



## European Technical Approval ETA-13/0237

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung  
*Trade name*

"Kerafix® Flexlit"  
"Kerafix® Flexlit"

Zulassungsinhaber  
*Holder of approval*

Rolf Kuhn GmbH  
Jägersgrund 10  
57339 Erndtebrück  
DEUTSCHLAND

Zulassungsgegenstand  
und Verwendungszweck  
*Generic type and use  
of construction product*

Biegsame, im Brandfall aufschäumende Brandschutzmatte  
*Flexible intumescent fire sealing mat*

Geltungsdauer:  
*Validity:* vom  
*from*  
bis  
*to*

22 May 2013  
22 May 2018

Herstellwerk  
*Manufacturing plant*

12

Diese Zulassung umfasst  
*This Approval contains*

9 Seiten einschließlich 1 Anhang  
*9 pages including 1 annex*

## 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 8 November 2011<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- 4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.
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- 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.

<sup>1</sup> Official Journal of the European Communities L 40, 11 February 1989, p. 12  
<sup>2</sup> Official Journal of the European Communities L 220, 30 August 1993, p. 1  
<sup>3</sup> Official Journal of the European Union L 284, 31 October 2003, p. 25  
<sup>4</sup> Bundesgesetzblatt Teil I 1998, p. 812  
<sup>5</sup> Bundesgesetzblatt Teil I 2011, p. 2178  
<sup>6</sup> Official Journal of the European Communities L 17, 20 January 1994, p. 34

## II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

### 1 Definition of product/ products and intended use

#### 1.1 Definition of the construction product

This European technical approval (ETA) applies to the construction product "Kerafix® Flexlit". "Kerafix® Flexlit" a flexible intumescent fire sealing mat, which is cut to strips at the factory. "Kerafix® Flexlit" may be one-side laminated or completely wrapped.

The following modifications will be acceptable according to this ETA:

- non-laminated basic variant, named "Kerafix® Flexlit",
- laminated with PVC-foil<sup>7</sup> of different colours on one side; named "Kerafix® Flexlit DF",
- laminated with PE-sellotape<sup>7</sup> on one side, named "Kerafix® Flexlit ZPE",
- laminated with aluminum foil<sup>7</sup> on one side, named "Kerafix® Flexlit AF",
- completely wrapped with textile tape<sup>7</sup>, named "Kerafix® Flexlit GE",
- completely wrapped with PE-foil metalized with aluminum<sup>7</sup>, named "Kerafix® Flexlit AE"

All these modifications may be additionally finished with a self adhesive tape<sup>7</sup> on one side.

The flexible intumescent fire sealing construction product "Kerafix® Flexlit" mainly consists of intumescent ingredients and an organic binder. It is manufactured in form of mats, slabs and strips of a nominal thickness of 1,5 mm, 2,0 mm, 5,0 mm and 6,0 mm and any width up to 1000 mm.

The fire sealing effect bases on the creation of foam in case of fire, that closes gaps, joints and other openings of construction elements and restricts the passage of heat, flame and /or smoke this way.

The product is delivered in rolls or cut to any shape and size at the factory on demand.

The characteristics and performances of the construction product "Kerafix® Flexlit" relevant for fire sealing purposes were determined as follows for the basic variant without any lamination or finish<sup>8</sup>:

- nominal thickness: 1,5 mm, 2,0 mm, 5,0 mm and 6,0 mm
- tolerance:  $\pm 0,3$  mm for every nominal thickness
- mass per unit area
  - at a thickness of 1,5 mm:  $1,05 \text{ kg/m}^2 \pm 10 \%$
  - at a thickness of 5,0 mm:  $3,10 \text{ kg/m}^2 \pm 8 \%$
- density<sup>9</sup>
  - for a thickness of 1,5 mm:  $700 \text{ kg/m}^3 \pm 10 \%$
  - for a thickness of 5,0 mm:  $620 \text{ kg/m}^3 \pm 10 \%$
- loss of mass on heating:  $10,0 \% \pm 5 \%$   
(tested at 400 °C for 30 minutes)<sup>10</sup>

<sup>7</sup> Type, manufacturer and characteristics deposited at DIBt.

<sup>8</sup> Test methods in accordance with EOTA Technical Report 024 (TR 024), version July 2009

<sup>9</sup> Differences in density at different thicknesses result from the manufacturing process.

- expansion ratio  
for the non-laminated basic variant at all thicknesses:  
2,0 to 5,5  
(tested at 400 °C for 30 minutes with a top-load)<sup>10</sup>
- expansion pressure:  
0,10 N/mm<sup>2</sup> to 0,25 N/mm<sup>2</sup>  
(tested at 300 °C, method 4)<sup>10</sup>

## 1.2 Intended use

The flexible intumescent fire sealing mat "Kerafix<sup>®</sup> Flexlit" and its modifications mentioned in clause 1.1 are intended to be used as components essential for the fire sealing and fire stopping effect of construction products, elements and assemblies, which shall meet requirements concerning the safety in case of fire. The construction product prevents the heat transmission and the propagation of fire by creating foam.

The flexible, intumescent fire sealing product "Kerafix<sup>®</sup> Flexlit" in end use conditions may be subjected to conditions for the use category type Z<sub>2</sub> (use in frost-protected dry rooms at relative humidity below 85 % and at temperatures up to +40 °C).

If the flexible intumescent strip according to this ETA is intended to be used exposed to specific conditions, further tests are necessary.

The provisions made in this European technical approval are based on an assumed working life in the end use application of the construction product "Kerafix<sup>®</sup> Flexlit" of 10 years, provided that the conditions laid down in sections 4.2, 5.1 and 5.2 for 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 or the approval body, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

## 2 Characteristics of the products and methods of verification

### 2.1 Mechanical resistance and stability

Not relevant

### 2.2 Safety in case of fire

#### 2.2.1 Reaction to fire

The construction product "Kerafix<sup>®</sup> Flexlit" as non-laminated basic variant complies concerning reaction to fire with the requirements of class E according to EN 13501-1<sup>11</sup>.

The performance "reaction to fire" of the other modifications according to 1.1 is not classified.

<sup>10</sup> Details of testing deposited at DIBt

<sup>11</sup> EN 13501-1:2009 Fire Classification of construction products and building elements, Part 1: Classification using test data from reaction to fire tests.

NOTE:

A European reference fire scenario for façades is not available. In some Member States the classification of the flexible, intumescent fire sealing mat and strips "Kerafix® Flexlit" according to EN 13501-1 may possibly not be sufficient for the use in façades. An additional assessment of "Kerafix® Flexlit" according to national provisions (e.g. on the basis of a large scale test) might be necessary to comply with Member State regulations, until the existing European classification system has been completed.

**2.2.2 Resistance to fire**

The fire resistance of a fire resistant assembly containing the flexible intumescent fire sealing mat "Kerafix® Flexlit" - cut to strip and additionally equipped with a self adhesive tape - as effective fire sealing component was tested according to the relevant test method for classification according to EN 13501-2<sup>12</sup>.

This test basically qualifies the flexible intumescent fire sealing strip "Kerafix® Flexpress 100", for a final application in fire resistant assemblies.

The performance "resistance to fire" is not being considered in more detail in this ETA.

**2.3 Hygiene, health and the environment**

**2.3.1 Air and water permeability**

Not relevant

**2.3.2 Release of dangerous substances**

According to the manufacturer's declaration and the chemical composition deposited<sup>13</sup>, the product "Kerafix® Flexlit" does not contain dangerous substances as registered in the Council Directive 76/769/EEC (amended by EC Decision 455/2009/EC of 6 May 2009)<sup>14</sup> or listed in the database of the European Commission; published in the Regulation (EC) N° 1272/2008 of 16 December 2008<sup>15</sup> excepted ceramic fibre.

NOTE:

In addition to the specific clauses relating to dangerous substances contained in this European technical approval, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Directive, these requirements need also to be complied with, when and where they apply.

**2.4 Safety in use (mechanical resistance and stability)**

Not relevant

**2.5 Protection against noise**

Not relevant

**2.6 Energy, economy and heat retention**

Not relevant

<sup>12</sup> EN13501-2 Fire classification of construction products and building elements, Part 2: Classification using data from fire resistance tests, excluding ventilation services.  
<sup>13</sup> The detailed chemical composition was presented to DIBt for assessment; type, manufacturer and characteristics of the lamination and finishing materials and the self adhesive fixing tape are deposited at DIBt.  
<sup>14</sup> Official Journal of the European Communities L 137 of 3 June 2009, p 3  
<sup>15</sup> Official Journal of the European Communities L 353 of 31 December 2008, p 1

## 2.7 Aspects of durability and serviceability

The construction product "Kerafix<sup>®</sup> Flexlit" was tested for the use category type Z<sub>2</sub> (frost-protected in-door use at temperatures up to + 40 °C and relative humidity permanently below 85 %).

Conclusion:

The construction product "Kerafix<sup>®</sup> Flexlit" and its modifications may be exposed to end-use conditions of frost-protected dry rooms without additional humidity and without occasional or permanent condensation, at temperatures up to + 40 °C without expecting essential changes of the intumescent properties expansion ratio, expansion pressure.

## 3 Evaluation and attestation of conformity and CE marking

### 3.1 System of attestation of conformity

According to the Decision 1999/454/EG of the European Commission<sup>16</sup>, system 1 of the attestation of conformity applies.

In addition, according to the Decision 2001/596/EC of the European Commission<sup>17</sup> system 3 of the attestation of conformity applies with regard to reaction to fire.

These systems of attestation of conformity are defined as follows:

System 1: Certification of the conformity of the product by an notified certification body on the basis of:

- (a) Tasks for the manufacturer:
  - (1) factory production control (FPC);
  - (2) further testing of samples taken at the factory by the manufacturer in accordance with a prescribed test plan;
- b) Tasks for the notified body:
  - (3) initial type-testing of the product;
  - (4) initial inspection of factory and of factory production control;
  - (5) continuous surveillance, assessment and approval of factory production control.

System 3: Declaration of conformity of the product by the manufacturer on the basis of:

- (a) Tasks for the manufacturer:
  - (1) factory production control (FPC);
- (b) Tasks for the notified body:
  - (2) initial type-testing of the product.

### 3.2 Responsibilities

#### 3.2.1 Tasks for the manufacturer

##### 3.2.1.1 Factory production control (FPC)

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.

The manufacturer may only use raw materials and components stated in the technical documentation of this European technical approval.

<sup>16</sup> Official Journal of the European Communities L 178/42 of 14 July 1999  
<sup>17</sup> Official Journal of the European Communities L 209/33 of 2 August 2001

The factory production control (FPC) shall be in accordance with the control plan which is part of the technical documentation of this European technical approval.

The control plan is laid down in the context of the FPC system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik.<sup>18</sup>

The results of FPC shall be recorded and evaluated in accordance with the provisions of the control plan.

#### 3.2.1.2 Other tasks for the manufacturer

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 sealing and fire stopping products in order to undertake the actions laid down in section 3.2.2. 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 ETA-13/0237 issued 22. May 2013.

#### 3.2.2 Tasks for the notified bodies

The notified body shall perform the

- initial type-testing of the product (systems 1 and 3),
- initial inspection of factory and of factory production control (systems 1),
- continuous surveillance, assessment and approval of factory production control (system 1)

in accordance with the provisions laid down in the control plan of 22/05/2013.

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

The notified certification body involved by the manufacturer shall issue an EC certificate of conformity 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 certification body shall withdraw the certificate of conformity and inform Deutsches Institut für Bautechnik without delay.

#### 3.3 CE marking

The CE marking shall be affixed on the product itself or the label attached to it or on packaging or the accompanying commercial document, e.g. the EC declaration of conformity.

The letters "CE" shall be followed by the identification number of the notified 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 of conformity for the product,
- the number of the European technical approval,
- the generic type of product
- the use categories

Example: see annex 1

<sup>18</sup>

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

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

##### **4.1 Manufacturing**

The European technical approval is issued for the construction product "Kerafix® Flexlit" and its modifications on the basis of agreed data and information, deposited with Deutsches Institut für Bautechnik, which identifies the products assessed and judged.

Changes concerning the products or the production process, which could result in the fact, that deposited data and information are invalid, should be notified to Deutsches Institut für Bautechnik before implementing the changes.

The 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 modifications to the approval shall be necessary.

##### **4.2 Installation**

Additionally installed cover sheets for mechanical protection must not restrict the creation of foam of the construction product "Kerafix® Flexlit".

The product in end use-conditions shall be completely enclosed in a dust-tight manner at the room-face. When handling the product the relevant health and safety regulations shall be considered.

The manufacturer's installation instruction shall be considered.

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

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

All modifications of the product "Kerafix® Flexlit" and its cuts shall be protected carefully from mechanical damage and any kind of humidity or direct weathering during transport and storage.

The construction product "Kerafix® Flexlit" and its modifications and cuts may be stored at temperatures between + 2 °C and + 40 °C and at a relative humidity up to 70 %.

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

Damaged sections of the construction product "Kerafix® Flexlit" or its modifications and cuts shall be only replaced by new, unspoiled sections of the same modification, thickness and dimension.

The substitution shall be carried out carefully. The required quantity of material and the total thickness of material shall be maintained.

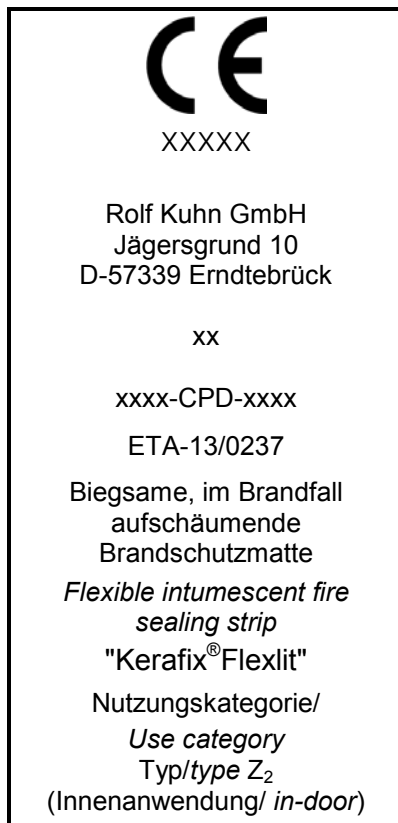
Prof. Gunter Hoppe  
Head of Department

*beglaubigt:*  
Dierke



## ANNEX 1

Example of CE marking for the flexible intumescent fire sealing mat "Kerafix® Flexlit"



Symbol "CE"

Identification number of notified certification body for  
AoC system 1

Name and address of the producer

Two last digit of year of affixing CE marking for AoC  
system 1

Number of EC certificate of conformity

ETA number

Generic type of product and trade name:  
"Kerafix® Flexlit" or other modification according to  
this ETA-13/0237, clause 1.1

Use categories according to ETA-13/0237