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

- It is 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?

• It’s wood protected by Copper Azole Type C preservative from Arch 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, listed in Standards of American Wood Protection Association, is used with western species and by people wanting AWPA acceptance.

- **Micronized copper — MCA-C**
  Copper is finely ground and suspended in liquid. Wood treated with this form has been issued a code evaluation report.

- **Both forms**
  - Are enhanced with BARamine® technology
  - Use recycled copper
  - Are NGBS Green Certified
  - 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)
• A 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

- **CODE ACCEPTANCE SYMBOL**
- **PROPER USE**
- **PRESERVATIVE**
- **TRADEMARK OF THIRD-PARTY INSPECTION AGENCY**
- **RETENTION LEVEL**
- **TREATING COMPANY & PLANT LOCATION**

© Quality Checkmark symbol used by AWPA

® ICC-ES logo

*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>
</tr>
</thead>
<tbody>
<tr>
<td>Above Ground</td>
<td>0.060</td>
<td>0.050</td>
</tr>
<tr>
<td>Ground &amp; Freshwater Contact</td>
<td>0.15</td>
<td>0.14</td>
</tr>
<tr>
<td>Critical Structural Components</td>
<td>0.31</td>
<td>0.23</td>
</tr>
<tr>
<td>Acceptance</td>
<td>AWPA U1</td>
<td>ICC-ES ESR</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
Wolmanized® Outdoor® Wood Production

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
Quiz
Which of the following statements best describe Wolmanized® Outdoor® wood?

A – Protected against termites and fungi
B – Contains copper
C – Both A and B
D – Neither A nor B

Wolmanized® Outdoor® wood:

A – Has been sprayed with a preservative formulation
B – Is made from a preservative containing recycled copper and an effective fungicide
C – With BARamine® technology is treated with the most effective copper azole available
D – Both A and B
E – Both B and C
The preservative in Wolmanized® Outdoor® wood is:

A – Copper Azole Type A
B – Copper Azole Type B
C – Copper Azole Type C
D – Something else

Which organizations and codes have recognized Wolmanized® Outdoor® wood:

A – ICC Evaluation Services
B – IBC
C – IRC
D – All of the above
Key features of Wolmanized® Outdoor® wood include:

A – Renewable resource
B – Economical
C – Ideal for backyard projects
D – Proven around the world
E – All of the above

True / False: Azole protects wood against copper-tolerant fungi and is carbon-based.
**Wolmanized® Outdoor® wood can be used:**

A – Above ground and in ground contact  
B – In freshwater  
C – In saltwater  
D – A & B only  
E – A, B & C

**Wolmanized® Outdoor® wood is:**

A – Clean to the touch  
B – Odorless  
C – Used with hot-dipped galvanized hardware  
D – All of the above
Wolmanized® Outdoor® wood:

A – Can be painted or stained when dry
B – Should not be burned
C – Is produced in a pressurized cylinder
D – Can be disposed of with ordinary trash collection
E – All of the above
Answers
Which of the following statements best describe Wolmanized® Outdoor® wood?

A – Protected against termites and fungi
B – Contains copper
C – Both A and B
D – Neither A nor B

Wolmanized® Outdoor® wood:

A – Has been sprayed with a preservative formulation
B – Is made from a preservative containing recycled copper and an effective fungicide
C – With BARamine® technology is treated with the most effective copper azole available
D – Both A and B
E – Both B and C
The preservative in Wolmanized® Outdoor® wood is:

A – Copper Azole Type A  
B – Copper Azole Type B  
C – Copper Azole Type C  
D – Something else

Which organizations and codes have recognized Wolmanized® Outdoor® wood:

A – ICC Evaluation Services  
B – IBC  
C – IRC  
D – All of the above
Key features of Wolmanized Outdoor wood include:

A – Environmentally responsible
B – Economical
C – Ideal for backyard projects
D – Proven around the world
E – All of the above

True / False: Azole protects wood against copper-tolerant fungi and is carbon-based.
**Wolmanized® Outdoor® wood can be used:**

A – Above ground and in ground contact  
B – In freshwater  
C – In saltwater  
D – A & B only  
E – A, B & C

**Wolmanized® Outdoor® wood is:**

A – Clean to the touch  
B – Odorless  
C – Used with hot-dipped galvanized hardware  
D – All of the above
Wolmanized® Outdoor® wood:

A – Can be painted or stained when dry
B – Should not be burned
C – Is produced in a pressurized cylinder
D – Can be disposed of with ordinary trash collection
E – All of the above