



# PRESERVE SPEC

Guidance for properly specifying and using preserved wood products

## Specifying with AWWPA Use Categories for Construction

The purpose of the American Wood Protection Assn. (AWPA) Use Category system is to provide a simple way to select preserved wood products by relating the end use of wood product directly to the appropriate AWWPA Standard. Use Categories define a series of different exposures for preserved wood products that may be used in construction.

The advantage of Use Categories is simplicity. The smaller the Use Category number, a lesser amount of protection is required to protect against decay or insect attack. Likewise, the largest Use Category number provides the highest degree of protection. For residential construction, preserved wood products are available in Use Categories ranging from UC1 for interior, dry uses to UC4B for ground contact applications where the wood is a critical component or hard to replace.

For typical construction uses, refer to Use Categories specified for sawn products under Commodity Specification A. Review the exposure conditions defined below or the table on the next page to select the proper Use Category. Next, refer to the Specification Guide table for the specific product, preservative and retention (level of preservative in the wood) for the respective Use Category.

### AWPA Use Categories for Typical Construction Applications (Per AWWPA Commodity Specification A)

#### UC1 – Interior, Dry

Wood used in interior construction not in contact with the ground or foundations. Such products are continuously protected from weather and interior sources of water such as leaking plumbing, condensate, pools and spas.

*Applications* - Interior furniture, construction furnishings, millwork.

#### UC2 – Interior, Damp

Wood used for interior construction that are not in contact with ground, but may be subject to dampness. These products are continuously protected from the weather, but may be exposed to occasional sources of moisture.

*Applications* - Interior beams, timbers, flooring, framing, millwork, sill plates.

#### UC3A – Above Ground, Protected

Wood used in exterior construction that are coated and not in contact with the ground. Such products may be exposed to the full effects of weather, but are in vertical exterior walls or other types of construction that allows water to quickly drain from the surface.

*Applications* - Coated millwork, siding, trim.

#### UC3B – Above Ground, Exposed

Wood used in exterior construction and not in contact with the ground. Materials do not require an exterior coating, but may be finished to achieve a desired aesthetic appearance. **For Commodity Spec. A:** See Note 1 under UC4A for sawn components that may be physically above ground but that are required to be treated for ground contact. This includes sawn components that are difficult to replace and critical to the structure, or that may be exposed to ground contact type hazards due to climate, artificial or natural processes or construction.

*Applications* - Decking, railings, joists and beams for decks and freshwater docks, fence pickets, uncoated millwork.

#### UC4A – Ground Contact, General Use

Wood used in (1) contact with the ground, fresh water, or other situations favorable to deterioration; (2) used above ground but are difficult to maintain, repair or replace and are critical to the performance and safety of the entire system/construction; or (3) used above ground but may end up in ground contact or are subject to hazards comparable to ground contact due to climate, artificial or natural processes or construction.

Note 1: The following sawn components for exterior above ground use shall be treated to Ground Contact UC4A or higher requirements:

- When there is a reasonable expectation that soil, vegetation, leaf litter or other debris may build up and remain in contact with the component.
- When the construction itself, other structures or anticipated vegetation growth will not allow air to circulate underneath the construction and between decking boards.
- When components are installed less than 6 inches above ground (final grade after landscaping) and supported on permeable building materials (e.g. treated wood or concrete).
- When components are in direct contact with non-durable untreated wood, or any older construction with any evidence of decay.
- When components are wetted on a frequent or recurrent basis (e.g., on a freshwater floating dock or by a watering system).
- When components are used in tropical climates.

*Applications* - Fence posts, deck posts, structural lumber, joists and beams for decks and freshwater docks, timbers.

#### UC4B – Ground Contact, Heavy Duty

Wood used in contact with the ground either in severe environments, such as horticultural sites, in climates with a high potential for deterioration or in critically important components.

*Typical Applications* - Permanent wood foundations, building poles.



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## Service Conditions for Use Categories

| Use Category  | Service Conditions  | Use Environment   | Common Agents of Deterioration  | Typical Applications   |
|---|---|---|---|--|
| UC1<br>Interior, Dry  | Interior construction<br>Above Ground, Dry  | Continuously protected from weather or other sources of moisture  | Insects only  | Interior construction and furnishings  |
| UC2<br>Interior, Damp   | Interior construction<br>Above Ground, Damp   | Protected from weather, but may be subject to sources of moisture   | Decay fungi and insects   | Interior construction, sill plates   |
| UC3A<br>Above Ground, Protected   | Exterior construction<br>Above Ground<br>Coated & rapid water runoff  | Exposed to all weather cycles, including intermittent wetting   | Decay fungi and insects   | Coated millwork, siding, trim  |
| UC3B<br>Above Ground, Exposed<br>(Commodity Specification A only)       | Exterior construction<br>Above Ground<br>Uncoated or poor water run-off.<br>Excludes above ground applications with ground contact type hazards.                          | Exposed to all weather cycles including intermittent wetting but with sufficient air circulation so wood can readily dry  | Decay fungi and insects   | Decking, railings, joists and beams for decks and freshwater docks <sup>1</sup> , fence pickets, uncoated millwork |
| UC4A<br>Ground Contact, General Use<br>(Commodity Specification A only) | Ground Contact or Fresh Water<br>Non-critical components<br>(Includes above ground applications with ground contact type hazards or that are critical or hard to replace) | Exposed to all weather cycles, including prolonged wetting  | Decay fungi and insects   | Sawn fence, deck and guardrail posts, joists and beams for decks and freshwater docks <sup>1</sup>                 |
| UC4B<br>Ground Contact, Heavy Duty                                      | Ground Contact or Fresh Water<br>Critical components or difficult replacement   | Exposed to all weather cycles, including continuous or prolonged wetting, high decay potential includes salt water splash | Decay fungi and insects with increased potential for biodeterioration | Permanent wood foundations, sawn horticultural posts   |

Source: AWPAs 2017 Book of Standards, Table 2-1

<sup>1</sup> Joists and beams shall be treated to requirements for UC4A when they are difficult to maintain, repair or replace and are critical to the performance and safety of the entire system/construction.

## Preservatives for Residential Products

Consumers today have a variety of preserved wood products to choose from that offer the durability and performance needed for any application. The preservatives available today contain components that are approved by the EPA and provide an effective way to preserve the natural benefits of wood.

Western preserved wood products are commonly available in the retail marketplace today with the following preservatives:

### ACQ - Alkaline Copper Quaternary

Brands: Preserve® ACQ, NatureWood®  
Species: Douglas Fir, Hem-Fir  
Use: Above ground, ground contact, fresh water contact, salt water splash  
Availability: Home centers, lumber yards, distributors

### CA - Copper Azole

Brands: Wolmanized® Outdoor® Wood, Preserve® CA, NatureWood® CA  
Species: Douglas Fir, Hem-Fir  
Use: Above ground, ground contact, fresh water contact, salt water splash  
Availability: Home centers, lumber yards, distributors

### EL2 - DCOI-Imidacloprid

Brand: Ecolife™, Severe Weather® MAX  
Species: Douglas Fir  
Use: Above ground only  
Availability: Home centers, lumber yards, distributors

### PTI - Propiconazole-Tebuconazole-Imidacloprid

Brands: Wolmanized® EraWood®, Nexwood®  
Species: Douglas Fir, Hem-Fir  
Use: Above ground only  
Availability: Home centers, lumber yards, distributors

### SBX - Inorganic Boron

Brands: PacBor®, TimBor®, HiBor®, SilBor®, AdvanceGuard®, TimberSaver®, Cellu-Treat®  
Species: Douglas Fir, Hem-Fir, Southern Yellow Pine  
Use: Interior applications; "where its application is continually protected from liquid water."  
Availability: Home centers, lumber yards, distributors

## Specification Guide for Preserved Wood in Construction Applications

|   | Use Category | ACQ          | CA-C                | EL2         | PTI                        | SBX/DOT             |
|---|--------------|--------------|---------------------|-------------|----------------------------|---------------------|
| <b>DECKS, OUTDOOR LIVING</b>  |              |              |                     |             |                            |                     |
| Decks, Residential  |              |              |                     |             |                            |                     |
| Decking boards  | 3B           | 0.15         | 0.06                | 0.019       | 0.018 <sup>(2)</sup>       | NL                  |
| Joists and beams, above ground <sup>(1)</sup>                           | 3B or 4A     | 0.15 or 0.40 | 0.06 or 0.15        | 0.019 or NL | 0.018 <sup>(2)</sup> or NL | NL                  |
| Joists and beams, ground contact  | 4A           | 0.40         | 0.15                | NL          | NL                         | NL                  |
| Ledger board  | 4A           | 0.40         | 0.15                | NL          | NL                         | NL                  |
| Posts, structural   | 4A           | 0.40         | 0.15                | NL          | NL                         | NL                  |
| Railing   | 3B           | 0.15         | 0.06                | 0.019       | 0.018 <sup>(2)</sup>       | NL                  |
| Stairs <sup>(1)</sup>   | 3B or 4A     | 0.15 or 0.40 | 0.06 or 0.15        | 0.019 or NL | 0.018 <sup>(2)</sup> or NL | NL                  |
| Garden box  | 4A           | 0.40         | 0.15                | NL          | NL                         | NL                  |
| Landscape wall  | 4A           | 0.40         | 0.15                | NL          | NL                         | NL                  |
| Porch flooring, covered   | 3B           | 0.15         | 0.06                | 0.019       | 0.018 <sup>(2)</sup>       | NL                  |
| <b>BUILDING CONSTRUCTION MATERIAL</b>                                   |              |              |                     |             |                            |                     |
| Fascia, trim  | 3A           | 0.15         | 0.06                | 0.019       | 0.013                      | NL                  |
| Framing lumber, studs - interior  | 1 or 2       | 0.15         | 0.06                | 0.019       | 0.013                      | 0.25 <sup>(6)</sup> |
| Permanent Wood Foundation   |              |              |                     |             |                            |                     |
| Lumber <sup>(3)</sup>   | 4B           | 0.60         | 0.31                | NL          | NL                         | NL                  |
| Plywood <sup>(3)</sup>  | 4B           | 0.60         | 0.31                | NL          | NL                         | NL                  |
| Plywood   |              |              |                     |             |                            |                     |
| Sub-floor, damp, above ground   | 2            | 0.15         | 0.06                | 0.019       | 0.013                      | 0.25 <sup>(6)</sup> |
| Exterior, above ground  | 3B           | 0.15         | 0.06                | 0.019       | 0.018 <sup>(2)</sup>       | NL                  |
| Ground contact  | 4A           | 0.40         | 0.15                | NL          | NL                         | NL                  |
| Out of contact with ground and continuously protected from liquid water | 2            | 0.15         | 0.06                | 0.019       | 0.013                      | 0.25 <sup>(6)</sup> |
| Poles, building   |              |              |                     |             |                            |                     |
| Round   | 4A or 4B     | 0.60         | 0.31 <sup>(4)</sup> | NL          | NL                         | NL                  |
| Sawn  | 3B           | 0.15         | 0.06                | NL          | NL                         | NL                  |
| Sill plate  | 2            | 0.15         | 0.06                | 0.019       | 0.013                      | 0.25 <sup>(6)</sup> |
| Shakes and shingles <sup>(3)</sup>                                      | 3B           | 0.15         | 0.06                | NL          | NL                         | NL                  |
| <b>FENCING</b>  |              |              |                     |             |                            |                     |
| Pickets, slats, trim  | 3A or 3B     | 0.15         | 0.06                | 0.019       | 0.018 <sup>(2)</sup>       | NL                  |
| Posts, sawn   | 4A           | 0.40         | 0.15                | NL          | NL                         | NL                  |
| Posts, round  | 4A           | 0.40         | 0.15 <sup>(5)</sup> | NL          | NL                         | NL                  |
| Rail  | 3A or 3B     | 0.15         | 0.06                | 0.019       | 0.018 <sup>(2)</sup>       | NL                  |

Source: AWPA 2017 Book of Standards, Table 3-1 and U-1, Commodity Specification A

### Footnotes

NL - Not Listed in the AWPA Standards Retentions listed in pcf, or pounds per cubic foot

(1) See application recommendations for Use Categories 3B and 4A

(2) For certain species, use of an accepted water repellent additive allows 0.013 pcf

(3) PWF components, shakes and shingles can be treated with CCA at 0.60 pcf

(4) Western Red Cedar only

(5) Lodgepole Pine only

(6) Equivalent to 0.17 pcf B<sub>2</sub>O<sub>3</sub>