

HOMEOWNER'S TIP

When was the last time you did a safety inspection of your home? Just walk through it slowly, looking for things that could injure you if you stumble or fall. Also, to really scrutinize your house for safety (and look pretty dumb while you are at it!), crawl through it on your hands and knees. That's the only way you will see things as a child sees them. You will be surprised at what hazards you notice from that height.

IN THIS ISSUE

- ✓ P/T LUMBER – SHOULD YOU BE CONCERNED?
- ✓ DECKS – HOW SAFE IS YOUR FAMILY?

FOR MORE INFORMATION

Call our local office or visit our Web site at:

www.criterium-engineers.com

P/T LUMBER – *Should you be concerned?*

Blood poisoning. Cancer. Infection. These have all been linked to pressure-treated (P/T) lumber in recent years. How real are these risks, and what, if anything, should you do about them?

P/T lumber has been used for many years to resist rot, decay and insect infestation. It has become common in the construction of porches, decks and areas where wood is likely to come in contact with moisture or earth, such as sill plates on foundations. P/T lumber typically has a greenish tint. In addition, you should be able to find a stamp on the material that identifies it as pressure-treated and/or rot- and insect-resistant. P/T lumber is sold under many different brand names.

Although P/T lumber does its job well, in recent years it has come under increasing attack by environmental and safety-conscious consumer groups for its alleged risks. How significant this is for you, as a homeowner, is still unclear. So far, no one has been willing to say just how much of a risk P/T lumber represents. However, apparently it is enough to cause a major change in the industry.

More specifically, the wood preservative industry has entered into a voluntary agreement with the EPA to stop producing pressure-treated wood products treated with CCA (chromated copper arsenate) for the residential building market and consumer-related products by December 2003. This is not expected to affect industrial and commercial products or those used in saltwater marine applications.

What is CCA? CCA is a chemical compound that works to preserve wood. It is made up of copper, chromium and arsenic. The copper is the major preservative, protecting against fungi and insects. The arsenic is a second line of defense, and the chromium acts to fix the treatment, so it doesn't easily leach out of the wood. CCA is controversial. Arsenic, however, is a known carcinogen. Many believe that it is a health threat for those who touch it. However, in negotiating with the

(Continued on next page)

CRITERIUM®



timber industry, the Environmental Protection Agency (EPA) stopped short of calling it dangerous. Instead, they said that any reduction in the amount of arsenic in the environment is desirable. We are not aware of any credible studies that quantify the actual safety risk.

EPA has also said, in a somewhat contradictory statement, that there is no reason to remove or replace CCA-treated structures. On the one hand, CCA-treated lumber is dangerous enough to be phased out of use, while on the other hand, there is no need to remove or replace existing structures!?!

Instead of recommending removal, EPA says that applying an oil-based, semitransparent stain once a year may reduce the levels of arsenic on the surface and, thus, reduce the risk. In addition, children playing on CCA-treated wood should wash their hands before eating and never place food directly on the wood. Children should also avoid getting splinters from the wood. Ever try telling your child not to get a splinter?! If you remove CCA-treated wood, use gloves and handle it as construction debris. Do not burn it.

So what should you do? The older the structure and the more it has been exposed to weather, the less likely it is a significant hazard. How it is used (i.e. frequent and/or prolonged contact with bare skin) will help determine the degree of risk.

It is for you to judge, ultimately. In most cases, however, the risk seems manageable, and the guidelines noted above are adequate for most situations. In high traffic areas, especially where children are present, replacement or, at a minimum, regular treatment with a sealant or stain is recommended.

What will we do in the future? Rot and insect resistance will continue to be an important quality for some of our building materials. Replacements are available, but generally more expensive. They include alkaline copper quaternary (ACQ), sold under the trade name Preserve, copper boron azole (CBA) and Tanalith E, another copper-based product with an organic fungicide. Composite or vinyl building components may also see more use. Cedar and redwood are alternatives with natural rot/insect-resistant characteristics. These woods are, however, more expensive.

For more information about CCA-treated wood, go to www.epa.gov and do a search (top right of first screen) using CCA as a search criterion. You will find several documents about current standards and commonly asked questions.

Do you have a deck? Does it stand straight “Ready for duty, SIR!” or slouch and lean, leaving you with the sense that it would rather not be used? Have you had parties on your deck? Perhaps enjoyed a spectacular view? Do you and your family spend a lot of time on your deck? Have you ever wondered about your deck? Are the railings weak? Does the floor sag? Have you maintained it enough? Just how safe is your deck?

*DECKS –
How safe is
your family?*

Decks are popular outdoor recreation areas. Most are well built, but not all. Every year people are injured or killed when a deck fails. If you want to evaluate your deck, what should you look for?

First, if your deck was built recently, check with your municipal offices to find out if your town has a building code. Most codes have requirements for deck construction. Typically, a building permit is required for the construction of a deck. You should confirm that a permit was issued and that the construction was inspected and approved by your local Code Enforcement Officer (CEO).

In general, regardless of local codes, here are some important guidelines to ensure a safe and sound deck. We refer to the International Building Code (IBC). While IBC will not apply to many towns (it is a new code), its requirements are similar to many other major codes such as BOCA, UBC and SBC. In time, the IBC is intended to replace the other major codes. Thus, it serves as a good reference even if your town does not have an adopted building code.

However you don't need to know codes to check your deck.

Wall attachment – The 2000 edition of the International Building Code (IBC) (section 1604.8.3) states that a deck “shall be positively anchored to the primary structure and designed for both vertical and lateral loads.” In addition, “such attachment shall not (emphasis added) be accomplished by the use of toenails or nails subject to withdrawal.” Essentially, when such an attachment is not possible, the deck should be freestanding. Toenails are nails driven diagonally to attach framing members perpendicular to each other. This type of nailing has little structural capacity.

In other words, your deck should be solidly connected to the wall that supports it. SOLID is the key word, with bolts, not nails.

Floor capacity – The capacity of a deck floor, according to IBC, should be the same as the adjacent floor in the house, which would be 40 pounds per square foot for most homes.

In other words, the floor of your deck should feel solid. A 200-pound adult should be able to jump up and down on the deck without causing excessive or alarming vibration or flex.

Railings – The perimeter of the deck should have a railing at least 42 inches high, according to most codes. At this height, if you are leaning against the railing and slip you will, most likely, fall inside the railing, not over it. If it is significantly lower, you are more likely to fall over the railing and become injured.

Ironically, a railing built to the proper height often obstructs your view when you are sitting in a chair on the deck behind the railing. Thus, some builders will deliberately build the railing lower. The local CEO often overlooks the resulting “noncompliance.” However, ensuring a good view should not be considered an acceptable reason to compromise safety.

Practically speaking, make sure your railings are at least 38 to 40 inches high, and use a tape measure to confirm that.

A railing must be strong enough. It should be solidly anchored and stable. IBC says a railing must be able to resist a 200-pound force applied in any direction at any point along the top and have attachment and supporting structure adequate to transfer that force into the building (section 1607.7.1).

In other words, a moderately fit adult male should be able to grab the top rail and soundly push and pull on it without causing a significant amount of movement or distortion.

A railing should have intermediate balusters spaced such that the opening between them does not exceed 4 inches, according to most codes. This is to prevent children from crawling through a railing.

Railings should not have integral benches that encourage sitting on the top rail, with the risk of falling over. Even though most of us guide our lives with good common sense, when it comes to sitting on things such as bench railings, we seem to think we are immune to accidents. The best defense is a good offense; eliminate the temptation, eliminate the bench rail.

All stairways with three or more risers should have a railing on at least one side.

Generally, according to most building codes, these standards will apply to decks at least 30 inches off the ground. However, we recommend a railing on any deck, even a few inches off the ground, to tripping hazards.

Decks are great enhancements to your home. However, they can be hazardous if not built well. We recommend a thorough examination of your deck to be sure it is safe. Oh, and don't forget to establish some clear ground rules for everyone who uses your deck.

For the office
nearest you, call
1-800-242-1969

YOUR HOME is your link to the nation's oldest inspection service, with affiliate offices staffed exclusively by registered engineers and architects — professionals committed to serving your needs. CRITERIUM ENGINEERS was founded in 1957.

Copyright © 2003 by CRITERIUM ENGINEERS. Reproductions in any form without express, written consent are prohibited. For additional copies or more information, contact CRITERIUM ENGINEERS, 22 Monument Square - Suite 600, Portland, ME 04101.

