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### **Factory Spray Painted Building Information and Maintenance Guide**

Our paint is supplied by Teknos UK, the market leaders in supplying paint to the timber and building industry.

The paint is applied to each section of the building twice with a spray gun ensuring complete coverage and a finish that would not be achieved by hand application. The coating provides a water replant, flexible and decorative finish which will give many years of service.

There are certain factors we would like you to be aware of with regards to this type of finish.

#### **Discolouration of coated timber**

Staining of opaque coated joinery is a complex phenomenon and generally results from two main sources: soluble extractives or tannins and resins, both of which are naturally present in timber. Resin exudation is prevalent in softwood, particularly around knots.

As well as timber species, the severity of staining is also influenced by the following: growing region, knots, preservation treatment, processing, and exposure of conditions. Moisture plays a major part in tannin migration through the coating system and site problems occur most often when dry timber from the factory is exposed to warm moist conditions. The rapid uptake of moisture in the timber will mobilise the resin and tannins whilst heat and sunlight will draw them to the surface.

Many tropical and naturally durable timbers contain soluble extractives that are released when the timber is wetted by coating. Such extractives can discolour the coating film, and the effect is most pronounced with traditional water borne coatings. Western Red Cedar is perhaps the most extreme example of species prone to this type of staining.

#### **Resin staining and exudation**

In addition to soluble extractives, the cell structures of wood contain groups of chemicals, often referred to as exudates. In softwood the principal exudate is referred to as resin and can show itself in coating discolouration, viscous liquid, or crystalline solids on the surface of timber or coating, or combination of both.

Resin staining and exudation is commonly seen at knot margins but is also found in resin ducts and sometimes on latewood bands. Timber species, age, growth conditions, season of harvest, the ratio of sapwood to heartwood and the number of live knots all have an influence.

The staining associated with resin is chemically different from the tannin stains of hardwoods and many hardwoods isolating primers offer relatively ineffective protection against resin staining.

Resin exudation is usually initiated by a combination of heat and moisture, which changes the resin from a solid to a liquid, and in severe cases a gas. Specific weather conditions can trigger the problem and discolouration will occur most rapidly on warmer southern elevations when humidity levels are high. Darker coating colours, which absorb more energy, may initially disguise staining, but can accelerate resin migration leading to blistering and adhesion failure.



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The problem is often seen around knots, where the preservation fluid will partly dissolve resin concentrates, bringing them to the timber surface, producing deVere staining and blistering even when knotting solution is used. There is no fool proof solution to the problem of resin exudation.

#### Resin Exudation remedial measures

When resin has exuded through the permeable coating, the best remedial treatment is to allow the resin to weather until it dries and oxidises, forming a white crystalline powder. The dried resin can then be removed with a stiff nylon or natural bristle brush, and any remaining residues washed off with a cloth.

Water based coatings with their relatively high degree of moisture vapour permeability are most likely to allow passage of resin to the surface without damage to the coating, and if the finish is not damaged by over vigorous scrubbing during crystal removal, re-coating is often unnecessary.

Although it may be unsightly, it is better not to remove fresh sticky resin in practice, this can be exceedingly difficult, and the presence of sticky resin indicates that the exudation is continuing.

The remedial work for resin exudation is often best left until the first maintenance period, by which time the resin has normally fully crystallised. After removal as described above, the overall application of one maintenance coat to finish restores the general appearance of the timber and maintains its protection.

#### Maintenance

This gives basic Guidance on maintain and redecorating your factory spray painted building

Typically, these buildings will have a maintenance cycle of around three years, but in exposed and coastal locations or on open elevations, wind, rain and strong sunlight can cause increased amount of dimensional movement within the timber substrate, causing a more rapid disruption of the protective film.

For this reason, it is recommended the cladding is inspected annually and any areas of damage or breakdown repaired. Preventative rather than reactive maintenance will ensure the timber is always protected, extend its service and maintain the decorative appearance of the building.

#### General Care

At least once a year inspect the timber cladding, ideally washing it down with soapy water to remove surface pollution, this can be done at the same time as when the windows are cleaned. **Do not use a pressure washer as this will drive water between the tongue and groove and into the building.**

Inspect the coated boards, looking for signs of surface damage or splitting, coating breakdown, or discolouration of the timber surface beneath the coating, which indicates moisture ingress.

Inspect and clean out any guttering and down pipes that have been installed, repairing any leaks, which can cause localised and excessive wetting of the cladding

Spot repair any minor areas of coating damage, shakes or open joints.