

## NON-CONFORMING & NON-COMPLYING BUILDING PRODUCTS

The media has been repeatedly reporting deficient building practices and non-compliant building materials in the past few years, both here and abroad. The Lacrosse Dockland's exterior cladding catching fire from a discarded cigarette on a balcony in Melbourne in 2014, a similar fire to the Grenfell Tower in London in 2017, and (in more recent headlines) the evacuation of Opal & Mascot residential buildings after suffering major cracking, are some of these examples.

While these might seem a far distant from the timber truss and frame industry, as we move forward into more mid-rise timber apartment buildings, ensuring safe and suitable timber building products will be critical. Even the humble Class 1 single occupancy dwelling has seen disasters (including fatalities) from timber deck collapses that could be attributed to the use of unsuitable products and practices.

Many state and territory regulatory bodies as well as the federal government have been, or are in the process of passing legislation against non-conforming and non-compliant building products. These laws apply to everyone in the supply chain from manufacturers to specifiers right up to the end users.

What is the difference between non-conformance and non-compliance?

### Non-Conformance

The Victorian Building Authority defines this as follows:

**Non-Conforming Building Products** are 'products and materials that claim to be something they are not; do not meet required standards for their intended use; or are marketed or supplied with the intent to deceive those who use them'.

There are unfortunately many non-conforming building products imported into Australia. One example is the Infinity Cable, whose inferior insulation coating dangerously risked electrocution, and forced a [Senate hearing over the matter](#).

By contrast, all MiTek engineered building products are designed, developed and certified by chartered professional engineers to satisfy the requirements of the ABCB National Construction Code. They are rigorously tested in the laboratory to meet, or exceed the strength and serviceability requirements in the Australian Standards.

Certified building products are always identifiable by clear markings on them. They are accompanied by readily accessible comprehensive specifications, which clearly describe not only their performance, but also their limitations and conditions of use. It is always wise to also ensure that they have been produced to Australian Standards by a well-known and reputable company. As an example, the MiTek punched strap clearly shows the manufacturer, the product name and compliance with relevant Australian standard (Photo 1 below).

By contrast, a generic product is usually not clearly identifiable once it is taken out of its packaging, and there is very little technical documentation to support it. As an example, in one test of an imported wall strap tensioner, we found that it had already stretched about 8mm before even achieving its 2.5kN serviceability capacity, well before its 6.1kN strength capacity. This potentially causes plasterboard cracking and other defects. By contrast, the MiTek engineered tensioner elongated by only 0.4mm.

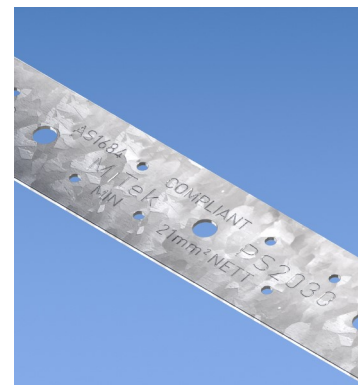


Photo 1: Clearly labelled compliant product

## Non-Compliance

The Victorian Building Authority defines this as follows:

**Non-Compliant Building Products** are “products and materials that are used in situations where they do not comply with the requirements of the National Construction Code (NCC). This may include products that comply with the relevant standards in terms of testing and/or marking, but have been used in a location or situation for which the NCC states they are not suitable.”

A building product or material can therefore be conforming, and yet be non-complying at the same time.

To illustrate a non-compliant product in simple terms, consider a commonly used building product, such as a standard galvanized joist hanger, in the following situation:

*A new two storey residential dwelling constructed one block (50m) from the coast with water views, has an open deck at the front balcony. The plans indicate joist hangers for fixing deck joists to the house, but do not explicitly specify the steel grade. As requested, the supplier took off the required number of joist hangers from the plans, quoted and delivered the hangers. The builder approved the quote, ordered and checked the delivery before installing the Z275 galvanized joist hangers. The building inspector omitted to closely inspect the hangers under the deck before issuing his compliance certificate. Within a few short years, the hangers are now showing signs of advanced rust and rightly deemed a safety hazard (Photo 2). Who amongst the designer, supplier, builder or inspector is at fault?*

This is a clear example of a conforming product that has been used in a non-complaint way. There is nothing wrong with the Z275 coated joist hanger when used in the right situation. It will perform as designed. However, when used on an exposed deck, it becomes non-compliant with the manufacturer’s specifications.

As a responsible producer of engineered building products, MiTek provides a reference datasheet called “Corrosion Resistance of MiTek Metal Connectors” that clearly describes the appropriate product coating to suit different environments. This datasheet is widely distributed in multiple media, including printed datasheets, websites, computer software, and smartphone apps to help users and specifiers achieve compliance.



**Photo 2: An ordinary galvanised joist hanger in an exposed environment**

## Non-Conformance AND Non-Compliance

Some imported generic steel brackets do not guarantee whether their steel grade and galvanized coating meet the minimum levels required by Australian Standards, hiding behind the fact they make no claim but expect the user to satisfy themselves. Others loosely claim conformance with the Australian Standards, but in the fine print, one finds that they deliberately used incorrect design factors from outdated standards to claim better strength capacities. In reality, their actual capacities are lower than the published claim. These products are clearly non-conformant. Those in the supply chain who deliberately or carelessly disregard these anomalies from disreputable sources, and specify, sell or buy them are also guilty of non-compliance. The supply and use of these products fall under both non-conforming AND non-compliant categories.

As regulations continue to tighten in the current climate with increasing reports of sub-standard buildings, everyone in the supply chain (suppliers, installers, certifiers, and in some cases even the end user), will be held accountable to ensure that the building product being used is conformant and compliant, and fit for purpose.

To avoid being caught out, we should all exercise due diligence. Manufacturers should ensure their building products are certified, compliant with current standards, and accompanied by detailed specifications and conditions of use. Specifiers should make informed choices and produce conforming instructions. Stockists should purchase from reputable manufacturers and supply compliant products. Builders and end users should not ignore their common sense and buy on price without regard to suitability.

The ramifications are real for taking a cheap short cut. That is exactly what is being reported in the news today.

To view MiTek's Corrosion Resistance brochure (left) please visit [MiTek's website](#).

The collage contains several technical documents:

- CORROSION RESISTANCE**: A brochure titled 'THE BASIC FACTS ON MITK CORROSION PROTECTION' with a photo of a steel mesh and text about product specifications.
- EXPOSURE CONDITIONS**: A diagram showing three categories: ENCLOSED (with a house diagram), SHELTERED (with a house diagram), and EXPOSED (with a house diagram).
- MITEK CONNECTOR DURABILITY FLOW CHART**: A flowchart mapping environmental zones (SEA SPRAY, INDUSTRIAL, MARINA, LOW-HABITAT) to connector types (ENCLOSED, SHELTERED, EXPOSED) and their corresponding minimum corrosion protection requirements.



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