MORE THAN SURFACE LEVEL IMPROVEMENT:
NEW DESIGN POSSIBILITIES WITH POWDER COATED PLYWOOD

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**Understanding the Need for Timber Finishing**

The phrase 'timber finishing' describes the broad range of methods for embellishing and/or protecting a timber surface at the end of its installation process. Finishing timber is a critical part of the material treatment as it ensures that the component or surface achieves its highest level of performance for an extended period of time.

Left untreated, timber is highly susceptible to moisture damage and decay, both of which can cause failure in 5 years or less. Certain surface finishes can also add a degree of protection against pests including termites and other insects. The ability to protect a material through finishing methods improves its economic viability as the endurance and maintenance of the material permits a longer lifespan, which in turn validates the initial investment in timber products and quality of their finish.

Finally, timber finishes provide aesthetic benefits and design flexibility by allowing designers to customise the colour and texture of timber elements throughout the project.

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**Conventional Timber Finishing Methods**

WoodSolutions, an industry initiative of Forest and Wood Products Australia, classifies timber finishes into three key categories: evaporative, reactive and coalescing.

The categories set forth below can help specifiers understand the different characteristics of different finishes, and act as a useful tool for making specification decisions.

**Evaporative**

Evaporative finishes incorporate acetone, alcohol, or other solvents. Applied wet, they 'lock together' as they dry and the solvents evaporate, creating a continuous surface that is impervious to moisture. The thickness of the surface - and subsequent level of protection - can be enhanced by adding more coats. Typically giving a clear, shiny finish, this category includes wax, shellac, and cellulose lacquers. Many of the solvents used in this category of finish have been shown to be harmful to both human health and the environment.

**Reactive**

Rather than evaporation, reactive finishes rely on a chemical change that occurs due to drying and create a protective surface. Finishes in this group include oil-based varnishes such as tung or linseed oil, which react with oxygen to form an impervious surface, and catalysed lacquers, which dry from the bottom, or first-applied layer upward. Reactive finishes require scuff sanding between coats - thus adding to construction time - to ensure that subsequent layers have an adequate ‘grip’, and are usually transparent with a decent level of gloss.

**Coalescing**

Water-based finishes are also known as coalescing finishes because they cure through a combination of chemical change and evaporation. As water within the finish evaporates, droplets of reactivity cured resin slowly come together and form a solid film. This category includes paint and clear glues, and can result in transparent, opaque, and matte or gloss finishes. Coalescing finishes depend on temperature and humidity, and require an extended drying period.

This type of finish also produces considerable material waste and largely relies on the skill of the craftsman to deliver a high quality finish.
With cutting edge technology, timber powder coating draws together beneficial characteristics of conventional timber finishes to create a design solution that meets contemporary demands.

Technology that has long been used to finish steel and other materials is now adapted with state of the art process methods for MDF, plywood and other flat panel engineered wood products. This method is a dry finishing process in which extremely fine, dry powder is electrostatically applied onto a timber surface. Free of solvents, binders, and other liquids, powder coating technology creates an even and durable finish that is ready for immediate use after application and UV curing.

The factory applied layered finish means the product has a buildable nature that enables a smooth surface, ensures the correct amount is applied and offers significant reduction in raw material waste in comparison with other finishing methods.

The fully automated application of the layers of powder coating creates a more consistent surface than evaporative, reactive, or coalescing finishes, all of which are dependent on the skill of the individual crafts person. Timber powder coating also comes in a variety of colours and a range of performance characteristics. As such, powder coating gives designers the freedom to customise the opacity of the finish, texture, and overall appearance with a product that is entirely VOC free.

Gunnersen has been a proudly Australian, family owned company since its establishment in 1879 and is currently the nation’s largest independent distributor of timber, wood-based panel products, and decorative surface materials. Driven by a generational passion for innovative, value-adding construction solutions, the company prides itself on its catalogue of efficient and cutting edge products.

The Gunnersen range is supported by the company’s signature outstanding customer service, which extends to the ability to building strong, lasting relationships with clients.

Designed to make an impact, DesignerPly is a range of decorative plywood for wall panelling, joinery and ceiling panels. The selection is available in a range of finishes including the promising new application of powercoating technology, which can be specified in clear, lime wash, white, black, blue, green, yellow, red, orange and purple.

An advanced powder coating process that is exclusive to Gunnersen ensures that DesignerPly is free of solvents and other hazardous materials; combined with a VOC-free powder coating process, this enables the finished product to achieve an emission rating of E0. The health benefits of this characteristic last long after installation and help to create healthy interior spaces. As efficient as it is healthy, powder coating enables near 100% utilisation of powder, as overspray can be recycled and reused, while the implementation of cutting edge UV curing technology allows significant reductions in energy costs, meaning that powder coating has the smallest carbon footprint of all industrial coatings.

The finish solution is therefore ideal for designers seeking to meet health, safety, and environmental targets. Powder coating offers outstanding timber protection and results in a durable, low maintenance surface that is resistant to yellowing and most chemicals. Finished panels are available from Gunnersen in FSC and RW/PEFC species.
REFERENCES


2. ‘Should You Choose a Concrete, Timber or Steel Construction?’ in Western Australian Steel Sales, August 2016. https://www.wasteel.com.au/should-you-choose-a-concrete-timber-or-steel-structure/#.W6mZDhMzbYU


