the consumer’s best choice: Wood for Outdoor Applications Protected by CA-C Preservative
Objective

• Introduce Wolmanized® Outdoor® wood and explain:
  • How it works
  • Why it exists
  • What it protects against
  • How it is made
  • Where it is used
  • Key features
Why Real Wood?

• Wood is our only renewable and sustainable construction material

• Most wood products are grown in managed plantations

• Construction advantages of wood
  • Readily available
  • Good strength-to-weight ratio
  • Easily worked and fabricated
  • Exemplary fastener-holding ability
  • Economical when compared to alternatives

• People like the appearance of real wood
What is Treated Wood?

• Lumber or plywood that has been pressure-impregnated with a preservative, which makes the wood resistant to attack by termites and decay fungi

• The preservative:
  • Becomes fixed in the wood, so it’s resistant to leaching out
  • Renders the wood less attractive as a food substance for wood-destroying organisms
  • Has been used effectively around the world for decades
What is Wolmanized® Outdoor® Wood?

• Wood protected by Copper Azole Type C preservative from Lonza Wood Protection, pioneer of copper azole technology

• Active ingredients:
  • Recycled copper (protects against termites and fungal decay)
  • Two synergistic, carbon-based azoles (protect against certain copper-tolerant fungi)
• Formulation now enhanced with BARamine® technology, making it the most effective copper azole system available
Two Forms of Copper for CA-C

• Dissolved copper — CA-C
  • Historical form of copper, it is dissolved into solution. This form is often used with western species.

• Micronized copper — MCA-C
  • Copper is finely ground and suspended in liquid.

• Both forms
  • Are enhanced with BARamine® technology
  • Use recycled copper
  • Are NGBS Green Certified
  • AWPA listed
  • Meet model building codes
    • International Residential Code (IRC)
    • International Building Code (IBC)
What is BARamine® Technology?

• Better protection against common fungi
• Improved resistance to certain aggressive copper-tolerant fungi
• Enhanced moldicide properties for a variety of conditions
• Proprietary components provide more effective and consistent preservative distribution into the wood (also allows for increased treatability in refractory wood species)
• Cleaner, brighter, fresher wood appearance
• In-depth testing on multiple continents
• Patented technology
Residential Treated Wood is Different than Industrial Treated Wood

- Uses different ingredients in the preservative
- Preservative not classified as a restricted use pesticide
- No special EPA precautions for handling wood
Primary Characteristics

- Long-lasting
- Odorless
- Clean appearance
- Affordable
- Real wood, not artificial
Warranty

- Limited warranty for original owner
- Covers most residential and agricultural applications
- Offers replacement of wood product for failure due to fungal decay or termite attack
Where is Wolmanized® Outdoor® Wood Used?

- Residential, agricultural, commercial projects
  - Decks, walkways, landscaping
  - Sill plate, structural components
  - Fences, shelters, ramps, gazebos
- Freshwater applications
- Not approved for saltwater use
## Above Ground vs. Ground Contact

Choose wood based upon the conditions of its intended use.

<table>
<thead>
<tr>
<th>Above Ground</th>
<th>Ground Contact</th>
<th>Ground Contact Heavy Duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>above the ground and not in contact with the ground</td>
<td>in ground or in contact with the ground or in fresh water</td>
<td>nominal 6x6 or larger posts when used in ground contact or fresh water supporting decks or other structures</td>
</tr>
<tr>
<td>applications where wood is expected to readily dry out between times it gets wet</td>
<td>above ground instances where wood is expected to stay wet or not ventilated; in contact with debris or vegetation</td>
<td>posts supporting houses or other permanent structures</td>
</tr>
<tr>
<td>areas of low or moderate decay hazard</td>
<td>for all supporting members of a structure, nominal 4” or less, in contact with ground; all supporting members not in contact with ground</td>
<td>typical Ground Contact uses in tropical climates; saltwater splash</td>
</tr>
</tbody>
</table>
Check the End Tag for Intended Use

*NOTE: Treated wood permitted for use in construction under the IBC or IRC must have end tags showing one of the above symbols.
## CA-C Retention Standards (lbs./cu.ft.)

<table>
<thead>
<tr>
<th>Application</th>
<th>Dissolved Copper</th>
<th>Micronized Copper</th>
<th>Micronized Copper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above Ground</td>
<td>0.060</td>
<td>0.060</td>
<td>0.060</td>
</tr>
<tr>
<td>Ground &amp; Freshwater Contact</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>Critical Structural Components</td>
<td>0.31</td>
<td>0.31</td>
<td>0.23</td>
</tr>
<tr>
<td>Acceptance</td>
<td>AWPA U1</td>
<td>ICC-ES Report</td>
<td></td>
</tr>
</tbody>
</table>
Treatable Species (U.S.)

- Southern Pine
- Ponderosa Pine
- Red Pine
- Hem-Fir*
- Douglas Fir*
- Western Hemlock*
- Caribbean Pine
- Radiata Pine
- White Pine

*Incising necessary to meet AWPA standards
Common species of lumber, timbers and plywood are loaded onto trams and pushed into a large horizontal treating cylinder.
Inside the Treating Cylinder

**Step 1**
Dry wood is loaded into cylinder

**Step 2**
Initial vacuum pulls out air

**Step 3**
Liquid preservative fills cylinder
Inside the Treating Cylinder

**Step 4**
Pressure forces preservative into wood

**Step 5**
Remaining liquid emptied for later user

**Step 6**
Final vacuum removes excess chemical
Quality Control Provides Consumer Assurance

• Wood treated to requirements of AWPA and/or ESR-1721
• Independent third-party audit program for treating procedures
Environmental Benefits of Preserved Wood

• Renewable resource
• Treated wood made from plentiful, fast-growing trees grown in managed timberlands
• Preservatives extend forest resources
• Low energy requirements for production
• Growing trees absorb carbon dioxide and wood products embody carbon, both reducing greenhouse gas
• Treated wood can be recycled for several uses
Environmental Credentials for Wolmanized® Outdoor® Wood

All the benefits of other preserved wood, plus:

• Preservative consists mostly (96%) of recycled copper
• NGBS Green Certified product
• It has been evaluated by a Life Cycle Assessment
Safety & Handling Precautions

• Do not burn treated wood except in approved commercial incinerators (American Medical Association also recommends against burning plywood, particleboard, and old furniture)

• Ordinary trash disposal

• Treated sawdust and shavings not recommended for composting, mulching, or animal bedding

• Wear dust mask and goggles when cutting or sanding wood (treated or not)

• Wear gloves when working with all wood

• Wash hands after working with all wood
Construction Tips

• Evaluate conditions for intended use of project
  – Will wood be in contact with ground or debris or used where it will get and stay wet?
  – Will ventilation be good around project?
  – What are your critical supporting components?

• Check labels for correct application: Above Ground, Ground Contact or Ground Contact Heavy Duty applications based upon evaluated conditions of use

• Butt deck boards together during construction to allow for initial shrinkage of treated wood (unless wood is dried after treatment in which case a slight gap allows for potential swelling)
More Construction Tips

• Reduce splitting by pre-drilling holes
• Avoid excessive spans to minimize springiness and warping
• Screws take longer to drive than nails, but hold boards securely and allow for easier removal
• Orient embedded support columns so only pressure-treated ends are in ground contact
• Cover upper ends of posts with post caps or cut them at angles to shed water
• Coat all ends, holes or other intrusions into wood with suitable wood preservative product
Maintenance of Wolmanized® Outdoor® Wood

• No maintenance needed for resistance to fungi and termites
• Apply water repellent periodically for protection against moisture damage
• You can paint or stain Wolmanized® Outdoor® wood when it is thoroughly dry (more details on drying time for various combinations of coatings and treatments appear at WolmanizedWood.com)
• Coatings manufacturer recommendations should be followed
• To revitalize a dingy appearance, use deck cleaner or pressure washer
Recommended Hardware

• Fasteners should be hot-dipped galvanized steel meeting ASTM A 153 or better
• Connectors should meet ASTM A 653 (Class G185 sheet)
• Coated aluminum flashing, gutters and trim can be used in contact with micronized copper azole (MCA-C) in non-continuous wetting environments
• Always check with the fastener/connector/flashing manufacturer’s recommendations prior to use
Available Treatment Additives

• Water repellent additive
• Dyes and pre-stain additives
• Mandatory moldicide
The Wolmanized® Brand

- Recognized brand name
- Long history of performance
- From the worldwide leader in wood preservation technology
- Strong advertising and promotional support program
- Industry leadership
Summary

• Real wood with long-lasting protection against termites and fungal decay
• Wolmanized® Outdoor® Wood with BARamine® technology is treated with the most effective copper azole available
• Proven around the world
• Economical
• Ideal for backyard projects
• Backed by a limited warranty
• Offers environmental benefits of wood