

Treated Timber, Ticking Time-bomb



The Need for a Precautionary Approach to the Use of Copper Chrome Arsenate (CCA) as a Timber Preservative

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Executive Summary

Timber preserved with Copper Chrome Arsenate (CCA) is ubiquitous in Australia. Wood, such as radiata pine, is treated with CCA to protect it from insects, rot and fungus. CCA-treated timber is commonly used on telegraph poles, decking, fencing, landscaping, vineyard stakes, picnic tables and in playgrounds. However the arsenic in CCA leaches out of CCA-treated timber and arsenic is toxic and can cause cancer in the long-term. Sealants are only effective at reducing arsenic levels on the surface of the wood for about six months.

There is a growing body of scientific evidence that timber treated with CCA poses a danger to both humans and the environment. As a result, authorities around the world are imposing tighter restrictions on its manufacture, use and disposal. This report investigates a range of concerns and issues surrounding its manufacture, use and disposal.

Children who play on CCA-treated structures are particularly vulnerable because of their hand-to-mouth behaviour. Several overseas studies have shown that they are exposed to arsenic and may increase their lifetime risk of getting cancer as a result. No comprehensive study has been done on this in Australia. However the Australian Pesticides and Veterinary Medicines Authority (APVMA) has decided to prohibit the further use of CCA-treated timber for situations where the public are likely to come into close contact with it. This is in line with the Precautionary Principle but their opinion that nothing needs to be done about CCA-treated timber that is already in the community, even though it poses the same dangers, contravenes the Precautionary Principle. Arsenic continues to be found on the surfaces of CCA-treated timber for at least 20 years after it has been applied.

People who treat the timber and work with it once it has been preserved are also exposed to health risks if they do not take sufficient precautions. A number of studies have shown that workers exposed to CCA-treated timber fumes and dust have experienced a range of debilitating health problems. For this reason the AWU has imposed a ban on certain construction methods involving CCA-treated timber.

A survey of hardware retailers, building industry information centres and treated timber industry representatives found that Australian consumers are receiving little quality information about the hazards associated with CCA-treated timber and the correct methods of handling and working with it. Although material safety data sheets recommend safe working practices, these are sometimes not made available to workers and are seldom provided to amateur home handypeople.

As could be expected, there has been a number of lawsuits in the US against manufacturers of CCA-treated timber over the last 20 years because of the health impacts on consumers and workers. The threat of class actions is now looming. In Australia the potential liabilities for authorities are being discussed but no lawsuits have yet been initiated. The timber preservation industry continues to deny that CCA-treated timber poses any health or environmental risks if handled properly.

Because CCA leaches out of the treated timber over time there can be residues of arsenic, copper and chromium on the surfaces of the wood and it can be washed off by rain to accumulate in the soil or water below. The environmental impacts of heavy metal leaching into surrounding soil and water, and toxins being released into the air when treated timber is burned, particularly after bushfires, have been the subject of a number of academic studies.

The eventual disposal of CCA-treated timber is also of great concern because of the large volume of anticipated waste and the lack of safe disposal options, given the toxicity of the treated timber. If CCA-treated timber is incinerated the smoke and the ash can be toxic, so it is usually disposed of in municipal landfills in Australia, where it continues to leach arsenic. In Europe it is categorised as a hazardous waste for these reasons.

CCA-treated timber may be incinerated accidentally as a result of house fires and bushfires, or by people ignorant of its dangers when they dispose of waste treated timber in backyard burn-offs. Perhaps of most concern is the fact that people sometimes burn it in their home combustion heaters, wood ovens and fireplaces, without realizing the dangers to which they are exposing their families and neighbours.

Reuse options are limited because of the risks associated with them but they are being developed to minimize this risk. In particular, CCA-treated timber should not be reused for garden mulch or animal bedding or for any use where humans and animals can have close contact with it. Methods to remove the toxic components from the treated wood are still in their infancy and have cost or environmental problems associated with them.

There are restrictions on CCA use in the US, the European Union, Canada and Japan, and it has been banned altogether in several countries including Denmark, Switzerland, Vietnam and Indonesia. Indeed, Australia is one of the last major CCA-producing countries to take an official position on the availability and use of CCA-treated timber. Here the CCA preservative is approved and regulated by APVMA and national standards relating to the treatment and use of treated timber are set by Standards Australia. However the preservatives committee that sets the relevant standards is dominated by those with an interest in the continued wide use of CCA-treated timber.

The APVMA has reviewed existing studies and made recommendations for CCA to be restricted and its labels changed to prevent it being used on picnic tables, deckings, handrails and children's play equipment and to provide more guidance on safe handling, use and disposal. However the APVMA does not have the powers to directly regulate the use of timber treated with the CCA preservative and its review has stopped short of dealing with in-situ and waste CCA-treated timber.

There are several alternative chemicals being promoted as alternatives to CCA but, although they do not involve arsenic or chrome, they still pose environmental and health risks. However, there is a broad spectrum of non-chemical wood treatments as well as substitute materials that do not require treatment. For example, untreated hardwoods that are naturally pest-resistant can provide a timber alternative and timber can be substituted for by other materials. This is not an attractive option to the timber industry.

This report concludes with a set of policy recommendations to adequately and effectively deal with CCA. On the basis of the Precautionary Principle, an immediate ban should be placed on the manufacture and use of CCA-treated timber, as there is enough scientific evidence to argue that CCA may impose serious health impacts and environmental impacts, even though these cannot be proven. There are also recommendations on disposal, the need for increased community awareness of the issues surrounding CCA-treated timber, the need for changes to the regulatory system with respect to CCA-treated timber, and future research needs.

Recommendations

In-situ CCA-treated timber

It is recommended that:

- CCA-treated timber is removed from use in all residential and public spaces within the next two years;
- Whilst CCA-treated timber remains in place it should be sign-posted with warning signs to ensure that people do not touch it, as already occurs in parts of the US;
- CCA-treated timber that remains in place should be coated with water-borne acrylic paints and stains every six months but permanently tagged so that it can later be identified;
- All access to arsenic-contaminated public and residential sites should be publicly listed by governments on a contaminated site registry and controlled until the sites can be fully remediated;
- Funding should be allocated for removal and cleanup with significant contributions from the timber preservative industry.

Disposal

It is recommended that:

- CCA-treated timber waste is immediately classified as hazardous waste;
- Landfill disposal is a last resort and only properly engineered, lined landfills are used for this purpose;
- 'Cradle to grave' life cycle management of CCA products should be adopted immediately to minimise environmental and health risks;
- Reuse, recovery and recycling of CCA products be employed where they are fully researched and demonstrated to be safe;
- Further research be commissioned into waste management technologies for the waste;
- CCA registrants be required to demonstrate that emissions and waste arising from their activities do not pose an off-site health or environmental risks; and
- Incineration only be carried out if toxic gases, ash and other by-products can be captured and dealt with safely.

Community awareness

It is recommended that:

- Full information on the environmental and health risks associated with handling, use and disposal of CCA-treated timber be provided immediately at all retail outlets through pamphlets accompanying every purchase, labels on all treated wood products, and informed staff. Materials Safety Data Sheets should accompany all stocked products;
- A nation-wide community awareness campaign (that includes schools) be conducted that ensures widespread awareness of the need for proper handling, use and disposal of CCA-treated timber be carried out immediately;
- Local councils, television renovation and 'do-it-yourself' programs, and other influential information sources be required to communicate safety requirements, risks and alternatives to CCA-treated timber.

Regulation of CCA

It is recommended that:

- An authority, or a set of authorities working collaboratively, be given responsibility to:
 - manage the replacement of current in-service CCA-treated timber;
 - regulate and monitor industries that manufacture, use and dispose of CCA-treated timber;
 - undertake or commission necessary research into the risks associated with CCA-treated timber (manufacture, use and disposal);
 - regulate and monitor restrictions on future CCA uses and recommend alternatives;
 - classify CCA-treated timber waste as hazardous waste and ensure its safe disposal;
- Standards Australia reconstitute its timber preservative committee to better reflect community concerns and to ensure that it is not dominated by timber industry interests;
- The reconstituted standards committee revise AS5605: *Guide to the safe use of preservative-treated timber* and other relevant standards according to the Precautionary Principle; and
- Industries that may inadvertently recycle or re-use CCA treated timber be better regulated and monitored.

Research and Development

It is recommended that non-industry linked research funding is made available in sufficient amounts to enable researchers to:

- Investigate non-biocidal wood treatment alternatives and the performance of alternative materials;
- Conduct epidemiological research on the health impacts of CCA exposure on timber workers, as well as on agricultural animals, such as horses;
- Carry out a comprehensive mass testing programme of Australian playgrounds to determine how much arsenic children are ingesting;
- Undertake epidemiological studies that are properly extrapolated to the risks for children, taking into account the different rate of metabolism for children;
- Measure the actual amount of arsenic residue on the surface of CCA-treated timber of different ages, as well as levels of arsenic in the surrounding soil, and investigate the factors that influence this;
- Investigate synergistic toxicity of CCA acting as a combination, rather than extrapolating the risks of each element acting alone;
- Determine the environmental risk to aquatic environments posed by CCA-treated timber;
- Understand the environmental risk associated with the use of CCA-treated timber in commercial applications, such as farm fencing, poles and bollards;
- Measure the level of plant uptake of arsenic in Australia, including through the roots; and
- Develop technologies to safely remove arsenic, chromium and copper from CCA-treated timber prior to landfill or re-use.