

BRE Global Test Report

BS 476: Part 3: 2004 External fire exposure to roofs test on Flexitec 2020 on 9mm Masterboard calcium silicate base

Prepared for: Res-Tec Ltd
Date: 03 November 2017
Report Number: P108719-1000 Issue 1

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Position Senior Technician

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Name J Hunter

Position Section Leader, Reaction to Fire

Date 03 November 2017

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Table of Contents

1	Objective	3
2	Sample	3
2.1	Traceability	3
2.2	Description of sample and test format.	3
3	Conditioning	4
4	Results	4
4.1	Preliminary ignition test	4
4.2	Spread of flame test	4
4.3	Penetration test	5
4.4	Observations	5
5	Designation of specimens	5
6	Conclusion	6
7	Validity	6
8	Reference	6
	Appendix A	7



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: 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	Res-Tec Ltd Unit 25 Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA
Manufacturer of sample	Res-Tec Ltd
Sample name/reference	Flexitec 2020 on 9mm Masterboard calcium silicate base
Sample description (as provided by test sponsor/manufacturer)	A product description as provided by the test sponsor has been included in this report as appendix A.
Description of sample (as received)	White calcium silicate type board with a light grey textured coating on one face, over all thickness 10.3 to 10.7mm as measured. Thickness of grey layer approximate 1.3 – 1.7mm. Thickness of base approximate 9.0mm.
Sample receipt date	06 June 2017
Test face	Light grey textured coated face.
Test format	The test was carried out in the flat position
Date of test	04 September 2017



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
E10085-1	None	20.4°C 77.8%RH	Nil	Nil	None

4.2 Spread of flame test

Specimen reference	Joint	Ambient	Flame spread mm	Flame duration min:s
E10085-5	None	26.6°C 90.1%RH	0mm (under pilot only)	4:47
E10085-6	None	27.1°C 91.5%RH	0mm (under pilot only)	5:29
E10085-7	None	27.8°C 88.7%RH	0mm (under pilot only)	5:18

The mean flame spread was 0mm



4.3 Penetration test

Specimen reference	Joint	Ambient	Penetration min:s	Observations
E10085-2	None	20.4°C 77.8%RH	Nil	No significant observations
E10085-3	None	27.3°C 88.8%RH	Nil	No significant observations
E10085-4	None	27.5°C 91.6%RH	Nil	No significant observations

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.AA**.

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.

8 Reference

- 1 British Standard 476-3: 2004. 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

The following is a product definition sheet provided by the test sponsor.

PRODUCT DEFINITION

Trade name	Flexitec 2020
Product reference/number	N/A
Manufacturer	Res-Tec Ltd
General description	Liquid Applied Flexible Polyester Roof Waterproofing System
Thickness	1.7mm (nominal)
Density or mass per unit area	2.38kg/m ²
Flame retardant treatment used in production of product	Aluminium Oxide Trihydrate
Test face (layer 1)- - Name/reference - Type - Thickness - Mass per unit area - Colour	Flexitec 2020 (Batch No. FT0410012) Liquid Applied Flexible Polyester 0.5mm 0.71kg/m ² (with catalyst) Light Grey
Layer 2 - Name/reference - Type - Thickness - Mass per unit area - Colour	Flexitec 2020 (Batch No. FT0410012) Liquid Applied Flexible Polyester Resin 0.85mm (without reinforcement) 1.22kg/m ² (with catalyst) Light Grey
Layer 3 (Note: within Layer 2) - Name/reference - Type - Thickness - Mass per unit area - Colour	Fibreglass Chopped Strand Mat Chopped Strand Glass reinforcing Mat Note 1 225g/m ² Note 1
Layer 4 - Name/reference - Type - Thickness - Mass per unit area - Colour	Flexitec Primer (Batch No. UN1303112) Note 1 0.2mm 0.22kg/m ² (with catalyst) White
Layer 5 - Name/reference - Type - Thickness - Mass per unit area - Colour	Masterboard Calcium Silicate 9mm 9kg/m ² Note 1

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

BRE Global Test Report

CEN/TS 1187: 2012 Test 4 External fire exposure to roofs test on Flexitec 2020 on 9mm Masterboard calcium silicate base

Prepared for: Res-Tec Ltd
Date: 30 October 2017
Report Number: P108719-1001 Issue 1

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Authorised by

Name J Hunter

Position Section Leader, Reaction to Fire

Date 03 November 2017

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Table of Contents

1	Objective	3
2	Sample	3
2.1	Traceability	3
2.2	Description of sample and test format.	3
3	Conditioning	4
4	Results	4
4.1	Preliminary ignition test	4
4.2	Penetration test	4
4.3	Observations	4
5	Conclusion	5
6	Validity	5
7	Reference	5
	Appendix A	6



1 Objective

To determine the capacity to resist penetration by fire of the sample described in Section 2 using the external fire exposure to roofs test specified in CEN/TS 1187: 2012 Test 4¹.

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	Res-Tec Limited Unit 25, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA
Manufacturer of sample	Res-Tec Ltd
Sample name/reference	Flexitec 2020 on 9mm Masterboard calcium silicate base
Sample description (as provided by test sponsor/manufacturer)	A product description as provided by test sponsor has been included in this report as Appendix A.
Description of sample (as received)	White calcium silicate type board with a grey textured coating on one face, over all thickness 10.3 to 10.7mm as measured. Thickness of grey layer approximate 1.3 – 1.7mm. Thickness of base approximate 9.0mm.
Sample receipt date	06 June 2017
Test face	Light grey textured coated face.
Test format	The test was carried out in the flat position
Date of test	04 September



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
E10085-1	None	20.4°C 77.8%RH	Nil	Nil	None

4.2 Penetration test

Specimen reference	Joint	Ambient	Penetration min:s	Observations
E10085-2	None	20.4°C 77.8%RH	Nil	No significant observations
E10085-3	None	27.3°C 88.8%RH	Nil	No significant observations
E10085-4	None	27.5°C 91.6%RH	Nil	No significant observations

4.3 Observations

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



5 Conclusion

CEN/TS 1187: 2012 does not contain acceptance criteria and therefore this test report does not indicate a pass or fail of the product.

6 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.

7 Reference

- 1 CEN/TS 1187: 2012. Test methods for external fire exposure to roofs. Test 4 – Two stage method incorporating burning brands, wind and supplementary radiant heat. CEN, Avenue Marnix 17, B-1000, Brussels, Belgium.



Appendix A

A product description table as supplied by the test sponsor:-

PRODUCT DEFINITION

Trade name	Flexitec 2020
Product reference/number	N/A
Manufacturer	Res-Tec Ltd
General description	Liquid Applied Flexible Polyester Roof Waterproofing System
Thickness	1.7mm (nominal)
Density or mass per unit area	2.38kg/m ²
Flame retardant treatment used in production of product	Aluminium Oxide Trihydrate
Test face (layer 1)- - Name/reference - Type - Thickness - Mass per unit area - Colour	Flexitec 2020 (Batch No. FT0410012) Liquid Applied Flexible Polyester 0.5mm 0.71kg/m ² (with catalyst) Light Grey
Layer 2 - Name/reference - Type - Thickness - Mass per unit area - Colour	Flexitec 2020 (Batch No. FT0410012) Liquid Applied Flexible Polyester Resin 0.85mm (without reinforcement) 1.22kg/m ² (with catalyst) Light Grey
Layer 3 (Note: within Layer 2) - Name/reference - Type - Thickness - Mass per unit area - Colour	Fibreglass Chopped Strand Mat Chopped Strand Glass reinforcing Mat Note 1 225g/m ² Note 1
Layer 4 - Name/reference - Type - Thickness - Mass per unit area - Colour	Flexitec Primer (Batch No. UN1303112) Note 1 0.2mm 0.22kg/m ² (with catalyst) White
Layer 5 - Name/reference - Type - Thickness - Mass per unit area - Colour	Masterboard Calcium Silicate 9mm 9kg/m ² Note 1

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

BRE Global Classification Report

Classification report for roofs/roof coverings exposed to external fire in accordance with EN 13501-5: 2005 + A1:2009 on Flexitec 2020 on 9mm Masterboard calcium silicate base

Prepared for: Res-Tec Ltd
Date: 03 November 2017
Report Number: P108719-1002 Issue 1

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Position Section Leader, Reaction to Fire

Date 03 November 2017

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Table of Contents

1	Introduction	4
2	Sample	Error! Bookmark not defined.
2.1	Traceability	4
2.2	Description of sample and test format.	Error! Bookmark not defined.
3	Reports in support of classification	5
4	Test results in support of classification	5
4.1	Test conditions:	5
4.2	Preliminary test (stage 1)	6
4.3	Penetration test (stage 2)	6
5	Classification and field of application	7
5.1	Reference of classification	7
5.2	Classification	7
5.3	Field of application	7
6	Limitations	7
7	Reference	8



BRE Global

EXTERNAL EXPOSURE TO FIRE CLASSIFICATION REPORT OF Flexitec 2020 on 9mm Masterboard calcium silicate base.

Classification report No.:	P108719-1002
Issue number:	1
Sponsor:	Res-Tec Ltd, Unit 25, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA
Product name:	Flexitec 2020 on 9mm Masterboard calcium silicate base
Prepared by:	BRE Global Ltd., Bucknalls Lane, Garston, Watford, WD25 9XX, England.
Notified Body Number	0832
Date of issue:	03 November 2017

This classification report consists of nine pages and may only be used or reproduced in its entirety



1 Introduction

This classification report defines the classification assigned to roof/roof covering Flexitec 2020 on 9mm Masterboard calcium silicate base in accordance with the procedures given in EN 13501-5: 2005 + A1: 2009¹.

2 Description of the roof/roof covering

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	Res-Tec Limited, Unit 25, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA
Manufacturer of sample	Res-Tec Ltd
Sample name/reference	Flexitec 2020 on 9mm Masterboard calcium silicate base
Sample description (as provided by test sponsor/manufacturer)	A product description as provided by test sponsor has been included in this classification report as Appendix A.
Description of sample (as received)	White calcium silicate type board with a grey textured coating on one face, over all thickness 10.3 to 10.7mm as measured. Thickness of grey layer approximate 1.3 – 1.7mm. Thickness of base approximate 9.0mm.
Test face	Light grey textured coated face.
Test format	The test was carried out in the flat position



Reports in support of classification

Name of Laboratory	Name of sponsor	Test report ref. no.	Test method
BRE Global	Res-Tec Ltd	P108719-1001	CEN/TS 1187: 2012 Test 4

3 Test results in support of classification

3.1 Test conditions:

Test pitch: Flat
Deck: As product description, Section 2
Supporting structure: As product description, Section 2



3.2 Preliminary test (stage 1)

Parameter	Criteria				Test result	Compliance			
	Class B _{ROOF(t4)}	Class C _{ROOF(t4)}	Class D _{ROOF(t4)}	Class E _{ROOF(t4)}		Class B _{ROOF(t4)}	Class C _{ROOF(t4)}	Class D _{ROOF(t4)}	Class E _{ROOF(t4)}
Burn time	< 5 min	< 5 min	< 5 min	≥5 min	0 sec	Y	-	-	-
Flame spread distance	< 0,38m	< 0,38m	< 0,38m	No limit	0 mm	Y	-	-	-
Penetration	None	None	None	None	None	Y	-	-	-

3.3 Penetration test (stage 2)

Parameter	Criteria				Test results				Compliance			
	Class B _{ROOF(t4)}	Class C _{ROOF(t4)}	Class D _{ROOF(t4)}	Class E _{ROOF(t4)}	Specimen 1	Specimen 2	Specimen 3	Mean*	Class B _{ROOF(t4)}	Class C _{ROOF(t4)}	Class D _{ROOF(t4)}	Class E _{ROOF(t4)}
Penetration time	≥ 60 min	< 60 min ≥ 30 min	<30 min	< 30 min	60 min	60 min	60 min	60 min	Y	-	-	-

* If one or two of the specimens have not failed at one hour, a time of 60 min shall be used in calculating the mean time of penetration



4 Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with EN 13501-5: 2005 + A1: 2009¹.

4.2 Classification

The roof/roof covering Flexitec 2020 on 9mm Masterboard calcium silicate base in relation to its external fire performance is classified:

B_{ROOF}(t4)

4.3 Field of application

This classification is valid for the following conditions:

Range of pitches: $0^\circ \leq \text{pitch} \leq 10^\circ$

Deck and supporting structure: 9mm Masterboard calcium silicate ba

The classification is valid only for the deck and supporting structure tested.

5 Limitations

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

This classification document has been written with reference to a test carried out to CEN/TS 1187: 2012, which supersedes ENV 1187: 2002 and is expected to be recognised in any update to EN 13501-5: 2005 + A1: 2009. There is no change to the test procedure in CEN/TS 1187: 2012 Test 4. Therefore, this test is also compliant with the ENV 1187: 2002, which is the method specified in this classification standard, EN 13501-1: 2005 + A1: 2009.

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 and classification 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 or classification to ensure that they are consistent with current practices, and if required may endorse the report.



6 Reference

- 1 EN 13501-5: 2005 + A1: 2009 Fire classification of construction products and building elements – Part 5: Classification using data from external fire exposure to roofs tests. CEN, Avenue Marnix 17, B-1000, Brussels, Belgium. 2009.
- 2 CEN/TS 1187: 2012 Test methods for external fire exposure to roofs. Test 4 – Two stage method incorporating burning brands, wind and supplementary radiant heat. CEN, Avenue Marnix 17, B-1000, Brussels, Belgium. 2012.
- 3 ENV 1187: 2002 + A1: 2005. Test methods for external fire exposure to roofs. Test 4 – Two stage method incorporating burning brands, wind and supplementary radiant heat. CEN, Avenue Marnix 17, B-1000, Brussels, Belgium. 2002



Appendix A Test Sponsor's Product Description

A product description table as supplied by the test sponsor:-

PRODUCT DEFINITION

Trade name	Flexitec 2020
Product reference/number	N/A
Manufacturer	Res-Tec Ltd
General description	Liquid Applied Flexible Polyester Roof Waterproofing System
Thickness	1.7mm (nominal)
Density or mass per unit area	2.38kg/m ²
Flame retardant treatment used in production of product	Aluminium Oxide Trihydrate
Test face (layer 1)- - Name/reference - Type - Thickness - Mass per unit area - Colour	Flexitec 2020 (Batch No. FT0410012) Liquid Applied Flexible Polyester 0.5mm 0.71kg/m ² (with catalyst) Light Grey
Layer 2 - Name/reference - Type - Thickness - Mass per unit area - Colour	Flexitec 2020 (Batch No. FT0410012) Liquid Applied Flexible Polyester Resin 0.85mm (without reinforcement) 1.22kg/m ² (with catalyst) Light Grey
Layer 3 (Note: within Layer 2) - Name/reference - Type - Thickness - Mass per unit area - Colour	Fibreglass Chopped Strand Mat Chopped Strand Glass reinforcing Mat Note 1 225g/m ² Note 1
Layer 4 - Name/reference - Type - Thickness - Mass per unit area - Colour	Flexitec Primer (Batch No. UN1303112) Note 1 0.2mm 0.22kg/m ² (with catalyst) White
Layer 5 - Name/reference - Type - Thickness - Mass per unit area - Colour	Masterboard Calcium Silicate 9mm 9kg/m ² Note 1

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

BRE Global Classification Report

Classification report for roofs/roof coverings exposed to external fire in accordance with EN 13501-5: 2016 on Flexitec 2020 on SA Carrier

Prepared for: Res-Tec Ltd
Date: 24 September 2020
Report Number: Q100928-1008 Issue 1

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Date 24 September 2020

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Table of Contents

1	Introduction	5
2	Sample	5
2.1	Description of the roof/roof covering	5
2.2	Traceability	6
3	Reports in support of classification	6
4	Test results in support of classification	6
4.1	Test conditions:	6
4.2	Preliminary test (stage 1)	7
4.3	Penetration test (stage 2)	7
5	Classification and field of application	8
5.1	Reference of classification	8
5.2	Classification	8
5.3	Field of application	8
6	Limitations	8
7	Reference	8
Appendix A	Product description provided by the test sponsor	10
Appendix B	Photographs of a test specimen	14



BRE Global

EXTERNAL EXPOSURE TO FIRE CLASSIFICATION REPORT OF Flexitec 2020 on SA Carrier

Classification report No.:	Q100928-1008
Issue number:	1
Sponsor:	Res-Tec Ltd, Furness House, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA, UK
Product name:	Flexitec 2020 on SA Carrier
Prepared by:	BRE Global Ltd., Bucknalls Lane, Garston, Watford, WD25 9XX, England.
Notified Body Number	0832
Date of issue:	24 September 2020

This classification report consists of 14 pages and may only be used or reproduced in its entirety.



1 Introduction

This classification report defines the classification assigned to roof/roof covering Protec on SA Carrier in accordance with the procedures given in EN 13501-5: 2016.

2 Sample

2.1 Description of the roof/roof covering

Unless otherwise stated all measurements are nominal.

Test Sponsor	Res-Tec Ltd, Furness House, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA, UK
Manufacturer of sample	Note 1
Sample name/reference	Res-Tec 2020 on SA Carrier
Place of manufacture	Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA
Sample description (as provided by test sponsor/manufacturer)	Liquid applied flexible polyester roof waterproofing system on SA Carrier and PIR 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)	Light grey liquid applied type coating over dark grey liquid applied type coating on a membrane including glass fibres over silver foil faced black bitumen type layer (2.1 to 2.6 mm), on 150mm off white foam, on foil faced flexible black bitumen type VCL over 18mm OSB base. Photographs of the sample are given in Appendix B.
Sample receipt date	26 June 2020
Test face	Grey face
Test format	The test was carried out in the flat position
Date of test	08 July 2020
Purchase order number	RM 233477
Test operator	P Potter

Note 1 The test sponsor was unable to provide the information required to adequately describe the specimens. This information should form part of the definition of the product tested/classified. The information is not available from BRE Global.



2.2 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.

3 Reports in support of classification

Name of Laboratory	Name of sponsor	Test report ref. no.	Test method
BRE Global	Res-Tec Ltd	Q100928-1007	CEN/TS 1187: 2012 Test 4

4 Test results in support of classification

4.1 Test conditions:

Test pitch: Flat
Deck: As product description, Section 2
Supporting structure: As product description, Section 2



4.2 Preliminary test (stage 1)

Parameter	Criteria				Test result	Compliance			
	Class B _{ROOF(t4)}	Class C _{ROOF(t4)}	Class D _{ROOF(t4)}	Class E _{ROOF(t4)}		Class B _{ROOF(t4)}	Class C _{ROOF(t4)}	Class D _{ROOF(t4)}	Class E _{ROOF(t4)}
Burn time	< 5 min	< 5 min	< 5 min	≥5 min	0 sec	Y	-	-	-
Flame spread distance	< 0,38m	< 0,38m	< 0,38m	No limit	0 mm	Y	-	-	-
Penetration	None	None	None	None	None	Y	-	-	-

4.3 Penetration test (stage 2)

Parameter	Criteria				Test results				Compliance			
	Class B _{ROOF(t4)}	Class C _{ROOF(t4)}	Class D _{ROOF(t4)}	Class E _{ROOF(t4)}	Specimen 1	Specimen 2	Specimen 3	Mean*	Class B _{ROOF(t4)}	Class C _{ROOF(t4)}	Class D _{ROOF(t4)}	Class E _{ROOF(t4)}
Penetration time	≥ 60 min	< 60 min ≥ 30 min	<30 min	< 30 min	60 min	60 min	60 min	60 min	Y	-	-	-

* If one or two of the specimens have not failed at one hour, a time of 60 min shall be used in calculating the mean time of penetration



5 Classification and field of application

5.1 Reference of classification

This classification has been carried out in accordance with EN 13501-5: 2016.

5.2 Classification

The roof / roof covering Flexitec 2020 on SA Carrier, as described in Section 2 above and Appendix A, in relation to its external fire performance is classified:

B_{ROOF}(t4)

5.3 Field of application

This classification is valid for the following conditions:

Range of pitches	0° < pitch ≤ 10°
Substrate / deck	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
Supporting structure	As tested, no variation allowed
Joints	As tested, no variation allowed.

6 Limitations

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

The information in section 2.1 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.

7 Reference

- 1 EN 13501-5: 2016 Fire classification of construction products and building elements – Part 5: Classification using data from external fire exposure to roofs tests. CEN, Avenue Marnix 17, B-1000, Brussels, Belgium. 2016.



- 2 CEN/TS 1187: 2012 Test methods for external fire exposure to roofs. Test 4 – Two stage method incorporating burning brands, wind and supplementary radiant heat. CEN, Avenue Marnix 17, B-1000, Brussels, Belgium. 2012.



Appendix A Product description provided by the test sponsor

PRODUCT DEFINITION

Test sponsor (Company name and address): Res-Tec Ltd, Furness House, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA, UK	
Trade name	Flexitec 2020
Product reference/number	Res-Tec 2020 on SA Carrier
General description	Liquid applied flexible polyester roof waterproofing system on SA Carrier and PIR Insulation
Manufacturer of the roofing product (Company name and address)	Roberts Manufacturing Limited
Place of manufacture	Furness House Castle Park Industrial Estate Flint Flintshire CH6 5XA
Test specimens assembled by (if not by roof product manufacturer)	Note 1
Thickness (overall depth of roof structure tested)	172mm
Mass per unit area (overall value for the roof structure tested)	Approx 21.2kg
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	ETAG 005 - 04(2000) System 3
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)	Flexitec 2020 top coat (B/No: FT0401 189) Note 2 Liquid applied flexible polyester roof waterproofing system 0.5mm 0.5ltr/m2 Light Grey Roller Note 2



Test sponsor (Company name and address): Res-Tec Ltd, Furness House, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA, UK	
Trade name	Flexitec 2020
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)	Flexitec 2020 base coat (B/No: FT0401 189) Note 2 Liquid applied flexible polyester roof waterproofing system 1.0mm 1.0ltr/m ² Light Grey Roller Note 1 Note 2
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)	Res-Tec CSM 225g/m ² (Batch No: 25200444). Note 2 Chopped strand glass reinforcing mat 225g/m ² (Note : This is within layer 2) Note 1 Note 3
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)	Res-Tec SA Carrier Layer Note 2 Self-adhesive carrier layer 2.0mm 1700g/m ² Note 1 Note 1 Note 1 Note 3
Layer 5 - 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)	Res-Tec SA Primer Note 2 Polymeric adhesive primer 0.15mm 0.15ltr/m ² Black Roller Note 1 Note 3



Test sponsor (Company name and address): Res-Tec Ltd, Furness House, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA, UK	
Trade name	Flexitec 2020
Layer 6 - 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)	PIR Insulation (adhesively fixed with Res-Tec insulation adhesive) Note 2 Tissue faced PIR 150mm 4.5kg/m ² Note 1 Note 1 Note 1 Note 3
Layer 7 - 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)	Res-Tec SA Vapour Barrier Note 2 Self-adhesive vapour barrier 0.6mm 700g/m ² Aluminium Note 1 Note 1 Note 3
Layer 8 - 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)	Res-Tec SA Primer Note 2 Polymeric adhesive primer 0.15mm 0.15ltr/m ² Black Roller Note 1 Note 3
Layer 9 - Name/reference (eg "deck" or "substrate") - 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 Note 2 Oriented strand board 18mm 11.6kg/m ² Note 1 Note 1 Note 1 Note 3



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.

Note 3: The test sponsor was unable to provide the information required to adequately describe the specimens. This information should form part of the definition of the product tested/classified. The information is not available from BRE Global.



Appendix B Photographs of a test specimen



BRE Global Test Report

CEN/TS 1187: 2012 Test 4 External fire exposure to roofs test on Flexitec 2020

Prepared for: Res-Tec Ltd
Date: 24 September 2020
Report Number: Q100928-1011 Issue 1

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CH6 5XA
UK



0578



Prepared by

Name P Potter

Position Senior Technician

Signature

A handwritten signature in blue ink, appearing to read 'P Potter', is written over a light blue horizontal line.

Authorised by

Name J Hunter

Position Section Leader, Reaction to Fire

Date 24 September 2020

Signature

A handwritten signature in black ink, appearing to read 'J Hunter', is written over a light blue horizontal line.

This report is made on behalf of BRE Global and may only be distributed in its entirety, without amendment, and with attribution to BRE Global Ltd to the extent permitted by the terms and conditions of the contract. Test results relate only to the specimens tested. BRE Global has no responsibility for the design, materials, workmanship or performance of the product or specimens tested. This report does not constitute an approval, certification or endorsement of the product tested and no such claims should be made on websites, marketing materials, etc. Any reference to the results contained in this report should be accompanied by a copy of the full report, or a link to a copy of the full report.

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Table of Contents

1	Objective	4
2	Sample	4
2.1	Traceability	5
2.2	Description of sample and test format.	4
3	Conditioning	5
4	Results	5
4.1	Preliminary ignition test	5
4.2	Penetration test	5
4.3	Observations	5
5	Conclusion	6
6	Validity	6
7	Reference	6
Appendix A	Product description provided by the test sponsor	7
Appendix B	Photographs of the test specimens	10



1 Objective

To classify the sample described in Section 2 according to its capacity to resist penetration by fire, using the external fire exposure to roofs test specified in CEN/TS 1187: 2012 Test 4¹.

2 Sample

2.1 Description of sample and test format.

Unless otherwise stated all measurements are nominal.

Test Sponsor	Res-Tec Ltd, Furness House, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA, UK
Manufacturer of sample	Note 1
Sample name/reference	Flexitec 2020 on OSB
Place of manufacture	Furness House, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA
Sample description (as provided by test sponsor/manufacturer)	Liquid applied flexible polyester roof waterproofing system on OSB Deck. 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)	Dark grey textured liquid applied coating over light grey liquid coating on 18mm OSB board, on 150mm off white insulation foam with silver foil facing, on a black flexible plastic VCL (0.23 mm) over 18mm OSB. The system is mechanically fixed with screws. Photographs of the sample are given in Appendix B.
Sample receipt date	26 June 2020
Test face	Grey face
Test format	The test was carried out in the flat position
Date of test	17 July 2020
Purchase order	RM 233477
Test operator	P Potter

Note 1: 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.



2.2 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.

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
E12882/1	None	21.8 °C 59.4 %RH	0	0:00	None

4.2 Penetration test

Specimen reference	Joint	Ambient	Penetration min:sec	Observations
E12882/2	None	21.8 °C 59.6 %RH	None	Ignited on surface at one point, fire spread over whole surface. Still flaming at end of test.
E12882/3	None	22.8 °C 57.0 %RH	None	Did not ignite
E12882/4	Insulation	23.1 °C 55.8 %RH	None	Did not ignite

4.3 Observations

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



5 Conclusion

CEN/TS 1187: 2012 does not contain acceptance criteria and therefore this test report does not indicate a pass or fail of the product.

6 Validity

This test report does not represent type approval or certification of the product.

The information in section 2.1 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.

7 Reference

- 1 CEN/TS 1187: 2012. Test methods for external fire exposure to roofs. Test 4 – Method with two stages incorporating burning brands, wind and supplementary radiant heat. CEN, Avenue Marnix 17, B-1000, Brussels, Belgium.



Appendix A Product description provided by the test sponsor

PRODUCT DEFINITION

Test sponsor (Company name and address): Res-Tec Ltd, Furness House, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA, UK	
Trade name	Flexitec 2020
Product reference/number	Note 1
General description	Liquid applied flexible polyester roof waterproofing system on OSB Deck
Manufacturer of the roofing product (Company name and address)	Note 2
Place of manufacture	Furness House Castle Park Industrial Estate Flint Flintshire CH6 5XA
Test specimens assembled by (if not by roof product manufacturer)	Note 1
Thickness (overall depth of roof structure tested)	188mm
Mass per unit area (overall value for the roof structure tested)	Approx 30.3 Kg
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	ETAG 005 - 04(2000) System 3
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)	Flexitec 2020 top coat (B/No: FT410 194) Note 1 Liquid applied flexible polyester roof waterproofing system 0.5mm 0.5ltr/m ² Dark Grey Roller Note 2



Test sponsor (Company name and address): Res-Tec Ltd, Furness House, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA, UK	
Trade name	Flexitec 2020
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)	Flexitec 2020 base coat (B/No: FT410 194) Note 1 Liquid applied flexible polyester roof waterproofing system 1.0mm 1.0ltr/m ² Dark Grey Roller Note 2
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)	Res-Tec CSM 225g/m ² (Batch No: 25200444). Note 1 Chopped strand glass reinforcing mat Note 1 225g/m ² Note 1 (Note : This is within layer 2) Note 1 Note 3
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)	Sterling OSB3 Note 1 Oriented strand board 18mm 11.6kg/m ² Note 1 Note 1 Note 1 Note 3
Layer 5 - 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)	PIR Insulation (mechanically fixed with EJOT TKR fixings) Note 1 Note 1 Foil faced PIR 150mm 4.5kg/m ² Note 1 Note 3



Test sponsor (Company name and address): Res-Tec Ltd, Furness House, Castle Park Industrial Estate, Flint, Flintshire, CH6 5XA, UK	
Trade name	Flexitec 2020
Layer 6 - 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)	1200 Gauge Visqueen Vapour Barrier Note 1 Polyetheleyne vapour barrier 300µm 260g/m ² Note 1 Note 1 Note 1 Note 3
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 Note 1 Oriented strand board 18mm 11.6kg/m ² Note 1 Note 1 Note 1 Note 3

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.

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Appendix B Photographs of the test specimens

