

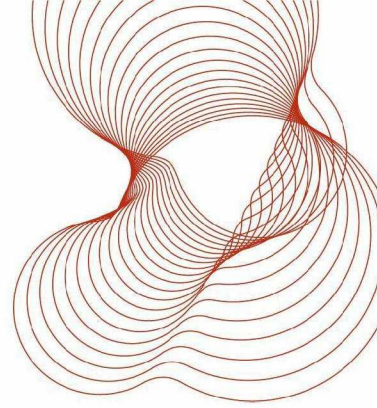


**An assessment of the  
external wall system for  
the Riverlight project,  
London against the  
provisions given in  
Section 12 of Approved  
Document B, Volume 2**

Prepared for:  
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**Assessment report number  
CC 279005**



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## 1 Introduction

We understand that the Riverlight project is a residential development in London which includes over 800 apartments set over 6 blocks, all of which are over 18m in height. The guidance to national building regulations states that the external envelope of a building should not be a medium for fire spread. The use of combustible materials in the cladding system and extensive cavities may present such a risk. The proposed external wall system for this project includes Kingspan K15 insulation and Trespa Metoen FR external panels. Both materials are combustible. This report gives an opinion on whether or not the proposed external wall system complies with the guidance.

## 2 Scope

This report considers the construction of the external wall system described in this report for the Riverlight project against the provisions given in Section 12 of Approved Document B, Volume 2, *Fire safety, Buildings other than dwellinghouses*. The scope of the report does not include any fire resistance provisions included in the guidance given in the Approved Document.

### 3 Supporting Data

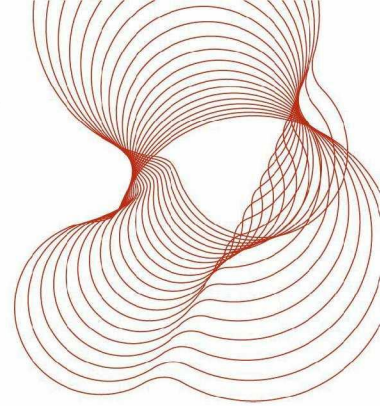
### 3.1 Classification report warringtonfiregent Nr 11708C

This classification report defines the classification assigned to the product Trespa Meteon FR, at least 6mm thick, in accordance with the procedures given in the standard EN 13501-1 (February 2002): *Fire classification of construction products and building elements Part 1: Classification using data from reaction to fire tests*.

The report confirms that the classification of the product in relation to its reaction to fire behaviour is classified as B-s2, d0.

## 4 Description of the Proposed System

The assessed external wall system is described below and in Figure 1. The wall system comprises of a steel-framed wall lined internally with plasterboard and externally with 12mm cement particle board sheathing. The wall system is built between the concrete decks of each storey. Kingspan Kooltherm K15 insulation is fitted between the studs. A rainscreen system of Trespa Meteon FR panels held in an aluminium frame is secured across the external face of the wall and there is mineral wool insulation in the



cavity between the rainscreen and the sheathing board. A cavity barrier is fitted between the edge of each floor slab and the rainscreen system.

## 5 Assessment

The wall system described in Section 4 and Figure 1 includes two combustible components, the thermal insulation used between the studwork, Kingspan Kooltherm K15, and the panels used in the rainscreen system, Trespa Meteon FR. Our understanding of the guidance given in Section 12 of Approved Document B, Volume 2, is that systems need only be classified to BR 135, *Fire performance of external thermal insulation for walls of multi storey building*, if any of the following requirements are not satisfied: -

- a) The external surface meets Diagram 40 of Approved Document B.
- b) The insulation material used in the external cladding of the wall system is a material of limited combustibility.
- c) Cavity barriers are provided.

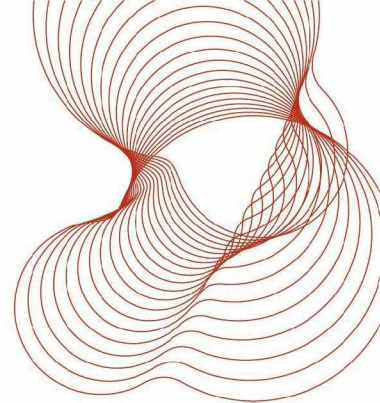
The most onerous requirement for the external surface of an external wall of a building given in Diagram 40 of Approved Document B requires that the surface is class B-s3, d2 or better. The classification report summarised in 3.1 confirms that the Trespa panels satisfy this requirement.

The insulation used in the external cladding is mineral wool. Although the detailed specification of the mineral wool has not been provided we would expect that most mineral wool products marketed in the UK are 'materials of limited combustibility' as defined in Approved Document B and therefore satisfy this requirement. However, before any mineral wool material is installed the supporting test evidence should be obtained from the mineral wool manufacturer to ensure that this is the case.

We understand that the guidance is only referring to any insulation materials on the external face of the sheathing board. Nevertheless some approval authorities may still be concerned that there is combustible insulation within the inner part of the wall, i.e. the Kingspan Kooltherm K15 material. However this insulation is enclosed by the cement particle sheathing board, the concrete decks and the plasterboard internal lining. The identity of the 12mm cement particle board has not been given but we would expect that most products of this type would adequately shield the insulation from external fire attack. In order to ensure that the correct sheathing board is selected, the board manufacturer should have test evidence from a BS 8414-2: 2005 test that demonstrates that the board will not crack excessively or fall away during the test. Alternatively, similar evidence from a fire resistance test employing the heating conditions of BS 476: Part 20: 1987 or BS EN 1363-1: 1999 for about 30 minutes would be suitable as this would expose the board to similar heating conditions.

A fire-resisting cavity barrier is located at the edge of each floor slab as shown in Figure 1. In principle the proposed detail is adequate but supporting test evidence should be obtained from the cavity barrier manufacturer to ensure that it performs in fire as required, i.e. the barrier has a fire resistance of at least 30 minutes (30 minutes integrity, 15 minutes insulation) when tested to ad hoc BS 476: Part 20: 1987 or BS EN 1366-3: 2009.





One remaining concern may be that fire being emitted from an opening may penetrate the wall and pass through to the inside of the building in a higher storey during a test to BS 8414-2: 2005. In our opinion this is unlikely as the combination of cement particle sheathing board, Kooltherm K15 insulation, and two layers of plasterboard will adequately resist the fire when tested to BS 8414-2: 2005.

Finally, we expect that the rainscreen system would fall away from the outer face of the wall if tested to BS 8414-2: 2005 as the panels are supported by aluminium framing. The low melting point of this type of framing normally leads to an early deformation and collapse of the system when exposed to fire. However, although BR 135 requires that such a performance is recorded it is not part of the pass/fail performance criteria.

## 6 Conclusion and Recommendations

We have considered the suitability of the external wall system described in this report with regards to the guidance given in Section 12 of Approved Document B, Volume 2, and have concluded that the system does satisfy the guidance providing the following steps are taken:

1. The mineral wool insulation used on the outside of the sheathing board must have been shown by test to be a material of limited combustibility, as defined in the Approved Document.
2. The manufacturer of the cement particle sheathing board should provide test evidence that the board will not crack excessively or fall away when exposed to the heating conditions of BS 8414-2: 2005. If this evidence is not available, a similar performance in a fire resistance test to BS 476: Part 20: 1987 or BS EN 1363-1: 1999 for about 30 minutes would be acceptable.
3. The cavity barrier located between the edge of each floor slab and the rainscreen system must have been shown by test or assessment to satisfy the integrity and insulation performance criteria of BS 476: Part 20: 1987 or BS EN 1363-1: 1999 for at least 30 minutes and 15 minutes respectively when exposed to the heating conditions of the standard.

This report excludes any consideration of any requirements the wall may have for fire resistance.

### 7.1 Declaration by applicant

We are not aware of any information that could adversely affect the conclusions of this assessment.

For and on behalf of:

This assessment has been carried out in accordance with Fire Test Study Group Resolution No. 82. It relates to the fire performance of the product and does not cover aspects of quality, durability, maintenance nor service requirements. This assessment relates only to the specimen(s) assessed and does not by itself infer that the product is approved under any Loss Prevention Certification Board approval or certification scheme or any other endorsements, approval or certification scheme.



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