

Facts about CCA Treated Wood

CCA treated wood is ideal for using outdoors where structures are exposed to weathering or harsh estuarine or marine conditions, and/or are in direct contact with the ground or water. It is a good substitute for naturally durable timber species that are under threat from over-logging or illegal harvesting.

Why not use natural wood?

In its natural state, wood may either:

- be durable and able to resist decay and insect attack – such as jarrah and other Australian eucalypts, teak and many tropical hardwoods, or
- have only moderate or no durability – such as many indigenous species and all commercially grown species in New Zealand.

Many of the naturally durable species of wood are protected from commercial use for conservation reasons. For a good supply of durable wood, therefore, it is necessary to treat non-durable species.

Some non-durable wood species cannot be preservative treated due to their cell structure or, in some cases, due to differences between heart and sapwood within the one species. Fortunately, the most commonly available species of commercial wood in New Zealand, radiata pine, is the most treatable species in the world.

Why use CCA treated wood?

Wood gets preservative treatment to make it more durable, particularly when it is used outdoors. With CCA treatment, wood can last for 40 years, and often much longer, even when it is exposed to the weather or a harsh estuarine or marine environment and/or is in direct contact with the ground or with fresh or salt water .



What is CCA?

CCA has been used as a preservative for about 70 years. It is a highly cost-effective means of treating wood.

It is made up of three active elements:

- copper – which resists rot or decay caused by fungal attack
- chrome – which fixes the preservative to the cell walls in the wood so it doesn't leach out
- arsenate – which resists attack by insects such as borers and termites.

These elements are combined in a water-based mixture. For reasons of health and safety and to protect the environment, this treatment process must take place in a plant that is specifically designed for this purpose.

To apply the mixture, it is put in a pressure container and infused into the wood.

What are the benefits of CCA treated wood?

CCA treated wood is the ideal material for outdoor structures because it is a renewable natural resource that benefits conservation and protects the environment.

1. Conservation

Because we can use CCA treated radiata pine grown in plantations instead of durable species of wood, we can conserve natural forests in New Zealand and in many other countries. Tree species like radiata pine are more readily renewable than slow-growing species like rimu, matai, totara and beech. Furthermore, by increasing the life span of wood through CCA treatment, we can harvest plantation-grown trees at a substantially slower rate. In New Zealand, it's estimated that we need to harvest 100,000 fewer trees from plantations each year thanks to CCA treatment.

2. Environmental protection

CCA treated wood is used in a wide range of ways, such as for decks, fences and fence posts, horticultural farming, walkways and other civic amenities, marinas and marine farming. We could use concrete, steel, aluminium or plastic for the same purposes but all of these products are made from non-renewable resources, generally extracted from the earth, which are transformed into usable products through energy-intensive processes. By using CCA treated wood, we greatly reduce mining activity and consume far less energy.

How safe is CCA treated wood?

Although the elements in CCA do have harmful properties, CCA treated wood is no risk to human health because it contains only small amounts of the elements and they are fixed to the wood.

Many studies in New Zealand and in other countries have concluded that human exposure to arsenate, in particular from CCA treated wood, is negligible. There have been no known instances where exposure to CCA treated wood has led to life-threatening or debilitating illnesses.

Several studies support this conclusion.

- In 2005 public health physician Dr Deborah Read produced a report that had been commissioned by the then New Zealand Environmental Risk Management Authority. She concluded that, "There are no epidemiological studies or human case reports involving disease related to direct contact with CCA-treated wood and the low level exposures that most of the general population will experience from contact with CCA-treated wood are extremely unlikely to result in acute health effects. CCA-treated wood has also been in use for many years without discernible adverse health effects suggesting that if there is a true increased risk it is very small."
- Since Dr Read's report was published, Dr Bruce Graham, a New Zealand environmental scientist, has reviewed the issue several times. In his latest review in 2009, Dr Graham evaluated the findings of the United States Environmental Protection Agency (US EPA) which led to its decision to re-register chromated arsenicals in September 2008. He noted, "The final report on the US EPA's assessment of child exposures from playground equipment and decks has shown that estimated exposures to arsenic and chromium are within acceptable limits for non-cancer effects, except at the very upper end of the exposure distribution for arsenic, while the median results for cancer effects are very close to the target level of 1 per 100,000 normally applied in New Zealand risk assessments. The EPA assessment is inherently conservative."
- In an extensive review of internationally published literature conducted for the New Zealand Timber Preservation Council in 2003, Dr Wayne Temple, Director of the National Poisons Centre and Dr Peter Di Marco, Director of BenchMark Toxicology Services, Perth, Australia concluded, "In the context of possible adverse health effects through exposure to CCA treated wood, the scientific evaluation is clear – there simply is no significant risk."

What about the risk to children?

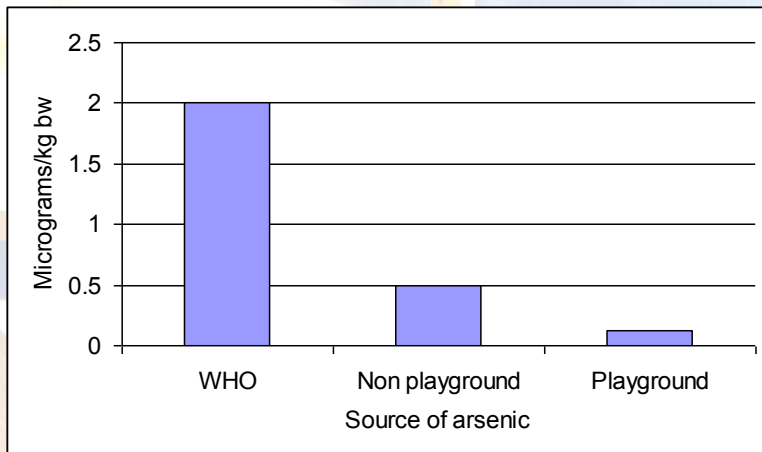
Children are the most vulnerable members of our communities. They may be exposed to CCA and in particular arsenic if they take it into the body by:

- touching it with a hand and then putting that hand in their mouth – which is seen as the more likely possibility
- touching it with some part of their body and CCA is then absorbed into the body through the skin – which is seen as a negligible risk.

The most likely way that children could take in CCA by transferring it from hand to mouth is by wiping their palm on CCA treated timber on a deck or in a playground before putting it in their mouth. They may also be exposed if they put soil containing CCA leachate into their mouth.

The World Health Organization's (WHO's) Tolerable Daily Limit for arsenic is 2µg/kg of body weight. In other words, a person can take in this amount of arsenic for every kilogram of their body weight every day without suffering any substantial health risk over their lifetime as a result.

Numerous studies in the USA have tried to identify the extent to which humans are exposed to arsenic from contact with CCA treated wood. These studies have used a variety of assumptions, some very conservative, to estimate these exposure levels. Based on these studies, the US Consumer Product Safety Commission considers that typically a child's daily intake of arsenic is 0.62µg/kg of body weight from all sources. This amount is clearly well below the WHO Tolerable Daily Limit, as the graph below illustrates.



Recommendations

CCA treated wood does contain arsenic but the degree to which people, particularly children, can be exposed to it from contact with the wood is negligible. The typical intake from wood is minute compared with the intake through food and water and is even less significant compared with the World Health Organization's Tolerable Daily Limit.

Restrictions on the use of CCA treated wood in other countries such as Australia and the USA are not based on any scientific data. Rather, they were introduced as "precautionary measures" and to reduce the financial risk if any legal action were to be taken in future.

You can safely use CCA treated wood for any of your outdoor projects such as building a deck or fence or landscaping your garden.

Our only warnings are:

- don't burn CCA treated wood because this could release the active elements into the atmosphere or into the soil
- don't use CCA treated wood as a surface to prepare food on.

