

# Tunncliffe's

Tunncliffe Timber Company Limited

## The Myth about Primer

Exterior timber windows and doors getting wet during the building process can cause major problems in the way of bowing and twisting and in some cases cracking. The most vulnerable parts of the joinery are the window-, and door-sills.

The problem occurs with the majority of timber species, yet is a common problem with Radiata pine which is mainly used for the frames; jambs, sills and mullions.



Once the manufactured joinery leaves the joinery shop it is up to the builder to ensure that it is prepared and installed properly during the building process. It is common industry practice to prime the joinery on all surfaces as soon as possible, under dry conditions, before installation.

There is a perception that once this has been undertaken, nothing can go wrong. But this is a myth, primer helps protecting the timber from absorbing moisture in high humidity conditions. It does not prevent liquid on the surface being absorbed. Under prolonged extreme wet conditions during our New Zealand winter-months, once the joinery is installed, the primer is unable to sufficiently protect the timber from penetrating water, causing it to swell. The expanding timber then causes stress on finger-joints and lamination glue lines and can result in bow and delamination. If there is rapid change in moisture content cracking can also occur.

There is arguably no primer on the New Zealand market today which is able to seal the timber adequately and make it "water-proof".

What in fact needs to be sealed off are very small openings on the surface of the Radiata pine timber components which cannot be seen with the naked eye, you don't need a microscope but with a reasonable magnification glass you can see "resin canals", which are designed to transport water and nutrients between the wood cells, in horizontal direction, at the time the timber was part of a living tree. If you have a close look, you can see thousands of needle-pin-holes.

Water is easily absorbed through these pin holes in liquid form. A minimum of two quality coatings of finishing paint prevents this from happening. It should be noted that the best way of applying the coatings of paint is with a brush because the forces at the tips of the bristles are working the coating into these pin holes which are hard to fill up. Spray coats in situations where there are many resin canals won't necessarily fill these up.



The only way for the water to get out of the timber is in gas form (vapour). The principle ingredients of drying timber are temperature and airflow. The process of moisture getting out takes much longer than the water penetrating (flowing into) the timber.

The combination of water, primer and timber is close to 'one way traffic'. Putting primed joinery out in the weather is like setting up a 'non-return valve'. It is easy for water to get past the primer into the timber yet the primer makes it hard for water vapour to get out again.

If water got into the timber and the finishing coatings of paint are going on the water is trapped and further problems may occur such as rot, only to become apparent six months, one, sometimes two years later, even if the timber was treated.

However, unfortunately, it is realistically not always achievable to finish timber joinery with the required two coatings of paint during the building process in weather conditions described above.

Under these circumstances it is too easy to blame the timber. With this article we hope to raise the awareness of the problem in the wider industry to help preventing it. Things go wrong in business, problems come up from time to time, what matters is how they are dealt with and we believe that understanding the problem is half the fixing of it.

One thing is for sure, a quality paint job is an essential part of the final product which is often underestimated.●