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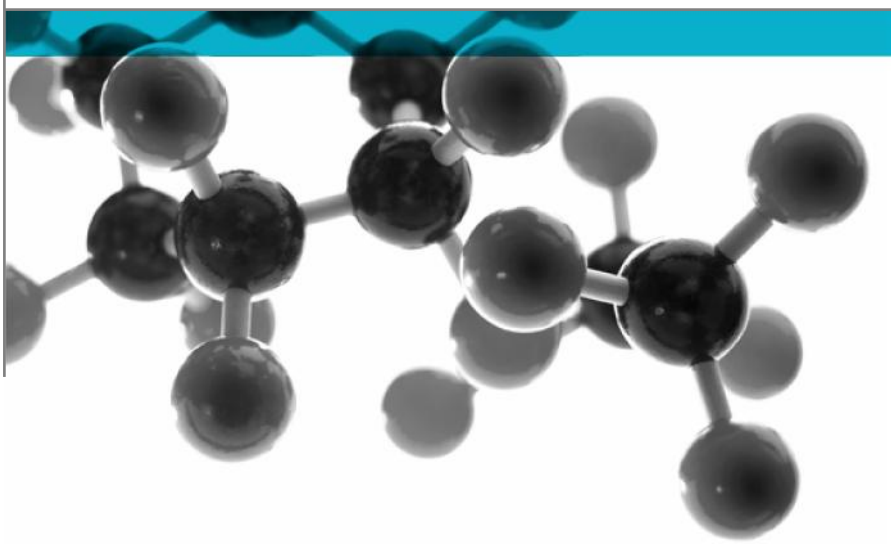
BS 476: Part 6: 1989+A1:2009



Method Of Test For
Fire Propagation For Products

A Report To: Vetus B.V.

Document Reference: Additional test report No. 331468

Date: 10th September 2013

Issue No.: 2

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	Density
Impregnated polyurethane (PU) foam	"Prometech"	25mm	85kg/m^3
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor Vetus B.V., Fokkerstraat 571, 3125 BD Schiedam, The Netherlands.

Test Results:

Fire propagation index, I	**=**	**11.8**
Sub index, i_1	**=**	**5.3**
Sub index, i_2	**=**	**5.3**
Sub index, i_3	**=**	**1.2**

Date of Test 11th & 12th December 2012

Reason for revision This document replaces issue 1 (dated 29th August 2013) of the same number which has been withdrawn. The sponsor's name has been changed and been amended in this issue 2 report.

This test report is additional to that issued as WF No. 324708 and dated the 21st December 2012 and has been issued at the request of the sponsor. The original test report remains valid and is not replaced by this additional test report. The product referred to in the original report and this additional test report has not been re-tested since the original test and neither has a technical review of the original test report resulting in any technical changes been carried out.

The original sponsor has been removed and "Vetus B.V." has been inserted. The sponsor of the test has stated that the material described in this additional report is identical to the material which was tested. Both the original and alternative sponsor's names and addresses have been documented and the documentation is maintained in the confidential file covering this investigation.

Signatories

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

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

Report Issued: 10th September 2013

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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 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 11th & 12th December 2012 at the request of the original sponsor of the test.

Provision of test specimens

The specimens were supplied by the original 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 5th December 2012.

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

Material - Single substance or uniformly dispersed mixture, e.g. metal, stone, timber, concrete, mineral fibre, polymers.

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 original sponsor of the test. All values quoted are nominal, unless tolerances are given.

Generic type	Impregnated polyurethane (PU) foam
Product reference	"Prometech"
Detailed description / composition details	**See Note 1 below**
Name of manufacturer	**See Note 1 below**
Thickness	25mm (stated by original sponsor) 24.85mm (determined by **Exova Warringtonfire**)
Density	85kg/m^3 (stated by original sponsor) 88.98kg/m^3 (determined by **Exova Warringtonfire**)
Colour reference	"Black"
Trade name of flame retardant	**See Note 1 below**
Generic type of flame retardant	Alumina Tri-Hydrate
Amount of flame retardant	**See Note 1 below**
Brief description of manufacturing process	Foam impregnation

Note 1 - The original sponsor was unwilling 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	**=**	**11.8**
Sub index, i_1	**=**	**5.3**
Sub index, i_2	**=**	**5.3**
Sub index, i_3	**=**	**1.2**

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 : 11-Dec-12**

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts- Tc/10t	Sub Index Of Performance
0.50	**21**	**12**	**1.80**	
1.00	**28**	**18**	**1.00**	
1.50	**35**	**23**	**0.80**	
2.00	**41**	**28**	**0.65**	
2.50	**45**	**31**	**0.56**	
3.00	**52**	**35**	**0.57**	**5.38**
4.00	**102**	**70**	**0.80**	
5.00	**152**	**107**	**0.90**	
6.00	**183**	**135**	**0.80**	
7.00	**207**	**156**	**0.73**	
8.00	**225**	**172**	**0.66**	
9.00	**239**	**186**	**0.59**	
10.00	**247**	**198**	**0.49**	**4.97**
12.00	**263**	**213**	**0.42**	
14.00	**264**	**224**	**0.29**	
16.00	**265**	**230**	**0.22**	
18.00	**294**	**237**	**0.32**	
20.00	**280**	**242**	**0.19**	**1.43**
Total Index of Performance S			**=**	**11.77**

SubIndex s1 **5.38**

SubIndex s2 **4.97**

SubIndex s3 **1.43**

Index of Performance S **11.77**

Table 2

Laboratory Record Sheet

FIRE PROPAGATION TEST - BS 476:PART 6:1989+A1:2009

Specimen No. : 2 **Date : 12-Dec-12**

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts-Tc/10t	Sub Index Of Performance
0.50	**20**	**12**	**1.60**	
1.00	**29**	**18**	**1.10**	
1.50	**37**	**23**	**0.93**	
2.00	**43**	**28**	**0.75**	
2.50	**46**	**31**	**0.60**	
3.00	**52**	**35**	**0.57**	**5.55**
4.00	**105**	**70**	**0.88**	
5.00	**152**	**107**	**0.90**	
6.00	**183**	**135**	**0.80**	
7.00	**206**	**156**	**0.71**	
8.00	**222**	**172**	**0.63**	
9.00	**235**	**186**	**0.54**	
10.00	**244**	**198**	**0.46**	**4.92**
12.00	**254**	**213**	**0.34**	
14.00	**258**	**224**	**0.24**	
16.00	**264**	**230**	**0.21**	
18.00	**269**	**237**	**0.18**	
20.00	**279**	**242**	**0.19**	**1.16**
Total Index of Performance S			**=**	**11.63**

SubIndex s1 **5.55**

SubIndex s2 **4.92**

SubIndex s3 **1.16**

Index of Performance S **11.63**

Table 3

Laboratory Record Sheet

FIRE PROPAGATION TEST - BS 476:PART 6:1989+A1:2009

Specimen No. : 3 **Date : 12-Dec-12**

Time mins t	Specimen Temperature Deg C Ts	Calibration Temperature Deg C Tc	Ts-Tc/10t	Sub Index Of Performance
0.50	**20**	**12**	**1.60**	
1.00	**28**	**18**	**1.00**	
1.50	**35**	**23**	**0.80**	
2.00	**40**	**28**	**0.60**	
2.50	**45**	**31**	**0.56**	
3.00	**51**	**35**	**0.53**	**5.09**
4.00	**112**	**70**	**1.05**	
5.00	**163**	**107**	**1.12**	
6.00	**190**	**135**	**0.92**	
7.00	**210**	**156**	**0.77**	
8.00	**234**	**172**	**0.78**	
9.00	**249**	**186**	**0.70**	
10.00	**252**	**198**	**0.54**	**5.87**
12.00	**254**	**213**	**0.34**	
14.00	**256**	**224**	**0.23**	
16.00	**254**	**230**	**0.15**	
18.00	**266**	**237**	**0.16**	
20.00	**270**	**242**	**0.14**	**1.02**
Total Index of Performance S			**=**	**11.99**

SubIndex s1 **5.09**

SubIndex s2 **5.87**

SubIndex s3 **1.02**

Index of Performance S **11.99**

Revision History

Issue No : 2	Re-issue Date: 10th September 2013
Revised By: C. Meachin	Approved By: S. Deeming
Reason for Revision: This document replaces issue 1 (dated 29th August 2013) of the same number which has been withdrawn. The sponsor's name has been changed and been amended in this issue 2 report.	

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