



The Salt Building, located in Vancouver, was built around 1930 to refine raw salt and it later served as a paper recycling plant in the 1980s. The city completed a full restoration of the Salt Building including an upgrade of the foundation and restoration of the exposed timber piles and interior. For the 2010 Winter Games, the building was raised and its shell upgraded for VANOC's use as a gathering spot during the games. Sansin's Purity Arctic Satin was used to provide a low VOC clear coat finish to the interior. Sansin's Purity 0-VOC Base requires less stain to deliver vibrant and even wood saturation with little to no odor, offering ease of application and extremely uniform appearance, even on maple.

WOOD FINISHING

Success Comes in the Preparation

Sjoerd Bos, VP of Sansin

Wood is an incredible building material that is beautiful, strong, durable and kind to the environment. In this time when it's all about green building, wood is about as green as you can get. It cleans the atmosphere as it grows and feeds the earth at the end of its lifecycle. Wood is our only truly renewable building resource.

However, for many builders, homeowners and even architects, low maintenance is a priority and thus – due to misunderstandings about wood maintenance – materials other than wood are often selected. Critical decisions made at the beginning of a project are what determine cost and maintenance. When wood is used properly in the design process and consideration is given to the species of wood to be utilized, the preservation and finishing of wood could arguably require the least maintenance, making it competitive with any other building material on the market.

Considerations for Easier Maintenance

“Before anything else, preparation is the key to success,” said Alexander Graham Bell, and this maxim applies to designing with wood and ensuring that a coating or sealant will properly protect the wood.

First, make sure the wood remains dry and experiences minimal prolonged wetting cycles. This will naturally prevent decay from setting in. When this is unavoidable, a deep penetrating preservative or pressure treated wood might be considered to prevent microorganisms from attacking the wood over the long term.

When using pressure treated wood, be aware that species such as Southern yellow pine absorb the treatment more thoroughly than spruce.

Second, make sure the design uses overhangs to protect the wood from wetting or, in very exposed locations, use wood predominantly on façades that are leeward and not necessarily windward. Wood will endure windward exposures but the treatment, species and dimension of wood must be specifically selected to provide a stable and sound surface that will perform for generations.



This home in upstate New York used a custom blended stain, top coated with the Hydrocrom clear water-based system from Italy's Milesi spa. Hydrocrom is exclusively imported by Colorspec Coatings International, Inc., Holbrook, NY. It is an elastomeric coating which means it remains flexible while maintaining lasting durability. Photo courtesy of Reilly Windows & Doors.

For instance, to achieve maximum dimensional stability (preventing cracks and checks), the wood profile width should not exceed 6 times its thickness. Specifying grain orientation (edge grain versus flat grain) will also increase stability and help minimize expansion and contraction which can damage the substrate and have long term effects on the surface treatment.

Wood Species and Their Impact

Aesthetic considerations often determine the selection of a wood species, but in reality, a wood species should be selected for its known performance characteristics. For example, Western red cedar, particularly the heartwood, is naturally very decay resistant. When combined with good grain orientation or balanced dimensions, Western red cedar can have many decades of life as a patio surface.

Spruce, on the other hand, is a very strong species commonly used in wall construction but, because of its relatively low decay resistance, it is rarely used for exterior decking without a preservative treatment.

When using wood for windows and doors, the wood must have a very low moisture content; therefore, it is very important that the millwork is coated with finishes that preserve, protect and seal to avoid swelling, which would cause operating problems.

For this application, consider using a millwork protective undercoat, which penetrates and protects against moisture absorption, followed by a topcoat system. Whether transparent or opaque, the top coat system provides long-term protection and easy maintenance. In this situation, compatibility with the undercoat is critical.

Film form finishes are the most desirable as the film can be relied upon to provide envelope-style protection against the elements and when the film wears or breaks, the undercoat will protect for a short time while maintenance is done.



Decks – A Unique Situation

Decks present a completely different surface situation. They endure foot traffic, have a horizontal orientation, and are completely exposed to the elements.

Film form finishes that may perform well on horizontal surfaces for windows will likely have trouble and require restoration, rather than maintenance, on horizontal deck surfaces.

For one thing, most decks are made of wet wood or, best-case scenario, dry wood which may be as low as 18 per cent moisture content. The moisture content of exterior wood used in decks will fluctuate with the seasons and may rarely fall below 18 per cent in a wet climate like the Northeast. This makes these decks particularly difficult to finish with coatings that require wood to have a low moisture content for application. It is therefore imperative to select deck protection can penetrate wood with variable or slightly higher moisture contents.

Specifically, penetrating non film forming finishes are far easier to maintain on decks because these coatings tend to wear or erode rather than peel. As a result, a quick recoat will enhance the original beauty and protection. A good quality penetrating stain for decks should yield a two- to five-year maintenance cycle, depending on the pigment loading (transparent or opaque) and the exposure.

As a final consideration, color choice is important to exterior maintenance since the pigment loading affects the performance of the coating. The more pigment, the longer it will last since good-quality pigments, particularly iron oxides, provide excellent UV protection.

However, wood has a very attractive and distinctive character that

most architects and homeowners wish to reveal and not hide. So, with clear or nearly clear coatings, new technologies use finely ground iron oxides, such as trans oxides or nano tints, to maintain clarity and enhance UV protection, even in a clearer coating.

Summary

Wood is an amazing material that we should utilize more often in our new buildings. Wood is strong, ecologically responsible and creates unparalleled atmosphere. New structures allow us to specify design elements, wood species, grain orientation, component dimensions and treatment systems that will ensure low maintenance, sustainable wood surfaces for years of enjoyment. 🏡

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