

## MIMA position paper on fire safety for the building regulations review

### 1. Scope of Building Regulations Review

MIMA welcomes the fact that scope of the Building Regulations review is not limited to high rise domestic buildings and believe particular attention should be given to all mid- and high-rise, sensitive and high occupancy buildings such as schools, hospitals and care homes.

A wider review should consider the implications for fire safety in technology advances. Current developments in technology mean it is perfectly practical to track a product from factory to installation while keeping a digital record of what the product characteristics are – including fire performance, installer name and even a geo-located photo of the installation. That record can be handed over to future building occupants.

#### **Recommendations:**

A thorough review of Approved Document B should follow the independent review with particular attention to all mid- and high-rise, sensitive and high occupancy buildings such as schools, hospitals and care homes.

This follow up review should consider wider testing methodologies' fitness for purpose. Specifically focusing on whether the testing regimes applying in all buildings are only testing a perfect installation rather than a 'real world' one.

Develop a comprehensive fire risk analysis for both existing and new buildings.

### 2. Current regulations are ambiguous

Currently 'guidance' for facades in buildings over 18m high sits in multiple documents with Approved Document B referencing a variety of supporting documents which don't lead to clear and unambiguous guidance on what is or isn't permitted.

- The Building Regulations demand that external walls adequately resist the spread of fire. Approved Document B says this can be achieved through the use of materials of limited combustibility (A1/A2 rated on the Euroclass system), or by undertaking a BS8414 test on a full façade system. For further details you are referred to BR135.
- BR135 presents "generic fire performance design principles" rather than robust design details. It states that these elements are not exhaustive, and advises that "innovative designs and variations in material selection and design can be fully assessed only by full-scale testing".
- For industry readers, this is ultimately a) ambiguous and inconclusive in determining which types of materials can and cannot be used on building facades and b) from the outset it introduces the possibility of using combustible materials through the use of 8414 testing.

#### **Recommendation:**

The current regulations need to be made clear to avoid interpretations that can compromise public safety. To offer maximum public safety, the approved document should offer the only point of reference and, as covered below, the only permissible routes to compliance should be the use of Euroclass A1 or A2 rated products on facades which should be clearly set out in a redrafted Approved Document B. That redrafting should also clearly set out that Approved Document B is the only acceptable route to compliance.

### 3. Routes to compliance

Current practice suggests four routes to compliance are available for facades on high rise buildings;

1. The use of non-combustible A1 / A2 Euroclass products in the systems
  2. Undergoing a BS8414 system test and meeting the criteria set out in BR135
  3. Desktop studies suggesting façade make ups will likely perform similarly in a fire to a construction tested in BS8414 and passing criteria in BR135
  4. Fire Safety Engineering whole system analysis
- Approved Document B is not the only means to compliance with the Building Regulations – other bodies are permitted to publish their own guidance on how the regulations can be met.
  - This has led to industry bodies such as the BCA and NHBC publishing their own guidance on BR135 – these guides both contained four routes to compliance including desktop studies, which allow for combustible materials to be used without even being tested.
  - There is substantial confusion within the industry and even amongst fire experts about what the official regulations do and do not state – many are under the false impression that the oft-quoted ‘four routes to compliance’ are in ADB or BR135, when they are not.

#### **Recommendation:**

Only specifying either A1 or A2 Euroclass products / systems can ever offer certainty to occupants that the façade will offer the maximum protection against fire. All other routes permit human error or judgement in to the system.

### 4. Classification

- References in Approved Document B to national fire classifications such as “Class O” alongside Euroclasses A1, A2, B, C, D, E and F cause confusion - Class O certification is commonly misinterpreted to mean that a product is non-combustible.
- The continued use of “Class O” classification has allowed manufacturers to imply a greater degree of fire-resistant performance than is actually the case. Similarly, marketing terms such as “fire retarded”, “fire safe” and “non-flammable” are frequently used to describe the reaction to fire properties of materials which are classified as combustible.
- The difference between combustible and non-combustible materials is an extremely significant distinction which must not be blurred.
  - Combustible materials contain considerable fuel loads which contribute to the spread of fire.
  - The term ‘non-combustible’ is defined in official Government guidance provided in support of Building Regulations (including Approved Document B in England and Wales), by reference to the Euroclass classification system. Non-combustible products cannot contain significant quantities of combustible materials, including any glues and binders, as this would prevent them from achieving a non-combustible classification (which for example includes testing to determine calorific content in accordance with BS EN ISO 1716:2010).
- Building regulations must offer greater assurance of fire safe performance for occupants of both residential and non-residential buildings over 18 metres. With the health of building occupants, a priority, the smoke toxicity of construction products must be tested, classified and labelled to provide important information to consumers and made a key component within Approved Document B.

**Recommendation:**

The Euroclass system should be the only classification system referenced in a redrafted Approved Document B. All reference to the British Standard (BS) 'Class O' should be removed as this adds ambiguity and uncertainty of interpretation – indeed many report a belief that Class O classification is synonymous with 'non-combustible', which it clearly isn't.

Euroclass classifications should become the 'vocabulary' of a redrafted Approved Document B and, if any supporting documents remain, related documents. Any documents that use terminology linked in any way to combustibility that may be ambiguous or open to misinterpretation should be removed.

**5. Testing Methods:**

No modelling available can ever genuinely replicate the behaviour of a fire in a complex building in the real world while no fire test on a perfect installation can ever replicate fire behaviour in buildings that have received real world installation practices. Desktop studies do not produce a reliable indication of fire performance.

**- Desktop studies**

There are serious concerns about the validity and accuracy of probability-based calculations for both desktop studies and fire safety engineering and little to no experience is available today to show that buildings assessed using Fire Safety Engineering have performed as predicted during a fire.

- Desktop studies do not produce a reliable indication of fire performance. These generalised assessments can do little more than guess at how combustible materials might behave in a fire on an unspecified building.
- The acceptance of evidence produced by desktop studies has also promoted a light-touch approach which has encroached upon the regulatory regime as a whole, eroding the previous scepticism (and rigour of checks) that the proposal to use combustible materials such as plastic foam insulation would have once been expected to trigger.

**- BS8414 test**

Even passing a full BS8414 test does not necessarily indicate that a system would provide adequate resistance to a real-life fire.

- Tests are conducted on perfectly installed systems, which do not reflect common installation issues in the market, as recognised in the Each Home Counts Review
- As highlighted by the Fire Protection Association, the design of the test wall does not reflect real life structures as it misses important details such as windows and air vents.

**Recommendations:**

Testing regimes must be continually reviewed to keep pace with construction practices as well as to ensure the process is sufficiently.

The BS8414 test should be updated to reflect real life construction features such as windows and vents.

The communication of test results based on perfect laboratory conditions must highlight the limitations of these tests in terms of predicting real life performance.

Given the fatal danger of toxic smoke, material testing and classification should be introduced for toxicity. These products must then be labelled and regulated accordingly.

## 6. Enforcement:

Clear guidance will allow easier interpretation however compliance clearly needs to be policed while sanctions for non-compliance robust. Approaches on how any new guidance will tackle policing and sanction should be clearly set out.

### **Recommendation:**

Sanctions need to be meaningful, tough and properly enforced.

## 7. Summary of recommendations:

1. The current ambiguous regulation must be replaced with clear, straightforward guidance.
2. All mid- to high- rise and sensitive buildings should be clad and insulated with Euroclass certified A1 and A2 materials only.
3. The adoption of a simple binary system with building materials classified as either non-combustible (Euroclasses A1 and A2) or combustible (Euroclasses B-F).
4. An equally rigorous approach should be taken with other elements of the building exterior, including roofs.
5. The BS EN 'Euroclass' system should be the sole classification system referred to in Approved Document B.
6. Regulations must take account of the creation of toxic smoke during fires. Materials testing and classification should be introduced for toxicity, which stringent limits set on their usage which take account of the fatal dangers of toxic smoke in a fire.
7. Government should give clear, unequivocal direction on certain key safety issues pertaining to accountability e.g. the use of desktop studies should be explicitly prohibited by government.
8. The Government must clearly communicate that Approved Document B provides the expected route to compliance.

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