WESTERN WOOD PRESERVERS INSTITUTE
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PRESERVESPEC
Guidance for properly specifying and using preserved wood products

Preserved Wood and the 2024 International Residential Code

This publication is intended to identify the key sections of the International Residential Code (IRC) referencing preservative-treated wood and to describe the provisions outlined in those sections. Descriptions are edited for brevity; for exact wording, refer to the code itself, available here: codes.iccsafe.org/content/IRC2024P2

The IRC recognizes the ability of preserved wood to protect against decay as well as termite damage. In some instances, preservative-treated wood is required; for others the code allows use of preserved wood or wood classified as naturally decay-resistant.

Developed by International Code Council, the IRC is a model code defining construction standards for one- and two-family structures. It serves as the basis for residential construction codes in force in most local jurisdictions throughout the U.S. The ICC publishes updates to the IRC every three years; the current version is the 2024 IRC. Often, local codes reference older versions of the IRC, such as those published in 2021, 2018 or even earlier. Local jurisdictions are free to adopt some of the IRC's provisions, but not all of them, and they often make changes to the provisions or adopt provisions of their own which are not included in the IRC.

It is important to understand that the local codes, not the IRC, govern construction practices in each locality.

Chapter 3 - Building Planning

Before 2024, the key provisions surrounding preserved wood were found in Sections R317 and R318. In the 2024 IRC, those provisions are in Sections R304 and R305.

Section R304 Protection of Wood and Wood-Based Products Against Decay

R304.1 Location required.

This section identifies residential construction applications where the IRC calls for the use of preserved wood or naturally durable wood:

1. In crawl spaces or unexcavated areas located within the periphery of the building foundation
2. Wood framing, including columns, that rests directly on concrete or masonry exterior foundation walls
3. Sills and sleepers on a concrete or masonry slab in direct contact with the ground
4. The ends of wood girders entering exterior masonry or concrete walls
5. Exterior wood siding, sheathing and wall framing less than 6 inches from the ground
6. Wood structural members supporting moisture-permeable floors or roofs exposed to the weather
7. Furring strips or other wood framing attached directly to the interior of masonry or concrete walls below grade
8. Structural supports of buildings, balconies, porches, etc. that are exposed to the weather
9. Wood columns in contact with basement floor slabs

R304.1.1 Field treatment

Requires end cuts, notches and holes made in preserved wood to be field-treated in accordance with AWPA M4.

R304.1.2 Ground contact

Requires that wood supporting structures intended for human occupancy which is in contact with the ground or embedded in concrete exposed to weather or in contact with the ground to be pressure-preservative-treated wood suitable for ground contact. Provides an exception for wood used entirely below groundwater level or continuously submerged in fresh water.

R304.2 Quality mark

Requires pressure-preservative-treated wood to bear the quality mark of an approved and accredited inspection agency attesting to the preserved wood's quality and adherence to pertinent standards.

R304.2.1 Required information

States that the quality mark must be applied to each piece of preserved wood and lists the information components the quality mark must include:

1. Identification of the treating plant
2. Type of preservative.
3. The minimum preservative retention.
4. End use for which the product was treated.
5. Standard to which the product was treated.
6. Identity of the approved inspection agency.
7. The designation "Dry," if applicable.

R304.3 Fasteners and connectors

Defines the types of fasteners and connectors, including nuts and washers, allowed to be used in contact with preserved wood and lists the ASTM standards that apply.

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R304.3.1 Fasteners for preservative-treated wood
States that the fasteners must be hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper. Staples must be stainless steel. Coating types and weights must be in accordance with the connector manufacturer's recommendations or, at a minimum must comply with ASTM A 653 type G185. Offers certain exceptions.

R304.3.2 Fastenings for wood foundations
Fastenings, including nuts and washers, for wood foundations must comply with the American Wood Council Permanent Wood Foundation Specification.

R304.3.3 Fasteners for fire-retardant-treated wood used in exterior applications or wet/damp locations
Requires fasteners for fire-retardant-treated wood used in exterior or wet/damp locations be hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper. Allows fasteners other than nails, staples and timber rivets to be mechanically deposited zinc-coated steel complying with ASTM B695, Class 55 for minimum coating weights.

R304.3.4 Fasteners for fire-retardant-treated wood used in interior applications
Requires fasteners for fire-retardant-treated wood used in interior locations to comply with the manufacturer's recommendations or at a minimum adhere to the requirements of Section R304.3.3.

Section R305 Protection Against Subterranean Termites

The following subsections apply only in geographical areas that have been determined by the local jurisdiction to be subject to termite damage. NOTE: In many areas determined to be subject to termite damage, the local code requires measures that go beyond those outlined in the IRC.

R305.1 Subterranean termite control methods

Defines allowable methods of protection from termite damage:

1. Chemical termiticide treatment
2. Installed termite-baiting system
3. Use of pressure-preservative-treated wood in accordance with the provisions of Section R304.1.
4. Use naturally durable termite-resistant wood.
5. Employ physical barriers in locations described in Section R304.1.
6. Use cold-formed steel framing in accordance with Sections R505.2.1 and R603.2.1.

If preserved wood is used, the following sub-sections apply:

R305.1.1 Quality mark
Requires pressure-preservative-treated wood to bear the quality mark of an approved and accredited inspection agency attesting to the preserved wood's quality and adherence to pertinent standards.

R305.1.2 Field treatment
Requires end cuts, notches and holes made in preserved wood to be field-treated in accordance with AWPA M4.

Other Sections

R402.1.2 Wood treatment
Defines pressure-preservative-treated wood as having been dried after treatment in accordance with AWPA U1, Specification A, Special Requirement 4.2. Requires the wood bear the mark of an accredited agency and that copper napthenate with a minimum 2% copper concentration be used for field treating.

R504.1 General
Requires preserved wood floors in basements or in contact with the ground to the axial forces caused by lateral soil pressure in their design criteria.

R504.2 Site preparation
Requires areas with foundation walls that support preserved wood floor sleepers to be free of top soil, vegetation and foreign material and compacted uniformly.

R504.2.2 Moisture barrier
Requires preserved wood floor sleepers directly contacting the ground to be covered by a minimum 6-mil polyethylene moisture membrane.

Details

R507.9.1.1 Ledger details
Requires minimimum 2x8 nominal preservative-treated lumber or decay-resistant naturally durable wood be used for deck ledgers. (NOTE: This section in the 2024 IRC is out of date in that it species particular species of preserved wood to be used. In reality any preserved wood species with the required design values may be used.)

Quality Assurance for Preserved Wood

To comply with model building codes, preserved wood must meet American Wood Protection Association (AWPA) Standards and bear the mark of an accredited American Lumber Standards Committee (ALSC) quality assurance agency.

The WWPI CheckMark, shown near the center of the facsimile label below, makes it to easy to locate and recognize the various ALSC-accredited agency trademarks. AWPA standards require the CheckMark and third-party agency logo be included on labels of sawn preserved wood products as an indicator the products were treated to AWPA standards.

The facsimile label below indicates information required by model codes to be included on the label.

Typical End Label