

Is Australia headed for a cladding crisis?



London's Grenfell Tower and Melbourne's Lacrosse apartment building fires have raised a legion of issues about building standards and regulatory compliance, as well as who carries responsibility for defective products.

The speed, spread and difficulty of managing both fires were due to the use of aluminium composite panel (ACP) cladding on the exterior walls of the buildings. These types of panels were originally developed in the 1970s for use in signage and contain polyethylene (PE) or expanded polystyrene fillings.

The fires triggered state audits of external cladding on multi-storey buildings, with preliminary figures from New South Wales and Victoria identifying more than 1,000 buildings in each state with dangerous aluminium composite panels (ACP), according to [The Guardian](#) and [ABC News](#), but the actual figure may be much more.

"How many? It's unquantifiable... it could be more than thousands," Acting Deputy Chief Officer of the Melbourne Fire Brigade Adam Dalrymple said in an interview with [news.com.au](#) in September 2017.

What makes ACP cladding combustible?

Short answer: the PE filling. **Polyethylene is derived from petroleum and is more flammable**, according to an interim report on aluminium composite cladding made to the Parliament of Australia, although PE cladding can be combined with non-combustible materials to reduce this, and the actual degree of combustibility can only be established by testing the filling.

Aluminium itself is not fire resistant and is a heat conductor. **When the CSIRO tested the flammability of samples from the cladding used on the Lacrosse building the process had to be suspended** to avoid damaging the machines involved, the [Australian Financial Review](#) reports.

Dangerously popular

Due to its lightness, versatility and slick appearance PE cladding has been adopted extensively for exterior building treatments. According to [ABC News](#), in Australia it has been used on:

- **countless high-rise developments** such as Jackson's Landing in Pyrmont, Sydney
- **public buildings** such as the Fremantle Maritime Museum in Perth
- a number of **hospitals** in Melbourne.

In 2014 the fire started by a cigarette left burning on an eighth-floor balcony of Melbourne's Lacrosse building raced up the exterior walls to the 21st floor of Melbourne's Lacrosse building within eight minutes. Dalrymple said the Lacrosse blaze was unlike anything the Melbourne Fire Brigade had encountered in its 125-year history.

"You have multiple sets of fires over multiple levels all at the same time. That challenges the way you fight a fire."

How did we get here?

Investigation by the Melbourne Municipal Building Surveyor of the cladding used for the Lacrosse building found the commonly used ACP product was not non-combustible, but **the builder claimed it had been cleared for use by international testing agencies and approved by local experts**. The same product was used on the \$15 million-plus Grenfell Tower refurbishment in 2016.

Under 2015 amendments to the *Home Building Act 1989 (NSW)* builders are held responsible for significant problems in fire safety systems. These changes ensured fire safety systems in residential buildings are covered by the six-year period of statutory warranty for major defects.

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The [CSIRO Fire safety guideline for external walls](#) states that the overarching Building Code of Australia Deemed to Satisfy requirement for external walls of buildings is that they must be non-combustible. The guide also notes that makers of cladding systems usually produce a range of products and that a particular brand of ACP cladding could include panels with different core materials ranging from 100% PE cores to substantial amounts of fire retardant and mineral filler added to a polymer core, **making selection by brand alone unreliable.**

For owners of these buildings, “It is absolutely critical that they understand the combustibility of the product selected for the project and provide a transparent disclosure to insurers of the presence and properties of cladding used on external walls,” Gallagher’s [property](#) expert Martin Andrews advises.

But that isn’t the only area of ambiguity. A range of factors involved in the combustible cladding issue.

Non-compliant usage

How did the use of potentially unsafe cladding become widespread in the construction sector? What are the factors behind misunderstanding of the regulations and, in some cases, ill-informed exploitation of grey areas?

According to a report in [The Australian](#), an audit conducted in 2015 by the Victorian Building Association found that approximately half of Melbourne’s CBD buildings used cladding that did not comply with Building Code of Australia requirements. In 2000 a Sydney supplier who switched to importing cladding with a filling with enhanced fire-resistant properties estimates that prior to that potentially thousands of square metres of polyethylene (PE) cladding had already been used on buildings.

The Victorian Cladding Taskforce established after the Lacrosse fire identified **three key reasons** why potentially combustible ACP cladding has been used so widely in construction:

- the supply and marketing of inappropriate products
- poor industry compliance
- failure of regulation.

Misleading marketing

The ACP used on the Lacrosse building was marketed and sold internationally as a product **suitable for use on the external cladding of buildings including high-rise and residential buildings**, according to the construction company responsible for the build. The builder added that use of the brand and similar products had been common practice in Australia for at least 40 years, as reported by [The Australian](#).

In the Lacrosse case the builder asserted that the architect signed off on the choice of cladding and also did not raise concerns with either the engineer or building surveyor officially involved with the project.



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According to Gallagher's [general liability insurance](#) expert Adam Sulway, from an insurance liability perspective whoever is responsible for importing the product is deemed to be the 'manufacturer' under the *Competition and Consumer Act 2010*. This definition raises risks for multiple project stakeholders.

"In a worst case scenario for injury and loss of life the building owner, architect, project manager, builder and materials supplier – everyone involved during the construction process – could be drawn into liability claims and it will be up to the courts to determine who is liable and for what part," he says.

Compliance

Under the Building Code of Australia, ACP cladding with a PE core can be used on some types of buildings less than 25 metres in height (Type C). For Type B and Type A buildings the specification is for non-combustible cladding.

Type A <25 metres in height (each storey <6m)

Type B >3 storeys, <25m in height (each storey <6m)

Type C <3 storeys

But the Code also includes a grey area in this multi-storey building cladding specification. It provides that a fire safety engineer-approved **alternative solution** can be employed to reduce the risk presented by ACP cladding with a PE core or PE combination core.

These design measures might include:

- sprinklers
- fire barriers
- limiting or separating areas of combustible materials.

The Code also provides that alternative solutions must be assessed and approved by architects, building surveyors, fire safety experts and the relevant authorities. It appears that despite this provision it did not prevent parties involved in the design and construction of multi-storey buildings from using ACP cladding with a PE or PE-combination core on external walls as common practice.

Regulatory grey area

The problem with using alternative solutions designed to limit the spread of fires in multi-storey buildings is that the **actual degree of combustibility** of the cladding they are intended to counteract is unknown without actually taking the panels apart and testing the filling.

[The City of Melbourne Municipal Building Surveyor's report](#) concludes by commenting that the Lacrosse case highlighted a failure of the building regulations to reflect the types of buildings being constructed today and how they are used.



Regulatory response

Industry regulators are now undertaking reviews with the aim of avoiding misunderstanding and misapplication of building codes relating to cladding. Stakeholders need to be abreast with these changes or run the risk of finding themselves in breach of these requirements.

Immediate changes in regard to fire safety in high-rise buildings have been made to the National Construction Code (NCC) 2016 under the title [Volume One Amendment 1](#). These changes were agreed between the Building Ministers Forum and the Australian Building Code Board (ABCB), and **took effect from 12 March 2018**.

The changes include:

- a new verification method (CV3) for testing that external wall systems do not contribute to the spread of a fire in Type A and Type B multi-storey buildings. This includes a new testing standard, AS 5113, that applies to the assembled product, not the individual materials
- increased stringency for the sprinkler protection of balconies of residential buildings through referencing of a revised AS 2118 standard
- a new requirement (A2.2b) for evidence that the use of a material, product, construction method or design meets the code's Performance Requirement or Deemed-to-satisfy conditions.

"The changes also look to limit any opportunity to misinterpret the intent of the NCC provisions and enhance the practice of establishing evidence of suitability by building practitioners," Chief Executive Officer of the ABCB Neil Savery told Gallagher in March 2018.

Ensuring compliance will be in the hands of states and territories which are responsible for implementation of the NCC through mechanism such as:

- private certification
- inspections
- auditing
- enforcement.



Looking ahead

The ABCB's discussion paper on proposed changes to **the next edition of the NCC, (due 2022)**, is open for public comment and technical proposals [on the board's website](#), closing August 2020.

In the meantime, **proposed changes to an interim 2019 edition of the NCC** include improved fire safety measures and the removal of the ability to use bonded laminated material where a non-combustible material is required.

Duty of disclosure

[The City of Melbourne Municipal Building Surveyor's report](#) recommends that changes to the regulatory framework should reflect **the need to replace non-compliant cladding on existing buildings** and consider who would pay for the fix or whether there should have been mandatory insurance to cover such costs.

Construction companies involved in these types of projects, past, current and future, need to be aware that they are likely to be subject to a higher degree of scrutiny and accountability when seeking insurance.

"It's possible that insurers may seek to impose exclusions on renewals on policies for contractors or engineers who have risk exposure," Gallagher's Roger Irvine, Head of [Construction](#) – Australia and Asia, warns. "Gallagher is working with clients to secure information that clarifies whether they are subject to this exposure in relevant cases and to build a case as to why such a restriction in policy coverage should not be imposed."

Gallagher's [property](#) expert, Manager – Corporate Ryan Gooley, stresses that **independent reporting and up-to-date valuations** will be required in order for brokers to effectively negotiate on behalf of their clients.

"The industry should be prepared for insurers to make cladding materials a focus in relevant policies and also for increased premiums required to meet the need to amass a claims payment pool," advises Gallagher's [general liability insurance](#) expert Adam Sulway.

Audits of cladding used on multi-storey residential buildings are ongoing around Australia. Transparency and scrupulous care in compliance are the only ways forward.

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