MINISTERIO
DE INDUSTRIA, TURISMO
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MINISTRY OF INDUSTRY, TOURISM AND TRADE
LICOF: Official Laboratory for Fire Testing
R.D. 1614/1985 on 1st of August
M.O. on 21st of May of 1991

AFITI LICOF
Centre for Fire Testing and Research
Association for the Promotion of Research and Fire Safety Technology

Classification Report

Fire Resistance Laboratory

ilac-MRA ENAC ENSAYOS Nº 41/LE104

APPLICANT:

HENKEL AG & Co KGaA

CLASSIFICATION OF THE FIRE RESISTANCE ACCORDING TO STANDARD UNE-EN 13501-2:2009+A1:2010

- Element: **Linear joint seals**
  - Manufacturer: Henkel AG & Co KGaA
  - References:
    According to information included on the page 3 of 12

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CLASSIFICATION OF THE FIRE RESISTANCE ACCORDING TO UNE-EN 13501-2:2009+A1:2010

Applicant: **HENKEL AG & Co KGaA**
Henkelstrasse 67
40191 – DÜSSELDORF (Germany)

Issuing laboratory: **AFITI-LICOF**
Notified Body nr.: 1168

Building element: **Linear joint seals**
Manufacturer: Henkel AG & Co KGaA
References: According to information included in the chapter 1 (Page 3 to 12)

Classification Report nr.: **2132T10-11 (English version)**
Date of issue: 09th-Jun-11

Report Contents

1.- AIM OF THE REPORT

This Classification Report defines the Fire Resistance classification assigned to the linear joint seals, designated by the applicants according to the references indicated in the table 1, in compliance with the procedures established in the Standard UNE-EN 13501-2:2009+A1:2010 *"Fire classification of construction products and building elements. Part 2: Classification using data from fire resistance tests, excluding ventilation services"*.

- Table 1

Referencia Comercial
"CERESIT FR77"
"MAKROFLEX FR77"
"SISTA FR77"
"PATTEX FR77"
"RUBSON FR77"
"TANGIT FP 100"

2.- DETAILS OF THE ELEMENTS UNDER CLASSIFICATION

2.1.- TYPE OF FUNCTION

The elements designated commercially according to the references indicated in the table 1, are defined as "Linear joint seals". Their function is to resist the fire with regard to the fire behaviour characteristics stated in the chapter 5 of the Standard UNE-EN 13501-2:2009+A1:2010.

2.2.- DESCRIPTION

The elements are completely described in the test report on which this classification is based. The said report is identified in the Chapter 3 of this report.

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3.- TEST REPORTS AND RESULTS USED IN SUPPORT OF THIS CLASSIFICATION

Reports

Issuing laboratory	Applicant	Report	Test method
AFITI-LICOF Pol. Ind. Sta. Mª de Benquerencia C/ Río Estenilla, s/n 45007 – TOLEDO Notified Body nr.: **1168**	**HENKEL AG & Co KGaA** Henkelstrasse 67 40191 – DÜSSELDORF (Germany)	Nr.: **2132T10-6 SUP.2** D. of issue: 09th-Jun-11 Test dates: 15th-Jun-10 16th-Jun-10 10th-Nov-10	EN 1366-4:2006 + A1:2010

Conditions of exposure

Temperature Curve / Time:	Standard
Direction of exposure:	All the specimens with polyurethane foam not exposed to fire.
Nr. of exposed sides:	One

Test results

		Specimen nr T2053A	T2053B	T2053C
Integrity (E)	.....	**182 minutes (S)**	**126 minutes**	**152 minutes**
Performance criteria				
Cotton pad	.....	182 minutes (S)	126 minutes	152 minutes
Sustained flames > 10 s	.....	182 minutes (S)	126 minutes (D)	152 minutes (D)
Thermal Insulation (I)	.....	**122 minutes**	**92 minutes**	**119 minutes**
Performance criteria				
Maximum temperature	.....	122 minutes	92 minutes	119 minutes

(S): Test stopped by mutual agreement with the applicant
(D): End of the assessment of the specimen.

		Specimen nr T2053D	T2053E	T2053F
Integrity (E)	.....	**153 minutes**	**182 minutes (S)**	**163 minutes**
Performance criteria				
Cotton pad	.....	153 minutes	182 minutes (S)	163 minutes
Sustained flames > 10 s	.....	153 minutes (D)	182 minutes (S)	163 minutes (D)
Thermal Insulation (I)	.....	**116 minutes**	**121 minutes**	**96 minutes**
Performance criteria				
Maximum temperature	.....	116 minutes	121 minutes	96 minutes

(S): Test stopped by mutual agreement with the applicant
(D): End of the assessment of the specimen.

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		Specimen nr		
		T2053G	**T2053H**	**T2053I**
Integrity (E)	.....	**13 minutes**	**16 minutes**	**16 minutes**
Performance criteria				
Cotton pad	.....	13 minutes	16 minutes	16 minutes
Sustained flames > 10 s	.....	13 minutes (D)	16 minutes (D)	16 minutes (D)
Thermal Insulation (I)	.....	**12 minutes**	**16 minutes**	**14 minutes**
Performance criteria				
Maximum temperature	.....	12 minutes	16 minutes	14 minutes

(D): End of the assessment of the specimen.

		Specimen nr		
		T2053J	**T2053K**	**T2054A**
Integrity (E)	.....	**39 minutes**	**58 minutes**	**128 minutes**
Performance criteria				
Cotton pad	.....	39 minutes	58 minutes	128 minutes
Sustained flames > 10 s	.....	39 minutes (D)	58 minutes (D)	128 minutes (D)
Thermal Insulation (I)	.....	**37 minutes**	**58 minutes**	**128 minutes**
Performance criteria				
Maximum temperature	.....	37 minutes	58 minutes	128 minutes

(D): End of the assessment of the specimen.

		Specimen nr		
		T2054B	**T2054C**	**T2054D**
Integrity (E)	.....	**71 minutes**	**64 minutes**	**34 minutes**
Performance criteria				
Cotton pad	.....	71 minutes	64 minutes	34 minutes
Sustained flames > 10 s	.....	71 minutes (D)	64 minutes (D)	34 minutes (D)
Thermal Insulation (I)	.....	**69 minutes**	**62 minutes**	**32 minutes**
Performance criteria				
Maximum temperature	.....	69 minutes	62 minutes	32 minutes

(D): End of the assessment of the specimen.

	Specimen nr		
	T2054E	**T2054F**	**T2054G**
Integrity (E)	**28 minutes**	**19 minutes**	**16 minutes**
Performance criteria			
Cotton pad	28 minutes	19 minutes	16 minutes
Sustained flames > 10 s	28 minutes (D)	19 minutes (D)	16 minutes (D)
Thermal Insulation (I)	**26 minutes**	**19 minutes**	**16 minutes**
Performance criteria			
Maximum temperature	26 minutes	19 minutes	16 minutes

(D): End of the assessment of the specimen.

	Specimen nr		
	T2054H	**T2054I**	**T2054J**
Integrity (E)	**166 minutes**	**112 minutes**	**132 minutes**
Performance criteria			
Cotton pad	166 minutes	112 minutes	132 minutes
Sustained flames > 10 s	166 minutes (D)	112 minutes (D)	132 minutes (D)
Thermal Insulation (I)	**133 minutes**	**106 minutes**	**132 minutes**
Performance criteria			
Maximum temperature	133 minutes	106 minutes	132 minutes

(D): End of the assessment of the specimen.

	Specimen nr		
	T2054K	**T2132A**	**T2132B**
Integrity (E)	**102 minutes**	**241 minutes(S)**	**241 minutes(S)**
Performance criteria			
Cotton pad	102 minutes	241 minutes(S)	241 minutes(S)
Sustained flames > 10 s	102 minutes (D)	241 minutes(S)	241 minutes(S)
Thermal Insulation (I)	**96 minutes**	**241 minutes(S)**	**241 minutes(S)**
Performance criteria			
Maximum temperature	96 minutes	241 minutes(S)	241 minutes(S)

(D): End of the assessment of the specimen.
(S): Test stopped by mutual agreement with the applicant

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	Specimen nr		
	T2132C	**T2132D**	**T2132E**
Integrity (E)	**215 minutes**	**224 minutes**	**221 minutes**
Performance criteria			
Cotton pad	215 minutes	224 minutes	221 minutes
Sustained flames > 10 s	215 minutes (D)	224 minutes (D)	221 minutes (D)
Thermal Insulation (I)	**199 minutes**	**224 minutes (D)**	**185 minutes**
Performance criteria			
Maximum temperature	199 minutes	224 minutes (D)	185 minutes

(D): End of the assessment of the specimen.

	Specimen nr		
	T2132F	**T2132G**	**T2132H**
Integrity (E)	**157 minutes**	**132 minutes**	**228 minutes**
Performance criteria			
Cotton pad	157 minutes	132 minutes	228 minutes
Sustained flames > 10 s	157 minutes (D)	132 minutes (D)	228 minutes (D)
Thermal Insulation (I)	**154 minutes**	**120 minutes (D)**	**205 minutes**
Performance criteria			
Maximum temperature	154 minutes	120 minutes (D)	205 minutes

(D): End of the assessment of the specimen.

	Specimen nr	
	T2132I	**T2132J**
Integrity (E)	**143 minutes**	**170 minutes**
Performance criteria		
Cotton pad	143 minutes	170 minutes
Sustained flames > 10 s	143 minutes (D)	170 minutes (D)
Thermal Insulation (I)	**139 minutes**	**153 minutes (D)**
Performance criteria		
Maximum temperature	139 minutes	153 minutes (D)

(D): End of the assessment of the specimen.

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4.- CLASSIFICATION AND FIELD OF APPLICATION.

4.1.- CLASSIFICATION STANDARD

This classification has been performed according to the chapter 7.5.9 from the Standard UNE-EN 13501-2:2009+A1:2010.

4.2.- CLASSIFICATION

The elements designated commercially according to the references indicated in the table 1 are classified in accordance with the following combination of parameters and classes.
Other classifications are not admitted.

Fire Resistance Classification Specimen nr: T2053A	**E 180-V-X-B-W 00 a 50** **EI 120-V-X-B-W 00 a 50**
Fire Resistance Classification Specimen nr: T2053B	**E 120-V-X-B-W 00 a 50** **EI 90-V-X-B-W 00 a 50**
Fire Resistance Classification Specimen nr: T2053C	**E 120-V-X-B-W 00 a 30** **EI 90-V-X-B-W 00 a 30**
Fire Resistance Classification Specimen nr: T2053D	**E 120-V-X-B-W 00 a 30** **EI 90-V-X-B-W 00 a 30**
Fire Resistance Classification Specimen nr: T2053E	**E 180-V-X-B-W 00 a 20** **EI 120-V-X-B-W 00 a 20**
Fire Resistance Classification Specimen nr: T2053F	**E 120-V-X-B-W 00 a 20** **EI 90-V-X-B-W 00 a 20**
Fire Resistance Classification Specimen nr: T2053G	**Not achieve any classification**
Fire Resistance Classification Specimen nr: T2053H	**EI 15-V-X-B-W 00 a 25**
Fire Resistance Classification Specimen nr: T2053I	**E 15-V-X-B-W 00 a 20**

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Fire Resistance Classification Specimen nr: T2053J	**EI 30-V-X-B-W 00 a 15**
Fire Resistance Classification Specimen nr: T2053K	**EI 45-V-X-B-W 00 a 10**
Fire Resistance Classification Specimen nr: T2054A	**EI 120-V-X-B-W 00 a 10**
Fire Resistance Classification Specimen nr: T2054B	**EI 60-V-X-B-W 00 a 15**
Fire Resistance Classification Specimen nr: T2054C	**EI 60-V-X-B-W 00 a 20**
Fire Resistance Classification Specimen nr: T2054D	**EI 30-V-X-B-W 00 a 25**
Fire Resistance Classification Specimen nr: T2054E	**EI 20-V-X-B-W 00 a 30**
Fire Resistance Classification Specimen nr: T2054F	**EI 15-V-X-B-W 00 a 40**
Fire Resistance Classification Specimen nr: T2054G	**EI 15-V-X-B-W 00 a 50**
Fire Resistance Classification Specimen nr: T2054H	**EI 120-V-X-B-W 00 a 40**
Fire Resistance Classification Specimen nr: T2054I	**EI 90-V-X-B-W 00 a 40**
Fire Resistance Classification Specimen nr: T2054J	**EI 120-V-X-B-W 00 a 50**
Fire Resistance Classification Specimen nr: T2054K	**EI 90-V-X-B-W 00 a 50**

Fire Resistance Classification Specimen nr: T2132A	**EI 240-V-X-B-W 00 a 20**
Fire Resistance Classification Specimen nr: T2132B	**EI 240-V-X-B-W 00 a 30**
Fire Resistance Classification Specimen nr: T2132C	**EI 180-V-X-B-W 00 a 40**
Fire Resistance Classification Specimen nr: T2132D	**EI 180-V-X-B-W 00 a 20**
Fire Resistance Classification Specimen nr: T2132E	**EI 180-V-X-B-W 00 a 30**
Fire Resistance Classification Specimen nr: T2132F	**EI 120-V-X-B-W 00 a 40**
Fire Resistance Classification Specimen nr: T2132G	**EI 120-V-X-B-W 00 a 50**
Fire Resistance Classification Specimen nr: T2132H	**EI 180-V-X-B-W 00 a 50**
Fire Resistance Classification Specimen nr: T2132I	**EI 120-V-X-B-W 00 a 50**
Fire Resistance Classification Specimen nr: T2132J	**EI 120-V-X-B-W 00 a 50**

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4.3.- FIELD OF APPLICATION

In compliance with the provisions of the chapter 13 of the Standard EN 1366-4:2006 + A1:2010, the elements designated commercially according to the references indicated in the table 1 have the following field of application.

The classification obtained is still valid for the following variations in the characteristics of the specimen without the need for further testing due to such modifications.

Characteristic	Permitted variation	Reference value (1)
– Orientation	Result valid for linear vertical joint located on vertical supporting construction.	*Linear vertical joint located on vertical supporting construction.*
– Fire exposure	Result valid for: • Position equal to the tested one • Joints with greater depth: • Seal flush with the supporting construction on both sides of the specimen.	*Seals of joints flush on both sides of the supporting construction, with the polyurethane foam 1K-Adapterschaum HFKW-Frei-EI, on the side Unexposed to fire and mineral wool with different thicknesses and densities (See the Test Report 2132T10)*
– Movement capacity	Without movement capacity	*Mechanical movement is not applied to the specimen*
– Supporting construction	Result valid for concrete or factory partition walls with thickness and/or density higher than the tested one.	***Specimens T2053A to T2053K:*** *Material: Lightweight concrete* *Thickness: 100 mm;* *Density: 650±200 kg/m³* ***Specimens T2054A to T2054K:*** *Material: Lightweight concrete* *Thickness: 200 mm;* *Density: 650±200 kg/m³* ***Specimens T2132A to T2132J:*** *Material: Lightweight concrete* *Thickness: 200 mm;* *Density: 650±200 kg/m³*

(1) Reference values of the specimen tested from which the indicated variations can be obtained. The reference values which are not included in this chapter are included in the Technical Report of the Test Report on which this classification is based.

5.- LIMITATIONS

This report does not represent type approval or certification of the element.

Toledo, 09th June of 2011

Signed: Agustín Garzón Cabrerizo
Technical Director of
Fire Resistance Laboratory
Technical Director of LICOF

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AFITI LICOF Centre for Fire Testing and Research

Association for the Promotion of Research and Fire Safety Technology

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MINISTRY OF INDUSTRY, TOURISM AND TRADE

Tomás de la Rosa Sánchez, General Manager of AFITI declares:

- That AFITI (Association for the Promotion of Research and Fire Safety Technology), is a non profit-making association and was declared Association of Public Utility by the Spanish Cabinet on 27th January 1995.

- That the ownership of LICOF (Centre for Fire Testing and Research) is of Ministry of Industry, Tourism and Trade, by R.D. 1614/85 and O.M. on 21st may 1991, corresponding, by agreement, the management to AFITI.

- That LICOF is the Fire Testing and Research Center corresponding to the Technical Unit of Test accredited by the National Accreditation Body (ENAC), to act under files Nr. 41/LE104 and Nr. 41/LE204.

Signed: Tomás de la Rosa Sánchez
General Manager

Recognition / Accreditation: MINISTRY OF INDUSTRY, TOURISM AND TRADE, MINISTRY OF PUBLIC WORKS, ENAC, IMO & VKF-AEAI.

Notify Body: NOTIFY BODY TO THE EUROPEAN COMMISSION WITH NR. 1168.

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