

Advice for building owners on external wall systems that do not incorporate Aluminium Composite Material

This Advice Note is for the attention of anyone responsible for residential buildings over 18m in height who are concerned about the fire safety implications of external wall systems that do not incorporate Aluminium Composite Material. It has been developed in consultation with DCLG's Independent Expert Advisory Panel.

1. The Grenfell Tower tragedy has raised concerns amongst building owners and residents about the fire safety of external wall systems on high-rise residential buildings. The Government's Building Safety Programme has to date focussed on identifying and advising on interim and remedial measures for high-rise building with Aluminium Composite Material (ACM) cladding systems, where such systems do not meet current Building Regulations guidance for resisting fire spread across external wall surfaces.
2. This advice is for owners of high-rise residential buildings where the external wall system of their building does not incorporate ACM. Building owners will want to satisfy themselves and their residents that buildings are safe.
3. Building owners should take their own professional advice on any further action, reflecting their building's particular circumstances.

Summary

4. With a series of large scale fire system tests for ACM cladding systems now complete and advice issued to building owners [<https://www.gov.uk/government/publications/building-safety-programme-update-and-consolidated-advice-for-building-owners-following-large-scale-testing>], the Government, supported by the Independent Expert Advisory Panel, has been considering whether there may be heightened risks linked to other external wall systems.
5. The potential that there may be incorrectly specified or substituted products installed on tall buildings should not be ignored. Building owners will want to satisfy themselves and their residents that buildings are safe, and may therefore wish to carry out the checks set out below.

Advice

6. As with ACM cladding systems, the Independent Expert Advisory Panel recommends that building owners seek professional advice where there is any uncertainty about the fire safety of their external wall systems. The expert panel maintains the view that the clearest ways of ensuring an external wall system adequately resists external fire spread are to use materials either of limited combustibility¹, or an external wall system which can be shown to have passed a large scale test conducted to the BS 8414 standard; and where the construction of the building also meets the other provisions of Building Regulations guidance, including fire stopping between floors and the required cavity barriers being in place (see Section 9 of Approved Document B volume 2).
7. Where an Assessment In Lieu of Test (sometimes referred to as a desktop study or technical assessment) of the likely performance of particular external wall systems has been undertaken, the technical basis of such assessments should be checked to ensure that all assumptions are technically robust (based on well-known scientific and engineering principles) and are supported by reference to relevant fire test data. Building owners and those providing professional advice should also consider the holistic fire strategy to ensure that the performance of the wall system achieves the functional requirements of the Building Regulations.
8. Building owners should understand the construction of their buildings and how best to maintain their safety in use. To do so, building owners should check their records for information about the external wall systems used on their buildings. It should also be possible to obtain advice and information from the product manufacturers and/or contractors about the fire performance, correct installation and maintenance of materials used.

Common external wall systems

9. ACM is part of a wider range of Metal Composite Materials (MCM) faced with other metals such as zinc, copper, and stainless steel. Like ACM, the filler or core material of MCM panels varies between products and can include combustible materials. In addition, the facing materials of MCM have different melting points, therefore the fire performance may differ depending on the type of metal facing. Building owners should seek professional advice over the suitability of MCM cladding.

¹ Materials of limited combustibility would either include a material or product which is at least Class A2-s3, d2 in accordance with BS EN 13501-1:2007; or has achieved a national equivalent classification in accordance with Table A7 of Approved Document B volume 2.

10. There are many different types of components used in the construction of external wall systems, for example, High Pressure Laminates (HPL) and Rendered Insulation systems and all perform differently when exposed to a fire. It is, therefore, important that the right combination of products has been installed and maintained correctly, to ensure they adequately resist the spread of fire over the wall to the standard required by current Building Regulations guidance. Building owners should seek to confirm the combination of products within the external wall system and the type of cladding (rainscreen or render) system on the building. Where there is potential for a product to have been substituted from what was originally specified at the design stage, onsite checks can help provide confirmation of product type. Where the product type (and associated fire classification) cannot be confirmed or there is doubt, then manufacturers' advice on the identification of their different products, systems and their fire performance details may be needed.

BS8414 tests

11. Some external wall systems incorporate insulation and other components, which do not meet the limited combustibility requirements of current Building Regulations guidance (on external fire spread). This may include rigid foam insulation or other components such as rainscreen panels. To determine whether the standards for external wall systems set out in current Building Regulations guidance would be met in cases where combustible components are included as part of an external wall system, building owners should determine if the external wall system has completed a BS 8414 test and successfully attained BR 135 classification. In support of this we have asked the laboratories that offer BS 8414 testing to list those systems they have tested and classified. This should help professionals in identifying whether a system on a building has or has not been tested and to identify product manufacturers and/or external wall system suppliers.
12. The Building Research Establishment's catalogue of historical data of external wall systems, which have completed a BS 8414 test and successfully attained BR 135 classification can be accessed on their website [<https://www.bre.co.uk/regulatory-testing>].
13. External wall systems which have been tested to BS 8414, and shown to adequately resist fire spread, rely upon design detailing such as cavity barriers and in some cases external renders to inhibit fire spread. Building owners with BS 8414 tested external wall systems should seek professional advice on whether the external wall system has been installed and maintained as recommended by the manufacturer/supplier. For example, missing or

incorrectly fitted cavity barriers, or damaged render can significantly compromise the fire performance of an external wall system.

Spandrel panels/ window panels/ infill panels

14. Spandrels can be part of an external wall on both ACM and non-ACM clad buildings, therefore the advice in this section is relevant to both types of building.
15. Spandrel panels (also including window panels and infill panels) are part of the external wall of the building. Therefore the requirements of Paragraph B4 of Schedule 1 of the Building Regulations 2010 (as amended) (External Fire Spread) apply.
16. Spandrel panels can be provided for both aesthetic and functional purposes. Like the rest of the external wall, the panels are generally required to meet acoustic, thermal, moisture, and fire performance requirements. Such panels are not normally load bearing but are often designed to account for wind loading. The design and materials of panels varies between buildings; some are made of singular components such as cement particle board, other panels are composite products comprising outer facing materials bonded to an inner core.
17. It is important that building owners check the materials used in the panels to ensure that they do not present a risk of fire spread over the wall. It may not be readily apparent what materials are present, particularly for composite products which can include inner combustible insulating cores.
18. Building owners can seek information about the panels from design information and building records however it is important to check that a product substitution has not taken place onsite. Where the panel product type can be confirmed on the building (e.g. by labeling), building owners should check the fire performance with the manufacturer by requesting test certification. Where there is no information about the panel or there is uncertainty, it will be necessary to investigate the panel composition by sample testing. Building owners should seek professional advice and take precautions to avoid releasing hazardous materials such as asbestos which may be present. Following any sampling, care should be taken to remediate any damage to the panels which would otherwise increase the fire risk (e.g. by exposing a combustible core).

19. The expert panel's view is that for buildings over 18m, the clearest way to ensure they do not present a risk of fire spread is to confirm that materials are limited combustibility¹ or better. Where the panels do not meet this classification, the most appropriate means of remediation is to remove and replace the panels, however professional advice should be sought first.
20. The Government is currently undertaking work to assess non ACM risks, and will be considering the risks associated with spandrel panels further in that work. The Government will consider with the Expert Panel whether further advice and guidance should be provided. Notwithstanding this, building owners should not delay the removal of spandrels where they are assessed to be unsafe.

Further advice on fire safety

21. Helpful advice on how to manage fire safety in blocks of flats is set out in *fire safety in purpose built blocks of flats* published by the Local Government Association. This advice can be accessed on their website [<https://www.local.gov.uk/fire-safety-purpose-built-flats>].
22. This Advice Note is for building owners to act on now. However, the Government is commissioning further research to support further understanding in the industry of the fire performance of external wall systems.

¹ Materials of limited combustibility would either include a material or product which is at least Class A2-s3, d2 in accordance with BS EN 13501-1:2007; or has achieved a national equivalent classification in accordance with Table A7 of Approved Document B volume 2.