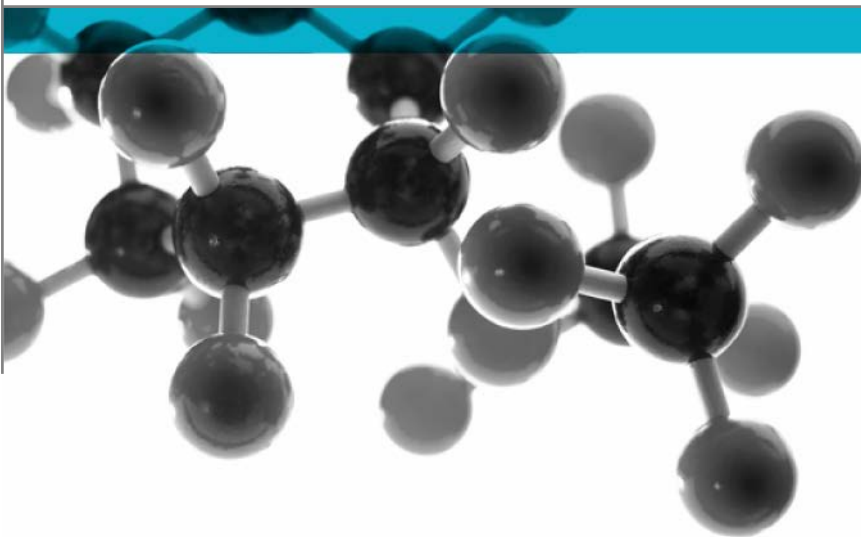


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BS 476: Part 7: 1997



Method For Classification Of The Surface Spread Of Flame Of Products

A Report To: MACtac UK Limited

Document Reference: 376377

Date: 29th November 2016

Issue No.: 1

Page 1

Testing
Advising
Assuring



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 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: **Class 1**

Date of Test 21st & 22nd November 2016

Signatories



Responsible Officer
C. Meachin *
Technical Officer



Authorised
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* 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 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 21 st & 22 nd 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	<p>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 17th November 2016.</p> <p>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.</p>
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. Each specimen was tested in direct contact with a nominally 12mm thick non-combustible backing board.
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
	Substrate	Curing process	See Note 1 below
		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.

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 2 – Classification Criteria

Classification of spread of flame	Spread of Flame at 1.5 min		Final Spread of Flame		
	Classification	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.

Revision History

Issue No :	Re-issue Date:
Revised By:	Approved By:
Reason for Revision:	

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