DrJ CERTIFICATION

Technical Evaluation Report™

TER 2209-01

Use of EnergyShield® XR Insulation in Areas of “Very Heavy” Probability of Termite Infestation

Atlas Roofing Corporation

Product:

EnergyShield® XR

Issue Date:

January 12, 2023

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SECTION: 07 21 00 - Thermal Insulation

DIVISION: 31 00 00 - EARTHWORK

SECTION: 31 31 00 - Soil Treatment

SECTION: 31 31 16 - Termite Control

1 Product Evaluated[1,2]

1.1 EnergyShield® XR

2 Applicable Codes and Standards[3]

2.1 *Codes*

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

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

2.1.3 *IECC—15, 18, 21: International Energy Conservation Code®*

2.2 *Standards and Referenced Documents*

2.2.1 *ASTM C272: Standard Test Method for Water Absorption of Core Materials for Sandwich Constructions*

2.2.2 *ASTM C1289: Standard Specification for Faced Rigid, Cellular Polyisocyanurate Thermal Insulation Board*

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

[2] This TER is a code defined research report provided by an approved source (see IBC Section 1703.4.2) and an approved agency (see IBC Section 1703.1). Given that this TER is for new materials, as defined in IBC Section 1702, for which there are no approved rules or standards, IBC Section 1707.1 states that, "In the absence of approved rules or other approved standards, the building official shall accept duly authenticated reports (i.e., research 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". A professional engineer is approved as an approved source when that professional engineer is properly licensed to transact engineering commerce.

[3] Unless otherwise noted, all references in this TER are from the 2021 version of the codes and the standards referenced therein. This material, design, or method of construction also complies with the 2000-2018 versions of the referenced codes and the standards referenced therein.

3 Performance Evaluation

3.1 Testing and related engineering evaluations are defined as intellectual property and/or trade secrets.

3.2 This TER evaluates EnergyShield® XR brand insulation:

3.2.1 For use in areas designated by the applicable building code as requiring protection from subterranean termites.

3.2.2 For use in areas designated by the applicable building code as “very heavy” probability of termite infestation.

3.2.3 For water absorption in accordance with ASTM C272, Procedure A.

3.3 Specifically, EnergyShield® XR brand insulation is evaluated for use in the following applications:

3.3.1 Under slab foundations below grade.

3.3.2 On the interior or exterior face of foundation walls.

3.3.3 Under interior or exterior foundation walls.

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

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

4 Product Description and Materials

4.1 EnergyShield® XR brand insulation consisting of a rigid closed-cell polyisocyanurate foam core bonded to impermeable facers on both sides.

4.2 *Material Availability*

4.2.1 Thickness: ½″ (13 mm) through 4″ (114 mm).

4.2.2 Standard product width: 48″ (1219 mm).

4.2.3 Standard lengths: 96″ (2,438 mm) and 108″ (2,743 mm).

5 Applications

5.1 EnergyShield® XR brand insulation complies with IBC Chapter 26 and IRC Section R316 for the use of foam plastics in building construction.

5.2 EnergyShield® XR brand insulation is used as continuous insulation as required in some climate zones on wood-frame walls, basement walls, crawl space walls, and under slabs (IRC Table N1102.1.3[4] and IECC Table R402.1.3[5]). EnergyShield® XR brand insulation is often used in these applications due to its high resistance to thermal energy loss per inch of thickness.

5.3 The IRC requires wood-framed buildings to be protected from termite damage, no matter what sheathing or cladding is applied.

> R318.1 Subterranean Termite Control Methods
>
> In areas subject to damage from termites as indicated by Table R301.2[6] methods of protection shall be one, or a combination, of the following methods:
>
> 1. Chemical termiticide treatment in accordance with Section R318.2.
> 2. Termite-baiting system installed and maintained in accordance with the label.
> 3. Pressure-preservative-treated wood in accordance with the provisions of Section R317.1.
> 4. Naturally durable termite-resistant wood.

[4] 2018 IRC Table N1102.1.2

[5] 2018 IECC Table R402.1.2

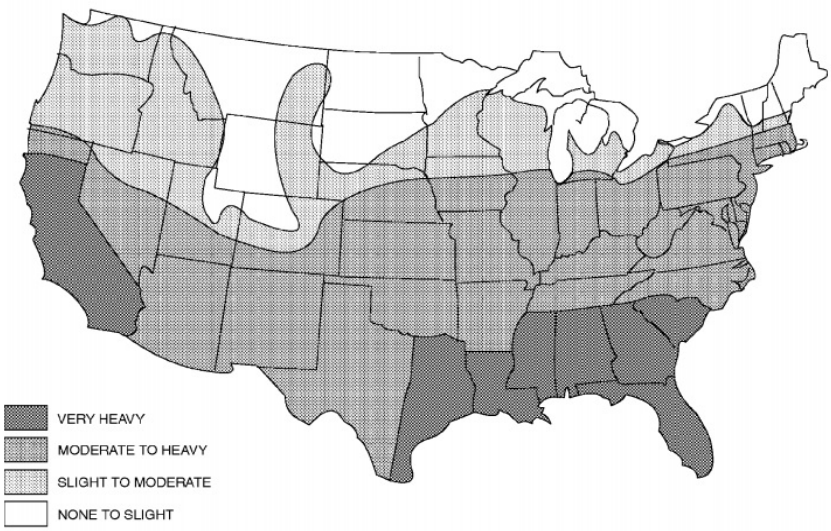
[6] 2018 IRC Table R301.2(1)

5. Physical barriers in accordance with Section R318.3 and used in locations as specified in Section R317.1.

6. Cold-formed steel framing in accordance with Sections R505.2.1 and R603.2.1.

5.4 The IBC does not contain a similar list of termite control methods. However, IBC Section 2304.12 describes methods to protect wood framing against decay and termites. These methods are outside the scope of this document since they do not relate to the use of foam plastic insulating sheathing (FPIS).

5.5 Both the IBC and IRC define the probability of termite infestation with the map shown below. IBC Figure 2603.8 and IRC Figure R318.4[7] are identical.



Note: Lines defining areas are approximate only. Local conditions may be more or less severe than indicated by the region classification.

Figure 1. IRC Figure R318.4 Termite Infestation Probability Map

5.6 Beyond the general provisions for protection of wood structures against termites, use of foam plastic insulation in areas subject to "very heavy" termite infestation probability is found in both the IBC and IRC.

IBC Section 2603.8 Protection Against Termites

In areas where the probability of termite infestation is very heavy in accordance with Figure 2603.8, extruded and expanded polystyrene, polyisocyanurate and other foam plastics shall not be installed on the exterior face or under interior or exterior foundation walls or slab foundations located below grade. The clearance between foam plastics installed above grade and exposed earth shall be at least 6 inches (152 mm).

Exceptions:

1. Buildings where the structural members of walls, floors, ceilings and roofs are entirely of noncombustible materials or preservative-treated wood.

2. An approved method of protecting the foam plastic and structure from subterranean termite damage is provided.

3. On the interior side of basement walls.

[7] 2018 IRC Figure R301.2(7)

IRC Section R318.4 Foam Plastic Protection

In areas where the probability of termite infestation is "very heavy" as indicated in Figure R318.4, extruded and expanded polystyrene, polyisocyanurate and other foam plastics shall not be installed on the exterior face or under interior or exterior foundation walls or slab foundations located below grade. The clearance between foam plastics installed above grade and exposed earth shall be at least 6 inches (152 mm).

Exceptions:

1. Buildings where the structural members of walls, floors, ceilings and roofs are entirely of noncombustible materials or pressure-preservative-treated wood.
2. When in addition to the requirements of Section R318.1, an approved method of protecting the foam plastic and structure from subterranean termite damage is used.
3. On the interior side of basement walls.

5.7 Specifically, the use of FPIS in three locations is addressed as needing special consideration:

5.7.1 Under slab foundations below grade.

5.7.2 On the exterior face of foundation walls.

5.7.3 Under interior or exterior foundation walls.

5.8 In areas subject to “very heavy” termite infestation probability, the use of foam plastic insulation is permitted in the following circumstances, per the exceptions given in IBC Section 2603.8 and IRC Section R318.4:

5.8.1 Exception #1 – Buildings where the structural members of walls, floors, ceilings and roofs are entirely of noncombustible materials or preservative-treated wood.

5.8.2 Exception #2 – An approved method of protecting the foam plastic and structure from subterranean termite damage is provided.

5.8.3 Exception #3 – On the interior side of basement walls.

5.9 The following methods can be considered for approval for the protection of the FPIS in “very heavy” termite infestation probability areas (Exception #2):

5.9.1 Chemical termiticide treatment of the soil with retreatment as required, per the termiticide label (IRC Section R318.2), and which is approved for use in very heavy termite infested areas.

5.9.2 Protection of EnergyShield® XR brand insulation with a physical barrier product that is approved for use in very heavy termite infested areas and that prevents access by the termites to the foam plastic insulation (IRC Section R318.3). These products may include:

5.9.2.1 Approved applied coverings or coatings that prevent access to the foam by termites.

5.9.2.2 Termite-resistant soils, gravels or sands.

5.9.2.3 Use of termite barriers that prevent termites from accessing the wood framing through hidden pathways.

5.10 FPIS is not a food source for the termites. However, FPIS may serve as a pathway for termites to travel through causing damage that is not visible for inspection.

5.11 Products called termite shields generally provide only a physical deterrent to termites and may also expose their activity, but do not, by themselves, necessarily protect against termites, but make inspection easier. These products need to be used in conjunction with another method of protection in accordance with IRC Section R318.3.

> **R318.3 Barriers.** Approved physical barriers, such as metal or plastic sheeting or collars specifically designed for termite prevention, shall be installed in a manner to prevent termites from entering the structure. Shields placed on top of an exterior foundation wall shall be used only if in combination with another method of protection.

5.12 The following details show the use of EnergyShield® XR brand insulation on the exterior side of foundation walls and are compliant with the IBC and IRC for use in areas of “very heavy” probability of termite infestation.

5.12.1 With stucco veneer (Figure 2):

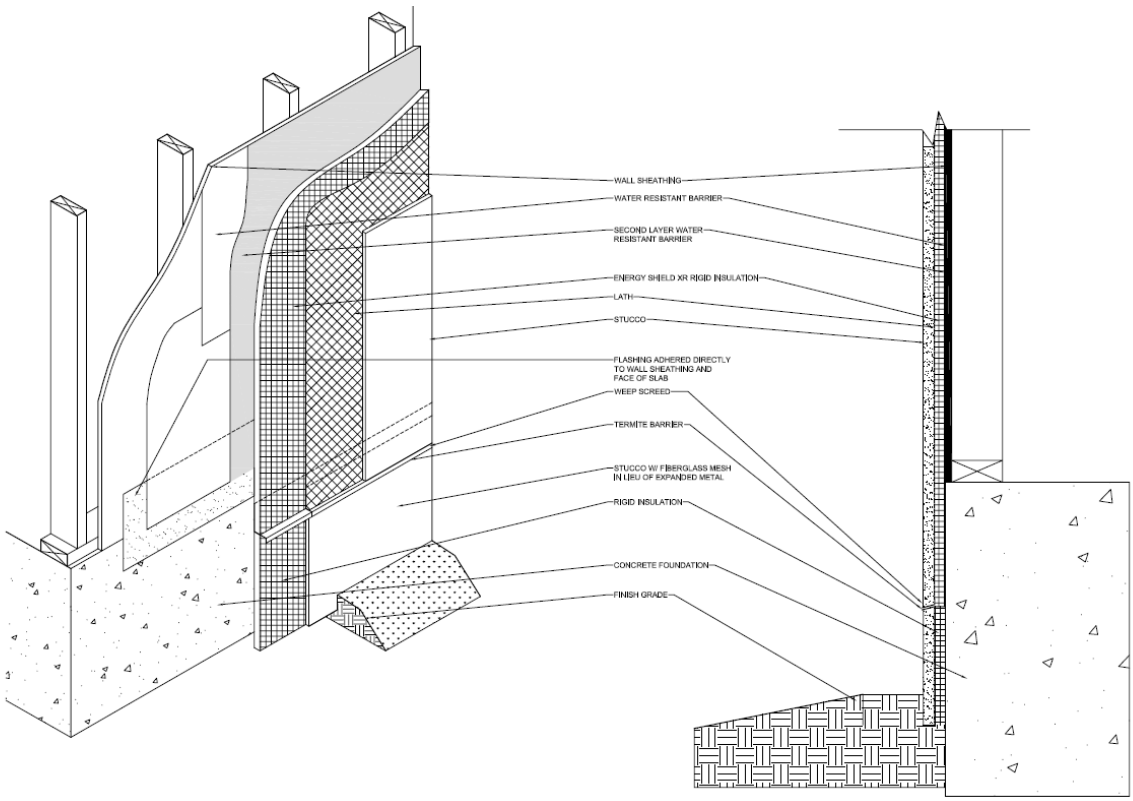


Figure 2. Stucco Veneer

5.12.2 With stone veneer (Figure 3):

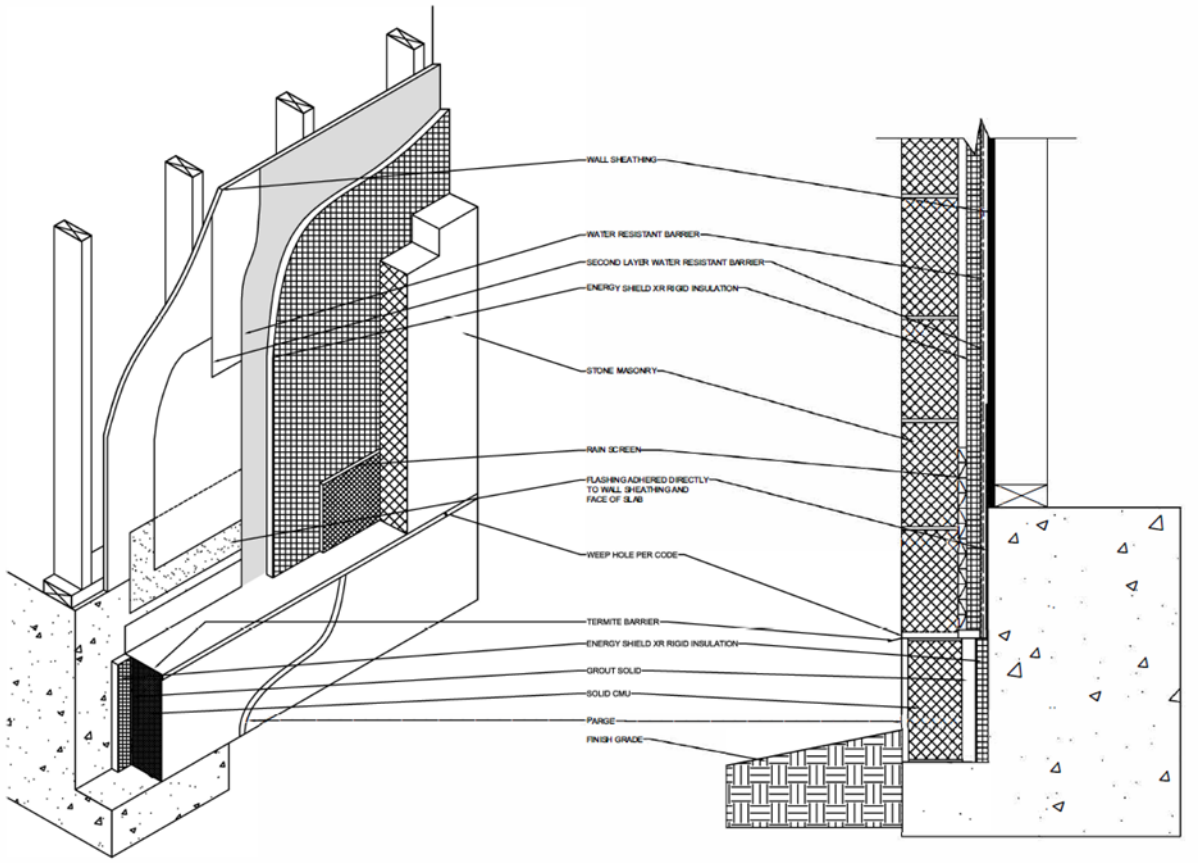


Figure 3. Stone Masonry Veneer

5.13 *Water Absorption*

5.13.1 EnergyShield® XR has been tested in accordance with ASTM C272, Procedure A and is found to have a water absorption of less than 0.3% by volume after 24 hours of immersion.

5.14 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 For application details not covered in this TER, use of EnergyShield® XR brand insulation is permitted provided the application is approved and meets the intent of the applicable code.

6.4 Installation in areas designated as very heavy termite infestation probability must comply with IBC Section 2603.8 or IRC Section R318.4.

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 Water absorption testing in accordance with ASTM C272, Procedure A.

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., registered design professionals [RDP]), and/or professional engineering regulations. Accuracy of external test data and resulting analysis is relied upon

7.3 Where pertinent, DrJ's 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 any raw materials. 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.

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.[8]

8 Findings

8.1 As delineated in Section 3, the EnergyShield® XR has performance characteristics that were tested and/or meet pertinent standards and is suitable for use pursuant to its specified purpose.

8.2 EnergyShield® XR brand insulation may be installed below grade in areas designated as very heavy termite infestation probability in the following locations:

8.2.1 Under slab foundations below grade.

8.2.2 On the interior or exterior face of foundation walls.

8.2.3 Under interior or exterior foundation walls.

8.3 EnergyShield® XR brand insulation may be installed below grade in areas requiring a water absorption of less than 0.3% by volume when tested in accordance with ASTM C272, Procedure A.

8.4 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Atlas Roofing Corporation.

8.5 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.10[9] 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] See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition.
9 2018 IFC Section 104.9

8.6 Approved[10]: Building codes require that the building official shall accept duly authenticated reports[11] or research reports[12] 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.

8.6.1 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).

8.6.2 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.

8.6.3 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.

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

8.8 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 & Signatories to meet the Purpose of the MLA – "*certified once, accepted everywhere*."

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 When used, termiticides shall be applied in accordance with the manufacturer installation instructions and shall comply with all applicable state and federal regulations pertaining to their use.

9.4 Installation of the methods of protection shall be in accordance with the installation instructions provided by the manufacturer of the product used for protection.

9.5 When required by regulation and enforced by the building official, also known as the authority having jurisdiction (AHJ) in which the project is to be constructed:

9.5.1 Any calculations, incorporated into the construction documents that are required to show compliance with this TER, shall conform to accepted engineering practice, and shall be approved when requirements of the relevant regulations are met.

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

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

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

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

9.5.6 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.

9.5.7 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.

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[10] 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.

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

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

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 Additional technical information can be found at www.atlasrwi.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 current status of this TER, contact DrJ Certification.

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

12.1 EnergyShield® XR 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.

1 Appendix A: 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 EnergyShield® XR 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 2016 (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[13] 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.[14]

1.3 **Approved**[15] **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.[16] 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.[17]

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

[14] IBC 2021, Section 1706.1 Conformance to Standards

[15] See section 8.3 for the distilled building code definition of Approved.

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

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

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[18] 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[19] (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).

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.

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

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

1.8 **Approved by New Jersey**: Pursuant to Building Code 2018 of New Jersey in IBC Section 1707.1 General,[20] 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)".[21] 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[22] and Part 3280,[23] 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 **Approved by US, Local, and State Jurisdictions in General**: In all other local and state jurisdictions, the regulations require approval per Section 8 above.

1.11 **Approved 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.

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

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

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

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

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.