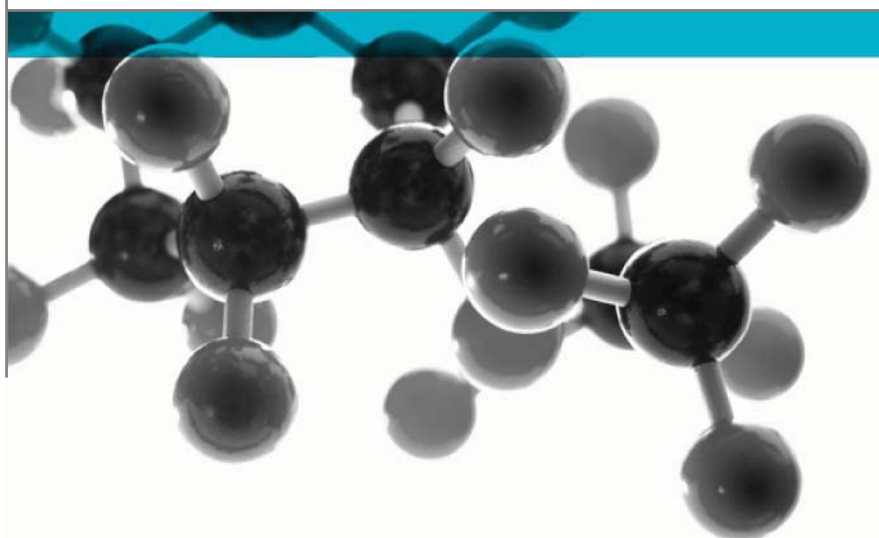


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BS 476: Part 7: 1997



Method For Classification Of The Surface Spread Of Flame Of Products

A Report To: i-plas

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Date: 29th September 2011

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	Weight per unit area or density
Recycled plastic lumber	"Zyplex 55"	50mm	0.94g/cm ³
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor i-plas, Ridings Business Park, Hopwood Lane, Halifax, Yorkshire, HX1 3TT

Test Results: **Class 3**

Date of Test 22nd September 2011

Signatories

	
Responsible Officer T. Benyon * Technical Officer	Authorised D. J. Owen * Senior Technical Officer

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

Report Issued: 29th September 2011

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CONTENTS	PAGE NO.
EXECUTIVE SUMMARY	2
SIGNATORIES.....	2
TEST DETAILS.....	4
DESCRIPTION OF TEST SPECIMENS.....	5
TEST RESULTS	6
APPENDIX 1 – TEST RESULTS	7
APPENDIX 2 – CLASSIFICATION CRITERIA	8
REVISION HISTORY	9

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 22 nd September 2011 at the request of i-plas, 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 were received on the 15 th September 2011 and were conditioned to constant mass at a temperature of $23 \pm 2^{\circ}\text{C}$ and a relative humidity of $50 \pm 5\%$ prior to testing.
Form in which the specimens were tested	Material - Single substance or uniformly dispersed mixture, e.g. metal, stone, timber, concrete, mineral fibre, polymers. Each specimen was tested in direct contact with a nominally 12mm thick non-combustible backing board.
Exposed face	One of two identical faces 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	Recycled plastic lumber
Product reference	"Zyplex 55"
Detailed description	See Note 1 below
Name of manufacturer	i-plas
Density	0.94g/cm ³ (stated by sponsor) 0.87g/cm ³ (determined by Exova Warringtonfire)
Thickness	50mm (stated by sponsor) 50.7mm (determined by Exova Warringtonfire)
Colour	"Black"
Flame retardant details	The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of this product
Brief description of manufacturing process	Intrusion

Note 1: The sponsor of the test has provided this information but at the specific request of the sponsor, these details have been omitted from the report and are instead held on the confidential file relating to this investigation.

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 3.**

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 1 – Test Results

SPECIMEN No.	1	2	3	4	5	6
Maximum distance travelled at 1.5 minutes (mm)	170	180	170	160	165	170
Distance (mm)	Time to travel to indicated distance (minutes : seconds)					
75	0:50	0:48	0:50	0:49	0:51	0:50
165	1:28	1:24	1:27	1:32	1:29	1:27
190	1:41	1:39	1:41	1:42	1:47	1:40
215	1:56	1:55	1:56	1:54	2:01	1:55
240	2:08	2:14	2:14	2:09	2:18	2:10
265	2:30	2:24	2:26	2:33	2:39	2:26
290	2:51	2:47	2:49	2:52	2:57	2:46
375	4:31	4:28	4:12	4:34	4:36	4:28
455	6:42	6:53	6:05	6:35	6:40	6:11
500	8:06	8:09	7:21	7:58	7:59	7:32
525	9:01	9:10	8:05	8:47	9:02	8:32
600						
675						
710						
750						
785						
825						
Time to reach maximum distance travelled	10:00	10:00	10:00	10:00	10:00	10:00
Maximum distance travelled in 10 minutes (mm)	550	550	575	550	550	575

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:

In the case of each specimen tested, flaming debris was produced from 4:35, 4:50, 5:10, 4:45, 5:15 & 5:05 respectively, continuing to burn on the floor for 5 seconds.

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)
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

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Revised By:	Approved By:
Reason for Revision:	

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