

SECTION 06 0573

WOOD TREATMENT

This master specification section has been prepared by Viance LLC for use in the preparation of a project specification section covering fire-retardant and preservative treatments for wood decking, fencing, and framing.

This specification is a part of the SpexPlus™ system, which comprises a full architectural master specification that can be used to specify all project requirements.

The following should be noted in using this specification:

Hypertext links to specific websites are included after manufacturer names and names of organizations whose standards are referenced within the text, to assist in product selection and further research.

Hypertext links are contained in parenthesis and shown in blue, e.g.:

(www.spexplus.net)

Optional text requiring a selection by the user is enclosed within brackets, e.g.: "Section [09 0000.] [____.]"

Items requiring user input are enclosed within brackets, e.g.: "Section [____ - ____]."

Optional paragraphs are separated by an "OR" statement, e.g.:

**** OR ****

Sustainable requirements are included for projects requiring LEED certification, and are included as green text. For additional information on LEED, visit the U.S. Green Building Council website at www.usgbc.org.

For assistance on the use of the products in this section, contact Viance LLC by calling 800-421-8661, by email at productinfo@viance.net, or visit their website at www.treatedwood.com.

For assistance with obtaining or using the SpexPlus™ Master Specification System contact SpexPlus by calling 1-888-877-SPEX (1-888-877-7739), by email at chaney@spexplus.net, or visit our website at www.spexplus.net.

1. GENERAL

1. SUMMARY

Edit the following paragraphs to include only those items specified in this section.

A. Section Includes:

1. Fire-retardant treated [lumber] [plywood] [and] [finish wood.]
2. Preservative treated [lumber] [plywood] [and] [finish wood.]

Coordinate the following paragraphs with other sections in the project manual.

A. Related Sections:

1. Division 01: Administrative, procedural, and temporary work requirements.
2. Section [06 1000 - Rough Carpentry] [06 1100 - Wood Framing] [06 1200 - Structural Panels] [06 1300 - Heavy Timber] [06 1600 - Sheathing] [06 1700 - Shop-Fabricated Structural Wood] [06 1800 - Glued-Laminated Construction] [____ - ____]: Wood [framing] [and] [sheathing] to receive wood treatment.
3. Section [06 1400 - Wood Foundations] [____ - ____]: Wood foundations to receive wood treatment.

4. Section [06 1500 - Wood Decking] [____ - _____]: Wood decking to receive wood treatment.
5. Section 06 2000 - Finish Carpentry] [06 4000 - Architectural Woodwork] [____ - _____]: Finish wood to receive wood treatment.
6. Section [32 3129 - Wood Fences and Gates] [____ - _____]: Wood [fences] [and] [gates] to receive wood treatment.

1. REFERENCES

In the following paragraphs, retain only those reference standards that are used elsewhere in this section.

- A. American National Standards Institute/American Forest and Paper Association (ANSI/AF&PA) (www.ansi.org) - Permanent Wood Foundation Design Specification.
- A. ASTM International (ASTM) (www.astm.com):
 1. A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 2. A653 / A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 3. D3201 Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Base Products.
 4. D5516 Standard Test Method for Evaluating the Flexural Properties of Fire-Retardant Treated Softwood Plywood Exposed to Elevated Temperatures.
 5. D5664 Standard Test Method for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant Treated Lumber.
 6. D6305 Standard Practice for Calculating Bending Strength Design Adjustment Factors for Fire retardant Treated Plywood Roof Sheathing.
 7. E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- A. American Wood-Protection Association (AWPA) (www.awpa.com):
 1. E12 - Standard method of determining the corrosion of metal in contact with wood.
 2. M4 - Standard for the Care of Preservative Treated Wood Products.
 3. P5 - Standard for Waterborne Preservatives.
 4. P17 - Fire Retardant Formulations.
 5. P23 - Standard for Chromated Copper Arsenate Type C (CCA-C).
 6. P25 - Standard for Inorganic Boron (SBX).
 7. P26 - Standard for Alkaline Copper Quat Type A (ACQ-A).
 8. P27 - Standard for Alkaline Copper Quat Type B (ACQ-B).
 9. P28 Standard for Alkaline Copper Quat Type C (ACQ-C).
 10. P29 Standard for Alkaline Copper Quat Type D (ACQ-D).
 11. P47 - Standard for DCOI/Imidacloprid/Stabilizer, Waterborne (EL2).
 12. P50 Standard for Fire Retardant FR-2 (FR-2).
 13. T1 - Use Category System: Processing and Treatment Standard.
 14. U1 - Use Category System: User Specification for Treated Wood.
- A. City of Los Angeles, California - Building Code.
- A. City of New York, New York - Building Code.
- A. Hawaiian Local Building Code Standards.
- A. International Code Council (ICC) (www.iccsafe.org):
 1. International Building Code (IBC).
 2. International Residential Code (IRC).
 3. Evaluation Report 1851.
 4. Evaluation Report 2644.
 5. Evaluation Report 2645.

- A. National Fire Protection Association (NFPA) (www.nfpa.org) 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.
- A. Southern Pine Council (SPC) (www.southernpine.com) - Permanent Wood Foundations - Design and Construction Guide.
- A. Underwriters Laboratories, Inc. (UL) (www.ul.com) 723 - Tests for Surface Burning Characteristics of Building Materials.

1. SUBMITTALS

Limiting submittals to only those actually required helps to minimize liability arising from the review of submittals. Minimize submittals on smaller, less complex projects.

Include the following for submission of shop drawings, product data, and samples for the Architect's review.

- A. Submittals for Review:
 1. Product Data: Manufacturer's instructions for use, including requirements for storage, cutting, and finishing.

Include the following for submission of quality control submittals. These submittals are intended for the Owner's record purposes and are not intended to be reviewed by the Architect.

- A. Quality Control Submittals:
 1. Preservative Treatment Certification: Treating plant's certification of compliance with specified standards, process employed, and preservative retention values.
 2. Fire-Retardant Treatment Certification: Treating plant's certification of compliance with specified requirements.

Include the following for submission of sustainable design submittals.

- A. Sustainable Design Submittals:
 1. Regional Materials.

1. QUALITY ASSURANCE

The following paragraph specifies a minimum level of experience required of the parties performing the work of this section. Retain if required, and edit to suit project requirements.

- A. Wood Treatment Plant Qualifications:
 1. Minimum [5] [] years experience in work of this Section.
 2. Licensed by wood treatment manufacturer.
- A. Obtain treated wood products from single source.
- A. Mark each piece of plywood and lumber indicating compliance with specified requirements.
- A. Provide fire retardant treatment complying with following:
 1. ICC IBC.
 2. ICC IRC.

In the following paragraph select 1851 for EL2 and Ecolife, 2644 for Preserve ACQ, and 2645 for D-Blaze.

1. ICC Evaluation Report [1851.] [2644.] [2645.]
2. City of Los Angeles Building Code, RR24502.
3. City of New York, New York Building Code, MEA 406 and MEA 407.
4. Hawaiian Local Building Code Standards.

- A. Independent Third Party Inspection: Provide inspections of wood treatment plant.
- A. Kiln Dry after Treatment (KDAT) Materials: Kiln dry after treatment to 19 percent maximum moisture content for lumber and 18 percent for plywood in accordance with AWWA T1, Section 7 - Drying After Treatment (lumber) and AWWA T1, Section F: Pressure treated composites (3c) kiln drying after treatment.

1. DELIVERY, STORAGE AND HANDLING

- A. Protect wood products against moisture and dimensional changes during transit and storage in accordance with instructions from treating plant.
- A. Store treated products above ground.

1. WARRANTIES

Edit the following to indicate desired warranty term.

- A. Provide manufacturer's standard [20 year] [40 year] [50 year] [lifetime] transferable limited warranty for pressure-treated wood.

PART 2 PRODUCTS

1. MANUFACTURERS

- A. Contract Documents are based on products by Viance LLC. (www.treatedwood.com)

Edit the following to indicate whether or not substitutions will be permitted for the products in this section.

- A. Substitutions: [Under provisions of Division 01.] [Not permitted.]

1. MATERIALS

Coordinate the following paragraphs with other sections in the project manual.

- A. Dimension Lumber: Specified in Section [06 1000.] [06 1100.] [06 1300.] [06 1400.] [06 1500.] [06 1700.] [06 1800.] [32 3129.]
- A. Plywood: Specified in Section [06 1000.] [06 1100.] [06 1200.] [06 1600.]
- A. Finish Lumber and Plywood: Specified in Section [06 2000.] [06 4000.]
- A. Fasteners and Metal Hardware In Preservative Treated Wood; for treated wood and [wood in ground contact] [subject to high relative humidity] [exposed to weather]:
 - 1. Fasteners: Hot-dip zinc galvanized to ASTM A153/A153M.
 - 2. Hardware: ASTM A653/A653M, Class G185 galvanized.
 - 3. In accordance with ICC ESR-2644.
- A. Fasteners In Fire-Retardant Treated Wood: In accordance with ICC Evaluation Report 2645.

1. PRESERVATIVE PRESSURE TREATMENT OF WOOD

Lumber and plywood treated with TimberSaver PT is designed for use in above ground applications protected from the weather. Select 0.25 lb/cu ft for protection against North American subterranean termites, decay and insects and 0.42 lb/cu ft for protection against North America subterranean termites, Formosan termites and insects.

- A. Preservative Treatment - above-ground use continuously protected from liquid water:
1. Treatment: TimberSaver PT (SBX) in accordance with AWPA U1 and P5 and P25.
 2. Use 0.25 lb/cu ft (4kg/m³) Disodium Octaborate Tetrahydrate (DOT) minimum retention (0.17 lb/cu ft (2.7 kg/m³) as B₂O₃ equivalent) retention.

**** OR ****

1. Use 0.42 lb/cu ft. (6.7 kg /m³) Disodium Octaborate Tetrahydrate (DOT) minimum retention (0.28 lb/cu ft.(4.5 kg/m³) as B₂O₃ equivalent) in accordance with AWPA U1 or Hawaiian Building Code Standards as appropriate.

Lumber and plywood treated with TimberSaver 40 is designed for use in above ground applications protected from the weather, For protection against North American subterranean termites, Formosan termites and insects.

1. Treatment: TimberSaver 40 (SBX) in accordance with AWPA U1 and P5 and P25.
2. Use 0.42 lb/cu ft. (6.7 kg /m³) Disodium Octaborate Tetrahydrate (DOT) minimum retention (0.28 lb/cu ft.(4.5 kg/m³) as B₂O₃ equivalent) in accordance with AWPA U1 or Hawaiian Building Code Standards as appropriate.

Edit the following paragraphs to suit project requirements.

1. Treat wood in following locations:
 - a. Framing lumber, studs, sill plates, floor joists, roof rafters, trusses, and plywood.
 - b. Interior sheathing, furring strips, flooring, moldings, and wood trim.

ACQ (alkaline copper quaternary) preservatives variously branded as ACQ®, Preserve® or PreservePlus® are used to pressure treat a wide variety of commercially available timber species including Douglas fir. Minimum preservative retention levels for various applications are provided in the American Wood Protection Association Standards or in the ICC ESR 2644. Preserved wood products are designed for long term performance in outdoor applications and therefore require building code approved high quality corrosion resistant nails, screws and other fastening systems. In addition building code approved corrosion resistant metal hardware such as joist hangers should also be used. Direct contact of ACQ preserved wood with aluminum or uncoated mild steel is not recommended. ACQ is not approved for use in marine immersion (saltwater) applications, ACQ was awarded a US EPA Presidential Green Chemistry Award in 2002.

Ecolife is protected with a revolutionary, non-metallic preservative plus wood stabilizer system. Ecolife Stabilized Weather Resistant Wood was the first decking product to receive NAHB Research Center National Green Building Certification as a "Green Approved Product", eligible to contribute points toward certification of a building under the National Green Building Standard(TM). Ecolife Stabilized Weather-Resistant Wood is protected with Ecovance® preservative-the active ingredient of which was awarded a US EPA Presidential Green Chemistry Award in 1996 for its use in other applications. Ecolife Stabilized Weather-Resistant Wood is an environmentally preferred building product that enhances the strength and long-term natural beauty of your deck projects -with significantly lower maintenance. Ecolife Stabilized Weather-Resistant Wood is not approved for use in ground contact, fresh water immersion or salt water immersion.

- A. Preservative Treatment - Above ground decking, fencing, handrails, joists, subflooring, roof decks, and sheathing:
1. Treatment: ACQ as manufactured for Viance in accordance with AWPA U1 and P5, P26, P27, P28, P29 or ICC ESR 2644 as appropriate.
 2. Use 0.15 lb/cu ft (2.4 kg/m³) of ACQ in accordance with U1 or ICC ESR 2644 as appropriate.

**** OR ****

1. Treatment: EL 2 or EcoLife II as manufactured by Viance.
2. Use 0.019 lb/cu ft (0.3 kg/m³) of EL2 (+ 0.2 lb/cu ft MCS) in accordance with AWPA U1 or use 0.0187 lb/cu ft (0.3kg/m³) Ecolife II in accordance with ESR 1851 as appropriate.

Edit the following paragraphs to suit project requirements.

1. Treat wood in following locations:
 - a. In contact with roofing, flashing, or waterproofing.
 - b. In contact with masonry or concrete.
 - c. Within 18 inches (450 mm) of grade.
 - d. Exposed to weather.
 - e. Other locations indicated.
- A. Preservative Treatment - Ground and fresh water contact: fence posts, landscaping, piers and docks:
 1. Treatment: ACQ as manufactured for Viance in accordance with AWPA U1 and ICC ESR 2644.
 2. Use 0.40 lb/cu ft (6.4 kg/m³) of ACQ in accordance with U1 or ICC ESR 2644 as appropriate.
 3. If required, kiln dry after treatment to 19 percent maximum moisture content for lumber and 18 percent for plywood.

Edit the following paragraphs to suit project requirements.

1. Treat wood in the following locations:
 - a. In contact with ground.
 - b. In contact with fresh water.
 - c. Used as posts, landscaping timbers, retaining walls, piers, or docks.
- A. Preservative Treatment - Wood foundation systems - permanent wood foundations, and crawl spaces:
 1. Pressure-treat softwood lumber, timber, and plywood for wood foundation systems with waterborne preservatives to comply with AWPA U1.
 2. Treatment: ACQ as manufactured for Viance in accordance with AWPA U1 or ICC ESR 2644.
 3. Use 0.60 lb/cu ft (9.6 kg/m³) of ACQ in accordance with U1 or NER 643 as appropriate.

SupaTimber® Clean and odor-free pressure treatment contains waterborne arsenical preservatives and requires some precautions in use and handling.

- A. Preservative Treatment - salt water splash zone exposure:
 1. Pressure-treat softwood lumber, timber, and plywood for salt water splash with waterborne preservatives to comply with AWPA U1.
 2. Treatment: ACQ as manufactured for Viance in accordance with AWPA U1 or ICC ESR 2644.
 3. Retention: 0.60 lb/cu ft (9.6 kg/m³) of ACQ in accordance with U1 or ICC ESR 2644 as appropriate.

1. CCA PRESERVATIVE PRESSURE TREATMENT OF WOOD

- A. Preservative Treatment of Lumber and Plywood - above ground use (UC3) in accordance with US EPA supplemental label requirements for forest products treated with CCA:
 1. Treatment: CCA Type C manufactured by CSI in accordance with AWPA U1, P5 and P23.
 2. Use 0.25 lb/cu ft (4 kg/m³) of CCA type C in accordance with AWPA U1.
 3. When required, kiln dry after treatment to 19 percent maximum moisture content for lumber and 18 percent for plywood recommended in accordance with AWPA T1 Section 7 - Drying After Treatment (lumber) and AWPA T1 Section F Pressure treated composites (3c) kiln drying after treatment.

Edit the following paragraphs to suit project requirements.

1. Treat wood for use in following locations:
 - a. In contact with roofing, flashing, or waterproofing.
 - b. In contact with masonry or concrete.
 - c. Within 18 inches (450 mm) of grade.

- d. Exposed to weather.
 - e. Other locations indicated.
- A. Preservative Treatment of Lumber and Plywood - ground and fresh water contact (UC4A) in accordance with US EPA supplemental label requirements for forest products treated with CCA:
- 1. Treatment: CCA type C manufactured by CSI in accordance with AWPA U1, P5 and P23.
 - 2. Use 0.40 lb/cu ft (6.4 kg/m³) of CCA type C retention in accordance with AWPA U1.
 - 3. When required, kiln dry after treatment to 19 percent maximum moisture content for lumber and 18 percent for plywood recommended in accordance with AWPA T1 Section 7 - Drying After Treatment (lumber) and AWPA T1 Section F Pressure treated composites (3c) kiln drying after treatment.

Edit the following paragraphs to suit project requirements.

- 1. Treat wood in the following locations:
 - a. In contact with ground.
 - b. In contact with fresh water.
 - c. Used as posts, landscaping timbers, retaining walls, piers, or docks.
- A. Preservative Treatment of Lumber and Plywood - wood foundation systems UC4B in accordance with US EPA supplemental label requirements for forest products treated with CCA:
- 1. Pressure-treat softwood lumber, timber, and plywood for wood foundation systems with CCA type C manufactured by CSI in accordance with AWPA U1, P5 and P23.
 - 2. Use 0.60 lb/cu ft (9.6 kg/m³) retention of CCA type C to comply with AWPA U1.
- A. Preservative Treatment of Lumber and Plywood - salt water splash zone uses (UC4B) in accordance with US EPA Supplemental label requirements for forest products treated with CCA
- 1. Pressure treat softwood lumber, timber and plywood with CCA type C manufactured by CSI in accordance with AWPA U1, P5 and P23.
 - 2. Use 0.60 lb/cu ft (9.6 kg/m³) retention of CCA type C to comply with AWPA U1
- A. Preservative Treatment - Poles (UC4B) in Accordance with US EPA Supplemental label requirements for forest products treated with CCA:
- 1. Pressure treat poles with CCA type C manufactured by CSI in accordance with AWPA U1, P5 and P23.
 - 2. Use 0.60 lb/cu ft (9.6 kg/m³) retention of CCA type C to comply with AWPA U1.
- A. Preservative Treatment of Wood - fresh water and land round piles (UC4C) in accordance with US EPA Supplemental label requirements for forest products treated with CCA:
- 1. Pressure treat wood with CCA type C manufactured by CSI in accordance with AWPA U1, P5 and P23.
 - 2. Use 0.80 lb/cu ft (12.8 kg/m³) retention of CCA type C to comply with AWPA U1.
- A. Preservative Treatment - wood for salt water immersion (Marine Use) (UC5) in accordance with the US EPA Supplemental label requirements for forest products treated with CCA:
- 1. Pressure treat wood with CCA Type C manufactured by CSI in accordance with AWPA U1, P5 and P23.
 - 2. Use retentions of CCA Type C appropriate for the marine exposure zone to comply with AWPA U1.
1. FIRE RETARDANT PRESSURE TREATMENT OF LUMBER AND PLYWOOD
- A. Fire Retardant Treatment - wood, including roof and floor trusses, roof decks and sheathing; subflooring, beams and purlins, blocking and furring, studs, joists and paneling, architectural millwork and trim, interior non-load bearing partitions and exterior load-bearing walls:
- 1. Lumber: Comply with AWPA U1 UCFA, Type A or ICC-ES ESR 2645.
 - 2. Plywood: Comply with AWPA U1, UCFA, Type A or ICC-ES ESR 2645.

3. Bear UL Recognition Mark R10647, R15861, or R10950.
4. Surface Burning Characteristics: UL FR-S rating; or flame spread and smoke developed ratings of 25 or less in a test of 30 minutes' duration in accordance with IBC Section 2303.2.
5. Treatment: D-Blaze FRT as manufactured by Viance.
6. Kiln dry after treatment to 19 percent maximum moisture content for lumber and 15 percent for plywood.

Edit the following paragraphs to suit project requirements.

1. Treat wood used for following applications:
 - a. Roof and floor trusses.
 - b. Roof decks and sheathing.
 - c. Subflooring.
 - d. Beams and purlins.
 - e. Blocking and furring.
 - f. Interior non-load bearing partitions.
 - g. Studs and joists.
 - h. Exterior load-bearing walls protected by weather barrier.
 - i. Millwork and trim.

a. EXECUTION

1. INSTALLATION

- A. Install treated wood as specified in referenced specification sections.
- A. Preservative Treated Wood: Treat field cuts on members that provide structural support to permanent structure in accordance with AWPA M4.
- A. Wood Foundation System: Install in accordance with [ANSI/AF&PA Permanent Wood Foundation Design Specification.] [SPC Permanent Wood Foundations, Design and Construction Guide.]
- A. Fire-Retardant Treated Wood:
 1. Comply with manufacturer's installation instructions.
 2. End cuts and drilling permitted; do not rip or mill lumber after fire-retardant treatment.

END OF SECTION