

DrJ Research Report

Report No: DRR 1202-03



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Foam Plastic Insulating Sheathing Products in Exterior Walls of Type V Construction

Trade Secret Report Holder:

Foam Sheathing Committee (FSC) Members

americanchemistry.com/industry-groups/foam-sheathing-committee-fsc

continuousinsulation.org

CSI Designations:

DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

Section: 07 20 00 - Thermal Protection

Section: 07 21 13 - Foam Board Insulation

Section: 07 25 00 - Water-Resistive Barriers/Weather Barriers

Section: 07 21 00 - Thermal Insulation

Section: 07 24 00 - Exterior Insulation and Finish Systems

Section: 07 27 00 - Air Barriers

1 Innovative Products Evaluated¹

1.1 Foam Plastic Insulating Sheathing (FPIS) products from the following manufacturers are recognized in this report. Products are as listed in **Table 1**.

- 1.1.1 Atlas Roofing Corporation
- 1.1.2 BASF Corporation
- 1.1.3 DuPont de Nemours, Inc.
- 1.1.4 Hunter Panels
- 1.1.5 Insulfoam
- 1.1.6 Kingspan Insulation, LLC
- 1.1.7 Owens Corning
- 1.1.8 Progressive Foam Technologies Inc.
- 1.1.9 Rmax, a Business Unit of Sika Corporation

2 Evaluation Scope

- 2.1 This research report provides a central location for the identification of products that have been approved for use in exterior walls of buildings in Type V construction.
 - 2.1.1 The products listed in this report are those that have been listed in code evaluation reports as approved for use in Type V construction. These reports are shown in **Table 1**.
- 2.2 This research report supplements existing product certifications and is intended only to provide information on the products approved for the manufacturers listed in **Section 1.1**. For the purposes of this report, DrJ is not certifying the products, but rather is providing the user with direction on where they can obtain specific information for the products shown. For details on the products found in **Table 1**, see the manufacturer's code evaluation reports or listings.
- 2.3 Any code compliance issues not specifically addressed in this section are outside the scope of this DRR.
- 2.4 Any engineering evaluation conducted for this DRR was performed within DrJ's professional scope of work on the dates provided herein.

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 The regulatory authority shall enforce¹² 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 writing¹³ stating the nonconformance and the path to its cure.
- 3.6 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.¹⁴
- 3.7 Approval equity is a fundamental commercial and legal principle.¹⁵

4 Applicable Standards for the Listing; Regulations for the Regulatory Evaluation¹⁶

4.1 Standards

- 4.1.1 *ASTM C578: Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation*
- 4.1.2 *ASTM C1289: Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board*
- 4.1.3 *ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials*
- 4.1.4 *UL 723: Test for Surface Burning Characteristics of Building Materials*

4.2 Regulations

- 4.2.1 *IBC – 18, 21, 24: International Building Code®*
- 4.2.2 *IRC – 18, 21, 24: International Residential Code®*

5 Regulatory Compliance Assessment for Use in Type V Construction

5.1 This research report covers the use of foam plastic insulating sheathing (FPIS) when used as exterior wall sheathing or in exterior walls in Type V construction as defined by the IBC and detailed in IBC Section 504 and Section 506.

5.1.1 Type VA and VB construction is acceptable for almost all occupancy groups (VB is not permitted for H-1 and I-2).

5.1.1.1 Type VA requires a 1-hour fire-resistance rating for exterior bearing walls.

5.1.1.2 Type VB requires no fire-resistance rating (see IBC Table 601 and Table 705.5¹⁷).

602.1.1 Minimum requirements. A building or portion thereof shall not be required to conform to the details of a type of construction higher than that type which meets the minimum requirements based on occupancy even though certain features of such a building actually conform to a higher type of construction.

5.2 The use of FPIS in or on exterior walls in Type I, II, III, or IV construction, as defined by the IBC, are covered in separate research reports.¹⁸

5.3 The use of FPIS as a water-resistive barrier (WRB) or air barrier, as defined by the IBC, are covered in separate research reports.¹⁹

5.4 Code Requirements for Foam Plastic Insulation when Used in or on Exterior Walls in Type V Construction

5.4.1 Requirements for foam plastic insulation in or on exterior walls of buildings of any height are given in IBC Section 2603.5.

5.4.1.1 The requirements for use in Type V construction are given in the second to last sentence (emphasis added).

2603.5 Exterior walls of buildings of any height. Exterior walls of buildings of Type I, II, III or IV construction of any height shall comply with Sections 2603.5.1 through 2603.5.7. Exterior walls of cold storage buildings required to be constructed of noncombustible materials, where the building is more than one story in height, shall comply with the provisions of Sections 2603.5.1 through 2603.5.7. Exterior walls of buildings of Type V construction shall comply with Sections 2603.2, 2603.3 and 2603.4. Fireblocking shall be in accordance with Section 718.2.

5.4.1.2 It is the responsibility of the user to apply the requirements of the specific edition used in the jurisdiction where the structure is to be built.

5.4.1.3 It is also the responsibility of the user to verify the certifications listed in code evaluation reports.

5.5 Product Code Compliance

5.5.1 **Table 1** shows the FPIS products from the manufacturers in **Section 1** that meet all the requirements in IBC Section 2603.2, Section 2603.3, and Section 2603.4 for use in Type V construction.

5.5.1.1 Consult the manufacturer installation instructions and associated evaluation report for details specific to the intended application.

Table 1. Product Code Compliance

Manufacturer	Product	Evaluation Report	<u>2603.2</u> Labeling ¹	<u>2603.3</u> FSI / SDI ²	<u>2603.4</u> Thermal Barrier Required ^{3,4,5}	<u>2603.4.1.6</u> Ignition Barrier Required ^{4,5}
Atlas Roofing Corporation	EnergyShield® CGF	<u>ESR-1375</u>	Y	Y	Y	N
	EnergyShield®		Y	Y	Y	N
	EnergyShield® XR		Y	Y	Y	N
	EnergyShield® CGF Pro	<u>TER 1306-03</u> <u>ULEX.R13089-01</u>	Y	Y	Y	N
	EnergyShield® Pro	<u>TER 1306-03</u> <u>ESR-1375</u> <u>ULEX.R13089-01</u>	Y	Y	N	N
	Atlas Geofoam	<u>ESR-1962</u>	Y	Y	N	N
	Duratherm		Y	Y	N	N
	ThermalStar GPS T&G II		Y	Y	Y	Y
	ThermalStar Intergrade Board EPS		Y	Y	Y	N
	ThermalStar EIFS		Y	Y	Y	N
	ThermalStar Flute Fill		Y	Y	N	N
	ThermalStar Taper		Y	Y	N	N
	TalonGuard Treated EPS		Y	Y	Y	N
	Atlas OEM (Molded Polystyrene)	<u>ESR-1962</u> <u>ULEX.R16529-01</u>	Y	Y	N	N
	ThermalStar		Y	Y	N	N
	ThermalStar Insulation Board		Y	Y	N	N
	ThermalStar LCi		Y	Y	N	N
	ThermalStar Lri		Y	Y	N	N
	ThermalStar T&G		Y	Y	N	N
	ThermalStar GPS	<u>ULEX.R16529-01</u>	Y	Y	N	N
	ThermalStar LCi GPS		Y	Y	N	N
	Elevation Geofoam		Y	Y	N	N
	ThermalStar SWi GPS	<u>TER 1905-02</u> <u>ULEX.R16529-01</u>	Y	Y	N	N
	ThermalStar LWi GPS		Y	Y	N	N
	ThermalStar SWi	<u>ESR 1962</u> <u>TER 1905-02</u> <u>ULEX.R16529-01</u>	Y	Y	N	N
	ThermalStar LWi		Y	Y	N	N
BASF Corporation	Neopor® Insulation Boards	<u>ESR-2784</u>	Y	Y	Y	N
	Neopor® GPS Insulation Boards	<u>ULEX.R5817-02</u>	Y	Y	Y	N
	Neopor® ThermaPlus™	<u>ESR-4431</u>	Y	Y	Y	Y

Table 1. Product Code Compliance

Manufacturer	Product	Evaluation Report	<u>2603.2</u> Labeling ¹	<u>2603.3</u> FSI / SDI ²	<u>2603.4</u> Thermal Barrier Required ^{3,4,5}	<u>2603.4.1.6</u> Ignition Barrier Required ^{4,5}
DuPont de Nemours, Inc.	Thermax™ ci Exterior	CCRR-0435	Y	Y	N	N
	Thermax™ XARMOR (ci) Exterior		Y	Y	N	N
	Thermax™ Heavy Duty		Y	Y	N	N
	Thermax™ Light Duty		Y	Y	N	N
	Thermax™ Metal Building		Y	Y	N	N
	Thermax™ Sheathing		Y	Y	N	N
	Thermax™ White Finish		Y	Y	N	N
	Thermax™ Metal Building Board NH Insulation	CCRR-0440	Y	Y	N	N
	Thermax™ White Finish NH Insulation		Y	Y	N	N
	Thermax™ Heavy Duty NH Insulation		Y	Y	N	N
	Thermax™ Light Duty NH Insulation		Y	Y	N	N
	Thermax™ Basic NH Insulation		Y	Y	N	N
	Isocast™ R	ESR-3089	Y	Y	Y	Y
	Super Tuff-R™		Y	Y	Y	N
	Super Tuff-R™ C		Y	Y	Y	N
	Tuff-R™		Y	Y	Y	N
	Tuff-R™ C		Y	Y	Y	N
	Styrofoam™	ESR-4755	Y	Y	N	N
Hunter Panels	Xci Foil (Class A)	TER 1402-01	Y	Y	N	N
	Xci Foil (Class A) PLUS		Y	Y	N	N
	Xci CG (Class A)		Y	Y	Y	Y
	Xci 286		Y	Y	N	N
	Xci Ply (Class A)		Y	Y	Y	Y
	Xci Foil	TER 1402-02	Y	Y	Y	Y
	Xci CG		Y	Y	Y	Y
	Xci Ply		Y	Y	Y	Y
	Xci NB	TER 1508-01	Y	Y	Y	Y
Insulfoam	Blueskin VP Tech	TER 2309-01	Y	Y	Y	Y

Table 1. Product Code Compliance

Manufacturer	Product	Evaluation Report	<u>2603.2</u> Labeling ¹	<u>2603.3</u> FSI / SDI ²	<u>2603.4</u> Thermal Barrier Required ^{3,4,5}	<u>2603.4.1.6</u> Ignition Barrier Required ^{4,5}
Kingspan	GreenGuard® CM	TER 1407-03	Y	Y	N	N
	GreenGuard® LG CM		Y	Y	N	N
	GreenGuard® SL		Y	Y	N	N
	GreenGuard® LG SL		Y	Y	N	N
	GreenGuard® SLX		Y	Y	N	N
	GreenGuard® PLYGOOD		Y	Y	N	N
	GreenGuard® Fanfold		Y	Y	N	N
Owens Corning	FOAMULAR®	ULEX.R8811	Y	Y	N	N
	FOAMULAR® NGX™		Y	Y	N	N
Progressive Foam Technologies	Chrome® GPS™	ULEX.R18532	Y	Y	Y	N
	Contoured Expanded Polystyrene Insulation		Y	Y	Y	Y
	Contoured Graphite Polystyrene Insulation		Y	Y	Y	N
	Proboard®		Y	Y	Y	N
	Proboard® Core		Y	Y	N	N
	Proboard® Insulating Sheathing		Y	Y	Y	N
	Proboard® FR		Y	Y	N	N
	Proboard® Original		Y	Y	Y	Y
	Proboard® Premium		Y	Y	Y	N
	Proboard® Ultra™		Y	Y	Y	N
	Proboard® Versa™		Y	Y	Y	N
	Proboard® Versa™ VP		Y	Y	Y	N
	ProFold®		Y	Y	Y	Y
	ProFold® Original		Y	Y	Y	Y
	ProFold® Premium		Y	Y	Y	N
	Progressive Foam® Rigid Foam Plastic Insulating Sheathing		Y	Y	Y	Y
	Halo®		Y	Y	Y	N
	Halo® Exterra®		Y	Y	Y	N
	Halo® Interra® Plus		Y	Y	Y	N
	Halo® Subterra®		Y	Y	Y	N

Table 1. Product Code Compliance

Manufacturer	Product	Evaluation Report	<u>2603.2</u> Labeling ¹	<u>2603.3</u> FSI / SDI ²	<u>2603.4</u> Thermal Barrier Required ^{3,4,5}	<u>2603.4.1.6</u> Ignition Barrier Required ^{4,5}
Rmax, a Business Unit of Sika Corporation	Thermasheath®	TER 1309-03	Y	Y	N	N
	TSX-8500		Y	Y	N	N
	TSX-8510		Y	Y	N	N
	ECOMAXci® FR		Y	Y	N	N
	ECOMAXci® FR White		Y	Y	N	N
	ECOMAXci® Ply	TER 1504-04	Y	Y	Y	N
	ECOMAXci® FR Air Barrier	TER 1212-03	Y	Y	Y	Y
	EVOMAXci™		Y	Y	Y	Y
	R-Matte® Plus-3	DL 2312-01	Y	Y	Y	Y
	Durasheath®	TER 2202-02	Y	Y	N	N
	ThermaBase-CI™	TER 1504-05	Y	Y	Y	N
	Thermasheath®-SI	TER 1207-01	Y	Y	N	N
	ECOMAXci® FR Ply	TER 1811-02	Y	Y	N	N
<ol style="list-style-type: none"> 1. The evaluation reports listed reference specific codes and versions of those codes. Consult the evaluation report for use with specific code versions. 2. Flame Spread Index / Smoke Developed Index 3. To meet required 15-minute thermal barrier, sheathing must be $19/32$" or thicker per IBC Table 722.6.2(1). 4. Where a product is noted as approved for use without a thermal barrier, consult the manufacturer code approval report for restrictions or appropriate uses without a thermal barrier. Where a product is noted as approved for use without an ignition barrier, consult the manufacturer code approval report to restrictions or appropriate uses without an ignition barrier. 5. Thermal or ignition barrier not required in attics and crawl spaces in accordance with IBC Section 2603.4.1.6. 						

5.5.2 Not all of IBC Section 2603.2, Section 2603.3, and Section 2603.4 are applicable to exterior walls. **Table 2** summarizes the code requirements for FPIS used in or on exterior walls in Type V construction.

Table 2. Code Requirements

Code Section	Section Title	Summary of Requirements
<u>2603.2</u>	Labeling and Identification	Packages and containers of foam plastic insulation and foam plastic insulation components delivered to the job site shall bear the label of an approved agency showing the manufacturer's name, product listing, product identification, and information sufficient to determine that the end use will comply with the code requirements.
<u>2603.3</u>	Surface-Burning Characteristics	<p>(Less than or equal to 4" thickness)</p> <p>Unless otherwise indicated in this section, foam plastic insulation and foam plastic cores of manufactured assemblies shall have a flame spread index of not more than 75 and a smoke-developed index of not more than 450 where tested in the maximum thickness intended for use in accordance with ASTM E84 or UL 723. Loose fill-type foam plastic insulation shall be tested as board stock for the flame spread and smoke-developed indices.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Smoke-developed index for interior trim as provided for in <u>Section 2604.2</u>. 2. In cold storage buildings, ice plants, food plants, food processing rooms, and similar areas, foam plastic insulation where tested in a thickness of 4" (102 mm) shall be permitted in a thickness up to 10" (254 mm) where the building is equipped throughout with an automatic sprinkler system in accordance with <u>Section 903.3.1.1</u>. The approved automatic sprinkler system shall be provided in both the room and that part of the building in which the room is located. 3. Foam plastic insulation that is a part of a Class A, B, or C roof-covering assembly provided that the assembly with the foam plastic insulation satisfactorily passes NFPA 276 or UL 1256. The smoke-developed index shall not be limited for roof applications. 4. Foam plastic insulation greater than 4" (102 mm) in thickness shall have a maximum flame spread index of 75 and a smoke-developed index of 450 where tested at a minimum thickness of 4" (102 mm), provided that the end use is approved in accordance with <u>Section 2603.9</u> using the maximum thickness and density intended for use. 5. Flame spread and smoke-developed indices for foam plastic interior signs in covered and open mall buildings provided that the signs comply with <u>Section 402.6.4</u>. <p>(Greater than 4" thickness)</p> <p>Exception 4 – see <u>Section 2603.9</u></p>
<u>2603.4</u>	Thermal Barrier	Except as provided for in <u>Sections 2603.4.1</u> and <u>2603.9</u> , foam plastic shall be separated from the interior of a building by an approved thermal barrier of $1\frac{1}{2}$ " (12.7 mm) gypsum wallboard, mass timber or heavy timber in accordance with <u>Section 2304.11</u> or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275. Combustible concealed spaces shall comply with <u>Section 718</u> .
<u>2603.4.1</u>	Thermal Barrier Not Required	The thermal barrier specified in <u>Section 2603.4</u> is not required under the conditions set forth in <u>Section 2603.4.1.1</u> through <u>Section 2603.4.1.15</u> .
<u>2603.4.1.4</u>	Exterior Walls, One-Story buildings	<p>Installation:</p> <ul style="list-style-type: none"> • Separation from interior of building by ignition barrier • Flame spread index of not more than 25 • Smoke-developed index of not more than 450 <p>Less than 4" thickness:</p> <ul style="list-style-type: none"> • Covered by aluminum or steel of required thickness • Building sprinklered per <u>Section 903.3.1.1</u>

Table 2. Code Requirements

Code Section	Section Title	Summary of Requirements
<u>2603.4.1.6</u>	Attics and crawl spaces	Within an attic or crawl space where entry is made only for service of utilities, foam plastic insulation shall be protected against ignition by: <ul style="list-style-type: none"> • 1½"-thick (38 mm) mineral fiber insulation • ¼"-thick (6.4 mm) wood structural panel, particleboard or hardboard • ⅜" (9.5 mm) gypsum wallboard • Corrosion-resistant steel having a base metal thickness of 0.016" (0.4 mm) • 1½"-thick (38 mm) self-supported spray applied cellulose insulation in attic spaces only • Other approved material installed in such a manner that the foam plastic insulation is not exposed. • The protective covering shall be consistent with the requirements for the type of construction.
<u>2603.9</u>	Special approval	(IBC 2021 and IBC 2024) Compliance with requirements of <u>Section 2603.4</u> or those of <u>Section 2603.6</u> are not required where the product has been specifically approved based on large-scale testing (NFPA 286, FM 4880, UL 1040, or UL 1715) that relates to the actual end-use configuration using the maximum thickness intended for use. Assemblies tested shall include seams, joints, and other typical details used in the installation of the assembly. (IBC 2018) Foam plastic shall not be required to comply with the requirements of Section 2603.4 or those of Section 2603.6 where specifically approved based on large-scale tests such as, but not limited to, NFPA 286 (with the acceptance criteria of Section 803.2), FM 4880, UL 1040, or UL 1715. Such testing shall be related to the actual end-use configuration and be performed on the finished manufactured foam plastic assembly in the maximum thickness intended for use.

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

5.7 Any regulation specific issues not addressed in this section are outside the scope of this report.

6 Installation

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

6.2 In the event of a conflict between the manufacturer installation instructions and the manufacturer code compliance report, the more restrictive shall govern.

6.3 For applications outside the scope of this research report or the referenced research reports, an alternate means of code compliance is required.

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 indicated in the manufacturer research reports listed in **Table 1**.
- 7.2 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.
- 7.3 Where pertinent, 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 equivalent²⁰ to the regulatory provision in terms of quality, strength, effectiveness, fire resistance, durability, and safety.
- 7.4 The accuracy of the provisions provided herein may be reliant upon the published properties of raw materials, which are defined by the grade mark, grade stamp, mill certificate, 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 Duly Authenticated Reports, may be dependent upon published design properties by others.
- 7.5 Testing and engineering analysis: The strength, rigidity, and/or general performance of component parts and/or the integrated structure are determined by suitable tests that simulate the actual conditions of application that occur and/or by accepted engineering practice and experience.²¹
- 7.6 Where additional condition of use and/or regulatory compliance information is required, please search for Foam Plastic Insulating Sheathing (FPIS) products on the DrJ Certification website.

8 Findings

- 8.1 As outlined in **Section 5**, Foam Plastic Insulating Sheathing (FPIS) products have performance characteristics that were tested and/or meet applicable regulations and are suitable for use pursuant to its specified purpose.
- 8.2 When used and installed in accordance with this duly authenticated report and the manufacturer installation instructions, Foam Plastic Insulating Sheathing (FPIS) products shall be approved for the following applications:
 - 8.2.1 Use in buildings of Type V construction in accordance with IBC Section 2603.
 - 8.3 Any application specific issues not addressed herein can be engineered by an RDP.
 - 8.4 IBC Section 104.2.3²² (IRC Section R104.2.2²³ and IFC Section 104.2.3²⁴ are similar) in pertinent part states:

104.2.3 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved.

- 8.5 **Approved:**²⁵ Building regulations require that the building official shall accept Duly Authenticated Reports.²⁶
 - 8.5.1 An approved agency is “approved” when it is ANAB ISO/IEC 17065 accredited.
 - 8.5.2 An approved source is “approved” when an RDP is properly licensed to transact engineering commerce.
 - 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. Denial without written reason deprives a protected right to free and fair competition in the marketplace.

9 Conditions of Use

- 9.1 At a minimum, this product shall be installed per **Section 6** of this DRR.
- 9.2 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:
 - 9.2.1 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.
 - 9.2.2 This report and the installation instructions shall be submitted at the time of permit application.
 - 9.2.3 The review of this report by the AHJ shall comply with IBC Section 104 and IBC Section 105.4.
 - 9.2.4 These Foam Plastic Insulating Sheathing (FPIS) products have an internal quality control program and a third party quality assurance program in accordance with IBC Section 110.4, IBC Section 104.7.2,²⁷ IBC Section 1703, IRC Section R109,²⁸ and IRC Section R109.2.
 - 9.2.5 The application of these Foam Plastic Insulating Sheathing (FPIS) products 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.
- 9.3 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 104.2.3,"²⁹ all of IBC Section 104 and IBC Section 105.4. If there is a non-conformance, the specific regulatory section and language of the non-conformance shall be provided in writing³⁰ stating the nonconformance.
- 9.4 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.

10 Identification

- 10.1 The Foam Plastic Insulating Sheathing (FPIS) products from the manufacturers listed in **Section 1.1** are identified by a label on the board or packaging material bearing the manufacturer name, product name, label of the third-party inspection agency, and other information to confirm code compliance.
- 10.2 Additional technical information can be found at the respective FSC member websites provided at americanchemistry.com/industry-groups/foam-sheathing-committee-fsc.

11 Review Schedule

- 11.1 This report is subject to periodic review and revision. For the latest version, visit drjengineering.org.
- 11.2 For information on the status of this report, please contact [DrJ_Engineering](mailto:DrJ_Engineering@americanchemistry.com).

Notes

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

2 [2021 IBC Section 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 [2021 IBC Section 104.11](#).

4 [2021 IBC Section 1706](#)

5 The design strengths and permissible stresses of any structural material shall conform to the specifications and methods of design of accepted engineering practice: [2021 IBC Section 1706.1](#).

6 [2021 IBC Section 1707.1](#)

7 [2021 IBC Section 1703.4.2](#)

8 [2021 IBC Definitions: Approved Agency](#)

9 [2021 IBC Definitions: Approved Source](#)

10 All ideas, engineering analysis, and test data are proprietary [intellectual property \(IP\)](#) and [trade secrets \(TS\)](#) and should not be provided to anyone. In particular, public regulatory officials are subject to freedom of information act requests – [federal](#) and state [public records acts](#). This means that IP and TS will be in the public domain when any information is provided. In addition, each state also has legislation that mimics the federal [Defend Trade Secrets Act 2016](#) (DTSA), where providing test reports, engineering analysis, and/or other related IP/TS is subject to [prison of not more than 10 years and/or a \\$5,000,000 fine or 3 times the value of the IP and TS](#). To follow DTSA and to comply with state public records and trade secret legislation requires approval through [ANAB ISO/IEC 17065 accredited certification bodies](#) or [approved sources](#). For more information, please visit <http://www.drjengineering.org/AppendixC> and <https://www.drjcertification.org/cornell-2016-protection-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 [2021 IBC Section 104](#)

13 [2021 IBC Section 104.11 AND 2021 IBC Section 105.3.1](#)

14 [2021 IBC Section 1707.1](#)

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

16 Unless otherwise noted, all references in this Listing are from the 2024 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.

17 [2018 IBC Table 602](#)

18 [DRR 1202-01, DRR 1202-04](#)

19 [WRB: DRR 1410-05, Air Barrier: DRR 1410-06](#)

20 [2021 IBC Section 104.11](#)

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

22 [2021 IBC Section 104.11](#)

23 [2021 IRC Section R104.11](#)

24 [2021 IFC Section 104.10, 2018 IFC Section 104.9](#)

25 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.

26 [2021 IBC Section 1707.1](#)

27 [2021 IBC Section 110.4](#)

28 [2021 IRC Section R104.4](#)

29 [2021 IBC Section 104.11](#)

30 [2021 IBC Section 104.11 AND 2021 IBC Section 105.3.1](#)