



CERTIFICATE OF APPROVAL

No CF 5323

This is to certify that, in accordance with
 TS00 General Requirements for Certification of Fire Protection Products
 The undermentioned products of

TKK D.O.O.

Srpenica 1, 5224 Srpenica, Slovenia
Tel: +386 5 384 1300

Have been assessed against the requirements of the Technical Schedule(s)
 denoted below and are approved for use subject to the conditions
 appended hereto:

CERTIFIED PRODUCT

Tekapur Firestop

TECHNICAL SCHEDULE

**TS40 Linear Joint Sealing
 Systems**

Signed and sealed for and on behalf of CERTIFIRE



Sir Ken Knight
 Chairman – Impartiality committee
 Page 1 of 4

Issued: 7th May 2015
 Valid to: 6th May 2020



CERTIFICATE No CF 5323

TKK D.O.O

Tekapur Firestop Fire Rated Expanding Foam

1. This approval relates to the use of Tekapur Firestop linear joint sealing systems for the fire protection of movement joints within walls and floors. The detailed scope is given in the Approval Matrix included in this Certificate. This shows the thickness and width for Tekapur Firestop linear joint sealing systems required to provide fire resistance periods generally in accordance with BS476 Part 20: 1987 of up to 120 minutes.
2. This certification is designed to demonstrate compliance of the product or system specifically with Approved Document B (England and Wales), Section 2 of the Technical Standards (Scotland), Technical Booklet E (N. Ireland). If compliance is required to other regulatory or guidance documents there may be additional considerations or conflict to be taken into account.'
3. The product is approved on the basis of:
 - i) Initial type testing
 - ii) Audit testing at the frequency specified in TS40
 - iii) A design appraisal against TS40
 - iv) Inspection and surveillance of factory production control
 - v) Certification of quality management system to ISO 9001: 2008
3. The block/masonry/concrete walls shall be at least 200mm thick and have at least the same fire rating as that required for the penetration seal.
4. Block/masonry and concrete gap faces will be within the density range of 450 to 2300kg/m³, and gap faces will be free from loose or flaking material. Aluminium, Steel, softwood and plywood substrates are also included within the scope of certification.
5. The approval relates to ongoing production. Product and/or its immediate packaging is identified with the manufacturers' name, the product name or number, the CERTIFIRE name or name and mark, together with the CERTIFIRE certificate number and application where appropriate.

Further information regarding the details contained in this data sheet may be obtained from TKK d.o.o. (Tel: +386 5 384 1368)

Further information regarding the CERTIFIRE certification and other approved products can be obtained from CERTIFIRE (Tel: 01925 646777).

CERTIFICATE No CF 5323
TKK D.O.O

Tekapur Firestop - Approval Matrix

Blockwork/Masonry/Concrete (aerated or normal) Wall Installations					
Product Name		Tekapur Firestop			
Max. Joint Width mm	Min. Foam Depth mm	Substrates	Minimum Thickness of Wall mm	Integrity (mins)	Insulation (mins)
10	100	Concrete - Concrete	100	90	90
10	100	Steel - Aluminium	100	30	30
10	100	Plywood - Softwood	100	90	90
40	200	Concrete - Concrete	200	90	90
40	200	Steel - Aluminium	200	30	30
40	200	Plywood - Softwood	200	120	120
Application Technique		The foam is gunned in to the required depth.			
Resistance to Smoke:		Not evaluated by this approval	Weather Capability:		Not evaluated by this approval
Acoustic Rating:		Not evaluated by this approval	Movement Capability:		Not evaluated by this approval

CERTIFICATE No CF 5323
TKK D.O.O

Tekapur Firestop - Approval Matrix

Concrete (aerated or normal) Floor Installations					
Product Name		Tekapur Firestop			
Max. Joint Width mm	Min. Foam Depth mm	Substrates	Minimum Thickness of Wall mm	Integrity (mins)	Insulation (mins)
10	100	Concrete - Concrete	100	90	90
10	100	Steel - Aluminium	100	30	30
10	100	Plywood - Softwood	100	90	90
40	200	Concrete - Concrete	200	90	90
40	200	Steel - Aluminium	200	30	30
40	200	Plywood - Softwood	200	120	120
Application Technique		The foam is gunned in to the required depth.			
Resistance to Smoke:		Not evaluated by this approval	Weather Capability:		Not evaluated by this approval
Acoustic Rating:		Not evaluated by this approval	Movement Capability:		Not evaluated by this approval



MFPA Leipzig GmbH

Testing, Inspection and Certification Authority for
Construction Products and Construction Types

Leipzig Institute for Materials Research and Testing
Business Division III - Structural Fire Protection
Dipl.-Ing. Sebastian Hauswaldt

Work Group 3.2 - Fire Behaviour of Building Components and special
Constructions

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Classification Report No. KB 3.2/16-129-9

2 May 2018

No. Copy 1

Fire resistance classification acc. to
DIN EN 13501-2:2016-12

Subject matter: Sealing of linear, horizontal and vertical part joints using "Tekapur Firestop"
polyurethane foam for use in solid ceilings and solid walls in sealing widths of
10 mm, 20 mm, 30 mm and 40 mm.

Applicant: TKK d.o.o.
Srpenica 1
5224 Srpenica
Slovenia

Person in charge: J. Peitzmeier, M.Sc.

This classification report is valid for an unlimited period.

This document consists of 5 pages.

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DAKKS
Deutsche
Akkreditierungsstelle
D-PL-11021-01-00

Testing laboratory accredited by DAKKS GmbH according to DIN EN ISO/IEC 17025. The accreditation only applies to the test methods listed in the certificate (in this document marked with *) which can be seen on www.mfpa-leipzig.de

Gesellschaft für Materialforschung und Prüfungsanstalt für das
Bauwesen Leipzig mbH (MFPA Leipzig GmbH)

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1 Introduction

This fire resistance classification report defines the classification of the “Tekapur Firestop” polyurethane foam joint seal in ceiling constructions with horizontal part joints and wall constructions with vertical part joints in accordance with the procedure specified in DIN EN 13501-2:2016-12 for the area of joint flanks of solid ceilings and walls.

2 Details of the classified product “Tekapur Firestop” joint seal

2.1 General

The “Tekapur Firestop” polyurethane foam joint seal (nominal bulk density: 22-26 kg/m³, material class B1 regarding reaction to fire in accordance with DIN 4102:1998-05), is defined as a horizontal part joint in solid ceilings and as a vertical part joint in solid walls. Its function is to ensure fire resistance pursuant to sections 5.2.2 and 5.2.3 of DIN EN 13501-2:2016-12.

2.2 Description of the joint seal as a seal in the connection area of joint flanks of solid structural parts

The joint systems were installed vertically as well as horizontally in supporting structures made of cellular concrete elements (bulk density class 0.4, stability class 2) with a thickness of 200 mm.

The vertical and horizontal joints of the supporting structure with a width of 10 mm, 20 mm, 30 mm and 40 mm were filled with “Tekapur Firestop” polyurethane foam by spraying. Any excess of the swelling foam was removed after curing.

The foam is marketed in the versions “Tekapur Firestop hand held” and “Tekapur Firestop gun grade”. The material behaviour of the two versions is identical.

Further structural details can be found in the corresponding test report PB 3.2/ 16-129-1 by MFPA Leipzig GmbH, dated 9 January 2017.

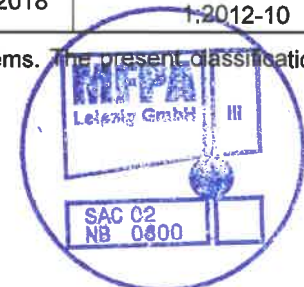
3 Test reports and test results supporting this classification

3.1 Test report

Table 1 Overview of the supporting test reports

Name of the test lab	Applicant	Number of the test report	Test method
MFPA Leipzig GmbH Hans-Weigel-Str. 2b 04319 Leipzig	TKK d.o.o.	PB 3.2/16-129-1 ¹⁾ from 09 January 2018	DIN EN 1366-4:2010-08 based on DIN EN 1363-1:2012-10

¹⁾ The above-mentioned test report deals with several different joint systems. The present classification report, however, only refers to the “Tekapur Firestop” joint system.



3.2 Fire resistance capacity in vertical orientation

Table 2 Joint seal of the linear, vertical butt joint as per section 2.2 with "Tekapur Firestop" polyurethane foam (solid structural part with a thickness of 200 mm)

Test method	Parameter	Results based on joint width			
		10 mm	20 mm	30 mm	40 mm
DIN EN 1366-4: 2006-08 in conjunction with DIN EN 1363-1: 2012-10	Integrity ¹⁾	up to the 243rd minute	up to the 145th minute	up to the 111th minute	up to the 89th minute
	Combustion of the cotton ball	no combustion > 240 minutes	no combustion > 120 minutes	no combustion > 90 minutes	no combustion > 60 minutes
	Appearance of gaps	no gaps appeared > 240 minutes	no gaps appeared > 120 minutes	no gaps appeared > 90 minutes	no gaps appeared > 60 minutes
	Appearance of flames on the opposite side	no permanent appearance of flames > 240 minutes	no permanent appearance of flames > 120 minutes	no permanent appearance of flames > 90 minutes	no permanent appearance of flames > 60 minutes
	Thermal insulation	up to the 243rd minute	up to the 145th minute	up to the 111th minute	up to the 89th minute
	max. single value > 180 K	not exceeded over a test period of 240 minutes	not exceeded over a test period of 120 minutes	not exceeded over a test period of 90 minutes	not exceeded over a test period of 60 minutes

¹⁾ According to DIN EN 1366-4:2010-08, the use of feeler gauges is not permitted

3.3 Fire resistance capacity in horizontal orientation

Table 3 Joint seal of the linear, horizontal butt joint as per section 2.2 with "Tekapur Firestop" polyurethane foam (solid structural part with a thickness of 200 mm)

Test method	Parameter	Results based on joint width			
		10 mm	20 mm	30 mm	40 mm
DIN EN 1366-4: 2006-08 in conjunction with DIN EN 1363-1: 2012-10	Integrity ¹⁾	up to the 243rd minute	up to the 156th minute	up to the 107th minute	up to the 89th minute
	Combustion of the cotton ball	no combustion > 240 minutes	no combustion > 120 minutes	no combustion > 90 minutes	no combustion > 60 minutes
	Appearance of gaps	no gaps appeared > 240 minutes	no gaps appeared > 120 minutes	no gaps appeared > 90 minutes	no gaps appeared > 60 minutes
	Appearance of flames on the opposite side	no permanent appearance of flames > 240 minutes	no permanent appearance of flames > 120 minutes	no permanent appearance of flames > 90 minutes	no permanent appearance of flames > 60 minutes
	Thermal insulation	up to the 243rd minute	up to the 156th minute	up to the 107th minute	up to the 89th minute
	max. single value > 180 K	not exceeded over a test period of 240 minutes	not exceeded over a test period of 120 minutes	not exceeded over a test period of 90 minutes	not exceeded over a test period of 60 minutes

¹⁾ According to DIN EN 1366-4:2010-08, the use of feeler gauges is not permitted



4 Classification and field of application

4.1 Reference for classification

This classification has been carried out in compliance with section 7.5.9 "Classification of structural joints" of DIN EN 13501-2: 2016-12.

4.2 Classification of the structural joints pursuant to section 2.2 for a structural part with a thickness of 200 mm

The "Tekapur Firestop hand held" and "Tekapur Firestop gun grade" joint seals in the connection area of the joint flanks of solid structural parts (thickness $t = 200$ mm) were classified based on the following combination of general performance parameters in accordance with DIN EN 13501-2:2016-12 and Table.

For joint widths $b = 10$ mm, the following classifications apply to vertical and horizontal installation:

R	E	I	W	-	t	-	M	C	S	IncSlow	sn	ef	r
-	E	I	-	-	240	-	-	-	-	-	-	-	-

Fire-resistance rating: EI 240-H-V-X-F-W 10

For joint widths $b = 20$ mm, the following classifications apply to vertical and horizontal installation:

R	E	I	W	-	t	-	M	C	S	IncSlow	Sn	ef	r
-	E	I	-	-	120	-	-	-	-	-	-	-	-

Fire-resistance rating: EI 120-H-V-X-F-W 10 to W 20

For joint widths $b = 30$ mm, the following classifications apply to vertical and horizontal installation:

R	E	I	W	-	t	-	M	C	S	IncSlow	Sn	ef	r
-	E	I	-	-	90	-	-	-	-	-	-	-	-

Fire-resistance rating: EI 90-H-V-X-F-W 20 to W 30

For joint widths $b = 40$ mm, the following classifications apply to vertical and horizontal installation:

R	E	I	W	-	t	-	M	C	S	IncSlow	sn	ef	r
-	E	I	-	-	60	-	-	-	-	-	-	-	-

Fire-resistance rating: EI 60-H-V-X-F-W 30 to W 40



4.3 Direct field of application

This classification is valid for the following applications:

- This type of joint seal may only be used in
 - o horizontal joints in horizontal parts,
 - o vertical joints in vertical parts.

The field of application with regard to the tested orientation applies to A and B pursuant to DIN EN 1366-4:2010-08, section 13.1.

- According to DIN EN 1366-4:2010-08, section 13.2, the solid ceiling and solid wall constructions must have a thickness of at least 200 mm. The joint seals may be used in space-enclosing parts made of concrete, hollow blocks and masonry with a density $\geq 400 \text{ kg/m}^3$.
- The joints with the joint seals used may not experience any lateral strains greater than 7.5% of the joint width.

No further changes are allowed in any of the named installation situations.

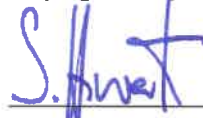
5 Limits

This classification report is not a type approval or certification of the product. It does not replace any building authority certificate that may be necessary according to German building laws (state building code) and is only valid in conjunction with the corresponding test report.

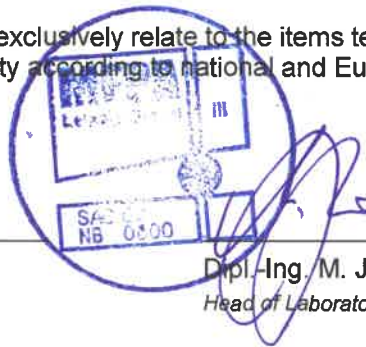
This classification report is valid for an unlimited period. It is the responsibility of the certification body to check whether the relevant test and classification standards are valid and/or that no significant changes have been made that may have an effect on the safety level.

The results of the tests exclusively relate to the items tested. This document does not replace a certificate of conformity or suitability according to national and European building codes.

Leipzig, 2 May 2018



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