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# European Technical Assessment

# ETA-20/0262 of 22/09/2020

## General Part

**Technical Assessment Body issuing the European Technical Assessment:**  
**Kiwa Nederland B.V.**  
**Sir Winston Churchilllaan 273**  
**NL-2288 EA Riswijk**

**Trade name of the construction product**

**BPA-QUELLMAX**

**Product family to which the construction product belongs**

**swellable joint sealing tape on the basis of bentonite for construction joints in watertight concrete**

**Manufacturer**

**BPA GmbH**  
**Behringstraße 12**  
**71083 Herrenberg**  
**GERMANY**

**Manufacturing plant**

**BPA GmbH**  
**Behringstraße 12**  
**71083 Herrenberg**  
**GERMANY**

**This European Technical Assessment contains**

11 pages including 3 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 320008-01-0605 (July 2018)  
swellable joint sealing tape on the basis of bentonite for construction joints in watertight concrete

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## 1. Technical description of the product

BPA-QUELLMAX is a swellable joint sealing tape and is used to seal construction joints in watertight concrete against the penetration of pressing and non-pressing water or soil moisture. The product is made of a sodium-bentonite mixture and butyl rubber.

The waterstop consists of the following components:

### **BPA-QUELLMAX Blackstop:**

swellable, sodium-bentonite joint sealing tape (dark gray - black), available in the following cross-section sizes:

- 10 mm x 20 mm
- 15 mm x 20 mm
- 16 mm x 21 mm
- 18 mm x 24 mm
- 20 mm x 25 mm

### **BPA-QUELLMAX Plus / BPA QUELLMAX Plus 2-Phases:**

swellable, sodium-bentonite joint sealing tape (dark gray - black) with an additional polymeric dispersion layer (transparent).

The product is available in the following cross-section sizes:

- 15 mm x 20 mm
- 16 mm x 21 mm
- 18 mm x 24 mm

The polymeric dispersion layer is mounted on the surface of the bentonite-rubber mixture in order to prevent a preliminary swelling process. PH – level neutral liquids (e.g. rainwater) are not able to penetrate the protective layer. After approximately 72h in alkaline surrounding (e.g. concrete) the protective layer is softening and allows initiation of the swelling process.

BPA-QUELLMAX is delivered in 5 m rolls and cut on site. Cross-section sizes may vary  $\pm 10\%$ . Special sizes and forms can be produced on demand.

Detailed descriptions of the product are shown in annex B.

### **BPA adhesive CEM 805 / CEM 805 “active”:**

BPA-CEM 805 is a solventless sealant/adhesive (MS-Polymer) for bonding the BPA-QUELLMAX to the underground. In case of special application based on designing or technical requirements the BPA-QUELLMAX can be bonded with the wateractive swell sealant/adhesive BPA - CEM805 “active” (PU-Polymer).

The fixation can also be accomplished with rails and grids.  
Detailed descriptions are shown in annex B.

**2. Specification of the intended use in accordance with the applicable European Assessment Document EAD 320008-01-0605**

The sealing tape is used to seal construction joints in concrete with high resistance to water (watertight concrete) against penetration of pressing and non-pressing water (e.g. groundwater) and to soil moisture.

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to set up the appropriate measures and to advise his clients.

It is assumed that the product will be installed according to the manufacturer's instructions or according to the usual practice of the building professionals. Detailed install instructions are shown in annex C.

The assessment methods included or referred to in the EAD have been written based on the manufacturer's request to take into account a working life of the sealing tape for the intended use of 50 years after installation.

The indications given as to the working life of the construction product cannot be interpreted as a guarantee neither given by the product manufacturer or his representative nor by EOTA when drafting the EAD nor by the Technical Assessment Body issuing an ETA based on the EAD, but are regarded only as a means for expressing the expected economically reasonable working life of the product.

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

| Essential characteristic   | Performance   |  |                |
|--|---|--|----------------|
| Reaction to fire   | Classification "Class E"<br>according to DIN EN ISO 13501-1   |  |                |
| Dimensions   | cross-section sizes   |  |                |
|  | BPA-QUELLMAX<br>Blackstop   | BPA-QUELLMAX<br>Plus/<br>BPA-QUELLMAX Plus<br>2-Phases |                |
|  | 10 mm x 20 mm   | 15 mm x 20 mm  |                |
|  | 15 mm x 20 mm   | 16 mm x 21 mm  |                |
|  | 16 mm x 21 mm   | 18 mm x 24 mm  |                |
|  | 18 mm x 24 mm   | 20 mm x 25 mm  |                |
|  | 20 mm x 25 mm   |  |                |
| Watertightness in end use condition  | 12 m water column / watertight up to 3 bar tested   |  |                |
| Swelling behaviour in different liquids at the state of delivery (BPA-QUELLMAX Blackstop)                        |   | time till end of mass change                           | mass variation |
|  | deionised water   | 13 d   | 563 %          |
|  | alkaline solution   | 13 d   | 355 %          |
|  | acidic solution   | 11 d   | 186 %          |
| Swelling behaviour in different liquids at the state of delivery (BPA-QUELLMAX Plus/ BPA-QUELLMAX Plus 2-Phases) |   | time till end of mass change                           | mass variation |
|  | deionised water   | 13 d   | 420 %          |
|  | alkaline solution   | 13 d   | 425 %          |
|  | acidic solution   | 13 d   | 177 %          |
| Reversibility of swelling process  | <ul style="list-style-type: none"> <li>swelling process is reversible</li> <li>swelling process started without time lag</li> <li>shorter time till end of mass change</li> </ul> |  |                |

|                   |                       |
|-------------------|-----------------------|
| Swelling pressure | 0,5 N/mm <sup>2</sup> |
|-------------------|-----------------------|

| Product characteristic   | Performance           |              |
|--|-----------------------|--------------|
| weight per m<br>(BPA QUELLMAX<br>Blackstop)                          | cross-section sizes   | weight per m |
|  | 10 mm x 20 mm         | app. 310,0 g |
|  | 15 mm x 20 mm         | app. 590,0 g |
|  | 16 mm x 21mm          | app. 610,0 g |
|  | 18 mm x 24 mm         | app. 760,0 g |
|  | 20 mm x 25 mm         | app. 800,0 g |
| weight per m<br>(BPA QUELLMAX<br>Plus/BPA QUELLMAX<br>PLUS 2-Phases) | cross-section sizes   | weight per m |
|  | 15 mm x 20 mm         | app. 590,0 g |
|  | 16 mm x 21 mm         | app. 610,0 g |
|  | 18 mm x 24mm          | app. 760,0 g |
| Thermogravimetry   | shown in Annex A      |              |
| Density  | 1,9 g/cm <sup>3</sup> |              |

**4. Assessment and verification of constancy of performance system applied, with reference to its legal base**

| Product  | Intended use                                    | Classification | System |
|--|---|----------------|--------|
| Swellable joint sealing tape on the basis of bentonite | construction joints in watertight concrete      | -              | 3      |
|  | according to the provisions to reaction of fire | E              | 3      |

#### 4.1 Task of the manufacturer

| No. | Type of control    | Test method           | Criteria    | Minimum number of samples | Frequency                          |
|-----|--------------------|-----------------------|-------------|---------------------------|------------------------------------|
| 1   | Geometry           | Part 2.2.2 of the EAD | $\pm 10 \%$ | 1                         | each batch<br>resp. each<br>1000 m |
| 2   | Mass per m         | weighing              | $\pm 10 \%$ | 1                         | each batch<br>resp. each<br>1000 m |
| 3   | Ash<br>Content/TGA | e.g. ISO 7111         | $\pm 10 \%$ | 1                         | once a year                        |
| 4   | Density            | ISO 1183-1            | $\pm 10 \%$ | 1                         | each batch<br>resp. each<br>1000 m |

#### 5. Technical details necessary for the implementation of the AVCP system

Technical details necessary for the implementation of the AVCP system are laid down in the control plan which is deposited at the certification body.

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Ron Scheepers  
Kiwa Nederland B.V.

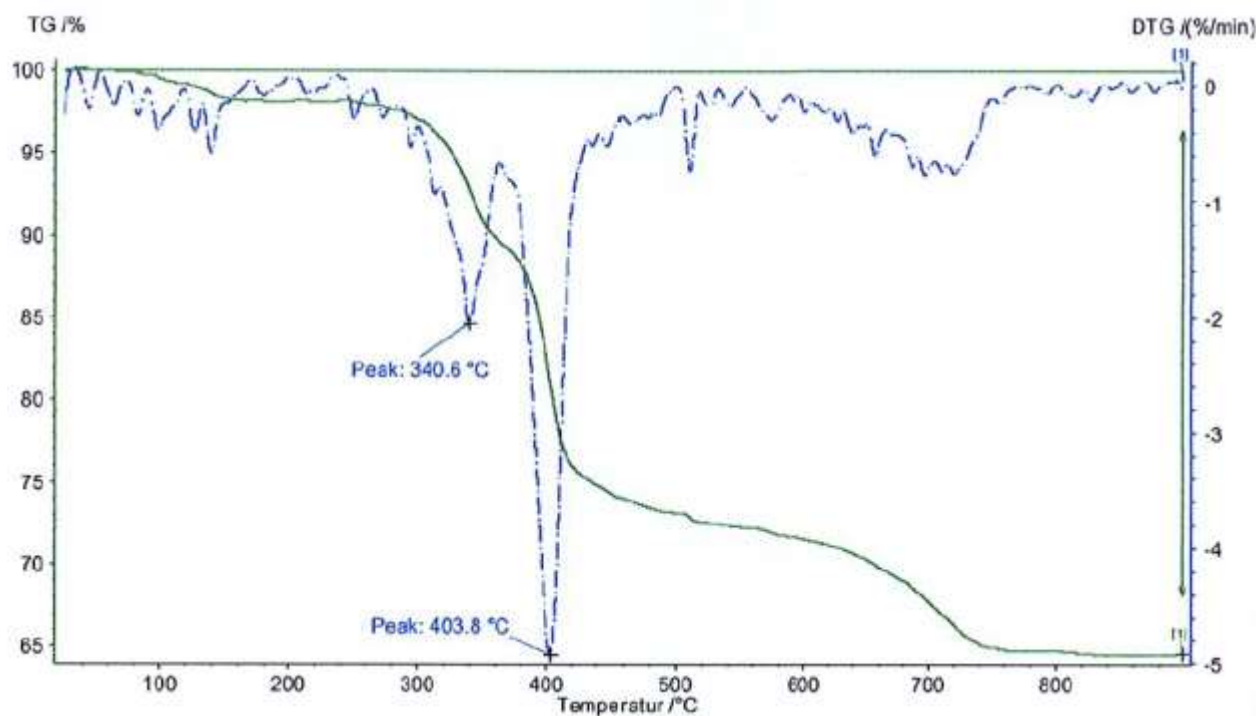


image 1: TGA - BPA QUELLMAX Plus/ BPA QUELLMAX Plus 2-Phases

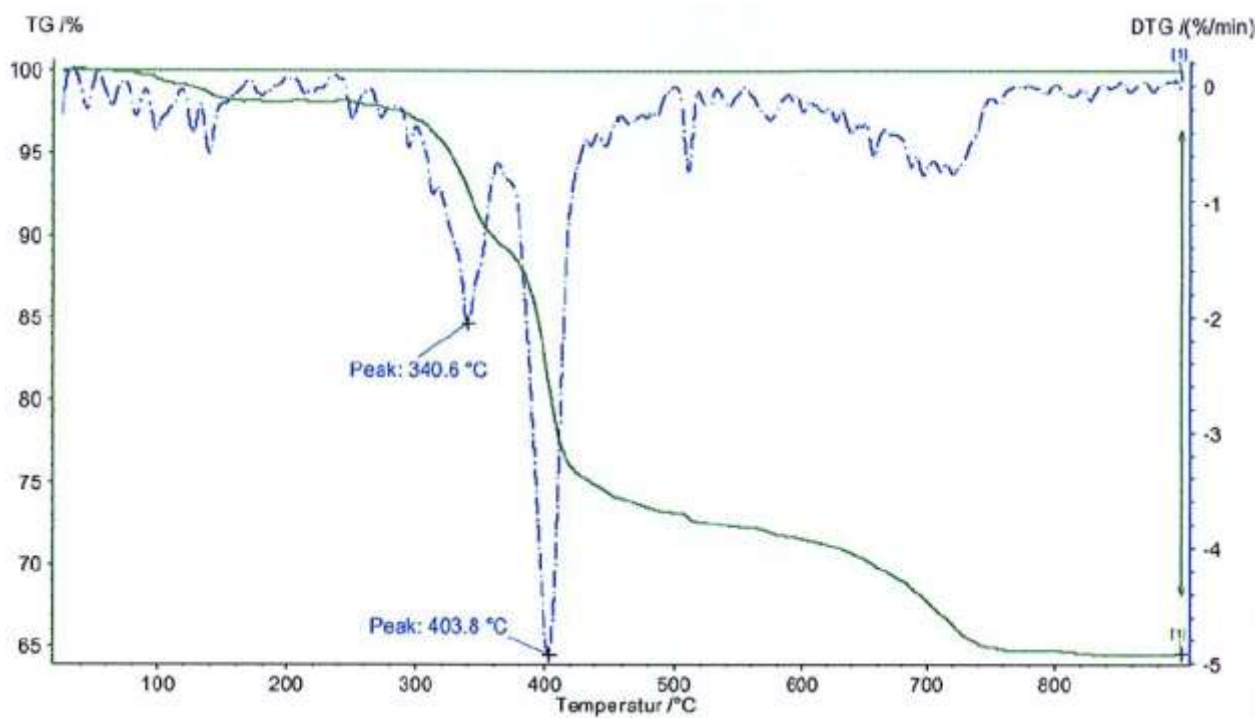


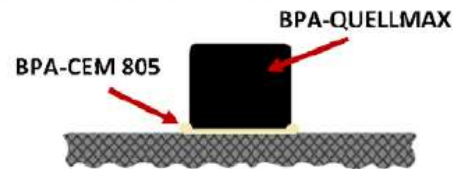
image 2: TGA - BPA QUELLMAX Blackstop

Product

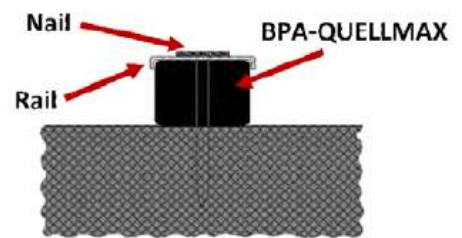


Fixing method

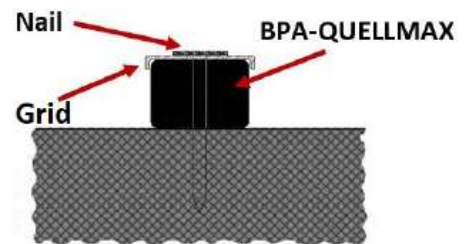
EXAMPLE ADHASIV FIXING



EXAMPLE RAIL FIXING



EXAMPLE GRID FIXING



Profile types – BPA QUELLMAX



### **Installation**

The performance of this product can only be guaranteed, when the installation is carried in accordance with installation instructions stated in the manufacturer's product data sheet, in particular taking account in the following points:

- Installation only by appropriately trained personnel
- Installation of components that are specified as components of BPA-QUELLMAX only
- Installation only with the required tools
- In joints areas, ends are abutted and firmly pressed together
- The surface to which BPA-QUELLMAX is to be installed must be sustainable, flat, clean, dry and free from all surface contaminants
- During transport and storage BPA-QUELLMAX should be stored off the ground in dry conditions, which is free from frost in its original packaging until used
- BPA-QUELLMAX Blackstop shall be installed only in dry state and at dry weather conditions. BPA-QUELLMAX Plus/BPA-QUELLMAX Plus 2-Phases is protected by a rain protection coating for a better weather resistance.
- BPA-QUELLMAX has to be installed in the middle of the construction joints. There should be a minimum of 80 mm of concrete covering all sides of BPA-QUELLMAX.
- The distance between BPA-QUELLMAX and the edge of the construction element must be a
  - minimum of 8 cm in reinforced concrete construction or
  - minimum of 10 cm in unreinforced concrete construction.
- During installation and concreting BPA-QUELLMAX shall be fixed by fully bonding by or with an adhesive bonding / rail and nails / grid and nails (3 steel nails or impact dowels / nail plugs per meter are required (max. spacing: 35 cm)). During concreting BPA-QUELLMAX should not move and should not float.
- Inspecting of position and fixing of BPA-QUELLMAX during the installation work and of the finished installed water stop respectively after the first concrete step. The results have to be documented.

