GUIDANCE ON ALUMINIUM COMPOSITE MATERIAL (ACM) FAÇADE SYSTEMS

The Metal Cladding and Roofing Manufacturers Association (MCRMA) talks through its new advice note on replacing ACM façade systems

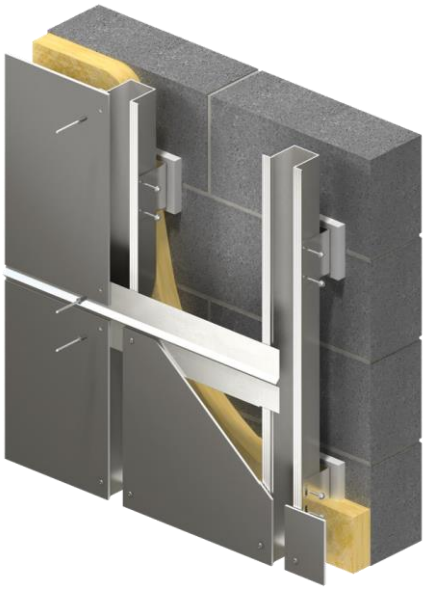
The Metal Cladding and Roofing Manufacturers Association (MCRMA) has published an Advice Note, titled *Aluminium Composite Material Façade Systems* which incorporates the latest guidance on Aluminium Composite Material (ACM) façade systems following the completion of the BS 8414 Part 1 fire test programme commissioned by the Department for Communities and Local Government (DCLG) – see table 1.

	Polyisocyanurate (PIR) insulation	**Stone wool insulation**	**Phenolic foam insulation**
ACM unmodified polyethylene (PE) core	Failed (DCLG test No 1)	Failed (DCLG test No 2)	Not tested in scheduled programme
ACM fire retardant polyethylene (FR) core	Failed (DCLG test No 3)	Compliant (DCLG test No 4)	Failed (DCLG test No 7)
ACM limited combustibility mineral (A2) core	Compliant (DCLG test No 5)	Compliant (DCLG test No 6)	Not tested in scheduled programme

Table 1: Combination of materials tested and results summary

In the Advice Note, MCRMA sets out its guidance relating to removal of the cladding/insulation and identifying a solution for the replacement of the façade. This should be considered in conjunction with information issued by the Government via the DCLG, regarding the overall safety of the building's occupants. It is important to recognise that there are known acceptable and reasonably straightforward solutions. The specific course of action however, will depend on several factors.

Firstly, there are number of points to consider in relation to the removal of the cladding and/or insulation. The quickest and most cost-effective way to re-clad a building is to make identical panels out of a similar, suitable and compliant material. Care therefore, should be taken not to damage any removed panels. Original panels should be retained, identified and referenced to their original location and orientation on the building. In the case of face fixed, flat sheet façades, a simple measurement should suffice.



Example of a face-fixed facade

In more complex situations (for example, cassette panels) the panels may need to be returned to a manufacturer to determine the relevant information required to make new panels. (In an ideal scenario, the original manufacturer may still have the CNC manufacturing computer code.) If buildings have been dismantled without retaining the original panels, then a survey will be required and a new façade detailed.

Example of a cassette facade

Depending on whether the building remains occupied, the condition of the substructure and the anticipated delay in replacing the façade, a decision should be made on installing temporary weatherproofing (and, if appropriate, new insulation) as the panels are removed.

The MCRMA does not recommend removing the ACM cladding in isolation, as this may increase fire risk and create a falling debris hazard. Detailed advice, which may be dependent on the nature of the façade and the substructure, can be obtained from members of the MCRMA and other professionals. This would include for example, whether and for how long, the building is habitable while devoid of its cladding and insulation. MCRMA recommends that the services of a contractor directly experienced in façade installation should be used at all times.

In identifying a solution for the replacement of the façade, the following factors need to be taken into account:

a) The building foundations, load capacity and layout of the supporting structure are only likely to be capable of carrying cladding panels of similar mass and design. Therefore, a major departure from ACM for example, terracotta tiling or brick slips, is not likely to be a straightforward or cost-effective solution.

b) PIR insulation and phenolic insulation are not 'limited combustibility' and therefore would need a BS 8414 certificate for use in conjunction with any cladding material, to comply with Building Regulations (or a desktop study, which is likely to be based on a certificate).

Currently, the only known BS 8414 compliant solutions and hence solutions which are compliant with Building Regulations are as follows:

i) A1 mineral fibre insulation with 'FR-type' material.
ii) A1 mineral fibre insulation with ACM limited combustibility mineral (A2) core.
iii) PIR (polyisocyanurate) insulation with ACM limited combustibility mineral (A2) core.

In addition, there are a number of 'limited combustibility' metallic solutions which use A1 mineral fibre insulation in combination with solid metal such as aluminium, steel, zinc etc (Care must be taken with this route to ensure compliance with Diagram 40 of Approved Document B, Vol 2, p 95).

c) It must be noted that adequate vertical and horizontal fire stops should be included at appropriate locations within the construction and in line with specific design advice.

The MCRMA web site contains the details of members who can assist in the rectification of a building, including independent inspectors, professional advisors and manufacturers. Any MCRMA member would be happy to recommend a reliable installer to help remove and replace the façade. All members comply with the MCRMA charter and code of conduct, and all MCRMA manufacturers possess ISO 9001 quality accreditation.

In addition, MCRMA has a dedicated rainscreen group, formed from companies within MCRMA membership, which includes the principal companies who supply metal based systems and component parts used within the fabrication and construction of rainscreen cladding systems.

Members of the group have been involved in the development of rainscreen systems over many years and have an extensive knowledge of their use and application on all types of buildings. In addition, the rainscreen group provides a technical focus for specifiers who wish to use these highly aesthetic systems on prestigious new build developments or refurbishment projects.

For more information and to download the Advice Note go to www.mcrma.co.uk

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