Fire Safe Europe’s comments on the BS8414 large scale façade test

In the context of the Local Government and Communities Committee session on Building Regulations and Fire Safety in Scotland, Fire Safe Europe would like to share some concerns regarding the test method BS8414.

These concerns stem from the research that has been done by several experts and organisations in the aftermath of the Grenfell tragedy. The report by Professor Jose L. Torero, submitted to the independent enquiry, stated that “Tests such as BS 8414 provide a single scenario deemed consistent with an external fire, a very limited number of measurements and a very simple failure criterion. The combination of these three characteristics does not provide a sufficiently comprehensive assessment of performance.”1 - Another report commissioned by the Association of British Insurers, titled “A review and investigation of potential shortcomings of the BS8414 standard for the approval of cladding systems such as those commonly used on tall buildings”, also points to flaws in the BS 8414 method.

Due to the criticism of the test, the British Standards Institution (BSI) has decided to start a revision process of BS 8414. The independent review led by Dame Judith Hackitt also recommends a strong limitation of five-year review cycles on test methods, which has a direct impact on BS8414.

The BS8414 test, the British standard test-method for fire performance of external cladding systems on buildings, is currently lacking in several crucial areas:

1. BS8414 does not include measurements of smoke development and smoke toxicity. We already know that toxic smoke had a devastating effect at Grenfell, with many survivors treated subsequently for cyanide poisoning.

2. The surround to the combustion chamber is not specified in BS8414 but routinely comprises a protective frame, which is not resent around real-life window openings and can reasonably be expected to protect the façade system in a way that real-life installation details will not.

3. Cavity barrier details, such as location and frequency, can be chosen by the test client and do not have to reflect real-life practice.

4. Windows, vents and other common wall features are missing from the BS8414 test, the results of which are therefore wholly unrepresentative of façade performance in a real fire. What made the Grenfell fire so devastating is the fact that the fire re-entered the building at every floor, spreading the fire to all

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apartments. This risk can only be fully evaluated by including windows in the tests.

5. Mechanical performance such as system collapse and flaming pools are not included despite the obvious risks to fire-fighters, evacuees and others on the ground, as well as the potential for fire damage and spread.

6. Specimen samples are not subject to any validation criteria.

7. Test wall surface details are not specified, and the UK’s only testing facility uses rigs with flat and regular walls, in stark contrast to the irregular finish of existing walls in retrofit projects – an important factor which may enable fire to spread behind combustible insulation.

8. Installation in BS8414 tests represents ‘best possible’ practice, which is unreflective of real-life installation

9. The failure temperature and time provided by BR 135, which are too high and too short, respectively.

Thank you for taking the time to consider this submission and please do not hesitate to contact us if we can be of any further assistance.

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About Fire Safe Europe
Fire Safe Europe (FSEU) is a broad and unique cross-sectorial alliance of fire experts, fire fighters, European associations, and international companies, including construction manufacturers and material suppliers of insulation, cable, concrete, ceiling, and fire protection equipment.

FSEU’s mission is to improve fire safety in buildings for people.