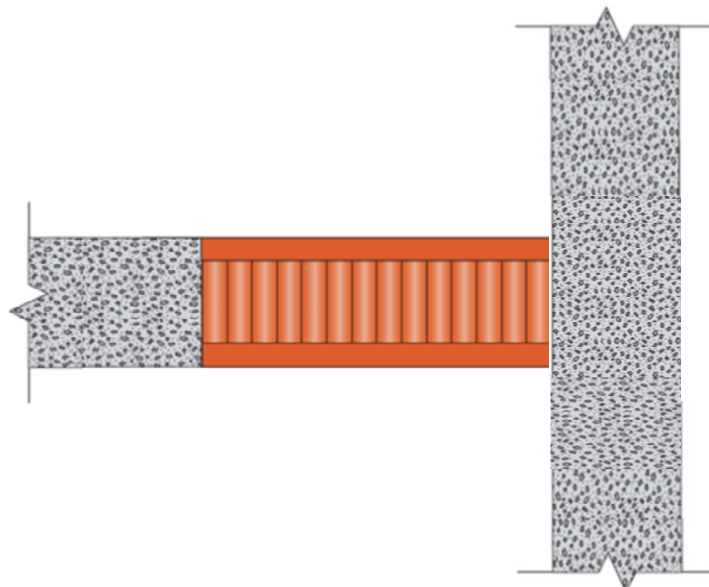


maximum gap width

Cross sections of horizontal gap seals in horizontal floor abutting a wall



minimum joint width



maximum joint width