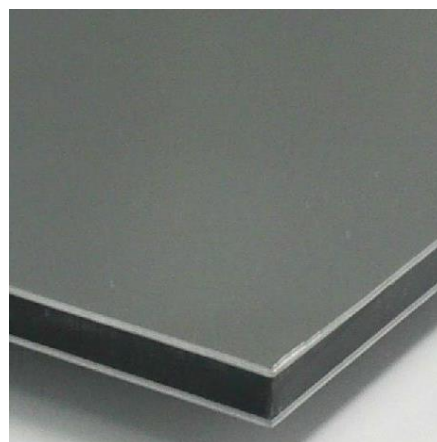


Subject: Aluminium Composite Panels (ACP) - Fire Risk - Australia & New Zealand

CMI would firstly like to express how deeply saddened we are by the news of the fire in London, which comes on the back of a similar fires in Dubai, China, as well as the Docklands Fire in Melbourne 2014.



All these fire events involved Aluminium Composite Panels (ACP), made of Aluminium Composite Material (ACM). This type of paneling consisting of two thin aluminium sheets bonded to a non-aluminium core, and are most frequently used for decorative external cladding or facades of buildings, and signage. They are classified as attachments in Australia and New Zealand, and it is a requirement of the Building Codes in both countries that the panels, “irrespective of their fire classification”, only be attached to fire rated walls. Such panels must demonstrate that they will not contribute to the spread of flame in the event of fire.

Aluminium Composite Panels (ACPs) are manufactured with various cores ranging from the flammable Polyethylene (PE) core up to the fully non-combustible Aluminium honeycomb core. It is important to note that, there is a considerable price difference between the flammable PE cored material and the fire retardant and fire-proof cored material as mentioned above.

Table one below explains the types of ACP panels available and details their uses.

Panel type	Fire rating	Use	Note
PE is a light composite material consisting of two aluminium cover sheets and a core made of polyethylene.	Flammable	This type of panel is restricted in its use to signage, low rise developments, factories and warehouses.	Restricted Use: Type C Construction Only
FR Panels. The designation FR refers to ‘Fire Resistant’ and as with A2 panels it has been tested to EN 13501: B-s1,d0.	B-s1,d0 Difficult to ignite	This type of panel may be used on high rise buildings. It must be attached to a fire rated wall. Although not strictly referred to as Non-combustible it has a very low spread of flame indices and will not contribute to the spread of flame.	ACCEPTABLE FOR USE ON HIGH RISE CONSTRUCTIONS
A2 , This type of panel gets its name from a specific fire test (EN 13501: A2-s1,d0).	A2-s1,d0 Classified as Non-combustible	This type of panel may be used on high rise buildings. It must be attached to a fire rated wall.	ACCEPTABLE FOR USE ON HIGH RISE CONSTRUCTIONS
Aluminium-Core Composite Panel are classified as A1 or noncombustible.	A1 Non-combustible	This type of panel may be used on high rise buildings. It must be attached to a fire rated wall.	ACCEPTABLE FOR USE ON HIGH RISE CONSTRUCTIONS

Figure 1 Fire rating and use of ACP's

*Colours shown in above figure 1, are a shade variation of those indicated in “European classification of building products 2016”

In New Zealand the co-relation of wall and ceiling surface finishes derived from Australian or European classifications to the Group Number requirements of NZBC Clause 3.4(a) can, without the need for further testing, be taken as described in the following table.

New Zealand Group Number according to NZBC Clause C3.4(a) using ISO 9705:1993	Australian Group Number according to NCC Specification C1.10 Clause 4 using AS ISO 9705:2003	European Classification using to EN 13501-1:2007+A1:2009
Group Number 1-S	Group 1, and a smoke growth rate index not more than 100	Class A1, A2 or B and Smoke production rating s1 or s2
Group Number 1	Group 1	Class A1, A2 or B
Group Number 2-S	Group 2, and a smoke growth rate index not more than 100	Class C and Smoke production rating s1 or s2
Group Number 2	Group 2	Class C
Group Number 3	Group 3	Class D
Group Number 4	Group 4	Class E and F

T: 1800 CertMark (237 862)

E: Info@CertMark.org

P: +61 (07) 5445 2199

W: www.CertMark.org

The tragic fire in London, highlights the need for strict controls on cladding materials that have a combustible component.

CMI certifies a large number of the ACP products, both in Australia and in New Zealand and can confirm that, to the best of our knowledge, none of these certified products have been involved in any fire event to date. After the Docklands fire in 2014, the Australian Building Codes Board (ABCB) introduced very strict guidelines regarding the requirements for fire testing external wall systems (refer to ABCB Advisory Note 2016-3 emailed to Clients 5th September 2016), these are also generally in line with the “Reaction to fire performance of Aluminium Composite Panels” released in 2016 by the Ministry of Business and Employment (MBIE). CMI is confident that all ACPs certified by us comply with the testing requirements as stipulated by both the ABCB and MBIE.

The importance of third party certification and ongoing surveillance of ACP products was highlighted after the Docklands fire in 2014. The building was clad in a PE core material. Under CMI’s strict Certification criteria, this type of material would not have been considered compliant for use on the Docklands building or any other high rise. During the subsequent investigation and public forums, the Victorian Government in Australia used one of CMI’s CodeMark™ certification certificates for a PE core material to demonstrate that the Limitations and Conditions specified on this certificate would have precluded its use on the Docklands building.

The question should then be asked, why do non-conforming building materials continue to be used in the marketplace and indeed, how many buildings are there in the market that contain the flammable PE core material? The simplest answer to this is the fact that PE core material is much cheaper than the Fire Retardant or non-combustible paneling systems. They all look the same but as has tragically been proven, they do not react the same in a fire event. The only way to fully satisfy yourself that your building is not also clad in a flammable PE cored ACP, is to contact a certified Fire Engineer and have the building inspected, with particular attention to be paid to the cladding material.

It is important to note that the New Zealand Building Code has lead the world in its fire safety performance by referencing the requirement of the American, National Fire Protection Association (NFPA) NFPA-285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior. Non-Load-Bearing Wall Assemblies. This test is a very stringent full scale fire test aimed at demonstrating that the test material will not contribute to the spread of fire.

It is also important to note that as a flammable material, the Building Codes in Australia and New Zealand do not permitted the use of PE core ACP unless due consideration is given to the type of construction and the proposed use of the panel. It is up to the design and install team involved in the engineering of the building to understand the difference in the products performance . The ultimate decision on the use of any building material rests with the building designers and engineering team .

In Australia, Standards Australia has recently released AS 5113:2016, Fire propagation testing and classification of external walls of buildings. This Standard sets out the procedures for the fire propagation testing and classification of external walls of buildings according to their tendency to limit the spread of fire via the external wall and between adjacent buildings. For more information on this comprehensive testing CMI recommend contacting mail@ignissolutions.com.au.

If you require further information on the above, please contact your CMI Client Liaison Officer.

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