

## BRE Global Classification Report

**Stofix Ventilated Brick Cladding System. Classification of fire performance in accordance with BR 135: 2013 Annex B**

**Prepared for:** Stofix Oy  
**Date:** 22 July 2016  
**Report Number:** P100576 -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](mailto:enquiries@bre.co.uk)  
[www.bre.co.uk](http://www.bre.co.uk)

Prepared for:

Stofix Oy  
Ahlmaninkatu 2 E  
FIN – 40100 Jyväskylä  
FINLAND



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## Prepared by

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Name Phil Clark

Position Senior Consultant

Signature

A handwritten signature in black ink, appearing to read 'Phil Clark', is written over a light grey rectangular background.

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## Authorised by

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Name Stephen Howard

Position Director

Date 22 July 2016

Signature

A handwritten signature in blue ink, appearing to read 'Stephen Howard', is written over a light grey rectangular background.

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

**Sponsor:** Stofix Oy, Ahlmaninkatu 2 E, FIN – 40100 Jyväskylä, FINLAND

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

**Product name:** Stofix Ventilated Brick Cladding System

**Classification report No.:** P100576 -1000

**Issue number:** 2

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This classification report consists of 16 pages and may only be used or reproduced in its entirety.



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## 1 Introduction

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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.

This classification is Issue 2 of BRE classification report P100576-1000 Issue 1 dated 13th November 2015. At the request of the client, a change to the product description has been made in this report. BRE classification report P100576-1000 Issue 1 dated 13th November 2015 has been withdrawn with effect from the date of this report



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## 2 Details of the Classified Product

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### 2.1 Description of substrate

The test specimen was installed onto cladding test frame 3. This is a test frame 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 1-5, and (in order from the structural frame to the outer panels) comprised of:

- Double layer of 12.5mm plasterboard.
- 100mm lightweight steel frame
- 12mm cement particle sheathing board
- Tyvec Supro membrane
- 120mm K15 Kingspan Insulation –installed in two layers 1200mm x 600mm x 60mm (thick).
- Horizontal firebreaks – AIM intumescent cavity barrier 133mm x 75mm
- Vertical firebreaks – mineral wool fire breaks - 170mm x 75mm
- Secondary frame consisting of rails to secure the insulation and decorative panels.
- Brick slip panels.

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

A sectional steel frame system (SFS) was installed between the floor slab hangers on the test frame, with horizontal base and head tracks fixed to the floor edge detail provided on the test frame. The vertical sections were at nominal 600mm centres, although in some areas this spacing was reduced to allow the frame to be fitted to the cladding test frame.

The horizontal sections 104mm x 70mm x 1.2mm and the vertical sections were 100mm x 75mm x 1.2mm. Both sections were formed from galvanised mild steel.

The rear of the framing system was clad with two layers of 12.5mm plasterboard.

12mm cement particle board was installed on the front face of the frame.

The breather membrane was installed over the cement particle board. This was installed with the long edge of the sheet vertical.



Right angle brackets (Stofix SK115) were installed mainly at 720mm centres in a vertical lines onto the cement particle board to carry vertical rails (Stofix J60). The vertical rails were secured to the brackets using M8 bolts.

Insulation in 1200mm x 600mm sections was friction fitted between the rails in two 60mm layers. The insulation was additionally secured onto the cement particle board using 155mm x 6.0mm screw fixings with a 75mm steel washer.

Horizontal rails were installed onto the vertical rails (Stofix AK25) at either 600mm or 400mm centres to carry the brick slip system, one rail carrying one panel.

The brick slip system was supplied in 1200mm x 600mm x 20mm (thick) sheets and was backed with a galvanised steel sheet. The galvanised sheet was formed to enable the brick slip system to be hooked onto the horizontal rails. The reference for the brick slip system was 285x85 1/3 S1200600, S1200400.

Adjacent panels were secured with self-tapping screws through the joint between panels and these joints were then finished with (Stofix site bonding grout). Horizontal expansion joints were placed to every floor slab level and vertical expansion joints to over centre of the fire chamber and to the inner corner of the test facade.

The hearth to wall joint was packed with mineral wool and covered with cement particle board.

The 38 mm gap behind the brick slip panels was giving a full length ventilated cavity from bottom to top of the façade.

The top of the system was covered with mild steel galvanised flashing with top ventilation.

### 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.



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### 3 Product Specification

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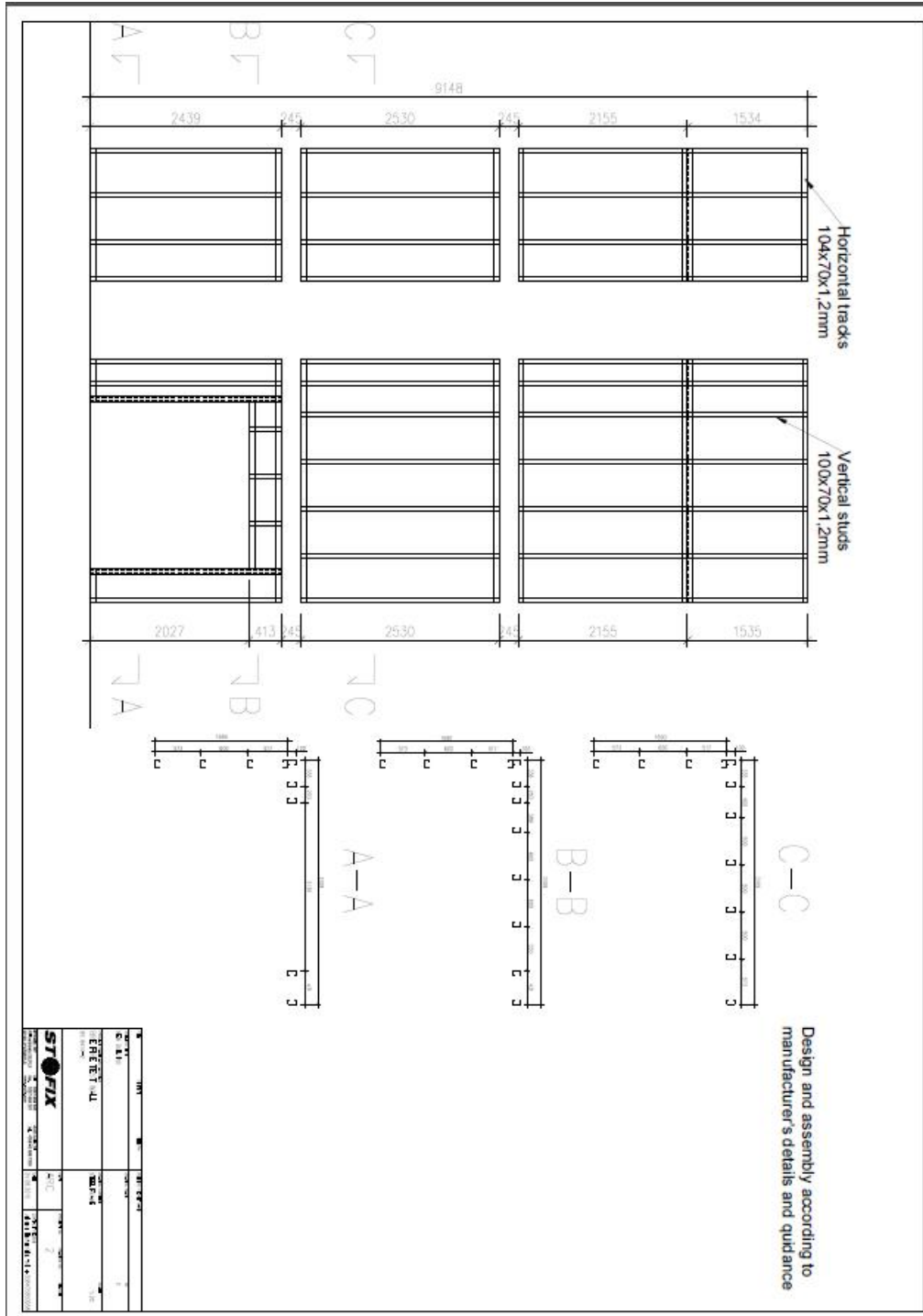


Figure 2. Steel framing









## 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	Stofix	303931 issue 2	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- Cavity 1		>15 minutes	Compliant
	Internal fire spread Insulation layer		>15 minutes	Compliant
	Peak temperature/time at level 2, cement particle board		>15 minutes	Compliant
	Internal fire spread – Cavity 2		>15 minutes	Compliant
	Internal fire spread Plasterboard		>15 minutes	Compliant
	Internal fire spread – fire break through to internal compartment		>15 minutes	Compliant



### 4.3 Mechanical Performance

A vertical crack formed on the main face of the system, from immediately above the hearth to the second level fire break.

A second crack formed horizontally at the first level fire break level, extending from the middle of the main face to the width of the hearth on both sides of the centre.

A small horizontal crack also formed on the wing face of the wall at the same level as the main face horizontal crack, on the right hand side extending roughly 1m horizontally on the wall.

The remainder of the system above the hearth was not seen to be damaged.

No tiles or panels were observed to have detached from the system.



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## **5 Classification and field of application**

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### **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.





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## 6 Limitations

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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.