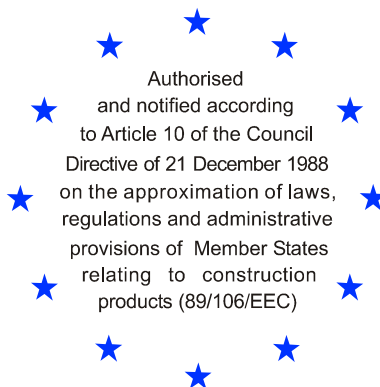


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# DIBt

Mitglied der EOTA  
*Member of EOTA*

## European Technical Approval ETA-10/0314

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung <i>Trade name</i>	Eurotek-Fugenabdichtungsband <i>Eurotek-Joint Sealing Band</i>
Zulassungsinhaber <i>Holder of approval</i>	Euroteam Bauchemie GmbH Hans-Geiger-Straße 6 89407 Dillingen DEUTSCHLAND
Zulassungsgegenstand und Verwendungszweck	Eurotek-Fugenabdichtungsband als Bestandteil des Fugenabdichtungssystems der Euroteam Bauchemie GmbH zur Verwendung in Anlagen zum Lagern, Abfüllen und Umschlagen wassergefährdender Stoffe
<i>Generic type and use of construction product</i>	<i>Eurotek-Joint Sealing Band as a part of the joint sealing system of the Euroteam Bauchemie GmbH used in facilities for the storage, handling and filling of liquid chemicals (substances hazardous to water)</i>
Geltungsdauer: <i>Validity:</i>	vom <i>from</i> 23 September 2010 bis <i>to</i> 23 September 2015
Herstellwerk <i>Manufacturing plant</i>	Euroteam Bauchemie GmbH An der Mühle 1 D-15345 Altlandsberg Germany

Diese Zulassung umfasst  
*This Approval contains*

22 Seiten einschließlich 7 Anhänge  
*22 pages including 7 annexes*



Europäische Organisation für Technische Zulassungen  
European Organisation for Technical Approvals

## I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:
  - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products<sup>1</sup>, modified by Council Directive 93/68/EEC<sup>2</sup> and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council<sup>3</sup>;
  - Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998<sup>4</sup>, as amended by law of 31 October 2006<sup>5</sup>;
  - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC<sup>6</sup>.
- 2 Deutsches Institut für Bautechnik is authorized to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.
- 3 This European technical approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.
- 4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
- 5 Reproduction of this European technical approval including transmission by electronic means shall be in full. However, partial reproduction can be made with the written consent of Deutsches Institut für Bautechnik. In this case partial reproduction has to be designated as such. Texts and drawings of advertising brochures shall not contradict or misuse the European technical approval.
- 6 The European technical approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

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1 Official Journal of the European Communities L 40, 11 February 1989, p. 12

2 Official Journal of the European Communities L 220, 30 August 1993, p. 1

3 Official Journal of the European Union L 284, 31 October 2003, p. 25

4 *Bundesgesetzblatt Teil I 1998*, p. 812

5 *Bundesgesetzblatt Teil I 2006*, p.2407, 2416

6 Official Journal of the European Communities L 17, 20 January 1994, p. 34

## II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

### 1 Definition of the product and intended use

#### 1.1 Definition of the construction product

(1) The Joint Sealing System by Euroteam Bauchemie GmbH (in the following called "sealing system"), is made of (see Annex 1):

- Primers, "Eurolastic Primer U12G" and "Eurolastic Primer ZM"
- Adhesive membrane "Eurolastic TC 30 S grey"
- Joint band "Eurotek Joint Sealing Band" and
- where necessary backfill material.

(2) The following primers are given by the manufacturer of the sealing system especially for the respective contact material.

- "Eurolastic Primer U12G " for sealing constructions made of concrete (precast concrete elements and/or in-situ concrete) and fibre concrete
- "Eurolastic Primer S2" for sealing constructions made of polymer-concrete based on UP resin
- "Eurolastic Primer ZM" for sealing constructions made of steel and for parts of sealing constructions made of CD-coated steel (cathodic dip coating only permitted on the basis of aminated, water-insoluble epoxy resin on bisphenol-A).

(3) A closed-cell backfill material, compatible with the joint sealing band and the adhesive membrane, is used.

(4) The sealing system is glued with the adhesive membrane on the prepared construction, made of different materials (contact material), after preparation of the surface with the respective primer.

(5) The sealing system is applied with a defined ratio between its thickness "d" and width "b". Evidence of suitability of the respective joint geometry is provided within the scope of the approval tests.

#### 1.2 Intended use

(1) The sealing system is intended for use in liquid proof installations (e.g. made of concrete) for the dealing of certain liquid chemicals (substances hazardous to water) both inside of buildings as well as in the open.

(2) It shall be used for sealing of vertical and horizontal movement joints, which shall allow unrestrained deformation of structural elements (e.g. shrinkage, temperature-dependent alterations in length or the effects of different ground deformations) and, with regard to their sealing function, shall not be adversely affected.

(3) The sealing system shall be used under constantly changing mechanical actions in liquid proof installations.

(4) It is to be installed at normal environmental, structural element and material temperatures (usually within a range of +5 °C to +40 °C). It is intended to be used usually at temperatures between -20 °C and +70 °C, without being adversely affected with regard to their sealing function. The temperature of the liquid chemicals (substances hazardous to water) during the contact with the joint sealing system shall be not higher than 30 °C.

(5) The joint sealing system shall be used in liquid-proof constructions made of e.g. concrete dealing with liquid chemicals (substances hazardous to water), which are exposed to the simultaneous or succeeding effects of combinations (e.g. chemicals, deformation movements, temperature, weather).

(6) The sealing system shall be used for the repair of joints and cracks.

(7) The provisions made in this European technical approval are based on an assumed working life of the Joint Sealing System of 10 years, provided that the conditions laid down in this ETA for the packaging, transport, storage, installation, use, maintenance and 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.

## 2 Characteristics of product and methods of verification

### 2.1 General

(1) The joint sealing system shall correspond to the drawings and the details of the annexes of this approval.

(2) The chemical composition or the formula of the joint sealing band and of the primer shall correspond to the information deposited with Deutsches Institut für Bautechnik.

(3) The characteristics of the material, the dimensions and tolerances which are not declared in this approval shall correspond to the information laid down in the technical documentation<sup>7</sup> of this European technical approval.

### 2.2 Characteristics

The joint sealing system

- is resistant and impermeable to the liquids listed in Annex 2 for the stress level S<sub>1</sub>, H<sub>1</sub>, F<sub>1</sub> "low" and S<sub>2</sub>, H<sub>2</sub> and F<sub>2</sub> "medium" (definition of stress levels see Annex 7),
- is resistant to aging, hydrolysis and weather,
- is suitable to be directly applied onto joint sealing systems on polysulfide basis that has already hardened,
- is suitable to be attached to certain permissible contact materials (see Annex 4, Table 1),
- is suitable to take up the extension-, compression and shear deformations documented in Annex 3, Table 2 in the area of parallel joint side walls as well as Tee and cross intersections without becoming leaky,
- is accessible for pedestrians only according to the level of road serviceability (see Annex 3, Table 2),
- meets the requirements of the reaction-to-fire class "E" in accordance with EN 13501-1<sup>8</sup> (see Annex 3, Table 2),
- under consideration of the determinations of Annex 5, Figure 2 prevents migration of the liquids listed in Annex 2 in the area of the joint and
- meets the requirements of the slipping behaviour of vertical glued joint bands in the installed state stressed with temperature up to 200 °C.

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<sup>7</sup> The technical documentation of this European technical approval is deposited with Deutsches Institut für Bautechnik and shall be made available to the approved bodies, who are involved in the procedure of conformity attestation, for the fulfilment of their tasks.

<sup>8</sup> EN 13501-1: Fire classification of construction products and building elements

## 2.3 Composition

(1) The sealing system is made of the joint band, primers, the adhesive membrane and a suitable backfill material -if necessary.

– Joint band

"Eurotek Joint Sealing Band":

The joint band is made of the extruded joint sealing compound "Eurolastic TC 30 S grey" (ETA-10/0269). The compound is based on 2K-polysulfide.

– Primers (ETA-10/0269)

- sealing constructions made of concrete and fibre concrete:

" Eurolastic Primer U12G " consisting of the components A and B, the base material of which is epoxy resin.

- sealing constructions made of polymer-concrete on UP-resin base:

" Eurolastic Primer S2" consisting of an one-component primer on silane base.

- sealing constructions made of steel and for parts of sealing constructions made of CD-coated steel:

" Eurolastic Primer ZM " consisting of components A and B, the base material of which is epoxy resin.

– Adhesive membrane

"Eurolastic TK 30 S grey" (ETA-10/0269):

The adhesive membrane is based on 2K-polysulfide.

– Backfill material

A closed-cell backfill material, compatible with the joint sealing system, is to be chosen and to be used in accordance with the provisions by the manufacturer according to the following criteria:

– A backfill material is to be chosen which prevents the adhesion of the joint sealing compound to the ground of the joint. The backfill material has to be installed sufficiently stable.

– The backfill material shall be installed such that the lower surface of the installed joint sealing compound results in as convex a surface as possible. It shall be compatible with the joint sealing compound and shall be closed-cell.

– The backfill material shall not inadmissibly impede the change in shape of the joint sealing compound and shall not contain any substances which weaken the adhesion of the joint sealing compound on the joint sidewalls

– It may not cause discolorations or bubbles. At built-in state the backfill material shall offer sufficient resistance when placing the joint sealing compound.

– The backfill material has at least to meet the requirements for building products of reaction-to-fire class E in accordance with EN 13501-1

(2) More information about the individual components of the sealing system are given in Annex 4.

## 2.4 Emission of dangerous substances

(1) According to the manufacturer's declaration the components of the joint sealing system taking account of the EU database<sup>9</sup> does not contain any dangerous substances.

(2) Within the scope of this approval there may be other requirements applicable to dangerous substances resulting from transposed European legislation or applicable national regulations and administrative provisions. These requirements need also to be complied with.

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<sup>9</sup> References in Guidance Paper H: A harmonised approach with regard to the handling of dangerous substances according to the Construction Products Directive, Brussels 18 February 2000

(3) There may be other requirements applicable to the products resulting from other applicable national regulations and administrative provisions. These requirements need also to be complied with.

### **3 Evaluation and attestation of conformity and CE marking**

#### **3.1 General**

The evaluation and the attestation of conformity of the joint sealing system with the provisions of this European technical approval is performed for each factory on the basis of the provisions of section 3.2 related to the respective system of attestation of conformity (e.g. system 2+: initial type-testing by the manufacturer and a factory production control).

#### **3.2 System of attestation of conformity**

(1) According to the Decision 2003/656/EC of the European Commission<sup>10</sup> system 2+ of the attestation of conformity is to be used in reference to hygiene, health and the environment (ER 3) and general aspects of the sealing system.

(2) Additionally according to the Decision 2001/596/EC of the European Commission<sup>11</sup> the System 1 of attestation of conformity has to be taken into account in relation to the reaction-to-fire performance. These systems of attestation of conformity are described in the following:

##### **(3) System 2+**

Declaration of conformity by the manufacturer with reference to ER 3 and general aspects for the mastic asphalt mixture on the basis of:

###### **(a) Tasks for the manufacturer:**

- (1) initial type-testing of the product;
- (2) factory production control;
- (3) testing of samples taken at the factory in accordance with a control plan.

###### **(b) Tasks for the approved body:**

Inspection body:

- (4) Initial inspection of the factory and of factory production control,
- (5) continuous surveillance, assessment and approval of factory production control

Certification body:

- (6) Certification of conformity of the product

##### **(4) System 1**

Declaration of conformity by the manufacturer with reference to the reaction-to-fire performance of the joint sealing band on the basis of:

###### **(a) Tasks for the manufacturer:**

- (1) factory production control;
- (2) further testing of samples taken at the factory in accordance with a prescribed test plan

###### **(b) Tasks for the approved bodies:**

Testing laboratory:

- (3) Initial type-testing
- (4) Audit-testing of samples taken at the factory, on the open market or on the construction side

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<sup>10</sup> Letter of the European Commission to EOTA of 15.10.2004.

<sup>11</sup> Official Journal of the European Communities L 209/33 of 2.8.2001.

Inspection body:

- (5) Initial inspection of factory and of factory production control,
- (6) continuous surveillance, assessment and approval of factory production control

Certification body:

- (7) Certification of the conformity of the product

Note: Approved bodies are also named "notified bodies"

### **3.3 Responsibilities**

#### **3.3.1 Tasks for the manufacturer**

##### **3.3.1.1 Factory production control**

(1) 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 insure that the product is in conformity with this European technical approval.

(2) The manufacturer may only use raw materials stated in the technical documentation of this European technical approval.

(3) The factory production control shall be in accordance with the control plan of September 2010 relating to the European technical approval ETA-10/0314 issued on 23.09.2010 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 with Deutsches Institut für Bautechnik.<sup>12</sup>

(4) The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan. The records shall include at least the following information:

- Designation of the product, of the initial materials,
- type of inspection or test,
- date of the manufacture of the product, batch N° (if relevant) and date of the inspection or test of the product / the initial materials,
- results of the inspections or tests and, if applicable, comparison with the requirements and
- signature of the person responsible for the factory production control.

(5) The records shall be kept for at least (a minimum of) five years. On request they shall be presented to Deutsches Institut für Bautechnik.

(6) Details concerning extent, type and frequency of the tests or inspections to be performed within the scope of the factory production control shall correspond to the control plan which is part of the technical documentation to this ETA.

##### **3.3.1.2 Other tasks for the manufacturer**

(1) The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.2 in the field of joint band systems in order to undertake the actions laid down in section 3.2.2. For this purpose, the "control plan" part 2 referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved bodies involved.

(2) The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of the European technical approval ETA-10/0314 issued on 23.09.2010.

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<sup>12</sup> The "control plan" is a confidential part of the European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

### 3.3.2 Tasks for the approved bodies

(1) The approved bodies shall perform the following tasks in accordance with the provisions of the "control plan":

- initial type-testing of the product (for system 1),
- initial inspection of factory and of factory production control (for systems 1 and 2+),
- continuous surveillance, assessment and approval of factory production control (for systems 1 and 2+).

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

(3) The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the factory production control stating the conformity with the provisions of this European technical approval.

(4) The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of

- the product (for system 1) or
- the factory production control (for system 2+)

stating the conformity with the provisions of this European technical approval.

(5) In cases where the provisions of the European technical approval and its control plan are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform Deutsches Institut für Bautechnik without delay.

## 3.4 CE marking

The CE marking shall be affixed on the product itself and/or on the label attached to it; packaging; accompanying commercial document. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE marking was affixed,
- the number of the EC certificate for the factory production control,
- the number of the European technical approval,
- essential properties:
  - reaction-to-fire class,
  - admissible contact material,
  - admissible levels of serviceability and
  - resistance to media shall be given with the wording "*Resistance to media in accordance with Annex 2 of the ETA-10/0314*".

## 4 Assumptions under which the fitness of the product for the intended use was favourably assessed

### 4.1 Manufacturing

(1) For the manufacture of the joint sealing system the provisions of this approval shall apply.

(2) The preparation of the joint sealing system may only be performed by the manufacturing plant Euroteam Bauchemie GmbH, An der Mühle 1, 15345 Altlandsberg, Germany according to the information deposited.



(3) The European technical approval is issued for the product on the basis of agreed information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed and judged.

(4) Changes to the product or production process, which could result in this deposited information being incorrect, should be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

## **4.2 Installation**

### **4.2.1 Conditions for the installation**

(1) The joint sealing system is planned and designed by expert designers only.

(2) The joints are designed such that they can be controlled during subsequent use.

(3) For the proper installation of the joint sealing system the manufacturer of the joint sealing system draws up installation and handling instructions, which are deposited as part of the technical documentation with Deutsches Institut für Bautechnik.

(4) The joint sealing system can be connected to the joint sealing system according to ETA-10/0269.

(4) The additional instructions and technical advice given by the manufacturer have paid attention to, e.g. concerning the condition of the gluing area and adjacent building components or surface sealants.

(5) The serviceability for the respective intended use results from the contact material and the indicated levels and/or performance classes of the categories of use.

(6) Controllable calculations and construction drawings (e.g. joint plans) are made up taking account of the requirements at national level of the respective Member States and the stresses and loadings to be expected.

(7) The movable joints are arranged such that the admissible extension, compression and shear distances referred to in Annex 3, Table 2 are complied with.

(8) The following is considered for design and dimensioning:

- Joint sealing systems are arranged such that they can be used - within the scope of the stress level "low" and "medium" according to Annex 2 - with liquid chemicals (substances hazardous to water) or that an accumulation of a mixture of dirt and liquid chemicals (substances hazardous to water) is avoided on the joint sealing system.
- The joint side walls shall have enough strength and load-bearing capacity that they are able to accept the occurring stresses acting on them through the joint sealing system.
- The sealing surfaces and/or constructions to be connected shall be designed such that the admissible deformations according to Annex 3, Table 2 (e.g. due to temperature, residual shrinkage or creep) are observed.
- In accordance with the national requirements of the respective member state, the sealing construction (e.g. uncoated concrete) in which and/or on which the joint sealing system is installed may only show limited penetration depths of liquids. The characteristic penetration depth of the respective liquid in the sealing construction or sealing layer, e.g. made of concrete, shall be smaller than the protected area of the joint side wall "d<sub>H</sub>" (see also Annex 5).

#### 4.2.2 Processing

- (1) Fitness for use of the installed joint sealing system can only be assumed, if the processing is performed according to the provisions of this ETA and according to the supplementing installation and processing instructions by the manufacturer.
- (2) It has to be checked whether the system components of the joint sealing system and the respective primer were not exchanged.
- (3) It is to be guaranteed that the admissible geometry of the joint construction especially the joint band according to Annex 3, Table 1 will be warranted observed.
- (4) Before the installation of the joint sealing system the suitability of the surrounding joint areas and the surfaces of the constructions to be connected to it have ascertained.
  - In the case of concrete sealing constructions the concrete of the contact surfaces shall have reached at the time of jointing at least 70% of the 28-days-strength and be at least 7 days old.
  - The surrounding joint areas shall be dry and may not show any impurities.
  - Accumulations of precipitation behind already installed sealants have to be prevented.
  - The surface temperature of the building elements in the area of the joints shall be at least 3 K above thawing temperature during the installation of the joint sealing system.
  - The primer shall be applied evenly on the respective gluing area. The primer will be applied according to the installation instructions by the manufacturer
  - The classification of the different primers to the respective contact materials (e.g. concrete, uncoated steel) shall be strictly observed.
- (5) When installing the joint sealing system the specifications made by the manufacturer or the designing engineer (see e.g. the drawing of the joint) shall be observed.
- (6) At temperatures of the building component below 5 °C and above 40 °C jointing may not be performed. The temperature of the single sealing components has to be at least 10 °C at the time of installation.
- (7) The components of the primer and the adhesive membrane shall be mixed according to manufacturer's instructions.
- (8) The primer and the adhesive membrane may not be applied on layers of condensation moisture.
- (9) The time interval given in Annex 3, Table 2, between applying the primer and installing the adhesive membran (airing out) may not fall below or be exceeded.
- (10) Joints in horizontal areas have to be filled with a suitable material (e.g. closed-cell PE-round cord) up to the surface of the joint to avoid a hanging down of the join band.
- (11) The release for mechanical and chemical stresses of the sealing construction may only be performed after the period indicated in Annex 3, Table 2 after complete installation of the joint sealing system.

#### 4.2.3 Installing firm and the attestation of conformity of the installed sealing system

- (1) The installation of the sealing system shall be carried out by firms only who (including their specialists) are authorized and trained by the holder of the approval. Further requirements for the installing firm can result from national provisions of the Member States, e.g. in G.: *Fachbetriebspflicht* ('obligation of a specialist firm').

(2) The attestation of conformity of the installed joint sealing system with the determinations of this ETA and according to the supplementing installation and processing instructions by the manufacturer shall be given with a declaration by the installing firm on the basis of the following controls:

- Control, whether the right system components for the sealing system were used as well as their marking according to section 3.3.
- Control of the execution according to section 4.2.4.

(3) The results of controls shall be recorded and evaluated by the installing firm, e.g. according to Annex 8). The records shall include at least the following information:

- Sealing system: "Eurotek-Joint Sealing Band as a part of the joint sealing system of the Euroteam Bauchemie GmbH"
- Approval-number: ETA-10/0314
- Approval holder: *Name, Address*
- Installation on: *Date*
- Installing firm: *Name, Address*
- Type of control or test (see section 4.2.4)
- Date of the test
- Result of the control and tests and comparison with the requirements
- Provisions to which the sealing system conforms:
  - reaction-to-fire class
  - indication of levels of trafficability
  - the resistance to media shall be described with the wording "*in accordance with Annex 2 of the ETA-10/0314*". Special notes applicable to the use of the product:  
*"Repair work /retrofitting is admissible only according to this approval. Furthermore the corresponding instructions of the manufacturer shall be taken into account."*
- Name of, and position held by, the person empowered to sign the declaration on behalf of the installing firm or of his authorized representative.

(4) During the installation of the joint sealing system the verification of the correct installation shall be documented by the construction manager or his authorized representative. The documentation and the declaration of the installing firm shall be kept with the construction file of the respective object. They shall be laid out ready during the period of construction. On request they shall be presented to the approval body, the relevant construction supervision authority and the expert personnel in accordance with the national regulations of the Member States.

(5) If there are insufficient test results the installing firm shall immediately take the necessary actions to stop the deficiency. After the corrective action the controls shall be repeated immediately - as far as technically possible - to verify that the rectification of deficiencies.

#### 4.2.4 Control of the execution

(1) Before, during and after the installation of the joint sealing system the following controls are made.

(2) Before the installation:

- For sealing layers made of concrete the strength class of concrete and the water-cement ratio according to EN 206 and/or according to the national stipulations of the respective countries (e.g. G.: according to the *DAfStb-Richtlinie "Betonbau im Umgang mit wassergefährdenden Stoffen"*<sup>13</sup> ('Concrete construction for handling substances hazardous to water') shall be proven before placing the sealing system on site.
- Control of the joint width, the joint distance according to Annex 1 and 3, respectively, of the design documents e.g. design of the joint (see section 4.2.1) and/or the processing instructions by the manufacturer.
- Control of the condition of the contact areas (bond areas). Dirt accumulations shall be removed thoroughly before the installation.
- Determination of the surface temperature and comparison (3 K above thawing temperature) in accordance with section 4.2.2.
- Control of the surface levelling top edge of the joint filling material according to 4.2.2(10).
- At the repair of joint sealing systems or cracks the suitability has to be controlled in accordance with the determinations of sections 1.1 and 1.2 and where necessary the type of the sealing compound according to section 4.3.

(3) After the installation:

- The installed sealing system is examined in full length.
- Control that the joint sealing band does not hang down more than 2 mm in the middle of the non treaded flexible area.

### 4.3 Repair works

#### 4.3.1 Repair of the sealing system

(1) Only firms according to clause 4.2.3 (1) are charged with the repair works.

(2) The section to be repaired shall be separated from the intact section by conducting a vertical cut.

(3) The defective joint material shall be removed completely. The surface around the joint area shall be repaired in accordance with the determinations of section 4.2.2 and prepared for the gluing of the sealing system. If using repair systems made of concrete with polymer additions or polymer-concrete, the evidence of suitability shall be furnished of these repair systems has to be provided in accordance with the national regulations of the Member States (e.g. in G.: national approval)

(4) The determinations of section 4.1 and 4.2 will be complied with.

#### 4.3.2 Repair of joint sealing systems and/ or cracks in used facilities

(1) Only firms according to clause 4.2.3 (1) are charged with the repair works.

(2) The area around the joint and / or cracks have to meet the determinations of sections 1.1 and 1.2 and/ or they are repaired and prepared for the on gluing of the joint sealing system, taking into consideration the determinations of sections 4.1 and 4.2.

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<sup>13</sup> Deutscher Ausschuss für Stahlbeton (DAfStb): DAfStb-Richtlinie Betonbau beim Umgang mit wassergefährdenden Stoffen. Date of issue: 2004-10

- (3) The damaged joint sealing compound could be left into the joint, if
- the force free movements of the joint building constructions are given,
  - the damaged joint sealing compound does not limit the movements of the joint sealing band and
  - the contact in non treaded flexible area of the joint band will be prevented by a separation layer (e.g. PE-folia or silicon paper).
- (4) If the contact between the joint sealing band and the damage joint sealing compound can not be avoided the evidence the chemical compatibility has to be positively performed before installation.

#### **4.4 Responsibilities for the manufacturer**

- (1) It is the responsibility of the holder of the approval to make sure that all those who use his sealing system will be appropriately informed about the specific conditions according to sections 1, 2, 4, and 5 including the annexes to this ETA, the installation and processing instructions by the holder of the approval and the not confidential parts of the technical documentation to this ETA.
- (2) This information can be given by reproduction of the corresponding parts of the European technical approval.

### **5 Indications to the manufacturer**

#### **5.1 Packaging, transport and storage**

- (1) Packaging, transport and storage of the single components of the joint sealing system shall be such that the fitness for the intended use will not be affected. All components of the joint sealing system and the respective primer shall in particular be stored in closed original containers/packs protected against moisture. The maximum storage time indicated on the containers/packs shall be observed.
- (2) The joint sealing bands shall be stored as erected coils. During the storage the bands should be not squeezed.
- (3) The information on requirements from other fields of the law (e.g. law relating to hazardous substances and/or law relating to transport)) given on the containers/packs shall be observed.
- (4) The components of the joint sealing system shall not be exposed to direct solar radiation. They are to be stored such that the temperature of the material at the time of processing is higher than +10 °C and lower than +40 °C.
- (5) The additional to the provisions of this ETA the instructions and technical advice given by the manufacturer have to be taken into account.

#### **5.2 Use, maintenance, repair**

- (1) In order to ensure the fitness for use of the joint sealing system, the measures described in the following sections are recommended. It is the task of the manufacturer to make sure that all parties involved are adequately informed.
- (2) The operator of the respective facility establishes operating instructions including, among others, the description of the necessary measures
- for the control of the proper condition
  - for ensuring proper operation
  - for maintenance and repair
- of the joints as well as the description of measures to be taken in case of damage. The inspection intervals are specified according to the stress levels given in Annex 2 in conjunction with Annex 7 of this ETA. The inspection results are documented.
- (3) Dripping losses and/or accumulations of already minor liquid quantities are directly removed.

(4) Leaked out liquid chemicals will immediately be bound with suitable means. The polluted bonding agent is taken up and recycled duly and without loss or is disposed of. Appropriate materials and/or employment devices are specified in the operating instructions and are constantly ready in sufficient quantity. For the disposal and treatment, respectively, of the materials resulting in waste reference is made to the applicable regulations of the respective Member State (e.g. in G.: Abfallgesetz (*Waste Management Law*)).

(5) Before placing into operation and, if necessary, after every repair work and if necessary after required rectification of deficiencies, the inspections for the putting into operation are carried out as follows:

- The inspection for the putting into operation is carried out by expert personnel only. Further requirements for the individuals can result from national regulations of the Member States.
- The person put in charge of the inspection will constantly be kept informed on the process of the work. The person is given the possibility to participate in the controls of the sealing system before and after the installation according to section 4.2.4 and to evaluate the results of the controls.
- Checking the condition of the installed joint sealing systems is done via visual inspection of the surface of all joints of the respective sealing construction.
- The person put in charge of the inspection examines the intended control intervals of the operating instructions by the operator of the respective facility.

(6) One year after every start-up inspection and then every five years recurring inspections shall be performed as follows:

- The recurring inspections are carried out by expert individuals. Further requirements for the individuals can result from national regulations of the Member States.
- The investigation of the condition of the joint sealing systems is done via visual check of the sealing in all areas of the respective sealing construction.
- On the basis of the documentation in accordance with section 5.2(2) it is checked whether
  - the check intervals were kept,
  - the specifications of the operating instructions are observed, and
  - no longer contact has occurred between the joint sealing system and the substances hazardous to water in the course of use.

(7) If doubts arise about the tightness of the joint sealing system (e.g. due to softening of the surface of the sealing band) further examinations become necessary. For that purpose samples (drilling core) will be taken from the section concerned, if need be. It can be done without the taking of samples from the soil underneath the sealing system; if demonstrably no complete penetration of the sealing system occurred by liquids chemicals.

(8) Further national regulations of the Member States shall remain unaffected.

## **6 Recommendations for the operator of a facility for storing, filling and handling of liquid chemicals (substances hazardous to water)**

(1) Reference is made to the necessity of a permanent surveillance by the operator of the facility for tightness and operability of the joint sealing system in accordance with the requirements of the national regulations of the respective Member State.

(2) An operating instruction shall be prepared by the operator of the respective facility which takes the following points into account:

- The contents of the regulations to be applied by the employee working in these fields will be presented in the operating instructions in a comprehensible and clear way and be laid out or put up at a suitable place of the plant. The operating instruction can be part of operating instructions in accordance with other fields of law of the respective Member States.

- The employees working in these fields will be instructed in the possible threats to water when storing, filling and handling of liquid chemicals (substances hazardous to water) as well as in the measures of hazard control. Before working in this field, they will be instructed before working with these substances and afterwards at least once per year.
  - All essential measures of control by the operator, the maintenance and the repair will be specified in the operating instructions. The realization of the measures will be noted in each case in the company journal.
  - In this operating instruction the operator lays down his inspection intervals with regard to the stress level specified in this ETA in accordance with Annex 2 in conjunction with Annex 7. These records are ready and will be presented to the person responsible according to the national regulations in force of the respective Member State.
- (3) The operator of a facility for the storing, filling and handling of liquid chemicals (substances hazardous to water) commissions only enterprises with maintenance, repair and cleaning of the joint sealing systems according to section 4.2.3(1).
- (4) After each repair work and/or touch up of a larger extent a start-up check will be carried out and the recurring test shall be repeated by the person charged with the test, respectively, in accordance with the effective national regulations of the respective Member State.
- (5) The sealing system is only to use for traffic with pedestrians.

Uwe Bender  
Head of Division

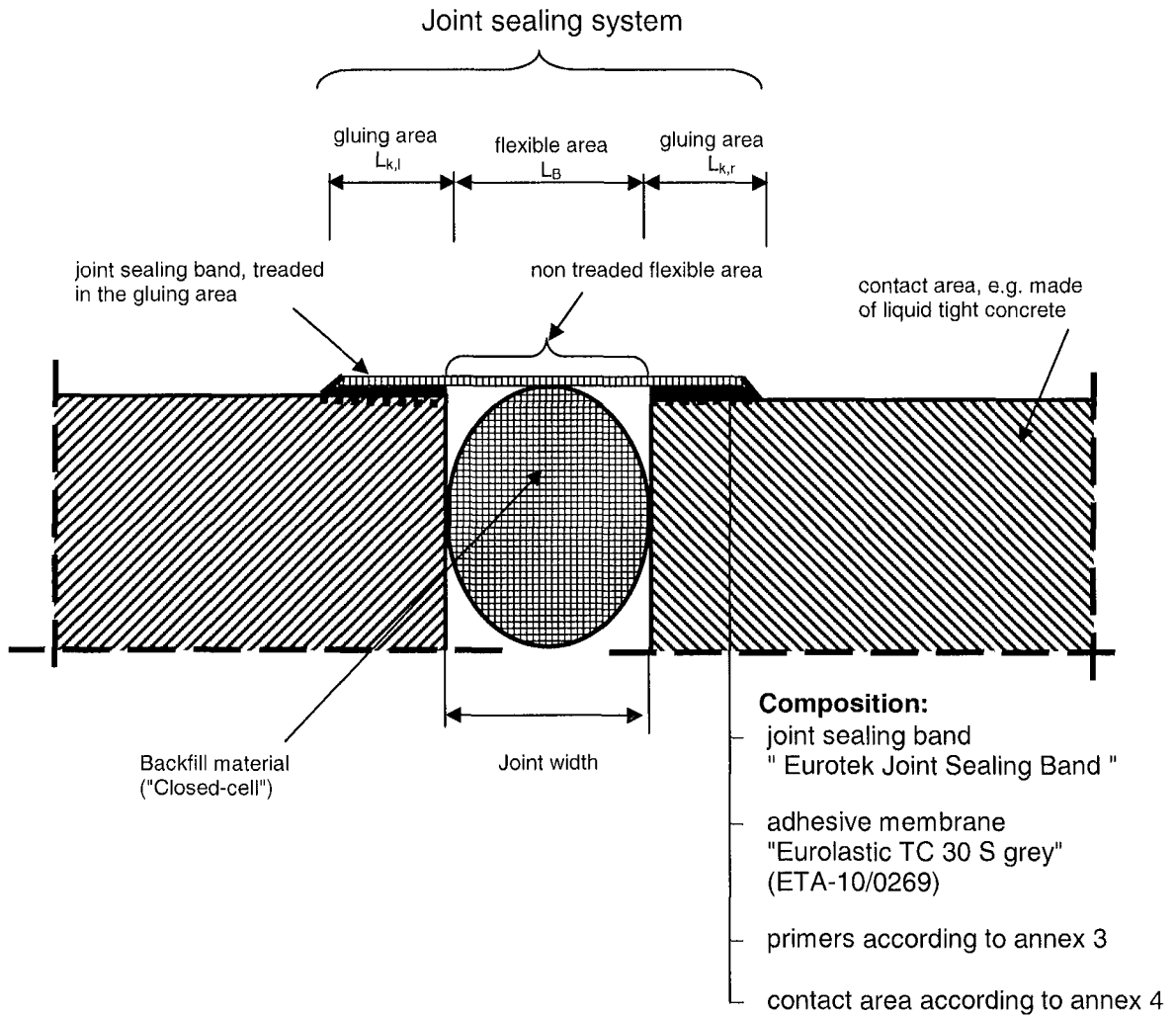
*beglaubigt*  
Dr.-Ing. Westphal-Kay

# Eurotek Joint Sealing Band

as part of the joint sealing system of the Euroteam Bauchemie GmbH used in facilities for the storage, handling and filling of liquid chemicals (substances hazardous to water)

is used on the following contact materials:

- concrete,
- polymer-concrete on UP-resin base
- uncoated steel and
- CD-coated\* parts made of steel



The joint sealing system is only permitted for traffic with pedestrians (see Annex 3, Table 2).

\* CD-coated steel only permitted with cathodic dip coating (corrosion protection) based on aminated, water-insoluble epoxy resin on bisphenol-A

<p><b>Eurotek Joint Sealing Band</b> as a part of the joint sealing system of the Euroteam Bauchemie GmbH used in facilities for storage, handling and filling of substances hazardous to water</p>	<p><b>Annex 1</b> of the European technical approval</p>
<p>Product and built-in state</p>	<p>ETA-10/0314</p>



The joint sealing system used in facilities for the storage, handling and filling of liquid chemicals (substances hazardous to water) is impermeable and chemically resistant to the following liquids (stress level: S<sub>1</sub>, H<sub>1</sub>, and F<sub>1</sub> "low" and S<sub>2</sub>, H<sub>2</sub> and F<sub>2</sub> "medium", see also Annex 7).

**Table 1:** List of liquids for stress level S<sub>1</sub>, H<sub>1</sub> and F<sub>1</sub> "low"

Group No.	liquids
DF 4a	Benzene and mixtures containing benzene

**Table 2:** List of liquids for stress level S<sub>2</sub>, H<sub>2</sub> and F<sub>2</sub> "medium"

Group No.	liquids
DF 1	Gasoline for spark ignition engines, super and normal (according to EN 228:2004-03) with a maximum 5 percentage by volume of bio-alcohol
DF 1a	Gasoline for spark ignition engines, super and normal (according to EN 228:2004-03) with a maximum 20 percentage by volume of bio-alcohol
DF 2	Aviation gasoline
DF 3	Fuel EL Unused combustion engine oil Unused motor vehicle gear oil Mixture of saturated and aromatic hydrocarbons with an aromatic content ≤ 20 wt.-% and a flash point > 55 °C
DF 3a	Diesel fuel (according to EN 590) with a maximum of 5 volume percent of bio-diesel fuel
DF 3b	Diesel fuel (according to EN 590) with a maximum of 20 volume percent of bio-diesel fuel
DF 4	All hydrocarbons and mixtures containing benzene with a maximum of 5 volume percent of benzene, except fuels
DF 4b	Crude oils
DF 4c	Used internal combustion engine oils and used vehicle gear oils with a point of ignition of > 55 °C
DF 5	Monovalent and polyvalent alcohol (up to a maximum of 48 volume percent of methanol), glycol ethers
DF 5a	Alcohol and glycol ethers
DF 5b	Monovalent and polyvalent alcohol ≥ C <sub>2</sub>
DF 7b	Bio-diesel fuel
DF 8	Aqueous solutions of aliphatic aldehyde up to 40 %
DF 9	Aqueous solutions of organic acids (carboxylic) up to 10 % as well as their salts in aqueous solutions
DF 10	Mineral acids up to 20 % as well as acidic, hydrolyzed inorganic salts in aqueous solution (pH < 6), except for hydrofluoric acids and acids with an oxidizing effect and their salts
DF 11	Inorganic lye as well as alkaline hydrolysing inorganic salts in aqueous solution (pH > 8), except oxidising salt solutions (e.g. hypochlorite)
DF 12	Aqueous solutions of inorganic non-oxidizing salts with a pH value between 6 und 8
DF 13	Amines as well as their salts (in aqueous solutions)
-	Single liquid: Skydrol LD 4

**Eurotek Joint Sealing Band**

as a part of the joint sealing system of the Euroteam Bauchemie GmbH used in facilities for storage, handling and filling of substances hazardous to water

**Annex 2**

of the European technical approval

List of liquids

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**Table 1:** Dimensions of the joint construction and/ or sealing system

No	Characteristic	Dimensions in mm							
		80	100	120	140	160	200	250	300
1	Band width <sup>1)</sup>	80	100	120	140	160	200	250	300
2	Band thickness	2,8				3,0			3,5
3	non treaded flexible area	45	60	70	80	95	120	150	180
4	Minimum gluing area width	2x 17,5	2 x 20	2x25	2x30	2x32,5	2x40	2x 50	2x60
5	maximum open joint width <sup>2)</sup>	40	55	65	75	90	115	145	175

<sup>1)</sup> In arrangement with the approval holder interim widths are permissible.

<sup>2)</sup> A back fill material has to be used to shore up the joint sealing band according to annex 6

**Table 2:** Characteristics of the joint sealing band and/ or the joint sealing system

No	Characteristic	Unit	Comments		
1	<b>storage time</b>	[days]	Without limit, taking the instructions of the manufacturer into consideration		
2	time of <b>airing out</b> (at 23°C) of Primer <sup>1)</sup>	[minutes]	Concrete (pre-fabricated elements or in-situ concrete)	– polymer-concrete (UP resin based)	Steel : uncoated and CD-coated
			60	10	120
3	<b>minimum cure time</b> Of the adhesive membrane	[hours]	24 to 48 (depending on weather)		
4	<b>waiting time</b> until full stress	[hours]	24 to 48 (depending on weather)		
5	<b>Shade:</b> - adhesive membrane - primer	[-]	gray		
			light yellow	colourless	green
6	<b>backfill material</b>	[-]	according to ETA and to the additional provisions by the manufacturer		
7	<b>surface temperature</b> of the pavement sealing system in areas of joints during installation	[K]	≥ 5°C und ≤ 40°C, ≥ 3 K above temperature of dew point		
8	<b>admissible deformations</b> as a result of extension, compressive strain and shear stress <sup>2)</sup>		<u>non treaded flexible area</u> <sup>3)</sup> 2		
9	the effects on the joint width as a reaction of the deformation behaviour of the connecting sealing construction (e.g. as a result of temperature) have to be taken into account.				
10	for the period of reaction the joint sealing system shall be protected from atmospheric exposure in accordance with the instructions by the manufacturer.				
11	reaction to fire class "E", classification according to EN 13501-1				
12	– Level of trafficability "t0": suited for traffic with pedestrians only, joint width: up to 15 mm				
	– Level of trafficability "t1": suited for traffic with pedestrians only, joint width: greater than 15 mm				

<sup>1)</sup> concrete and fibre concrete: Eurolastic Primer U12G  
polymer-concrete (UP resin based): Eurolastic Primer S2  
steel and CD-coated steel: Eurolastic Primer ZM

<sup>2)</sup> simultaneous extension and/or compressive stress and shear:  
Taking account of the real stresses, joint sealing compounds may be used placing more emphasis on the extension and/or compression capacity or on the shear capacity.

<sup>3)</sup> according to annex 3, Table 1

**Eurotek Joint Sealing Band**

as a part of the joint sealing system of the Euroteam Bauchemie GmbH used in facilities for storage, handling and filling of substances hazardous to water

**Annex 3**

of the European technical approval

Dimensions and characteristics of the sealing band and/ or sealing system

ETA-10/0314

**Table 1:** Admissible contact materials

No	contact materials	comments
1	sealing constructions made of uncoated and CD-coated steel <sup>1)</sup>	<ul style="list-style-type: none"> <li>- according to the statutory provisions implementing Directives of the European Community, which include the specific requirements of the building authority as well as the law relating to water and which bear the marking of the European Community (CE marking) and/or</li> <li>- according to national provisions of the respective countries, which also include the specific requirements of the building authority as well as the law relating to water and are marked with the intended conformity marking in accordance with the national provisions of the respective countries.</li> </ul>
2	sealing constructions made of polymer-concrete on UP resin base <sup>2)</sup>	
3	sealing constructions made of concrete <sup>3)</sup> : pre-fabricated elements with and without fibres <sup>4)</sup>	
4	sealing constructions made of concrete <sup>5)</sup> : in-situ concrete with and without fibres	

<sup>1)</sup> see Annex 1, footnote 1

<sup>2)</sup> e.g.: polymer-concrete, granted and marked in accordance with an *allgemeine bauaufsichtliche Zulassung* ('national technical approval') (G) for gutters (drains) made of polymer-concrete for the use in plants for the containment, handling and filling of substances hazardous to water

<sup>3)</sup> e.g.: vehicle pre-fabricated load-bearing elements made of liquid tight concrete granted and marked in accordance with an *allgemeine bauaufsichtliche Zulassung* ('national technical approval') (G) for the use in plants for the containment, handling and filling of substances hazardous to water

<sup>4)</sup> e.g.: gutters (drains) made of fibre concrete, granted and marked in accordance with an *allgemeine bauaufsichtliche Zulassung* ('national technical approval') (G) for the use in plants for the containment, handling and filling of substances hazardous to water

<sup>5)</sup> e.g.: liquid tight slabs made of in-situ concrete

**Table 2:** Properties of the contact materials

No	Property	Characteristic value	Comments
1	2	3	4
contact materials according to Annex 4, Table 1:			
1	migration behaviour	characteristic penetration depth "e <sub>tk</sub> "	In accordance with the national requirements of the respective countries the characteristic penetration depth "e <sub>tk</sub> " (e <sub>tk</sub> = e <sub>tm</sub> · 1.35) of the respective test liquid in the concrete has to be smaller than the joint side wall protected by the joint sealing compound (d <sub>H</sub> ), see also Annex 5, Figure 2.
In addition for concrete according to Annex 4, Table 1, No 6:			
2	compressive strength class	≥C30/37 ≤C50/60	EN 206-1, Table 7
3	maximum admissible water/cement ratio	≤ 0.5	EN 206-1, Table F.1

**Eurotek Joint Sealing Band**

as a part of the joint sealing system of the Euroteam Bauchemie GmbH used in facilities for storage, handling and filling of substances hazardous to water

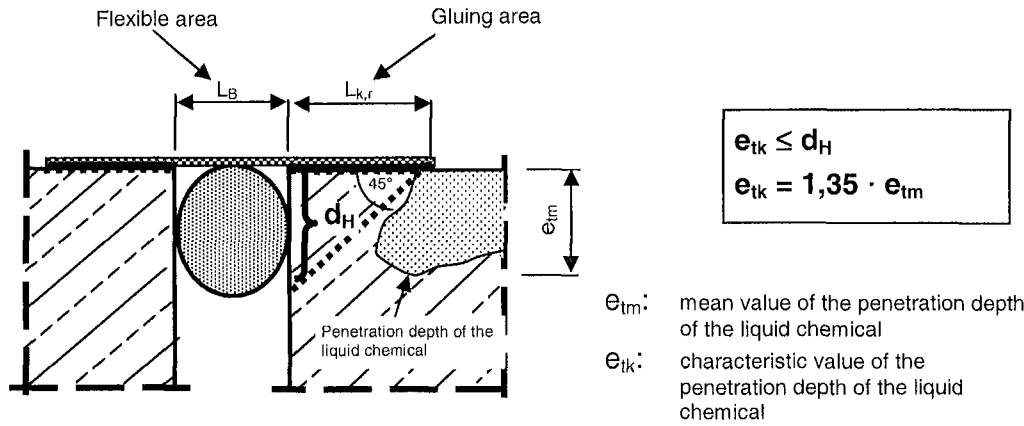
**Annex 4**

of the European technical approval

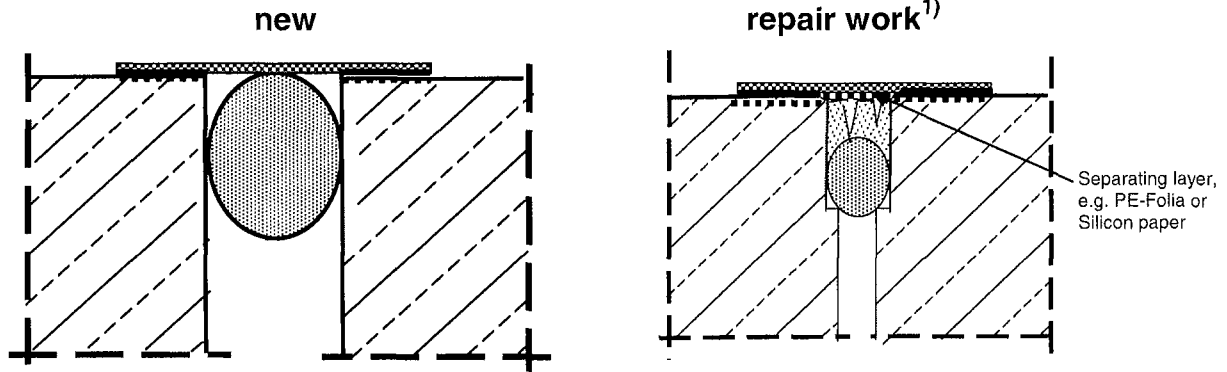
Admissible contact materials and there properties

ETA-10/0314

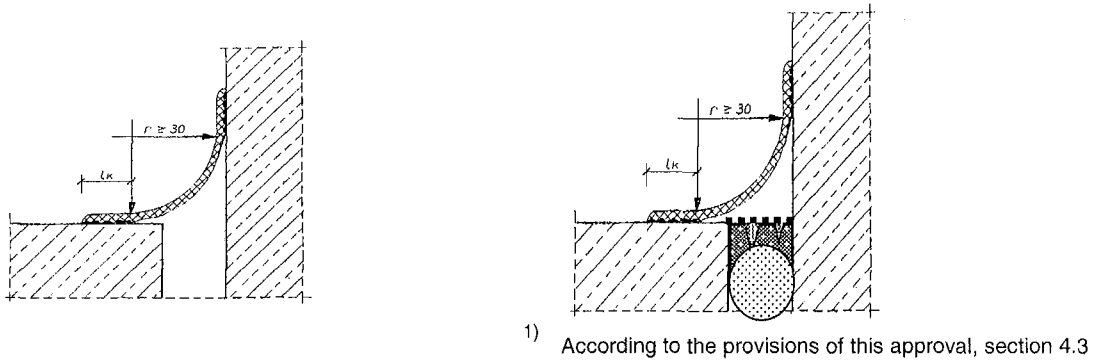
**Figure 1: Bonding and migration behaviour in the area of the installed joint sealing system**



**Figure 2: Admissible installation principles:**



**Figure 3: Installing in Corners:**



**Figure 4: Band connections:**



**Eurotek Joint Sealing Band**

as a part of the joint sealing system of the Euroteam Bauchemie GmbH used in facilities for storage, handling and filling of substances hazardous to water

**Annex 5**

of the European technical approval

### Confirmation by the executing company

No

- 1. Project - Name.....  
 - Size .....
- 2. storage substance: .....
- 3. Sealing system: "Eurotek Joint Sealing Band  
 as a part of the joint sealing system of the Euroteam Bauchemie GmbH used in facilities for storage, handling and filling of liquid chemicals (substances hazardous to water)"
- 4. Approval: ETA-10/0314 dated on 23 September 2010
- 5.a Manufacturer: Euroteam Bauchemie GmbH  
 An der Mühle 1, 15345 Altlandsberg, Germany  
 Phone: + 49 (0) 33438/ 1479-0, Telefax: + 49 (0)33438/ 1479-29
- 5.b Name of company installing according to .....  
 ETA section 4.2.3 (1): .....
- 5.c Construction period: .....

Confirmation

6. The qualified personnel of the executing company were instructed by the holder of the European technical approval mentioned above in the proper processing.

**7. Evaluations and controls before and during the installation of the sealing system**

- a) Before the installation:
  - Compare concrete compressive strength class ( $\geq C30/37$ ) and water-cement ratio ( $\leq 0,5$ ) with the documentation of the building side journal. Note the characteristic values of the building side journal  
C ...../..... / w/c-ratio: .....
  - joint width / joint distance / depth of the joint space [mm]: ...../..... / .....
  - surface temperature / thawing temperature [°C]: ...../.....
  - bond areas/contact areas are dry: yes / no
  - bond areas/contact areas are free from all contaminations: yes / no
  - system component in accordance with the approval: yes / no
  - Marking of all components in accordance with the approval: yes / no
- b) During and after the installation:
  - Records of the weather conditions are enclosed: yes / no
  - Visual test: 

no objections
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objections (see comments)
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  - side wall adhesion acc. to section 4.2.4(3): 

no objections
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objections (see comments)
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Remarks:

Date: .....

Signature / firm stamp

**Eurotek Joint Sealing Band**

as a part of the joint sealing system of the Euroteam Bauchemie GmbH used in facilities for storage, handling and filling of substances hazardous to water

**Annex 6**

of the European technical approval

Example of an installation report for an installed joint sealing system

ETA-10/0314

### Stress levels for the effective hourly capacity of water-contaminating substances \*)

The level of chemical exposure shall be chosen in accordance with the following Tables 1 and 2. The Tables indicate the time and/or the frequency (period of exposure and frequency, respectively) as well as the appropriate time (test period) during which the test liquid (see list of test liquids) acts on the sealing bands (during the test).

The period of exposure shall be chosen by the manufacturer. Following successful performance testing, the characteristic technical values related to the respective stress level shall be specified in the approval.

**Table 1:** Stress level related to the period of stress during storage in a test liquid

Stress level 1	Description 2	Period of stress 3	Test period 4
<b>Storage (S)</b>			
<b>S<sub>1</sub></b>	low	up to 8 hours	8 hours
<b>S<sub>2</sub></b>	mean	up to 72 hours	72 hours
<b>S<sub>3</sub></b>	high	up to 3 months	≥ 28 days <sup>1)</sup>

1) As far as no change is visible. Otherwise the test period can be prolonged until stability of mass, however up to 42 days at the most.

**Table 2:** Stress level related to the frequency of filling and/or handling period of test liquids

Stress level 1	Description 2	Period of stress 3	Test period 4
<b>Handling (H) and Filling (F)</b>			
<b>H<sub>1</sub>, F<sub>1</sub></b>	low	maximum of 4 times per year	8 hours
<b>H<sub>2</sub>, F<sub>2</sub></b>	mean	maximum of 200 times per year	72 hours
<b>H<sub>3</sub>, F<sub>3</sub></b>	high	more than 200 times per year	≥ 21 days <sup>1)</sup>

1) As far as no change is visible. Otherwise the test period can be prolonged until stability of mass, however up to 42 days at the most.

#### Eurotek Joint Sealing Band

as a part of the joint sealing system of the Euroteam Bauchemie GmbH used in facilities for storage, handling and filling of substances hazardous to water

#### Annex 7

of the European technical approval

Stress levels

ETA-10/0314