Ask Jon Eakes

Avoiding or dealing with wood rot

Last Updated: Tuesday, December 2nd, 2014, Created: Wednesday, November 29th, 2000

When we are building new structures, we need to think about avoiding future rot problems. When we are renovating or repairing existing structures we are often faced with dealing with existing rot problems.

In new construction we need to understand that all wood preservative systems are not equal, and all woods are not equal either. Take the case of Cedar. Old growth cedar, cut from large mature trees was loaded with natural oils that made the wood close to rot proof. However, modern cedar is usually forested from farm trees just big enough to make decent lumber. This wood has not had the time to develop the necessary resins that protected its predecessors. Yes, modern cedar is more resistant to rot and insects than white wood, but not as resistant as old cedar and often not as resistant as pressure treated wood. Amongst white woods, softwoods like construction lumber resist rot better than hardwoods.

Any site applied preservative is going to be less effective against rot than pressure treated wood for several reasons. The chemicals are not the same, the pressure and often incising process insures penetration of the soft wood cells and the kiln drying process serves to "fix" the preservative into the wood. So brushed on or even dip treated wood is less protected than certified (see the stickers on each piece of wood) pressure treated wood. End cut treatment works well simply because it is only applied to the open end grain. By the way, you can get colour matched end cut treatment. Also, brush application often misses the joint between two pieces of wood, the very point where moisture will be held and rot will start.

Even with the pressure treated wood, there are three basic levels of treatment: underground wood, specifically rated for preserved wood foundations; wood treated for ground contact, the most common type; and wood treated for above ground applications. All wood in contact with the soil or even in contact with concrete should be either pressure treated or separated from the concrete by a capillary break, like a polyethylene sheet ie. basement wall sleepers and sill plates.

What do you do when you arrive on the site and the rot is already there? You need to understand that rot is a growing organism and you cannot simply cover it up. You have two choices: totally remove all the rot, or do something to kill the rot that you do not remove. It is relatively difficult for rot to get started, but it is very easy for existing rot to survive and grow. It is like cancer, you get it all or the operation was a failure.

You may be delighted to hear that there are viable, though not cheap, alternatives to having to remove all the wood of a window sill, a joist, a floor, a front porch column or even a log in a cabin. The primary technique is to use a two step epoxy treatment, the most commonly available of which goes by the brand name of BCS in Canada and Smith & Co. in the US. The first two part epoxy mixture is extremely liquid, and it is applied to damaged wood to saturation. You only remove what wood wants to fall out, the rest is solidified by the epoxy saturation. This material also kills and cuts off the oxygen for existing and future fungus growth. The wood already begins to gain some strength. The second two part epoxy mixture is a putty consistency. You use pieces of epoxy soaked wood to fill in large areas and save on the cost of the putty. Using a plastic sheet and forms, you can actually mold the footings of columns, or the sill of a window to match its original form. I have actually rebuilt all the joists under a leaky toilet, without having to scarf in new joists. There is no more effective way to stop the cores of log houses from slowly rotting in towards the saddle joint in the corner. It both stops the rot and weatherproofs the end of the log. The final surface can be sawed, sanded, drilled, stained and painted. Where total removal and replacement is a costly or difficult option, restoration may be the best alternative.

**Originally published as an article by Jon Eakes in Home Builder Magazine, the magazine of the Canadian Home Builder's Association.

Keywords:
Damage, Preserved Wood, Pressure Treated, Rot, Environmental, Wood