

Briefing on HPL Large-Scale Test and Non-ACM Materials

Overview

We believe the large-scale test used to assess HPL cladding was fundamentally flawed, and that Government should give urgent instructions to building owners to remove all combustible cladding and insulation from high-rise and high-risk buildings.

Recommendations

- Under the Building Safety Programme, the Government should conduct a comprehensive audit of the façade materials on all high-rise and high-risk buildings to identify the use of combustible materials. The audit of materials should include the following:
 - Identification of the system type (e.g. rainscreen cladding or external wall insulation) and build-up of each building.
 - Identification of both the cladding and insulation products used and their respective European Reaction to Fire classifications (Euroclass), along with the full Declaration of Performance for each product.
- The Government should urgently instruct building owners to remove all HPL cladding from high-rise and high-risk buildings, as well as any combustible insulation found beneath – the same should apply for all combustible cladding and insulation.
- The Government should extend the ban on combustible materials to all high-rise and high-risk buildings such as schools, hospitals and entertainment venues.

BS 8414 test on HPL cladding and stone wool insulation

The test used to assess HPL cladding was fundamentally flawed. It did not reflect real-life conditions and underestimated the risks of combustible materials on high-rise and high-risk buildings. As numerous expert witnesses to the Grenfell Tower Inquiry have previously stated, the test method neither reflects the way cladding systems are installed on buildings nor the buildings themselves.

Fine margins can make the difference between a pass and a fail. We have noted a number of key details in the HPL test that made it easier for the combustible cladding to pass:

- **There was a protective aluminium frame fitted around the chamber where the fire is situated.** This frame, which is not seen in normal construction, will divert flames away from the façade.
- **Four horizontal cavity fire barriers were used within a vertical distance of 6.5m, instead of one every three metres, which is common practice on real buildings.** Using extra fire barriers resists the spread of flame along the cavity, reduces the flame attack on the back of the cladding panels and reduces the temperature rise in the cavity (one of the key pass/fail criteria).

- **The thermocouples used to measure temperature rise in the cavity were all protected by cavity fire barriers.** Fire barriers were placed in close proximity to the underside of the thermocouples. Since the temperature measured by these thermocouples is a key pass/fail criterion, protecting the thermocouples is a way of influencing the test result.

The FPA, which conducted the test, has itself noted in its report that it cannot endorse the BS 8414 test result on its own “for the guarantee of end-use system performance”. It also notes that “some elements of a cladding system are not by default tested through this test regime which again have the potential to be important to overall performance such as the provision of breaches within the system (e.g. vents and ducts).”

This echoes testimony from Professor Jose Torero to the Grenfell Inquiry, in which he noted that:

“Many details can be hidden within the results of the test and therefore great caution needs to be exercised when interpreting such tests. In particular, it is essential to recognize the limitations of the failure criteria and the complexities associated to its extrapolation to real systems.”

Similarly, Dr Barbara Lane strongly criticised the specific BS 8414 tests run at the BRE for DCLG in the summer of 2017:

“I don’t take anything from those tests because I don’t consider them to be relevant because they are so far away from the kind of construction detailing that people like me have to deal with in our profession.”

The design of the large-scale test recently conducted with HPL cladding was virtually identical to the tests conducted for DCLG in 2017.

Advice for building owners on combustible façade systems

We welcome the fact that the Government has initiated an audit of all high-rise residential buildings above 18 metres, and we urge MHCLG to extend this to all high-rise and high-risk buildings.

We further welcome Government advice to remove all HPL cladding with a Euroclass rating worse than B and all HPL cladding where it is installed with combustible insulation. However, given the above, we believe the Government should not take the risk of allowing any combustible HPL cladding to remain on high-rise buildings.

We also note that no results or data have yet been made available from the bespoke non-ACM testing programme. This is concerning as many non-ACM cladding materials are combustible (Euroclass rated B-F) and are often installed in conjunction with combustible insulation. Many of these systems would thus not meet the functional requirements of the Building Regulations or even the criteria set out in BS 8414/BR 135. Building owners need clear and urgent advice on how to identify and remediate these systems.