Letters

Are We Poisoning Our Kids With Treated Wood?

To the Editor:

Picture this scenario: Cambridge, Massachusetts. A two-year-old child is leaning over the railing of the jungle gym at a newly remodeled neighborhood playground. The child's arms are draped over the railing and his eyes are serenely observing the chaotic activity as he absentmindedly chews the wood railing. But this is no ordinary railing. This railing is a coppery-green color, and it has been treated with chemicals that no self-respecting organism would share a patch of earth with: chromated-copper arsenate. This is the same wood which, when purchased at the lumber yard, is accompanied with instructions that exhort the handler to wear a mask when sawing, to wear gloves when touching, and to wash his hands thoroughly after using (and especially before eating).

My question is this: Why are most new playgrounds built entirely out of pressure-treated lumber when children will certainly be in direct contact with these toxins that do not remain inert in the wood? Are there no laws to govern the uses and applications of pressure-treated wood? Are we builders going to shake our heads in ten or twenty years and cluck, "Gee, I wish I knew that stuff caused cancer when I built all those porch railings and sandboxes out of treated lumber."

Is this going to be another situation like asbestos, ureaformaldehyde, PCB's, and lead? Are we poisoning ourselves, our children, and anyone else who comes in contact with this substance? Do companies selling this product already know or at least suspect the dark truth, and are they slow to react only because the laws are even slower to react? I suspect that the answer is, yes.

My company uses clear vertical-grain fir or red cedar for railings, decking, post wrappings, and balusters. We do this for several reasons: Pressure-treated wood is not a good finish material. It checks as it dries, and it doesn't take paint or stain well, so we only use it where it counts, for structural framing members that we wrap whenever human exposure is possible.

I hope this information becomes public before the city of Cambridge builds any more parks or bus-stop benches. Every new playground the city built in the last two or three years is entirely constructed of chromated-copper-arsenate treated wood.

Ritchie Goldstein
Advanced Energy Builders
Cambridge, Mass.

CCA or chromated-copper-arsenate-treated wood accounts for 95 percent of the preserved wood products sold to consumers. CCA is one of three "waterborne arsenicals." Like the other two most common preservatives in use – creosote and pentachlorophenol – waterborne arsenicals contain toxins, some of which cause cancer.

CCA is called waterborne because it is impregnated in the wood with water. After CCA enters the wood, it chemically interacts with the wood sugars to form insoluable products or "precipitates." These precipitates, once fixed in the wood, are highly resistant to leaching, and are non-volatile – they will not vaporize or evaporate, according to extensive industry research.

CCA preservatives have been used since the 1940s in the U.S., and in England since 1933. A number of organizations, including the Environmental Protection Agency (EPA), The American Wood Preservers Institute (AWPI), and The National Coalition Against the Misuse of Pesticides (NCAMP), have compiled or commissioned research on CCA-treated wood.

The AWPI, which represents wood treaters and chemical manufacturers, cites many studies that demonstrate CCA's safety. For example, Dr. Stuart A. Peoples, at the University of California, has found that animals fed CCA-treated sawdust show "no observable toxic symptoms."

"Occupational Evaluation for Airborne Arsenic Concentration at a Home Building Plant," a study done by the State of Wisconsin Dept. of Health and Social Services, states that "No detectable airborne arsenic concentrations were found in the breathing zone of the radial-saw operator or the workers assembling [a] treated-wood foundation."

Dr. Henry A. Schroeder, at Dartmouth Medical School, conducted studies as well. His research focused on pentavalent arsenic, the kind found in CCA wood. According to Schroeder, "pentavalent arsenate – not to be confused with commercially produced trivalent arsenic — is a natural-occurring trace element present in soil, water, plants and is in the tissues of most living creatures."

Not surprisingly, NCAMP, a membership-supported public-interest group, differs with industry-sponsored research on CCA. "Although it's true that pentavalent arsenic occurs naturally," says Dianna Baxter, a toxicologist with NCAMP, "it is not necessarily safe. It is simply a less toxic form of the chemical. There is a chemical path in the body metabolism that can transform some pentavalent arsenic into trivalent arsenic. Also, these compounds accumulate in your body and they can reach toxic levels."

Tom Oates, Information Coordinator for NCAMP, says CCA-treated wood "poses an unnecessary health hazard." Oates tells of a U.S. Forest Service worker who becomes seriously ill after building picnic tables with CCA-treated lumber. The worker sued 28 companies, settled with 26 of them out of court, and won one of two court cases for a total of $667,200 in damages. There are other cases of animals and humans becoming sick after contact with CCA-treated wood and ash.

Oates says that "these case studies are the only ethical way to do research involving humans, and they refute industry assertions about the safety of the product."

AWPI acknowledges that CCA-related products can pose risks. But "nothing is safe," says AWPI president John Hall. "People can misuse this or any product. But used properly, this product doesn't present an unreasonable risk. We recommend it be handled with the safety recommendations of the EPA report."

The EPA, which concluded in 1985 after an eight-year study that "CCA-treated wood does not pose an unreasonable risk," makes the following recommendations: Wear gloves when handling CCA-treated wood; if you are around wood dust, wear a mask; you should wash your hands before using tobacco products and before eating. The EPA requires that suppliers distribute public warnings on the potential dangers of CCA-treated products. The EPA further recommends that CCA-treated wood should not come in contact with food products, and therefore it should not be used for cutting boards or countertops.

As for a child licking his hand in the playground after touching CCA wood, AWPI's John Hall says that the level of cancer risk from CCA is about the same risk that child runs for skin cancer when he spends a day in sunlight. An exception to this is CCA-treated wood that is wet with CCA solution. All CCA-treated wood should be air-dried or kiln-dried after treatment."

"If you get CCA-treated wood that is wet with CCA solution, send it back," says Hall. But,. he acknowledges, there is no way to tell if the solution on the wood you buy is simply water or CCA solution without some kind of chemical test.

NCAMP's Diane Baxter further warns of skin contact. "Dermal [skin-contact] exposure to fresh CCA solution is something to avoid." AWPI's Hall agrees: "It's true that touching wet CCA solution is bad. When CCA-treated wood is shipped, though, we recommend that it be on the drip pad at the treatment plant for a full 48 hours at 60∞ to 80∞F (if the solution is frozen or if it is colder, the dry time will vary) so that it is dry to the touch and all of the oxides in the solution, have fixated. If you walk into a retail store and they have just gotten a fresh-out-of-the-vat shipment of CCA-treated wood from a treater 20 miles away, then you may be in some danger. But this is an extreme case."

There are alternatives to CCA-treated wood. Livos PlantChemistry in Sante Fe, New Mexico, markets a nontoxic citrus and tree-resin-based wood preservative called Donnos-Wood Pitch Impregnation. It can be painted on or used in pressure treating. Though it is only a fungicide, it can be used below ground and where wood is in contact with moisture.

U.S. Borax offers TIM-BOR, a pressure-treated wood product that uses sodium borate, a chemical that is less toxic than chromated-copper arsenate. It is not considered harmful to human beings or livestock. It can be handled by workers without the need for special procedures, and there is no danger in its preparation, handling, or milling.

One problem with TIM-BOR is that the borates leach out if the wood comes in direct contact with water. So, it is not recommended for ground contact, fence posts, water cooling towers, docks, etc., unless the surface has been painted or otherwise sealed. According to Chuck Blair from U.S. Borax, if TIM-BOR wood products don't come in constant contact with moisture, the borate stays in the wood with the same ferocity as CCA.

In conclusion, the evidence so far seems to indicate that CCA-treated wood that has been properly produced and dried is safe in the vast majority of cases. Still, there are cases where people have gotten sick from the product – due probably to manufacturing or drying problems or mishandling on the job-site. For below-ground use, CCA is unbeatable. For above-ground use, you might consider less-toxic alternatives. As for your kid's sandbox, I'd probably spring for cedar or redwood. – Editor

Lumber Grades Measure Strength, Not Looks

To the Editor:

I enjoy Hank Spies' column "On the House" very much. In his September 1988 column, he answered a reader who was interested in lumber grades. As field representative in the Northeast for Western Wood Products Association (WWPA), I would like to expand on his answer.

It is true that the grade rules for dimension lumber manufactured in the U.S. and Canada have not changed since industry-wide accep-

tance of the National Grade Rule in 1970. This grade rule was adopted so that visually graded lumber of all species and source of manufacture would be assessed according to the same criteria. It is important to note that this uniform lumber standard applies only to dimension lumber, and not to appearance grades such as boards, or to timbers. These other types of lumber are graded under the provisions of individual grade-rule writing agencies, of which there are seven in the U.S. and Canada.

When lumber is visually graded, each piece of stock comes under the scrutiny of a lumber grader who makes a decision based on the presence of knots, slope of grain, warp, etc., as Mr. Spies outlined in his comments. Structural grades relate to the amount of clear, straight-grain wood present in any section of the piece, and in particular at the weakest points, such as around knots. Virtually all of the strength of a piece of wood is in its clear wood. By being an assessment of the relative amount of clear wood, the lumber grade is a statement of the strength of that piece of wood. This is an important point – structural lumber is graded for its strength and not for its appearance.

Occasionally wood that looks less appealing is in fact of higher strength due to the slope of the wood fibers and the configuration of the grading characteristics in the wood. It is also important to note that lumber of the same grade but of different species may have different strength values.

It may be argued that the lumber of today looks different from that of yesteryear, due to a changing resource base from which the wood is cut. But the key point is that lumber of a particular grade and species meets the design and strength values of that grade and species. Both the rules of grading and design values are published and available to those who wish to know them.

Your reader asked a specific question about "Standard" grade 2x4s. "Construction," "Standard," and "Utility" are the three grades within a type of dimension lumber termed "Light Framing." These are narrow width grades (2x2s through 4x4s) whose intended use is in situations where high strength is not required, such as plates, sills and studs. A search for "Construction" grade 2x4s is apt to be frustrating. Although the grade exists, it is not often separated out at the mill or elsewhere. It is usually included with "Standard" grade lumber as the "Better" in "Standard and Better." "Standard and Better" is the normally available light-framing grade. One alternative is the grade "stud." This is also narrow width (2x2s through 4x6s), and is a grade intended specifically for use as studs, such as in load-bearing walls. It's design values for strength and stiffness are higher than are those for "Standard," and therefore is preferred in some uses. In the wider dimensions (2x6s through 4x16s), "2-inch and Better" is the normally available grade.

To summarize the last paragraph – a person interested in getting the best use out of his or her dimension lumber should start by understanding the grades "STD & BTR," "STUD," and "2 & BTR." WWPA along with the other lumber associations is highly interested in promoting this sort of information. I welcome any inquires in regard to this topic.

Christopher Donnelly
Western Wood Products Association
Northford, Conn.

Hiding the Heater Worked

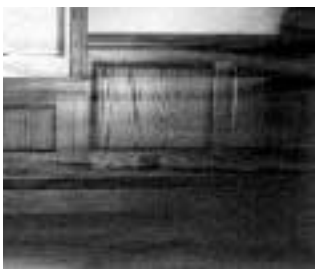
To the Editor:

I happened to read Gordon Tully's article on interior trim (12/87) as I was pondering the perennial detail problems associated with baseboard heat. Faced with no alternative heat source, we attempted to render the ugly metal as unobtrusive as possible using the suggestions provided by Tully. I enclose a photo of the results: Client and architect are happy, and I'm relieved. Skillful work by the painter on the inside of the heater and baffles produced a finished assembly that actually contributed to the room.

We had a 16-foot run along an exposed fieldstone wall so the cap had to be scribed and attached from inside the heater, but this was not an impossible task.

Please pass my thanks along to Tully and I congratulate you on your excellent publication.

Donald Eckard
Lone Wolf Construction
St. Davids, Pa.



Antsy About Insulation

To the Editor:

I wrote once regarding rigid foam insulation – its deterioration and consumption by ants. Recently, I had to "remove rot" along a sill and corner board area of a home. Rigid insulation had been installed eight years prior. I could not believe the huge quantity of ants living within the rigid insulation along with the tunnels that they had created by eating/removing the foam. The law now requires this insulation to be installed around the perimeter of the foundation walls 8 inches below grade or to footing (whichever is less).

Once again, what is going to prevent ants/termites from creating their tunnels within the foam structure right up into the sill or main structure of the dwelling without the owner even being aware of their activity? Also, the foam had been reduced in thickness by _ inch due to shrinkage. I took a piece to our local building department; they too, could not believe how the board had been devoured. They said that the rigid-foam insulation is supposed to be toxic to any ant or termite. Obviously, it was not toxic to these particular ants. My concern is, why is one expected to comply with codes that require materials that are destructive to the structure? Ant and termite invasion can occur without the owner suspecting any damage is taking place.

In response to Al Wasco's "It Looked Good On A Cocktail Napkin" (Letters, 11/88), which concerned packing ceiling areas with blown cellulose: We had to replace entire roofs and roof structures on 15-year-old condominiums. The purlin roof structure was tightly insulated with fiberglass. With no ventilation present, moisture developed within the fiberglass insulation and consequently was unable to evaporate. Over the years, so much moisture was created that the ceilings would start to rain, thus destroying entire ceilings, even when the sun was out. The roofs were removed, strapping installed perpendicular to purlins, new roof sheathing, bituthene, and roof shingles applied. An expensive proposition for lack of ventilation.

Richard Kendall
Acton, Mass.

Confused About Clapboards

To the Editor:

Paul Cove's January article on careless construction of a half-megabuck house clearly illustrated the value of adhering to well-established construction practices. One point made by Paul, however, is at odds with recommendations of Coastal Forest Products, a New England siding distributor. Paul advises that beveled-wood siding (clapboards) should overlap with a minimum of one-third their width to prevent water penetration. For a typical 6-inch clapboard, with a finished width of 5 3/8 inches or so, Paul's prescription would have you use an overlap of about 1 3/4 inches. Coastal, however, publishes a clapboard and siding installation guide that advises that plain-bevel siding should be overlapped no more than 1 inch. Coastal points out that if you overlap more than 1 inch you would have to nail too far up the exposure and risk splitting and cupping. If you nail lower on the exposure to avoid this splitting and cupping hazard you bump into the "double-nailing" no-no. Double nailing – having the nail on the top course penetrate the top portion of the lower course – will not allow natural expansion and contraction of either piece, and this creates a risk of further splitting.

I have watched a construction expert on public television violate the double-nailing prohibition. My veteran sub tells me he's been double-nailing clapboards for 25-plus years without a problem. Who has the right story?

By the by, I have been reading and recommending your lively and informative journal for several years; every issue, I am sure, has provided me with valuable, practical information.

Allan Chertok
Bedford, Mass.

Paul Cove Responds:

You should double nail, because it adds to the stability and life of the siding. If you nail too far from the butt end of the clapboard, that nail offers no resistance against the natural curling and cupping of the clapboard.

If the house is properly braced and sheathed, you shouldn't experience any lateral cracking along the clapboards. ■

Keep 'em coming…We welcome letters, but they must be signed and include the writer's address. The Journal of Light Construction reserves the right to edit for grammar, length, and clarity. Mail letters to The Journal, RR 2, Box 146, Richmond, VT 05477.