

Use of Treated Wood

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There are many examples where the service life of wood used for construction could be greatly increased by the proper use of preservative treated lumber, posts or poles. Even experienced contractors and builders may not be aware of the fact that treated wood materials are now generally available.

Further, most users of wood do not know the real value of treated material in construction. The following questions and answers are designed to give persons building with wood greater insight into the proper use and benefits of treated wood.

What is "preserved" wood?

Wood in which chemicals toxic to decay (fungi) and termites have been impregnated into the wood.

What are the chemicals used to preserve wood?

In Missouri, most of the wood readily available at lumberyards is treated with a 5 per cent pentachlorophenol ("penta" for short) light oil solution. There is another material coming into the market called copper chrome arsenate ("CCA" for short). CCA will probably become a larger portion of the market in time.

Why use treated wood at all?

Treated wood is used to prevent wood decay or attack by certain wood destroying insects such as termites.

Is all wood used in a structure subject to decay or termite attack?

No, only those wood parts that are exposed to a continuous source of moisture are subject to decay. Wood parts that are close to the ground line are in danger of termite attack in Missouri.

What are some examples of wood parts that are in danger of decay if they aren't treated?

Any wood in contact with the soil will absorb water and eventually decay if it is not treated. This includes wood poles, wood posts, stair stringers and any other wood members in contact with the soil.

What are some examples of wood parts that are in danger of attack by termites if they aren't treated?

Since termites in Missouri have their nests in the soil, it is a good rule of thumb to treat all wood parts within 18" of the ground line. In other words, all wood parts close to the ground line are subject to termite attack.

How long will treated wood products last when exposed to severe decay conditions?

Wood properly treated with "penta" will last at least 20 years and more likely 30 or 40 years. CCA has a greater life expectancy than "Penta."

Is it harmful to cut or drill treated wood parts?

Obviously it will be necessary to machine treated wood at the construction site. The builder should brush treat the fresh cut surfaces and place the machined surface "up"—away from the ground line or source of moisture.

Is it adequate simply to brush some of the toxic chemicals on the wood parts?

No, you cannot expect long-range protection simply by brushing the preservative on the wood. There are a number of ways that chemicals are injected into the wood commercially. The important point is that adequate amounts of chemicals are injected to specified depths in the wood. These specifications are now controlled by law in Missouri.

Can one treat his own posts or lumber by cold soaking or by some other process?

Yes, this can be done, but we have discontinued recommending that farmers and other small producers undertake this activity. It is considered a diseconomy when the major factors involved in the production of well treated wood products are considered. In most instances you will be money ahead to purchase the needed products from a reputable dealer.

Can all species of wood be treated equally well with toxic chemicals?

No, some species such as pine treat rather easily and, therefore, are recommended species for treatment. At the other extreme, the heartwood of white oak *cannot* be treated properly and is not recommended as a good species for preservative treatment.

Can treated wood be purchased in various forms such as plywood and lumber, as well as posts and poles?

Yes, treated wood products can be purchased at many local lumberyards in just about any form. The most readily available materials are various sizes of round and half-round posts, poles and framing lumber, i.e., 2 x 4's, 2 x 6's, 2 x 8's, etc. Four feet by eight feet sheets of plywood are also available but may be hard to find in most community markets.

Do all species of wood require preservative treatment?

The *heartwood* of some species has a relatively high degree of natural resistance (see Table 1). These woods might be used satisfactorily in some application without treatment. The *sapwood* of all species is highly susceptible to decay and insect attack under the appropriate conditions of moisture content, temperature, etc. It is important to recognize that untreated woods with a high degree of natural resistance to deterioration do not equal the life expectancy of treated pine, for example. It's hard to place a figure on life

Table 1. Service Life of the Heartwood of Some Common Missouri Tree Species Used as Posts (According to Their *Natural Durability*).

High (more than 15 years)

Black Locust
Osage Orange
Red Cedar

Intermediate (7 to 15 years)

Cypress
White Oak
Shortleaf Pine
Mulberry

Low (2 to 7 years)

Ash
Cottonwood
Hickory
Maple
Red Oak
Sycamore

expectancy; however, some treaters mention a guarantee of 20-30 years. It would not be realistic to expect much more than 15 years of life from any of the untreated (high natural resistance) woods and in many instances less than this when they're used in exposed situations or in contact with the soil.

What determines how long the "durable" woods will last without treatment?

The amount of heartwood is a factor. The sapwood on a post, for example, will decay rapidly (within a year or two) in the area immediately above and below the ground line level. The season of harvest of the logs has nothing to do with durability in a case where the wood is to be used untreated and in contact with the soil or in a high moisture content situation.

How can I tell if the wood has been treated properly when I buy it?

A simple answer is that you can't tell simply by seeing or smelling the wood. Consumers of treated wood products in Missouri are protected by the "Treated Timber Products Act of 1961." Professional treaters in Missouri are required to be licensed and must maintain specified minimum standards in regard to the preservative used and the amount injected into the wood. All treated poles, posts, sawn timber or lumber must be branded clearly before being sold within Missouri, except lumber less than 1 1/2" thick.

In summary, the best way to be sure you are purchasing properly treated wood is to buy from a reputable supplier. Check to see that products are branded as described above. If you buy large quantities of treated wood products and want to check the reliability of your supplier, it would be wise to seek the counsel of the Commissioner of Agriculture, Plant Industries Division, P.O. Box 630, Jefferson City, MO 65101. Phone: (314) 751-2462.

Where can I purchase treated wood products?

Many lumber dealers carry complete or partial stocks of treated wood products. If you are unable to find the materials you need, contact your local county extension agent. The county office has a list of licensed treaters in Missouri by counties and can direct you to the closest supply source.

Where can I get additional information about preservative treated wood?

By contacting James Pastoret, School of Forestry, Fisheries and Wildlife, University of Missouri, Columbia, MO 65201. Phone: (314) 882-4227.