DrJ™ CERTIFICATION

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17065 PRODUCT CERTIFICATION BODY

IAF MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT

Approved. Sealed. Code Compliant.

Technical Evaluation Report

TER 2011-01

Use of Huntsman Building Solutions Icynene® Brand Spray Polyurethane Foam (SPF) in Fire-Rated Non-Load Bearing Area Separation Wall (ASW) Assemblies

Huntsman Building Solutions®

Product:

Icynene® Brand Classic Ultra, Classic Ultra Select, Classic Plus, ProSeal, ProSeal LE

Issue Date:

January 12, 2021

Revision Date:

January 12, 2021

Subject to Renewal:

April 1, 2022

COMPANY INFORMATION:	ADDITIONAL LISTEES:

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DIVISION: 07 00 00 - THERMAL AND MOISTURE PROTECTION

SECTION: 07 21 19 - Foamed-in-Place Insulation

1 PRODUCT EVALUATED[1]

1.1 The Huntsman Building Solutions® (HBS) products evaluated in this TER are listed below.

1.1.1 Icynene® Brand Classic Ultra

1.1.2 Icynene® Brand Classic Ultra Select

1.1.3 Icynene® Brand Classic Plus

1.1.4 Icynene® Brand ProSeal

1.1.5 Icynene® Brand ProSeal LE

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

2 APPLICABLE CODES AND STANDARDS[2,3]

2.1 *Codes*

2.1.1 *IBC—12, 15, 18: International Building Code®*

2.1.2 *IRC—12, 15, 18: International Residential Code®*

2.1.3 *IECC—12, 15, 18: International Energy Conservation Code®*

2.2 *Standards and Referenced Documents*

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

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

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

2.2.4 *Gypsum Association Fire Resistance Design Manual GA 600*

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

[2] Unless otherwise noted, all references in this TER are from the 2018 version of the codes and the standards referenced therein. This material, design, or method of construction also complies with the 2000-2015 versions of the referenced codes and the standards referenced therein.

[3] All terms defined in the applicable building codes are italicized.

3 Performance Evaluation

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

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

3.1.2 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)

3.2 Any code compliance issues not specifically addressed in this section are outside the scope of this TER.

3.3 Any engineering evaluation conducted for this TER was performed within DrJ's ANAB "accredited ICS code scope" and/or the defined professional engineering scope of work on the dates provided herein.

4 Product Description and Materials

4.1 An example of the HBS Approved Spray Foam assemblies evaluated in this TER is shown in Figure 1.

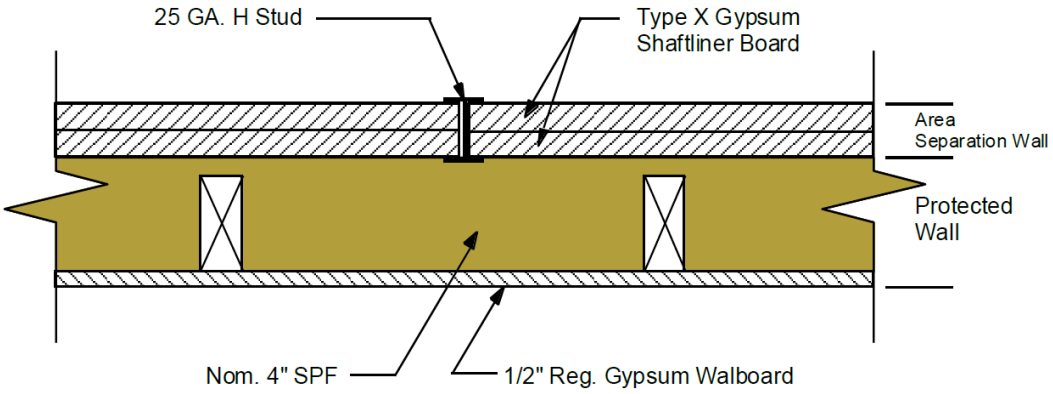

Figure 1. HBS Approved Spray Foams in a two-hour fire-rated non-load bearing ASW Assembly

4.2 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.

4.3 The two components of HBS Approved Spray Foams are:

4.3.1 Component A: MDI/pMDI isocyanate

4.3.2 Component B: proprietary resin

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

5 Applications

5.1 General

5.1.1 HBS Approved 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.

5.2 Two-hour fire-rated non-load bearing ASW assemblies

5.2.1 General:

5.2.1.1 HBS Approved 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 and Table 602 and *IRC* Section R302.2.

5.2.1.1.1 HBS Approved 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:

5.2.1.1.1.1 UL U336

5.2.1.1.1.2 UL U347

5.2.1.1.1.3 UL U366

5.2.1.1.1.4 UL U373

5.2.1.1.1.5 UL U375

5.2.1.1.1.6 UL U388

5.2.1.1.1.7 GA ASW 0800

5.2.1.1.1.8 GA ASW 0810

5.2.1.1.1.9 GA ASW 0980

5.2.1.1.1.10 GA ASW 0985

5.2.1.1.1.11 GA ASW 0997

5.2.1.1.1.12 GA ASW 0999

5.2.1.1.1.13 GA ASW 1004

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

5.2.1.2.1 HBS Approved Spray Foams may be applied to one or both sides of the shaft liner wall assembly creating either symmetrical or a-symmetrical layouts.

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

5.2.1.4 The thickness of HBS Approved 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 DrJ TER 1406-03.

5.3 Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience, and technical judgment.

6 INSTALLATION

6.1 Installation shall comply with the manufacturer's installation instructions and this TER. In the event of a conflict between the manufacturer's installation instructions and this TER, the more restrictive shall govern.

6.2 General:

6.2.1 SPF insulation shall be applied by licensed dealers and installers certified by Icynene-Lapolla®.

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

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

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

6.2.5 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.

6.2.6 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.

6.2.7 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.

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

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

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

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

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

6.3 Two-Hour Fire-Rated Non-Load Bearing ASW Assemblies:

6.3.1 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.

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

6.3.3 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 a 2 hour fire-rated non-load bearing ASW in accordance with *ASTM E119*

7.1.2 Engineering evaluation performed by Priest & Associates Consulting, LLC

7.1.3 UL Fire Resistance Directory, Volume 1

7.2 Information contained herein is the result of testing and/or data analysis by sources which conform to *IBC* Section 1703 and/or professional engineering regulations.

7.3 DrJ relies upon accurate data, provided pursuant to Section 7.1 and Section 7.2 to perform its ISO/IEC 17065 evaluations.

7.4 Where appropriate, DrJ's analysis is based on provisions that have been codified into law through state or local adoption of codes and standards. The providers of the codes and standards are legally responsible for their content. DrJ analysis may use code-adopted provisions as a control sample. A control sample versus a test sample establishes a product as being equivalent to that prescribed in this code in quality, *strength*, effectiveness, *fire resistance*, durability, and safety. Where the accuracy of the provisions provided herein is reliant upon the published properties of materials, DrJ relies upon the grade mark, grade stamp, mill certificate, and/or test data provided by material suppliers to be minimum properties. DrJ analysis relies upon these properties to be accurate.

8 FINDINGS

8.1 When used and installed in accordance with this TER and the manufacturer's installation instructions, the product listed in Section 1.1 are approved for the following:

8.1.1.1 As a component of the two-hour fire-rated non-load bearing ASW assemblies listed in Section 5.2

8.1.1.2 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.

8.2 This product have been evaluated in the context of the codes listed in Section 2 and is compliant with all known state and local building codes. Where there are known variations in state or local codes applicable to this TER, they are listed here.

8.2.1 No known variations

8.3 Building codes require data from valid *research reports* be obtained from *approved sources* (i.e., licensed *registered design professionals* [RDPs]).

8.4 Agencies who are accredited through ISO/IEC 17065 have met the code requirements for approval by the *building official*. DrJ is an ISO/IEC 17065 ANAB-Accredited Product Certification Body – Accreditation #1131 and employs RDPs. Building official approval of a licensed RDP is performed by verifying the RDP and/or their business entity is listed by the licensing board of the relevant *jurisdiction*.

8.5 Through ANAB accreditation and the IAF MLA, DrJ certification 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."

8.6 *IBC* Section 104.11 (*IRC* Section R104.11 and *IFC* Section 104.9 are similar) 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*.

9 CONDITIONS OF USE

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

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

9.3 Where required by the *building official*, also known as the authority having jurisdiction (AHJ) in which the project is to be constructed, this TER and the installation instructions shall be submitted at the time of *permit* application.

9.4 Any generally accepted engineering calculations needed to show compliance with this TER shall be submitted to the AHJ for review and approval.

9.5 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 (e.g., *owner* or RDP).

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

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

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.

9.9 This TER shall be reviewed for code compliance by the AHJ in concert with *IBC* Section 104.

9.10 The implementation of this TER for this product is dependent on the design, quality control, third-party quality assurance, proper implementation of installation instructions, inspections required by *IBC* Section 110.3, and any other code or regulatory requirements that may apply.

10 IDENTIFICATION

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

10.2 Additional technical information can be found at icynene.com.

11 REVIEW SCHEDULE

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

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