

BRE Global Classification Report

Carea Insulated façade system. Classification of fire performance in accordance with BR 135: 2013 Annex B

Prepared for: Carea Façade

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Report Number: P100769-1000

BRE Global Ltd
Watford, Herts
WD25 9XX

Customer Services 0333 321 8811

From outside the UK:
T + 44 (0) 1923 664000
F + 44 (0) 1923 664010
E enquiries@bre.co.uk
www.bre.co.uk

Prepared for:

Carea Façade
ZA Bel Air
49520 Combrée
France



Prepared by

Name Stephen Howard

Position Principal Consultant

Signature

A handwritten signature in blue ink, appearing to read 'S. Howard', is written over a light blue grid background.

Authorised by

Name Tony Baker

Position Principal Consultant

Date 8th June 2015

Signature

A handwritten signature in blue ink, appearing to read 'T. Baker', is written over a light blue grid background.

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Table of Contents

1	Introduction	4
2	Details of the Classified Product	5
2.1	Description of substrate	5
2.2	Description of product	5
2.3	Installation of Specimen	6
3	Product Specification	7
4	Supporting Evidence	14
4.1	Test reports	14
4.2	Test results	14
4.3	Mechanical Performance	15
5	Classification and field of application	16
5.1	Reference of classification	16
5.2	Classification	16
5.3	Field of application	16
6	Limitations	17



CLASSIFICATION OF FIRE PERFORMANCE IN ACCORDANCE WITH BR 135:2013 Annex B

Sponsor: Carea Façade, ZA Bel Air, 49520 Combrée, France

Prepared by: BRE Global Ltd, BRE, Bucknalls Lane, Garston, Watford, WD25 9XX, England

Product name: Carea Insulated façade system

Classification report No.: P100769-1000

Issue number: 1

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This classification report consists of 17 pages and may only be used or reproduced in its entirety.



1 Introduction

This report presents the classification of the system detailed in section 2. The classification is carried out in accordance with the procedures given in BR 135 – ‘Fire performance of external thermal insulation for walls of multi-storey buildings’, Third edition, Annex B 2013. This classification should be read in conjunction with this document and the associated test reports referenced in section 4.



2 Details of the Classified Product

2.1 Description of substrate

The test specimen was installed onto face 3 of the BRE Global External Cladding Test Facility. This is a multi-faced test facility constructed from steel, with the cladding system affixed to the steel substructure.

2.2 Description of product

Full details of the system specification and installation details have been provided by the client and are summarised in the following section. The build-up of the system is shown in figures 1-6, and (in order from the structural frame to the outer panels) comprised of:

- Double layer of 12.5mm plasterboard.
- 150mm Metsec steel frame
- 12mm cement sheathing board
- 140mm K15 Kingspan Insulation
- Horizontal firebreaks – Siderise RH25 open state cavity barriers
- Vertical firebreaks – Lamtherm -030/030/189-288
- Secondary frame consisting of rails to secure the decorative panels.
- Mineral composite grooved panels

Further detail of the composition of the wall is given below:

A sectional steel frame system (SFS) was installed between the floor slab hangers on the main cladding wall 3, with horizontal base and head tracks fixed to the steel substrate. Vertical rails were installed at varying centres to accommodate the cladding system on to the test rig. Refer to figure 3 for the actual spacing. A double layer of 12.5mm Plasterboard was installed on the rear of the SFS and a single layer of 12mm cement based calcium sheathing board was fixed to the front of the SFS.

'Helping hand' brackets were installed onto the cement particle board and the insulation was fitted over these brackets. The joints between the individual sheets and hole created by the bracket were tapped with aluminium tape.

The insulation was 140mm Kingspan K15 panels supplied in 2.4m x 1.2m sheets.

On to the helping hand brackets, a secondary rail system was installed to carry the decorative panels. A horizontal 'starter' bracket was installed just above the hearth which located the bottom of the first row of decorative panels. The top of the panel was secured with a second horizontal rail 'upper rail'. The rest of the panels were then installed on a repeating pattern of rails – the bottom of the panel located on an 'escape' rail and the top of the panel fixed to an 'upper rail'. The top and bottom of the panels were grooved to locate onto the rails and hence the horizontal rail spacing was 900mm.

The top row of panels was restrained using a 'Top stop claw' rail.



The decorative panels were 'Acantha Carea Grooved Panels'. The panels on the installed system were 900mm x 900mm and were polyester mortar. Panels were cut to size on the main wall right hand side and either side of the hearth opening.

Horizontal fire breaks, 75mm thick 'Siderise RH25 open state cavity barriers' were installed above the hearth (for the width of the main wall), approximately 900mm above the hearth (full width of main and wing walls), and aligned with the top of the level 2 'floor', and a final barrier was installed to close off the top of the system.

A vertical firebreak was installed on the main wall to the left hand side of the hearth (between the wing and main walls) for the full height of the system. This was located approximately 430mm from the cement particle sheeting board layer on the wing wall.

A second vertical fire break was installed on the wing wall for the full height of the system. This was located approximately 215mm from the cement particle sheeting board layer on the main wall.

A third vertical fire break was installed to the right of the hearth and terminated at the horizontal fire break across the top of the hearth. This was approximately 450mm from the right hand edge of the system.

The hearth opening was closed off with galvanised mild steel flashing.

2.3 Installation of Specimen

All test materials were supplied and installed by the sponsor. BRE 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.



3 Product Specification

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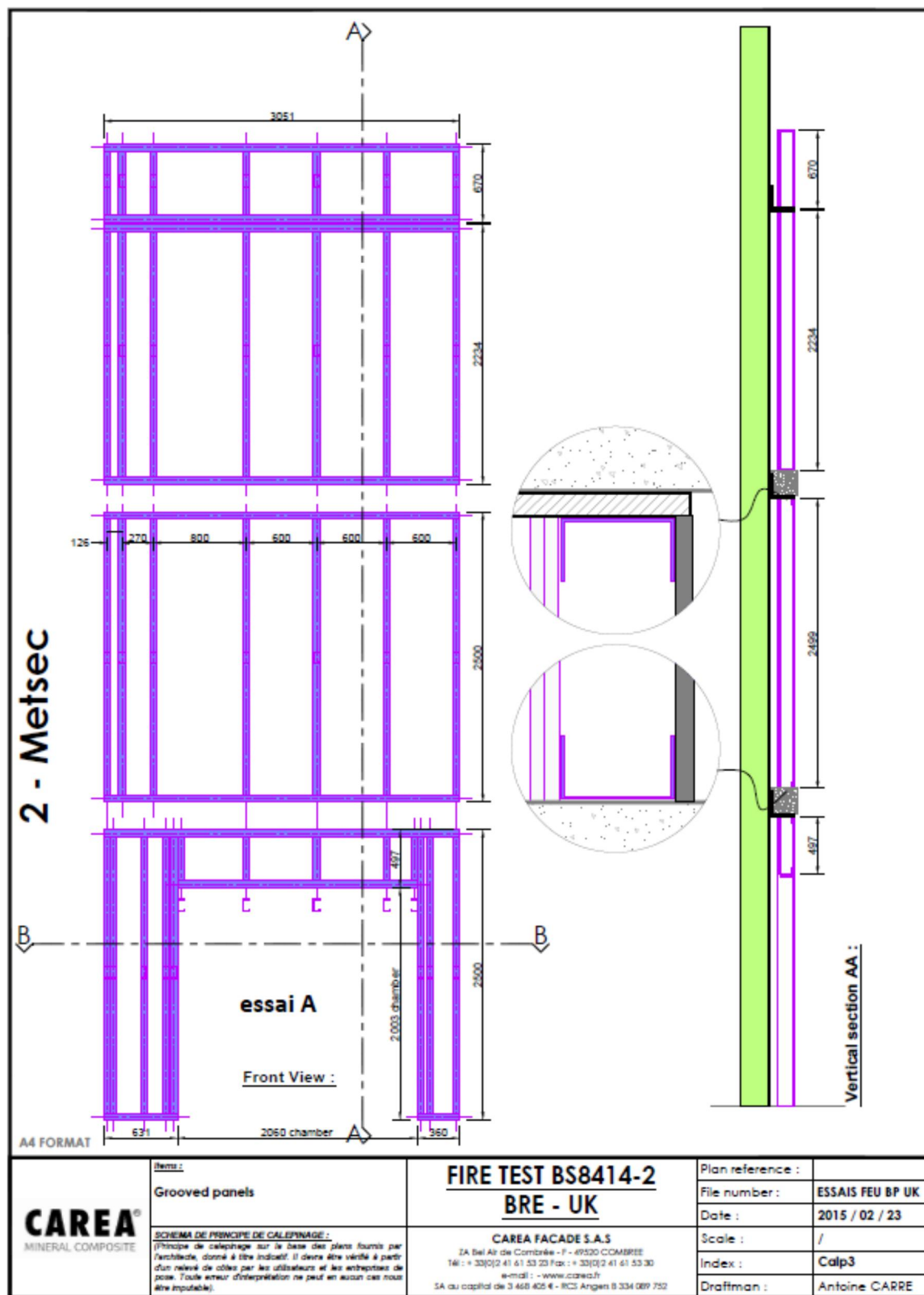


Figure 1. Test rig sub grid elevation

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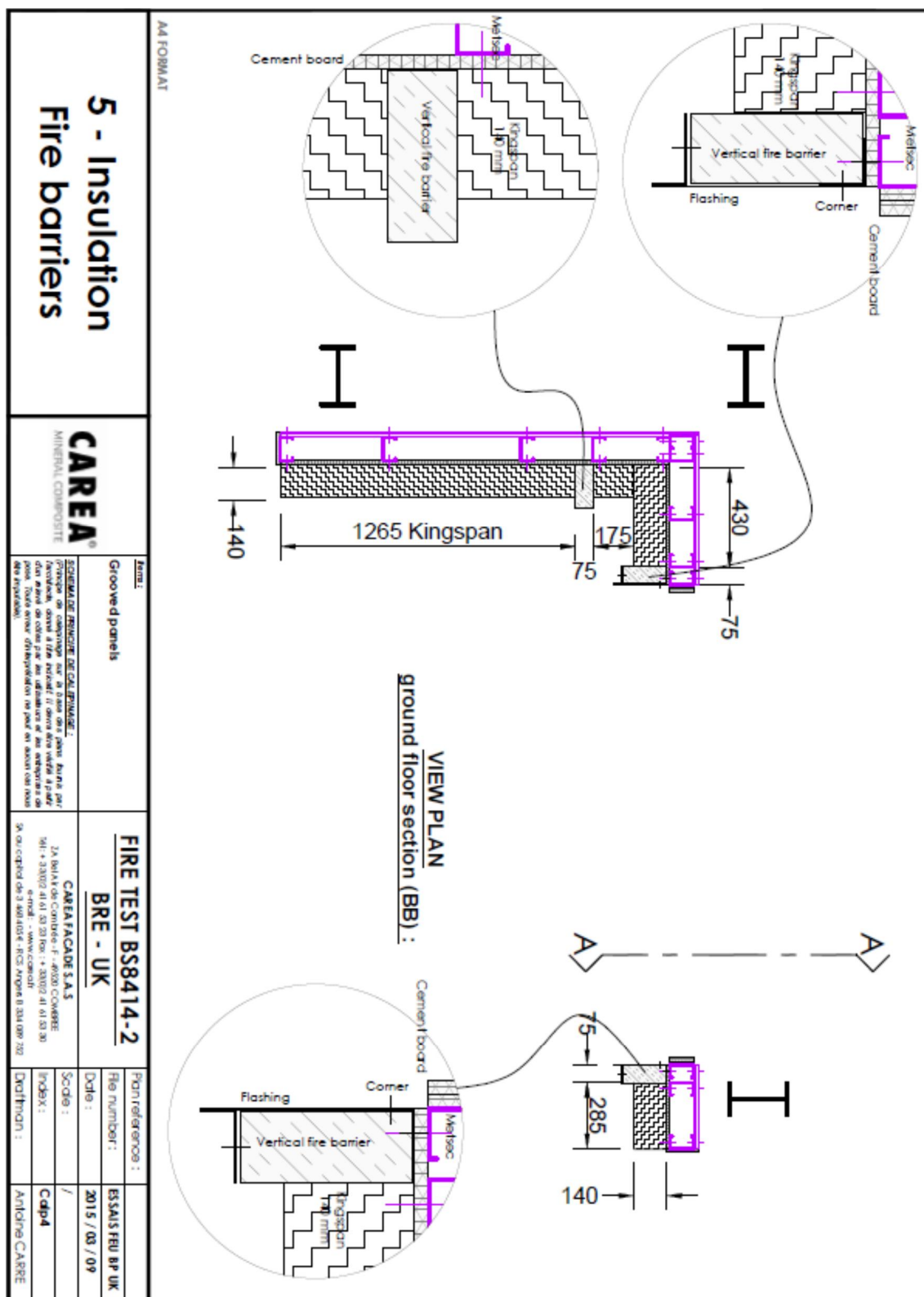


Figure 3. Test rig plan view and details

6 - Secondary frame

Front View :

essai A

Vertical section AA :

1 Cprim L65-50 profile, self drilling screw 5,5x25 mm, Fire barrier, Starter rail

2 self drilling screw 5,5x25 mm, Fire barrier, Escape rail, Cprim L65-50 profile, Upper rail

3 top stop claw, self drilling screw 5,5x25 mm, Fire barrier, Cprim L65-50 profile

4 Standard rail

280

310

550

Top stop claw

Standard rail

Standard rail

Standard rail

Escape rail Upper rail

Standard rail

Escape rail Upper rail

Escape rail Upper rail

Standard rail

Standard rail

Starter rail

Figure 4. Test rig secondary frame elevation

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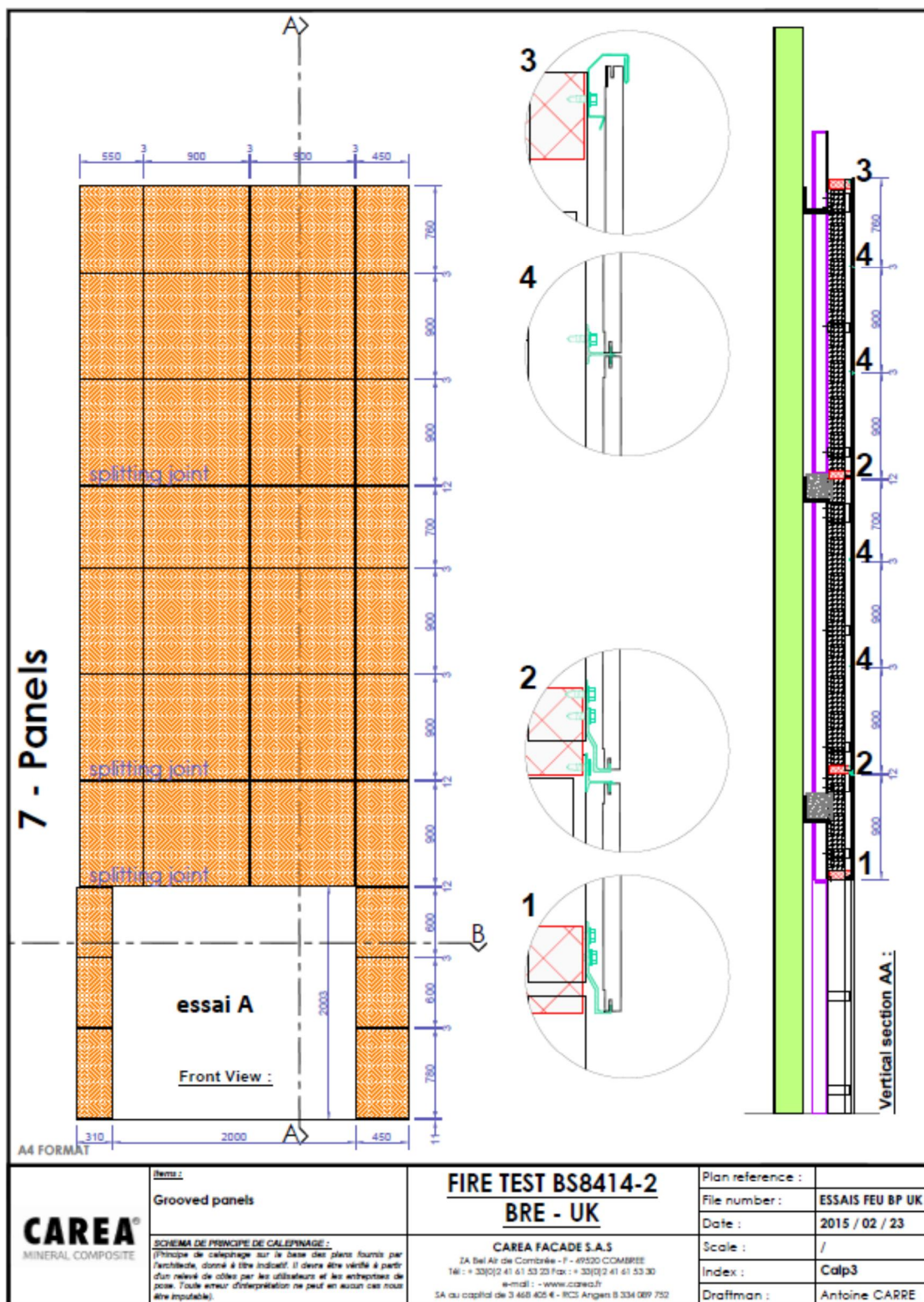


Figure 5. Test rig grooved panel elevation - main wall

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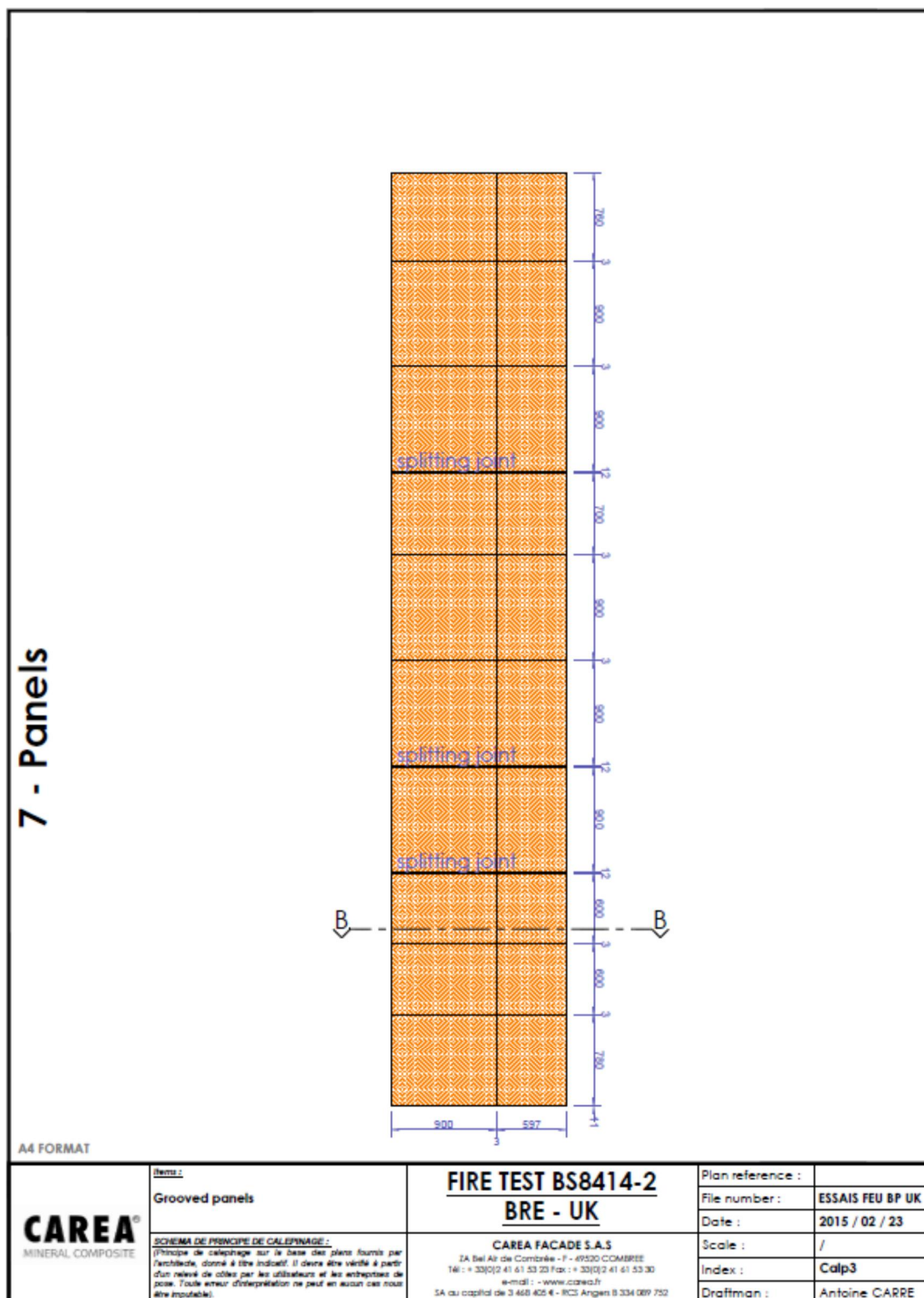


Figure 6. Test rig grooved panel elevation - wing wall



4 Supporting Evidence

4.1 Test reports

Name of Laboratory	Name of sponsor	Test reports/extended application report Nos.	Test method / extended application rules & date
BRE Global, BRE	Carea Façade	Test report 302995 issue 1	BS 8414-2: 2005

4.2 Test results

Test method & test number	Parameter	No. tests	Results	
			Fire spread test result time, t_s (min)	Compliance with parameters in Annex B BR135:2013
BS 8414-2: 2005	External fire spread	1	>15 minutes	Compliant
	Cavity behind rainscreen (cavity 1)		>15 minutes	Compliant
	Internal fire spread Insulation layer		>15 minutes	Compliant
	Cavity formed by Steel frame (cavity 2)		>15 minutes	Compliant
	Internal fire spread Burn through		>15 minutes	Compliant



4.3 Mechanical Performance

The system was tested for the full 60 minute test duration.

During the testing of the system, some panels detached from the system and fell to the ground. Details of this are given in the table below.

Time (min:secs)	Location of panel
10:05	Panel detached on the centreline of the main face directly above the top of hearth
13:05	Panel detached approximately 2.5m above the top of the hearth
19:50	Panels detached on the centreline of the main face approximately 5.0m above top of hearth. Flaming debris within a 1.2m x 2.4m area in front of hearth
23:35	Panel detached approximately 2m above the hearth on the wing wall.
37:00	Continued burning of the system on the main face.



5 Classification and field of application

5.1 Reference of classification

This classification has been carried out in accordance with Annex B of BR 135 – ‘Fire performance of external thermal insulation for walls of multi-storey buildings.’ Third Edition 2013.

5.2 Classification

The system described in this classification report has been tested and met the performance criteria set in Annex B of BR 135:2013.

5.3 Field of application

This classification is valid only for the system as installed and detailed in Section 2 of this classification report and the associated details found in the related test reports, referenced in Section 4.



6 Limitations

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

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.