

## THE PROBLEM WITH PRESSURE TREATED WOOD

Pressure treated wood, also known as copper chromium arsenate (CCA) wood is a wood that has been placed in a vacuum where all the water and air is removed, then the wood is injected under pressure with chemicals. Hence, the name pressure treated wood. These chemicals are used to prevent moisture and insect damage. It is easily recognized by its green color, which is a result of the copper unless it has been altered by painting.

But what worked in ideal laboratory conditions has fallen short of the mark in the environment. The proper drying conditions are often not met and arsenic residue is left on the surface where it is easily absorbed or leached into the surrounding environment. Secondly, studies done by Dr. David Stilwell of the Agriculture Experiment Station in Connecticut, revealed that these chemicals are leaching from the wood at alarming rates when it comes in contact with the acid found in rain even if the proper drying conditions have been met. While coating this wood every two years can eliminate the leaching greatly, it does not prevent the other problems that will now be described.

The purpose of this wood was honorable, the hope of saving trees and money. Pressure treated wood has been used for a variety of purposes from its beginning in India in 1933 to its present day use. It is used for telephone poles, foundations for buildings, picnic tables, landscaping ties, playground equipment, decks and wharfs. Its use is almost as endless as the steady supply of scrap CCA wood that is becoming a nightmare to get rid of.

Although copper and chromium are needed by the human body in trace amounts for proper health, the quantities and form of these three chemicals as they appear in pressure treated wood are at levels to be neurotoxic. To work with this wood certain precautions are essential to prevent illness or injury. Individuals must wear gloves, goggles, a proper mask, and have the body covered by clothing. These chemicals will be released during sawing, hammering and drilling. Even continuous touching of the wood increases risk of absorption. Workers must never eat, drink or smoke, until their face and hands have been thoroughly cleaned, after coming in contact with the wood. Work clothes need to be put in a bag and washed separately from other clothing.

Information sheets should be obtained from the place of purchase on the safety of working with and handling of the wood. These sheets are not always available but are supposed to be handed out with every purchase. Lineman are warned to protect themselves from their continual contact with this wood while climbing poles, in a bulletin put out by Health Canada, while we offer it to our children as playground equipment, doubling their risk of skin cancer, both from the sun and the arsenic exposure. Other cancers have also been related to exposure from these chemicals. These chemicals can cause additional problems from neurological to gastrointestinal and sexual problems in men. They effect learning and motor skills. Eating lunch at a CCA picnic table frequently, might be the cause of dermatitis, stomach pain or headaches. Heavy metal poisoning can result from using the wood either properly or improperly. Not an easy problem to diagnose or treat.

In 1983 two workers building picnic tables for the forestry service found out what working with this wood can do. One lost seven pints of blood and the other had many symptoms, which left them unable to work for many months. Upon returning to the same employment the following year their symptoms immediately returned, a result of being sensitized to these chemicals.

A man building a CCA dock became partially paralyzed after working with the wood and doctors noticed white half moon shapes on his fingernails, one of the telltales signs of arsenic poisoning. He recovered, but not fully and received a large settlement from the company involved.

A woman claims to have lost two fingers on her hand from CCA wood splinters. The claims of injury and illness are mounting. Companies, for fear of lawsuits from workers and consumers, have begun to switch to safer formulas.

The wood should never be burned, it is a highly toxic substance and its burning breaks the bond with the wood. When the arsenic is burned especially in a galvanized chimney or with galvanized nails, the zinc reacts with the arsenic to form arsine gas, a very toxic and odorless substance, which causes poisoning. The chromium is very toxic when inhaled and the copper, although it does not travel well in smoke, will be there in minute concentrations.

Burned pressure treated wood is known to have caused many problems in a family from Wisconsin who were studied by a team of doctors. The results were devastating. This family had been burning CCA scraps as fuel in

their home wood stove.

Even more dangerous than the smoke is the ash left over from the burnt CCA wood. A single 12-foot, 2 by 6 piece of wood contains enough arsenic (one ounce), to kill two hundred and fifty people. A dairy farmer in Saulk Rapids, Minnesota, learned of these dangers when his cows were spooked by a thunderstorm and jumped the fence onto a neighbors property. The people had spread ash from burnt CCA wood on their land. The cows attracted to the arsenic salt licked it and within days, the cows were all dead of liver failure and internal bleeding. A single tablespoon of this ash can kill a 150-lb human being if ingested.

Sugar cane farmers in Palm Beach Florida faced a million-dollar land fill bill when they burned CCA scraps in their cogeneration power plant. Half the year they burned sugar cane waste, the other they burned construction scrap. They estimate only 1% was CCA scrap. When tested, the soil where the ash was spread contained 507.7 ppm of arsenic, 8 ppm is the highest level considered safe in the State of Florida.

Presently there are lawsuits in progress from people injured or sick from coming in contact with CCA wood in the States. Several have already been settled both in and out of court. Several chemical companies in the United States are switching to safer formulas that do not include arsenic or chromium. In a recent conversation with a chemical company in Canada that produces these chemicals, it was stated that a public announcement could be expected soon, of a new chromium, arsenate free formula. At present, they said, there are no formulas in Canada registered to be used similar to those available in the States.

There is also a movement in the States to re-regulate the sawdust from CCA wood and have it deemed toxic waste. This would make the sawdust expensive to dispose of and CCA wood less economical to use.

Several countries like Vietnam, Switzerland and Indonesia have banned CCA wood altogether and others like Japan are restricting its use. Presently, in the United States, the EPA is investigating the concerns raised by Dr. David Stilwell and others. Here in Canada, Health Canada is reviewing the safety of CCA pressure treated wood.

While governments ponder this issue, each day more people are being effected in the workplace, the playground and at home. It is estimated that by the year 2010 there will be enough scrap CCA wood to build a boardwalk, 3ft wide and one and one half inches thick all the way to the moon.

People like C.W. Wu, the assistant professor of environmental engineering at the University of Florida, are working hard to find ways to deal with the burning of the wood. He has invented a process that mixes lime with the wood while burning so that lime will attach itself to the arsenic molecules making them too large to escape through special filters in proposed waste burning facilities. It has worked in laboratory conditions and he should be congratulated for his efforts but we would still be left with an enormous waste fill problem with the ash.

Finally in closing, I will leave you with the words of Bill Hinkley, Florida State's Environmental Officer, a man who deals with this problem on a regular basis, "We call it a threefer, it can leave you dead as a doornail at high doses. It can kill you at moderate amounts over a long period. And it's a carcinogen at low levels."