

Aluminium and Fire.

Cladding fires of recent times indicate that wrong assumptions about risk may have been made.

The disastrous Grenfell Tower fire in London shocked the world; and raised many questions about the safety of contemporary, tall, residential buildings. The fire took just 90 minutes to race up 20 storeys, killing 72 people in June 2017.

In February 2019, a cigarette butt in a plastic container started a blaze in the 41-floor apartment building called Neo 200 in Melbourne. The fire travelled up the side of the building in 11 minutes and it took more than 80 firefighters just over an hour to bring it under control. Fortunately, casualties were prevented.

The [ensuing incident report](#) sparked a media frenzy. The concerns raised by the Melbourne Metropolitan Fire Brigade were many. Several similar cladding fires in residential buildings had occurred recently around the world taking many by surprise.

The culprit was the building cladding which were aluminium composite panels with a polymer core, typically polyethylene. Under severe fire conditions timber chars, concrete spalls, steel melts, glass breaks and plastics burn. But polyethylene, which is a plastic, behaves differently to most structural building materials. Polyethylene becomes fuel. It does not spall, break, fall or melt: it flames and spreads fire.

The key point to note is that it was not the aluminium. Like most metals, aluminium (except in powder form) does not burn and does not support combustion. Aluminium will melt at temperatures above 660 degrees Celsius. It is the polymer core that makes cladding panels dangerous in a fire.

Now, most modern building codes, standards and regulations have come to terms with this issue. Façade cladding must now be constructed out of low-risk non-combustible material.

The Council has reviewed the range of factsheets published in Australia on this matter and found that all states have publicly available data on aluminium composite and their preferred approach. The Victorian Factsheet is the most widely referenced of the state information sources and can be found [here](#).