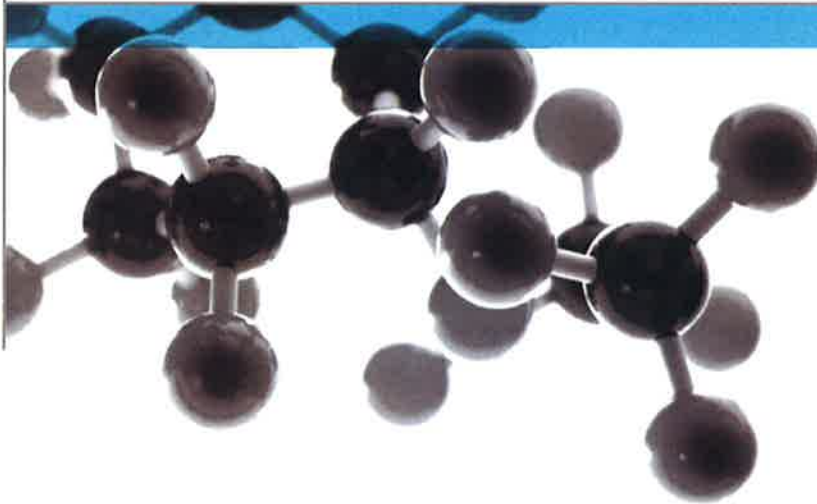


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BS 476: Part 6: 1989+A1:2009



Method Of Test For Fire Propagation For Products

A Report To: MACtac UK Limited

Document Reference: 376380

Date: 29th November 2016

Issue No.: 1

Page 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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0249

Executive Summary

Objective To determine the performance of the following product when tested in accordance with BS 476: Part 6: 1989+A1: 2009.

Generic Description	Product reference	Thickness or application rate	Weight per unit area or density
Self-adhesive film applied to an aluminium substrate	"WW100 Pro"	2.07mm *	5.36kg/m ² *
Individual components used to manufacture composite:			
Self-adhesive film	"WW100 Pro"	255 microns	265g/m ²
• Film	Unwilling to provide	60 microns	Unable to provide
• Adhesive	Unwilling to provide	Unwilling to provide	Not applicable
Aluminium substrate	Unable to provide	1.92mm *	2.77g/cm ³ *
* determined by Exova Warringtonfire			
Please see page 5 of this test report for the full description of the product tested			


Test Sponsor MACtac UK Limited, 37 Tenter Road, Moulton Park, Northampton. NN3 6AX

Test Results:


Fire propagation index, I	=	0.0
Sub index, i₁	=	0.0
Sub index, i₂	=	0.0
Sub index, i₃	=	0.0

Date of Test 22nd & 23rd November 2016

Signatories



Responsible Officer
C. Meachin *
Technical Officer



Authorised
T. Mort *
Senior Technical Officer

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

Report Issued: 29th November 2016

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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 6: 1989+A1: 2009, "Fire tests on building materials and structures, method for fire propagation for products".
	The test was performed in accordance with the procedure specified in BS 476: Part 6: 1989+A1: 2009, and this report should be read in conjunction with that British Standard.
Scope of test	BS 476: Part 6: 1989+A1: 2009 specifies a method of test, the result being expressed as a fire propagation index, that provides a comparative measure of the contribution to the growth of fire made by an essentially flat material, composite or assembly. It is primarily intended for the assessment of the performance of internal wall and ceiling linings.
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 22 nd & 23 rd November 2016 at the request of MACTac UK Limited, 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 for testing to BS 476: Part 6: 1989+A1: 2009 together with the specimens for testing to BS 476: Part 7: 1997 were received on the 17 th November 2016.
	Prior to the tests, all of the specimens were conditioned to constant mass at a temperature of $23 \pm 2^{\circ}\text{C}$ and a relative humidity of $50 \pm 5\%$. One specimen from the total sample submitted for test was selected for constant mass verification.
Form in which the specimens were tested	Composite - Combination of materials which are generally recognised in building constructions as discrete entities e.g. coated or laminated materials.
Exposed face	The film 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		Self-adhesive film applied to an aluminium substrate	
Thickness of overall composite		2.07mm (determined by Exova Warringtonfire)	
Weight per unit area of overall composite		5.36kg/m ² (determined by Exova Warringtonfire)	
Self-adhesive film	Product reference	"WW100 Pro"	
	Name of manufacturer	MACTac Europe S.A.	
	Thickness	255 microns	
	Weight per unit area	265 g/m ²	
	Film	Generic type	Gloss polyvinyl chloride (PVC)film
		Product reference	See Note 1 below
		Name of manufacturer	See Note 1 below
		Thickness	60 microns
		Weight per unit area	See Note 2 below
		Colour reference	"White"
		Flame retardant details	See Note 2 below
	Adhesive	Generic type	Opacified permanent acrylic adhesive
		Product reference	See Note 1 below
		Name of manufacturer	See Note 1 below
		Colour reference	"Grey"
		Application rate	See Note 1 below
		Application method	See Note 1 below
		Flame retardant details	See Note 3 below
	Curing process	See Note 1 below	
	Substrate	Generic type	Aluminium
Product reference		See Note 2 below	
Name of manufacturer		See Note 2 below	
Thickness		1.92mm (determined by Exova Warringtonfire)	
Density		2.77g/cm ³ (determined by Exova Warringtonfire)	
Colour reference		"Silver" (observed by Exova Warringtonfire)	
Flame retardant details		This component is inherently flame retardant	
Brief description of manufacturing process		See Note 1 below	

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

Note 2: The sponsor was unable to provide this information.

Note 3: The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of the component.

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Test Results

Results

A total of three specimens were tested. The laboratory record sheet relating to each of the test specimens is appended to this report (refer to Tables 1, 2 and 3).

Throughout the test on each specimen careful observation was made of the product's behaviour within the apparatus and special note was taken of any of the phenomena listed in clause 9.2 of the Standard. None of the listed phenomena was observed and the test results on all three specimens tested were valid.

The following test results were obtained for the product.

Fire propagation index, I	=	0.0
Sub index, i_1	=	0.0
Sub index, i_2	=	0.0
Sub index, i_3	=	0.0

NOTE: If a suffix 'R' is included in the above fire propagation index, I, then this indicates that the results should be treated with caution.

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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Table 1

Laboratory Record Sheet**FIRE PROPAGATION TEST - BS476:PART 6:1989+A1:2009**

Specimen No. : 1

Date : 22-Nov-16

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts- Tc/10t	Sub Index Of Performance
0.50	13	13	0.00	
1.00	19	20	0.00	
1.50	24	26	0.00	
2.00	27	30	0.00	
2.50	31	34	0.00	
3.00	35	38	0.00	0.00
4.00	68	72	0.00	
5.00	106	109	0.00	
6.00	138	142	0.00	
7.00	159	165	0.00	
8.00	174	184	0.00	
9.00	187	194	0.00	
10.00	196	202	0.00	0.00
12.00	212	221	0.00	
14.00	222	234	0.00	
16.00	228	244	0.00	
18.00	234	251	0.00	
20.00	238	258	0.00	0.00
Total Index of Performance S			=	0.00

SubIndex s1 0.00

SubIndex s2 0.00

SubIndex s3 0.00

Index of Performance S 0.00

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Table 2

Laboratory Record Sheet**FIRE PROPAGATION TEST - BS476:PART 6:1989+A1:2009**

Specimen No. : 2

Date : 22-Nov-16

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts- Tc/10t	Sub Index Of Performance
0.50	13	13	0.00	
1.00	19	20	0.00	
1.50	24	26	0.00	
2.00	28	30	0.00	
2.50	32	34	0.00	
3.00	35	38	0.00	0.00
4.00	68	72	0.00	
5.00	104	109	0.00	
6.00	144	142	0.03	
7.00	162	165	0.00	
8.00	178	184	0.00	
9.00	188	194	0.00	
10.00	197	202	0.00	0.03
12.00	214	221	0.00	
14.00	224	234	0.00	
16.00	234	244	0.00	
18.00	238	251	0.00	
20.00	245	258	0.00	0.00
Total Index of Performance S			=	0.03

SubIndex s1 0.00

SubIndex s2 0.03

SubIndex s3 0.00

Index of Performance S 0.03

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Table 3

Laboratory Record Sheet**FIRE PROPAGATION TEST - BS476:PART 6:1989+A1:2009**

Specimen No. : 3

Date : 23-Nov-16

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts- Tc/10t	Sub Index Of Performance
0.50	12	13	0.00	
1.00	19	20	0.00	
1.50	23	26	0.00	
2.00	27	30	0.00	
2.50	31	34	0.00	
3.00	35	38	0.00	0.00
4.00	68	72	0.00	
5.00	104	109	0.00	
6.00	140	142	0.00	
7.00	162	165	0.00	
8.00	178	184	0.00	
9.00	190	194	0.00	
10.00	198	202	0.00	0.00
12.00	215	221	0.00	
14.00	225	234	0.00	
16.00	230	244	0.00	
18.00	235	251	0.00	
20.00	240	258	0.00	0.00
Total Index of Performance S			=	0.00

SubIndex s1 0.00

SubIndex s2 0.00

SubIndex s3 0.00

Index of Performance S 0.00

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Revision History

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