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Compliance is Everyone's Responsibility.

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 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 (https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Economics/Non-conforming_products/Interim%20Report/c02).

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).

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.

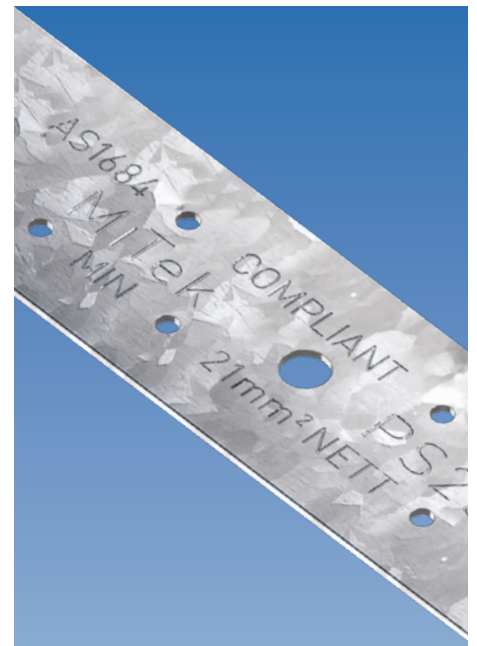


Photo 1: Clearly labelled compliant product



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

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.

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

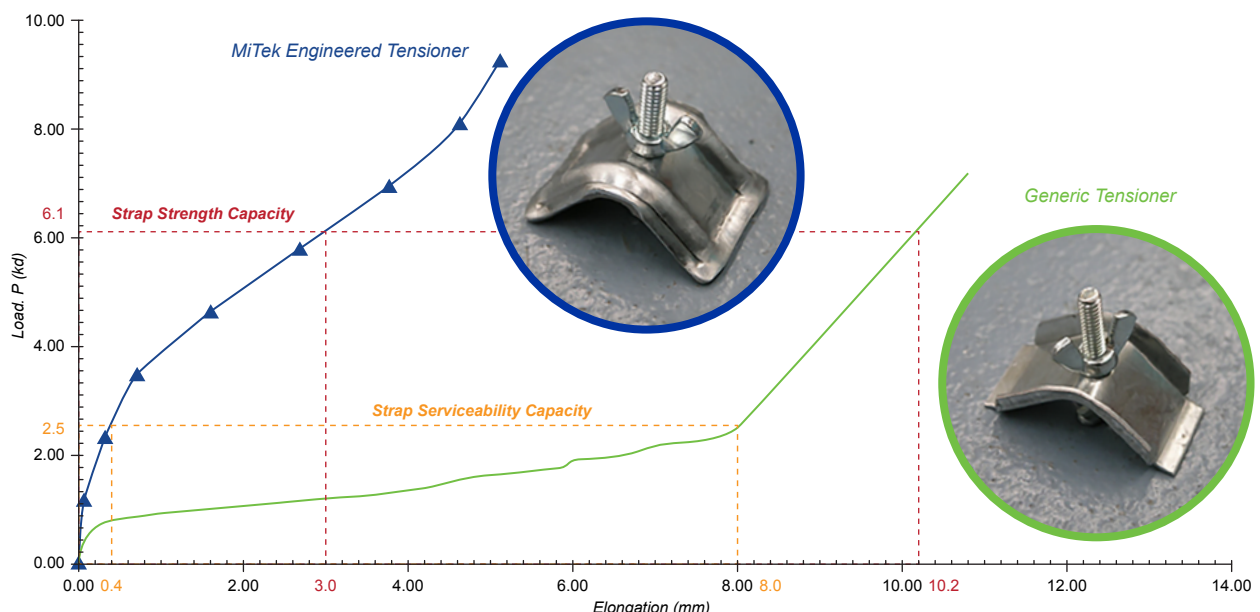
are clearly non-conformant. Those in the supply chain who deliberately or carelessly disregard these anomalies from disreputable sources, and specify, sell or buy them are also guilty of non-compliance.

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, conform with current standards, and are accompanied by detailed specifications and conditions of use. Specifiers should make informed choices and provide compliant instructions. Stockists should purchase only from reputable manufacturers and supply conforming 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.

Comparative Tests on Strap Tensioners

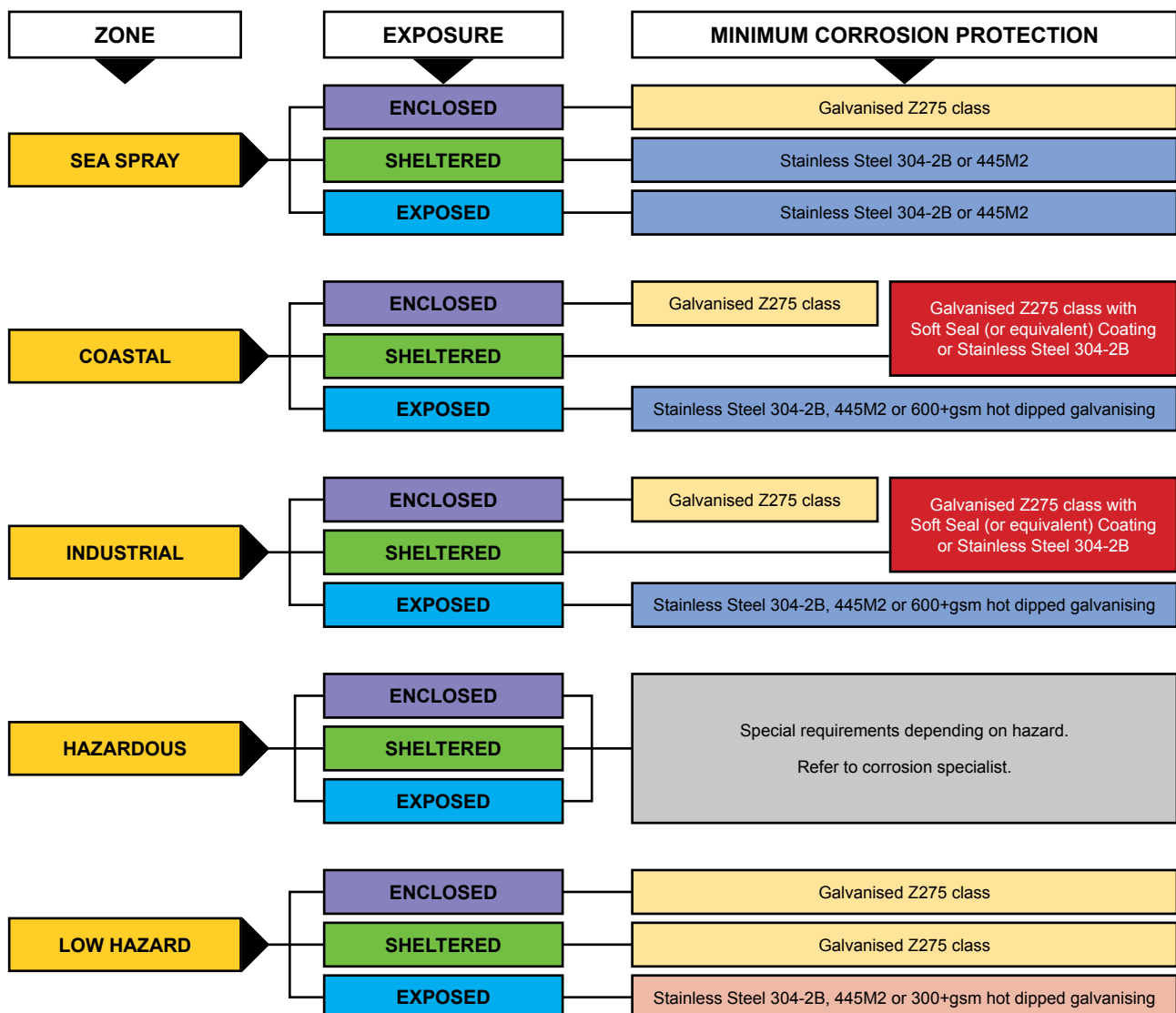


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ZONE DEFINITIONS

SEA SPRAY ZONE	Less than 1km from surf coast or 100m from bayside areas.
COASTAL ZONE	1km to 10km from surf coast or 100m to 1km from bayside areas.
INDUSTRIAL ZONE	Close proximity to industrial complexes where corrosive gases may be emitted. eg. Port Pirie and Newcastle.
HAZARDOUS ZONE	<p>The environment within a building may also adversely affect the durability of connectors. For example within enclosed swimming pools chloramines may cause rapid corrosion of metal products, including stainless steel.</p> <p>Chemical storage buildings and buildings housing animals can also pose specific corrosion problems, and will need consideration which is beyond the scope of this document.</p>
LOW HAZARD ZONE	Generally locations not described by the above.

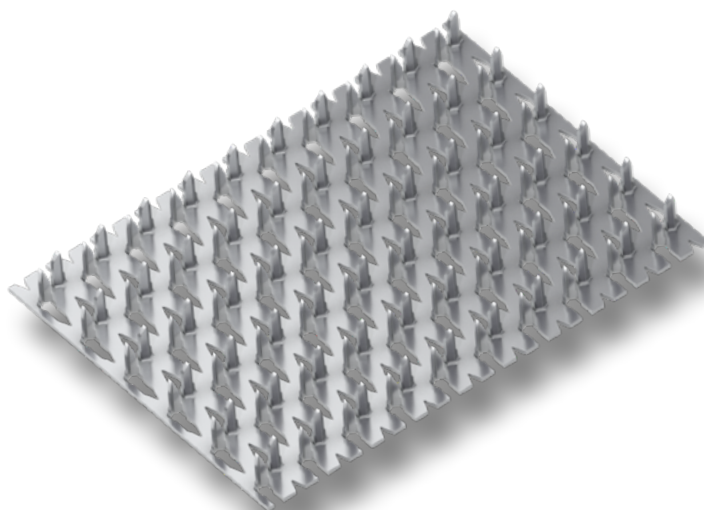
MITEK CONNECTOR DURABILITY FLOW CHART



The bare facts on MiTek Corrosion protection

Most MiTek nail plates and Engineered Building Products (EBPs) are manufactured from Z275 galvanised light gauge steel, (275gsm total coated thickness) and meet all of the requirements of AS1684 Australian Standards for Residential Timber Construction. These products are suitable for internal applications.

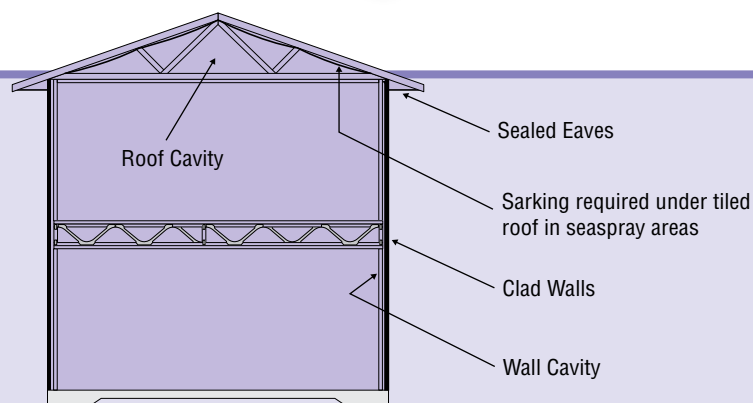
For situations outside the building envelope, or more corrosive environments generally, alternatives such as stainless steel or hot dipped galvanised coated products are available.



Exposure Conditions

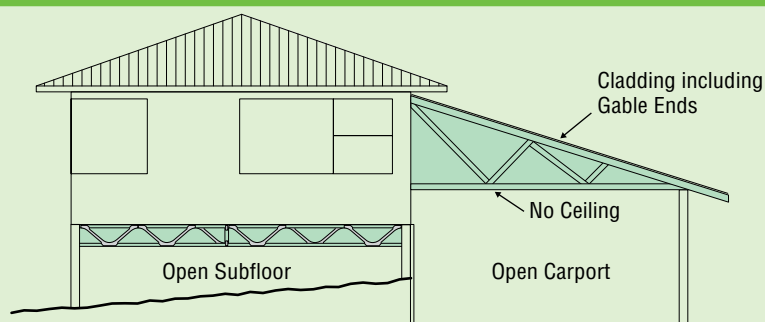
Enclosed

Connectors not exposed to rain or ground moisture or wind blown corrosive salts or steam.



Sheltered

Connectors not washed by direct or wind blown rain but may be subjected to wind blown corrosive salts.



Exposed

Connectors are exposed to weather and washed by direct or wind blown rain.

