Australian Made NORGLASS Specialty Finishes Australian Owned

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INFORMATION GUIDE

STOPPING THE ROT IN TIMBER

Line up 10 people and ask for a solution to wood decay… and there will be 10 answers to the problem. To definitively answer it, is simple… and the proof is **millions of years old**. Examine a piece of petrified wood encapsulated in natural resin and you can see that the dimensional stability is **exactly** the same as it was when embedded, all those eons ago.

This dispels the false notion that wood needs to "breath". **It only needs to breathe whilst still living**. When dead it becomes susceptible to decay (rot). Our use of wood as a structural tool, has one fundamental requirement, and that is **DIMENSIONAL STABILITY**. It's versatility in use, shaping, bending, laminating, pulping and cultivating has made this medium the building block of the universe… but it has an "Achillies Heel". The very effect that allows trees to suck up water 30 metres or more in the air is the same mechanism that brings about its destruction, after it has been cut down. Whilst it is still a living tree, it has a natural resistance to fungal attack, just as we humans inhale fungal spores continuously without harm. The hydrophilic nature of wood that acts as a capillary to suck up water (like a sponge) also carries "fungal passengers" with it. After the tree has been logged these mould spore need a "trigger" environment of 25% (or more) of water saturation in the wood to start the propagation process. Below that threshold the spores remain dormant. Beyond that point the spores become active and start to breakdown the lignin/cellulose cement that holds the fibre together. As this process continues, more water is sucked in and the structural integrity of the wood diminishes. In real terms wood rot is a cancer… A self fulfilling result of the presented conditions.

The answer is to **completely** seal the wood, so that there are no "backdoor" opportunities for water to start the cancer. We call this treatment "**NORSEAL**"… an epoxy wood treatment. This 2 pack coating is designed as a **water-thin** product so that it has **maximum penetration** and wetting characteristics. This is **essential** to the result. **NORSEAL** has to seek out and coat **every available** wood particle within its solutions reach. As the solvent component evaporates out of the wood, the residual epoxy film, coats each fibre in a waterproof solution and effectively **glues** fibre to fibre. Because the entry points have all been sealed off **below** the ingress point, the wood is now permanently stable, on the outer surface and the close internal areas. Beyond that the wood is still untreated and still potentially vulnerable unless a complete saturation process is possible.

Rationalé

Products that promote timber protection in a single pack form can only offer a "temporary solution" because, as the solvent migrates out of the film so does the toxic component of copper (whatever). The residual component will continue to migrate through the fibres and dissipate eventually leaving the wood barren and absorbent because it is not **locked into a cured binder**.

The object of the exercise is to **seal** the fibres just like a residual amount of diluted varnish will stick all of the bristles together in a paint brush. On small sections of shaped timber it is possible to immerse them in a bath of NORSEAL to **totally** impregnate the whole piece. Stand it on end and the capillory action will draw up the NORSEAL until it is **completely saturated**. At this point the piece of wood is permanently impregnated **forever!** At our factory we have cubes of Norseal impregnated chipboard which have been suspended in water for more than 25 years and are **still** as dimensionally stable as they were in the beginning.

Although the solvents in NORSEAL will kill the mould spores it comes in contact with, where others have not been reached, they will remain dormant forever, unless they are exposed to an excess of the 25% of water as previously stated.

Some useful tips

On plywood it is not sufficient to just coat the end grain with NORSEAL, because the inner cores often have small parts of wood missing. Unless the "bath" method is used, the end grain must be plugged with an epoxy filler, such as NORFILL **after** the NORSEAL application has cured. On the faces, **complete** penetration will be achieved through to the rescorcinol glue line. **However** if screws or nails are used **after** this treatment they must be either recoated with NORSEAL or recessed and filled with NORFILL. **NOTE**: Do **not** attempt to use polyester based fillers over NORSEAL, because epoxies will inhibit the curing of **all polyester based products**.

On other end grain timbers a **liberal** application of NORSEAL is all that is required. Bear in mind that NORSEAL **can only continue the penetration process whilst it is still liquid**. Apply 2 coats wet on wet on same day. Applying further coats the day after is useless, because the next coat can only sit on top of the cured film. When dealing with **partially** rotted surfaces such as a window sill, it is possible to repair the problem by removing the very soft areas, and drilling a series of holes at 30 degree angles and filling them with NORSEAL using a small funnel. As the NORSEAL disappears, refill them several times until satisfied that a significant area has been reached, with the solution. Once treated, leave the holes open for a minimum of 48 hours to allow the migration of the solvent to come out. This time is an arbitory one and will be affected by timber density, thickness, time of year, and temperature. Protecting the holes from water ingress is necessary, and masking tape and plastic covering should be used during the curing process to prevent more water entry. Following that NORFILL EPOXY FILLER should be used to fill the holes.

Do **NOT** use NORSEAL as a varnish, because all epoxies have poor u/v stability and will oxidise if left exposed to direct sunlight. Internally NORSEAL can be quite safely used with no further treatment needed, or can be varnished over. In direct sunlight NORSEAL should have a pigmented coating applied over it within 8 weeks. NORSEAL is also resistant to white ant attack and they find it, totally unpalatable…… however **all** surfaces have to be treated to prevent them gaining access.

