

# CCA TREATED TIMBER

## WHAT IS THE TIMBER PRESERVATIVE KNOWN AS CCA?

CCA (Copper-Chrome-Arsenate) is an industrial wood preservative developed in 1933 and widely used in South Africa since the 70's. When applied to timber it enhances the durability by preserving it against biological deterioration such as insect attack (wood borer and termites) and fungal decay (rot). In South Africa only CCA Type C is allowed to be used as it is internationally recognised as the most stable and effective type, i.e. apart from its efficacy as a timber preservative, it successfully fixes to the lignocellulose material in wood. CCA may only be applied by industrial high pressure process from where the familiar term "pressure treated wood" hails from.

In South Africa the manufacture and distribution of CCA is regulated by the Registrar of Act 36 of 1947 and it is registered as an agricultural remedy under the category "Wood Preservative". Its intended use is stipulated as an industrial wood preservative for use only by National Regulator for Compulsory Specifications (NRCS) approved and SABS or SATAS certified industrial wood preservation plants, i.e. under regulated and controlled conditions.

## WHAT IS CCA TREATED TIMBER :

Freshly treated CCA timber can be identified by its yellow/greenish to green colour that fades over time into a weathered silver-grey if exposed to the elements and not maintained with a wood finishing protective product i.e. a suitable exterior sealer. CCA treated wood is highly resilient against attack from biological decay and organisms if correctly applied and used in accordance with the required hazard classification, ranging from H2 (dry interior above ground) to H5 (heavy wet soils and fresh water), and for H6 (Marine contact) when used as a dual treatment with Creosote.

## IS CCA TREATED TIMBER SAFE?

The chemical composition of CCA is a mixture of copper-chromium-arsenic compounds mixed in a ratio that when pressure impregnated into timber, through a chemical process known as "fixation", causes the preservative to become immobile in the wood and therefore make it highly leach resistant. The chemistry behind CCA and its use in wood preservation is thus designed to fix the preservative in the wood so the treated wood product can perform as intended.

By the very nature of the function of any wood preservative it needs to be toxic to the agents which would otherwise attack the timber i.e. fungi and insects. The apprehension about the use and effects of CCA treated timber may be due to the inability to understand the significant difference between the actual preservative solution used in the industrial treatment plant and the final treated timber in which the preservative has become 'fixed.'

The Environmental Protection Agency (EPA) in the United States conducted an 8 year investigation into CCA, the treatment process, the use and handling of the treated timber and the alternatives

to the use of CCA. None of the EPA's investigations produced any conclusive findings showing increased risks of toxic effects on human (or of cancer) through the handling of treated timber. The EPA concluded that the benefits of CCA treated timber far outweighed any risks.

<http://www.woodpreservativescience.org/safety.shtml>

Additional scientific studies from unbiased sources, particularly in the area of exposure of children on playground structures conclude that there is no increased risk through the use and contact with CCA treated timber. <http://www.ncbi.nlm.nih.gov/pubmed/20377243>

#### WHAT IS THE SAFETY RECORD OF CCA TREATED TIMBER?

CCA has been produced, sold and used throughout the world for the last six decades. During this period there has been no known recorded or reported health problem caused by using and applying CCA treated timber correctly and as intended. Known and reported health problems are caused by the incorrect use of and exposure to CCA treated timber, e.g. burning treated timber off-cuts/waste for heating or cooking purposes, which is strictly forbidden and foolish (it is illegal to burn CCA treated wood). Certainly there may be the occasional allergy problem experienced when in contact with freshly treated timber or when machining, i.e. sawing, drilling and sanding, CCA treated timber. These symptoms can also arise with other types of preservatives used to treat timber, and even untreated timber. It is therefore recommended that the basic safety precautions need to be adhered to at all times when working and machining timber.

CCA treated timber is a passive material, the preservative renders the wood toxic and unsavoury to wood destroying fungi and insects - unlike other pest control products applied distinctively with the purpose to eradicate pests, e.g. fumigation, spray and soil treatments. CCA treated timber is effectively an impassive product capable of dissuading insect attack, and resisting fungal decay. Its use is therefore purely in a defensive capacity to ensure that an otherwise naturally non-durable product is rendered durable and long lasting.

#### DISPOSAL OF CCA TREATED TIMBER:

CCA treated timber must only be used as intended, and therefore when it reaches the end of its usable life, i.e. structures are broken down, it is recommended that it be re-used as in other timber applications when possible. If no re-use applications are available it should be disposed of at either a registered landfill site or waste disposal site, from where it will be disposed of to a registered landfill.

CCA treated timber waste, i.e. demolition waste and/or off-cuts must never be burned for disposal, heating or cooking purposes as it releases the fixed components which contain toxic and harmful substances. The aforementioned disposal methods apply.

Do not use CCA treated shavings as mulch; or for animal bedding or litter purposes, where it may become a component of animal feed and/or subsequently used as compost.

#### SAFETY AND HANDLING PRECAUTIONS:

CCA treated timber must only be used once fixation has fully taken place. The fixation is time and temperature dependant and can range from 48 hours (summer) to 7 days (winter) from the time

of treatment in typical South African conditions. During the fixation period freshly treated timber must only be handled when wearing the appropriate PPE, i.e. chemical resistant gloves and clothing.

When power-sawing/machining any timber, wear goggles to protect eyes from flying particles, and a mask to avoid dust inhalation when power-sawing/machining any timber. If sawdust accumulates on clothes, launder before re-use. Wash work clothes separately from other household clothing.

After working with CCA treated wood, wash hands before eating, drinking, smoking or otherwise placing your hands near your mouth or rubbing your eyes.

<http://www.sawpa.co.za/safetyissues.php>

### CCA TREATED WOOD IS AN ENVIRONMENTLY FRIENDLY MATERIAL:

When you select CCA treated wood you not only build projects that last, you invest in the conservation of our forest resources.

CCA treated wood will last much longer than it takes replacement trees to grow and be converted into wooden products, thus extending the life of wood and whilst requiring fewer trees to be cut, furthers the carbon sink of the carbon captured in the wood when the tree was growing.

### WHAT ALTERNATIVES ARE THERE TO CCA?

Alternative products are available, but they are either less practical or in some cases less effective in certain high hazardous and critical end applications, not always readily available, and in some cases just too costly when compared with other competing materials.

The alternatives to CCA for applications ranging from H2 (dry interior above ground) to H5 (contact in fresh water) hazard end applications are:

- Creosote, which is well known and extensively used since 1832, however its aromatic and oily characteristics renders it more practical for industrial and agricultural end uses, e.g. fencing, transmission and telephone poles, railway ties, etc. where direct contact and extended close proximity is not expected. When used together with CCA as a dual treatment it is suitable for H6 (marine) applications in South African coastal waters.
- The new generation inorganic alternatives used in applications similar to CCA are Copper Azole (CuAz), and Alkaline-Copper Quaternary (ACQ) preservatives. These preservatives are new to South Africa and therefore not widely available.

**For more information please contact:**

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