DrJ CERTIFICATION

Technical Evaluation Report™

TER 1703-14

Techwood 2200EX Treated Wood Protection

Chemical Technologies Holding Corp.

Product:

Techwood 2200EX (TW2200EX) Treated Wood Protection

Issue Date:

May 16, 2017

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July 5, 2023

Subject to Renewal:

July 1, 2024

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COMPANY INFORMATION:	ADDITIONAL LISTEES:	
Chemical Technologies Holding Corp. 205 Biscayne Blvd Ste 4-629 Aventura, FL 33180-1529 info@chemtechholding.com chemtechholding.com	K-Line Prefinishing A Division of K&K Industries, Inc. 12496 E US Highway 50 Loogootee, IN 47553 Alta Forest Products 7127 US Highway 101 Amanda Park, WA 98526	Chemical Technologies, Holding, Inc. 7397 Commercial Cir Ste 1 Fort Pierce, FL 34951-4119

DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES

SECTION: 06 05 83 - Shop-Applied Wood Coating

SECTION: 06 11 00 - Wood Framing

1 Innovative Product Evaluated[1,2]

1.1 Techwood 2200EX (TW2200EX) Treated Wood Protection

2 Applicable Codes and Standards[3,4]

2.1 *Codes*

2.1.1 *IBC—15, 18, 21: International Building Code®*

2.1.2 *IRC—15, 18, 21: International Residential Code®*

2.2 *Standards and Referenced Documents*

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

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

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

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

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

2 **Federal Regulation Definition.** 24 CFR 3280.2 "Listed or certified" means included in a list published by a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection 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. **International Building Code (IBC) Definition of Listed.** Equipment, materials, products or services included in a list published by an organization acceptable to the building official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose Listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose. **IBC Definition of Labeled**. Equipment, materials or products to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, approved agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

3 This Listing is a code defined research report, which is also known as a duly authenticated report, provided by an approved agency (see IBC Section 1703.1) and/or an approved source (see IBC Section 1703.4.2). An approved agency is "approved" when it is ANAB accredited. DrJ Engineering, LLC (DrJ) is listed in the ANAB directory). A professional engineer is "approved" as an approved source when that professional engineer is properly licensed to transact engineering commerce. Where sealed by a professional engineer, it is also a duly authenticated report certified by an approved source. (i.e., Registered Design Professional). DrJ is an ANAB accredited product certification body.

4 Unless otherwise noted, all references in this Listing are from the 2021 version of the codes and the standards referenced therein. This material, product, design, service and/or method of construction also complies with the 2000-2021 versions of the referenced codes and the standards referenced therein.

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2.2.5 *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*

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

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

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

2.2.9 *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*

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

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

3 Performance Evaluation

3.1 Tests, testing, test reports, research reports, duly authenticated reports, and related engineering evaluations are defined as intellectual property and/or trade secrets and protected by Defend Trade Secrets Act 2018 (DTSA).[5]

3.2 Testing and/or inspections conducted for this TER were performed an ISO/IEC 17025 accredited testing laboratory,[6] an ISO/IEC 17020 accredited inspection body,[7] which are internationally recognized accreditations through International Accreditation Forum (IAF), and/or a licensed Registered Design Professional (RDP).

3.3 Techwood 2200EX 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:

3.3.1 Preservative-treated wood as required by IBC Section 2303.1.9 and IRC Section R317 and Section R318.

3.3.2 Resistance to fungal decay as required by IBC Section 2304.12 and IRC Section R317.

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

3.3.4 Protection from subterranean termites (including Formosan) where required by IBC Section 2304.12.2 and IRC Section R318.

3.3.5 Flexure Preservative-treated wood as required by IBC Section 2303.1.9, and IRC Section R317 and Section R318.

3.4 Any building code and/or accepted engineering evaluations (i.e., research reports, duly authenticated reports, etc.) that are conducted for this Listing were performed by DrJ Engineering, LLC (DrJ), an ISO/IEC 17065 accredited certification body and a professional engineering company operated by RDPs/approved sources. DrJ is qualified[8] to practice product and code compliance services within its scope of accreditation and engineering expertise, respectively.

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[5] https://www.law.cornell.edu/uscode/text/18/part-I/chapter-90. Given our professional duty to inform, please be aware that whoever, with intent to convert a trade secret (TS), that is related to a product or service used in or intended for use in interstate or foreign commerce, to the economic benefit of anyone other than the owner thereof, and intending or knowing that the offense will, injure any owner of that trade secret, knowingly without authorization copies, duplicates, sketches, draws, photographs, downloads, uploads, alters, destroys, photocopies, replicates, transmits, delivers, sends, mails, communicates, or conveys such information; shall be fined under this title or imprisoned not more than 10 years, or both. 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. As the National Society of Professional Engineers states, "Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve." Therefore, to protect intellectual property (IP) and TS, and to achieve compliance with public records and trade secret legislation, requires approval through the use of Listings, certified reports, technical evaluation reports, duly authenticated reports and/or research reports prepared by approved agencies and/or approved sources. For more information, please review this website: Intellectual Property and Trade Secrets.

[6] Internationally recognized accreditations are performed by members of the International Accreditation Forum (IAF). Accreditation Body and Regional Accreditation Group Members of IAF are admitted to the IAF MLA only after a stringent evaluation of their operations by a peer evaluation team, which is charged to ensure that the applicant complies fully with both international standards and IAF requirements. Once an accreditation body is a signatory of the IAF MLA, it is required to recognise certificates and validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope.

[7] Ibid.

[8] 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.

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

3.6 Any regulation specific issues not addressed in this section are outside the scope of this TER.

4 Product Description and Materials

4.1 The product evaluated in this TER is shown in Figure 1 and Figure 2.



Figure 1. Techwood 2200EX Product



Figure 2. Example of Techwood 2200EX Acceptable Product Stamp

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4.2 Techwood 2200EX is a factory applied wood protection treatment that uses Disodium Octaborate Tetrahydrate (DOT), Biocides, pre-stain concentrate, and a water repellant additive to treat wood.

4.3 The wood products covered in this TER include:

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

4.4 Techwood 2200EX provides a minimum DOT loading of 0.0072 g/in^2 (minimum application rate) and a minimum total coating coverage of 0.054 g/in^2.

4.5 Techwood 2200EX protected products are acceptable for use in the following AWPA Use Categories:[9]

4.5.1 UC1 Interior/Dry construction: millwork and finishing

4.5.2 UC2 Interior/Damp construction: interior beams, timbers, flooring, framing, millwork, and sill plates

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

4.6 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.

4.7 Techwood 2200EX wood protection treatment is supplied by Chemical Technologies Holdings, Inc. and is used by the additional listee(s) above to treat wood products in accordance with the manufacturer requirements.

5 Applications

5.1 Techwood 2200EX is a preservative and protective treatment for wood products.

5.1.1 Applications include, but are not limited to, use as fence pickets in a vertically installed state.

5.1.2 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.

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

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

5.4 Field cuts, notches, or bored holes must be treated in the field in accordance with the manufacturer instructions and AWPA M4 in accordance with IRC Section R317.1.1 and Section R318.1.2.

5.5 *Design*

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

5.5.2 Techwood 2200EX is a topically applied treatment, not a pressure treatment, so the wood is not incised. Therefore, the NDS Section 4.3.8 Incising Factor is not applicable.

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

5.5.4 The design provisions for wood construction noted in IBC Section 2302.1[10] and IRC Section R301.1.3 apply to Techwood 2200EX protected products unless otherwise noted in this report.

5.5.5 *Connections*

5.5.5.1 Lateral loads for nails, screws, and bolts, and withdrawal loads for nails and screws installed in Techwood 2200EX protected products shall be in accordance with NDS using the species specific gravity.

[9] 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 to be 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.

[10] 2015 IBC Section 2301.2

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5.5.6 *Fasteners*

5.5.6.1 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 R317.3.

5.6 Where the application falls outside of the performance evaluation, conditions of use and/or installation requirements set forth herein, alternative techniques shall be permitted in accordance with accepted engineering practice and experience. This includes but is not limited to the following areas of engineering: mechanics or materials, structural, building science, and fire science.

6 Installation

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

6.2 In the event of a conflict between the manufacturer installation instructions and this TER, the more restrictive shall govern.

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

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

7 Substantiating Data

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

7.1.1 Fungal decay testing in accordance with AWPA E10

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

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

7.1.4 Reaction with metals testing in accordance with AWPA E12

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

7.2 Information contained herein may include the result of testing and/or data analysis by sources that are approved agencies (i.e., ANAB accredited agencies), approved sources (i.e., RDPs), and/or professional engineering regulations. Accuracy of external test data and resulting analysis is relied upon.

7.3 Where pertinent, testing and/or engineering analysis is based upon provisions that have been codified into law through state or local adoption of codes and standards. The developers of these codes and standards are responsible for the reliability of published content. DrJ's engineering practice may use a code-adopted provision as the control sample. A control sample versus a test sample establishes a product as being equivalent to the code-adopted provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.

7.4 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, Listings, certified reports, duly authenticated reports from approved agencies, and research reports prepared by approved agencies and/or approved sources provided by the suppliers of products, materials, designs, assemblies, and/or methods of construction. These are presumed to be minimum properties and relied upon to be accurate. The reliability of DrJ's engineering practice, as contained in this TER, may be dependent upon published design properties by others.

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7.5 Testing and engineering analysis: 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.[11]

7.6 Where additional condition of use and/or code compliance information is required, please search for Techwood 2200EX (TW2200EX) Treated Wood Protection on the DrJ Certification website.

8 Findings

8.1 As delineated in Section 3, Techwood 2200EX (TW2200EX) Treated Wood Protection has performance characteristics that were tested and/or meet pertinent standards and is suitable for use pursuant to its specified purpose.

8.2 When used and installed in accordance with this TER and the manufacturer installation instructions, Techwood 2200EX (TW2200EX) Treated Wood Protection shall be approved for the following applications:

8.2.1 Techwood 2200EX protection does not affect the allowable design stresses for lumber, OSB, Plywood, LVL, GLB, and PSL.

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

8.2.3 Techwood 2200EX protected products are suitable for above ground applications exposed to all weather cycles, including intermittent wetting.

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

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

8.2.6 Products protected with Techwood 2200EX meet the requirements of IBC Section 2304.12 and IRC Section R317 where protection against decay is required.

8.2.7 Products protected with Techwood 2200EX meet the requirements of IBC Section 2304.12.2.8[12] and IRC Section R318 where protection against termite attack is required.

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

8.4 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.10[13] are similar) in pertinent part states:

> **104.11 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. Where the alternative material, design or method of construction is not approved, the building official shall respond in writing, stating the reasons the alternative was not approved.

8.5 **Approved**:[14] Building codes require that the building official shall accept duly authenticated reports[15] or research reports[16] from approved agencies and/or approved sources (i.e., licensed RDP) with respect to the quality and manner of use of new products, materials, designs, services, assemblies, or methods of construction.

8.5.1 Acceptability of an approved agency, by a building official, is performed by verifying that the agency is accredited by a recognized accreditation body of the International Accreditation Forum (IAF).

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[11] See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition.

[12] 2018 IBC Section 2304.12.5

[13] 2018 IFC Section 104.9

[14] 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 where the building code authorizes sentences to have an ordinarily accepted meaning such as the context implies.

[15] https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1707.1

[16] https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1703.4.2

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8.5.2 Acceptability of a licensed RDP, by a building official, is performed by verifying that the RDP and/or their business entity is listed by the licensing board of the relevant jurisdiction.

8.5.3 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, as denial without written reason deprives a protected right to free and fair competition in the marketplace.

8.6 DrJ is an engineering company, employs RDPs and is an ISO/IEC 17065 ANAB-Accredited Product Certification Body – Accreditation #1131.

8.7 Through ANAB accreditation and the IAF Multilateral Agreements, this TER can be used to obtain product approval in any jurisdiction or country that has IAF MLA Members and Signatories to meet the Purpose of the MLA – "*certified once, accepted everywhere*." IAF specifically says, "*Once an accreditation body is a signatory of the IAF MLA, it is required to recognise certificates and validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope*."[17]

9 Conditions of Use

9.1 Material properties shall not fall outside the boundaries defined in Section 3.

9.2 As defined in Section 3, 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.

9.3 Techwood 2200EX complies with the treatment required for engineered or solid sawn lumber as permitted by the codes listed in Section 2, subject to the following conditions:

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

9.3.2 Fastener design values shall be determined using the specific gravity of the lumber species used in the treated product.

9.3.3 Cutting and notching of Techwood 2200EX preservative treated products is permitted where allowed by the applicable building code, the manufacturer recommendations, this TER, or where the effects of such alterations are specifically considered in the design of the member by a registered design professional.

9.3.3.1 Field cuts, notches, or bored holes must be treated in the field in accordance with the manufacturer instructions and AWPA M4 in accordance with IRC Section R317.1.1 and Section R318.1.2.

9.3.4 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.

9.3.5 Techwood 2200EX wood protection treatment is provided by the listees on page 2 of this TER with quality control inspections by an approved third-party quality control inspection agency.

9.3.6 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.

9.3.7 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.

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

9.3.9 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.

9.3.10 Use in tropical climate zones in not approved.

[17] https://iaf.nu/en/about-iaf-mla/#:~:text=required%20to%20recognise

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9.4 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:

9.4.1 Any calculations incorporated into the construction documents shall conform to accepted engineering practice, and, when prepared by an approved source, shall be approved when requirements of adopted legislation are met.

9.4.2 This TER and the installation instructions shall be submitted at the time of permit application.

9.4.3 This product has an internal quality control program and a third-party quality assurance program.

9.4.4 At a minimum, this product shall be installed per Section 6 of this TER.

9.4.5 The review of this TER, by the AHJ, shall be in compliance with IBC Section 104 and Section 105.4.

9.4.6 This product has an internal quality control program and a third party quality assurance program in accordance with IBC Section 104.4, IBC Section 110.4, IBC Section 1703, IRC Section R104.4 and IRC Section R109.2.

9.4.7 The application of this product in the context of this TER 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.

9.5 The approval of this TER by the AHJ shall comply with IBC Section 1707.1, where legislation states in pertinent part, "*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 104.11*," all of IBC Section 104, and IBC Section 105.4.

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

9.7 The actual design, suitability, and use of this TER, for any particular building, is the responsibility of the owner or the owner's authorized agent.

10 Identification

10.1 The product listed in Section 1.1 is identified by a label on the board or packaging material bearing the manufacturer name, product name, TER number, and other information to confirm code compliance.

10.2 For an example of acceptable product stamp, see Figure 2.

10.3 When intended for use where Formosan subterranean termites are a concern, the label shall identify the product as suitable for this application as part of the product marking.

10.4 Additional technical information can be found at chemtechholding.com.

11 Review Schedule

11.1 This TER is subject to periodic review and revision. For the most recent version, visit drjcertification.org.

11.2 For information on the status of this TER, contact DrJ Certification.

12 Approved for Use Pursuant to US and International Legislation Defined in Appendix A

12.1 Techwood 2200EX (TW2200EX) Treated Wood Protection is included in this TER published by an approved agency that is concerned with evaluation of products or services, maintains periodic inspection of the production of listed materials or periodic evaluation of services, and whose TER Listing states either that the material, product, or service meets identified standards or has been tested and found suitable for a specified purpose. This TER meets the legislative intent and definition of being acceptable to the AHJ.

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Appendix A

1 Legislation that Authorizes AHJ Approval

1.1 **Fair Competition**: State legislatures have adopted Federal regulations for the examination and approval of building code referenced and alternative products, materials, designs, services, assemblies and/or methods of construction that:

1.1.1 Advance Innovation,

1.1.2 Promote competition so all businesses have the opportunity to compete on price and quality in an open market on a level playing field unhampered by anticompetitive constraints, and

1.1.3 Benefit consumers through lower prices, better quality, and greater choice.

1.2 **Adopted Legislation**: The following local, state, and federal regulations affirmatively authorize Techwood 2200EX (TW2200EX) Treated Wood Protection to be approved by AHJs, delegates of building departments, and/or delegates of an agency of the federal government:

1.2.1 Interstate commerce is governed by the Federal Department of Justice to encourage the use of innovative products, materials, designs, services, assemblies and/or methods of construction. The goal is to "protect economic freedom and opportunity by promoting free and fair competition in the marketplace."

1.2.2 Title 18 US Code Section 242 affirms and regulates the right of individuals and businesses to freely and fairly have new products, materials, designs, services, assemblies and/or methods of construction approved for use in commerce. Disapproval of alternatives shall be based upon non-conformance with respect to specific provisions of adopted legislation, and shall be provided in writing stating the reasons why the alternative was not approved, with reference to the specific legislation violated.

1.2.3 The federal government and each state have a public records act. In addition, each state also has legislation that mimics the federal Defend Trade Secrets Act 2018 (DTSA).

1.2.3.1 Compliance with public records and trade secret legislation requires approval through the use of listings, certified reports, Technical Evaluation Reports, duly authenticated reports and/or research reports prepared by approved agencies and/or approved sources.

1.2.4 For new materials[18] that are not specifically provided for in any building code, the design strengths and permissible stresses shall be established by tests, where suitable load tests simulate the actual loads and conditions of application that occur.

1.2.5 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design using accepted engineering practice.[19]

1.2.6 The commerce of approved sources (i.e., registered PEs) is regulated by professional engineering legislation. Professional engineering commerce shall always be approved by AHJs, except where there is evidence, provided in writing, that specific legislation has been violated by an individual registered PE.

1.2.7 The AHJ 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 IBC Section 104.11.[20]

[18] https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706.2

[19] IBC 2021, Section 1706.1 Conformance to Standards

[20] IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General

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1.3 **Approved**[21] **by Los Angeles**: The Los Angeles Municipal Code (LAMC) states in pertinent part that the provisions of LAMC are not intended to prevent the use of any material, device, or method of construction not specifically prescribed by LAMC. The Department shall use Part III, Recognized Standards in addition to Part II, Uniform Building Code Standards of Division 35, Article 1, Chapter IX of the LAMC in evaluation of products for approval where such standard exists for the product or the material and may use other approved standards, which apply. Whenever tests or certificates of any material or fabricated assembly are required by Chapter IX of the LAMC, such tests or certification shall be made by a testing agency approved by the Superintendent of Building to conduct such tests or provide such certifications. The testing agency shall publish the scope and limitation(s) of the listed material or fabricated assembly.[22] The Superintendent of Building roster of approved testing agencies is provided by the Los Angeles Department of Building and Safety (LADBS). The Center for Building Innovation (CBI) Certificate of Approval License is TA24945. Tests and certifications found in a CBI Listing are LAMC approved. In addition, the Superintendent of Building 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 the California Building Code (CBC) Section 1707.1.[23]

1.4 **Approved by Chicago**: The Municipal Code of Chicago (MCC) states in pertinent part that an Approved Agency is a Nationally Recognized Testing Laboratory (NRTL) acting within its recognized scope and/or a certification body accredited by the American National Standards Institute (ANSI) acting within its accredited scope. Construction materials and test procedures shall conform to the applicable standards listed in the MCC. Sufficient technical data shall be submitted to the building official to substantiate the proposed use of any product, material, service, design, assembly and/or method of construction not specifically provided for in the MCC. This technical data shall consist of research reports from approved sources (i.e., MCC defined Approved Agencies).

1.5 **Approved by New York City**: The NYC Building Code 2022 (NYCBC) states in pertinent part that an approved agency shall be deemed[24] an approved testing agency via ISO/IEC 17025 accreditation, an approved inspection agency via ISO/IEC 17020 accreditation, and an approved product evaluation agency via ISO/IEC 17065 accreditation. Accrediting agencies, other than federal agencies, must be members of an internationally recognized cooperation of laboratory and inspection accreditation bodies subject to a mutual recognition agreement[25] (i.e., ANAB, International Accreditation Forum (IAF), etc.).

1.6 **Approved by Florida**: Statewide approval of products, methods, or systems of construction shall be approved, without further evaluation, by 1) A certification mark or listing of an approved certification agency, 2) A test report from an approved testing laboratory, 3) A product evaluation report based upon testing or comparative or rational analysis, or a combination thereof, from an approved product evaluation entity; 4) A product evaluation report based upon testing or comparative or rational analysis, or a combination thereof, developed and signed and sealed by a professional engineer or architect, licensed in Florida. For local product approval, products or systems of construction shall demonstrate compliance with the structural wind load requirements of the Florida Building Code (FBC) through one of the following methods; 1) A certification mark, listing, or label from a commission-approved certification agency indicating that the product complies with the code; 2) A test report from a commission-approved testing laboratory indicating that the product tested complies with the code; 3) A product-evaluation report based upon testing, comparative or rational analysis, or a combination thereof, from a commission-approved product evaluation entity which indicates that the product evaluated complies with the code; 4) A product-evaluation report or certification based upon testing or comparative or rational analysis, or a combination thereof, developed and signed and sealed by a Florida professional engineer or Florida registered architect, which indicates that the product complies with the code; 5) A statewide product approval issued by the Florida Building Commission. The Florida Department of Business and Professional Regulation (DBPR) website provides a listing of companies certified as a Product Evaluation Agency (i.e., EVLMiami 13692), a Product Certification Agency (i.e., CER10642), and as a Florida Registered Engineer (i.e., ANE13741).

[21] See Section 8 for the distilled building code definition of **Approved**

[22] Los Angeles Municipal Code, SEC. 98.0503. TESTING AGENCIES

[23] https://up.codes/viewer/california/ca-building-code-2022/chapter/17/special-inspections-and-tests#1707.1

[24] New York City, The Rules of the City of New York, § 101-07 Approved Agencies

[25] New York City, The Rules of the City of New York, § 101-07 Approved Agencies

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1.7 **Approved by Miami-Dade County (i.e., Notice of Acceptance [NOA])**: A Florida statewide approval is an NOA. An NOA is a Florida local product approval. By Florida law, Miami-Dade County shall accept the statewide and local Florida Product Approval as provided for in Florida legislation 553.842 and 553.8425.

1.8 **Approved by New Jersey**: Pursuant to Building Code 2018 of New Jersey in IBC Section 1707.1 General,[26] it states: "In the absence of approved rules or other approved standards, 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 the administrative provisions of the Uniform Construction Code (N.J.A.C. 5:23)".[27] Furthermore N.J.A.C 5:23-3.7 states: Municipal approvals of alternative materials, equipment, or methods of construction. **(a) Approvals**: Alternative materials, equipment, or methods of construction shall be approved by the appropriate subcode official provided the proposed design is satisfactory and that the materials, equipment, or methods of construction are suitable for the intended use and are at least the equivalent in quality, strength, effectiveness, fire resistance, durability and safety of those conforming with the requirements of the regulations. 1. A field evaluation label and report or letter issued by a nationally recognized testing laboratory verifying that the specific material, equipment, or method of construction meets the identified standards or has been tested and found to be suitable for the intended use, shall be accepted by the appropriate subcode official as meeting the requirements of (a) above. 2. Reports of engineering findings issued by nationally recognized evaluation service programs, such as, but not limited to, the Building Officials and Code Administrators (BOCA), the International Conference of Building Officials (ICBO), the Southern Building Code Congress International (SBCCI), the International Code Council (ICC), and the National Evaluation Service, Inc., shall be accepted by the appropriate subcode official as meeting the requirements of (a) above. The New Jersey Department of Community Affairs has confirmed that technical evaluation reports, from any accredited entity listed by ANAB, meets the requirements of item 2 given that the listed entities are no longer in existence and/or do not provide "reports of engineering findings".

1.9 **Approved by the Code of Federal Regulations Manufactured Home Construction and Safety Standards**: Pursuant to Title 24, Subtitle B, Chapter XX, Part 3282.14[28] and Part 3280,[29] the Department encourages innovation and the use of new technology in manufactured homes. The design and construction of a manufactured home shall conform with the provisions of Part 3282 and Part 3280 where key approval provisions in mandatory language follow: 1) "All construction methods shall be in conformance with accepted engineering practices"; 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."; and 3) "The design stresses of all materials shall conform to accepted engineering practice."

1.10 **Approval by US, Local, and State Jurisdictions in General**: In all other local and state jurisdictions, the adopted building code legislation states in pertinent part that:

1.10.1 For new materials that are not specifically provided for in this code, the design strengths and permissible stresses shall be established by tests.[30]

1.10.2 For innovative alternative products, materials, designs, services and/or methods of construction, in the absence of approved rules or other approved standards…the building official shall accept duly authenticated reports (i.e., listing and/or research report) from approved agencies with respect to the quality and manner of use of new materials or assemblies.[31] A building official approved agency is deemed to be approved via certification from an accreditation body that is listed by the International Accreditation Forum[32] or equivalent.

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[26] https://up.codes/viewer/new_jersey/ibc-2018/chapter/17/special-inspections-and-tests#1707.1

[27] https://www.nj.gov/dca/divisions/codes/codreg/ucc.html

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

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

[30] IBC 2021, Section 1706 Design Strengths of Materials, 1706.2 New Materials. Adopted law pursuant to IBC model code language 1706.2.

[31] IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General. Adopted law pursuant to IBC model code language 1707.1.

[32] Please see the ANAB directory for building official approved agencies.

1.10.3 The design strengths and permissible stresses of any structural material…shall conform to the specifications and methods of design of accepted engineering practice performed by an approved source.[33] An approved source is defined as a PE subject to professional engineering laws, where a research and/or a technical evaluation report certified by a PE, shall be approved.

1.11 **Approval by International Jurisdictions**: The USMCA and GATT agreements provide for approval of innovative materials, products, designs, services, assemblies and/or methods of construction through the Technical Barriers to Trade agreements and the International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA), where these agreements:

1.11.1 Permit participation of conformity assessment bodies located in the territories of other Members (defined as GATT Countries) under conditions no less favourable than those accorded to bodies located within their territory or the territory of any other country,

1.11.2 State that conformity assessment procedures (i.e., ISO/IEC 17020, 17025, 17065, etc.) are prepared, adopted, and applied so as to grant access for suppliers of like products originating in the territories of other Members under conditions no less favourable than those accorded to suppliers of like products of national origin or originating in any other country, in a comparable situation.

1.11.3 State that conformity assessment procedures are not prepared, adopted, or applied with a view to or with the effect of creating unnecessary obstacles to international trade. This means that conformity assessment procedures shall not be more strict or be applied more strictly than is necessary to give the importing Member adequate confidence that products conform to the applicable technical regulations or standards.

1.11.4 **Approved**: The purpose of the IAF MLA is to ensure mutual recognition of accredited certification and validation/verification statements between signatories to the MLA, and subsequently acceptance of accredited certification and validation/verification statements in many markets based on one accreditation for the timely approval of innovative materials, products, designs, services, assemblies and/or methods of construction. Accreditations granted by IAF MLA signatories are recognised worldwide based on their equivalent accreditation programs, therefore reducing costs and adding value to businesses and consumers.

[33] IBC 2021, Section 1706 Design Strengths of Materials, Section 1706.1 Conformance to Standards Adopted law pursuant to IBC model code language 1706.1.