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# BS 476: Part 3: 2004 test on SureSeal EPDM 1.2mm on a plywood deck

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

5th December 2012

Test report number 281504B revision 1

UKAS TESTING

0578



Protecting People, Property and the Planet

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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: 2004[1].

# 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<br>Unit 5 Central Park<br>Bellfield Road<br>High Wycombe<br>Bucks<br>HP13 5HG |
| Manufacturer of sample | Carlisle SynTec EPDM Membranes |
| Sample name/reference | SureSeal EPDM 1.2mm 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) | Dark grey membrane, 1.08mm thick , adhered to 18.3mm thick plywood |
| Sample receipt date | 6th August 2012 |
| Test face | Membrane face |
| Test format | The test was carried out in the flat position |
| Date of test | 3rd 7th 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 |
|---|---|---|---|---|
| E5186-6 | None | 0 | 0:00 | None |

4.2 Spread of flame test

| Specimen reference | Joint | Flame spread mm | Flame duration min:s |
|---|---|---|---|
| E5186-1 | Membrane | 0 | 8:40 |
| E5186-2 | Membrane | 30 | 6:27 |
| E5186-3 | Membrane | 160 | 30.03 |

The mean flame spread was 63mm

4.3 Penetration test

| Specimen reference | Joint | Penetration min:s | Observations |
|---|---|---|---|
| E5186-7 | Apparent pre-made joint in membrane | None | No ignition, large bulge in membrane |
| E5186-4 | None | None | No ignition, large bulge in membrane |
| E5186-5 | Membrane | None | Ignited at joint, large bulge in membrane |

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 : 2004[1], achieved the designation of EXT.F.AB.

## 7 Validity

This report is revision 1 of BRE report 281504B dated 25th September 2012. At the request of the client, a correction to the product description has been made in this report. BRE report 281504B 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.

## Annex 1

| | | |
|---|---|---|
| General description | | SURESEAL 1.2mm EPDM /PLYWOOD |
| Product reference | | SURESEAL 1.2mm EPDM |
| Specimen configuration | | SURESEAL 1.2mm EPDM/PLY |
| Overall thickness | | 20MM |
| Overall weight per unit area | | 11.5KG |
| Waterproofing membrane (Test Face) | General description of membrane | 1.2MM EPDM |
| | Product reference of membrane | SURESEAL 1.2mm EPDM |
| | Overall weight per unit area | 1.0 KG |
| | Overall thickness of | 1.2MM |
| | Generic type | EPDM |
| | Name of manufacturer | CARLISLE SYNTEC |
| | Colour reference | SLATE GREY |
| | Trade name of flame retardant | OPTION 4 |
| | Generic type of flame retardant | OPTION 4 |
| | Amount of flame retardant | OPTION 4 |
| Bonding details (membrane to plywood) | | |
| Adhesive | Product reference | WBA |
| | Generic type | ACRYLIC ADHESIVE |
| | Name of manufacturer | OPTION 3 |
| | Application rate | 250ML/M2 |
| | Colour reference | WHITE |
| | Trade name of flame retardant | OPTION 4 |
| | Generic type of flame retardant | OPTION 4 |
| | Amount of flame retardant | OPTION 4 |
| Deck | Product reference | PLYWOOD |
| | Generic type | PLYWOOD |
| | Name of manufacturer | OPTION 2 |
| | Thickness | 18MM |
| | Density / weight per unit area | 10.50KG |
| | Colour reference | BROWN |
| | Trade name of flame retardant | OPTION 4 |
| | Generic type of flame retardant | OPTION 4 |
| | Amount of flame retardant | OPTION 4 |

OPTION 1. – The sponsor was unwilling to provide this information.

OPTION 2. – The sponsor was unable to provide this information.

OPTION 3. – 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.

OPTION 4. - The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of the product / component.

==========REPORT ENDS==========