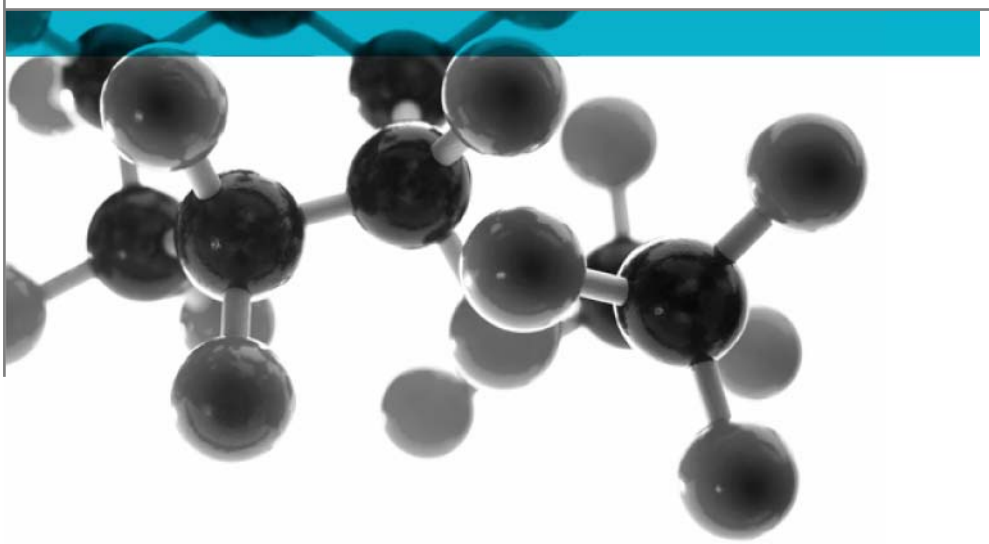
Exova Warringtonfire
Holmesfield Road
Warrington
WA1 2DS
United Kingdom

T : +44 (0 1925 655116
F : +44 (0) 1925 655419
E : warrington@exova.com
W: www.exova.com

BS 476: Part 6: 1989+A1:2009



Method Of Test For
Fire Propagation For Products

A Report To: S Lucas Limited

Document Reference: 326980

Date: 2nd April 2013

Issue No.: 1

Testing
Advising
Assuring

UKAS TESTING
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 / application rate	Weight per unit area or density
Coated cement board	"Muralplast MP Quartz on Versapanel"	8.25mm	11.12kg/m^2*
Individual components used to manufacture composite:			
Coating product (test face)	"Muralplast MP Quartz"	2 x 300g/m^2	Not stated
Substrate	"Versapanel"	8mm	10.4kg/m^2
***Determined by Exova Warringtonfire**			
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor S Lucas Limited, 11 Invicta Business Park, London Road, Wrotham, Kent, TN15 7RJ, United Kingdom

Test Results:

Fire propagation index, I	**=**	**4.7**
Sub index, i_1	**=**	**0.0**
Sub index, i_2	**=**	**1.8**
Sub index, i_3	**=**	**2.9**

Date of Test 19th & 20th March 2013

Signatories

Responsible Officer C. Meachin * Acting Testing Officer	Authorised M. Dale * Deputy Operations Manager

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

Report Issued: 2nd April 2013

CONTENTS PAGE NO.

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 19th & 20th March 2013 at the request of S Lucas 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 4th March 2013.

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.

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. All values quoted are nominal, unless tolerances are given.

General description		Coated cement board substrate
Product reference of composite including substrate		"Muralplast MP Quartz on Versapanel"
Name of manufacturer of composite including substrate		PRA
Thickness of composite including substrate		8.25mm (stated by sponsor) 8.45mm (determined by **Exova Warringtonfire**)
Weight per unit area of composite including substrate		11.12kg/m^2 (determined by **Exova Warringtonfire**)
Coating product (test face)	Generic type	Aqueous polymer emulsion
	Product reference	"Muralplast MP Quartz"
	Name of manufacturer	S Lucas Ltd
	Colour reference	"White"
	Number of coats	2
	Application rate per coat	300g/m²
	Application method	Paint Roller
	Flame retardant details	**See Note 1 below**
	Curing process per coat	Air drying
Substrate	Generic type (e.g. polyurethane)	Cement bonded particle board
	Product reference	"Versapanel"
	Name of manufacturer	Euroform Products Ltd
	Thickness	8mm
	Density / weight per unit area	10.4kg/m²
	Colour reference	"Grey"
	Flame retardant details	**See Note 2 below**
Brief description of manufacturing process		**See Note 2 below**

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

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

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	**=**	**4.7**
Sub index, i_1	**=**	**0.0**
Sub index, i_2	**=**	**1.8**
Sub index, i_3	**=**	**2.9**

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.

Table 1

Laboratory Record Sheet

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

Specimen No. : 1 **Date : 19-Mar-13**

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts-Tc/10t	Sub Index Of Performance
0.50	**12**	**12**	**0.00**	
1.00	**17**	**18**	**0.00**	
1.50	**21**	**22**	**0.00**	
2.00	**26**	**27**	**0.00**	
2.50	**30**	**30**	**0.00**	
3.00	**35**	**35**	**0.00**	**0.00**
4.00	**66**	**67**	**0.00**	
5.00	**107**	**106**	**0.02**	
6.00	**136**	**133**	**0.05**	
7.00	**159**	**155**	**0.06**	
8.00	**183**	**172**	**0.14**	
9.00	**214**	**187**	**0.30**	
10.00	**253**	**197**	**0.56**	**1.12**
12.00	**313**	**209**	**0.87**	
14.00	**337**	**222**	**0.82**	
16.00	**330**	**228**	**0.64**	
18.00	**312**	**235**	**0.43**	
20.00	**309**	**239**	**0.35**	**3.10**
Total Index of Performance S			**=**	**4.23**

SubIndex s1 **0.00**

SubIndex s2 **1.12**

SubIndex s3 **3.10**

Index of Performance S **4.23**

Table 2

Laboratory Record Sheet

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

Specimen No. : 2 **Date : 20-Mar-13**

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts-Tc/10t	Sub Index Of Performance
0.50	12	12	0.00	
1.00	16	18	0.00	
1.50	21	22	0.00	
2.00	25	27	0.00	
2.50	29	30	0.00	
3.00	34	35	0.00	0.00
4.00	64	67	0.00	
5.00	107	106	0.02	
6.00	141	133	0.13	
7.00	165	155	0.14	
8.00	209	172	0.46	
9.00	239	187	0.58	
10.00	275	197	0.78	2.12
12.00	310	209	0.84	
14.00	325	222	0.74	
16.00	316	228	0.55	
18.00	309	235	0.41	
20.00	301	239	0.31	2.85
Total Index of Performance S			**=**	**4.96**

SubIndex s1 **0.00**

SubIndex s2 **2.12**

SubIndex s3 **2.85**

Index of Performance S **4.96**

Table 3

Laboratory Record Sheet

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

Specimen No. : 3 **Date : 20-Mar-13**

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts-Tc/10t	Sub Index Of Performance
0.50	12	12	0.00	
1.00	17	18	0.00	
1.50	21	22	0.00	
2.00	25	27	0.00	
2.50	30	30	0.00	
3.00	34	35	0.00	0.00
4.00	66	67	0.00	
5.00	109	106	0.06	
6.00	142	133	0.15	
7.00	171	155	0.23	
8.00	197	172	0.31	
9.00	235	187	0.53	
10.00	269	197	0.72	2.00
12.00	313	209	0.87	
14.00	327	222	0.75	
16.00	317	228	0.56	
18.00	309	235	0.41	
20.00	301	239	0.31	2.89
Total Index of Performance S			**=**	**4.90**

SubIndex s1 **0.00**

SubIndex s2 **2.00**

SubIndex s3 **2.89**

Index of Performance S **4.90**

Revision History

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

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