

Aluminium composite panels in building cladding

Insurance advisory

The issue

In the last few years, there have been several fires involving multi-level building overseas where combustible aluminium composite panel cladding (APC cladding) has been a significant contributing factor to the damage caused by the fire.

In New Zealand, the use of ACP cladding has grown in the last 20 years. We have therefore investigated these issues to determine how much of a fire risk is posed to New Zealand buildings.

Types of ACP cladding

There are 4 main types of aluminium cladding used on buildings in New Zealand. They are:

1. ACP and steel composite panels with expanded polystyrene (EPS) cores. **EPS panelling is highly combustible and should not be used on any building that is more than 25m in height.** EPS panelling has historically been used on cool stores and needs to be well protected from ignition sources.
2. ACP with a solid polyethylene (PE) core. **PE panelling is combustible and should not be used on any building that is more than 25m in height.**
3. ACP with a mixture of PE and mineral fibre in the core. Fire performance usually improves the higher proportion of mineral fibre. Panels marketed *FR* may have a core with 70% mineral fibre and 30% PE. Higher performing panels marked *A2* may have a core with 80% mineral fibre and 20% PE.
4. Solid aluminium sheet with no core. This can generally be regarded as non-combustible.

ACP cladding use in New Zealand

In the last 7 to 8 years, fire-rated ACP panelling has been the most common product used on buildings over 10m in height. Prior to that, PE panelling may have been used.

Due to a change to the Building Code in early-2017, PE panelling and other combustible cladding can only be used on low rise buildings (buildings that are 7m or less in height). Buildings that are taller than this will need to have proven fire-rated cladding, such as less combustible mineral fibre-core ACP.

Requirements re. ACP

Building Code requirements

The Building Code's focus regarding fire safety is about occupant safety and means of escape. It sets out requirements that ensure occupants can safely evacuate a burning building within a reasonable period of time.

The Building Code is the minimum legal standard. An insurer's requirements may exceed those specified under the Building Code.

Insurer requirements

Commercial property insurance is about assessing the risk of damage to assets. While insurers value life safety as much as the government does, their primary focus is on assessing the potential risk of fire damage to the building.

Insurers are concerned about risk of fire spread being caused or exacerbated by combustible cladding on taller buildings. It is likely that insurers will view buildings with combustible ACP cladding as higher risk. They may charge a higher insurance premium or offer less insurance capacity compared to that they'd offer a similar building with non-combustible cladding.

Insurers will want to know what type of cladding you have when you apply for insurance.

Another issue that concerns insurers is how the ACP panelling has been attached to the building. With overseas fires on tall buildings that contain ACP cladding, combustible substrates, including insulation, fixings and framing (such as timber) may have contributed to the spread of the fire. Combustible substrates can create a fire propagation path within the cavity behind the cladding, which can allow a fire to spread much faster than it would through non-combustible substrates.

It is important that non-combustible substrates are used behind any cladding and that non-combustible cavity barriers are used up the wall of the building to act as fire breaks. This prevents the chimney effect behind the cladding, spreading the fire up the building.

Current construction practice in New Zealand is to use intumescent cavity barriers to create necessary fire breaks up the walls of buildings.

Assessing ACP cladding on an existing building

If construction records don't state what type of cladding was specified and used on your building, then you may need to have a sample tested to determine whether the building's cladding is combustible. If you have a sample handy, it's possible to determine whether your ACP contains a mineral core. If it does not, you may need to send a sample for testing in an approved laboratory.

Testing for mineral core

One method of testing for a mineral core in ACP cladding is to visually inspect the core material. PE core will normally be black (if it's recycled PE) or clear (if it's virgin PE). If mineral fibre is present, the core will usually be grey or white.

A second method is to measure the density of the panelling. Mineral fibre is denser than PE. ACP supplier ALUCOBOND have produced an app that allows you to check the density of a panel sample. By entering in the dimensions of the sample and its weight, the app can determine what type of panel your sample is likely to be. The app can be downloaded from <http://alucobond.com.sg/download/digital-apps> by clicking on the appropriate download link under the heading ALUCOBOND Fire.

Independent testing

Neither of the above methods are a guarantee of the composition of a building's cladding. If you'd like more information about your building's cladding, you could look at getting an independent cladding report, which will identify the type of cladding used and how the cavity and fixing material behind the cladding have been fire protected.

A favourable report should help building owners access competitive insurance rates.