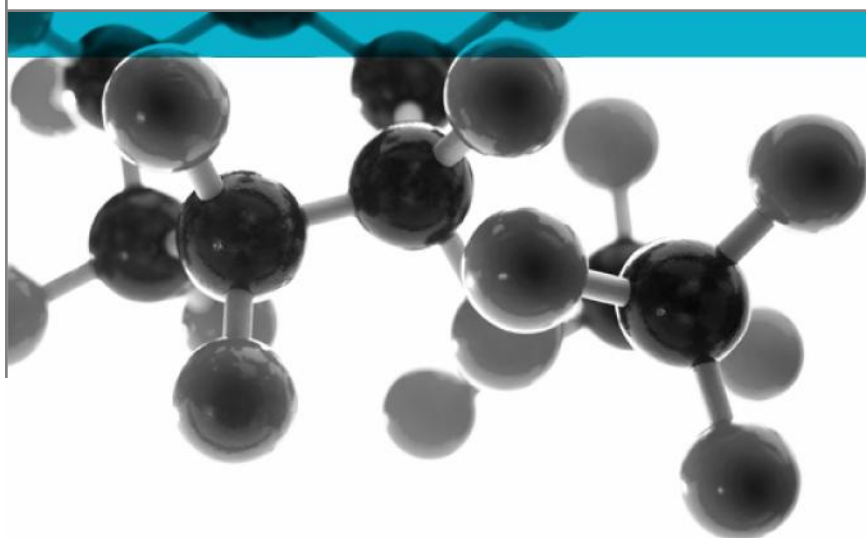


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BS 476: Part 6: 1989+A1:2009



Method Of Test For Fire Propagation For Products

A Report To: Enviroboards Ltd

Document Reference: 340980

Date: 3rd June 2014

Issue No.: 1

Page 1

Testing
Advising
Assuring



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	Weight per unit area or density
Magnesium oxide board reinforced with 2 layers of fibreglass mesh	"Mgo"	9mm	1060kg/m ³
Individual components used to manufacture composite:			
Magnesium oxide	"Mgo"	9mm	1060kg/m ³
Fibreglass reinforcement	"Fibreglass Mesh"	2 x 0.3mm	2 x 80g/m ²
Please see page 5 of this test report for the full description of the product tested			



Test Sponsor Enviroboards Ltd, New Lodge, Conholt, Hampshire Gate, Andover, SP11 9HF.

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 23rd & 27th May 2014

Signatories

	
Responsible Officer C. Meachin * Technical Officer	Authorised S. Deeming * Operations Manager

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

Report Issued: 3rd June 2014

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Test Details

Purpose of test	<p>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".</p> <p>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.</p>
Scope of test	<p>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.</p>
Fire test study group/EGOLF	<p>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.</p>
Instruction to test	<p>The test was conducted on the 23rd & 27th May 2014 at the request of Enviroboards Ltd, the sponsor of the test.</p>
Provision of test specimens	<p>The specimens were supplied by the sponsor of the test. Exova Warringtonfire was not involved in any selection or sampling procedure.</p>
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 16th May 29014.</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	<p>Composite - Combination of materials which are generally recognised in building constructions as discrete entities e.g. coated or laminated materials.</p>
Exposed face	<p>The smooth face of the specimens was exposed to the heating conditions of the test.</p>

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		Magnesium oxide board reinforced with 2 layers of fibreglass mesh
Product reference of composite including substrate		"Mgo"
Name of manufacturer of composite including substrate		Enviroboards
Thickness of composite		9mm (stated by sponsor) 8.9mm (determined by Exova Warringtonfire)
Density of composite		1060kg/m ³ (stated by sponsor) 1151.4kg/m ³ (determined by Exova Warringtonfire)
Magnesium oxide	Generic type	Magnesium oxide
	Product reference	"Mgo"
	Name of manufacturer	Enviroboards
	Colour reference	"White"
	Thickness	9mm
	Density	1060kg/m ³
	Flame retardant details	See Note 1 below
Fibreglass reinforcement	Generic type	Fibreglass mesh
	Product reference	"Fibreglass Mesh"
	Name of manufacturer	Enviroboards
	Colour reference	"White"
	Thickness	0.3mm
	Weight per unit area	80g/m ²
	Number of layers	2
	Type cell dimensions	6mm x 6mm
Flame retardant details	See Note 1 below	
Brief description of manufacturing process		Mixed and naturally cured magnesium oxide

Note 1 - The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of the component.

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 : 23-May-14

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts- Tc/10t	Sub Index Of Performance
0.50	8	15	0.00	
1.00	14	21	0.00	
1.50	19	26	0.00	
2.00	23	31	0.00	
2.50	27	35	0.00	
3.00	30	39	0.00	0.00
4.00	50	69	0.00	
5.00	74	106	0.00	
6.00	98	136	0.00	
7.00	121	159	0.00	
8.00	138	176	0.00	
9.00	152	188	0.00	
10.00	162	198	0.00	0.00
12.00	176	213	0.00	
14.00	187	223	0.00	
16.00	197	231	0.00	
18.00	205	237	0.00	
20.00	212	242	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

Table 2

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

Specimen No. : 2

Date : 23-May-14

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts- Tc/10t	Sub Index Of Performance
0.50	13	15	0.00	
1.00	19	21	0.00	
1.50	24	26	0.00	
2.00	28	31	0.00	
2.50	32	35	0.00	
3.00	36	39	0.00	0.00
4.00	65	69	0.00	
5.00	100	106	0.00	
6.00	124	136	0.00	
7.00	145	159	0.00	
8.00	161	176	0.00	
9.00	177	188	0.00	
10.00	186	198	0.00	0.00
12.00	203	213	0.00	
14.00	216	223	0.00	
16.00	228	231	0.00	
18.00	237	237	0.00	
20.00	244	242	0.01	0.01
Total Index of Performance S			=	0.01

SubIndex s1 0.00

SubIndex s2 0.00

SubIndex s3 0.01

Index of Performance S 0.01

Table 3

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

Specimen No. : 3

Date : 27-May-14

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts- Tc/10t	Sub Index Of Performance
0.50	11	13	0.00	
1.00	15	19	0.00	
1.50	20	23	0.00	
2.00	24	27	0.00	
2.50	27	32	0.00	
3.00	31	36	0.00	0.00
4.00	61	68	0.00	
5.00	92	104	0.00	
6.00	120	133	0.00	
7.00	141	156	0.00	
8.00	158	173	0.00	
9.00	171	186	0.00	
10.00	182	198	0.00	0.00
12.00	201	214	0.00	
14.00	215	226	0.00	
16.00	224	234	0.00	
18.00	230	242	0.00	
20.00	240	247	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

Revision History

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