DrJ CERTIFICATION

Technical Evaluation Report™

TER 2011-01

Use of Huntsman Building Solutions Spray Polyurethane Foam (SPF) in Two Hour Fire-Rated Wall Assemblies

Huntsman Building Solutions

Product:

Sealection® 500, Sealection® NM, Foam-Lok™ 500, Foam-Lok™ 450, OC No Mix™, Classic Ultra™, Classic Ultra Select™, Classic Plus™, ProSeal™ and ProSeal LE™

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1 Innovative Products Evaluated[1,2]

1.1 The Huntsman Building Solutions (HBS) products evaluated in this TER for use in a two-hour fire-rated non-load bearing Area Separation Wall (ASW) assembly are listed below:

1.1.1 Classic Ultra™

1.1.2 Classic Ultra Select™

1.1.3 Classic Plus™

1.1.4 ProSeal™

1.1.5 ProSeal LE™

1.2 The products listed in Section 1.1 shall hereinafter be referred to as “HBS Approved ASW Spray Foams” in this TER.

1.3 The HBS products evaluated in this TER for use in a two-hour fire-rated load bearing Wall Partition (WP) assembly are listed below:

1.3.1 Sealection® 500

1.3.2 Sealection® NM Open-Cell Spray Foam

1.3.3 Foam-Lok™ 500

1.3.4 Foam-Lok™ 450

1.3.5 OC No-Mix™

1.3.6 Classic Ultra™

1.3.7 Classic Ultra Select™

1.4 The products listed in Section 1.3 shall hereinafter be referred to as “HBS Approved WP Spray Foams” in this TER.

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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.

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®*

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

2.2 *Standards and Referenced Documents*

2.2.1 *ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials*

2.2.2 *ASTM E119: Standard Test Methods for Fire Tests of Building Construction and Materials*

2.2.3 *ASTM E2032: Standard Guide for Extension of Data From Fire Resistance Test Conducted in Accordance with ASTM E119*

2.2.4 *GA 600 Fire-resistance and Sound Control Design Manual, 22nd Edition*

3 Performance Evaluation

3.1 Tests, 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 2016 (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 Testing and related engineering evaluations are defined as intellectual property and/or trade secrets.[8]

3.4 HBS Approved Spray Foams were evaluated in accordance with ASTM E119 for the following applications:

3.4.1 Performance of two-hour fire-rated non-load bearing area separation wall (ASW) assemblies listed in Section 5.2.

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[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.

[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] 18 U.S. Code § 1831 - Economic espionage - Whoever, intending or knowing that the offense will benefit any foreign government, foreign instrumentality, or foreign agent, knowingly steals, or without authorization appropriates, takes, carries away, or conceals, or by fraud, artifice, or deception obtains a trade secret shall be fined not more than $5,000,000 or imprisoned not more than 15 years, or both. Any organization that commits any offense described shall be fined not more than the greater of $10,000,000 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. https://www.law.cornell.edu/uscode/text/18/part-I/chapter-90.

3.4.2 Performance in two-hour fire-rated non-load bearing ASW assemblies without a protected wall when the ASW forms the fire barrier between attic spaces (with a thermal or ignition barrier in accordance with the applicable code).

3.4.3 Performance in two-hour fire-rated load bearing wall assemblies listed in Section 5.3.

3.5 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[9] to practice product and code compliance services within its scope of accreditation and engineering expertise, respectively.

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

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

4 Product Description and Materials

4.1 An example of the HBS Approved ASW Spray Foam assemblies evaluated in this TER are shown in Figure 1 and Figure 2.

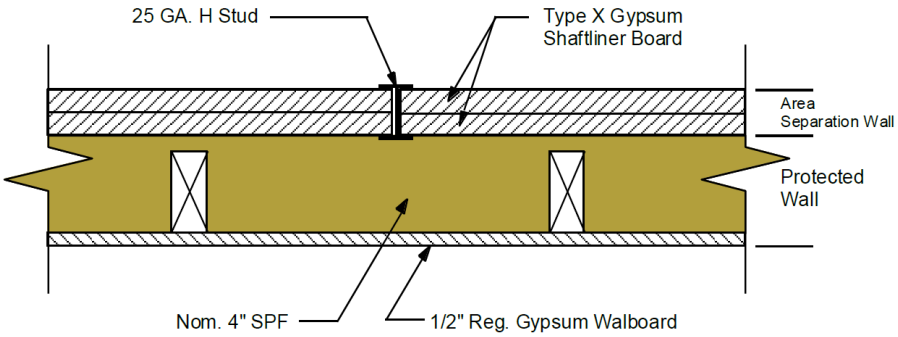

Figure 1. HBS Approved ASW Spray Foams in a Two-Hour Fire-Rated Non-Load Bearing ASW Assembly

4.2 An example of the HBS Approved WP Spray Foam assemblies evaluated in this TER is shown in Figure 2.

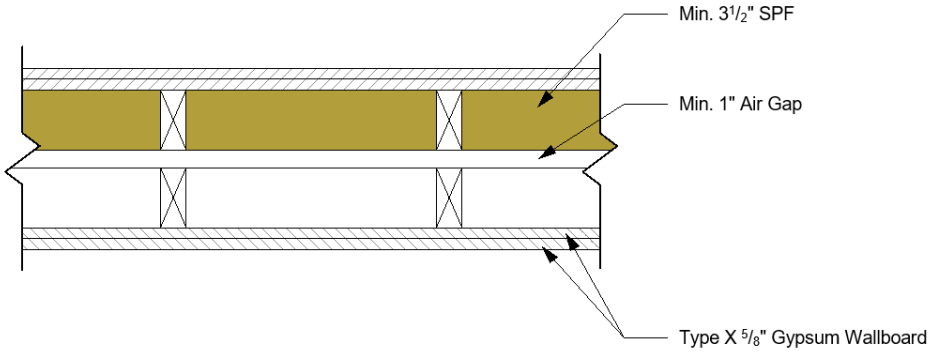

Figure 2. HBS Approved WP Spray Foams in a Two-Hour Fire-Rated Load Bearing WP Assembly

4.3 HBS Approved Spray Foams are proprietary, open (low density) and closed (medium density) cell Spray Polyurethane Foam (SPF) with a nominal density between 0.5 and 2.4 pcf.

[9] 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.

4.4 The two components of HBS Approved Spray Foams are:

4.4.1 Component A: MDI/pMDI isocyanate

4.4.2 Component B: proprietary resin

4.5 These two components are combined at the point of spray application.

5 Applications

5.1 *General*

5.1.1 HBS Approved ASW Spray Foams are used in the following applications:

5.1.1.1 Two-hour fire-rated non-load bearing ASW assemblies where required in buildings constructed in accordance with the IBC or IRC.

5.1.1.2 Two-hour fire-rated non-load bearing ASW assemblies without a protected wall when the ASW forms the fire barrier between inaccessible attic spaces. Ignition or thermal barriers shall be installed in accordance with the applicable code.

5.1.2 HBS Approved WP Spray Foams are used in the following applications:

5.1.2.1 Two-hour fire-rated load bearing wall partition assemblies where required in buildings constructed in accordance with the IBC or IRC.

5.2 *Two-Hour Fire-Rated Non-Load Bearing ASW Assemblies*

5.2.1 HBS Approved ASW Spray Foams are approved for use in two-hour fire-rated non-load bearing ASW assemblies as described in this document and in accordance with IBC Table 601, IBC Table 705.5[10] and IRC Section R302.2.

5.2.1.1 HBS Approved ASW Spray Foams shall be applied directly to the inside face of the gypsum board shaft liner, its accompanying H-Studs, and the adjacent framing without the need for an airspace between the shaft liner and the insulation.

5.2.1.1.1 HBS Approved ASW Spray Foams may be applied to one or both sides of the shaft liner wall assembly creating either symmetrical or asymmetrical layouts.

5.2.1.2 Up to 4" of HBS Approved ASW Spray Foams are allowed to be applied as described in Section 5.2.1 directly to the ASW assemblies listed in Section 5.2.2.

5.2.1.3 The thickness of HBS Approved ASW Spray Foams when applied to ASW assemblies in attic spaces per Section 5.1.1.2 shall be governed by testing of spray foam exposed in attic applications as detailed in TER 1406-03.

5.2.2 HBS Approved ASW Spray Foams are approved for use in the following two-hour fire-rated non-load bearing ASW assemblies when applied according to Section 5.2.1:

5.2.2.1 UL U336

5.2.2.2 UL U347

5.2.2.3 UL U366

5.2.2.4 UL U373

5.2.2.5 UL U375

5.2.2.6 UL U388

5.2.2.7 GA ASW 0800

5.2.2.8 GA ASW 0810

5.2.2.9 GA ASW 0980

[10] 2018 IBC Table 602

5.2.2.10 GA ASW 0985

5.2.2.11 GA ASW 0997

5.2.2.12 GA ASW 0999

5.2.2.13 GA ASW 1004

5.3 *Two-Hour Fire-Rated Load Bearing Wall Partition Assemblies*

5.3.1 HBS Approved WP Spray Foams are approved for use in two-hour fire-rated load bearing wall partition assemblies in accordance with IBC Table 601, IBC Table 705.5 and IRC Section R302 and as described below:

5.3.1.1 A double row of minimum 2x4 studs aligned front to back, 16″ o.c. on separate plates a minimum of 1″ apart.

5.3.1.2 Two (2) layers of $^{5}/_{8}$″ thick Type X Gypsum Wall Board (GWB) conforming to ASTM C1396 applied vertically (parallel to studs) with staggered joints covered with tape and joint compound (face layer only).

5.3.1.2.1 Base layer of GWB fastened to wood studs and bearing plates 8″:8″ o.c. (edge:field) with $1^{5}/_{8}$″ Type W screws.

5.3.1.2.2 Face layer of GWB fastened to wood studs and bearing plates over base layer 8″:8″ o.c. (edge:field) with $2^{1}/_{2}$″ Type W screws.

5.3.1.3 Minimum of $3^{1}/_{2}$″ of HBS Approved WP Spray Foam installed in stud cavities of either wall section.

5.3.2 HBS Approved WP Spray Foams are approved for use in the following two-hour fire-rated load bearing assemblies when applied according to Section 5.3.1:

5.3.2.1 GA WP 3820

5.3.2.2 ICC ESL 1373, Design No SPFI-1373-01

5.4 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 *General*

6.3.1 SPF insulation shall be applied by licensed dealers and installers certified by Huntsman Building Solutions.

6.3.2 A copy of the manufacturer published installation instructions shall be available at all times on the jobsite during installation.

6.3.3 HBS Approved Spray Foams shall be installed in accordance with the manufacturer installation instructions and this TER.

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

6.3.5 HBS Approved Spray Foams shall be applied to the framing using two-component spray equipment and shall be applied using a 1:1 ratio of Component A and Component B.

6.3.6 The substrate shall be dry and free of frost, ice, rust, oil, grease, dirt or any other substances that may prevent adhesion of the SPF to the substrate.

6.3.7 HBS Approved Spray Foams are intended for interior use only and are not to be used where they could come in contact with water. Provide protection from weather during and after installation.

6.3.8 HBS Approved Spray Foam shall be installed to the required thickness in accordance with the manufacturer installation instructions.

6.3.9 Do not use HBS Approved Spray Foams inside of electrical or junction boxes.

6.3.10 HBS Approved Spray Foams shall be installed only when the temperature is at or above 14°F (-10°C).

6.3.11 Insulation shall not be installed in areas where the service temperature is greater than 180°F (82°C).

6.3.12 For general SPF installation guidelines, see the American Chemistry Council's Guidance on Best Practices for the Installation of Spray Polyurethane Foam.

6.4 *Two-Hour Fire-Rated Non-Load Bearing ASW Assemblies:*

6.4.1 Any two-hour fire-rated non-load bearing ASW assemblies shall be installed in accordance with the wall assembly designs listed in Section 5.2.

6.4.2 Fire blocking shall be installed at the floor-to-wall intersections in accordance with the applicable code.

6.4.3 Other fire resistant wall assemblies are outside the scope of this TER.

6.5 *Two-Hour Fire-Rated Load Bearing WP Assemblies:*

6.5.1 Any two-hour fire-rated load bearing WP assemblies shall be installed in accordance with the wall assembly designs listed in Section 5.3.

6.5.2 Fire blocking shall be installed at the floor-to-wall intersections in accordance with the applicable code.

6.5.3 Other fire resistant wall assemblies are outside the scope of this TER.

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 Fire testing of wall assemblies in accordance with ASTM E119

7.2 Engineering evaluation performed by Priest & Associates Consulting, LLC.

7.3 UL Fire Resistance Directory, Volume 1.

7.4 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.

7.5 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.

7.6 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.

7.7 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]

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

7.8 Where additional condition of use and/or code compliance information is required, please search for Sealection® 500, Sealection® NM, Foam-Lok™ 500, Foam-Lok™ 450, OC No Mix™, Classic Ultra™, Classic Ultra Select™, Classic Plus™, ProSeal™ and ProSeal LE™ on the DrJ Certification website.

8 Findings

8.1 As delineated in Section 3, Sealection® 500, Sealection® NM, Foam-Lok™ 500, Foam-Lok™ 450, OC No Mix™, Classic Ultra™, Classic Ultra Select™, Classic Plus™, ProSeal™ and ProSeal LE™ have 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, Sealection® 500, Sealection® NM, Foam-Lok™ 500, Foam-Lok™ 450, OC No Mix™, Classic Ultra™, Classic Ultra Select™, Classic Plus™, ProSeal™ and ProSeal LE™ shall be approved for the following applications:

8.2.1 As a component of the two-hour fire-rated non-load bearing ASW assemblies listed in Section 5.2 (HBS Approved ASW Spray Foams, only).

8.2.2 As a component of two-hour fire-rated non-load bearing ASW assemblies without a protected wall when the ASW forms the fire barrier between attic spaces (HBS Approved ASW Spray Foams, only).

8.2.3 As a component of the two-hour fire-rated load bearing WP assemblies listed in Section 5.3 (HBS Approved WP Spray Foams, only).

8.3 Any application specific issues not addressed herein can be engineered by an RDP. Assistance with engineering is available from Huntsman Building Solutions.

8.4 IBC Section 104.11 (IRC Section R104.11 and IFC Section 104.10[12] 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**:[13] Building codes require that the building official shall accept duly authenticated reports[14] or research reports[15] 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 Acceptance 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).

8.5.2 Acceptance 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.

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[12] 2018 IFC Section 104.9

[13] 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.

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

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

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 & 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*."[16]

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 Use of HBS Approved Spray Foams in wall assemblies other than those listed in Section 5 are outside the scope of this TER.

9.4 HBS Approved Spray Foam may be used without an ignition barrier where permitted by TER 1406-03 or ESR 3500.

9.5 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:

9.5.1 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.

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

9.5.3 These innovative products have an internal quality control program and a third-party quality assurance program.

9.5.4 At a minimum, these innovative products 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 These innovative products have 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 these innovative products in the context of this TER are 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.

9.6 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.

9.7 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).

9.8 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.

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

10 Identification

10.1 The innovative products listed in Section 1.1 and Section 1.3 are 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 huntsmanbuildingsolutions.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 Sealection® 500, Sealection® NM, Foam-Lok™ 500, Foam-Lok™ 450, OC No Mix™, Classic Ultra™, Classic Ultra Select™, Classic Plus™, ProSeal™ and ProSeal LE™ are 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.

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 Sealection® 500, Sealection® NM, Foam-Lok™ 500, Foam-Lok™ 450, OC No Mix™, Classic Ultra™, Classic Ultra Select™, Classic Plus™, ProSeal™ and ProSeal LE™ 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),[17] where providing test reports, engineering analysis and/or other related IP/TS is subject to prison of not more than 10 years[18] and/or a $5,000,000 fine or 3 times the value of[19] 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 materials[20] 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.[21]

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.[22]

[17] http://www.drjengineering.org/AppendixC and https://www.drjcertification.org/cornell-2016-protection-trade-secrets.

[18] https://www.law.cornell.edu/uscode/text/18/1832#:~:text=imprisoned%20not%20more%20than%2010%20years

[19] https://www.law.cornell.edu/uscode/text/18/1832#:~:text=Any%20organization%20that,has%20thereby%20avoided

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

[21] IBC 2021, Section 1706.1 Conformance to Standards

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

1.3 **Approved**[23] **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.[24] 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.[25]

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[26] 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[27] (i.e., ANAB, International Accreditation Forum (IAF), etc.).

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

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

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

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

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

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.

1.8 **Approved by New Jersey**: Pursuant to Building Code 2018 of New Jersey in IBC Section 1707.1 General,[28] 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)”.[29] 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”.

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

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

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[30] and Part 3280,[31] 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.[32]

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.[33] A building official approved agency is deemed to be approved via certification from an accreditation body that is listed by the International Accreditation Forum[34] or equivalent.

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.[35] 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.

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

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

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

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

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

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

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.