

There are more choices than there used to be

How to Choose Lumber for Your New Deck

Back in the early 1970s, when concrete patios were much more common than raised wood decks, the choices for deck materials were few: redwood, cedar, maybe cypress. In that same decade, lumber dealers began stocking pressure-treated pine, suburban living became part of the American dream, and backyard decks began their tremendous growth in popularity.

The appeal of decks remains strong today and is spreading to other countries. Not only do decks provide useful, private space for outdoor relaxation and entertaining, they also add to the resale value of homes. It has been estimated that some 30,000,000 wood decks exist in the United States, and the number increases with every new subdivision.

Over the past few years, many alternative materials have been introduced for deck construction. Newer options include plastic products, wood-plastic composites, and tropical hardwoods. The primary deck material, however, is pressure-treated wood.

Treated wood, now sold in nearly every lumber outlet in North America, is chosen by contractors and do-it-yourselfers for a variety of reasons: it has a natural appearance, its resistance to termites and rot is well established, wood is a plentiful and renewable resource, and treated wood is usually the most economical choice.

But, even in preserved wood, the options have expanded. Different species of wood are treated in different regions, some treated wood contains built-in water repellent, and wood is available that is re-dried after treatment.

How can a busy homeowner sort out the possibilities?

Just as there's a time to reap and a time to sow, there's a time to select high-grade, well-protected outdoor lumber and a time to choose more economical pieces. Homeowners building a deck or other backyard project need not spend extra money for quality they don't need, but they should not settle for second-rate material in applications where quality is preferred and beneficial.



Longevity. If you want to use real wood for an outdoor project and you expect the wood to withstand termites and fungal decay, your principal choices are either a naturally durable wood (i.e., all-heartwood grade of redwood or all-heartwood grade of cedar) or wood that has been pressure-treated with preservative. A widely used brand of treated wood is Wolmanized® wood, a name by which people frequently, but erroneously, refer to all preserved wood.

In much of the country, all-heart redwood and cedar are rare or discouragingly expensive. Preserved wood, which is made from plentiful species, is economical. It is also backed by a long-term warranty, an assurance not available with redwood or cedar. Some producers offer warranties that extend for the life of the purchaser.

It is believed that more than 80% of all U.S. decks are built entirely or partially with preserved wood. Even when plastic or composite decking is used for the deck platform, preserved wood is usually used for posts, beams, and joists because of wood's structural strength.



Apppearance. Appearance is named the top priority by most people planning a deck and choosing lumber. The appearance of a deck affects homeowner pride and the deck's value at the time of the eventual sale of the home.

Treated wood can be found in a variety of lumber grades — from knot-free, close-grained grades to lower grades that have more knots, splits, and wane (missing corners where bark once existed). Other than imparting a slight color, pressure-treatment has little affect on the appearance of wood; treating makes wood last longer regardless of its appearance.

The grades of lumber are determined by certified graders at sawmills, prior to treatment. The grade designation is stamped on each piece of wood. Generally, the higher the grade, the higher the cost.



For those parts of a deck where the wood is conspicuous and you want top appearance, select a higher grade of lumber. Examples are the platform and railing. High grade lumber is also preferred for other projects, such as gazebos and outdoor furniture. Where the wood will be unseen (such as a deck joist) or where you might like a rustic look (such as a retaining wall), you can buy a more economical grade.

Preservative treatments. Since the early treated wood decks were built, the wood was impregnated with CCA (chromated copper arsenate) preservative. Now, however, residential lumber is protected by

newer preservatives composed of different ingredients — they are copper-based with non-metallic fungicides. Wood treated with these preservatives is now available from lumber dealers under various brand names, including Wolmanized® Residential Outdoor® Wood.

Recently, wood preservatives have been introduced that contain no copper or any metals at all. Intended for decking, rails, and other out-of-ground applications, wood protected with such non-metallic preservatives have exceptionally low impact on metal hardware, coatings, and sawblades. The first brand on the market was Wolmanized® L³ wood, now called Wolmanized EraWood™ lumber.

Protection. Regardless of the preservatives, different conditions present different hazards for wood. For example, wood that has contact with the ground is more susceptible to termite and rot damage than wood which remains above ground. Wood immersed in seawater has even greater vulnerability.


The wood preservation industry has established standard levels of protection that are adequate for the different hazard conditions. The standards refer to the amount of chemical retained in wood after treatment, or retention, and is measured in pounds of preservative per cubic foot (pcf) of wood. Higher retention levels enable wood to withstand more demanding conditions.

The numerical retentions are no longer the same for all preservatives; newer types require less chemical. Look for the intended use (e.g., Above Ground, Ground Contact, Decking) on the wood.



In order to attain adequate penetration of preservative in some species of wood, mostly western species, their surfaces must be incised (cut with shallow slits).

Sample Lumber Tag

<p style="text-align: center; color: blue;">Limited Warranty</p> <div style="text-align: center;">  </div>	<p style="text-align: center; font-size: 1.2em;">1 0.15 pcf CA-C 2</p> <p style="text-align: center; font-size: 1.2em;">3 UC4A Ground Contact 4</p> <p style="text-align: center; font-size: 1.2em;">ESR-1721</p> <p style="text-align: center; font-size: 1.2em;">5 Monitored by BMR Inspection</p> <p style="text-align: center; font-size: 1.2em;">6 DYNAMO WOOD TREATING Springdale, PA</p>
---	---

1. Retention level
2. Preservative abbreviation
3. Use Category (if applicable)
4. Proper exposure condition
5. ALSC-accredited agency
6. Treating plant and location

Confidence. When you buy treated wood, you do so because you want the wood to last. But what assurance do you have that your purchase will stand up?

You can be certain you're getting properly treated wood if you buy wood with 1) a respected brand name, 2) a clear warranty extending at least 30 years and backed by a solid company, and 3) the verification of an independent and accredited inspection agency. This information appears on ink stamps or, more commonly, on tags stapled to each piece of wood. The tags also indicate the intended use and may include condensed safety recommendations.

Other options. You can find preserved wood products in a full range of sizes from 1" x 4" boards to 6" x 6" timbers, in a variety of lengths, plus plywood. For decking, a popular thickness is 5/4" (spoken "five-quarters"), which has rounded edges for a distinctive look.

While the preservative treatment protects wood against termites and rot, it does not prevent moisture damage which can cause warping, cracking, and deterioration of appearance. Some treated wood is produced with built-in water repellent which helps keep the wood looking good for longer. Several brands are available; the water repellent feature will be marked on the wood and noted on store signs.

Some dealers offer treated wood that has been re-dried, either Kiln Dried After Treatment (KDAT) or Air Dried After Treatment (ADAT). This step adds to the price of the treated wood, but provides a lighter weight product that is less prone to warp and can be painted without a waiting period.

Many stores also carry treated wood specialty products — such as spindles, handrails, ball tops, step stringers, and lattice — which can make construction easier and embellish your project.



During a rainstorm, the differences between conventional treated wood (top) and Wolmanized® wood with Lumbrella™ (foreground) are obvious. The regular wood has absorbed more water, assumed a darker color, and swollen noticeably compared to the lumber with built-in water repellent.

Maintenance. Every decking material requires some maintenance, for cleaning if nothing else. Pressure-treatment provides long-term protection against termites and rot, but even treated wood is subject to moisture damage. Unless preventative measures are taken, alternating periods of precipitation and sunlight will cause swelling, shrinking, warping, and splitting, which are natural characteristics of wood exposed to the elements. To protect your wood against weather and premature aging, coat the wood with an effective brand of water repellent as soon as possible and then reapply a coating every year or so.

Paint and film-forming stains can also be applied but, unless your wood has been re-dried after treatment, you should wait several months for the wood to dry before coating in order to get satisfactory adhesion.





Environmental benefits. You can feel good about using preserved wood, an environmentally responsible choice. Treated lumber comes from our only major renewable building material — wood. The trees used are plentiful and fast-growing, and they are grown on managed timberlands (not in ecologically sensitive ancient forests or unregulated, third-world rainforests). Treated wood requires less energy to produce than alternative building products. Copper preservatives are manufactured, in large part, from recycled metals.

Life Cycle Assessments show that, since growing trees absorb carbon dioxide and since wood products sequester carbon, the use of preserved wood reduces greenhouse gas.

Most important for homeowners and the environment, the treatment extends the life of wood. This enables a deck to last longer, and it reduces demands on forests and other resources.

By following these suggestions, you'll select long-lasting, economical material for your project. Now all you have to do is build it ...

Internet references on decks and preserved wood:

Southern Pine Council
www.southernpine.com

Western Wood Preservers Institute
www.wwpinstitute.org

Wolmanized® wood
www.wolmanizedwood.com

