# Listing and Technical Evaluation Report™

**A Duly Authenticated Report from an Approved Agency**

**Report No: 1703-14**

Issue Date: May 16, 2017

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Subject to Renewal: July 1, 2027

## TechWood 2200EX Preservative Treated Wood Protection

### Trade Secret Report Holder:

### Chemical Technologies Holding Corporation

Phone: 772-242-8939 Website: www.techwoodtreatments.com Email: connect@techwoodtreatments.com

### CSI Designations:

**DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES**

Section: 06 05 73 - Fire Retardant Wood Treatment of Wood Products Section: 06 11 00 - Wood Framing Section: 06 12 00 - Structural Panels

## 1 Innovative Product Evaluated[1]

1.1 TechWood 2200EX (TW2200EX) Custom Blended Treated Wood Protection

1.1.1 This product is intended for use where preservative treated lumber is required by the applicable code.

## 2 Product Description and Materials

2.1 The innovative product evaluated in this report is shown in **Figure 1** and an example of the product label is provided in **Figure 2**.



**Figure 1**. TechWood 2200EX (TW2200EX) Treated Wood Protection


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**Figure 2**. Example of Acceptable TechWood 2200EX Product Stamp

2.2 TechWood 2200EX is a custom blended factory-treated wood penetrant protection that uses a proprietary formulation of Disodium Octaborate Tetrahydrate (DOT), biocides, pre-stain concentrate, and a water repellant additive to permanently impregnate various wood substrates.

2.2.1 TechWood 2200EX is not a coating application as coating is used in the context of IBC Chapter 2, and is not a paint or stain pursuant to IBC Chapter 2, where there is no contextual definition.

2.3 The wood products covered in this report include:

2.3.1 Dimensional wood and timber species including mixed Southern Pine (SP), Spruce-Pine-Fir (SPF), Hem Fir (HF), and Douglas-Fir (DF).

2.4 TechWood 2200EX provides a minimum DOT loading of 0.0072 g/in$^2$ (minimum application rate) and a minimum total loading of 0.054 g/in$^2$.

2.5 TechWood 2200EX protected products are acceptable for use in the following AWPA Use Categories:[2]

2.5.1 *UC1 Interior/Dry Construction:* millwork and finishing

2.5.2 *UC2 Interior/Damp Construction:* interior beams, timbers, flooring, framing, millwork, and sill plates

2.5.3 *UC3A Above Ground (Exterior) Protected:* coated millwork, siding, fence pickets, and trim in a vertical state

2.5.4 *UC3B Above Ground (Exterior):* deck joists and beams only. See **Section 9.5** for specific use requirements for deck joists and beams.

2.6 TechWood 2200EX incorporates a stain available currently in seven colors and other additives, which provide a protective coating to the treated lumber. Additional coating is permitted, but is not required.

2.7 TechWood 2200EX custom blended wood protection treatment is supplied by Chemical Technologies Holding Corporation (ChemTech) and is used by the Listees in **Section 13.2** to treat wood products in accordance with the manufacturer requirements.

2.8 As needed, review material properties for design in **Section 6** and the regulatory evaluation in **Section 8**.


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## 3 Definitions[3]

3.1 New Materials[4] are defined as building materials, equipment, appliances, systems, or methods of construction, not provided for by prescriptive and/or legislatively adopted regulations, known as alternative materials.[5] The design strength and permissible stresses shall be established by tests[6] and/or engineering analysis.[7]

3.2 Duly authenticated reports[8] and research reports[9] are test reports and related engineering evaluations that are written by an approved agency[10] and/or an approved source.[11]

3.2.1 This report utilizes intellectual property and/or trade secrets to create public domain material properties for commercial end-use.

3.2.1.1 This report protects confidential Intellectual Property and trade secrets under the regulation, 18.US.Code.90, also known as Defend Trade Secrets Act of 2016 (DTSA).[12]

3.3 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is accredited and listed in the ANAB directory.

3.4 An approved source is *"approved"* when a professional engineer (i.e., Registered Design Professional, hereinafter RDP) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.[13]

3.5 Testing and/or inspections conducted for this duly authenticated report were performed by an ISO/IEC 17025 accredited testing laboratory, an ISO/IEC 17020 accredited inspection body, and/or a licensed RDP.

3.5.1 The Center for Building Innovation (CBI) is ANAB[14] ISO/IEC 17025 and ISO/IEC 17020 accredited.

3.6 The regulatory authority shall enforce[15] the specific provisions of each legislatively adopted regulation. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in writing[16] stating the nonconformance and the path to its cure.

3.7 The regulatory authority shall accept duly authenticated reports from an approved agency and/or an approved source with respect to the quality and manner of use of new materials or assemblies as provided for in regulations regarding the use of alternative materials, designs, or methods of construction.[17]

3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) signatory. Therefore, recognition of certificates and validation statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope shall be approved.[18] Thus, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent,[19] and can be used in any country that is an MLA signatory found at this link: https://iaf.nu/en/recognised-abs/

3.9 Approval equity is a fundamental commercial and legal principle.[20]

## 4 Applicable Local, State, and Federal Approvals; Standards; Regulations[21]

4.1 *Local, State, and Federal*

4.1.1 Approved in all local jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured local jurisdictions: Austin, Baltimore, Broward County, Chicago, Clark County, Dade County, Dallas, Detroit, Denver, DuPage County, Fort Worth, Houston, Kansas City, King County, Knoxville, Las Vegas, Los Angeles City, Los Angeles County, Miami, Nashville, New York City, Omaha, Philadelphia, Phoenix, Portland, San Antonio, San Diego, San Jose, San Francisco, Seattle, Sioux Falls, South Holland, St. Louis County, Texas Department of Insurance, and Wichita.[22]

4.1.2 Approved in all state jurisdictions pursuant to ISO/IEC 17065 duly authenticated report use, which includes, but is not limited to, the following featured states: California, Florida, New Jersey, Oregon, New York, Texas, Washington, and Wisconsin.[23]


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4.1.3 Approved by the Code of Federal Regulations Manufactured Home Construction: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[24] and Part 3280[25] pursuant to the use of ISO/IEC 17065 duly authenticated reports.

4.1.4 Approved means complying with the requirements of local, state, or federal legislation.

4.2 *Regulations*

4.2.1 *IBC – 18, 21, 24: International Building Code®*

4.2.2 *IRC – 18, 21, 24: International Residential Code®*

4.3 *Standards*

4.3.1 *ANSI/AWC NDS: National Design Specification (NDS) for Wood Construction*

4.3.2 *ASTM D198: Standard Test Methods of Static Tests of Lumber in Structural Sizes*

4.3.3 *ASTM D3273: Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*

4.3.4 *ASTM D4587: Standard Practice for Fluorescent UV-Condensation Exposures of Paint and Related Coatings*

4.3.5 *ASTM D5590: Standard Test Method for Determining the Resistance of Paint Films and Related Coatings to Fungal Defacement by Accelerated Four-Week Agar Plate Assay*

4.3.6 *AWPA E1: Laboratory Methods for Evaluating the Termite Resistance of Wood-based Materials: Choice and No-choice Tests*

4.3.7 *AWPA E10: Laboratory Method for Evaluating the Decay Resistance of Wood-Based Materials Against Pure Basidiomycete Cultures: Soil/Block Test*

4.3.8 *AWPA E12: Standard Method of Determining Corrosion of Metal in Contact with Treated Wood*

4.3.9 *AWPA E21: Standard Field Test Method for the Evaluation of Wood Preservatives to be Used for Interior Applications (UC1 and UC2); Full-size Commodity Termite Test*

4.3.10 *AWPA M4: Standard for the Care of Preservative-Treated Wood Products*

4.3.11 *AWPA U1: Use Category System: User Specification for Treated Wood*

## 5 Listed[26]

5.1 Equipment, materials, products, or services included in a List published by a nationally recognized testing laboratory (e.g., CBI), an approved agency (e.g., CBI and DrJ), and/or an approved source (e.g., DrJ), or other organization(s) concerned with product evaluation (e.g., DrJ), that maintains periodic inspection (e.g., CBI) of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

## 6 Tabulated Properties Generated from Nationally Recognized Standards

6.1 TechWood 2200EX (TW2200EX) is a custom blended preservative and protective treatment for wood products.

6.1.1 Applications include, but are not limited to, use as fence pickets in a vertically installed state, as shown in **Figure 1**.

6.1.2 Use in above ground UC 3A applications exposed to all weather cycles, including intermittent wetting and in direct contact with concrete or masonry is approved.

6.2 Products protected by TechWood 2200EX meet the requirements of ASTM D3279 and ASTM D5590 where protection against decay is required.

6.3 Products protected by TechWood 2200EX meet the requirements of AWPA E1 where protection against termite attack is required.


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6.4 Field cuts, notches or bored holes must be treated in the field in accordance with the manufacturer instructions and AWPA M4, consistent with IRC Section R304.1.1[27] and IRC Section R305.1.2.[28]

6.5 *Design*

6.5.1 Allowable design stresses for products protected with TechWood 2200EX for dry conditions of use, are the same as the wood product before treatment.

6.5.2 TechWood 2200EX is factory-treated preservative wood protection providing permanent impregnation with low or no pressure chemical delivery treatment. The wood is not incised, so the NDS Incising Factor in NDS Section 4.3.8 is not applicable.

6.5.3 Duration of load design stress increase shall be in accordance with NDS Section 2.3.2.

6.5.4 The design provisions for wood construction noted in IBC Section 2302.1 and IRC Section R301.1.3 apply to TechWood 2200EX protected products, unless otherwise noted in this report.

6.5.5 *Connections:*

6.5.5.1 Lateral loads for nails, screws, and bolts, in addition to withdrawal loads for nails and screws installed in TechWood 2200EX protected products, shall be in accordance with the NDS, using the published design values of each lumber grade and species.

6.5.6 *Fasteners:*

6.5.6.1 Fasteners used with TechWood 2200EX protected products shall be stainless steel, aluminum, hot-dipped galvanized, or electro-galvanized in accordance with IBC Section 2304.10.5 and IRC Section R304.3.[29]

6.6 Alternative techniques shall be permitted in accordance with accepted engineering practice and experience. These provisions for the use of alternative materials, designs, and methods of construction are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed herein. This includes, but is not limited to, the following areas of engineering: mechanics of materials, structures, building science, and fire science.

## 7 Certified Performance[30]

7.1 All construction methods shall conform to accepted engineering practices to ensure durable, livable, and safe construction and shall demonstrate acceptable workmanship reflecting journeyman quality of work of the various trades.[31]

7.2 The strength and rigidity of the component parts and/or the integrated structure shall be determined by engineering analysis or by suitable load tests to simulate the actual loads and conditions of application that occur.[32]

## 8 Regulatory Evaluation and Accepted Engineering Practice

8.1 TechWood 2200EX (TW2200EX) has been evaluated to determine its suitability to treat wood products used in above ground applications where they are required by code to provide the following:

8.1.1 Preservative-treated wood as required by IBC Section 2303.1.9, IRC Section R304,[33] and IRC Section R305.[34]

8.1.1.1 Resistance to fungal decay as required by IBC Section 2304.12 and IRC Section R304.[35]

8.1.1.1.1 Inhibition of mold growth in accordance with ASTM D3273 and D5590.

8.1.1.2 Protection from subterranean termites, including Formosan, where required by IBC Section 2304.12.2 and IRC Section R305.[36]

8.1.2 Flexure (MOR/MOE) of preservative-treated wood as required by IBC Section 2303.1.9, IRC Section R304,[37] and IRC Section R305.[38]


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8.2 Any building code, regulation and/or accepted engineering evaluations (e.g., research reports, duly authenticated reports, etc.) that are conducted for this Listing were performed by DrJ, which is an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDP or approved sources. DrJ is qualified[39] to practice product and regulatory compliance services within its scope of accreditation and engineering expertise,[40] respectively.

8.3 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise, which is also its areas of professional engineering competence.

## 9 Installation

9.1 Installation shall comply with the approved construction documents, the manufacturer installation instructions, this report, and the applicable building code.

9.2 In the event of a conflict between the manufacturer installation instructions and this report, contact the manufacturer for counsel on the proper installation method.

9.3 Products treated with TechWood 2200EX shall be installed in accordance with the applicable code, the approved construction documents, this report, the manufacturer instructions, and standard framing practice as applied to solid-sawn lumber, as applicable.

9.4 In the event of a conflict between any of the above and this report, the more restrictive shall govern.

9.5 *Use as Deck Joists and Beams in AWPA UC3B Above Ground (Exterior) Applications*

9.5.1 TechWood 2200EX may be used as an alternative to deck joists and beams requiring AWPA UC3B designations.

9.5.2 When used as deck joists or beams, TechWood 2200EX shall be installed with self-adhering and self-sealing joist tape on the top edge of the joist.

9.5.2.1 The tape shall overhang the joist or beam 1/4" beyond each top of joist edge.

## 10 Substantiating Data

10.1 Testing has been performed under the supervision of a professional engineer and/or under the requirements of ISO/IEC 17025 as follows:

10.1.1 Fungal decay testing in accordance with AWPA E10

10.1.2 Mold growth inhibition testing in accordance with ASTM D3273 and ASTM D5590

10.1.3 Termite resistance testing in accordance with AWPA E1 and AWPA E21

10.1.4 Reaction with metals testing in accordance with AWPA E12

10.1.5 Flexure (MOR/MOE) testing of LVL/EWP in accordance with ASTM D198

10.2 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies, approved sources, and/or an RDP. Accuracy of external test data and resulting analysis is relied upon.

10.3 Where applicable, testing and/or engineering analysis are based upon provisions that have been codified into law through state or local adoption of regulations and standards. The developers of these regulations and standards are responsible for the reliability of published content. DrJ's engineering practice may use a regulation-adopted provision as the control. A regulation-endorsed control versus a simulation of the conditions of application to occur establishes a new material as being equivalent to the regulatory provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.


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10.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, or duly authenticated reports from approved agencies and/or approved sources provided by the supplier. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this duly authenticated report, may be dependent upon published design properties by others.

10.5 *Testing and Engineering Analysis*

10.5.1 The strength, rigidity, and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.[41]

10.6 Where additional condition of use and/or regulatory compliance information is required, please search for TechWood 2200EX on the DrJ Certification website.

## 11 Findings

11.1 As outlined in **Section 6**, TechWood 2200EX (TW2200EX) has performance characteristics that were tested and/or meet applicable regulations. In addition, they are suitable for use pursuant to its specified purpose.

11.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, TechWood 2200EX shall be approved for the following applications:

11.2.1 Use in direct contact with concrete or masonry is approved.

11.2.2 TechWood 2200EX protected products are suitable for aboveground applications exposed to all weather cycles, including intermittent wetting.

11.2.3 When used in exterior applications, products treated with TechWood 2200EX must be installed in a vertical application.

11.2.4 Mold growth inhibition is in accordance with ASTM D3273 and D5590.

11.2.5 Products protected with TechWood 2200EX meet the requirements of IBC Section 2304.12 and IRC Section R304,[42] where protection against decay is required.

11.2.6 Products protected with TechWood 2200EX meet the requirements of IBC Section 2304.12 and IRC Section R305,[43] where protection against termite attack is required.

11.3 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Chemical Technologies Holding Corporation.

11.3.1 IBC Section 2303.1.9 Preservative-Treated Wood states:

> Lumber, timber, plywood, piles and poles supporting permanent structures required by IBC Section 2304.12 to be preservative treated shall conform to AWPA U1 and M4…

11.3.2 See **Appendix A** for information on Impregnation Testing

11.4 IBC Section 104.2.3[44] (IRC Section R104.2.2[45] and IFC Section 104.2.3[46] are similar) in pertinent part state:

> **104.2.3 Alternative Materials, Design and Methods of Construction and Equipment.** The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative is not specifically prohibited by this code and has been approved.


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11.5 **Approved:**[47] Building regulations require that the building official shall accept duly authenticated reports.[48]

11.5.1 An approved agency is *"approved"* when it is ANAB ISO/IEC 17065 accredited.

11.5.2 An approved source is *"approved"* when an RDP is properly licensed to transact engineering commerce.

11.5.3 Federal law, Title 18 US Code Section 242, requires that, where the alternative product, material, service, design, assembly, and/or method of construction is not approved, the building official shall respond in writing, stating the reasons why the alternative was not approved. Denial without written reason deprives a protected right to free and fair competition in the marketplace.

11.6 DrJ is a licensed engineering company, employs licensed RDPs and is an ANAB Accredited Product Certification Body – Accreditation #1131.

11.7 Through the IAF Multilateral Arrangement (MLA), this duly authenticated report can be used to obtain product approval in any jurisdiction or country because all ANAB ISO/IEC 17065 duly authenticated reports are equivalent.[49]

## 12 Conditions of Use

12.1 As defined in **Section 6**, where material and/or engineering mechanics properties are created for load resisting design purposes, the resistance to the applied load shall not exceed the ability of the defined properties to resist those loads using the principles of accepted engineering practice.

12.2 As listed herein, TechWood 2200EX (TW2200EX) complies with the treatment required for engineered or solid sawn lumber as permitted by the codes listed in **Section 4**, subject to the following conditions:

12.2.1 The service conditions for TechWood 2200EX are any above ground application exposed to all weather cycles, including intermittent wetting.

12.2.2 Fastener design values shall be determined using the published design values of each lumber grade and species used in the treated product.

12.2.3 Cutting and notching of TechWood 2200EX preservative-treated products is permitted where allowed by the applicable building code, the manufacturer recommendations, this report, or where the effects of such alterations are specifically considered in the design of the member by an RDP.

12.2.3.1 Field cuts, notches, or bored holes must be treated in the field in accordance with the manufacturer instructions and AWPA M4 in compliance with IRC Section R304.1.1[50] and IRC Section R305.1.2.[51]

12.2.4 Duration of load increases shall be in accordance with the limitations of the applicable building code for sawn lumber, but not greater than 1.6.

12.2.5 TechWood 2200EX wood protection treatment is provided by the Listees in **Section 13.2** of this report, with quality control inspections by an approved third-party quality control inspection agency.

12.2.6 Products treated with TechWood 2200EX shall be kept free from prolonged exposure to soil, vegetation, leaf litter, or other debris that may build up along the fence line.

12.2.7 Products treated with TechWood 2200EX shall be installed with a 6" clearance between the ground and the bottom of the picket and shall not be installed in direct contact with permeable materials that are installed in direct contact with the ground.

12.2.8 Products treated with TechWood 2200EX shall not be installed in direct contact with non-durable, untreated wood, or older construction showing evidence of decay.

12.2.9 Products treated with TechWood 2200EX shall be protected from frequent or recurrent wetting, such as from watering systems. Exposure to incidental wetting from typical rainfall is approved.

12.2.10 Use in tropical climate zones is not approved.


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12.3 When required by adopted legislation and enforced by the building official, also known as the Authority Having Jurisdiction (AHJ) in which the project is to be constructed:

12.3.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice and, when prepared by an approved source, shall be approved when signed and sealed.

12.3.2 This report and the installation instructions shall be submitted at the time of permit application.

12.3.3 At a minimum, this innovative product shall be installed per **Section 9**.

12.3.4 The review of this report by the AHJ shall comply with IBC Section 104.2.3.2 and IBC Section 105.3.1.

12.3.5 This innovative product has an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.7.2, IBC Section 110.4, IBC Section 1703, IRC Section R104.7.2, and IRC Section R109.2.

12.3.6 The application of this innovative product in the context of this report is dependent upon the accuracy of the construction documents, implementation of installation instructions, inspection as required by IBC Section 110.3, IRC Section R109.2, and any other regulatory requirements that may apply.

12.4 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, *"the building official shall make, or cause to be made, the necessary tests and investigations; or the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 104.2.3"*, all of IBC Section 104, and IBC Section 105.3.

12.5 Design loads shall be determined in accordance with the regulations adopted by the jurisdiction in which the project is to be constructed and/or by the building designer (i.e., owner or RDP).

12.6 The actual design, suitability, and use of this report for any particular building, is the responsibility of the owner or the authorized agent of the owner.

## 13 Identification

13.1 TechWood 2200EX (TW2200EX) Custom Blended Treated Wood Protection, as listed in **Section 1.1**, is identified by a label on the board or packaging material bearing the manufacturer name, product name, this report number, and other information to confirm code compliance.

13.2 The following are the only approved product facilities for wood treated with TechWood 2200EX:

13.2.1 Location 201: Florida

13.2.2 Location 204: Indiana

13.2.3 Location 207: Ohio

13.2.4 Location 208: Washington

13.3 Additional technical information can be found at www.techwoodtreatments.com.

## 14 Review Schedule

14.1 This report is subject to periodic review and revision. For the latest version, visit www.drjcertification.org.

14.2 For information on the status of this report, please contact DrJ Certification.


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# Appendix A
## Impregnation Testing: Chemical Impregnation in Treated Wood

1. Chemical impregnation in treated wood by the proprietary application process and procedures recommended for TechWood 2200EX (TW2200EX) Treated Wood Protection by Chemical Technologies Holding Corporation.
   1.1. TW2200EX is a factory treated wood protection that uses a proprietary formulation of Disodium Octaborate Tetrahydrate (DOT), biocides for mold abatement to permanently impregnate members by zero to low-pressure chemical delivery.
   1.2. The results of the proprietary application process and procedures are found in *Figure 1*, below.
   1.3. The photos show the penetration of borate into regular framing lumber tested at 2-week and 4-week periods after initial treatment.
   1.4. The 2-part tracing reagents cause color dye reactions showing the chemicals penetration depth of $^{3}/_{16}$" – $^{9}/_{32}$" with both boron and phosphorus chemicals.
   1.5. This demonstrates that TW2200EX treatment provides permanent protection to all surfaces of the wood product.

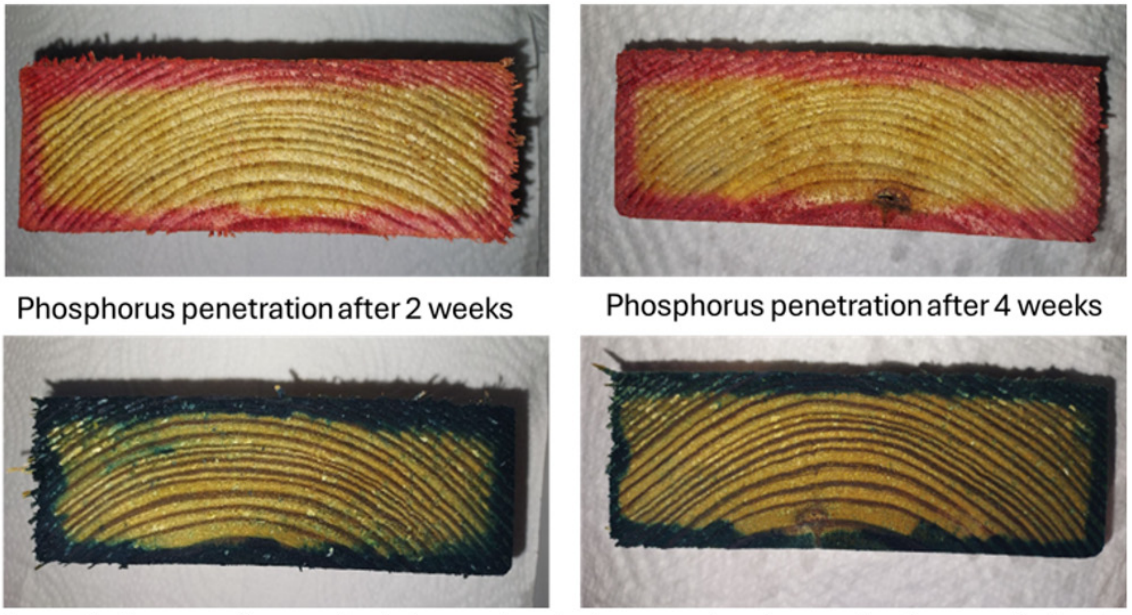



Figure 1. Dye reaction method shows chemical penetration in wood substrate. Red color indicates borate penetration, while dark blue color indicates phosphates penetration following AWPA A3-05 Standard Methods for Determining Penetration of Preservatives and Fire Retardants.


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# Notes

1 For more information, visit drjcertification.org or call us at 608-310-6748.

2 These are AWPA designated wood preservation systems and retentions (pressure impregnation processes only) that have been determined to be effective in protecting wood products under specified exposure conditions. The use of TechWood protective wood treatments, while purposely not included in the AWPA's specification, satisfies and complies with the intent of the building code and is a treated material equivalent in quality, strength, effectiveness, durability, and safety. Therefore, TechWood protective wood treatment treated articles are deemed non-AWPA standardized; however, the intent of the building code has been satisfied and is adequately supported by third-party verified data and accredited testing protocols. See IBC Section 104.11 for methods of obtaining *"Alternative Materials Approval"* via building official authority.

3 Capitalized terms and responsibilities are defined pursuant to the applicable building code, applicable reference standards, the latest edition of TPI 1, the NDS, AISI S202, US professional engineering law, Canadian building code, Canada professional engineering law, Qualtim External Appendix A: Definitions/Commentary, Qualtim External Appendix B: Project/Deliverables, Qualtim External Appendix C: Intellectual Property and Trade Secrets, definitions created within Design Drawings and/or definitions within Reference Sheets. Beyond this, terms not defined shall have ordinarily accepted meanings as the context implies. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

4 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1702

5 Alternative Materials, Design and Methods of Construction and Equipment: The provisions of any regulation code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by a regulation. Please review https://www.justice.gov/atr/mission and https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3

6 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.2:~:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests

7 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design of accepted engineering practice. https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1706.1:~:text=Conformance%20to%20Standards-,The%20design%20strengths%20and%20permissible%20stresses,-of%20any%20structural

8 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1:~:text=the%20building%20official%20shall%20make%2C%20or%20cause%20to%20be%20made%2C%20the%20necessary%20tests%20and%20investigations%3B%20or%20the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies%20in%20respect%20to%20the%20quality%20and%20manner%20of%20use%20of%20new%20materials%20or%20assemblies%20as%20provided%20for%20in%20Section%20104.2.3.

9 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4.2

10 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_agency

11 https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#approved_source

12 https://www.law.cornell.edu/uscode/text/18/1832 (b) Any organization that commits any offense described in subsection (a) shall be fined not more than the greater of $5,000,000 or 3 times the value of the stolen trade secret to the organization, including expenses for research and design and other costs of reproducing the trade secret that the organization has thereby avoided. The federal government and each state have a public records act. To follow DTSA and comply state public records and trade secret legislation requires approval through ANAB ISO/IEC 17065 accredited certification bodies or approved sources. For more information, please review this website: Intellectual Property and Trade Secrets.

13 https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/regulation-professional AND https://apassociation.org/list-of-engineering-boards-in-each-state-archive/

14 https://www.cbitest.com/accreditation/

15 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.1:~:text=directed%20to%20enforce%20the%20provisions%20of%20this%20code

16 https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#104.2.3 AND https://up.codes/viewer/mississippi/ibc-2024/chapter/1/scope-and-administration#105.3.1

17 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

18 https://iaf.nu/en/about-iaf-mla/#:~:text=Once%20an%20accreditation%20body%20is%20a%20signatory%20of%20the%20IAF%20MLA%2C%20it%20is%20required%20to%20recognise%20certificates%20and%20validation%20and%20verification%20statements%20issued%20by%20conformity%20assessment%20bodies%20accredited%20by%20all%20other%20signatories%20of%20the%20IAF%20MLA%2C%20with%20the%20appropriate%20scope

19 True for all ANAB accredited product evaluation agencies and all International Trade Agreements.

20 https://www.justice.gov/crt/deprivation-rights-under-color-law AND https://www.justice.gov/atr/mission

21 Unless otherwise noted, the links referenced herein use un-amended versions of the 2024 International Code Council (ICC) 2024 International Code Council (ICC) model codes as foundation references. Mississippi versions of the IBC 2024 and the IRC 2024 are un-amended. This material, product, design, service and/or method of construction also complies with the 2000-2012 versions of the referenced codes and the standards referenced therein. As pertinent to this technical and code compliance evaluation, CBI and/or DrJ staff have reviewed any state or local regulatory amendments to assure this report is in compliance.

22 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by the local jurisdiction. https://up.codes/codes/general

23 See Adoptions by Publisher for the latest adoption of a non-amended or amended model code by state. https://up.codes/codes/general

24 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14

25 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

26 https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2(Listed%20or%20certified); https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#listed AND https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#labeled

27 2021 IRC Section R317.1.1

28 2021 IRC Section R318.1.2

29 2021 IRC Section R317.3

30 https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1703.4


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[31] https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=All%20construction%20methods%20shall%20be%20in%20conformance%20with%20accepted%20engineering%20practices%20to%20insure%20durable%2C%20livable%2C%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the%20various%20trades

[32] https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#:~:text=The%20strength%20and%20rigidity%20of%20the%20component%20parts%20and/or%20the%20integrated%20structure%20shall%20be%20determined%20by%20engineering%20analysis%20or%20by%20suitable%20load%20tests%20to%20simulate%20the%20actual%20loads%20and%20conditions%20of%20application%20that%20occur

[33] 2021 IRC Section R317

[34] 2021 IRC Section R318

[35] 2021 IRC Section R317

[36] 2021 IRC Section R318

[37] 2021 IRC Section R317

[38] 2021 IRC Section R318

[39] Qualification is performed by a legislatively defined Accreditation Body. ANSI National Accreditation Board (ANAB) is the largest independent accreditation body in North America and provides services in more than 75 countries. DrJ is an ANAB accredited product certification body.

[40] https://anabpd.ansi.org/Accreditation/product-certification/AllDirectoryDetails?prgID=1&orgID=2125&statusID=4#:~:text=Bill%20Payment%20Date-,Accredited%20Scopes,-13%20ENVIRONMENT.%20HEALTH

[41] See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition: https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280

[42] 2021 IRC Section R317

[43] 2021 IRC Section R318

[44] 2021 IBC Section 104.11

[45] 2021 IRC Section R104.11

[46] 2018: https://up.codes/viewer/wyoming/ifc-2018/chapter/1/scope-and-administration#104.9 AND 2021: https://up.codes/viewer/wyoming/ibc-2021/chapter/1/scope-and-administration#104.11

[47] Approved is an adjective that modifies the noun after it. For example, Approved Agency means that the Agency is accepted officially as being suitable in a particular situation. This example conforms to IBC/IRC/IFC Section 201.4 (https://up.codes/viewer/mississippi/ibc-2024/chapter/2/definitions#201.4) where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

[48] https://up.codes/viewer/mississippi/ibc-2024/chapter/17/special-inspections-and-tests#1707.1

[49] Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements.

[50] 2021 IRC Section R317.1.1

[51] 2021 IRC Section R318.1.2


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