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BRE Global Test Report

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

Prepared for: Iso Systems and Aquarian Cladding Systems

Date: 02 July 2014

Report Number: 287129 Issue: 1

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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

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 (shown in Figures 1 to 9) comprised of:

- Double layer of 12.5 mm wall board.
- 150mm steel frame insulated with 140mm mineral wool insulation.
- 12mm Cement calcium sheathing board.
- Breather membrane.
- 15mm timber battens.
- Intumescent expanding fire break.
- 12mm Cement calcium sheathing board.
- 60mm K5 insulation board.
- 60mm Gebrik panel with bonded brick slips.

2.2 Installation of cladding System.

2.2.1 Steel substructure and fixings

A sectional steel frame system (SFS) was installed between the floor slabs on the main cladding wall 4, with horizontal base and head tracks fixed to the concrete and steel substrate. Vertical rails were installed at nominal 600mm centres to form the steel frame. A double layer of 12.5mm Gyproc wall board was installed on the rear of the SFS and a single layer of cement based calcium sheathing board was fixed to the front of the SFS. The void within the steel frame was filled with 140mm of mineral wool insulation.

2.2.2 Cladding system

A single layer of breather membrane was attached to the sheathing board. An array of 15mm rated timber battens was installed vertically and equally centred and mechanically fixed to the sheathing board. A second layer of sheathing board was attached to the timber battens to form a drainage cavity.

2.2.3 Fire breaks

At 2400mm and 4800mm from floor level a break in the sheathing board was formed and a continuous strip of intumescent expanding fire break fixed back to the first layer of sheathing board.

2.2.4 Insulation

A single layer of 60mm Kingspan Kooltherm K5 External wall board was mechanically attached to the sheathing board with single fixing and stainless steel washer placed in the centre of each board.

2.2.5 Gebrik System

A 60 mm single layer of Gebrik was mechanically fixed through the K5 insulation into the sheathing board through hidden fixing at a rate of 9 per whole panel and 5 on corner panels.

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 System as tested

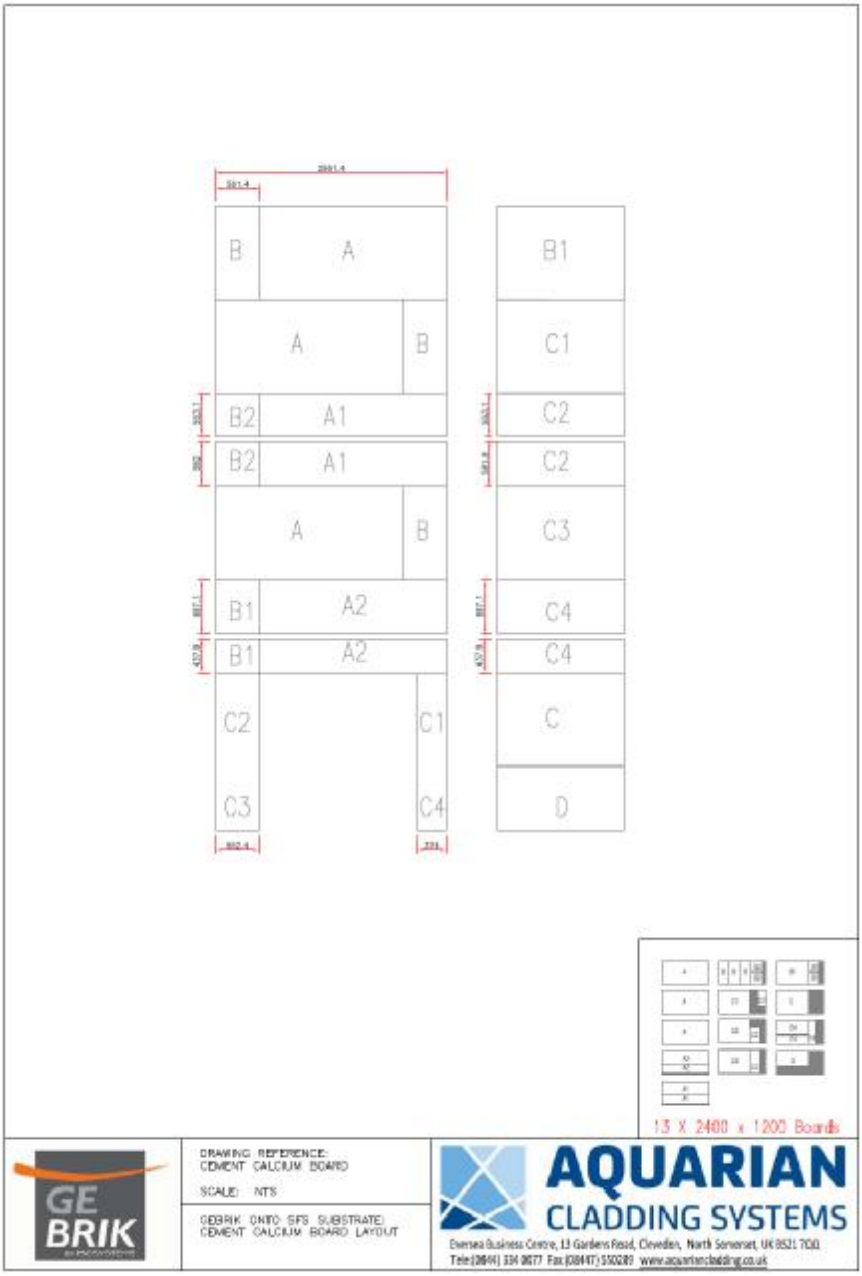

Figure 1. Construction of the System showing the layout of the cement calcium board (layer 1).

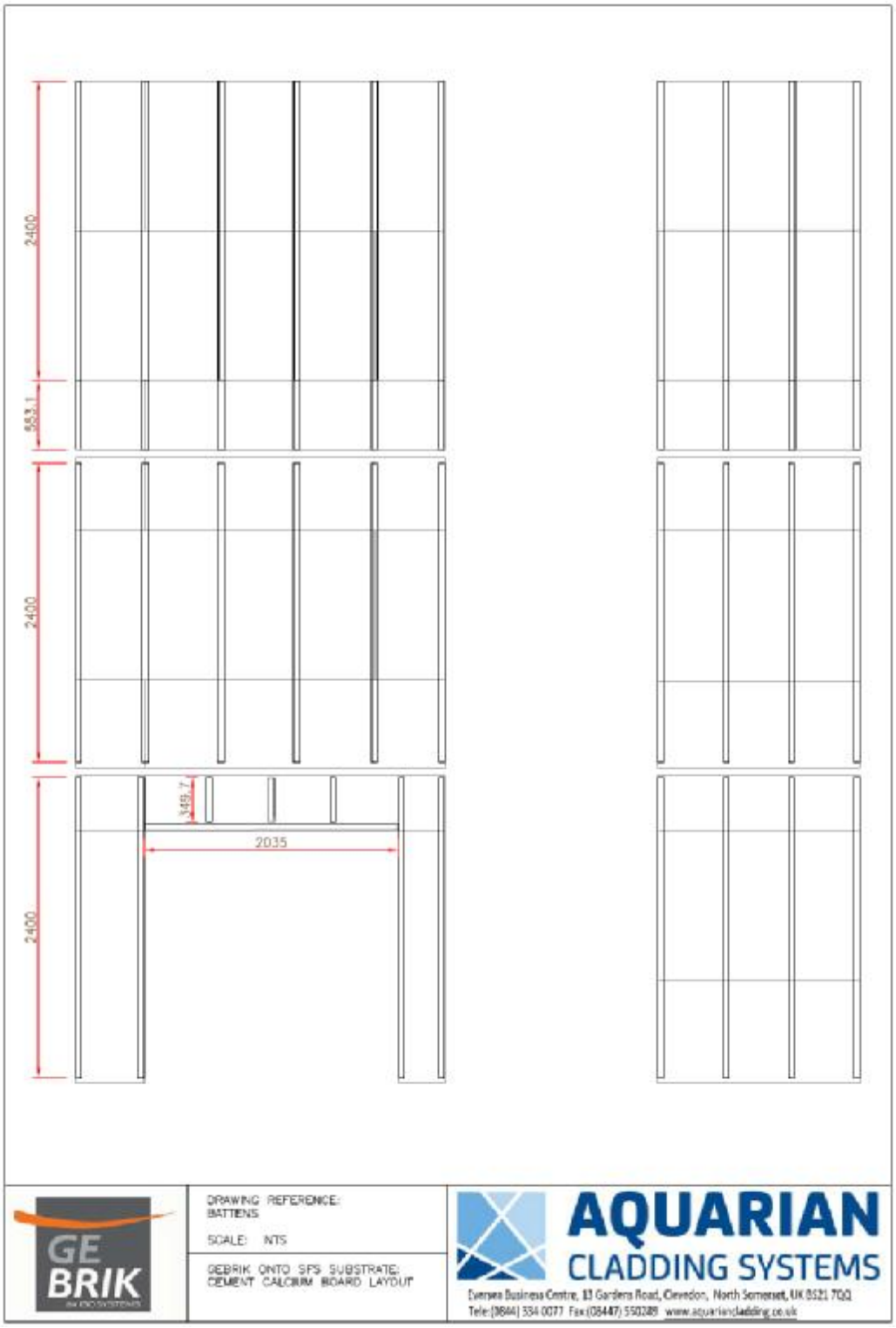

Figure 2. Construction of the System showing the panel layout of the timber battens.

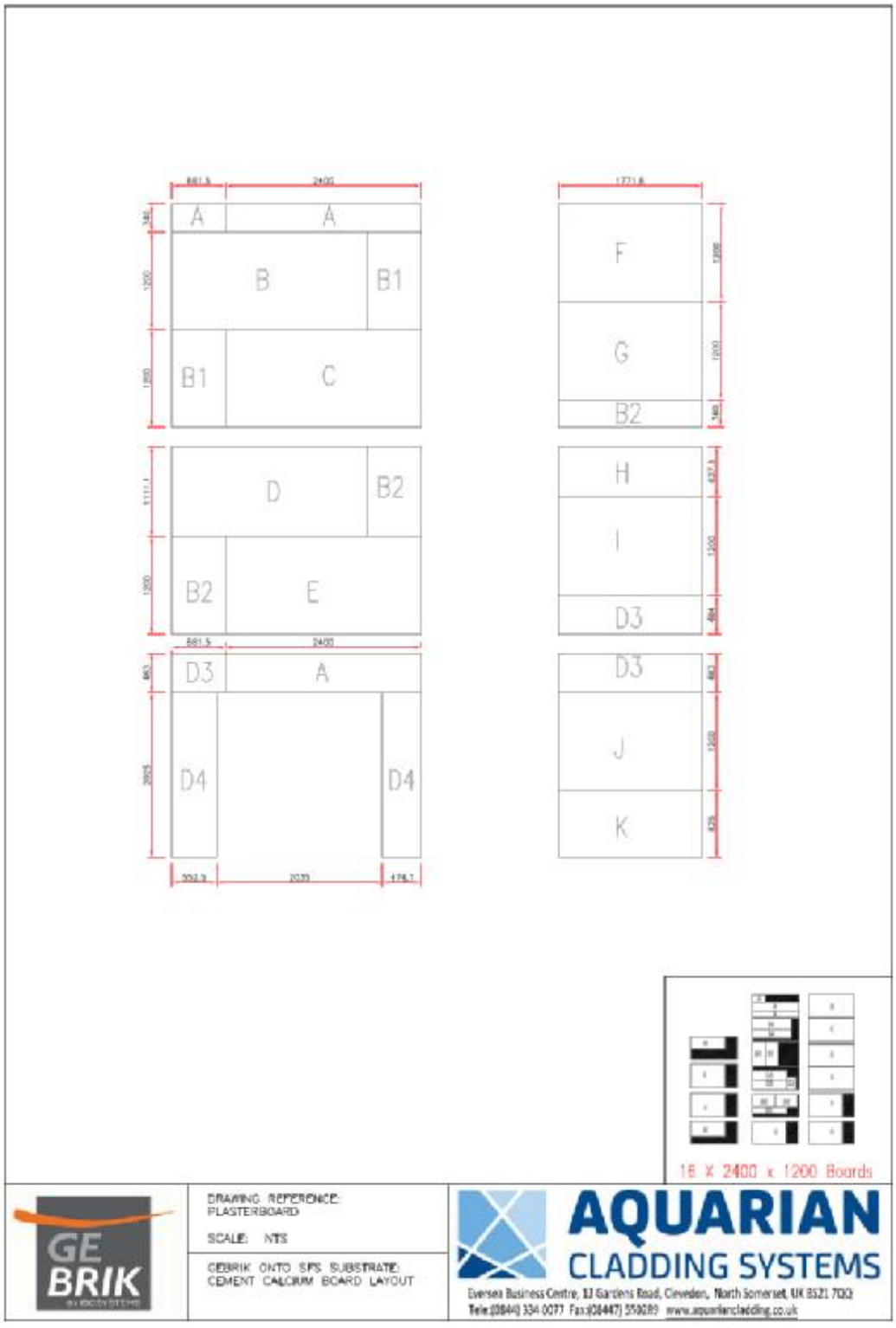

Figure 3. Construction of the System showing the layout of the cement calcium board (layer 2).

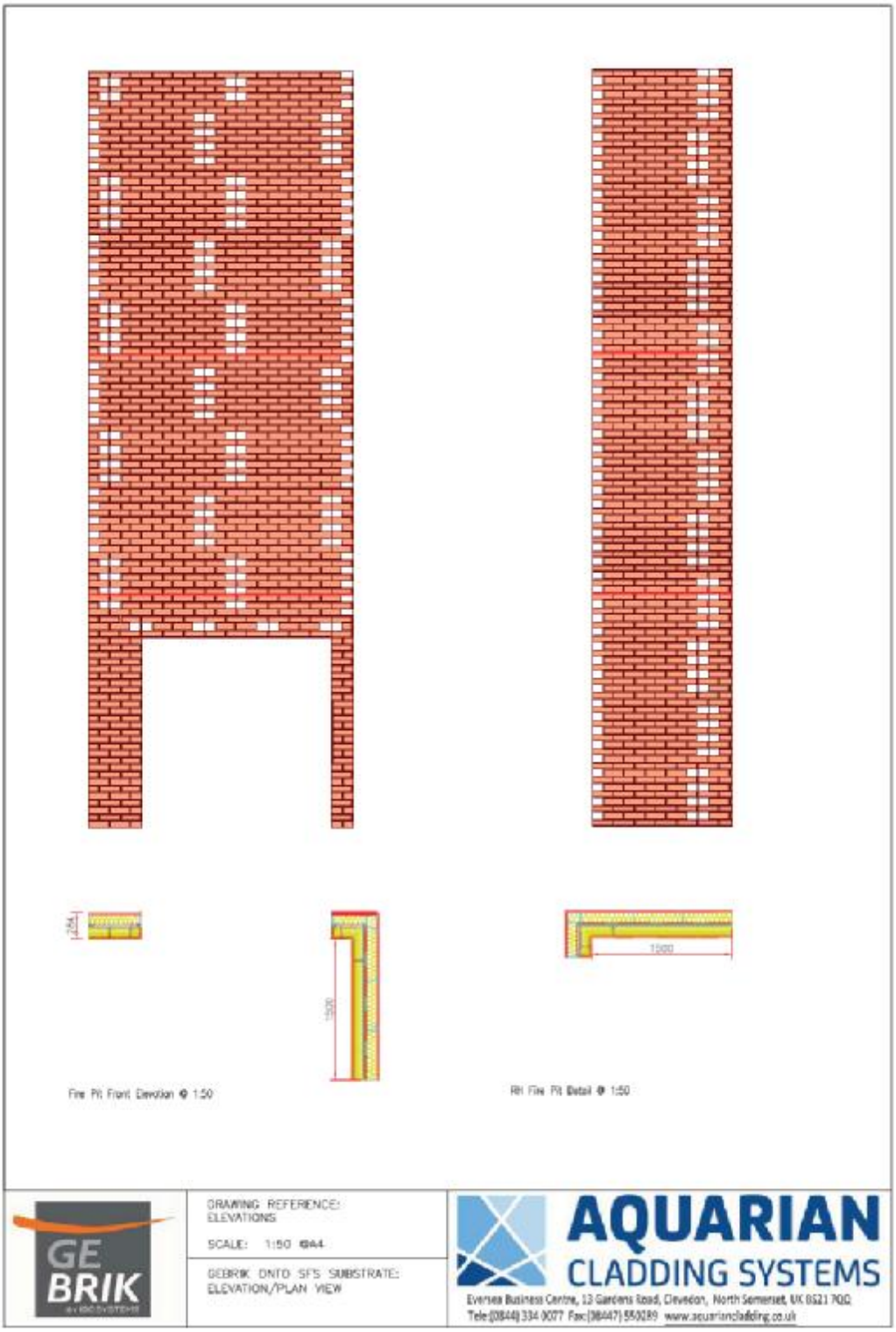

Figure 4. Construction of the System showing the Gebrik panel layout.

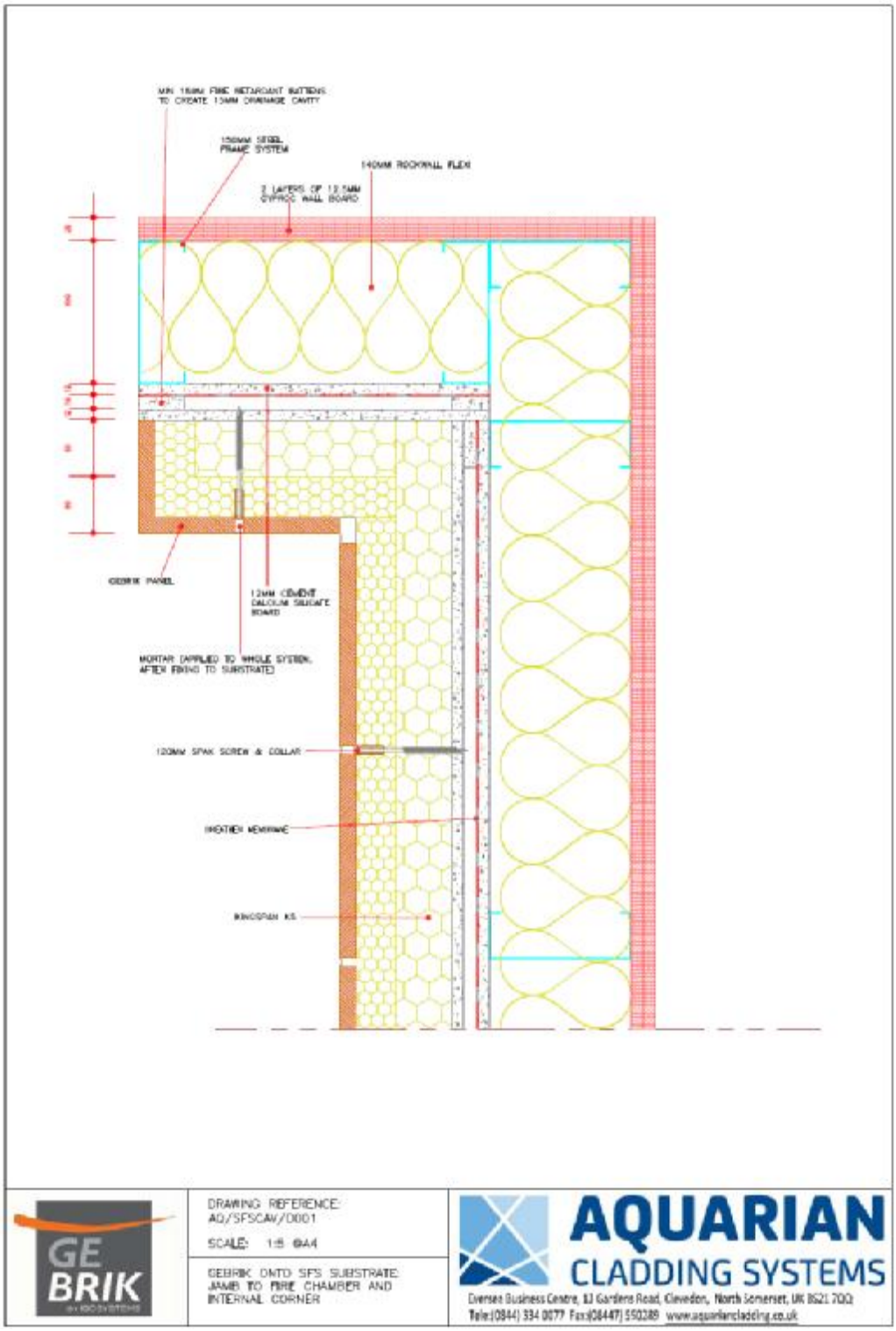

Figure 5. Construction of the System showing the build-up and fire chamber return.

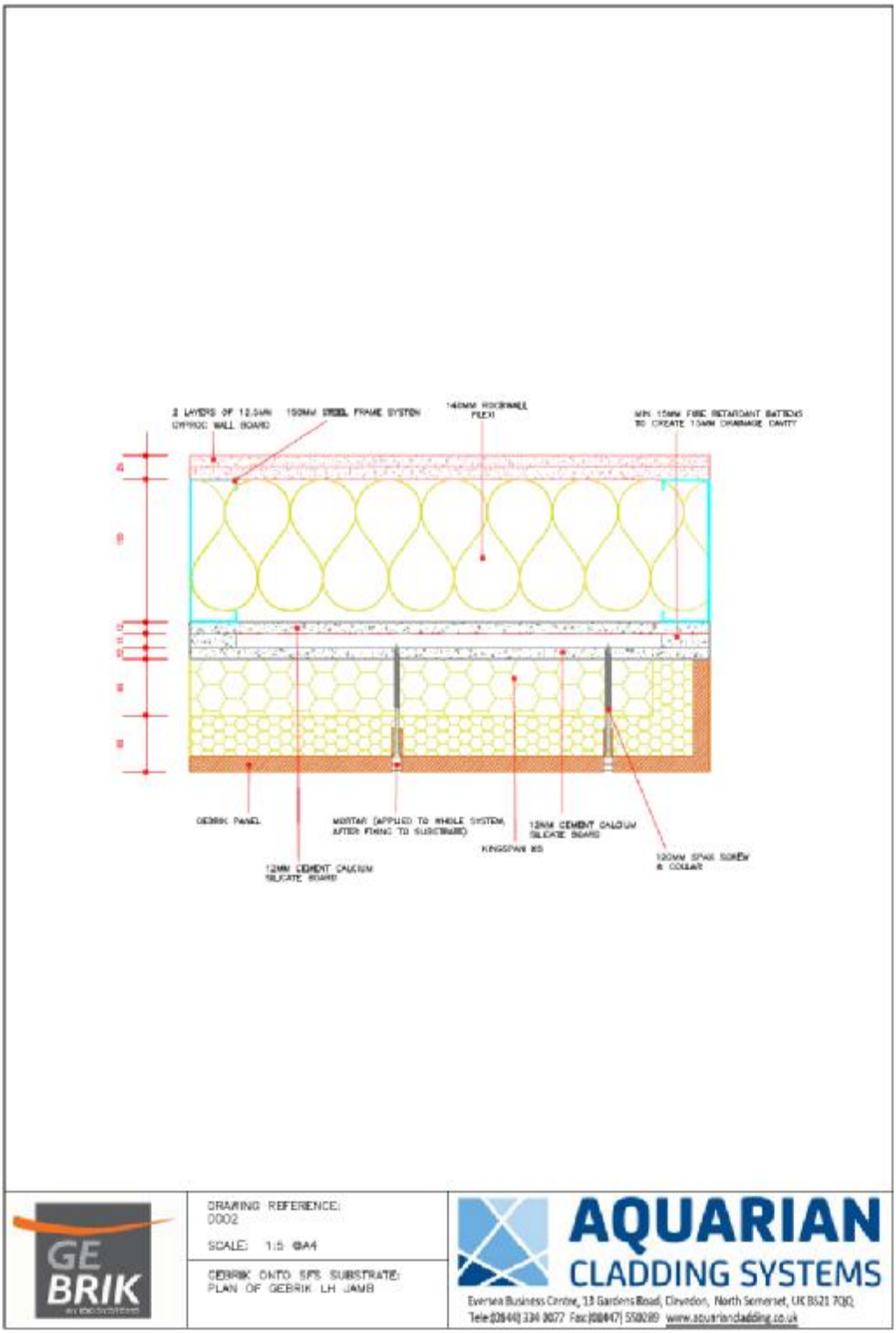

Figure 6. Construction of the System.

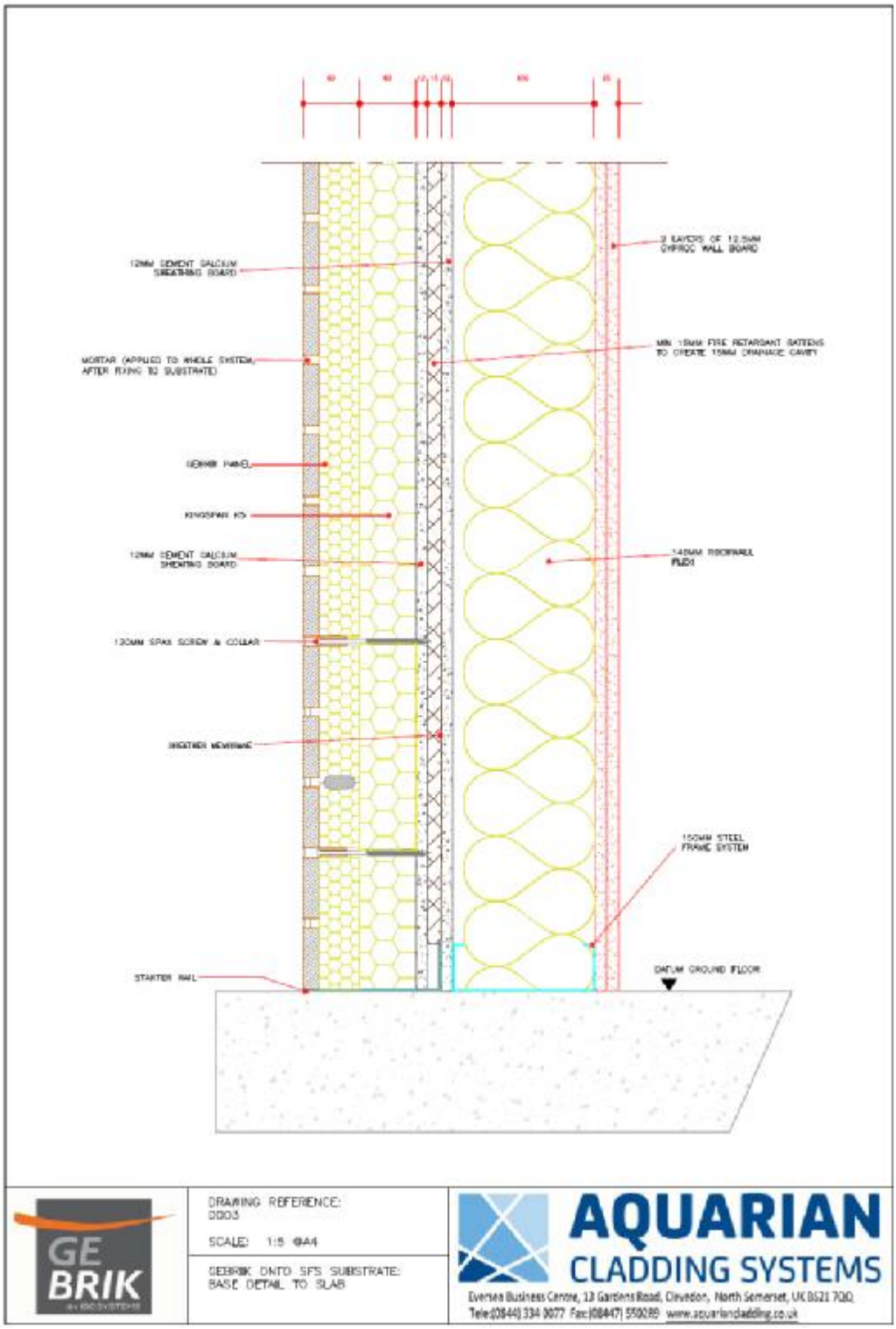

Figure 7. Construction of the System.

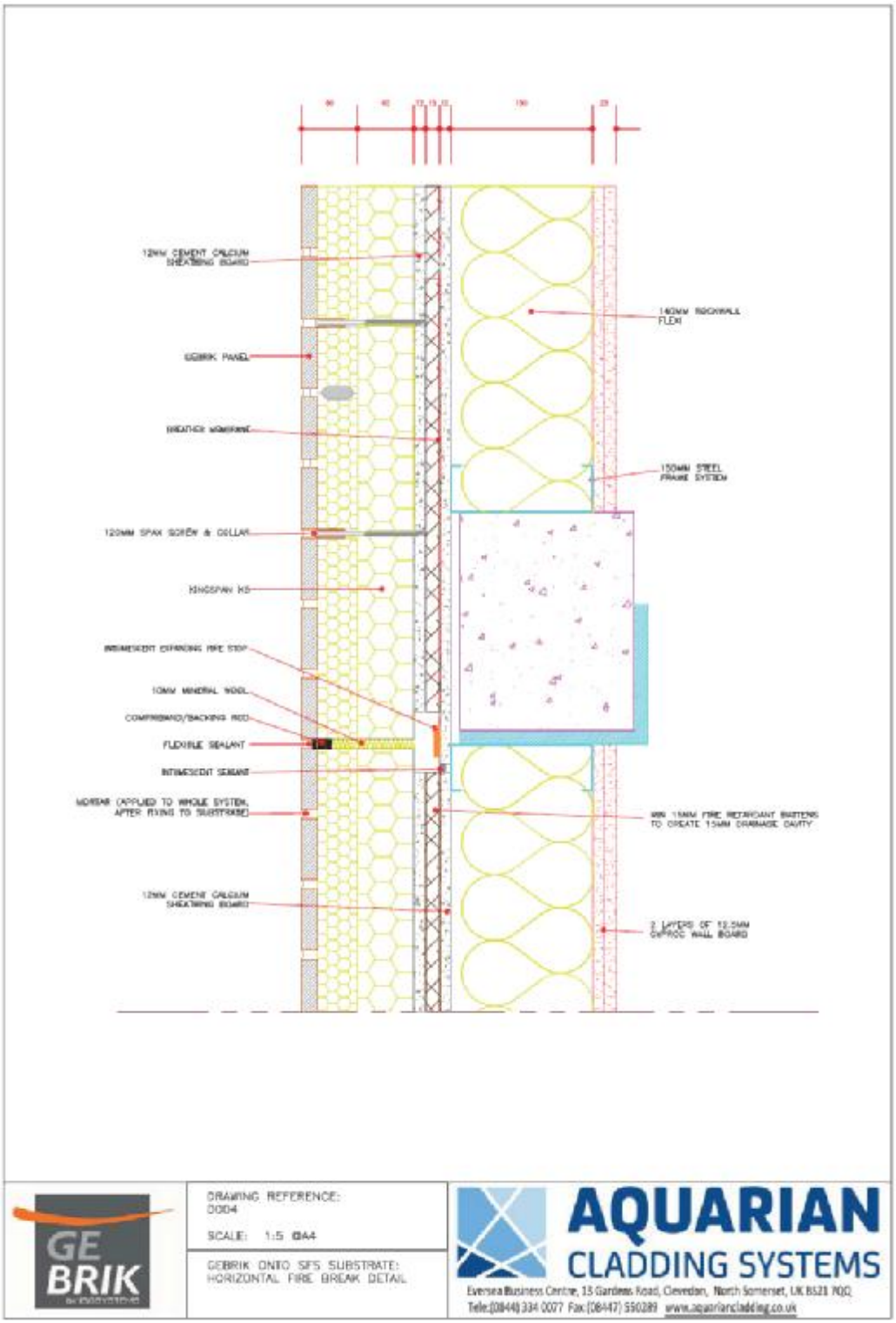

Figure 8. Construction of the System showing the fire break detail.

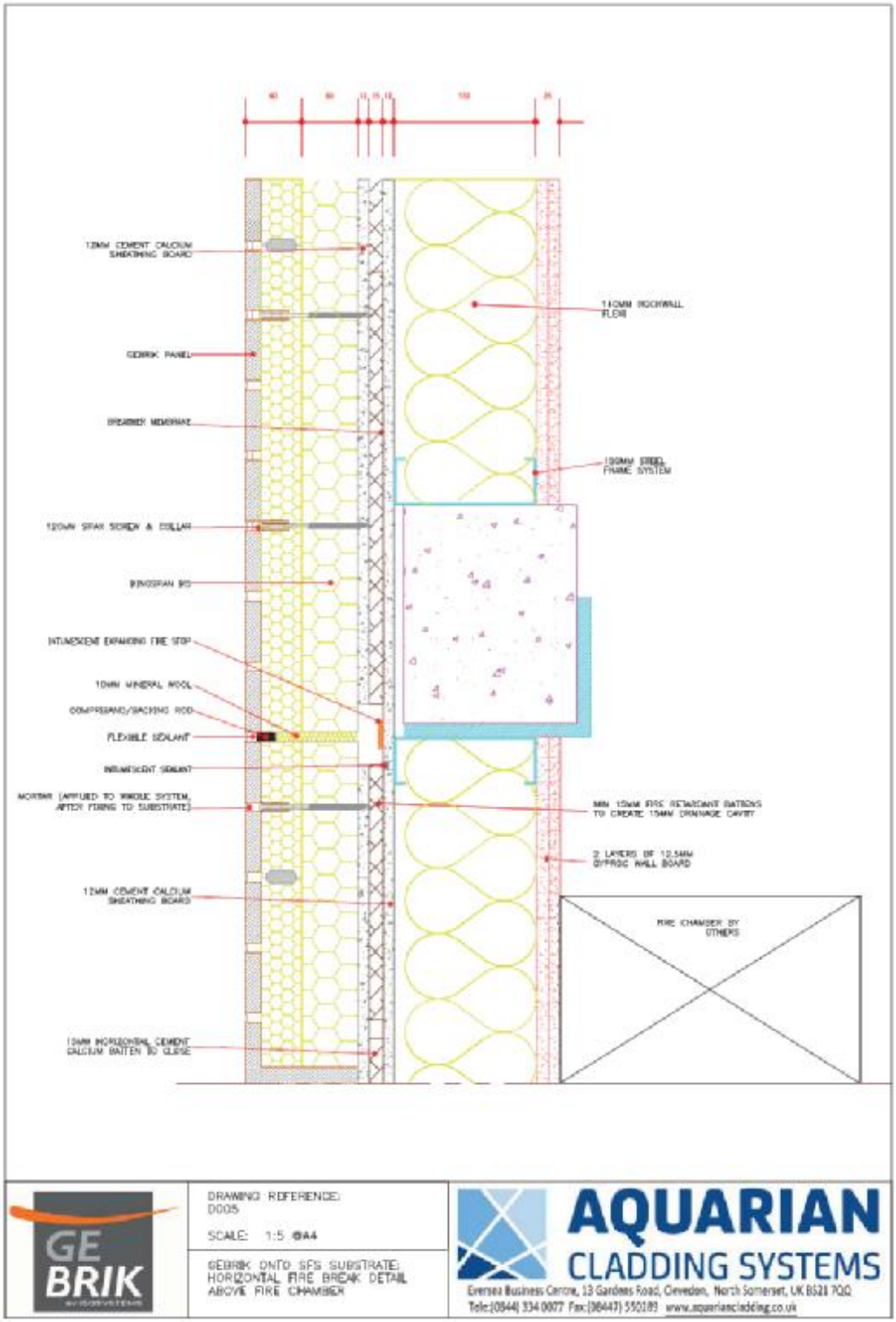

Figure 9. Construction of the System.

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	Iso Systems and Aquarian Cladding Systems	Test report 293941 dated 27th June 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 Burn through		>15 minutes	Compliant

4.3 Observations

Mechanical Performance

It was observed that from 9 minutes and 48 seconds that the brick slips from the main face of the cladding system began to fall away, this continued throughout the test period and at 25 minutes partial collapse of the wing wall at 4 m was observed.

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.

SIGNED

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S J Howard

Principle Consultant

For and on behalf of BRE Global Ltd

APPROVED

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T Baker

Principle Consultant

For and on behalf of BRE Global Ltd

Date: 3 July 2014

Report Ends