Building a Deck?

Here’s What You Need to Know about Treated Wood
At Lonza Wood Protection, we envision a world built with wood

We support a better quality of life for our communities by delivering technologies that enhance the performance and increase the longevity of wood, the world’s greatest renewable resource.

We are a trusted and innovative supplier of technologies and services in the field of wood protection, making wood resistant to termites, fungi, smoke development and flamespread, mold and moisture while enhancing its beauty. We support our customers with an industry-leading level of service, designed to ensure our customers’ success.

We are truly a global business with locations around the world where we collaborate on product and technology platforms and share broad industry knowledge with regional market-focused technical, sales, marketing and regulatory expertise.
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Few home improvements can match a wood deck for usefulness, beauty, and enhanced value to a home. For adults, decks offer outdoor living space for entertaining, relaxing, and dining. For children, they provide a secure outdoor play area. Decks are considered an essential and cost-effective way to add living space to your home — it’s a remodeling project that you can enjoy now and reap the benefits of the resale value a deck brings to your home.

Whether you are building the deck yourself or hiring a contractor, the use of Wolmanized® pressure-treated wood helps assure that your project will provide years of enjoyment and peace of mind. Wolmanized® Wood provides warranted protection against termites and fungal decay.

NOTE: While it is not our intent here to teach you how to build a deck, this information will aid your deck planning process and help you realize better results from treated lumber.
Why Wolmanized® Wood

Wolmanized® Outdoor® Wood is pressure-treated with an effective preservative, and:
• offers warranted protection against termites and fungal decay
• is as durable, yet more economical than cedar or durable grades of redwood, and costs considerably less than plastic composites or tropical hardwoods
• has excellent workability attributes such as it can be:
  • installed quickly by professionals or do-it-yourselfers
  • manipulated using every day tools (saw, hammer, drill, etc)
  • painted or stained
  • easily repaired if scratched
• is made from a natural, renewable resource that is preserved to last for decades

Applications* include:
• decking
• railing and structural deck components
• walkways
• other backyard projects such as pergolas, gazebos, raised bed gardens

The Wolmanized® name is synonymous with treated wood and is the preservative treated wood of choice for many deck professionals. In some areas it is also available with a built-in water repellent and factory-applied color. If you are seeking wood with a non-metallic preservative for certain light duty or low hazard uses, consider Wolmanized EraWood® lumber.

* Check the label to determine intended use — there are products available for above ground, ground contact/freshwater, and heavy duty applications. See Page 10 for more detail.

Lonza makes no warranty, expressed or implied, of fitness for a particular purpose of the stuctures and examples described in this brochure.
Before You Start

When planning your deck, consider the safety of your family and guests. A deck is an uncovered, outdoor structural floor system that is expected to endure changing weather and carry significant loads over many years. Careful material selection, design, installation, plus periodic inspection and maintenance are keys to long-term performance and structural stability.

Once you have decided on the basic size, shape, and location of your deck, check local building codes to find out if there are restrictions as to height and size within your subdivision or community. Contact your local building department for any specific requirements and guidelines they may have, and find out if a building permit is required before you build your deck.

NOTE: if you are located in Western states and are planning to build a deck in a designated wildfire area, you will need to consult the Wildland Urban Interface Code for building requirements.

In determining the location and design of your deck, you will also want to consider:

- Anticipated use
  - large parties, family relaxation, outdoor cooking
- Access to home
  - adjoin kitchen, living room, bedroom
- Extra amenities
  - fireplace
  - built-in grill or kitchen
- Terrain
  - elevated deck, close to the ground, multi-level
- Air currents
  - allow flow of gentle breezes, block out prevailing winds
- Existing structure
  - should be compatible
- Sunlight
  - abundant sun or shade
- Privacy
  - screen certain areas, avoid street noise, landscaping
- View
  - emphasize a good view, mask a poor one
- Safety for children or elders
To Build or Not to Build Yourself

More and more newly constructed decks are built by do-it-yourselfers as expansion of their living space. Homeowners take pride in their accomplishments as they enjoy a space they have created.

A basic, low-level deck is a home improvement project that can be done by a capable do-it-yourselfer. It doesn’t require posts, stairs or railings. Design is straightforward. No advanced carpentry skills are required.

If you have all of the tools you need (see list on Page 8), you’ll probably save around half the cost by building yourself. Budget several weekends to complete the job, plus a week for concrete to cure. Spend time up-front familiarizing yourself with deck construction from reputable sources and at your local home improvement store.

If you want a more complex deck or you’ve never been involved in building a deck before, it is advised to hire a professional. Construction must be sound in order for the deck to last. Plus there are building codes that must be followed for the safety of your guests and any future occupants of your home.

Take the time to study deck construction from an experienced professional — don’t rely solely on online videos. You will save time (and money) in the long run.

Pictured above: A low-level deck is easier to build but should be designed with material intended for use on or near the ground and with good ventilation to allow the wood to dry easily.
## Tools You’ll Need

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Selecting Materials
Over the past few years, many alternative materials have been introduced for deck construction. The primary deck material, however, is pressure-treated wood.

Treated wood, sold in nearly every lumber outlet in North America, is chosen by contractors and do-it-yourselfers for a variety of reasons:
• It comes from a plentiful and renewable resource
• Its resistance to termites and rot is well established
• It is usually the most economical choice
• It has a naturally beautiful appearance
• It is flexible and easy to work with using common tools
• It is easy and inexpensive to maintain

Wolmanized® Outdoor® Wood, is a trusted brand, tough enough to stand up to termites and fungal decay, and versatile enough to be used in all types of natural environments. It combines the natural beauty of real wood with the most popular, widely accepted preservative and a limited warranty against termites and fungal decay. If you are seeking wood with a metal-free preservative for above ground uses, consider Wolmanized EraWood® lumber.

There are other additional features available, including kiln-dried wood and treated wood with water repellent. These improve performance and may decrease maintenance requirements.

Once you draw up your basic plan, take it to a home center or hardware store, and they can estimate the amount of materials you will need.

Be sure to check the labels to get the wood that is properly treated for your intended use. If the material you need is not available, check with the professional desk about special ordering.

For more information on choosing treated lumber, visit www.LonzaWoodProtection.com.

Materials You Will Need

Typical Lumber Dimensions

Deck Posts
— 4x4 or 6x6

Beams
— 4x6, double or triple 2x6, 2x8 or 2x10

Joists
— 2x6, 2x8 or 2x10

Stair Stringers
— 2x12

Deck Boards/Stair Treads
— 2x4, 2x6 or 5/4x6

Railing Posts
— 4x4

Rails
— 2x4 or 2x6

Spindles
— 2x2

Skirtboards/Fascia
— 1x8, 1x10 or 1x12

Other Materials Needed

Ready-Mix Concrete or Bagged Concrete

Concrete Pier Blocks

Exterior Caulk

Construction Adhesive

1/2” Stainless Steel Drift Pins

Joist Hangers

Galvanized Flashing

Lag Screws, Washers, Carriage Bolts, Nuts

Galvanized/Coated Screws
— 2-1/2”, 3-1/2”

Galvanized/Coated Common & Casing Nails
— 8d, 10d, 16d
Check the Labels

When you or your contractor buy Wolmanized® Outdoor® Wood, be sure to check the end tag stapled of the end of the wood. Each piece is identified for a specific use. This information will help you decide the correct material to buy for each part of your outdoor project.

IMPORTANT: Wood is treated with different amounts of preservative for specific applications. The label will designate Above Ground, Ground Contact or Ground Contact Heavy Duty classifications. However, there are some cases where wood used above the ground should be treated to Ground Contact. See Page 11 for examples. The label will also refer to either AWPA U1 or ICC-ES ESR 1721 or ESR 1477 which indicate the product has been produced and inspected to meet accepted requirements.

*Note: Treated wood permitted for use in construction under the IBC or the IRC must have end tags showing one of the symbols at left.
Remember, if your project comes in contact with the ground or fresh water or is built in a manner that does not allow the wood to easily dry, Ground Contact treated wood must be used.

The American Wood Protection Association (AWPA) requires pressure treated wood used in many physically above-ground applications be treated to Ground Contact requirements.

The standards require the user (builder, consumer, or inspector) to select Ground Contact treatment for physically above-ground material when:

- soil or other debris may build up and stay in contact with the wood
- there is insufficient ventilation to allow air circulation around the wood
- material is installed <6 inches above the ground on permeable building materials
- material is installed in contact with non-durable untreated or older construction with any evidence of decay
- wood is subject to frequent or recurring wetting
- wood is used in tropical climates
- the wood is both:
  - difficult to maintain, repair or replace
  - critical to the performance and safety of the entire system
Tips to Properly Install Treated Wood

Note: treated wood will last a long time, therefore so will your workmanship. You’ll be happier — and your project will look better — if you take your time and observe the following construction techniques.

Before You Start

• Check your local building code requirements and get a permit if required. For additional industry guidance, see www.awc.org/publications/download.php.

• Make sure that your wood is suited for the intended use. Check the tag on lumber for “Above Ground” or “Ground Contact.”

Deck Boards

• Separate deck boards to allow for expansion and contraction. If heavy and wet, separate boards no more than 1/16” as some shrinkage will occur. If light and dry, separate boards about 1/8” to allow for swelling.

• Shorter spans between joists will help to minimize warping and twisting of deck boards as they dry.

• Avoid designs with long cantilevers unsecured at one end; check with your local building department on maximum cantilever permitted.

• Lumber wider than six inches should not be used as a flat surface. Wide, flat boards are subject to ponding of rain water, which can lead to cupping problems.

• Place boards bark side up to help shed water. They will also be more likely to have treated sapwood on the exposed face.

• Make sure there is good under-deck ventilation for above-ground treated wood, allowing airflow around the entire deck.

• All material treated for above-ground use must be off the ground where it can dry easily and be free of leaves or other debris. If not, use wood treated to Ground Contact.

• All joists and beams must be treated to at least Ground Contact.

• Proper flashing or spacers should be used between all adjacent structures and the deck.

• If a board is bowed, install it with the crown up. Gravity and the weight of people and furniture will flatten it. Or, if a board has a slight bend to it, it sometimes can be straightened as it is screwed or nailed in place.
Fasteners

- Screws take longer to drive than nails, but hold boards more securely and will allow for easier removal if necessary.
- Use 3 1/2” long nails on nominal two-inch decking and 3” nails for 5/4” decking. Use two nails across a 2 x 4 and three across a 2 x 6. Drive nails at a slight angle toward each other.
- To reduce splitting when using nails, especially near the ends of boards, drill a pilot hole about three quarters the diameter of the nail. For dense or brittle wood, grind sharpness from nails or blunt the points by striking them carefully with a hammer.

End Cuts

- Liberally coat all cut ends, holes, or other intrusions into the wood with a suitable wood preservative product containing a minimum of 0.675% copper as oxine copper (copper-8 or copper-8-quinolinolate) or 1% copper as copper naphthenate. (One such product is Outlast® Q8 Log Oil. See www.chemtch.com for information and to order).
- Orient supporting posts so that original factory treated ends are in contact with the ground. Trim the top ends as needed and cover them with post caps or cut them at angles to shed water and treat with a brush-on preservative (see above).

Maintenance

No maintenance is needed to maintain resistance to decay fungi and termites. However, protection is required to maintain the wood’s appearance against weather. Sun and rain cycles cause stresses in lumber and result in swelling, shrinking, warping, and cracking.
- The North American Deck and Railing Association (NADRA) recommends yearly deck safety checks. For a checklist, see www.nadra.org.
- To help protect against moisture damage, apply water repellent after your project is completed and the wood has had a chance to thoroughly dry.
- You can use a deck cleaner/brightener every couple of years to freshen the look of your deck. Bleach is not recommended since it contains chlorides and can cause hardware corrosion.
- After cleaning the deck, reapply a water repellent or water repellent stain to restore color to the deck.

More on Fasteners

Wolmanized® Outdoor® Wood

Hot-dipped galvanized fasteners (meeting ASTM A 153) and connectors (ASTM A 653 Class G185 sheet), or better, are recommended. Fasteners not meeting or exceeding these requirements could result in premature failures and degradation of fasteners and treated wood.

Aluminum flashing (3015 or similar alloy) may be used in contact with micronized copper azole treated wood in interior or exterior, above ground applications that are damp or intermittently wet. For dissolved copper azole preservative treated wood or whenever treated wood is subject to immersion or frequent or prolonged wetting, factory coated aluminum or an insulating moisture-resistant barrier should be used between the treated wood and the aluminum. See the end tag for type of treatment (CA-C indicates dissolved copper azole and MCA-C indicates micronized copper azole).

Wolmanized EraWood® Lumber

Moisture, salt, and other agents can cause metal corrosion, but Wolmanized EraWood® lumber is no more corrosive than untreated wood. Check with your hardware manufacturer regarding specific uses. For those projects needing building code compliance, you can use hardware with the minimum protection permitted by codes and local regulations. Aluminum can also be used in direct contact with this wood.
Use & Handling Tips

The following precautions should be taken both when handling the preserved wood and in determining where to use and dispose of it. Many of these precautions also apply to untreated wood and other building materials.

Use Site Precautions

• All sawdust and debris should be cleaned up and disposed of after construction.

• Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples are mulch from recycled treated wood, cutting boards, counter tops, animal bedding, and structures or containers for storing animal feed or human food. (e.g., in raised beds an impervious liner such as heavy polyethylene is recommended between treated wood and soil)

• Only treated wood that is visibly clean and free of surface residue should be used where contact is likely.

• Do not use treated wood for construction of those portions of beehives which may come into contact with honey.

• Treated wood should not be used where it may come into direct or indirect contact with drinking water, except for uses involving incidental contact such as support posts for docks or bridges.

Handling Precautions

• Dispose of treated wood by ordinary trash collection. TREATED WOOD SHOULD NOT BE BURNED in open fires or in stoves, fireplaces, or residential boilers because toxic substances may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be disposed of by complying with local landfill rules or burned in commercial or industrial incinerators or boilers when done in accordance with state and federal regulations.

• Avoid frequent or prolonged inhalation of sawdust from wood, treated or untreated. When sawing, sanding, and machining wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations or airborne sawdust.

• When power-sawing and machining, wear goggles to protect eyes from flying particles.

• Wear gloves when working with wood.

• Use proper techniques when lifting.

• After working with wood, and before eating, drinking, toileting, and use of tobacco products, wash exposed areas thoroughly.

• Because preservatives or sawdust may accumulate on clothes, they should be laundered before reuse. Wash work clothes separately from other household clothing.
Painting, Staining, & Coating

Wolmanized® Wood can be stained or painted and it should be coated with a water repellent to help maintain appearance.

With any coating, always follow the manufacturer’s directions on the product label.

How long must you wait before the wood is dry internally depends on the climate and the wood’s exposure. In summer in the American Southwest, deck lumber open to sunshine can dry in a few days. In cool, damp weather or when shaded by an overhanging roof or tree, it will take much longer for wood to dry. On average, we recommend waiting six months before applying paint or solid color stains and three months before applying semi-transparent stains. Too dry is always better than too wet!

Choose which of the following applies to your situation:

1. Typical Treated Wood

When wood is pressure-treated, it is saturated with a liquid solution of preservative diluted in water. In a typical situation, the wood you buy is still very wet.

PAINT AND SOLID COLOR STAINS — Do not apply until the wood is dry, both on the surface and internally. Otherwise, as the wood dries out, escaping moisture will cause blisters and poor adhesion in the paint. As with painting untreated wood, application of a primer is suggested for best results.

SEMI-TRANSPARENT STAINS — Semi-transparent stains do not block moisture movement like paint and solid color stains, so they can be used after the wood has dried long enough to ensure that they will be absorbed evenly into the surface. Be sure to test an inconspicuous area to make sure that application does not result in uneven color or blotchiness.

WATER REPELLENTS — Most water repellents can be applied immediately. Be sure to follow the manufacturer’s instructions.

2. Treated Wood with Built-in Water Repellent

To help protect against moisture damage, some Wolmanized® Wood has built-in water repellent. The water repellent helps minimize the tendency of wood to warp and crack while providing improved dimensional stability.

PAINTS & STAINS — If the wood is dry, oil-based paints and stains may be applied immediately. To apply a water-based coating, wait for the surface of the wood to weather to allow even penetration and adherence to wood. Hint: If water beads on the surface, it is too soon to apply a water-based coating. Always test the coating on the most shaded part of the deck to make sure it absorbs evenly without blotching.

WATER REPELLENTS — It is recommended to apply a water repellent or combination water repellent and stain coating every year or two thereafter initial installation, depending on the product used. Always follow the manufacturer’s instructions.

3. Treated Wood that Is Dried after Treatment

In some areas you can buy treated wood that is Kiln Dried After Treatment (KDAT) or Air Dried After Treatment (ADAT). In these processes, moisture is removed from the wood before shipment to a lumber dealer. KDAT or ADAT will be marked on each piece of wood on either the end tag or an ink stamp.

PAINT, STAIN, WATER REPELLENT — The moisture content of the wood is already in balance with atmospheric moisture levels, so coating can proceed immediately, unless wood has built-in water repellent (then see above).
Good luck creating your outdoor oasis!
Please contact us if you have questions about Wolmanized® wood or the information presented here.
www.LonzaWoodProtection.com