

Nanoseal® Wood

**Non-Toxic &
Environmentally
Friendly**

Easy to Apply

Invisible & Breathable

Water Repelling

Dirt Reflecting

**Moss and Algae
Rejecting**

Stops Wood Rot

Reduces Micro-cracks

Weather Resistant

Internal & External Use

**UV-Stable, Economical
and Long Lasting**

**Easy-Cleaning/Self
Cleaning Effect**

Saves Time & Money

Nanoseal® Wood is a transparent water-based nanotechnology surface treatment with high penetration depth for both internal and external wood.



Nanoseal® Wood is not a sealer; nano particles adhere directly to the substrates molecules (molecular bonding) and assemble into an invisible, ultra-thin nanoscopic mesh that provides an extremely long lasting hydrophobic (water repelling) surface. The hydrophobic effect creates an easy to clean protected surface with self-cleaning properties - all foreign particles are washed off by rain or when rinsed with water.

One of wood's worst enemies is water, by repelling water **Nanoseal®** Wood protects surfaces against wood-decay, fungi and rot, decreases swelling and shrinking that lead to cracking and warping, and will delay blistering, cracking and peeling of paint. **Nanoseal®** Wood is UV-stable, resistant to friction and cannot be removed by water, normal cleaning agents or high pressure (max. 60bar) equipment.

NB: Nanoseal® Wood is NOT suitable for polished or painted surfaces. New wood must be pre-weathered or sanded and natural surface oil must be removed. Due to the low water absorption rate, hardwoods may be difficult to treat.

Technical Information:

Surface Preparation: Older surfaces must be thoroughly cleaned with water, high-pressure water jet or steam cleaned. Ensure timber is clean, dry and free from surface coatings such as paint, varnish or polish. The substrate must be dry before application. Ensure wood is thoroughly weathered if applying over previously oiled timber.

Application: Ensure the pump spray is clean before use. Surfaces should be sprayed at least twice with a garden pressure spray pump or an industrial airless sprayer. Nozzle size should be as small as possible to create a very fine mist, provide the best coverage and lowest consumption. Treatment draws into the surface pores immediately after first contact. After 2-5 minutes apply second coat (wet on wet). A bead formation usually appears on the surface between coats. Depending on the porosity of the substrate, it may be necessary to repeat the application, again wet on wet. Larger surfaces should be applied in sections. Apply each coat neatly and evenly, taking care not to over apply as ponding may occur on less absorbent substrates, causing visible discolouring. Due to the wide variety of substrates it is advisable to test the absorption in an inconspicuous spot before doing the entire area. This is highly recommend on less absorbent substrates. Apart from spraying, the product can be applied by dipping or painted-on using a paint roller. It must be considered there may be higher product consumption with these methods.

Curing Time: After 24-48 hours the optimal protective effect is achieved, however treated surface are accessible with clean and soft footwear. The product is rainproof as soon as the surface has dried.

Consumption: Depending on the absorbency of the substrate, consumption with professional spraying devices should be 50-100g/m². 10-20 square metres can be treated with 1 litre.

Cleaning: Clean all equipment quickly after use with clean water.

Storage: Can be stored in the original sealed packaging for at least 12-months. Storage conditions should be dry and cool.

First Aid: Refer to MSDS. If swallowed rinse mouth immediately with water, DO NOT induce vomiting. Drink water or milk and seek medical advice if necessary.



T: +61 2 9905 8111
F: +61 2 9905 8144
www.nanotec.com.au

The information presented is offered as a result of the manufacturer's experience and as such is not to be taken as an offer and does not imply any warranty or guarantee as to the completeness of the descriptions contained herein. Further, the manufacturer reserves the right to alter products, systems, specifications and/or application techniques as described herein without prior notice, in line with its policy of technological advancement and product improvement. Technical information and services are freely available from Nanotec.

Nanoseal® Wood

Dry Rot

Additional Information:

In many situations structures such as barns and other large agricultural buildings, jetties, bridges, outdoor furniture and deck areas are difficult to maintain on a regular basis. These structures may be left unpainted for many years once the previous finish has failed. Studies have shown that regular maintenance on exposed wood only finds place in the first few years after the purchase of a house, building of a wooden structure or even after completion of wooden infrastructure constructions. The longer the weathering time, the more rapidly a finish develops cracking and flaking. Virtually all problems associated with wood-based building materials are related to moisture. Peeling paint, rot, warp, cracks and general shrinkage are all related to moisture in wood. Control of water absorption reduces weathering and decay.

Dry Rot:

There really is no such thing as dry rot. Wood need four things to decay; water, oxygen, food (wood) and favourable temperature. Wood can be too wet to decay. Waterlogged wood will not allow oxygen in to support the growth of fungi. Marine piling kept fully submerged may never rot. Wood can also be too dry to decay. Wood kept below 22% moisture content (MC) will generally be safe.

Pressure Treating

Pressure Treating:

Pressure treating does make wood rot resistant – BUT... it does not make wood water resistant. Pressure treated wood still soaks and loses moisture. As a result, the wood moves, cracks, twists, bends, cups and virtually tears itself apart. A technical report in the Forest Products Journal US (Nov-Dec 1998) indicated that the average pressure-treated deck only lasts 9 years.

Hardwood

Hardwood:

Density is the most important predictor of hardness and strength. Hardwood is more resistant to decay than other woods. Hardwoods shrink and swell more than less dense woods, but are more difficult to treat due to their pre-treatment with wood-preserving chemicals.

Rot Fungi

Rot Fungi:

Rot fungi are 'seeded' by the spread of single-celled spores. These spores are everywhere, and essentially all wood is exposed to the seed stock. Only when conditions are right will the infection develop into rot. The moisture content (MC) of wood needs to be above 28% to be initially infected. Since all lumber is above 28% MC at some point in its life, all lumber is infected. When the MC drops below 22% the rot fungi goes dormant. It's harmless, but it will be reactivated when the MC rises above 22%. The solution is to keep wood dry.

Weathering & Paint

Weathering and Paint:

Weathering is the deterioration of wood. Wood should not be allowed to weather before painting. Research conducted by the Forest Products Laboratory in Madison, WI US clearly shows that even a 3-week exposure to sun and rain is too much for new wood. Ultraviolet radiation from the sun alters chemicals in the wood and destroys lignin – the natural glue that holds wood cells together. Loosened wood fibres and decomposition of the surface prevents good bonding between paint and wood. Raw wood sucks moisture from rain, dew and high humidity. It swells. The sun quickly dries the surface fibres. They shrink. As a result, the surface is stressed and when it is painted at a later time, the paint is much more likely to peel. Siding must be dry and clean before it is painted. Weathered wood should be sanded and washed. On the other hand, weathered wood is not such a bad idea if you plan to stain the siding. Loose fibres and the roughened texture absorb penetrating stains and repel water better.



T: +61 2 9905 8111
F: +61 2 9905 8144
www.nanotec.com.au

The information presented is offered as a result of the manufacturer's experience and as such is not to be taken as an offer and does not imply any warranty or guarantee as to the completeness of the descriptions contained herein. Further, the manufacturer reserves the right to alter products, systems, specifications and/or application techniques as described herein without prior notice, in line with its policy of technological advancement and product improvement. Technical information and services are freely available from Nanotec.