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BRE Global Classification Report

Classification of fire performance in accordance with BR 135:2013 Annex B

Prepared for: Celotex Insulation Ltd
Date: 04 August 2014
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Table of Contents

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 report(s) referenced in section 3.

2 Details of classified product

2.1 Description of product

Error! Reference source not found. shows the system during construction. The system prior to test is shown in **Error! Reference source not found.**. Full details of the system specification and installation details have been provided by the client and are summarised in the following section. The system, as built comprised of:

- Two layers of 10mm wall board.
- Simco EFS 100mm Light steel frame system (LSF).
- 12mm magnesium oxide sheathing board.
- Aluminium Helping hand brackets,
- Aluminium L and T rails,
- Lamatherm CW-RHS Horizontal Intumescent expanding fire break,
- Lamatherm CW-RSV Vertical non expanding fire breaks,
- 100mm Celotex RS5000 insulation board.
- 12mm Marley Eternit Natura decorative rain screen board

2.2 Installation of cladding System.

2.2.1 Steel substructure and fixings

A sectional steel Light frame system (LFS) was installed between the floor slab hangers on the main cladding wall, with horizontal base and head tracks fixed to the steel and concrete substrate. Vertical rails were installed at nominal 600mm centres to from the steel fame. A double layer of 10mm wall board was installed on the rear of the LFS and a single layer of 12mm magnesium oxide sheathing board was fixed to the front of the LFS. The build-up of the cladding system is shown in **Error! Reference source not found.** to **Error! Reference source not found.**.

2.2.2 Cladding system

An array of aluminium helping hand brackets were mechanically fixed to the sheathing board using 50mm self-tapping screws. A single layer of 100mm Celotex RS5000 insulation board was mechanically attached to the sheathing board with 100mm self-tapping screws and metal washers. The insulation board was pushed over the helping hand brackets through pre-cut slots in the insulation boards.

2.2.3 Fire breaks

Four horizontal ventilated fire breaks (Lamatherm CW_RHS Ventilated cavity barrier) were fixed in a continuous strip and fixed back to the sheathing board with the manufactures recommended fixings. Four vertical non ventilated barriers (Lamatherm CW_RHS Non ventilated cavity barrier) were installed at the outer edges of the cladding system and vertically around the hearth opening to the full height of the test frame. The layout of the fire breaks is shown in **Error! Reference source not found.**.

2.2.4 Rain screen

An array of vertical carrier rails were fixed to the helping hand brackets with both L and T aluminium brackets used. A single layer of 12 mm Marley Eternit Natura board was mechanically attached to the carrier rails with self-tapping stainless steel screws and washers.

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3 System as tested

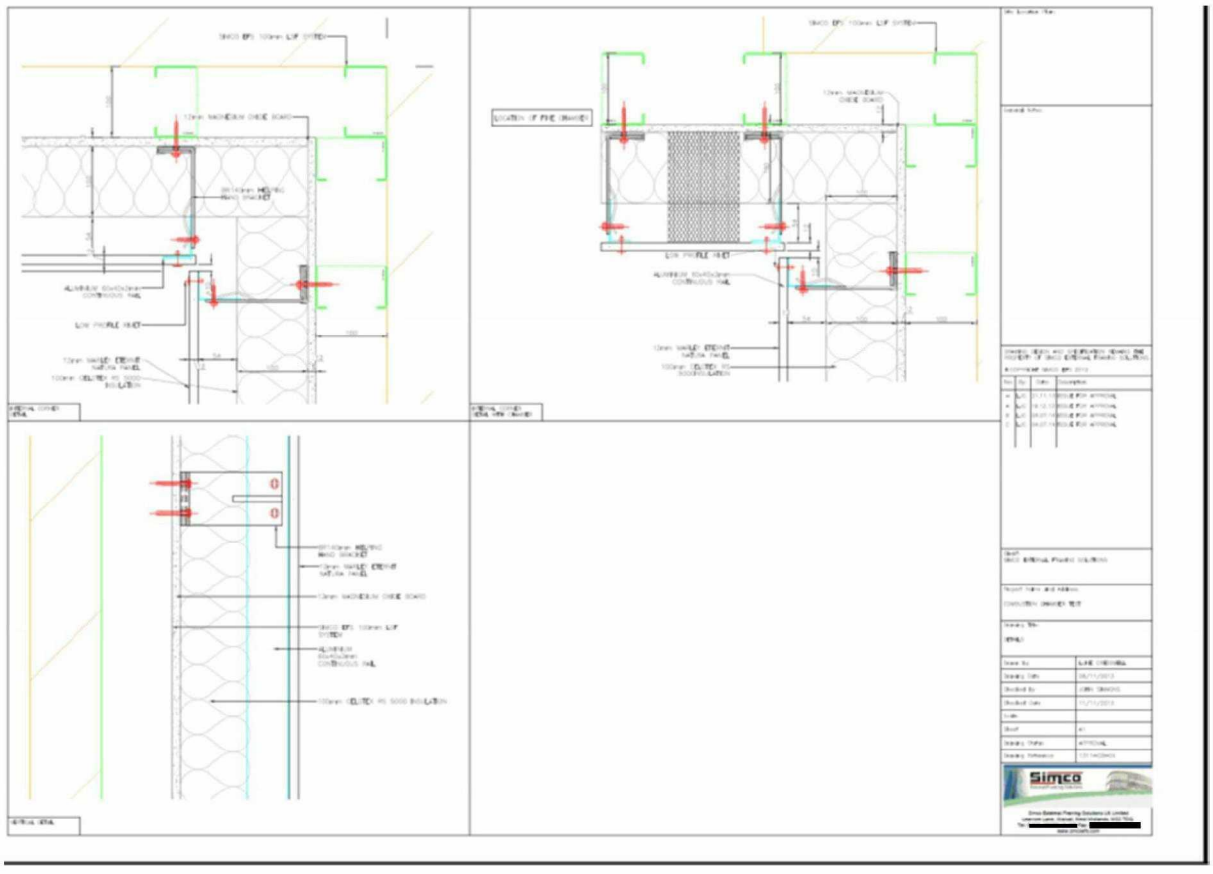

Figure 1. Construction of the System showing the key layers of the cladding system.

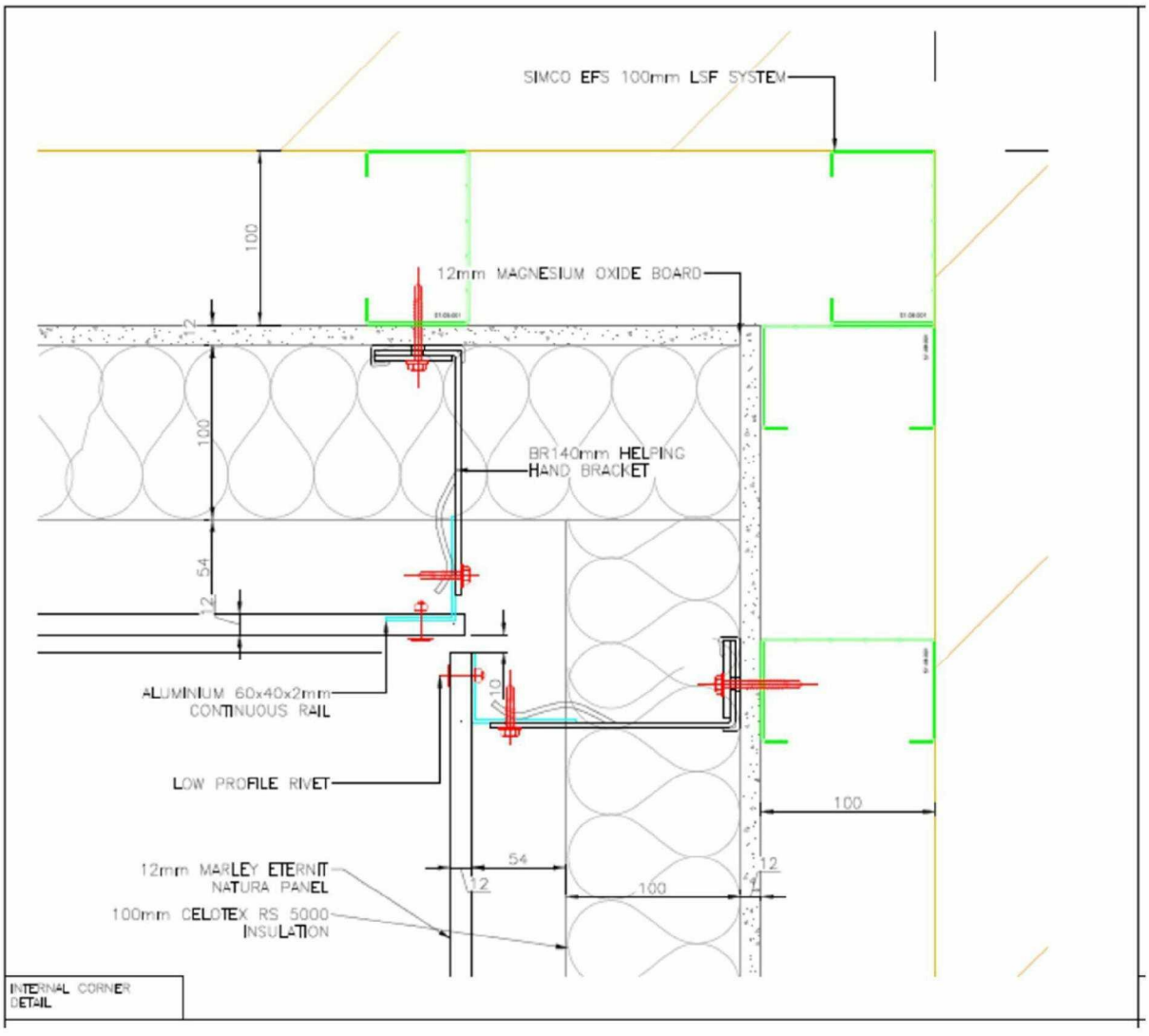

Figure 2. Construction of the System showing the key layers of the cladding system.

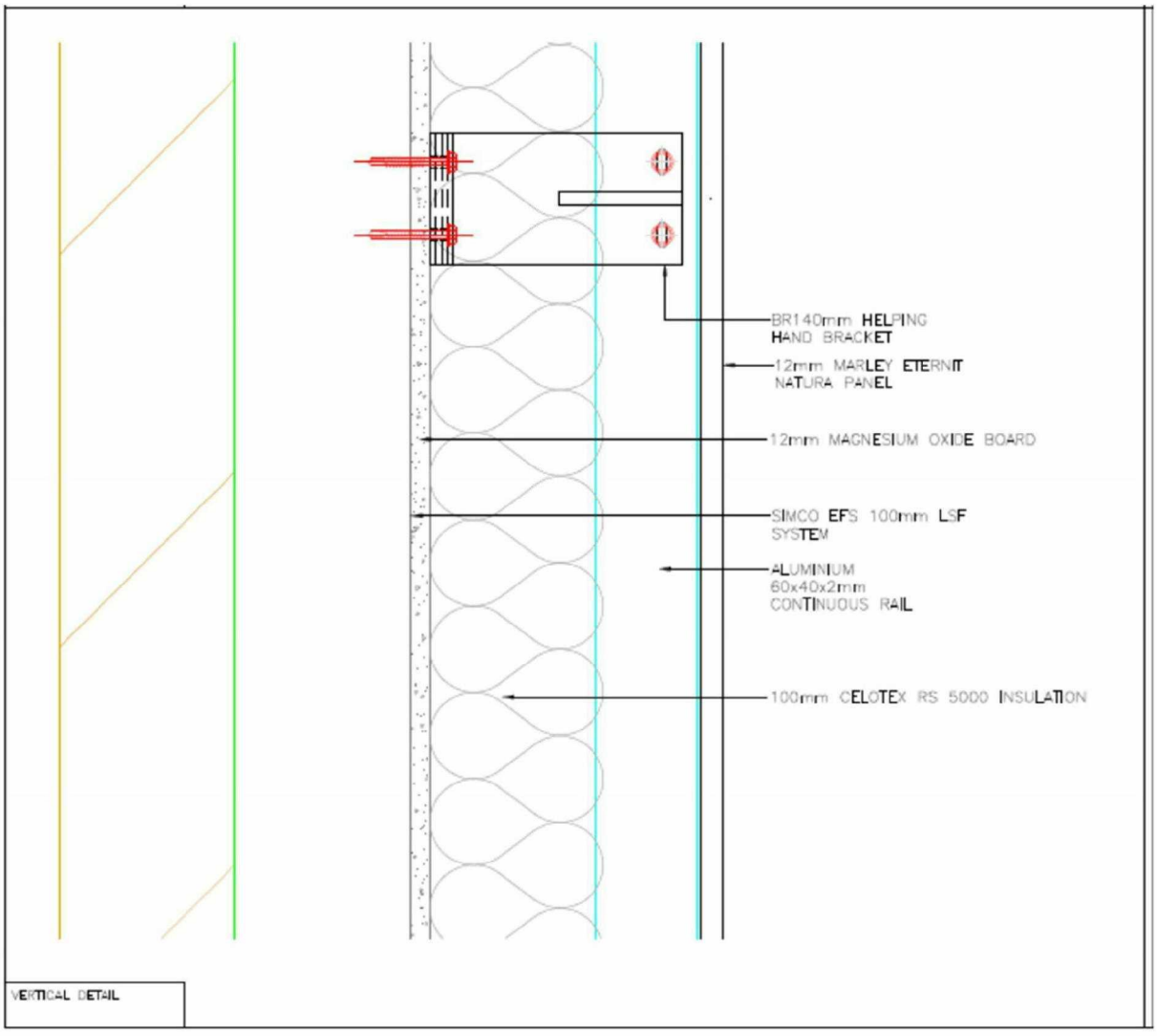

Figure 3. Construction of the System.

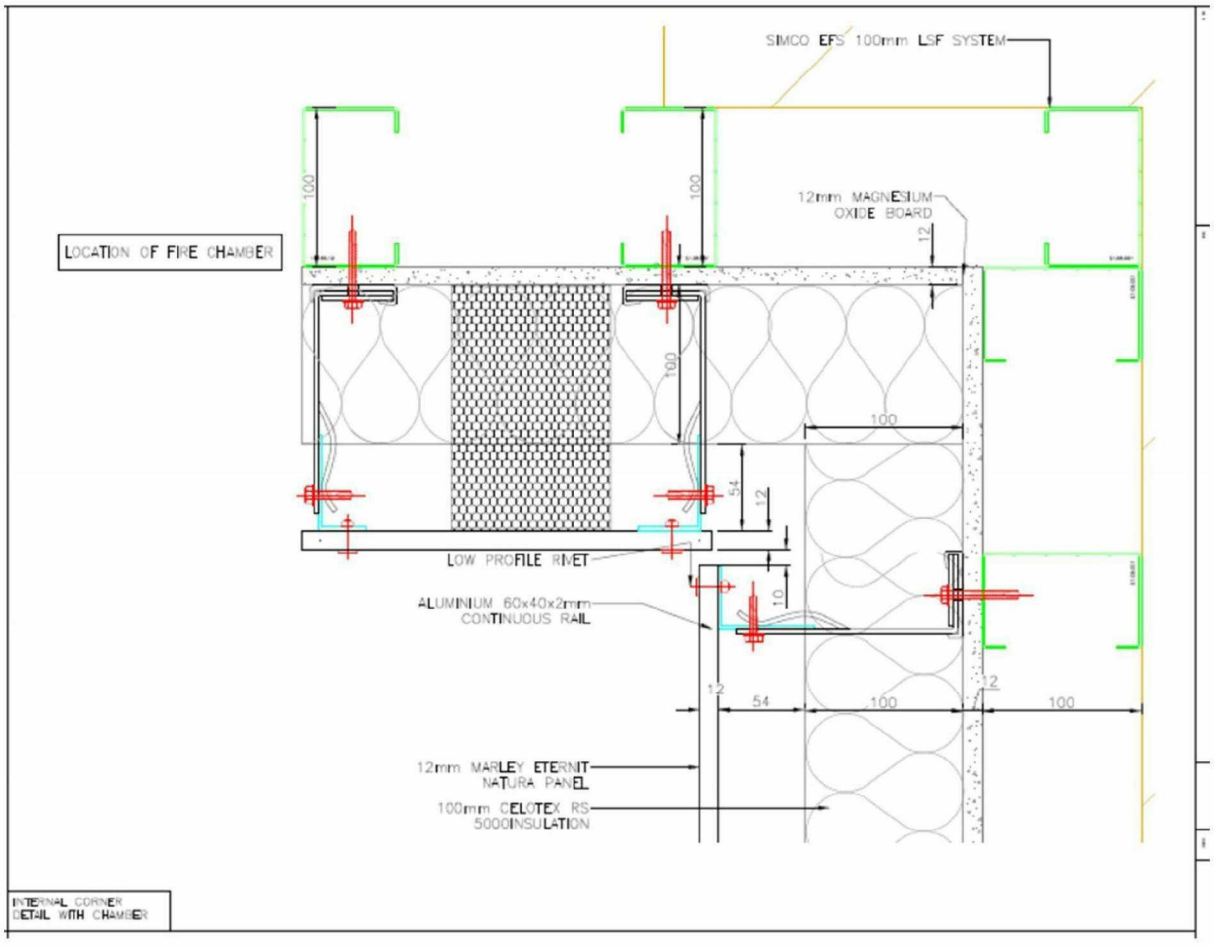

Figure 4. Construction of the System showing the internal corner details.

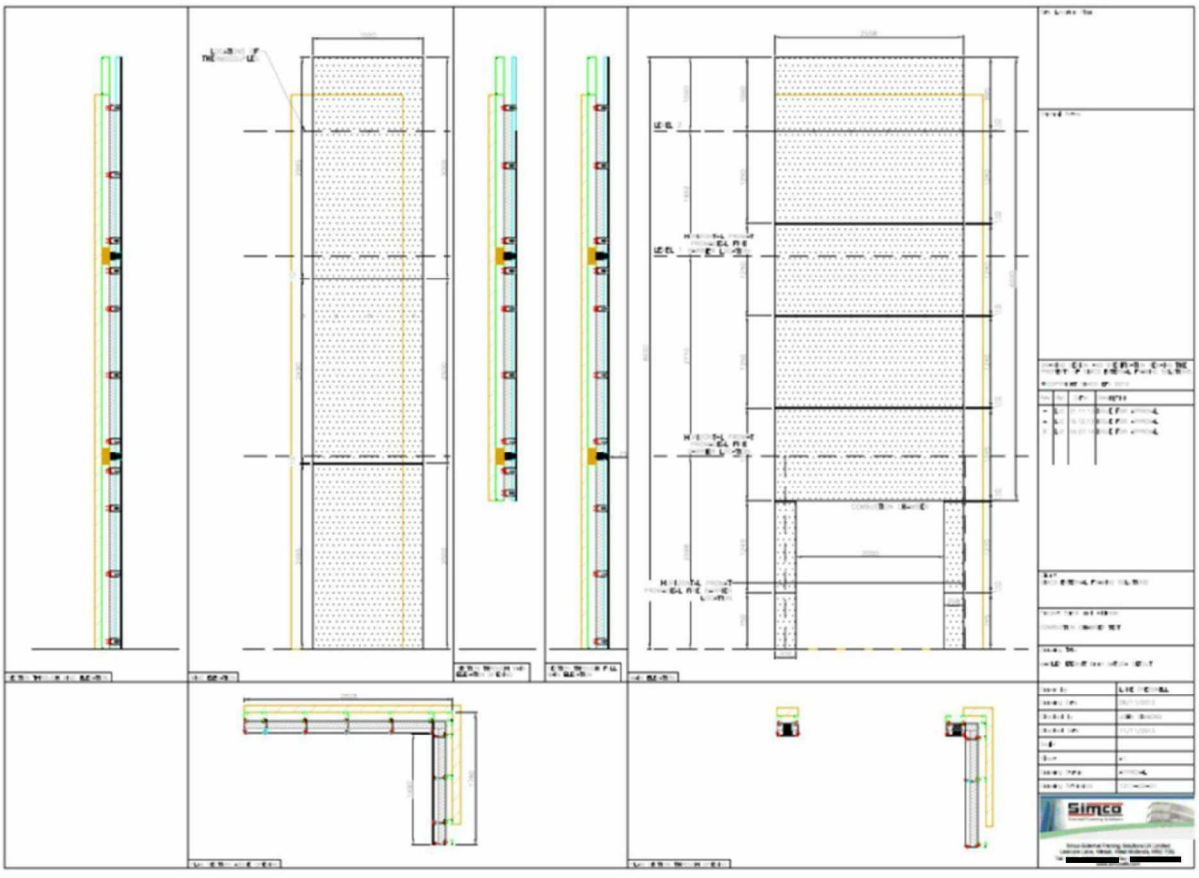

Figure 5. Construction of the System showing the fire break layout.

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4 Test reports in support of classification

4.1 Test report

Name of Laboratory	Name of sponsors	Test reports/extended application report Nos.	Test method / extended application rules & date
BRE Global, BRE	Celotex Insulation Ltd	Test report 295369 dated 1 August 2014	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
	Internal fire spread Insulation layer		>15 minutes	Compliant
	Internal fire spread Cavity		>15 minutes	Compliant
	Internal fire spread Burn through		>15 minutes	Compliant

4.3 Observations

Mechanical Performance

There was minimal collapse of the rain screen panels during the duration of the test.

The cladding system exhibited localised combustion after the heat source was extinguished at 30 minutes, this continued until it was manually extinguished at the conclusion of the test period at 60 minutes.

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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.

5.4 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.

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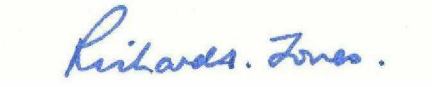

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R Jones

Associate Director

For and on behalf of BRE Global Ltd

APPROVED

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T Baker

Principal Consultant

For and on behalf of BRE Global Ltd

Date: 4 August 2014

Report Ends