

HIGH-RISE APARTMENT FIRES HIGHLIGHT COMBUSTIBLE CLADDING DANGERS



The Grenfell Tower fire 14 June 2017. Image credit: Wikimedia Commons

AUSTRALIAN WALLING MANUFACTURER DINCEL CONSTRUCTION SYSTEM HAS DEVELOPED A NON-COMBUSTIBLE PERMANENT FORMWORK BUILDING PRODUCT THAT ENCASES CONCRETE WITH A SPECIAL NON-TOXIC POLYMER THAT WILL NOT COMPROMISE A WALL'S STRUCTURAL INTEGRITY IN A FIRE EVENT.

Dincel engineering and product innovator Mr B. Dincel said "DCS has specially designed and manufactured its system, using a heavy metal-stabiliser free polymer material, that in the event of a fire, produces a smoke quantity that is significantly less than the BCA allowance (spec C1.10), is also non-combustible and, most importantly, non-toxic."

"The Dincel Wall consists of concrete in-fill and permanent polymer formwork," Mr

Dincel explained. "Our Dincel-Polymer formwork holds the wet concrete until it sets. Even if the outside surface chars or burns during a fire event, the core component remains as ordinary concrete and this provides the required Fire Resistance Period (FRP)."

"When filled with concrete our polymer is the equivalent of the Deemed-To-Satisfy non-combustible materials condition (clause C1.12) of the Building Code of

Australia. There are no limits on its use for flammability or smoke generation. In other words, when assessed in accordance with BCA requirements, Dincel Wall is deemed to be non-combustible."

"It is however important to note that any cladding system or finish that is applied to the Dincel Wall or any other non-combustible wall must be separately assessed as to its combustibility properties and must meet BCA requirements."

A recent real-world example displaying Dincel walls non-combustible performance occurred when a residential fire broke out next to a commercial building in Brisbane, Queensland. Dincel Queensland manager Perry Cook said the house was destroyed by the fire, during which flames were blown up against the Dincel Wall of the building adjacent. "Whilst heat from the fire caused that building's windows to break and the wall render and paint charred away, the fire was self-isolated and did not spread due to the Dincel Wall being non-combustible. The concrete panels within the Dincel Wall remained intact and structurally sound," Mr Cook said. The building manager Wilson Liu of WLM Management stated that he and the residents were most relieved to discover their building was largely unaffected by the fire.

Several recent high-rise apartment fires across the world and in metropolitan Australia have been linked to combustible cladding products that fail to meet building code requirements including London's Grenfell Tower disaster in which at least 80 people were killed. Survivors of the fire have been treated for toxic poisoning suspected from inhalation of smoke fumes released by burning insulation.

"Science knows that the majority of deaths in a fire event occur from smoke poisoning. However, the BCA at present only considers smoke quantity. It does not consider smoke toxicity, which is the real killer in a fire event."

Building Authorities in neighbouring country Singapore require a control on the toxicity level of smoke during a fire event, since some of the fire retardants used to control smoke quantity and non-combustibility can be toxic, and in many cases fatal.

All such fires fan fears that similar catastrophes could occur closer to home – particularly in the wake of booming multi-residential construction in our capital cities – as was the case with the infamous 2014 Lacrosse Apartments fire in Docklands, Melbourne.

CSIRO testing of the building's Alucobest aluminium composite cladding material revealed it to be



non-compliant after it failed to meet the non-combustibility requirements of the Building Code of Australia.

In the wake of the Lacrosse Apartments fire, building authorities and industry bodies have launched widespread investigations into the use of non-compliant products in existing projects.

During the Non-Compliance building products forum held in Brisbane, late 2014, Mr Dincel called on the building industries and regulators to be vigilant against the specification of products that fail to meet the National Construction Code. This included imported materials that do not meet Australian Standards. "If you are using imported products that weren't designed and tested to meet local standards and codes then there are question marks over compliance."

The pioneer Dincel structural walling system, is manufactured and tested locally in Australia, unlike many imported systems which may not comply with Australian standards.

Since its establishment back in 2003, Dincel has been committed to manufacturing polymer formwork systems that are non-combustible, non-toxic and heavy-metal stabiliser free. Our products are so safe, that they are suitable for potable water storage, and are a trusted solution for sick building syndrome.



The Dincel panels polymer skin after the QLD fire event in Mar 17 remained intact, ready for re-rendering.

UNLIKE MANY IMPORTED PRODUCTS, DINCEL IS A WELL ESTABLISHED AUSTRALIAN MANUFACTURER, SO OUR BUSINESS CANNOT DISAPPEAR OVERNIGHT. AS A RESULT, DINCEL PRODUCE A NON-TOXIC NON-COMBUSTIBLE PRODUCT FAR EXCEEDING BCA REQUIREMENTS.



DINCEL POLYMER IS TESTED NON TOXIC & NON-COMBUSTIBLE

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