Advice for building owners: Large-scale wall system test with ACM with unmodified polyethylene filler with foam insulation

1. The government is undertaking large scale testing of cladding systems to understand better how three different types of Aluminium Composite Material (ACM) panels behave with two different types of insulation in a fire. This note should be read alongside the government's explanatory note on the large scale wall systems testing, and sets out in more detail the results of the large scale test for a wall system including:

    - ACM with unmodified polyethylene filler (category 3 in screening tests), and
    - Foam insulation.

2. In all other respects, all tests are being specified and constructed according to the Building Regulations guidance - including fire stopping between floors and the required cavity barriers in place.

3. Further tests over the coming weeks will provide more information about how other systems behave in a fire, and more advice is expected to be published between now and mid-August as results from the testing are available. In addition, the government has asked the Building Research Establishment (BRE) and industry to publish the results of previous large scale (BS8414) tests on ACM and other cladding systems. This will help inform building owners' decisions about whether remediation work is required, and if so what materials could be used as replacements.

What do the test results say?

4. BRE have undertaken test BS8414-1 with a wall system with the above generic description. The detailed technical specification and results can be viewed at gov.uk (Fire test report: DCLG BS8414 test no.1).

5. This wall system failed the test, which means it did not adequately resist the spread of fire over the wall to the standard required by the current Building Regulations guidance, and which is referred to in BR135. The Expert Panel's advice is that, based on the test results, they do not believe any combination of these materials (ACM with unmodified polyethylene filler and foam insulation) would meet current Building Regulations guidance, and are not aware of any tests of such combinations meeting the performance criteria set out in BR135. This combination of materials therefore presents a significant fire hazard on buildings over 18m.

What do I need to do in light of these results?

6. Firstly, and while building owners are considering further actions they should take, based on the advice from the Expert Panel it is recommended that they:

    - Ensure they have implemented the interim measures set out in DCLG's letter to Local Authorities and Housing Associations on 22 June 2017, and act on them immediately if they have not already done so, in particular to ensure the local

Fire and Rescue Service has visited to complete a fire safety audit to assess mitigations. An email should be sent to nfccwmfshighrisecoordinationgroup@wmfs.net if a Fire Service visit is needed. The Expert Panel have reviewed and confirmed that the interim measures remain sound, and will help ensure safety of residents as any remediation work is planned and undertaken.

7. Secondly, building owners should take professional advice on what further steps to take with respect to their cladding system. This professional advice may be obtained from a qualified engineer with relevant experience in fire safety, including fire testing of building products and systems, such as a chartered engineer registered with the Engineering Council by the Institution of Fire Engineers[1]. Professional assessment of system performance may be obtained from an assessor employed by a test laboratory accredited by the United Kingdom Accreditation Service to carry out BS8414 and classify results to BR135.

8. Based on advice from the Expert Panel, where building owners have the same materials on their building as those set out in paragraph 1, it is recommended that in conjunction with their own professional advice they should follow the steps set out below:

- Put in place a plan to review the cladding system and undertake remedial work, in particular to remove cladding. Based on the test results, the Expert Panel do not believe any combination of ACM with unmodified polyethylene filler and foam insulation would meet current Building Regulations guidance. This combination of materials therefore presents a significant hazard on buildings over 18m. Building owners should take professional advice on whether they will also need to remove and replace insulation. Further large scale tests being undertaken over the coming weeks may provide more information to inform these decisions.
- Take professional advice on how to undertake remedial work safely (for example from an expert in cladding systems with relevant experience), and to ensure replacement materials are safe. An obvious option to ensure that the cladding system adequately resists external fire spread, is to replace the system with one where all of the elements of the wall are of limited combustibility[2]. For example, a wall system which includes an ACM panel with limited combustibility filler (category 1) and limited combustibility insulation such as mineral wool.

[1] Chartered fire engineers are engineers who have been through a verification process (overseen by the Engineering Council) to establish that they have the adequate education, training and experience to work as fire engineers.

2 Limited combustibility is a term used in the UK and defined in table A7 of Approved Document B against both national and European standards. ADB notes that, for the purpose of ADB, a material that is classified as A2 in the relevant European test standard, EN 13501-1 (or the national standards also set out in table A7), would also be acceptable as a material of limited combustibility. While the surface of a panel may be classified as Class 0, this does not address whether the filler material in the core of the panel meets the definition of limited combustibility.

- Assure themselves that remedial work also complies with Building Regulations guidance on how the system is designed and fitted – including provisions for fire breaks and cavity barriers.
- Ensure that when any work is carried out, including removing cladding, care is taken to consider the impact that removal may have on the other wall elements, and therefore on the overall structural and fire integrity of the building as well as other Building Regulation requirements. In particular care should be taken to ensure that insulation material is not exposed to the elements unnecessarily.
- DCLG has published a circular letter to building control bodies which sets out the planning and building control requirements that will need to be considered.

What other advice or support is available?

9. Further advice will be provided as more information is received following other large scale tests. This will add to the information available to building owners to help them take decisions about any remediation work necessary. All advice will be published on the Building Safety Programme webpage, and anyone can sign up for weekly email updates.

10. Government and industry are working together to support the process of remedial work needed to ensure that buildings are safe. Further information will be provided on this via the website above.