

Understanding preservative treated timber

The South African Wood Preservers Association (SAWPA) discusses the basics of wood preservation and the use of preservative treated timber

Why treat timber?

When a tree or parts thereof fall in the forest, a process of decay begins to decompose the woody cellulose material that contains starches and sugars. This breakdown takes place through insect and fungal decay that feeds off the starches and sugars, it is the way of nature.

When we purchase timber from the hardware store and use it in an exposed application, for example, outside or planted in the ground, without the proper protection, the timber is open to exactly the same risks.

If you are planning a project, for example, a deck or a pergola, using wood, you don't want your timber to become 'compost'.

To prevent timber from rotting or being eaten by termites and wood borers, we preservative treat the timber by impregnating wood preservative chemicals deeply into the wood at different strengths or loadings, depending on the application, so that the timber will last and endure for its intended use.

In South Africa, we grow (farm) pine and eucalyptus commercially for many



When a tree falls to the ground a process of decay begins. The same will happen to timber if it is not properly preservative treated



different end uses, including timber used for building and construction and agriculture. This is because these species grow fairly easily and are the most cost-effective. Unfortunately, these species have a low natural durability and it is vital to preservative treat such timber when used in exposed conditions. Preservation not only enhances the durability and life, but provides the added benefit of increasing the carbon sink, and it is a further extension of the only sustainable and renewable building material available to man. By treating it, we instil confidence in using timber.

Types of wood preservation

Wood preservation is categorised into primary (industrial) and secondary (DIY) wood preservation.

In primary wood preservation the timber is impregnated with an industrial wood preservative (biocides) to render it resistant to rot and wood borer or termite attack. This treatment is done at sawmills or pole treatment plants in a treatment vessel using mainly a vacuum and pressure cycle process before being made available on the market. It is important to note that in South Africa, it is a legal requirement that all timber put on the marketplace as preservative treated timber must comply with the requirements of the applicable SANS standards and be marked as such. This marking includes information such as the trademark of the manufacturer, the H class, SABS/SATAS quality mark and applicable SANS standards number.

In the case of round wood (poles), it would be on either a small metal disc on

either end or on the anti-split nail plates attached to the ends when required. For sawn timber, the same information is applied, but by ink stamps.

Secondary wood preservation includes supplemental or remedial preservatives that contain biocides as active ingredients, which can also be included in protective wood finishes, for example, wood sealers as the carrier. Supplemental or remedial preservatives are mainly applied by hand using a brush, paint or sprayed on in a DIY setting and are mainly corrective to stop further attack, but can also be used as a DIY preventative measure, treating exposed ends of pre-treated timber that has been modified or cut. Bandages, pastes and rods (sticks) with diffusible borate as the active ingredient also fall under the remedial preservatives. Supplemental or remedial preservatives normally require an ongoing maintenance programme to remain effective.

It is perhaps noteworthy to mention a third grouping, which is not regarded as wood preservatives, but rather protective wood finishes or sealers. The difference

between these and the remedial or supplemental wood preservative, although both are done by non-industrial DIY application, is that protective finishes do not contain active biocides. These types of wood finishes, however, have an important role as they protect against weathering factors, such as water ingress, temperature changes and UV rays, but not against active fungal decay and insect attack. They can, if applied to previously un-impregnated timber and if the coating is properly maintained, prevent fungal decay by merely keeping moisture out. If the protective surface of this grouping on untreated timber becomes degraded and allows moisture ingress, the risk of fungal decay increases exponentially.

Primary pretreated timber used in exposed conditions and where the natural wood appearance is required, must also be surface protected with a suitable exterior wood sealer. If a silver-grey weathered surface appearance is required on, for example, pretreated CCA treated timber, then an exterior wood sealer should not be applied.



There is a difference between wood preservatives and wood finishers or sealers. Wood finishers do play an important role to protect against weathering



Preserving confidence in Timber

For information on preservative treated timber products and where to obtain it, contact us on:

Email - sawpa@global.co.za, Tel - 011 974 1061, or visit our website at www.sawpa.co.za



Choosing the correct preservative treated timber

The South African wood preservation industry has adopted a Hazard classification system similar to that used in Europe and Australasia and the H class system categorises treated timber into different end use applications based on a) exposure conditions, b) risk of biological attack, and c) preservative retentions/ chemical loading.



Did you know?

The primary wood preservation industry boasts ±120 certified treatment plants throughout South Africa, mainly CCA and creosote plants. In 2013, the total volume of timber treated in South Africa was 1 065 580m³.

Product use information

- Be sure to choose the correct H class timber for your intended application and apply remedial preservative to all cross-cut/machined exposed, above ground areas (not acceptable for in ground, fresh water or marine contact areas).
- Poles or posts intended for ground contact must preferably be purchased in the desired lengths. Never plant cross-cut ends into the ground.
- Do not plant poles inside an encapsulated concrete base. Instead, use a 'collar' or compacted stone and soil with or without a solid (cured) concrete base (see diagram).
- Apply a suitable brush, paint or spray-on wood sealer when the natural look of the timber is desired.

How to plant a pole

The details in the diagrams on the right address proper drainage of any moisture that may be taken up by the pole. A structural engineer must be consulted for civil engineering details and requirements.

H class	Application and risk	Typical end uses	Preservative type
H2	Dry indoors, above ground Low risk - insect attack	Roof trusses, flooring, joinery, timber wall framing	CCA, Copper azole, ACQ, Boron, LOSPs
H3	Outside above ground Moderate risk - insect and fungal attack	Building, fencing, agriculture, landscaping, outdoor furniture, decking, cladding, bearers and beams, etc.	CCA Creosote Copper azole ACQ
H4	In ground contact High risk - insect and fungal attack	Building, fencing and agricultural poles, landscaping, in ground substructures	
H5	Fresh water and wet soils High risk - insect and fungal attack	Jetties, walkways, piling, agriculture, landscaping, retaining walls	
H6	Marine (sea) water High risk – marine borer and fungal attack	Jetties, quays, marine walkways, retaining walls and barriers	CCA + Creosote

Safety precautions and warnings

- When machining (for example, sanding and sawing) preservative treated wood, be sure to wear a dust mask. It is also important to wear safety glasses to protect your eyes from flying particles.
- Work in a well-ventilated area to avoid prolonged inhalation of sawdust from treated wood and wear gloves when working with freshly treated wood. Always wash work clothes separately.
- Do not make baby toys or furniture from treated wood that may be chewed on by infants, or make any food utensils from treated wood.
- Do not use treated wood for firewood, to prepare any foods and do not store food in direct contact with treated wood containers.
- Do not make containers for storing drinking water from treated wood.
- Preservative treated wood should also not be used in beehives where it may

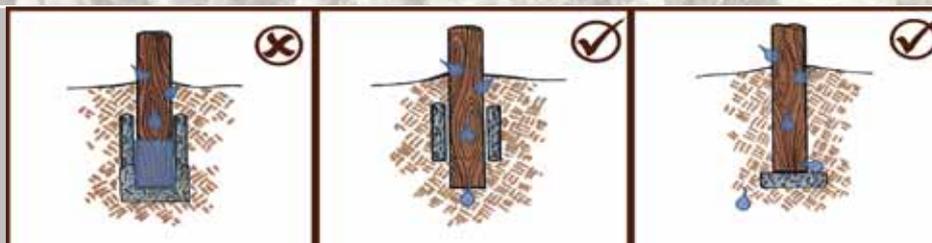
come into contact with the honey, nor should treated wood shavings or sawdust be used for animal litter or where it can become a component of animal feed.

Disposal

Preservative treated timber waste is not regarded as hazardous waste material; however, treated wood offcuts and waste should not be allowed to accumulate, but should be disposed of at a registered disposal or landfill site. It is important not to burn treated wood offcuts and waste or use it as firewood for food preparation, as this will allow the release of chemicals, which are tightly bound to the wood, into the smoke. The ashes may also contain residual chemicals. ✘

Source:

For more information on wood preservation in South Africa, contact SAWPA on 011-974-1061, email sawpa@global.co.za or visit www.sawpa.co.za or www.sawpa.org.za



Pressure Treated Timber



Timber with a moisture content below 20% cannot rot. This may not always be possible when used outside in exposed conditions as it requires proper application and maintenance of a suitable penetrating and water repellent wood sealer.

The options are to use either naturally durable but expensive exotic hardwoods, or less costly locally grown non-durable Pine or Eucalyptus (gum) timber or poles, that have been pressure treated with a suitable wood preservative to the desired exposure or hazard class.

The H class system is a guide to help you buy the correctly treated timber for your project.

Be sure to look for the required H class on the timber as well as one of the two quality marks given below.



Hazard classes:

H2— dry interior above ground

H3— exterior above ground

H4— in ground contact

H5— in contact with fresh water and wet soil

H6— in contact with marine waters

Sustainable Timber Resource

Timber is the most sustainable building product available to man. It's naturally renewable. Over 90% of plantations grown in South Africa are FSC™ certified.



South African Wood Preservers Association

For more information on preservative treated timber, or where to find a SAWPA member, contact us on 011 974 1061 or sawpa@global.co.za or visit our website at www.sawpa.co.za

A member of  **THE WOOD FOUNDATION.**