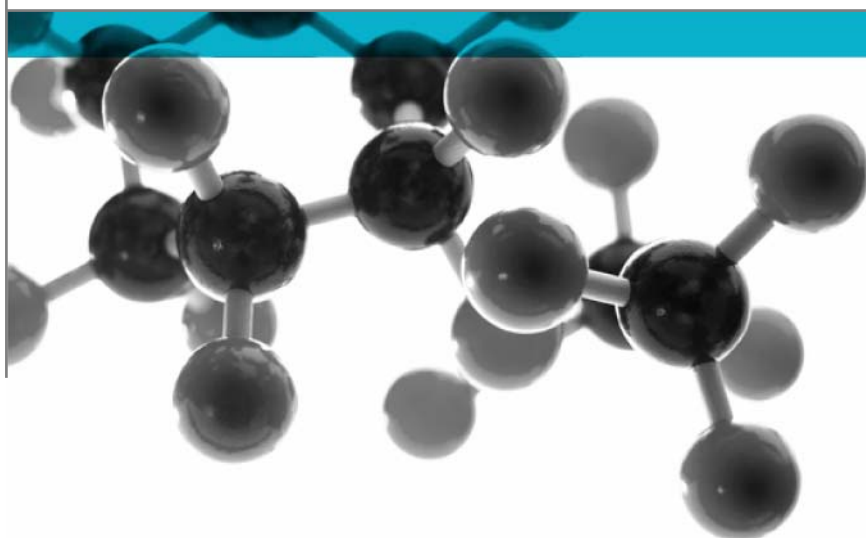


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BS 476: Part 6: 1989+A1:2009



Method Of Test For Fire Propagation For Products

A Report To: Coilcolor Limited

Document Reference: 330870

Date: 13th August 2013

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 / specific gravity
Plastisol coated steel substrate	"PLASTICERAM Sun"	1.05mm*	7.12 kg/m ² *
Individual components used to manufacture composite:			
Final coating product	"CC73-7223"	200µm	1.24
First coating product	"330/0107"	7µm	1.14
Substrate	"G275 HDG s280"	0.7mm	275 g/m ²
*Determined by Exova Warringtonfire			
Please see page 5 of this test report for the full description of the product tested			



Test Sponsor Coilcolor Limited, Whitehead Estate, Docks Way, Newport, NP20 2NW.

Test Results:

Fire propagation index, I	=	3.3
Sub index, i ₁	=	2.1
Sub index, i ₂	=	1.2
Sub index, i ₃	=	0.0

Date of Test 7th & 8th August 2013

Signatories

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

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

Report Issued: 13th August 2013

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CONTENTS	PAGE NO.
EXECUTIVE SUMMARY	2
SIGNATORIES.....	2
TEST DETAILS.....	4
DESCRIPTION OF TEST SPECIMENS.....	5
TEST RESULTS	6
Table 1	7
Table 2.....	8
Table 3.....	8
REVISION HISTORY	10

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 7 th & 8 th August 2013 at the request of a representative of the sponsor of the test.
Provision of test specimens	The specimens were supplied the representative of 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 1 st July 2013.
	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 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		Plastisol coated steel substrate
Name of manufacturer of composite		Coilcolor Ltd
Thickness of composite		1.05mm (determined by Exova Warringtonfire)
Weight per unit area of composite		7.12 kg/m ² (determined by Exova Warringtonfire)
Product reference of overall coating		"PLASTICERAM Sun"
Overall thickness of coating		185 – 210µm
Application rate of coating		760 m ² /kg/µ
Final coating product (test face)	Generic type	Plastisol
	Product reference	"CC73-7223"
	Name of manufacturer	BASF Coatings Ltd
	Colour reference	"Goosewing Grey"
	Number of coats	1
	Application thickness per coat	200µm
	Specific gravity	1.24
	Application method	Roller
	Trade name of flame retardant	"Barium Metaborate"
	Generic type of flame retardant	Barium metaborate
	Amount of flame retardant	1%
Curing process per coat		Conventional gas oven fusion
First coating product	Generic type	Acrylic chrome containing plastisol primer
	Product reference	"330/0107"
	Name of manufacturer	Beckers
	Number of coats	1
	Application thickness per coat	7µm
	Specific gravity	1.14
	Application method	Reverse roller
	Flame retardant details	See Note 1 below
Curing process per coat		Conventional gas oven fusion
Substrate	Generic type	Galvanised steel
	Product reference	"G275 HDG s280"
	Detailed description / composition details	Hot-dipped galvanised, 275 g/m ² on cold rolled steel base. Tensile S280 in coil form
	Name of manufacturer	TATA
	Thickness	0.7mm
	Weight per unit area	275 g/m ²
Flame retardant details		This component is inherently flame retardant
Brief description of manufacturing process		Reverse roller coated in coil form

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	=	3.3
Sub index, i_1	=	2.1
Sub index, i_2	=	1.2
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 : 7-Aug-13

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts- Tc/10t	Sub Index Of Performance
0.50	12	10	0.40	
1.00	19	16	0.30	
1.50	27	21	0.40	
2.00	32	27	0.25	
2.50	37	31	0.24	
3.00	41	36	0.17	1.76
4.00	73	69	0.10	
5.00	131	105	0.52	
6.00	153	132	0.35	
7.00	168	155	0.19	
8.00	182	172	0.13	
9.00	192	187	0.06	
10.00	200	197	0.03	1.37
12.00	213	219	0.00	
14.00	220	230	0.00	
16.00	227	241	0.00	
18.00	233	248	0.00	
20.00	238	252	0.00	0.00
Total Index of Performance S			=	3.12

SubIndex s1 1.76

SubIndex s2 1.37

SubIndex s3 0.00

Index of Performance S 3.12

Table 2

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

Specimen No. : 2

Date : 8-Aug-13

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts- Tc/10t	Sub Index Of Performance
0.50	12	10	0.40	2.18
1.00	21	16	0.50	
1.50	28	21	0.47	
2.00	33	27	0.30	
2.50	38	31	0.28	
3.00	43	36	0.23	
4.00	74	69	0.13	1.04
5.00	128	105	0.46	
6.00	147	132	0.25	
7.00	164	155	0.13	
8.00	178	172	0.08	
9.00	187	187	0.00	
10.00	197	197	0.00	1.04
12.00	215	219	0.00	0.00
14.00	223	230	0.00	
16.00	228	241	0.00	
18.00	236	248	0.00	
20.00	241	252	0.00	
Total Index of Performance S			=	3.22

SubIndex s1 2.18

SubIndex s2 1.04

SubIndex s3 0.00

Index of Performance S 3.22

Table 3

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

Specimen No. : 3

Date : 8-Aug-13

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts- Tc/10t	Sub Index Of Performance
0.50	12	10	0.40	
1.00	21	16	0.50	
1.50	28	21	0.47	
2.00	34	27	0.35	
2.50	39	31	0.32	
3.00	45	36	0.30	2.34
4.00	75	69	0.15	
5.00	130	105	0.50	
6.00	152	132	0.33	
7.00	174	155	0.27	
8.00	180	172	0.10	
9.00	187	187	0.00	
10.00	196	197	0.00	1.35
12.00	212	219	0.00	
14.00	220	230	0.00	
16.00	225	241	0.00	
18.00	234	248	0.00	
20.00	240	252	0.00	0.00
Total Index of Performance S			=	3.69

SubIndex s1 2.34

SubIndex s2 1.35

SubIndex s3 0.00

Index of Performance S 3.69

Revision History

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