Universal Forest Products

TECHNICAL BULLETIN

UNDERSTANDING PRODUCT USE OF PRESSURE-TREATED LUMBER

Detailed technical information related to the treatment of ProWood® and UFP-Treated™ products will help in the selection of the appropriate products for a job, as well as the design, construction and maintenance of treated wood structures.

OTHER HELPFUL DOCUMENTS AVAILABLE FROM UFP INCLUDE:

- The express written product warranties that address fungal decay and termite attack, and when applicable, color retention
- Safe-handling information with recommendations on proper disposal, as well as precautions when working with treated wood.

Many concepts discussed within relate directly to the warranty documents. Please note that nothing in this document alters any of those express written warranties in any way.

End tags are attached to each piece of wood we manufacture. These end tags play a critical role in identifying our products, the preservative used, the product's intended use, and its applicable warranties. A detailed description of end tags is included in this document.

prowood®

UFP Treated®

INDEX

UNDERSTANDING TREATED WOOD — WHAT IS IT?

Not all treated wood is the same. In this section we will review Aboveground Use vs. Ground Contact/Fresh Water Use and ProWood® vs. UFP-Treated™ products.

ABOVEGROUND VS. GROUND CONTACT

A primary difference between treated products is that some can only be used in aboveground applications. These are not intended to be used in, on or near the ground. By contrast, other products are made for ground contact and have a significantly higher concentration of preservative to protect the wood in these more challenging conditions.

WARRANTY TIP

IF AN ABOVEGROUND PRODUCT IS USED IN A GROUND CONTACT APPLICATION, ANY DAMAGE FROM FUNGAL DECAY OR TERMITE ATTACK IS NOT COVERED BY WARRANTY.

Additionally, products may not resist fungal decay (rot) if they are used in ways that approximate ground contact, like in poorly ventilated areas where they are damp for extended periods of time or where they are exposed to accumulated debris for long periods of time. One rule of thumb is to have at least 6 inches of clearance between the ground and the treated wood. Special care must be taken when using under-deck ceiling systems to avoid these pitfalls. To provide more detailed help, a special FAQ bulletin on these systems is available at ProWoodLumber.com/UnderDeck.

WARRANTY TIP

IF AN ABOVEGROUND PRODUCT IS USED IN AN APPLICATION THAT CAN SIMULATE GROUND CONTACT, ANY DAMAGE FROM FUNGAL DECAY OR TERMITE ATTACK IS NOT COVERED BY WARRANTY. THESE APPLICATIONS REQUIRE THE USE OF MATERIAL TREATED FOR GROUND CONTACT.

PROWOOD® VS. UFP-TREATED™

ProWood® products are UFP's best line of treated products, and as such, they carry our Lifetime Limited Warranty for protection from fungal decay and termite attack. Our ProWood® products will always bear an end tag identifying them as such, along with a clear statement of their intended use (Aboveground Use Only or Ground Contact/Fresh Water). Whenever possible, this is prominently displayed as a logo on the front of the tag. Sometimes, however, a retailer will desire to have their logo on the tag. In these cases, ProWood® will be stated on the back of the tag. Some retailers may offer our second line of products that carry a shorter warranty period, typically one year. These products will all have the UFP-Treated™ logo on the front of the tag. It is our hope to clearly differentiate these two options so consumers can make an informed decision and purchase the product that is right for them.

WATER-BASED PRESERVATIVE DELIVERY SYSTEM

There are basically two types of liquids we come across in our normal daily lives: polar (like water) and non-polar (like mineral spirits). In the science of wood preservation and wood protection, we have the same basic choices. As it turns out, water is the best carrier to deliver our wood preservatives deep into the wood where they can provide long-term protection. There are many benefits to using water, including a very clean and stain-free surface without any oily residue or strong odor, plus the best environmental scorecard. However, there is one drawback: when we treat the wood, we fully saturate the wood fiber and the wood swells in the same way a sponge swells when you get it wet.

The water in the treated wood will evaporate naturally, but this will only happen once air can circulate around the individual piece. Often this does not happen until the wood is purchased or even after your project is built. This means the wood will likely be in its swollen state when you are building your project. (This is also why treated wood feels heavy.)

The amount of swelling is governed entirely by Mother Nature and can vary quite a bit. A good rule of thumb is to expect a 6 inch deck board to shrink between a 1/4" and 3/8", but it can be more. This has nothing to do with the way the product is treated or the preservative it is treated with. It is a characteristic of that particular piece of wood.

Some ProWood® products have been kiln dried after treatment. They are referred to as KDAT, for Kiln Dried After Treatment. KDAT products will be purchased with a moisture content much closer to the one they will naturally attain, typically around 12%.

KEY FACTS:

- Wood swells as its moisture content goes from zero (bone dry) to about 30% (referred to as “fiber saturation”)
- The amount of swelling is solely a characteristic of that individual piece of wood
- Wood will achieve equilibrium with its environment over time, with most outdoor wood reaching a moisture content of about 12%
- Most of our treated wood will be at fiber saturation when purchased
- ProWood® KDAT will be purchased with about 19% moisture content.

Wood also picks up water during the life of the project when exposed to rain or standing water, then dries out again as conditions permit. As it does, it will swell and shrink. This wet-dry (swell-shrink) cycle is part of the natural weathering of any wood and can contribute to checking and splitting, among other undesirable conditions.

WARRANTY TIP

THE SHRINKING OF DECK BOARDS THAT RESULTS IN GAPS IS NOT COVERED BY WARRANTY. THIS SHRINKING SHOULD BE ACCOUNTED FOR DURING CONSTRUCTION.

WOOD TREATMENT FROM OUTSIDE TO INSIDE

When pressure-treated products are machined (cross cut, ripped or machined), unprotected or weakly protected areas can be exposed, lessening the wood’s ability to resist attack from decay fungi or termites. Here’s why...

ProWood® products are pressure treated in a process that forces chemical preservatives deep into the wood through the application of vacuum/pressure inside a closed cylinder. The preservative starts on the outside and pushes its way deep into the wood. Generally speaking, the sapwood is penetrated but the heartwood is not penetrated. Industry standards clearly define the required preservative penetration into the wood, as well as the way in which each batch must be tested after treating.

Southern Pine is the predominant species used for ProWood® products. Southern Pine has many desirable qualities. It’s a strong, renewable building material and very receptive to treatment. This species is comprised mainly of treatable sapwood with relatively small amounts of heartwood. Often the sapwood adjacent to the heartwood can be difficult to penetrate during the treating process, a fact reflected in the industry standards.

Finally, as the treating solution makes its way through the wood fiber toward the middle, some preservative is deposited in a higher concentration on the outside compared to the center.

The purpose of this information is to help users of our pressure-treated products understand why anytime the product is machined, care should be taken. First, one should be aware of the impact machining has on the warranty. The use of a brush on wood preservatives during construction, and the extra care required by these exposed surfaces during the life of the structure, should be considered. Finally, do not place the exposed surface in direct contact with the ground or in similar environments.

WARRANTY TIP

IF OUR TREATED WOOD IS CUT LENGTHWISE OR SURFACED, POSSIBLE DAMAGE RESULTING FROM DECAY FUNGI OR TERMITE ATTACK IS NOT COVERED BY WARRANTY.

WHY ROT AND TERMITES CAN’T GET A FOOTHOLD

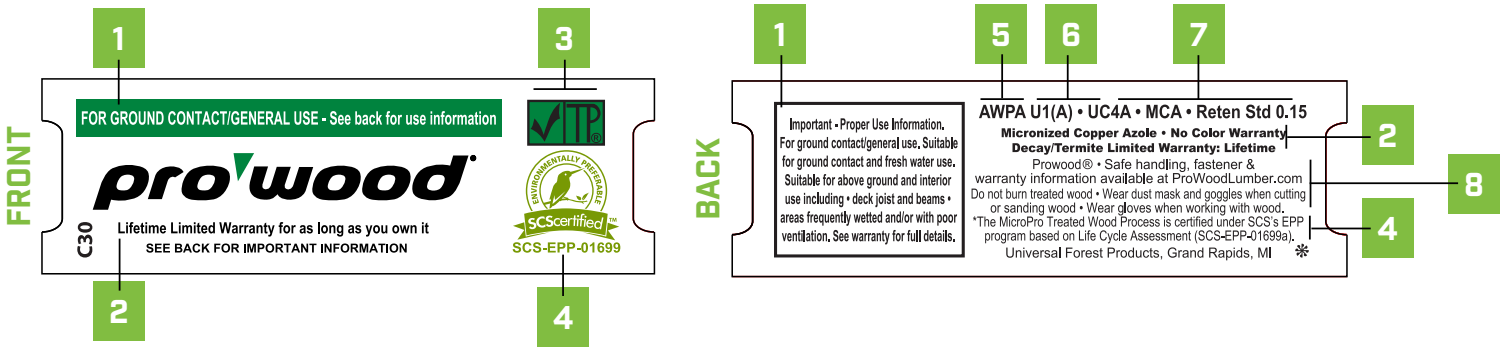
One of the primary ways our preservatives protect wood from decay fungi is by making it very difficult for spores to take root on the wood surface. However, if the decay fungi has settled into an untreated piece of wood that is touching a piece of treated wood, the fungi are better able to challenge—and maybe even overcome—the protection offered by the preservative treatment. There are a couple ways this can happen. If our product is in contact with an untreated piece of wood, the fungi may attack the treated product. Similarly, if aboveground treated wood is used in contact with the ground, it may succumb due to reasons described earlier. This piece can then threaten adjacent pieces of treated wood, even though they were used in the correct application (i.e., aboveground treated wood used in an aboveground application).

The situation is similar for termite attack. Untreated wood can draw termites to the properly treated product en masse and make it more likely for them to penetrate the protection afforded by the preservative treatment.

WARRANTY TIP

IF OUR TREATED WOOD IS IN DIRECT CONTACT WITH UNTREATED WOOD OR IMPROPERLY USED WOOD, POSSIBLE DAMAGE FROM DECAY FUNGI OR TERMITE ATTACK IS NOT COVERED BY WARRANTY.

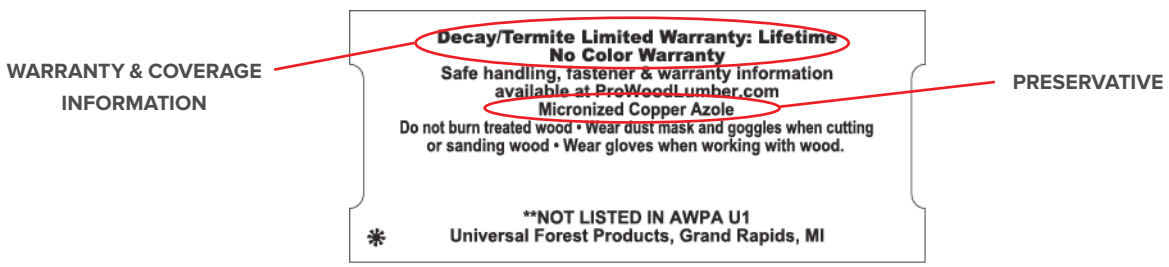
HOW DO YOU KNOW WHAT YOU'RE BUYING? READ THE END TAG!



1. Description of use
2. Warranty statement
3. 'Double-Box' symbol – required for building code compliance; indicates both the AWPA standard and the third party inspection agency
4. Environmental SCS certification based on Life Cycle Assessment
5. Code for use/exposure category
6. ICC-ES report number (treatment standard)
7. Preservative system
8. Details on where to find safe handling, fastener, and warranty information

TYPICAL TAG FRONT—UFP-TREATED

TYPICAL TAG BACK



DESIGN YOUR PROJECT FOR SUCCESS

Some simple rules can have long-lasting impacts—good or bad—on your treated wood structure. In light of our description of what treated wood is and how it works, these may seem obvious, but they're worth repeating.

LONG-TERM, HARD-TO-REPLACE VS. SHORT-TERM OR EASY-TO-REPLACE

For long-term structures and parts of a project that will be difficult to replace, choose the correct ProWood® products for the task. Choose Aboveground Use Only products for those areas that are clearly aboveground and will not devolve into situations that simulate ground contact. Choose Ground Contact/Fresh Water Use products for others. For landscaping projects or decorative fences that are short-term or easy to replace, use either the ProWood® or UFP-Treated™ products that best fit your project.

DEBRIS ACCUMULATION

For those parts of the project that will use Aboveground Use Only products, keep in mind that areas where debris can accumulate over months or years can simulate ground contact conditions. Factoring this into the design of the project and selection of material on the front end can pay dividends over the life of the project.

Other common culprits that fit this category are mulch used around fences or decks or vegetation that is allowed to grow up around the treated wood. These can quickly turn an aboveground exposure into one that presents the same challenges as direct ground contact.

VENTILATION

Providing good ventilation is very important in the design of a treated wood structure. Decay fungi tend to thrive in dark, damp areas. This is especially important when decks are built within two feet of the ground or elevated with an under-deck ceiling. Again, factoring this in on the front end of the design is important to the long-term life of the project.

MAINTENANCE

So far we have covered things that help keep the project structurally sound and fit for its intended purpose. However, keeping a project looking good is just as important. In this section, we will relate some of the attributes of our pressure-treated products to maintenance.

ROUND 1: NEW PROJECT, LOOKS GREAT, NOW WHAT?

Our preservative treatment is designed to provide protection from decay fungi and termite attack. However, as soon as your project is built, Mother Nature begins her assault, weathering your beautiful new project. Her primary weapons are the sun's ultraviolet (UV) rays and the wet-dry cycle (rain/high humidity, then drying out). There are a couple of options in our ProWood® or UFP-Treated™ products that may assist, but your decisions about how to take care of your new project will make the biggest difference.

One added benefit of our copper-based preservatives is that they offer real protection from the sun's ultraviolet (UV) rays. UV exposure is less damaging to these products than to untreated wood.

In addition to the preservative, we offer some products with built-in water repellent (see the end tag to know for sure) and/or an infusion of color as an alternative to the typical light green tone of most treated wood.

Applying a good quality brush-on or spray-on product is never a bad idea. These products are readily available. Look for penetrating products that boast water repellency, UV protection, and if desirable, color. Generally we would not recommend film-forming products like paints or other "long term products." The wood must be fairly dry to apply these penetrating products successfully. Except for KDAT products, this will generally take several weeks after the project has been installed. When you believe the wood is dry enough, apply a small amount and test for ready absorption into the wood. Generally these products will also have directions for confirming the wood is ready for the application of the product. For best results, the first application should be within 90 days of completing your project.

Products containing built-in water repellent will be better able to handle exposure over the first year or two. However,

the more help you can give the product, the better the long-term appearance and performance of your wood project.

ROUND 2: THE LONG HAUL

Re-application of a good penetrating product every year or two will be a great help in keeping your outdoor structure looking good for many years. For more information, visit: ProWoodLumber.com/Maintain.

PROWOOD® DURA COLOR

Our ProWood® Dura Color products are backed by an industry-leading 2-Year Limited Warranty for significant color change. For these products, clear penetrating products should be used until you decide it is time to refresh the color.

Universal Forest Products, Inc., a holding company that provides capital, management and administrative resources to subsidiaries that supply wood, wood composite and other products to three robust markets: retail, construction and industrial. Founded in 1955, the company is headquartered in Grand Rapids, Mich., with affiliates throughout North America. For more about Universal Forest Products, go to www.ufpi.com.

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