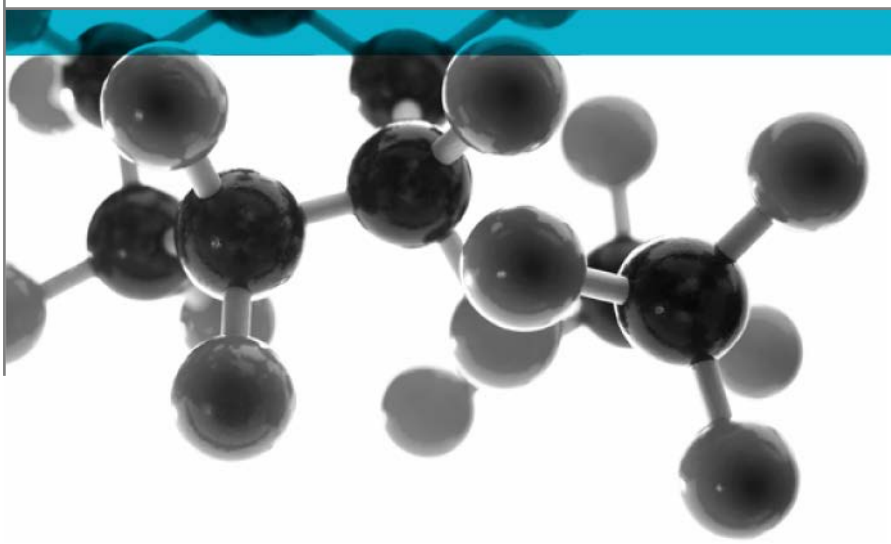
Warringtonfire
Holmesfield Road
Warrington
United Kingdom
T: +44 (0)1925 655116
W: www.warringtonfire.com

BS 476: Part 7: 1997



Method For Classification Of The Surface Spread Of Flame Of Products

A Report To: Pristine Specialist Ceilings Ltd

Document Reference: 429839

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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
Airtight coating for blockwalls	"Elite Airtight"	50.25mm* (thickness tested)	77.34kg/m^2 * (thickness tested)
Individual components used to manufacture composite:			
Water based coating	"Elite Airtight"	Not applicable	1.5m^2/l
Substrate	"Hollow dense concrete block"	50mm	Unable to provide
***determined by Warringtonfire**			
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor Pristine Specialist Ceilings Ltd, Unit 10 Phoenix Workshops, Station Road, Mochdre, Conwy, LL28 5EF

Test Results: **Class 1**

An uncertainty of measurement estimation has been conducted in relation to the distance travelled by the flame front and the findings are as detailed in Appendix 2.

Date of Test 26th June 2020

Signatories

Responsible Officer C. Jacques * Senior Technical Officer	Authorised T. Deluce * Senior Technical Officer

* For and on behalf of Warringtonfire.

Report Issued: 1st July 2020

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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 26th June 2020 at the request of Pristine Specialist Ceilings Ltd, the sponsor of the test.

Provision of test specimens

The specimens were supplied by the sponsor of the test. Warringtonfire was not involved in any selection or sampling procedure. The results stated in this report apply to the samples as received.

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 15th June 2020.

Prior to the tests, all of the specimens were conditioned to constant mass at a temperature of 23 ± 2°C and a relative humidity of 50 ± 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. Each specimen was tested in direct contact with a nominally 12mm thick non-combustible backing board.

Exposed face

The coated 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. This information has not been independently verified by Warringtonfire**.** All values quoted are nominal, unless tolerances are given.

General description		Airtight coating for blockwalls
Product reference of coating system		"Elite Airtight"
Name of manufacturer		**See Note 1 Below**
Thickness tested		50.25mm (determined by Warringtonfire)
Weight per unit area		77.34kg/m^2 (determined by Warringtonfire)
Coating product	Generic type	Water based coating
	Product reference	"Elite Airtight"
	Name of manufacturer	**See Note 1 Below**
	Number of coats	2
	Application rate	1.5m^2/l
	Specific gravity	
	Application method	Airless spray machine & roller
	Flame retardant details	**See Note 2 Below**
	Curing process	24 hours
Substrate	Generic type	Concrete breeze blocks
	Product reference	"Hollow Dense Concrete Block"
	Name of manufacturer	Build for less – Huwes Grey
	Thickness	50mm
	Density	**See Note 3 Below**
	Flame retardant details	**See Note 2 Below**
Brief description of manufacturing process of coatings		**See Note 3 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 retardants were used in the production of this product.

Note 3: The sponsor of the test was unable to provide this information.

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.

An uncertainty of measurement estimation has been conducted in relation to the distance travelled by the flame front and the findings are as detailed in Appendix 2.

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 3, 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.

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:

None

Appendix 2 – Uncertainty of Measurement

Specimen No.	1	2	3	4	5	6
Maximum distance travelled at 1.5 minutes (mm)	± 0	± 0	± 0	± 0	± 0	± 0
Maximum distance travelled in 10 minutes (mm)	± 0	± 0	± 0	± 0	± 0	± 0

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Appendix 3 – 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.

Revision History

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

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