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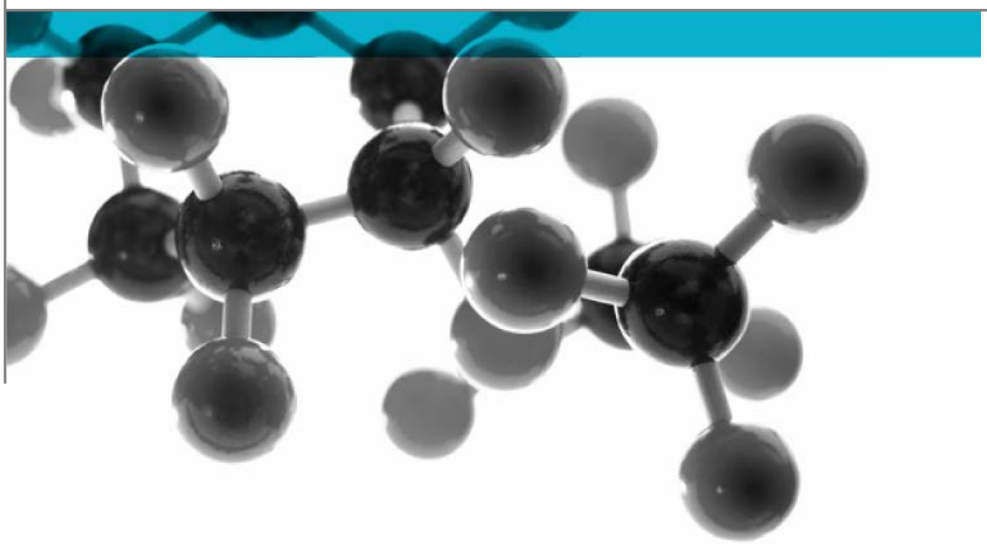
Review of Fire Test Report



A Report To: L'Isolante K-Flex S.p.A.

Document Reference: 358577

Date: 17th November 2015

Issue No.: 1

Testing
Advising
Assuring

Registered Office: Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian EH28 8PL United Kingdom. Reg No.SC 70429
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UKAS TESTING
0249

Executive Summary

Objective

To review and extend the validity period of Exova Warringtonfire Test Report No: 197751 which details the surface spread of flame classification of the following product when tested in accordance with BS 476: Part 7: 1997.

Generic Description	Product reference	Thickness	Weight per unit area or density
Open cell foam adhered to a steel substrate	"K-Fonik 160"	26mm	13.88kg/m^{2*}
Individual components used to manufacture composite:			
Foam	"K-Fonik 160"	25mm	180±20kg/m^3
Adhesive	"K-420"	Not applicable	0.85kg/l
Steel	Unwilling to provide	1mm	8-10kg/m^2
*** Determined by Exova Warringtonfire**			
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor

L'Isolante K-Flex S.p.A., Via Leonardo da Vinci 36, 20877 Roncello (MB) Italy.

Conclusion

With respect to test report WF No. 197751, its contents shall remain valid until 5th October 2020.

This review should be read in conjunction with test report WF No. 197751.

Date of Test

6th October 2010

Signatories

Responsible Officer C. Meachin * Technical Officer	Authorised S. Deeming * Business Unit Head

* For and on behalf of **Exova Warringtonfire**.

Report Issued: 17th November 2015

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Test Details

Introduction

Test report WF No. 197751 relates to a test performed in accordance with the procedures defined in BS 476: Part 7: 1997, "Fire tests on building materials and structures, method for classification of the surface spread of flame of products".

General description		Open cell foam adhered to a steel substrate
Name of manufacturer		L'Isolante K-Flex Srl
Trade name / product reference		"K-Fonik 160"
Overall weight per unit area of composite		13.88kg/m^2 (determined by **Exova Warringtonfire**)
Overall thickness of composite		26mm (stated by sponsor) 22mm (determined by **Exova Warringtonfire**)
Foam	General description	Open cell foam
	Generic type	Nitrile butadiene rubber (NBR) / Polyvinyl chloride (PVC) elastomeric foam
	Trade name / product reference	"K-Fonik 160"
	Name of manufacturer	L'Isolante K-Flex Srl
	Thickness	25mm
	Colour	"Black"
	Density	180±20kg/m^3
	Flame retardant details	**See Note 1 below**
Adhesive	General description	K-Flex contact glue
	Generic type	Neoprene glue
	Trade name / product reference	"K-420"
	Name of manufacturer	L'Isolante K-Flex Srl
	Colour	"Yellow/brown"
	Density	0.85kg/l
	Flame retardant details	**See Note 2 below**
Substrate	Generic type	Steel
	Trade name / product reference	**See Note 1 below**
	Name of manufacturer	B.F.
	Thickness	1mm
	Colour	"Grey"
	Weight per unit area	8-10kg/m^2
	Flame retardant details	The substrate is inherently flame retardant
Brief description of manufacturing process of foam insulation		**See Note 1 below**

Note 1: The sponsor of the test was unwilling to provide this information.

Note 2: The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of this component.

Test Results

Test report WF No. 197751 contains the following results:

IN ACCORDANCE WITH THE CLASS DEFINITIONS GIVEN IN BS 476: PART 7: 1997; THE SPECIMENS TESTED ARE CLASSIFIED AS CLASS 1.

Confirmation of Specification

Subsequent to the issue of the original test report, a representative of the sponsor of the test has stated that the sponsor has changed the name of the company. The correct name of the company is now L'Isolante K-Flex S.p.A. The new company name is referred to in this review report.

It has been confirmed in writing by L'Isolante K-Flex S.p.A. that there have been no changes to the product description contained within test report WF No. 197751 and that the product which is currently being manufactured is identical in every respect to the specimens which were tested.

It has also been confirmed in writing that no further fire testing of the previously fire tested specification has been performed since the issue of the test report, and no other individual or organisation has been asked to provide a technical review of the reports.

Conclusions

The procedures adopted for the original test (BS 476: Part 7: 1997) have been re-examined and are identical in all respects to those currently in use (BS 476: Part 7: 1997), therefore, with respect to test report WF No. 197751; its contents shall remain valid until 5th October 2020.

This review should be read in conjunction with test report WF No. 197751.

Validity

This review is based on information used in the original test report. No other information or data has been submitted by L'Isolante K-Flex S.p.A., which could affect this review.

Revision History

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Revised By:	Approved By:
Reason for Revision:	

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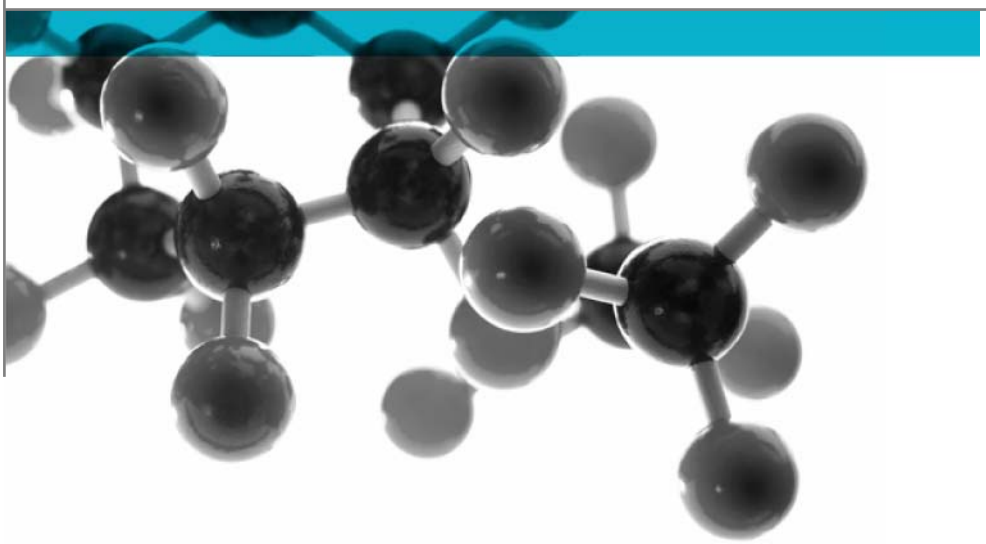
BS 476: Part 7: 1997



Method For Classification Of The Surface Spread Of Flame Of Products

A Report To: L'Isolante K-Flex SRL

Document Reference: 197751

Date: 19th October 2010

Issue No.: 1

Testing
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UKAS TESTING
0249

Executive Summary

Objective To determine the surface spread of flame classification of the following product when tested in accordance with BS 476: Part 7: 1997.

Generic Description	Product reference	Thickness	Weight per unit area or density
Open cell foam adhered to a steel substrate	"K-Fonik 160"	26mm	13.88kg/m^{2*}
Individual components used to manufacture composite:			
Foam	"K-Fonik 160"	25mm	180±20kg/m^3
Adhesive	"K-420"	Not applicable	0.85kg/l
Steel	Unwilling to provide	1mm	8-10kg/m^2
*** Determined by Exova Warringtonfire**			
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor L'Isolante K-Flex Srl, Via Leonardo da Vinci 36, 20040 Roncello (MI), Italy

Test Results: **Class 1**

Date of Test 6th October 2010

Signatories

Responsible Officer
T. Benyon *
Technical Officer

Approved
D. J. Owen *
Senior Technical Officer

Authorised
C. Dean *
Operations Manager

* For and on behalf of **Exova Warringtonfire**.

Report Issued: 19th October 2010

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Test Details

Purpose of test	To determine the performance of a product when it is subjected to the conditions of the test specified in BS 476: Part 7: 1997, "Fire tests on building materials and structures, method for classification of the surface spread of flame of products". This test was therefore performed in accordance with the procedure specified in BS 476: Part 7: 1997, and this report should be read in conjunction with that British Standard.
Scope of test	BS 476: Part 7: 1997 specifies a method of test for measuring the lateral spread of flame along the surface of a specimen of a product orientated in the vertical position, and a classification system based on the rate and extent of flame spread. It provides data suitable for comparing the performances of essentially flat materials, composites, or assemblies, which are used primarily as the exposed surfaces of walls or ceilings.
Fire test study group/EGOLF	Certain aspects of some fire test specifications are open to different interpretations. The Fire Test Study Group and EGOLF have identified a number of such areas and have agreed Resolutions which define common agreement of interpretations between fire test laboratories which are members of the Groups. Where such Resolutions are applicable to this test they have been followed.
Instruction to test	The test was conducted on the 6th October 2010 at the request of L'Isolante K-Flex Srl, the sponsor of the test.
Provision of test specimens	The specimens were supplied by the sponsor of the test. **Exova Warringtonfire** was not involved in any selection or sampling procedure.
Conditioning of specimens	The specimens were received on the 30th September 2010 and were conditioned to constant mass at a temperature of 23 ± 2°C and a relative humidity of 50 ± 5% prior to testing.
Form in which the specimens were tested	Assembly - Fabrication of materials and/or composites that can contain air gaps. Each specimen was placed over 25mm thick by 20mm wide calcium silicate based spacers positioned around its perimeter and mounted onto a backing board so that a 25mm enclosed air gap was provided between the unexposed face of the specimen and the backing board.
Exposed face	The foam face of the specimens was exposed to the heating conditions of the test.

Description of Test Specimens

The description of the specimens given below has been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

General description		Open cell foam adhered to a steel substrate
Name of manufacturer		L'Isolante K-Flex Srl
Trade name / product reference		"K-Fonik 160"
Overall weight per unit area of composite		13.88kg/m^2 (determined by **Exova Warringtonfire**)
Overall thickness of composite		26mm (stated by sponsor) 22mm (determined by **Exova Warringtonfire**)
Foam	General description	Open cell foam
	Generic type	Nitrile butadiene rubber (NBR) / Polyvinyl chloride (PVC) elastomeric foam
	Trade name / product reference	"K-Fonik 160"
	Name of manufacturer	L'Isolante K-Flex Srl
	Thickness	25mm
	Colour	"Black"
	Density	180±20kg/m^3
	Flame retardant details	**See Note 1 below**
Adhesive	General description	K-Flex contact glue
	Generic type	Neoprene glue
	Trade name / product reference	"K-420"
	Name of manufacturer	L'Isolante K-Flex Srl
	Colour	"Yellow/brown"
	Density	0.85kg/l
	Flame retardant details	**See Note 2 below**
Substrate	Generic type	Steel
	Trade name / product reference	**See Note 1 below**
	Name of manufacturer	B.F.
	Thickness	1mm
	Colour	"Grey"
	Weight per unit area	8-10kg/m^2
	Flame retardant details	The substrate is inherently flame retardant
Brief description of manufacturing process of foam insulation		**See Note 1 below**

Note 1: The sponsor of the test was unwilling to provide this information.

Note 2: The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of this component.

Test Results

Results and observations

The test results for the individual specimens, together with observations made during the test and comments on any difficulties encountered during the test are given in Appendix 1.

Classification

In accordance with the class definitions given in BS 476: Part 7: 1997, the specimens tested are classified as Class 1.

Criteria for classification

If the prefix 'D' or suffix 'R' or 'Y' is included in the classification, this indicates that the results should be treated with caution. An explanation of the reason for the prefix and suffixes is given in Appendix 2, together with the classification limits specified in the Standard.

Applicability of test result

The test results relate only to the behaviour of the test specimens of the product under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

The test results relate only to the specimens of the product in the form in which they were tested. Small differences in the composition or thickness of the product may significantly affect the performance during the test and may therefore invalidate the test results. Care should be taken to ensure that any product which is supplied or used is fully represented by the specimens which were tested.

Validity

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over five years old should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

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Appendix 1 – Test Results

SPECIMEN No.	1	2	3	4	5	6
Maximum distance travelled at 1.5 minutes (mm)	<50	<50	<50	<50	<50	<50
Distance (mm)	Time to travel to indicated distance (minutes : seconds)					
75						
165						
190						
215						
240						
265						
290						
375						
455						
500						
525						
600						
675						
710						
750						
785						
825						
Time to reach maximum distance travelled	1:00	1:00	1:00	1:00	1:00	1:00
Maximum distance travelled in 10 minutes (mm)	<50	<50	<50	<50	<50	<50

Note: Six specimens are usually tested. If the test on any specimen is deemed to be invalid, as defined in the Standard, it is permissible for up to a maximum of nine specimens to be tested in order to obtain the six valid test results.

Observations made during test and comments on any difficulties encountered during the test:

In the case of each specimen tested, transitory flaming occurred from the start of the test until the third minute of the test, up to a maximum distance of 350mm.

Appendix 2 – Classification criteria

Classification of spread of flame

Classification	Spread of Flame at 1.5 min		Final Spread of Flame	
	Limit (mm)	Limit for one specimen (mm)	Limit (mm)	Limit for one specimen (mm)
Class 1	*165*	165 + 25	165	165 + 25
Class 2	215	215 + 25	455	455 + 45
Class 3	265	265 + 25	710	710 + 75
Class 4	Exceeding the limits for class 3			

Explanation of prefix and suffixes which may be added to the classification

1. A suffix R is added to the classification if more than six specimens are required in order to obtain six valid test results (e.g. class 2R).

2. A prefix D is added to the classification of any product which does not comply with the surface characteristics specified in the Standard and has therefore been tested in a modified form (e.g. class D3).

3. A suffix Y is added to the classification if any softening and/or other behaviour that may affect the flame spread occurs (e.g. class 3Y).

For example, a classification of D3RY could be achieved indicating (a) a modified surface has been used; (b) a class 3 result has been obtained; (c) additional specimens have been used to obtain 6 valid results and; (d) softening and/or other behaviour has occurred which is considered to have affected the test result.

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