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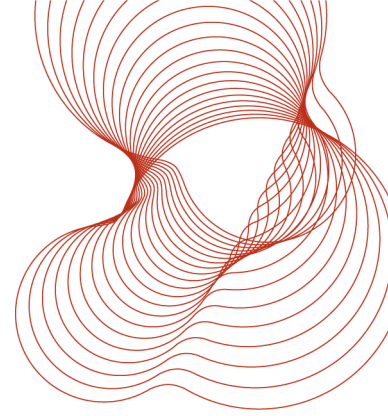
**BS 476: Part 3: 2004 test
on DuoPly FleeceBack
EPDM on a plywood
deck**

Prepared for:
Flex-R Ltd
Unit 5 Central Park
Bellfield Road
High Wycombe
Bucks
HP13 5HG

6th December 2012
Test report number 281558C
revision 1



0578



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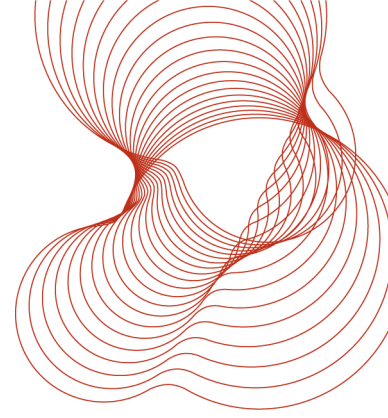
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1 Objective

To classify the sample specified in Section 2 according to its capacity to resist penetration by fire and its spread of flame characteristics, as shown by the external fire exposure roof test and criteria of BS 476: Part 3: 2004¹.

2 Sample

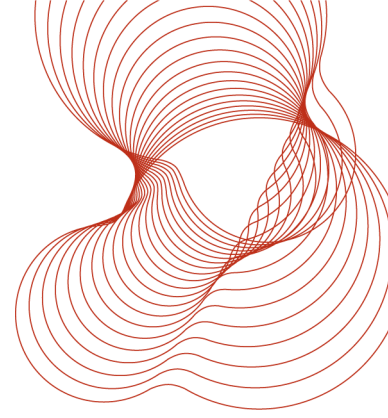
2.1 Traceability

The test samples were supplied by the client. BRE Global were not involved in the sample selection process and therefore cannot comment upon the relationship between samples supplied for test and the product supplied to market.

2.2 Description of sample and test format.

Unless otherwise stated all measurements are nominal.

Test Sponsor	Flex-R Ltd Unit 5 Central Park Bellfield Road High Wycombe Bucks HP13 5HG
Manufacturer of sample	Carlisle SynTec EPDM Membranes
Sample name/reference	DuoPly FleeceBack EPDM on a plywood deck
Sample description (as provided by test sponsor/manufacturer)	Details of the sample provided by the sponsor are given in Annex 1
Description of sample (as received)	Fleece backed, dark grey membrane, total thickness 3mm, membrane 1.15mm thick , adhered to 18.2mm thick plywood
Sample receipt date	6 th August 2012
Test face	Membrane face
Test format	The test was carried out in the flat position
Date of test	3 rd , 5 th and 7 th September 2012



3 Conditioning

The specimens were conditioned as required by the standard.

4 Results

4.1 Preliminary ignition test

Specimen reference	Joint	Flame spread mm	Flame duration min:s	Penetration min:s
E5188-6	None	0	0:00	None

4.2 Spread of flame test

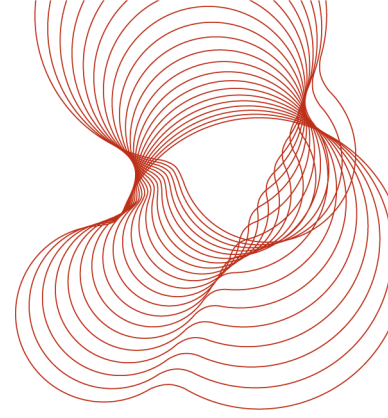
Specimen reference	Joint	Flame spread mm	Flame duration min:s	Observations
E5188-4	None	460	48:06	Membrane creases, flaming along creases
E5188-7	None	580	51:48	Membrane creases, flaming along creases
E5188-5	None	660	62:11	Membrane creases, flaming along creases

The mean flame spread was 567mm

4.3 Penetration test

Specimen reference	Joint	Penetration min:s	Observations
E5188-3	None	None	No ignition
E5188-1	Membrane	None	No ignition
E5188-2	None	None	No ignition

4.4 No dripping of material occurred from the underside of any specimen tested, nor was any mechanical failure, or development of holes, observed.



5 Designation of specimens

- 5.1 The designation of specimens subject to conditions of external fire shall be according to both the time of penetration and the distance of spread of flame along their external surface.
- 5.2 Each category designation shall consist of two letters, e.g. AA, AC, BB, these being determined as follows:

First letters:

- A. Those specimens which have not been penetrated within 1 hour.
- B. Those specimens which are penetrated in not less than ½ hour.
- C. Those specimens which are penetrated in less than ½ hour.
- D. Those specimens which are penetrated in the preliminary flame ignition test.

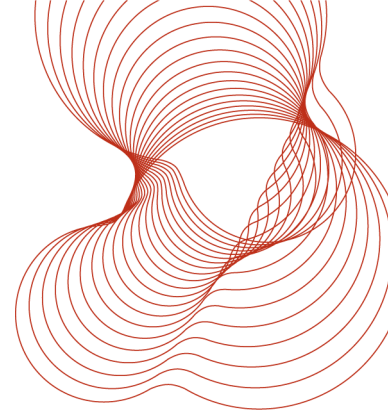
Second letters:

- A. Those specimens on which there is no spread of flame.
- B. Those specimens on which there is not more than 533mm spread of flame.
- C. Those specimens on which there is more than 533mm spread of flame.
- D. Those specimens which continue to burn for 5 minutes after the withdrawal of the test flame or spread more than 381mm across the region of burning in the preliminary test.
- 5.3 Attention shall be drawn to dripping from the underside of the specimen, any mechanical failures, and any development of holes, by adding a suffix 'X' to the designation to denote that one or more of these took place during the test.
- 5.4 When it is required to indicate test results obtained on the sample by designation, the following method shall be used:

The designation letter for penetration shall be given followed by that for spread of flame and preceded by the letters EXT.F. or EXT.S. according to whether the flat or inclined test has been made and when necessary the suffix 'X' shall be added. Thus, for example:

EXT.F.AA; EXT.F.ACX;

EXT.S.BA; EXT.S.CCX.



6 Conclusion

A sample as described in this report, when tested in accordance with BS 476 : Part 3 : 2004¹, achieved the designation of EXT.F.AC.

7 Validity

This report is revision 1 of BRE report 281558C dated 25th September 2012. At the request of the client, a correction to the product description has been made in this report. BRE report 281558C dated 25th September 2012 has been withdrawn with effect from the date of this report.

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 5 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.

8 Reference

- 1 Fire tests on building materials and structures. Part 3. Classification and method of test for external fire exposure to roofs. British Standard 476 : Part 3 : 2004. British Standards Institution, London, 2004.