



Listing and Technical Evaluation Report™

Report No: 2403-101



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Revision Date: April 4, 2025

Subject to Renewal: October 1, 2025

Strongwell® FRP RF Panel Enclosure System for Rooftop Communication Antenna Screening

Trade Secret Report Holder:

Strongwell®

Phone: 279-645-8000

Website: www.strongwell.com

CSI Designations:

DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

DIVISION: 10 00 00 - SPECIALTIES

Section: 07 07 00 - Roof Accessories

Section: 10 82 00 - Grilles and Screens

1 Design Evaluated¹

1.1 Strongwell Enclosure System

2 Product Description and Materials

2.1 The design evaluated in this report is shown in **Figure 1** through **Figure 5**, and is described in **Table 1**.



Figure 1. Example of a Strongwell Enclosure System

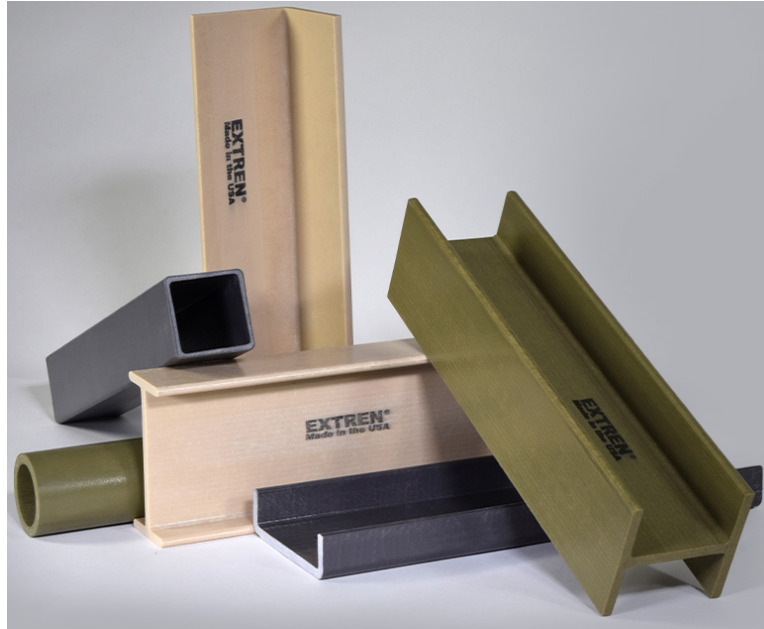


Figure 2. EXTREN® Structural Shapes

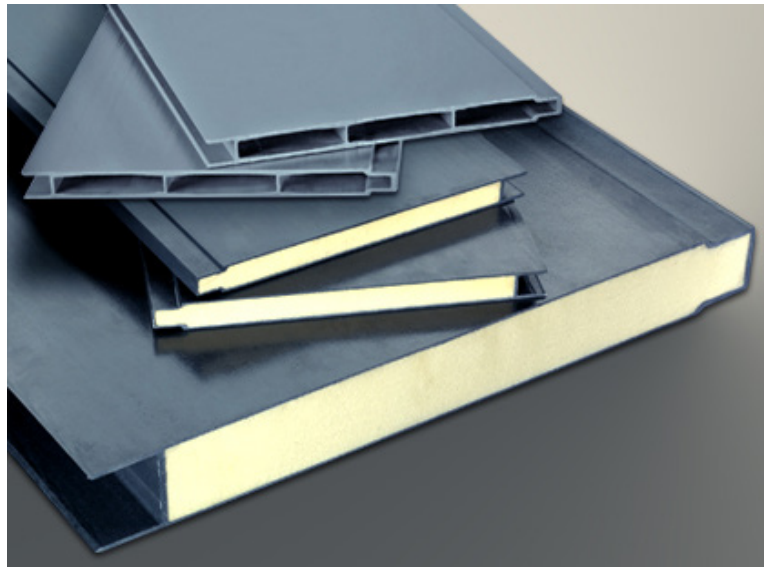


Figure 3. DURASHIELD® Foam Core and Hollow Core Panels

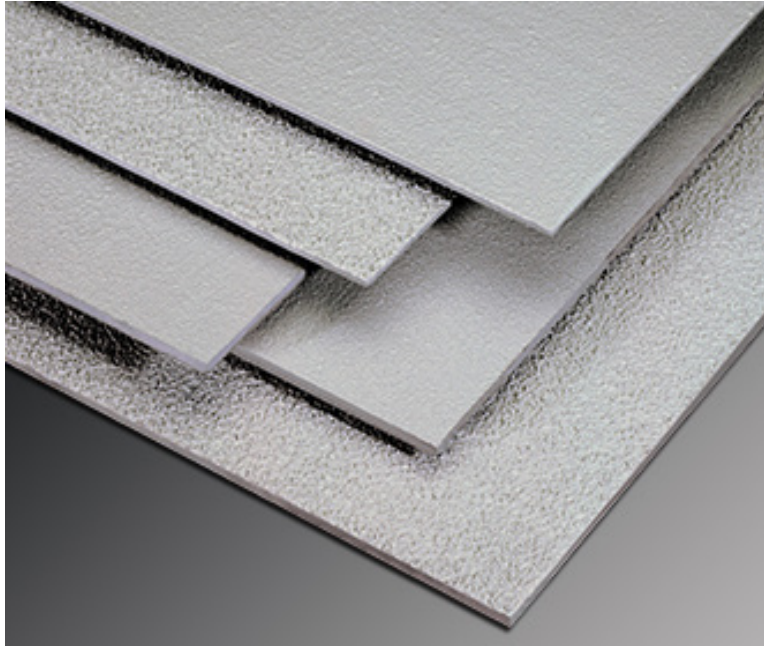


Figure 4. SAFPLATE® Plates

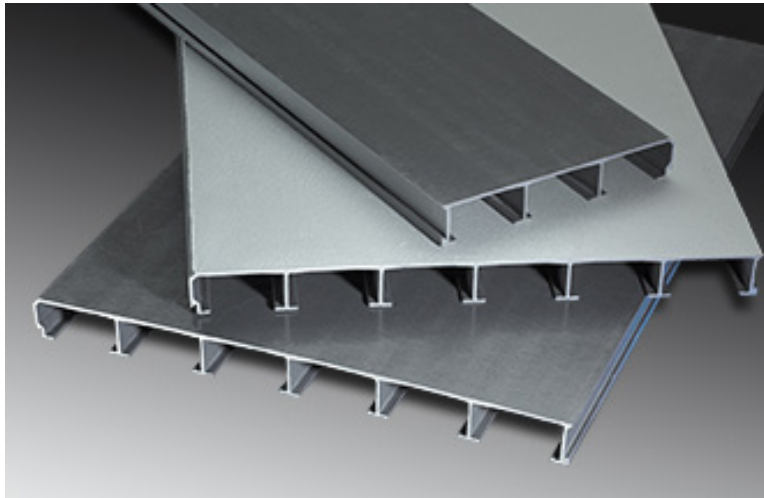


Figure 5. SAFPLANK® Planks



Table 1. Strongwell Enclosure System Components

Components	Type	Material	Dimensions
EXTREN Structural Shapes and Plates	500 Series	Pultruded fiberglass polyester resin with a UV inhibitor	EXTREN products are manufactured in many shapes and sizes. See manufacturer product data for specific details.
	525 Series	Pultruded fiberglass polyester resin with a UV inhibitor and flame retardant additives	
	600 Series	Pultruded fiberglass vinyl ester resin with a UV inhibitor	
	625 Series	Pultruded fiberglass vinyl ester resin with a UV inhibitor and flame retardant additives	
SAFPLANK	Urethane	Urethane coated SAFPLANK	12" and 24" wide panels. See manufacturer product data for specific details.
	Epoxy	Epoxy coated SAFPLANK	
DURASHIELD	Foam Core/Hollow-core	Pultruded fiberglass skin available in polyester or vinyl ester resin with a rigid closed-cell urethane foam core or hollow core	1" thick x 12" wide or 3" thick x 24" wide See manufacturer product data for specific details.

SI: 1 in = 25.4 mm

2.2 Structure

2.2.1 Frame:

2.2.1.1 EXTREN Structural Shapes applied as beams, columns, bracing, and connections.

2.2.2 Cladding:

2.2.2.1 EXTREN 1/4" flat plates, DURASHIELD or SAFPLANK connected to the frame via 1/2" Fiber Reinforced Plastic (FRP) threaded rods and FRP thermoplastic nuts.

2.3 As needed, review material properties for design in Section 6 and to regulatory evaluation in Section 8.

3 Definitions

3.1 New Materials² 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.³ The design strengths and permissible stresses shall be established by tests⁴ and/or engineering analysis.⁵

3.2 Duly authenticated reports⁶ and research reports⁷ are test reports and related engineering evaluations, which are written by an approved agency⁸ and/or an approved source.⁹

3.2.1 These reports contain intellectual property and/or trade secrets, which are protected by the Defend Trade Secrets Act (DTSA).¹⁰

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

3.4 An approved source is "approved" when a professional engineer (i.e., Registered Design Professional) is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.¹¹

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 Registered Design Professional (RDP).

3.5.1 The Center for Building Innovation (CBI) is ANAB¹² ISO/IEC 17025 and ISO/IEC 17020 accredited.



- 3.6 The regulatory authority shall enforce¹³ 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 writing¹⁴ 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.¹⁵
- 3.8 ANAB is an International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) signatory where recognition of certificates, validation and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA with the appropriate scope, shall be approved.¹⁶ Therefore, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent.¹⁷
- 3.9 Approval equity is a fundamental commercial and legal principle.¹⁸

4 Applicable Standards for the Listing; Regulations for the Regulatory Evaluation¹⁹

4.1 Standards

- 4.1.1 *ASCE 74: Load and Resistance Factor Design (LRFD) for Pultruded Fiber Reinforced Polymer (FRP) Structures*
- 4.1.2 *ASTM D2344: Standard Test Method for Short-Beam Strength of Polymer Matrix Composite Materials and Their Laminates*
- 4.1.3 *ASTM D2583: Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor*
- 4.1.4 *ASTM D4065: Standard Practice for Plastics: Dynamic Mechanical Properties: Determination and Report of Procedures*
- 4.1.5 *ASTM D570: Standard Test Method for Water Absorption of Plastics*
- 4.1.6 *ASTM D638: Standard Test Method for Tensile Properties of Plastics*
- 4.1.7 *ASTM D696: Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C with a Vitreous Silica Dilatometer*
- 4.1.8 *ASTM D790: Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials*
- 4.1.9 *ASTM D953: Standard Test Method for Pin-Bearing Strength of Plastics*

4.2 Regulations

- 4.2.1 *IBC – 15, 18, 21: International Building Code®*
- 4.2.2 *IRC – 15, 18, 21: International Residential Code®*
- 4.2.3 *LABC – 22: Los Angeles Building Code²⁰*

5 Listed²¹

- 5.1 Equipment, materials, products or services included in a List published by a nationally recognized testing laboratory (i.e., CBI), approved agency (i.e., CBI and DrJ), and/or approved source (i.e., DrJ) or other organization concerned with product evaluation (i.e., DrJ) that maintains periodic inspection (i.e., 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 Structural Applications

- 6.1.1 EXTREN plates meet the material properties requirements of ASCE 74 for Pultruded FRP products seen in **Table 2**.
 - 6.1.1.1 For DURASHIELD and SAFPLANK products, refer to the manufacturer literature.
- 6.1.2 EXTREN Structural Shapes meets the design value requirements of ASCE 74 for pultruded FRP shapes seen in **Table 3**.

Table 2. Material Properties of Strongwell Pultruded FRP¹

Products	Property	Result
EXTREN	Barcol Hardness	> 40
	Glass Transition Temperature	> 180°F
	Coefficient of Thermal Expansion, Longitudinal	<7.5 x 10 ⁻⁶ in/in/°F-
	Moisture Equilibrium Content	< 2%

Table 3. Reference Strength and Modulus Design Values of EXTREN Structural Shapes and Plates for LRFD^{1,2}

Product	Tensile Strength (psi)		Tensile Modulus (ksi)		Flexural Strength (psi)		Flexural Modulus (ksi)		Bearing Strength (psi)		Interlaminar Shear Strength (psi)
	Long.	Trans.	Long.	Trans.	Long.	Trans.	Long.	Trans.	Long.	Trans.	
EXTREN	30,000	7,000	3,000	800	30,000	13,000	1,600	900	21,000	18,000	3,500

SI: 1 psi = 0.00689 MPa

1. Reference values shall be multiplied by the appropriate resistance factor (ϕ), the appropriate time factor (λ), and all applicable end-use adjustment factors specified in ASCE 74.

2. "Long." refers to the longitudinal axis (parallel to direction of pultrusion). "Trans." refers to the transverse axis (perpendicular to direction of pultrusion).

- 6.1.3 Cladding shall be attached to the frame with 1/2" FRP threaded rods and fiberglass reinforced thermoplastic nuts. The bearing strength and required edge distance for these rods can be found in the Strongwell published literature.
 - 6.1.3.1 When properly supported, the allowable load for a 6' x 8' framed panel is 40 psf.
- 6.1.4 The fire separation distance shall be not less than 20 feet for Type I, II, III, and IV buildings per 2022 LABC Section 1511.6.2, item 2.
- 6.1.5 For Type V construction, the height of the mechanical equipment screen, as measured from the grade plane to the highest point on the mechanical equipment screen, shall be permitted to exceed the maximum building height allowed for the building by other provisions of the code, provided that the fire separation distance is greater than 5 feet per 2022 LABC Section 1511.6.3, item 3.
- 6.2 Complete design plans and structural calculations of any Strongwell Enclosure System must be prepared by a professional engineering company operated by RDP/approved sources.
- 6.3 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.



7 Certified Performance²²

- 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.²³
- 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.²⁴

8 Regulatory Evaluation and Accepted Engineering Practice

- 8.1 Strongwell Enclosure System complies with the following legislatively adopted regulations and/or accepted engineering practice for the following reasons:
 - 8.1.1 Strongwell Enclosure System meets the material properties and design value requirements of ASCE 74.
- 8.2 Any building code, regulation 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 RDP/approved sources. DrJ is qualified²⁵ to practice product and regulatory compliance services within its scope of accreditation and engineering expertise, respectively.
- 8.3 Engineering evaluations are conducted with DrJ's ANAB accredited ICS code scope of expertise, which are also its areas of professional engineering competence.
- 8.4 Any regulation specific issues not addressed in this section are outside the scope of this report.

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, the more restrictive shall govern.
- 9.3 *Installation Procedure*
 - 9.3.1 The EXTREN Structural Shape framing shall be built first, then EXTREN 1/4" flat plats, DURASHIELD or SAFPLANK cladding shall be connected to the frame via 1/2" Fiber Reinforced Plastic (FRP) threaded rods and FRP thermoplastic nuts.

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 Barcol hardness testing in accordance with ASTM D2583
 - 10.1.2 Glass transition temperature testing in accordance with ASTM D4065
 - 10.1.3 Coefficient of thermal expansion testing in accordance with ASTM D696
 - 10.1.4 Moisture equilibrium content testing in accordance with ASTM D570
 - 10.1.5 Tensile strength and stiffness testing in accordance with ASTM D638
 - 10.1.6 Flexural strength and stiffness testing in accordance with ASTM D790
 - 10.1.7 Bearing strength testing in accordance with ASTM D953
 - 10.1.8 Interlaminar shear strength testing in accordance with ASTM D2344



- 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 RDPs. 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.
- 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: 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.²⁶
- 10.6 Where additional condition of use and/or regulatory compliance information is required, please search for Strongwell Enclosure System on the DrJ Certification website.

11 Findings

- 11.1 As outlined in **Section 6**, Strongwell Enclosure System has performance characteristics that were tested and/or meet applicable regulations and is 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, Strongwell Enclosure System shall be approved for the following applications:
 - 11.2.1 Rooftop mechanical equipment screening
- 11.3 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Strongwell.
- 11.4 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.10²⁷ 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.

- 11.5 **Approved:**²⁸ Building regulations require that the building official shall accept duly authenticated reports.²⁹
 - 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 Agreements (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.³⁰

12 Conditions of Use

- 12.1 Material properties shall not fall outside the boundaries defined in **Section 6**.
- 12.2 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.
- 12.3 As listed herein, Strongwell Enclosure System shall not exceed eighteen (18) feet in height above the roof deck, except where located on buildings of type IA construction in accordance with IBC Section 1511.6.1.
- 12.4 Complete plans and structural calculations prepared by a California licensed architect, civil or structural engineer and shall be submitted to the department for approval prior to permit issuance.
- 12.5 The Fire Department shall approve all plans for plastic screening on Title 19 buildings.
- 12.6 Antennas and screening must not obstruct access to the roof by the Fire Department as required by Section 57.12.04 of the Los Angeles Municipal Code which states:

No person shall obstruct required access passageways on the roof surface. An unobstructed passageway for use by the Fire Department shall be provided through or around any approved structures or equipment installations on the roof surface. One access passageway shall be provided for every 50-foot length or fraction thereof of roof surface. Passageways shall be at least three feet wide and have at least seven feet of overhead clearance.

- 12.7 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:
 - 12.7.1 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.
 - 12.7.2 This report and the installation instructions shall be submitted at the time of permit application.
 - 12.7.3 This design has an internal quality control program and a third-party quality assurance program.
 - 12.7.4 At a minimum, this design shall be installed per **Section 9**.
 - 12.7.5 The review of this report by the AHJ shall comply with IBC Section 104 and IBC Section 105.4.
 - 12.7.6 This design 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.
 - 12.7.7 The application of this design 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.
- 12.8 The approval of this report by the AHJ shall comply with IBC Section 1707.1, where legislation states in part, *“the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new material or assemblies as provided for in Section 104.11,”* all of IBC Section 104, and IBC Section 105.4.



- 12.9 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).
- 12.10 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 The design 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 Additional technical information can be found at www.strongwell.com.

14 Review Schedule

- 14.1 This report is subject to periodic review and revision. For the latest version, visit drjcertification.org.
- 14.2 For information on the status of this report, please contact [DrJ Certification](#).

15 Approved for Use Pursuant to U.S. and International Legislation Defined in Appendix A

- 15.1 Strongwell Enclosure System is included in this report 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. This report states either that the material, product or service meets recognized standards or has been tested and found suitable for a specified purpose. This report meets the legislative intent and definition of being acceptable to the AHJ.



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
 - 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 this design 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),³¹ where providing test reports, engineering analysis and/or other related IP/TS is subject to prison of not more than ten years³² and/or a \$5,000,000 fine or 3 times the value of³³ the Intellectual Property (IP) and Trade Secrets (TS).
 - 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 materials³⁴ that are not specifically provided for in any regulation, 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.³⁵
 - 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 have 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 104.11.³⁶



- 1.3 **Approved³⁷ 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 that 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.³⁸ The Superintendent of Building Approved Testing Agency Roster 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 DrJ 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 1707.1.³⁹
- 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 2022 NYC Building Code (NYCBC) states in part that an approved agency shall be deemed⁴⁰ 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 agreement⁴¹ (i.e., ANAB, International Accreditation Forum also known as IAF, etc.).
- 1.6 **Approved by Florida:** Statewide approval of products, methods or systems of construction shall be approved, without further evaluation by:
- 1.6.1 A certification mark or listing of an approved certification agency,
 - 1.6.2 A test report from an approved testing laboratory,
 - 1.6.3 A product evaluation report based upon testing or comparative or rational analysis, or a combination thereof, from an approved product evaluation entity, or
 - 1.6.4 A product evaluation report based upon testing, comparative or rational analysis, or a combination thereof, developed, signed and sealed by a professional engineer or architect, licensed in Florida.
 - 1.6.5 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:
 - 1.6.5.1 A certification mark, listing or label from a commission-approved certification agency indicating that the product complies with the code,
 - 1.6.5.2 A test report from a commission-approved testing laboratory indicating that the product tested complies with the code,
 - 1.6.5.3 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,



- 1.6.5.4 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, or
- 1.6.5.5 A statewide product approval issued by the Florida Building Commission.
- 1.6.6 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](#).
- 1.8 **Approved by New Jersey:** Pursuant to the 2018 Building Code of New Jersey in [IBC Section 1707.1 General](#),⁴² 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)*”.⁴³ Furthermore N.J.A.C 5:23-3.7 states: “*Municipal approvals of alternative materials, equipment, or methods of construction.*”
 - 1.8.1 **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.
 - 1.8.1.1 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 the above.
 - 1.8.1.2 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 the above.
 - 1.8.2 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 the previous paragraph, 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](#)⁴⁴ and [Part 3280](#),⁴⁵ the Department encourages innovation and the use of new technology in manufactured homes. The design and construction of a manufactured home shall conform to the provisions of Part 3282 and Part 3280 where key approval provisions in mandatory language follow:
 - 1.9.1 “*All construction methods shall be in conformance with accepted engineering practices.*”
 - 1.9.2 “*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.*”
 - 1.9.3 “*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.⁴⁶
 - 1.10.2 For innovative alternatives and/or methods of construction, the building official shall accept duly authenticated reports from approved agencies with respect to the quality and manner of use of new materials or assemblies.⁴⁷
 - 1.10.2.1 An approved agency is “*approved*” when it is ANAB ISO/IEC 17065 accredited. DrJ Engineering, LLC (DrJ) is in the ANAB directory.
 - 1.10.2.2 An approved source is “*approved*” when an RDP is properly licensed to transact engineering commerce. The regulatory authority governing approved sources is the state legislature via its professional engineering regulations.⁴⁸
 - 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.⁴⁹
- 1.11 **Approval by International Jurisdictions:** The USMCA and GATT agreements provide for approval of innovative materials, designs, services, and/or methods of construction through the Agreement on Technical Barriers to Trade and the IAF Multilateral Recognition Arrangement (MLA), where these agreements:
- 1.11.1 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.
 - 1.11.2 **Approved:** The purpose of the 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, designs, services, and/or methods of construction.
 - 1.11.3 ANAB is an IAF-MLA signatory where recognition of certificates, validation, and verification statements issued by conformity assessment bodies accredited by all other signatories of the IAF MLA, with the appropriate scope, shall be approved.⁵⁰
 - 1.11.4 Therefore, all ANAB ISO/IEC 17065 duly authenticated reports are approval equivalent.⁵¹
- 1.12 Approval equity is a fundamental commercial and legal principle.⁵²



Issue Date: April 4, 2025

Subject to Renewal: October 1, 2025

LABC and LARC Supplement to Report Number 2403-101

REPORT HOLDER: Strongwell

1 Evaluation Subject

1.1 Strongwell Enclosure System

2 Purpose and Scope

2.1 Purpose

2.1.1 The purpose of this Report Supplement is to show Strongwell Enclosure System, recognized in Report Number 2403-101, has also been evaluated for compliance with the codes listed below as adopted by the Los Angeles Department of Building and Safety (LADBS).

2.2 *Applicable Code Editions*

2.2.1 *LABC—20, 23: Los Angeles Building Code*

2.2.2 *LARC—20, 23: Los Angeles Residential Code*

3 Conclusions

3.1 Strongwell Enclosure System, described in Report Number 2403-101, complies with the LABC and LARC and is subject to the conditions of use described in this supplement.

3.2 Where there are variations between the IBC and IRC and the LABC and LARC applicable to this report, they are listed here:

3.2.1 LABC Section 104 replaces IBC Section 104.

3.2.2 LABC Section 104.2.6 replaces IBC Section 104.11.

3.2.3 LABC Section 106.4.3 replaces IBC Section 105.4.

3.2.4 LABC Section 108.3 replaces IBC Section 110.4.

3.2.5 LABC Section 108.5 replaces IBC Section 110.3.

3.2.6 LARC Section 104.2.6 replaces IBC Section R104.11

3.2.7 LARC Section R108.5 replaces IRC Section R104.4

4 Conditions of Use

4.1 Strongwell Enclosure System, described in Report Number 2403-101, must comply with all of the following conditions:

4.1.1 All applicable sections in Report Number 2403-101.

4.1.2 The design, installation, and inspections are in accordance with additional requirements of LABC Chapter 16 and Chapter 17, as applicable.



Notes

- 1 For more information, visit drjcertification.org or call us at 608-310-6748.
- 2 <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1702>
- 3 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/colorado/ibc-2021/chapter/1/scope-and-administration#104.11>
- 4 <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706>:-:text=the%20design%20strengths%20and%20permissible%20stresses%20shall%20be%20established%20by%20tests%20as
- 5 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/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706>:-:text=shall%20conform%20to%20the%20specifications%20and%20methods%20of%20design%20of%20accepted%20engineering%20practice
- 6 <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1707.1>:-:text=the%20building%20official%20shall%20accept%20duly%20authenticated%20reports%20from%20approved%20agencies
- 7 <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1703.4.2>
- 8 https://up.codes/viewer/wyoming/ibc-2021/chapter/2/definitions#approved_agency
- 9 https://up.codes/viewer/wyoming/ibc-2021/chapter/2/definitions#approved_source
- 10 <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](#).
- 11 <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/>
- 12 <https://www.cbiteest.com/accreditation/>
- 13 <https://up.codes/viewer/colorado/ibc-2021/chapter/1/scope-and-administration#104>:-:text=to%20enforce%20the%20provisions%20of%20this%20code
- 14 <https://up.codes/viewer/colorado/ibc-2021/chapter/1/scope-and-administration#104.11>:-:text=Where%20the%20alternative%20material%20design%20or%20method%20of%20construction%20is%20not%20approved%20the%20building%20official%20shall%20respond%20in%20writing%20stating%20the%20reasons%20why%20the%20alternative%20was%20not%20approved AND <https://up.codes/viewer/colorado/ibc-2021/chapter/1/scope-and-administration#105.3.1>:-:text=If%20the%20application%20or%20the%20construction%20documents%20do%20not%20conform%20to%20the%20requirements%20of%20pertinent%20laws%20the%20building%20official%20shall%20reject%20such%20application%20in%20writing%20stating%20the%20reasons%20therefore
- 15 <https://up.codes/viewer/colorado/ibc-2021/chapter/17/special-inspections-and-tests#1707.1>:-:text=the%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%20104.11
- 16 <https://iaf.eu/en/about-iaf>
- 17 True for all ANAB accredited product evaluation agencies and all International Trade Agreements.
- 18 <https://www.justice.gov/crt/deprivation-rights-under-color-law> AND <https://www.justice.gov/atr/mission>
- 19 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.
- 20 All references to the LABC and LARC are the same as the 2021 IBC and 2021 IRC unless otherwise noted in the LABC and LARC Supplement at the end of this report.
- 21 <https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280#p-3280.2>(Listed%20or%20certified); <https://up.codes/viewer/colorado/ibc-2021/chapter/2/definitions#listed> AND <https://up.codes/viewer/colorado/ibc-2021/chapter/2/definitions#labeled>
- 22 <https://up.codes/viewer/colorado/ibc-2021/chapter/17/special-inspections-and-tests#1703.4>
- 23 <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%20livable%20and%20safe%20housing%20and%20shall%20demonstrate%20acceptable%20workmanship%20reflecting%20journeyman%20quality%20of%20work%20of%20the%20various%20trades
- 24 <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
- 25 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](#).
- 26 See Code of Federal Regulations (CFR) Title 24 Subtitle B Chapter XX Part 3280 for definition.
- 27 [2018 IFC Section 104.9](#)
- 28 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.
- 29 <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1707.1>



30 Multilateral approval is true for all ANAB accredited product evaluation agencies and all International Trade Agreements.
 31 <http://www.drjengineering.org/AppendixC> AND <https://www.drjcertification.org/comell-2016-protection-trade-secrets>
 32 <https://www.law.cornell.edu/uscode/text/18/1832#:~:text=imprisoned%20not%20more%20than%2010%20years>
 33 <https://www.law.cornell.edu/uscode/text/18/1832#:~:text=Any%20organization%20that,has%20thereby%20avoided>
 34 <https://up.codes/viewer/wyoming/ibc-2021/chapter/17/special-inspections-and-tests#1706.2>
 35 IBC 2021, Section 1706.1 Conformance to Standards
 36 IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General
 37 See **Section 11** for the distilled building code definition of **Approved**
 38 Los Angeles Municipal Code, SEC. 98.0503. TESTING AGENCIES
 39 <https://up.codes/viewer/california/ca-building-code-2022/chapter/17/special-inspections-and-tests#1707.1>
 40 New York City, The Rules of the City of New York, § 101-07 Approved Agencies
 41 New York City, The Rules of the City of New York, § 101-07 Approved Agencies
 42 <https://up.codes/viewer/new-jersey/ibc-2018/chapter/17/special-inspections-and-tests#1707.1>
 43 <https://www.nj.gov/dca/divisions/codes/codreg/ucc.html>
 44 <https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3282/subpart-A/section-3282.14>
 45 <https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280>
 46 IBC 2021, Section 1706 Design Strengths of Materials, 1706.2 New Materials. Adopted law pursuant to IBC model code language 1706.2.
 47 IBC 2021, Section 1707 Alternative Test Procedure, 1707.1 General. Adopted law pursuant to IBC model code language 1707.1.
 48 <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/>
 49 IBC 2021, Section 1706 Design Strengths of Materials, Section 1706.1 Conformance to Standards Adopted law pursuant to IBC model code language 1706.1.
 50 <https://iaf.nu/en/about-iaf-mla/#:~:text=it%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>
 51 True for all ANAB accredited product evaluation agencies and all International Trade Agreements.
 52 <https://www.justice.gov/crt/deprivation-rights-under-color-law> AND <https://www.justice.gov/atr/mission>