

BRE Global Test Report

BS 476: Part 3: 2004 + A1: 2006 + A2: 2007 External fire exposure to roofs test (flat) on Degaflex, 11 mm OSB3 deck

Prepared for: Degafloor Ltd

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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 tests (flat) 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. The results apply to the sample as received.

2.2 Description of sample and test format.

Unless otherwise stated all measurements are nominal.

| | |
|---|---|
| Test Sponsor | Degafloor Ltd |
| Manufacturer of sample | As above |
| Sample name/reference | Degaflex 001 |
| Place of manufacture | Peterborough |
| Sample description (as provided by test sponsor/manufacturer) | MMA with encapsulated fibreglass mat roof repair with Polyisocyanurate flat roof insulation A product definition as supplied by the test sponsor has been included in this report as Appendix A |
| Description of sample (as received by BRE Global) | <ol style="list-style-type: none"> 1. Light grey liquid applied type coating with granular textured surface 2. Strand mat membrane 3. OSB board, total thickness measured at edge = 20.0 – 21.1mm, fixed with 12 screws into (5) 4. PIR type insulation with foil facing on both faces printed with “Xtratherm” logo. 100mm thick, 735mm x 735mm. 5. Timber battens enclosing (4). Battens are 96 x 45 x 813mm. each fixed with 2 screws at each end. 6. Plain OSB board, 11.1mm thick, fixed with 12 screws into (5) <p>Photographs of the sample are given in Appendix B.</p> |



| | |
|---------------------|---|
| Sample receipt date | 04 February 2021 |
| Test face | Degaflex Seal |
| Test format | The test was carried out in the flat position |
| Date of test | 29 March 2021 |
| Purchase order | None given |
| Test operator | P Potter |

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:sec | Penetration min:sec |
|--------------------|-------|---------------------|-----------------|------------------------|---------------------|
| E13344/1 | None | 18.1 °C 56.0 %RH | 0 | 0 | None |

4.2 Spread of flame test

| Specimen reference | Joint | Ambient | Flame spread mm | Flame duration min:sec |
|--------------------|-------|---------------------|-----------------|------------------------|
| E13344/2 | None | 18.1 °C 54.9 %RH | 360 | 29:05 |
| E13344/3 | None | 18.2 °C 54.4 %RH | 420 | 42:28 |
| E13344/4 | None | 18.7 °C 59.7 %RH | 375 | 52:19 |

The mean flame spread was 385 mm

4.3 Penetration test

| Specimen reference | Joint | Ambient | Penetration min:sec | Observations |
|--------------------|-----------------------------|---------------------|---------------------|-------------------------------|
| E13344/5 | Upper OSB layer, butt joint | 18.9 °C 56.8 %RH | None | Flames out in 35mins 40 secs |
| E13344/6 | None | 19.0 °C 53.3 %RH | None | Flames out in 32mins 22 secs. |
| E13344/7 | None | 19.6 °C 51.9%RH | None | Flames out in 33mins 18 secs. |



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 Classification and field of application

6.1 Reference of classification

This classification (flat) has been carried out in accordance with BS 476: Part 3: 2004 + A1: 2006 + A2: 2007.

6.2 Classification

The roof / roof covering Degaflex, as described in Section 2 above and Appendix A, in relation to its external fire performance is classified:

EXT.F.AB

6.3 Field of application

This classification is valid for the following conditions:

| | |
|----------------------------|---|
| Range of pitches | $0^{\circ} \leq \text{pitch} \leq 10^{\circ}$ |
| Substrate/deck | 11mm OSB3, as tested, no variation allowed. |
| Supporting structure | As tested, no variation allowed. |
| Product configuration | As tested, no variation allowed. |
| Product composition | As tested, no variation allowed. |
| Product application method | As tested, no variation allowed. |
| Product thickness | As tested, no variation allowed. |
| Product colour | As tested, no variation allowed. |
| Joints | As tested, no variation allowed. |

7 Validity

This classification document does not represent type approval or certification of the product.

The information in section 2.2 and Appendix A of this report, other than that indicated otherwise, has been supplied by the test sponsor and has not been independently verified by BRE Global. The validity of the results is conditional on the accuracy of that data.

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.



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 Product description provided by the test sponsor

PRODUCT DEFINITION

| | |
|--|---|
| Test sponsor (Company name and address): Degafloor Ltd , Crusader House, High Street, Maxey, Peterborough, PE6 9HQ | |
| Product name of roof covering tested | Degaflex |
| Product reference/number | 001 |
| General description of roofing product tested and build up | MMA with encapsulated fibreglass mat roof repair with Polyisocyanurate flat roof insulation |
| Manufacturer of the roofing product (Company name and address) | Degafloor Ltd Crusader House, High Street, Maxey, Peterborough, PE6 9HQ |
| Place of manufacture | As above |
| Test specimens assembled by (if not by roof product manufacturer) | Degafloor Ltd |
| Thickness (overall depth of roof structure tested) | 4mm |
| Mass per unit area (overall value for the roof structure tested) | 1.92kg |
| Flame retardant treatment added, or organic content limited during production (yes/no), if yes give details | Note 2 |
| Harmonised EN product standard, and AVCP System No. if applicable | |
| 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) | Degaflex Seal Degafloor Ltd MMA Note 2 Note 2 Light grey Roller applied Resin flows over any overlap Note 2 |



| | |
|--|--|
| Test sponsor (Company name and address): Degafloor Ltd , Crusader House, High Street, Maxey, Peterborough, PE6 9HQ | |
| Product name of roof covering tested | Degaflex |
| 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) | 225GSM Fleece chop strand Bufa Composites Chopped strand fibreglass 1mm 189 grams White, translucent Laid on, and then encapsulated into layer 3 using a metal roller whilst layer 3 is still wet Overlapped by 100mm None |
| Layer 3 - 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) | Degaflex – Body Coat Degafloor MMA Note 2 Note 2 Light Grey Roller applied (metal ridged roller) Resin flows over any overlap Note 2 |
| 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) | OSB3 Chipboard Wickes (generic) OSB3 Oriented Strand Board 18mm 9.13kg Light natural wood Fixed with metal screws, jointed side by side no overlap None |
| 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) | Xtratherm FR/ALU 100mm PIR Insulation Xtratherm Polyisocyanurate flat roof insulation with vapour-tight aluminium foil 100mm 2.77kg Metallic surface, yellow foam interior Cut to size and laid on layer 6 No overlap, sheets laid next to each other with no gap. Loose laid None |



| | |
|--|--|
| Test sponsor (Company name and address): Degafloor Ltd , Crusader House, High Street, Maxey, Peterborough, PE6 9HQ | |
| Product name of roof covering tested | Degaflex |
| Layer 6 - Name/reference (eg "deck" or - Manufacturer "substrate") - Type - Thickness - Mass per unit area - Colour - Application method - Joint details (fixing method, overlap, etc) - Fire retardant (trade name, generic type, amount) | OSB3 Chipboard Wickes (generic) OSB3 Oriented Strand Board 11mm 6.47kg Light natural wood Fixed with metal screws, jointed side by side no overlap None |

Note 1: This information was not provided by the test sponsor.

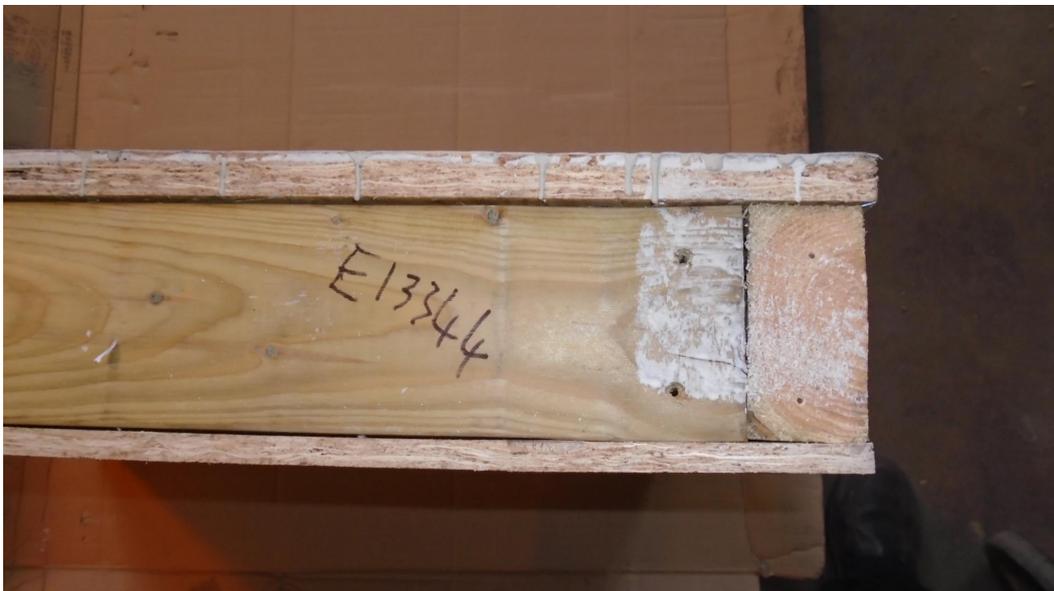
Note 2: At the request of the test sponsor this commercially sensitive information which forms part of the definition of the product tested/classified has been withheld from the report and is held on a confidential client file by BRE Global.



Appendix B Photographs of the test specimens



Picture 1: Test face



Picture 2: Edge



Picture 3: Back