

European Technical Approval ETA-13/0665

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung
Trade name

"Kerafix® FXL 200"

Zulassungsinhaber
Holder of approval

Rolf Kuhn GmbH
Jägersgrund 10
57339 Erndtebrück
DEUTSCHLAND

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

Biegsamer, im Brandfall aufschäumender Brandschutzstreifen
Flexible intumescent fire sealing strip

Geltungsdauer:
Validity:

vom
from
bis
to

12 June 2013

12 June 2018

Herstellwerk
Manufacturing plant

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Diese Zulassung umfasst
This Approval contains

10 Seiten einschließlich 1 Anhang
10 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 products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *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 1998⁴, as amended by Article 2 of the law of 8 November 2011⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
- 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- 4 This European technical approval may be withdrawn by Deutsches Institut für Bautechnik, in particular pursuant to information by the Commission according to Article 5(1) of Council Directive 89/106/EEC.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.

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 2011*, p. 2178
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 product/ products and intended use

1.1 Definition of the construction product

This European technical approval (ETA) applies to the flexible intumescent fire sealing strip "Kerafix[®] FXL 200".

The construction product "Kerafix[®] FXL 200" may be laminated on one side or completely wrapped with PVC-foil.

The following modifications will be acceptable according to this ETA:

- non-laminated basic variant, named "Kerafix[®] FXL 200",
- laminated with PVC-foil⁷ of different colours on one side; named "Kerafix[®] FXL 200 DF",
- laminated with PE-sellotape⁷ on one side, named "Kerafix[®] FXL 200 ZPE",
- laminated with textile tape⁷ on one side, named "Kerafix[®] FXL 200 GW",
- laminated with glass fibre scrim⁷ on one side, named "Kerafix[®] FXL 200 GG",
- laminated with glass non-woven⁷ on one side, named "Kerafix[®] FXL 200 GV",
- laminated with aluminum-foil⁷ on one side, named "Kerafix[®] FXL 200 AF" or
- completely wrapped with PVC-foil⁷, named "Kerafix[®] FXL 200 E".

All these modifications may be additionally finished with a self adhesive tape⁷ on one side.

The flexible intumescent fire sealing strip "Kerafix[®] FXL 200" is a product manufactured in form of mats, strips or cuts. It consists primarily of intumescent constituents and binder.

The fire sealing effect bases on the creation of foam at high temperatures 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 "Kerafix[®] FXL 200" does not develop essential expansion pressure in this process.

The flexible intumescent fire sealing strip "Kerafix[®] FXL 200" is produced of a thicknesses of 0,7 mm to 3,5 mm and in any widths up to 340 mm.

The mats and strips may be cut to every size or may be processed to blanked-out pieces.

The characteristics and performances of the construction product "Kerafix[®] FXL 200" relevant for fire sealing purposes were determined as follows for the basic variant without any lamination or finish⁸:

- | | |
|--------------------------|--|
| – nominal thickness: | 0,7 mm to 3,5 mm |
| tolerance | ± 10 % of the declared nominal thickness |
| – mass per unit area: | |
| thickness 0,7 mm | 0,97 kg/m ² |
| thickness 3,5 mm | 4,70 kg/m ² |
| tolerance | ± 10 % |
| – density ⁹ : | 1190 kg/m ³ to 1540 kg/m ³ |

⁷ Type, manufacturer and characteristics deposited at DIBt

⁸ Test methods in accordance with the CUAP 11.04/06, edition December 2011; see EOTA Technical Report 024 (TR 024), edition July 2009

⁹ Differences in density at different thicknesses result from the manufacturing process

- loss of mass on heating: (tested at 400 °C for 30 minutes)
38,0 % ± 5 %
- expansion ratio: (tested at 400 °C for 30 minutes without a top-load)¹⁰
 - thickness 0,7 mm 30,0 to 50,0
 - thickness 3,5 mm 17,0 to 30,0

1.2 Intended use

The flexible intumescent fire sealing strip "Kerafix® FXL 200" and its mentioned modifications are intended to be used as components essential for the fire sealing and fire protection 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 strip "Kerafix® FXL 200" in end use conditions may be subjected to conditions for the use category type $Y_{2(-5/+70^{\circ}\text{C})}$ (in-door use at temperatures between -5 °C and +70 °C at permanent or occasional condensation, but without any UV exposure). This includes the in-door use in accordance with the use categories type Z_2 and Z_1 .¹¹

If the flexible intumescent fire sealing 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 end use application of the flexible intumescent fire sealing strip "Kerafix® FXL 200", 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 product in relation to the expected economically reasonable working life of the works.

2 Characteristics of the product 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 flexible intumescent fire sealing strip "Kerafix® FXL 200" as non-laminated basic variant complies concerning reaction to fire with the requirements of class E according to EN 13501-1¹².

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

¹⁰ Details of testing deposited at DIBt

¹¹ See EOTA Technical Report 024 (TR 024), edition July 2009, clause 4.1, use categories, Note 5.

¹² 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 strip "Kerafix[®] FXL 200" according to EN 13501-1¹² might possibly not be sufficient for the use in façades. An additional assessment of "Kerafix[®] FXL 200" 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 strip "Kerafix[®] FXL 200" - additionally equipped with a self adhesive tape at one side - as effective fire sealing component was tested according to the relevant test method for classification according to EN 13501-2¹³.

This test basically qualifies the flexible intumescent fire sealing strip "Kerafix[®] FXL 200", for 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 compositions deposited¹⁴, the product "Kerafix[®] FXL 200" 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)¹⁵ or listed in the database of the European Commission; published in the Regulation (EC) N° 1272/2008 of 16 December 2008¹⁶.

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

¹³ EN 13501-2 Fire classification of construction products and building elements, Part 2: Classification using data from fire resistance tests, excluding ventilation services.

¹⁴ The detailed chemical composition deposited at DIBt for assessment.

¹⁵ Official Journal of the European Communities L 137 of 3 June 2009, p 3

¹⁶ Official Journal of the European Communities L 353 of 31 December 2008, p 1

2.6 Energy, economy and heat retention

Not relevant

2.7 Aspects of durability and serviceability

The construction product "Kerafix® FXL 200" was tested for the use category type $Y_{2(-5/+70^{\circ}\text{C})}$ (indoor use at temperatures between -5°C and $+70^{\circ}\text{C}$ at permanent or occasional condensation, but without any UV exposure)⁸.

No essential changes of the intumescent property "expansion ratio" could be assessed.

Conclusion:

The construction product "Kerafix® FXL 200" in final use conditions can be exposed to in-door conditions at temperatures between -5°C and $+70^{\circ}\text{C}$ with and without high humidity and to permanent or occasional condensation without any UV-exposure without expecting essential changes of the intumescent property expansion ratio.

Voluntarily¹⁷ the following additional verifications concerning the products' durability and serviceability were provided:

- exposure to a permanent temperature of 80°C for 40 days,
- subsequent over-painting with paints on the basis of
 - acrylic dispersion
 - alkyd resin
 - polyurethane acrylic
 - epoxy resin,
- exposure to solvents
 - butyl acetate
 - butanol
 - solvent naphtha
 - fuel,
- contact with plastics (PVC, PE).

After these exposures no essential changes of the intumescent property expansion ratio could be assessed.

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 Commission¹⁸, system 1 of the attestation of conformity applies.

In addition, according to the Decision 2001/596/EC of the European Commission¹⁹ system 3 of the attestation of conformity applies with regard to reaction to fire.

These systems of attestation of conformity are defined as follows:

¹⁷ EOTA Technical Report 024 (TR 024), version July 2009, clause 4.3
¹⁸ Official Journal of the European Communities L 178/42 of 14 July 1999
¹⁹ Official Journal of the European Communities L 209/33 of 2 August 2001

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

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.

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.²⁰

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-13/0665 issued on 12 June 2013.

²⁰ 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.

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 10/06/2013.

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

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

4.1 Manufacturing

The European technical approval is issued for the construction product "Kerafix® FXL 200" and its modifications on the basis of agreed data and information, which identifies the product, assessed and judged and which are deposited at Deutsches Institut für Bautechnik.

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 flexible intumescent fire sealing strip "Kerafix® FXL 200" or its modifications.

When assembling, the substrate shall be dry and proper to ensure e.g. the sufficient adhesion of the self-adhesive tape.

The products may be cut to size with appropriate tools on site.

The manufacturer's installation instruction shall be considered.

5 Indications to the manufacturer

5.1 Packaging, transport and storage

"Kerafix® FXL 200" and its modifications or cuts of them should be protected from mechanical damage and direct weathering during transport and storage.

The construction product "Kerafix® FXL 200" and its modifications or cuts of them should be stored frostprotected at temperatures up to +30 °C and at a relative humidity below 70 %.

5.2 Use, maintenance, repair

Damaged sections of the construction product "Kerafix® FXL 200" or its modifications or cuts shall be only replaced by new, unspoiled sections of the same modification and dimension.

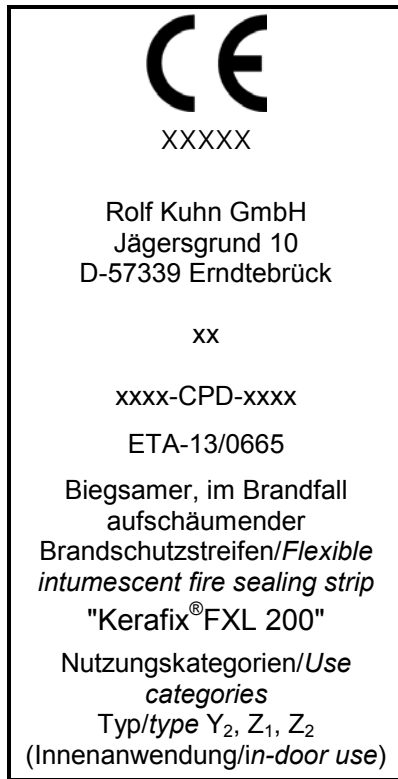
The substitution shall be carried out carefully. The required quantity of material and the total thickness of material shall be maintained.

Prof. Gunter Hoppe
Head of Department

beglaubigt:
Dr.-Ing. Dierke

ANNEX 1

Example of CE marking for the flexible intumescent fire sealing strip "Kerafix® FXL 200"



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® FXL 200" or other modification according to this ETA-13/0665, clause 1.1

Use categories according to ETA-13/0665