

BRE Global Test Report

BS 476: Part 3: 2004 + A1: 2006 + A2: 2007 External fire exposure to roofs test on PFRDG on an OSB3 board.

Prepared for: Colorplas Limited

Date: 04 November 2021

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1 Objective

To classify the sample described in Section 2 according to its capacity to resist penetration by fire and its spread of flame characteristics, using the external fire exposure to roofs test and criteria specified in BS 476: Part 3: 2004 Incorporating Amendment 1: 2006 and Amendment 2: 2007¹.

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	Colorplas Limited, Crawford Street, Rochdale OL16 5NU, United Kingdom.
Manufacturer of sample	Colorplas Limited
Sample name/reference	PFRDG on an OSB3 board.
Sample description (as provided by test sponsor/manufacturer)	Fire retardant coating based on an OSB3 board. A product description as provided by the test sponsor has been included in this report as Appendix A.
Description of sample (as received)	OSB type board with a grey coating on face. Grey coated face tested. overall thickness 20mm.
Sample receipt date	23 November 2017
Test face	Grey coated face.
Test format	The test was carried out in the flat position
Date of test	09 January 2018

3 Conditioning

The specimens were conditioned as required by the standard.



4 Results

4.1 Preliminary ignition test

Specimen reference	Joint	Ambient	Flame spread mm	Flame duration min:s	Penetration min:s
E10435-7	See Note 1	14.7°C 53.0%RH	Nil	Nil	None

4.2 Spread of flame test

Specimen reference	Joint	Ambient	Flame spread mm	Flame duration min:s
E10435-6	See Note 1	14.7°C 52.9%RH	450	26:39
E10435-5	See Note 1	14.8°C 53.0%RH	420	30:42
E10435-4	See Note 1	14.6°C 52.8%RH	500	24:55

The mean flame spread was 457 mm

4.3 Penetration test

Specimen reference	Joint	Ambient	Penetration min:s	Observations
E10435-3	See Note 1	14.8°C 52.8%RH	Nil	No significant observations
E10435-2	See Note 1	14.6°C 55.5%RH	Nil	No significant observations
E10435-1	OSB layer	14.7°C 54.5%RH	Nil	No significant observations

Note 1 The test sponsor stated that a specimen was supplied in which the laminate had been jointed and then top coated over with the fire-retardant product.

4.4 Observations

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

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.

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

The sample described in section 2 of this report, when tested in accordance with British Standard 476: Part 3: 2004 Incorporating Amendment 1: 2006 and Amendment 2: 2007, achieved the designation of **EXT.F.AB.**

7 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 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.

Because of the nature of reaction to fire testing and the consequent difficulty in quantifying the uncertainty of measurement of reaction to fire, it is not possible to provide a stated degree of accuracy of the results.

This report is additional to that issued as P108044-1000 issue 3 and dated 24 October 2018. The original report remains valid and is not replaced by the Additional Report. The product has not been retested and the Additional Report does not involve technical change or technical review of the original report. The original and new name of the product and the name of the company commercially responsible for the product are documented by the laboratory and maintained in laboratory records.

The manufacturer has made a declaration, which is held on file, that the product placed in the market place, named in section 2.2 of this report and produced at the manufacturing plant listed therein, is exactly the same as the product that was tested on 09 January 2018. This has not been verified by BRE Global.

8 Reference

- 1 British Standard 476-3: 2004 Incorporating Amendment 1: 2006 and Amendment 2: 2007. Fire tests on building materials and structures. Part 3. Classification and method of test for external fire exposure to roofs. British Standards Institution, London, 2007.



Appendix A Test sponsor's product description

Test sponsor (Company name and address): Colorplas Ltd, Mossbridge Road, Rochdale, OL165PQ	
Product name of roof covering tested	Premium Fire Retardant Dark Grey Roofing Topcoat
Product reference/number	PFRDG
General description of roofing product tested and build up	Fire Retardant coating based on OSB3 Board
Manufacturer of the roofing product (Company name and address)	Colorplas Ltd, Mossbridge Road, Rochdale, OL165PQ
Place of manufacture	As above
Test specimens assembled by (if not by roof product manufacturer)	Colorplas Ltd
Thickness (overall depth of roof structure tested)	0.5-0.6 mm (wet film)
Mass per unit area (overall value for the roof structure tested)	11-12 kg g/m ²
Flame retardant treatment added, or organic content limited during production (yes/no), if yes give details	Note 1
Harmonised EN product standard, and AVCP System No. if applicable	N/A
Please describe the roof build up, layer by layer, starting with the upper roof surface. Please add or remove rows as required.	
Test face (Layer 1) - Name/reference - Manufacturer - Type - Thickness - Mass per unit area - Colour - Application method - Joint details (fixing method, overlap, etc) - Fire retardant (trade name, generic type, amount)	PFRDG Colorplas Ltd Unsaturated polyester resin fire retardant topcoat 500-600 microns wet film. 675 – 810g/m ² - 1.350 gcm/3 Dark Grey Roller Note 1



Test sponsor (Company name and address): Colorplas Ltd, Mossbridge Road, Rochdale, OL165PQ	
Product name of roof covering tested	Premium Fire Retardant Dark Grey Roofing Topcoat
Layer 2 - Name/reference - Manufacturer - Type - Thickness - Mass per unit area - Colour - Application method - Joint details (fixing method, overlap, etc) - Fire retardant (trade name, generic type, amount)	Not known Not known Orthophthalic general purpose laminating resin N/A 1.100gcm/3 Tranlucent Hand Lay-up N/A N/A
Layer 3 Reinforcing Material - Name/reference - Manufacturer - Type - Thickness - Mass per unit area - Colour - Application method - Joint details (fixing method, overlap, etc) - Fire retardant (trade name, generic type, amount)	Not known Not known Emulsion bound glass mat ~1mm 450g/m2 Translucent Roller/Consolidator N/A N/A
Layer 4 - Name/reference - Manufacturer - Type - Thickness - Mass per unit area - Colour - Application method - Joint details (fixing method, overlap, etc) - Fire retardant (trade name, generic type, amount)	Note 1
Layer 5 (eg "deck" or "substrate") - Name/reference - Manufacturer - Type - Thickness - Mass per unit area - Colour - Application method - Joint details (fixing method, overlap, etc) - Fire retardant (trade name, generic type, amount)	Sterling OSB3 Not known Engineered wood-based panel 18 mm 9kg/m2 Light wood N/A Tongue & Groove N/A

Note 1: This information was not supplied by the test sponsor