

HOME INSPECTIONS

What exactly is dry rot?

By J Brent Heberlein

I guess just about everybody has been in the forest and seen fallen trees rotting on the ground, the bark and wood turning into a powdery like substance, and eventually the tree disappears altogether. How does this happen? It happens because a life form we know as fungi, and it is a wood destroying organism, has begun to grow in the wood.

Fungi are filamentous organisms that begin as microscopic spores on the surface of wood, oh and by the way, fungi are just about everywhere and on everything, but what starts the fungus to grow is the right combination of moisture, temperature, oxygen, and a food source. When these four essential elements are present in the right combination, the fungi produce thin strand like cells called hyphae that grow into the wood cells and secrete enzymes that weaken the wood, and thus, the beginning of dry rot. Over time the process further destroys the wood cells until there is nothing left but for the powdery substance lying on the ground.

What can be done to protect wood against dry rot? There isn't much that can be done about temperature. Most fungi like a temperature between -1.11°C to 37.78°C, that's pretty normal. Oxygen cannot be eliminated; it's pretty much everywhere except for wood submerged in water. The wood itself is the food source, so food is present, can't change that. So what about moisture, we can do something about that.

Excessive water in wood acts as a swelling agent, which effectively opens the wood structure and allows the fungal enzymes to enter and diffuse from the fungus to the wood.

It is a gradual process, but over time Mother Nature will win, just like she always does. What are we to do then to repel Mother Nature's army from invading our precious wood? Three things can be done, sealing wood, keeping moisture away in the first place, and treating the wood with toxic chemicals.

Let's first look at sealing the wood. There are many paints and sealers available on the market today, from water based acrylics to complex epoxies and everything in between, but they are all designed to protect by keeping moisture away. Paint stores can advise you on what is the best product to use for your particular need, but whatever you use, apply it according to the manufacturer's instructions. As a home inspector, I can't tell you the number of times I see paint failing because no primer was used as is required by a manufacturer, or the surface was not prepped correctly. Money down the drain and the wood rotted anyway.

Keeping moisture away from wood in many cases is a matter of good design and does not necessarily increase costs. You can replace flat surfaces with sloped surfaces that carry water away from an object, thereby eliminating standing water on its surface. The proper use of flashing to shed water away from vulnerable areas. A great example of this is where a deck attaches to a house. Many times during a home inspection I see where a deck was built by the homeowner, attached to the structure without the benefit of proper flashing because they do not understand the role of flashing and how it is installed to divert water away from structures. In these cases not only does the siding suffer but the deck boards and deck structure can dry rot as well. Keeping support posts from direct contact with soil is another way of reducing your risk of dry rot or preventing it altogether. That brings us to those situations where there is direct contact between wood and soil.

There are wood products available today that have a "pressure treatment" which is advertised as being ok to install in direct contact with soil. In my opinion, these wood products may slow down the dry rot process, but do not stop it. How many railroad ties have we all seen that were pretty well dry rotted and falling apart. There is probably no other wood product in the world that has as

much wood preservative soaked into it as a railroad tie. I think any time you can remove wood from having direct contact with soil you are better off.

Fungi that damage wood are classified according to the appearance of the damaged wood, as brown, white, or soft rot. Additionally, there are staining molds which are usually black but do not have any structural significance. Observation of these staining molds is important because they indicate an excessive level of moisture that should be brought under control. Whether the damaging fungi is brown, white, or soft rot does not really matter as a practical matter, they all significantly damage wood and they all went out of control due to excessive moisture in the wood.

Signs of fungal attack in wood are usually subtle and that's because a fungal attack is a gradual process. As the process progresses, wood may change color, lose luster, and become soft. By the time dry rot is discovered, the only remedy is replacement of the wood. Dry rot is usually detected at the intermediate or advanced stages.

You can use an awl or screwdriver to check wood by poking it into the wood and testing softness, how far the tool penetrates, and breaking a piece of wood off to see how it breaks away. Good wood breaks with a fibrous breaking pattern, where decayed wood is more brittle. Often dry rot will start in the middle of a piece of wood and spread outwards. Tapping on wood with a hammer is another way of testing for decay. If the wood has decay, the tap will produce a dull thud sound.

The simplest method of preventing wood decay around your house is to control moisture levels to the wood. From a home maintenance perspective, this can be accomplished by maintaining paint surfaces, eliminating plumbing leaks, maintain your gutters, maintain vapor barriers, increase air circulation around wood, and don't let the sprinklers soak your wood.