AMRIZE BUILDING ENVELOPE, LLC
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ENVERGE® NEXSEAL® 2.0 AND ENVERGE® NEXSEAL® LE SPRAY FOAM INSULATIONS

CSI Section:
07 21 00 Thermal Insulation

1.0 RECOGNITION

Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations recognized in this report have been evaluated for use as spray foam insulations complying with IBC Section 2603; 2024 IRC Section R303; 2021, 2018, and 2015 IRC Section R316; and IECC Sections C303, C402, R303, and R402. The surface burning, physical properties, thermal resistance, and applications in Types I to V construction of Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations have been evaluated to comply with the intent of the following codes and regulations:

- 2024, 2021, 2018, and 2015 International Building Code® (IBC)
- 2024, 2021, 2018, and 2015 International Residential Code® (IRC)
- 2024, 2021, 2018, and 2015 International Energy Conservation Code® (IECC)
- 2026 and 2023 Florida Building Code, Building (FBC, Building) - supplement attached.
- 2026 and 2023 Florida Building Code, Residential (FBC, Residential) - supplement attached.
- 2026 and 2023 Florida Building Code, Energy Conservation (FBC, Energy)- supplement attached.

2.0 LIMITATIONS

Use of Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations recognized in this report is subject to the following limitations:

2.1 The insulations shall be installed in accordance with the manufacturer's published installation instructions. They shall also be installed in accordance with this evaluation report and the applicable code, and if there are any conflicts between the manufacturer's published installation instructions and this report, the more restrictive governs.

2.2 Except as indicated in Section 3.3.3 of this report or by the applicable code, the insulations shall be separated from the interior of the building by a code approved thermal barrier.

2.3 As noted in Sections 3.3.3 and 3.3.4 of this report, Enverge® Nexseal® 2.0 and Enverge ® Nexseal® LE Spray Foam Insulations shall not exceed the nominal density and thickness.

2.4 During installation, the insulations and the surfaces to which they are applied shall be protected from exposure to weather.

2.5 The contractors that will be installing the insulations shall be certified by Amrize Building Envelope, LLC or by the Spray Polyurethane Foam Alliance (SPFA).

2.6 Use of Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations in areas of "very heavy" termite infestation shall be in accordance with IBC Section 2603.8, 2024 IRC Section R305.4, or 2021, 2018, and 2015 IRC Section R318.4, as applicable.

2.7 Labeling and jobsite certification of the insulations and coatings shall comply with IBC Section 2603.2, IRC Section 1101.10 or IECC Sections C303.1.1 and C303.1.2, as applicable.

2.8 Foam Plastic used in plenums as interior finish or interior trim shall comply with Section 2603.7 of the IBC.

2.9 Fire-resistance ratings are beyond the scope of this review. Where fire-resistnace rated assemblies are required by the IBC or IRC, documentation shall be provided to the building official showing compliance.

2.10 The insulations recognized in this report are produced by Amrize Building Envelope, LLC, located in Waukesha, Wisconsin, and Spring, Texas.

3.0 PRODUCT USE

3.1 General: When installed in accordance with Section 3.3 of this report, Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be used in wall cavities, floor assemblies or ceiling assemblies, and in attic and crawl spaces as nonstructural thermal insulation material. The spray-applied foam plastic insulations are used in Type V-B construction under the IBC and in dwellings under the IRC. The spray-applied foam plastic insulations also may be used in Type I, II, III, or IV construction when installed in accordance with Section 3.4 of this report.

Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be used as air impermeable insulations when installed in accordance with Section 3.2.4 of this report.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with Section 104.2.3 of the 2024 IBC and Section 104.11 of previous editions. This document shall only be reproduced in its entirety.

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3.2 Design

3.2.1 General: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations shall comply with requirements in IECC Sections C402.1 and R402, as applicable.

3.2.2 Thermal Resistance. (R-Values): Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations have a thermal resistance (R-Value) at a mean temperature of 75°F (24°C) as shown in Table 1 of this report.

TABLE 1 – Thermal Resistance (R-Value)[1,2]
(°F•ft²•h/Btu)

Thickness (inch)	Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE
1	7.2
2	14
3	21
3.5	25
4	28
5	35
6	42
7	49
8	56
9	64
10	71
11	78
12	84

For **SI:** 1 inch = 25.4 mm, 1°F·ft²·h/Btu = 0.176 110 K·m²/W.

[1] *R*-Values are calculated based on tested values at 1-inch and 3.5-inch thicknesses.

[2] *R*-Values greater than 10 are rounded to the nearest whole number.

3.2.3 Surface Burning Characteristics: At a maximum thickness of 4 inches (102 mm) and a nominal density of 2.0 pcf (32 kg/m³), the Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations have a flame spread index of 25 or less and smoke-developed index of 450 or less when tested in accordance with ASTM E84.

3.2.4 Air Permeability: When tested in accordance with ASTM E2178 at a minimum thickness of 1 inch (25.4 mm), Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are classified as air-impermeable insulations in accordance with Section 1202.3 of the 2024, 2021, and 2018 IBC; Section 1203.3 of the 2015 IBC; or Section R806.5 of the IRC, as applicable.

3.2.5 Vapor Permeance: When tested in accordance with the ASTM E96 desiccant method (Procedure A), Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations have a vapor permeance of less than 1.0 perms [57.4 x 10^{-9} g/(Pa•s•m²)], at a minimum thickness of $1^{5}/_{8}$ inches (41.3 mm) and qualify as a Class II vapor retarder in accordance with IBC Section 202 and IRC Section R202.

3.2.6 Fire-Protective Coatings and Coverings: Fire protective coatings, for use as part of an alternative thermal barrier assembly or alternative ignition barrier assembly, shall be in accordance with Table 2 or Table 3 of this report, as applicable, and installed in accordance with Section 3.3.3 or Section 3.3.4 of this report, as applicable.

3.3 Installation

3.3.1 General: The manufacturer's published installation instructions for Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations and this report shall be available on the jobsite during installation for quality control purposes.

Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations shall be spray-applied on the jobsite using a volumetric positive displacement pump in accordance with the manufacturer's published installation instructions. The applied insulations shall be sprayed in multiple passes having a maximum thickness of 2 inches (50.8 mm) per pass for Enverge® Nexseal® 2.0 and 4 inches (102 mm) per pass for Enverge® Nexseal® LE up to the maximum insulation thickness specified in this report. The maximum in-service temperature for all areas shall not exceed 180°F (82°C). The spray-applied foam plastic insulations shall not be used in electrical outlets or junction boxes or in continuous contact with rain or water. The spray-applied foam plastic insulations shall be sprayed onto a substrate that is protected and clean from any debris or weather-related conditions during application.

3.3.2 Installation with a Prescriptive Thermal Barrier: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations shall be separated from the interior by an approved thermal barrier of minimum ½-inch-thick (12.7 mm) gypsum wallboard or an equivalent thermal barrier. When installed in accordance with this section, the spray foam may be any thickness when installed behind a prescriptive thermal barrier. The barrier shall comply with and be installed in accordance with IBC Section 2603.4, 2024 IRC Section R303.4, or 2021, 2018, or 2015 IRC Section R316.4, as applicable. Thicknesses are not limited for ceiling cavities and wall cavities when covered by a code complying prescriptive thermal barrier, such as minimum ½-inch thick (12.7 mm) gypsum board.

3.3.3 Installation with an Alternative Thermal Barrier Assembly: The thermal barrier required by IBC Section 2603.4, 2024 IRC Section R303.4, or 2021, 2018, or 2015 IRC Section R316.4 may be omitted when applied as part of an alternative thermal barrier assembly as shown in Table 2 of this report.

3.3.4 Installation for Attics and Crawl Spaces: When used in an attic or crawl space where entry is made only for service of utilities, Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations shall be installed in accordance with this section. The insulation shall be separated from the

interior of the building by an approved thermal barrier as described in Sections 3.3.2 and 3.3.3 of this report, as applicable.

3.3.4.1 Installation with a Prescriptive Ignition Barrier: Where entry is made only for the service of utilities, Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be installed within attics or crawl spaces with an ignition barrier in accordance with IBC Section 2603.4.1.6, 2024 IRC Sections R303.5.3 and R303.5.4, or 2021, 2018, and 2015 IRC Sections R316.5.3 and R316.5.4, as applicable. The ignition barrier shall be installed in a manner such that the foam plastic insulation is not exposed and is consistent with the requirements of the type of construction required by the applicable code. When installed with a prescriptive ignition barrier in accordance with this section, the thickness of the spray foam insulation is not limited.

3.3.4.2 Installation with an Alternative Ignition Barrier Assembly: When installation is in accordance with this section, the ignition barrier specified by Section 2603.4.1.6 of the IBC, 2024 IRC Sections R303.5.3 and R303.5.4, or 2021, 2018, and 2015 IRC Sections R316.5.3 and R316.5.4, as applicable, may be omitted.

3.3.4.2.1 General: When Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are installed in attics and crawl spaces without a prescriptive ignition barrier, the following conditions apply:

- **a.** The thickness of the foam plastic insulation applied to the underside of the top of the space shall not exceed 11½ inches (292 mm).
- **b.** The thickness of the foam plastic insulation applied to the vertical surfaces shall not exceed 7½ inches (190 m).
- **c.** Entry is only to service utilities in the attic or crawl space, and no storage is permitted.
- **d.** Attic or crawl space areas cannot be interconnected.
- **e.** Air from the attic or crawl space cannot be circulated to other parts of the building.
- **f.** In accordance with 2024, 2021, and 2018 IBC Section 1202.2, the 2015 IBC Section 1203.2, or IRC Section R806, as applicable, attic ventilation is provided, except for unvented attics as described in Section 3.3.4.2.3 of this report.
- **g.** In accordance with 2024, 2021 and 2018 IBC Section 1202.4, 2015 IBC Section 1203.4, or IRC Section R408.1, as applicable, crawl-space ventilation is provided.
- **h.** In accordance with Uniform Mechanical Code Chapter 7, NFPA 31, or IMC (International Mechanical Code®) Section 701, as applicable, combustion air is provided.

3.3.4.2.2 Attics and Crawl Spaces: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be spray-applied in attics to the underside of roof sheathing, roof rafters and/or vertical surfaces, and in crawl spaces to the underside of floors and/or vertical surfaces as described in this section. When applied to the underside of the top of the space and the thicknesses of the Enverge Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations do not exceed 11½ inches (292 mm), and when applied to vertical surfaces, the maximum thicknesses do not exceed 7½ inches (190 mm), the Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations do not require the application of either an ignition barrier or a fire protective coating.

> **Optional:** If desired, Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be applied as part of an alternative ignition barrier assembly with a fire coating as shown in Table 3 of this report.

3.3.4.2.3 Unvented Attics: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be installed in unvented attic assemblies and unvented enclosed rafter assemblies in accordance with Section 1202.3 of the 2024, 2021, and 2018 IBC, Section 1203.3 of the 2015 IBC, or Section R806.5 of the IRC, as applicable.

3.4 Exterior Walls of Buildings of Type I, II, III, or IV Construction: When Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are used in exterior walls of buildings of Type I, II, III, or IV construction of any height, the insulations shall comply with Section 2603.5 of the IBC and this section. Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations shall be installed at a maximum thickness of 4 inches (102 mm).

3.4.1 Complying Exterior Wall Assemblies: Wall assemblies that comply with Section 2603.5 of the IBC and this report that may be used in exterior walls of buildings of Type I, II, III, or IV construction of any height are described in Table 4 of this report.

3.5 Use as a Water-resistive- Barrier: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE, when applied to form a minimum 1.5-inch thick (38.1 mm) continuous layer, may be used as an alternative water-resistive barrier specified in Section 1403.2 of the 2024, 2021, and 2018 IBC, and Section 1404.2 of the 2015 IBC, and Section R703.2 of the IRC, as applicable.

3.6 Weather Protection: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE, when applied to form a minimum 1.5-inch thick (38.1 mm) continuous layer, may be used to meet the requirements for weather protection applied to sheathing over framing spaced at 16 inches (406 mm) on center as provided in Exception 2 of Section 1402.2 of the 2024, 2021, and 2018 IBC and Exception 2 of Section 1403.2 of the 2015 IBC.

4.0 PRODUCT DESCRIPTION

Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are spray-applied, polyurethane foam plastic and comply as medium-density insulation in accordance with Section 301.1 and Table 2 of ICC 1100 and Section 4.2 and Table 8.2 of IAPMO ES1000. The insulations are a two-component spray foam plastic with a nominal in-place density of 2.0 pcf (32 kg/m^3).

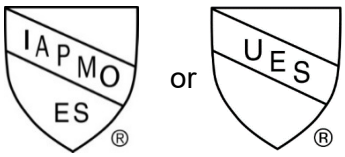
The spray-applied insulations are mixed in the field by combining a polymeric isocyanate (A component) and a resin blend (B component). The liquid components shall be stored in 55-gallon (208 L) drums at temperatures between 50°F and 70°F (10°C and 21°C). When Component A and Component B are stored in factory-sealed containers at the recommended temperatures, the maximum shelf life is six months.

5.0 IDENTIFICATION

The spray foam insulation containers are identified with the following:

a. Manufacturer's name (Amrize Building Envelope, LLC)
b. address and telephone number,
c. the product trade name (Enverge® Nexseal® 2.0 or Enverge® Nexseal® LE Spray Foam Insulation)
d. use instructions
e. density, flame-spread and smoke-development indices
f. date of manufacture or batch/run number
g. the IAPMO Uniform ES evaluation report number (IAPMO UES ER-374)
h. the name or logo of the inspection agency

Either IAPMO UES Mark of Conformity may also be used as shown below:



IAPMO UES ER-374

6.0 SUBSTANTIATING DATA

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation, AC377, dated June 2023, including reports of tests in accordance with Appendix X of AC377.

6.2 Data in accordance with 2019 ICC 1100 Standard for Spray-applied Foam Plastic Insulation.

6.3 Data in accordance with IAPMO/ANSI ES1000-2020, Standard for Building Code Compliance of Spray-Applied Polyurethane Foam.

6.4 Reports of room corner testing in accordance with NFPA 286.

6.5 Reports of fire characteristics testing in accordance with NFPA 285.

6.6 Reports of potential heat of building material testing in accordance with NFPA 259.

6.7 Reports of water vapor transmission testing in accordance with ASTM E96.

6.8 Reports of testing in accordance with ASTM E331.

6.9 Test reports are from laboratories in compliance with ISO/IEC 17025.

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research carried out by IAPMO Uniform Evaluation Service on Amrize Building Envelope's Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations to assess conformance to the codes shown in Section 1.0 of this report and serves as documentation of the product certification. Products are manufactured at the locations noted in Section 2.10 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org

TABLE 2 - ALTERNATIVE THERMAL BARRIER ASSEMBLIES

FIRE-PROTECTIVE COATING/COVERING[1]			MAXIMUM SPF THICKNESS (inch)	
TYPE	MINIMUM THICKNESS	THEORETICAL APPLICATION RATE (COATINGS ONLY)	WALLS AND VERTICAL SURFACES	CEILING AND OVERHEAD SURFACES
DC315 [2]	14 mils WFT (9 mils DFT)	0.87 gal/100 ft^2	5.5	10.25
Plus ThB[3]	14 mils WFT (9 mils DFT)	0.87 gal/100 ft^2	6	9.5
60-60A[4]	12 mils WFT (8 mils DFT)	0.75 gal/100 ft^2	6	10

For **SI:** 1 inch = 25.4 mm, 1 gallon = 3.785 L, 1 ft^2 = 0.0929 m^2

[1] Fire-protective coatings and coverings shall be applied over all exposed SPF surfaces in accordance with the coating/covering manufacturer's instructions and this report.
[2] International Fireproof Technology, Inc, recognized in IAPMO UES ER-499 and tested to the requirements of NFPA 286.
[3] No-Burn, Inc, recognized in IAPMO UES ER-305 and tested to the requirements of UL 1715.
[4] Flame Control Coatings, recognized in IAPMO UES ER-596 and tested to the requirements of NFPA 286.

TABLE 3 - ALTERNATIVE IGNITION BARRIER ASSEMBLIES

FIRE-PROTECTIVE COATING/COVERING[1]			MAXIMUM SPF THICKNESS (inch)	
TYPE	MINIMUM THICKNESS	THEORETICAL APPLICATION RATE (COATINGS ONLY)	WALLS AND VERTICAL SURFACES	CEILING AND OVERHEAD SURFACES
DC315[2]	4 mils WFT (3 mils DFT)	0.25 gal/100 ft^2	10	12

For **SI:** 1 inch = 25.4 mm, 1 gallon = 3.785 L, 1 ft^2 = 0.0929 m^2

[1] Fire-protective coatings and coverings shall be applied over all exposed SPF surfaces in accordance with the coating/covering manufacturer's instructions and this report.
[2] International Fireproof Technology, Inc, recognized in IAPMO UES ER-499.

TABLE 4 – NFPA 285 COMPLYING EXTERIOR WALL ASSEMBLIES

Wall Component	Material Description
Base Wall System (BWS) Use either **1**, **2** or **3**	**1** – Concrete wall **2** – Concrete masonry wall **3** – 1 layer of $^5/_8$-inch thick Type X gypsum wallboard installed on the interior side of minimum $3^5/_8$-inch-deep minimum No. 20-gauge thick steel studs spaced a maximum of 24 inches on center. Lateral bracing installed at a spacing of 4 feet or less vertically or as required. Wall stud cavities shall be filed at each floor line with minimum 4 pcf density mineral wool (e.g. Thermafiber) friction fit between steel wall studs.
Resilient Channel when used with **BWS 3** above	Double-leg 'hat' shaped steel resilient channel, minimum 30 gage, installed perpendicular to the wall studs (interior side only) and spaced a maximum of 24-inches on center between steel studs and Type X gypsum wallboard. Entire perimeter of window opening to be framed with resilient channel.
Perimeter Fire Barrier System	A perimeter fire barrier system complying with Section 715.4 of the IBC shall be installed, as applicable, to fill the void created at the intersection of the exterior curtain wall assembly and the concrete floor slab.
Interior Insulation Use either **1**, **2**, **3**, **4** or **5**; or combination of **3** and **4**; or combination of **3** and **5**	**1** – None **2** – Maximum $3^5/_8$-inch thickness of Enverge® EasySeal.5 (Enverge® SucraSeal®) applied to the interior surface of BWS 1 or 2 above.[1, 4] **3** – Enverge® EasySeal.5 (Enverge® SucraSeal®) applied to the full depth of the wall stud cavity, or less, with exterior gypsum sheathing (see BWS 3 above) as the substrate covering the width of the cavity and the inside of the steel wall stud framing flange limited to the potential heat in Note 4.[4] **4** – Fiberglass batt insulation (faced or unfaced) **5** – Mineral wool insulation (faced or unfaced)
Exterior Sheathing Use either **1**, **2** or **3**	**1** – None (for BWS 1 or 2 above) **2** – ½-inch thick exterior gypsum sheathing (for BWS 3 above) **3** – $^5/_8$-inch-thick Type X exterior type gypsum sheathing (for BWS 3 above)
Exterior Insulation	Maximum 4-inch thick Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulation [3]
Exterior Wall Covering[2] Use either **1**, **2**, **3**, **4** or **5**	**1** - Brick - steel brick veneer anchors, installed a maximum 24-inches on-center, vertically on each stud with maximum 2-inch air gap between exterior insulation and brick. Brick to be standard nominal 4-inch- thick clay brick installed in a running bond pattern using Type S mortar. **2** - Stucco - minimum ¾-inch thick, exterior cement plaster and lath. A secondary water-resistive barrier (WRB) shall be installed between the exterior insulation and the lath. The Secondary WRB shall not be full-coverage asphalt or butyl-based self-adhering membranes. **3** – Minimum 2-inch- thick natural stone. Joints shall be mortared (non-open jointed). **4** – Minimum 1½-inch thick concrete masonry unit, pre-cast concrete or artificial cast stone. Joints shall be mortared. **5** – Minimum 1¼-inch thick terra cotta. Joints shall be mortared.
Flashing of Windows, Doors or Other Exterior Wall Penetrations	As an option, flash around windows, doors, and other exterior wall penetrations with limited amounts of maximum 12-inch-wide flashing tape (acrylic, asphalt or butyl-based) or liquid-applied membrane material with or without fiber mesh reinforcement.

SI: 1 inch = 24.4 mm: 1 pcf = 16.0 kg/m^3; 1 BTU/ft^2 = 0.01128 mJ/m^2

[1] Fireblocking per Section 718 of the 2024, 2021, 2018, and 2015 IBC and thermal barrier material requirements per Section 2603.4 of the IBC shall be met for Base Wall Systems 1 and 2, as required by specific wall construction details when a combustible concealed space is created on interior side of exterior wall assembly.

[2] Exterior wall coverings shall be installed in accordance with the manufacturer's installation instructions and shall comply with the provisions of Chapter 14 of the IBC and Chapter 7 of the IRC, as applicable.

[3] The potential heat of 4-inch-thick Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulation is 2,066 Btu/ft^2 per inch of thickness when tested in accordance with NFPA 259.

[4] The potential heat of $3^5/_8$-inch-thick Enverge® EasySeal.5 (Enverge® SucraSeal®) 0.5 lb. Spray Foam Insulation is 466 Btu/ft^2 per inch of thickness when tested in accordance with NFPA 259.

FLORIDA SUPPLEMENT

AMRIZE BUILDING ENVELOPE, LLC
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ENVERGE® NEXSEAL® 2.0 AND ENVERGE® NEXSEAL® LE SPRAY FOAM INSULATIONS

CSI Section:
07 21 00 Thermal Insulation

1.0 RECOGNITION

Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations recognized in this supplement have been evaluated for use as spray foam insulations complying with 2026 and 2023 Florida Building Code, Building Section 2603; 2026 and 2023 Florida Building Code, Residential Section R316, and Florida Building Code, Energy Conservation Sections C303, C402, R303, and R402. The surface burning, physical properties, thermal resistance, and applications in Types I - V construction of Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations have been evaluated to comply with the intent of the following codes and regulations:

- 2026 and 2023 Florida Building Code, Building (FBC, Building)
- 2026 and 2023 Florida Building Code, Residential (FBC, Residential)
- 2026 and 2023 Florida Building Code, Energy Conservation (FBC, Energy)

2.0 LIMITATIONS

Use of Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations recognized in this supplement is subject to the following limitations:

2.1 The insulations shall be installed in accordance with the manufacturer's published installation instructions. They shall also be installed in accordance with this supplement and the applicable code, and if there are any conflicts between the manufacturer's published installation instructions and this supplement, the more restrictive governs.

2.2 Except as indicated in Section 3.3.3 of this supplement or by the applicable code, the insulations shall be separated from the interior of the building by a code approved thermal barrier.

2.3 As noted in Sections 3.3.3 and 3.3.4 of this supplement, Enverge® Nexseal® 2.0 and Enverge ® Nexseal® LE Spray Foam Insulations shall not exceed the nominal density and thickness.

2.4 During installation, the insulations and the surfaces to which they are applied shall be protected from exposure to weather.

2.5 The contractors that will be installing the insulations shall be certified by Amrize Building Envelope, LLC or by the Spray Polyurethane Foam Alliance (SPFA).

2.6 Use of Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations in areas of "very heavy" termite infestation shall be in accordance with 2026 FBC, Building Section 1403.9; 2023 FBC, Building Section 1403.8; and 2026 and 2023 FBC, Building Section 2603.8 or 2026 and 2023 FBC, Residential Sections R318.7 and R318.8, as applicable.

2.7 Labeling and jobsite certification of the insulations and coatings shall comply with FBC, Building Section 2603.2 or FBC, Energy Conservation Sections C303.1 or R303.1, as applicable.

2.8 Foam Plastic used in plenums as interior finish or interior trim shall comply with Section 2603.7 of the FBC, Building.

2.9 The insulations recognized in this supplement are produced by Amrize Building Envelope, LLC, located in Waukesha, Wisconsin, and Spring, Texas.

2.10 This supplement expires concurrently with IAPMO UES ER-374.

3.0 PRODUCT USE

3.1 General: When installed in accordance with Section 3.3 of this supplement, Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be used in wall cavities, floor assemblies or ceiling assemblies, and in attic and crawl spaces as nonstructural thermal insulation material. The spray-applied foam plastic insulations are used in Type V-B construction under the FBC, Building and in dwellings under the FBC, Residential. The spray-applied foam plastic insulations also may be used in Type I, II, III, or IV construction when installed in accordance with Section 3.4 of this supplement.

Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be used as air impermeable insulations when installed in accordance with Section 3.2.4 of this supplement.

FLORIDA SUPPLEMENT

3.2 Design

3.2.1 General: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations shall comply with requirements in FBC, Energy Conservation Chapter 4: Commercial Energy Efficiency and Chapter 4: Residential Energy Efficiency, as applicable.

3.2.2 Thermal Resistance. (R-Values): Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations have a thermal resistance (R-Value) at a mean temperature of 75°F (24°C) as shown in Table 1 of this report.

TABLE 1 – Thermal Resistance (R-Value)[1,2]
(°F•ft²•h/Btu)

Thickness (inch)	Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE
1	7.2
2	14
3	21
3.5	25
4	28
5	35
6	42
7	49
8	56
9	64
10	71
11	78
12	84

For **SI:** 1 inch = 25.4 mm, 1°F·ft²·h/Btu = 0.176 110 K·m²/W.
[1] *R*-Values are calculated based on tested values at 1-inch and 3.5-inch thicknesses.
[2] *R*-Values greater than 10 are rounded to the nearest whole number.

3.2.3 Surface Burning Characteristics: At a maximum thickness of 4 inches (102 mm) and a nominal density of 2.0 pcf (32 kg/m³), the Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations have a flame spread index of 25 or less and smoke-developed index of 450 or less when tested in accordance with ASTM E84.

3.2.4 Air Permeability: When tested in accordance with ASTM E2178 at a minimum thickness of 1 inch (25.4 mm), Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are classified as air-impermeable insulations in accordance with Section 202 of the FBC, Building and Section R202 of the FBC, Residential, as applicable.

3.2.5 Vapor Permeance: When tested in accordance with the ASTM E96 desiccant method (Procedure A), Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations have a vapor permeance of less than 1.0 perms [57.4 x 10^{-9} g/(Pa•s•m²)], at a minimum thickness of $1\frac{5}{8}$ inches (41.3 mm) and qualify as a Class II vapor retarder in accordance with FBC, Building Section 202 and FBC, Residential Section R202.

3.2.6 Fire-Protective Coatings and Coverings: Fire protective coatings, for use as part of an alternative thermal barrier assembly or alternative ignition barrier assembly, shall be in accordance with Table 2 or Table 3 of this report, as applicable, and installed in accordance with Section 3.3.3 or Section 3.3.4 of this supplement, as applicable.

3.3 Installation

3.3.1 General: The manufacturer's published installation instructions for Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations and this supplement shall be available on the jobsite during installation for quality control purposes.

Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations shall be spray-applied on the jobsite using a volumetric positive displacement pump in accordance with the manufacturer's published installation instructions. The applied insulations shall be sprayed in multiple passes having a maximum thickness of 2 inches (50.8 mm) per pass for Enverge® Nexseal® 2.0 and 4 inches (102 mm) per pass for Enverge® Nexseal® LE up to the maximum insulation thickness specified in this supplement. The maximum in-service temperature for all areas shall not exceed 180°F (82°C). The spray-applied foam plastic insulations shall not be used in electrical outlets or junction boxes or in continuous contact with rain or water. The spray-applied foam plastic insulations shall be sprayed onto a substrate that is protected and clean from any debris or weather-related conditions during application.

3.3.2 Installation with a Prescriptive Thermal Barrier: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations shall be separated from the interior by an approved thermal barrier of minimum ½-inch-thick (12.7 mm) gypsum wallboard or an equivalent thermal barrier. When installed in accordance with this section, the spray foam may be any thickness when installed behind a prescriptive thermal barrier. The barrier shall comply with and be installed in accordance with FBC, Building Section 2603.4 and FBC, Residential Section R316.4, as applicable. Thicknesses are not limited for ceiling cavities and wall cavities when covered by a code complying prescriptive thermal barrier, such as minimum ½-inch thick (12.7 mm) gypsum board.

3.3.3 Installation with an Alternative Thermal Barrier Assembly: The thermal barrier required by FBC, Building Section 2603.4 and FBC, Residential Section R316.4 may be omitted when applied as part of an alternative thermal barrier assembly as shown in Table 2 of this report.

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3.3.4 Installation for Attics and Crawl Spaces: When used in an attic or crawl space where entry is made only for service of utilities, Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations shall be installed in accordance with this section. The insulation shall be separated from the interior of the building by an approved thermal barrier as described in Sections 3.3.2 and 3.3.3 of this supplement, as applicable.

3.3.4.1 Installation with a Prescriptive Ignition Barrier: Where entry is made only for the service of utilities, Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be installed within attics or crawl spaces with an ignition barrier in accordance with FBC, Building Section 2603.4.1.6 and FBC, Residential Sections R316.5.3 and R316.5.4, as applicable. The ignition barrier shall be installed in a manner such that the foam plastic insulation is not exposed and is consistent with the requirements of the type of construction required by the applicable code. When installed with a prescriptive ignition barrier in accordance with this section, the thickness of the spray foam insulation is not limited.

3.3.4.2 Installation with an Alternative Ignition Barrier Assembly: When installation is in accordance with this section, the ignition barrier specified by Section 2603.4.1.6 of the FBC, Building, or FBC, Residential Sections R316.5.3 and R316.5.4, as applicable, may be omitted.

3.3.4.2.1 General: When Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are installed in attics and crawl spaces without a prescriptive ignition barrier, the following conditions apply:

- **a.** The thickness of the foam plastic insulation applied to the underside of the top of the space shall not exceed 11½ inches (292 mm).
- **b.** The thickness of the foam plastic insulation applied to the vertical surfaces shall not exceed 7½ inches (190 m).
- **c.** Entry is only to service utilities in the attic or crawl space, and no storage is permitted.
- **d.** Attic or crawl space areas cannot be interconnected.
- **e.** Air from the attic or crawl space cannot be circulated to other parts of the building.
- **f.** In accordance with FBC, Building Section 1203.2 or FBC, Residential Section R806, as applicable, attic ventilation is provided, except for unvented attics as described in Section 3.3.4.2.3 of this report.
- **g.** In accordance with FBC, Building Section 1203.4 or FBC, Residential Section R408, as applicable, crawl-space ventilation is provided.
- **h.** In accordance with NFPA 31, combustion air is provided.

3.3.4.2.2 Attics and Crawl Spaces: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be spray-applied in attics to the underside of roof sheathing, roof rafters and/or vertical surfaces, and in crawl spaces to the underside of floors and/or vertical surfaces as described in this section. When applied to the underside of the top of the space and the thicknesses of the Enverge Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations do not exceed 11½ inches (292 mm), and when applied to vertical surfaces, the maximum thicknesses do not exceed 7½ inches (190 mm), the Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations do not require the application of either an ignition barrier or a fire protective coating.

Optional: If desired, Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be applied as part of an alternative ignition barrier assembly with a fire coating as shown in Table 3 of this report.

3.3.4.2.3 Unvented Attics: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations may be installed in unvented attic assemblies and unvented enclosed rafter assemblies in accordance with Section 1203.3 of the FBC, Building or Section R806.5 of the FBC, Residential, as applicable.

3.4 Exterior Walls of Buildings of Type I, II, III, or IV Construction: When Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are used in exterior walls of buildings of Type I, II, III, or IV construction of any height, the insulations shall comply with Section 2603.5 of the FBC, Building and this section. Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations shall be installed at a maximum thickness of 4 inches (102 mm).

3.4.1 Complying Exterior Wall Assemblies: Wall assemblies that comply with Section 2603.5.5 of the FBC, Building and this supplement may be used in exterior walls of buildings of Type I, II, III, or IV construction of any height are described in Table 4 of this report.

3.5 Use as a Water-resistive Barrier: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE, when applied to form a minimum 1.5-inch thick (38.1 mm) continuous layer, may be used as an alternative water-resistive barrier specified in Section 1404.2 of the FBC, Building and Section R703.2 of the FBC, Residential, as applicable.

3.6 Weather Protection: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE, when applied to form a minimum 1.5-inch thick (38.1 mm) continuous layer, may be used to meet the requirements for weather protection applied to sheathing over framing spaced at 16 inches (406 mm) on center as provided in Exception 2 of Section 1403.2 of the FBC, Building.

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4.0 PRODUCT DESCRIPTION

Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are spray-applied, polyurethane foam plastic and comply as medium-density insulation in accordance with Section 301.1 and Table 2 of ICC 1100 and Section 4.2 and Table 8.2 of IAPMO ES1000. The insulations are a two-component spray foam plastic with a nominal in-place density of 2.0 pcf (32 kg/m^3).

The spray-applied insulations are mixed in the field by combining a polymeric isocyanate (A component) and a resin blend (B component). The liquid components shall be stored in 55-gallon (208 L) drums at temperatures between 50°F and 70°F (10°C and 21°C). When Component A and Component B are stored in factory-sealed containers at the recommended temperatures, the maximum shelf life is six months.

5.0 REFERENCE CODE SECTIONS

The code references apply to the recognition provided in this supplement but may not include every code section related to the use of this product.

2026 Florida Building Code, Building:

- Section 104.11 Alternative materials, design methods of construction and equipment.
- Section 202 Definitions
- Section 1203 Ventilation
- Section 1403.2 Weather Protection
- Section 1403.9 Protection Against Termites
- Section 1404.2 Water-resistive Barrier
- Section 2603 Foam Plastic Insulation

2026 Florida Building Code, Residential:

- Section R202 Definitions
- Section R316 Foam Plastic
- Section R318 Protection Against Termites
- Section R408 Crawlspace Ventilation
- Section R703.2 Water-resistive Barrier
- Section R806 Attic Ventilation

2026 Florida Building Code, Energy Conservation:

- Section C303.1 Identification
- Section C304.2 Testing of building materials thermal properties.
- Section R303.1 Identification

ENERGY STAR SEAL AND INSULATE SUPPLEMENT

AMRIZE BUILDING ENVELOPE, LLC
26 Century Boulevard
Suite 205
Nashville, Tennessee 37214

ENVERGE® NEXSEAL® 2.0 AND ENVERGE® NEXSEAL® LE SPRAY FOAM INSULATIONS

CSI Section: 07 21 00 Thermal Insulation

1.0 PURPOSE

Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations have been certified for use as thermal *insulation* under the Seal and Insulate with ENERGY STAR® Program. The *insulations* have been evaluated for thermal resistance, surface burning characteristics (flame spread and smoke-development), and complies with the following codes and regulations:

- EPA Definitions and Testing Requirements for Residential Insulation Version 1.0
- 2024 International Building Code® (IBC)
- 2024 International Residential Code® (IRC)
- 2024 International Energy Conservation Code® (IECC)

2.0 DEFINTIONS

2.1 General Definitions

Insulation: Any material mainly used to slow down heat flow. It may be mineral or organic, fibrous, cellular, or reflective (aluminum foil). It may be in rigid, semi-rigid, flexible, or loose-fill form.

Residential Buildings: Single family homes (attached or unattached), multifamily buildings with 4 units or fewer, or multifamily buildings (e.g., condominiums and apartments) with 3 stories or less in height above grade.

2.2 Insulation Product Definitions

Spray or Pour Foam Insulation: A thermal insulating material that is sprayed or poured (as a gel or foamy liquid) into place and expands or sets into a cellular foam and cures at the point of installation through a chemical reaction. Foamed materials include, but are not limited to, polyurethane, polyisocyanurate, phenolic, and cementitious insulation.

Board Insulation: Semi-rigid or rigid insulation preformed into rectangular units having a degree of suppleness particularly related to their geometrical dimensions. Typical materials include, but are not limited to, fiberglass, expanded polystyrene (EPS), extruded polystyrene (XPS), polyisocyanurate, and polyurethane. The product may or may not be faced.

2.3 Insulation Performance Definitions

R-value: The inverse of the time rate of heat flow through a body from one of its bounding surfaces to the other surface for a unit temperature difference between the two surfaces, under steady state conditions, per unit area. For the purposes of this program, Imperial units will only be accepted [i.e., (h·ft2 ·°F)/Btu].

Smoke-Development Index: The characteristic of a material to emit smoke when exposed to flame or fire compared to red oak and inorganic cement.

Flame-Spread Index: The characteristic of a material to resist the spreading of flames when exposed to flame or fire compared to red oak and inorganic cement.

3.0 PRODUCT USE

3.1 General: Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are *Spray Foam Insulations for use* in *residential buildings.*

3.2 Thermal Resistance: *R-Values* are provided in Table 1 of this report. These R-Values are taken from testing in accordance with ASTM C518 at a mean temperature of 75ºF with a temperature differential of 50°F +/- 10°F.

TABLE 1 – Thermal Resistance (R-Value)[1,2]
(°F•ft²•h/Btu)

Thickness (inch)	**Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE**
1	7.2
2	14
3	21
3.5	25
4	28
5	35
6	42
7	49
8	56
9	64
10	71
11	78
12	84

For **SI:** 1 inch = 25.4 mm, 1°F·ft²·h/Btu = 0.176 110 K·m²/W.
[1] *R*-Values are calculated based on tested values at 1-inch and 3.5-inch thicknesses.
[2] *R*-Values greater than 10 are rounded to the nearest whole number.

3.3 Surface Burning Characteristics: The surface burning characteristics of flame-spread index and smoke-development index are taken from testing in accordance with ASTM E84. At a maximum thickness of 4 inches (102 mm) and a nominal density of 2.0 pcf (32.0 kg/m^3), the Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations yield a flame spread index of 25 or less and smoke-developed index of 450 or less in compliance with IBC Section 2603.3 and IRC Section R303.3.

3.4 Installation:

3.4.1 Installation General: Installation shall be in accordance with Section 3.3 of IAPMO UES ER-374 and the manufacturer's published installation instructions. Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are mixed and applied on site exclusively by installers approved by Amrize Building Envelope, LLC.

3.4.2 Personal Protective Equipment (PPE) and Ventilation: The **Safety** section of the installation instructions, provides the following information on personal protective equipment and ventilation requirements:

"Personal protective equipment (PPE):

a. **Skin:** Wear gloves, coveralls, apron, and boots as necessary to prevent contact of liquid components or partially-cured SPF with skin. When handling liquids, gloves should be made of nitrile, neoprene, butyl, or PVC.
b. **Eyes:** Protect eyes while handling liquid components or spraying with safety glasses or safety goggles combined with a face shield. During spray application, eye protection may be provided by a full-face or hood respirator.
c. **Respiration:** Contractors engaged in the application of Enverge spray foam must have a written respiratory protection program for employees handling or applying Enverge spray foam materials. Depending on the situation, respiratory protection may include dust masks, air-purifying respirators (APR), powered air-purifying respirators (PAPR), or supplied-air respirators (SAR).
d. **VENTILATION:** Provide ventilation and other engineering controls to exhaust vapors from work areas and to protect building occupants and other workers on site."

3.4.3 Occupancy Time After Installation: The section on **Re-entry and Occupancy** of the installation instructions provides the following guidance on Re-entry:

Re-entry: Re-entry can occur one hour after application with proper ventilation. Occupancy times will vary depending on factors including ventilation. Typically, when ventilating. 10 air exchanges per hour for a 24 hour period following the conclusion of spray application and occupancy may occur at that time.

3.4.4 Installation Drawings: Installation Drawings follow at the end of this supplement.

4.0 PRODUCT DESCRIPTION

Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulations are a spray-applied foam plastic insulation.

5.0 IDENTIFICATION

The Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE Spray Foam Insulation products are identified with the following:

a. Manufacturer's name (Amrize Building Envelope, LLC)
b. address and telephone number,
c. the product trade name (Enverge® Nexseal® 2.0 or Enverge® Nexseal® LE)
d. use instructions
e. density, flame-spread and smoke-development indices
f. date of manufacture or batch/run number
g. thermal resistance values
h. the evaluation report number (IAPMO UES ER-374)

The IAPMO UES Mark of Conformity may also be used as shown below:

IAPMO UES ER-374

6.0 SUBSTANTIATING DATA

6.1 Manufacturer's descriptive literature and installation instructions.

6.2 Reports of testing in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation, AC377, dated June 2023, including Appendix X.

6.3 Reports of Thermal Transmission testing in accordance with ASTM C518.

6.4 Reports of testing for Surface Burning Characteristics in accordance with ASTM E84.

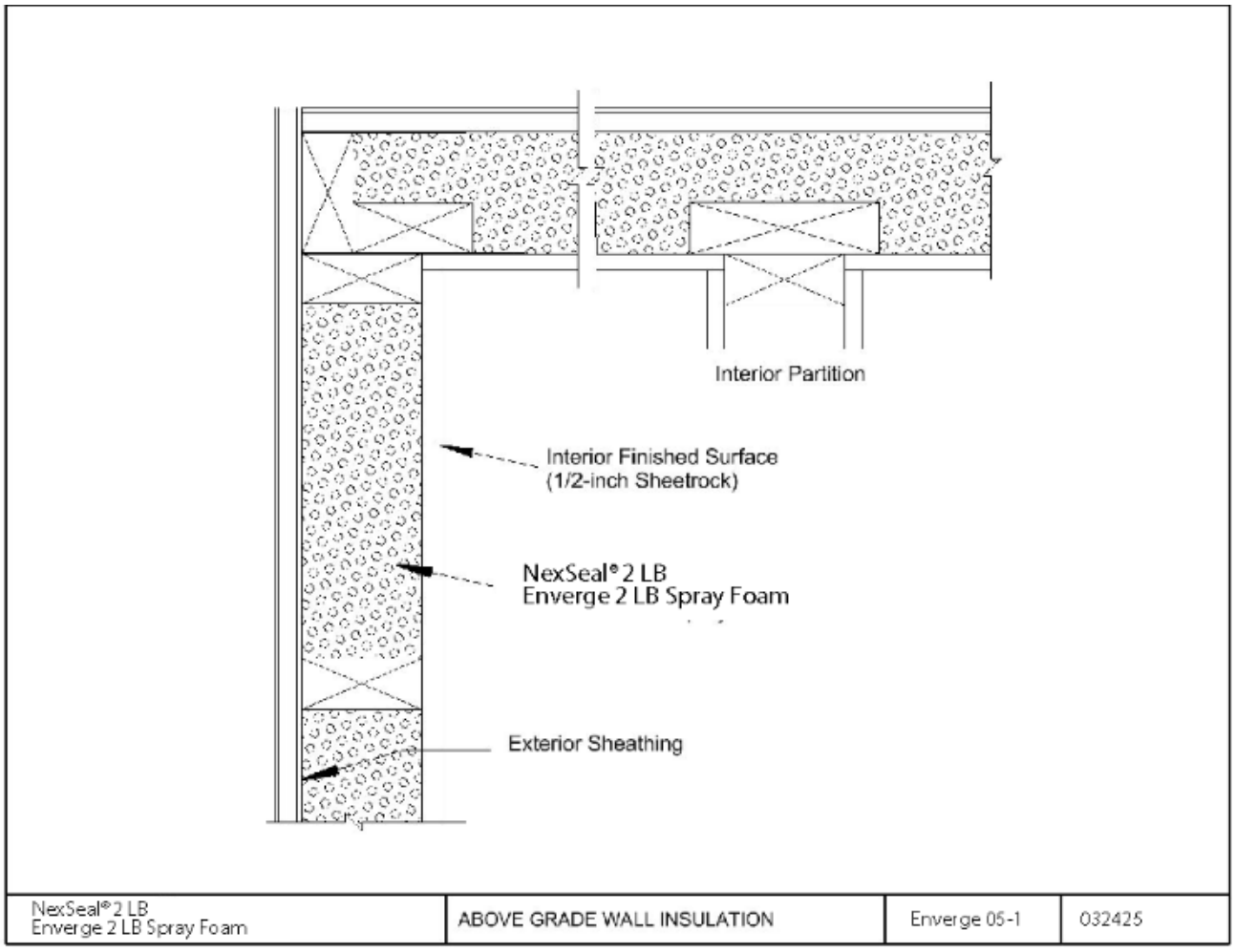
6.5 Test results were from a laboratory accredited to the applicable procedure as required by the Conditions and

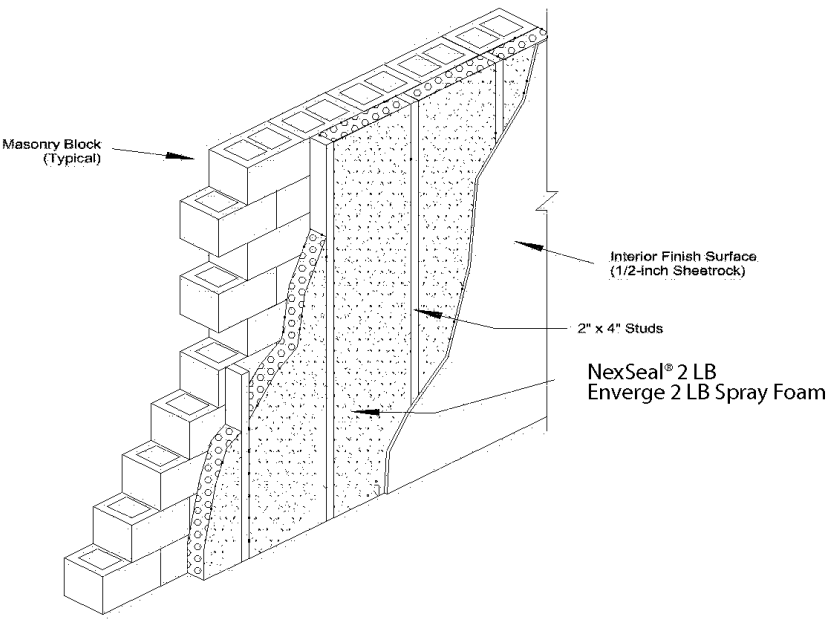
Criteria for Recognition of Insulation Certification Bodies for the ENERGY STAR Program.

6.6 Enverge® Nexseal® 2.0 and Enverge® Nexseal® LE SPF Application Guide dated July 19, 2024.

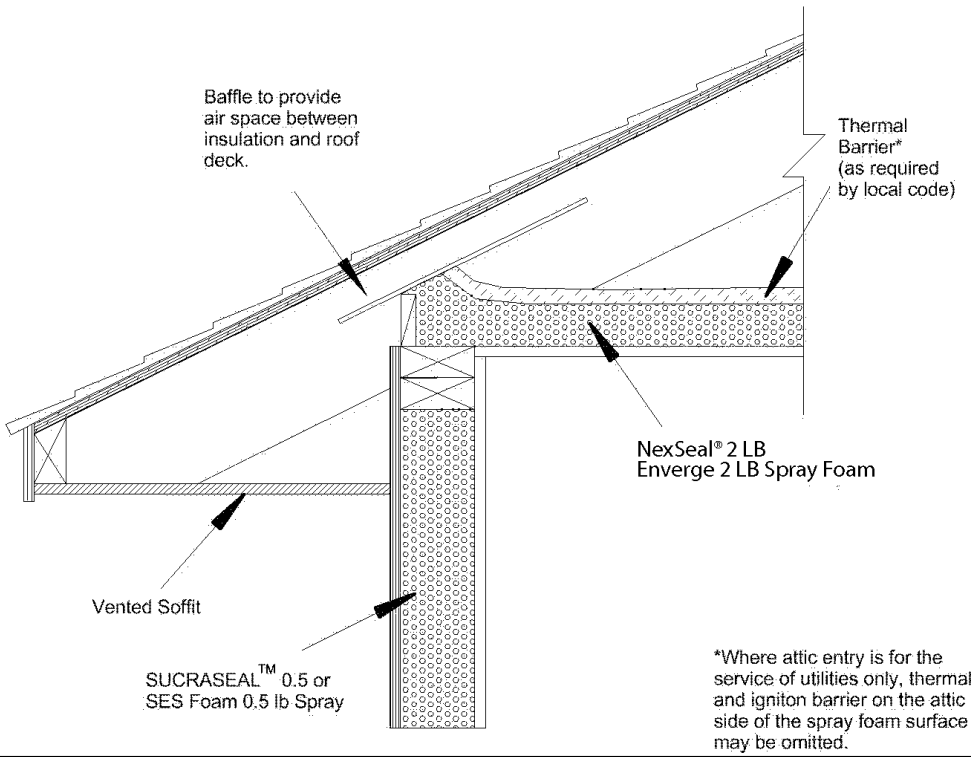
6.7 All tests were conducted on insulation samples that were determined to be representative of the product line based on having identical chemical and physical properties. All R-Values are based on Test and conducted at representative thicknesses.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org

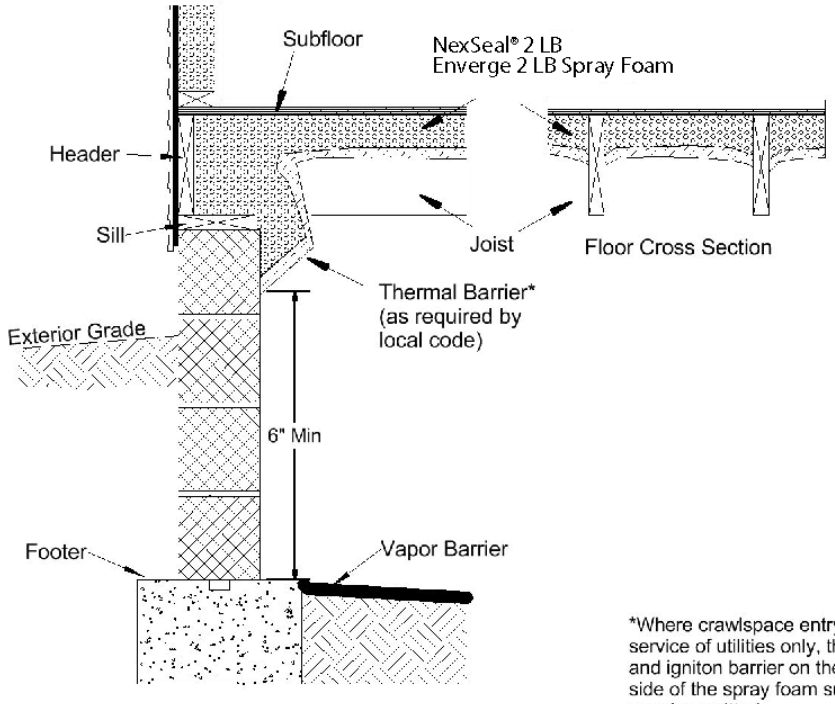




NexSeal® 2 LB Enverge 2 LB Spray Foam	BELOW GRADE WALL INSULATION (Insulation on Interior Side of Wall)	Enverge 05-2	032425

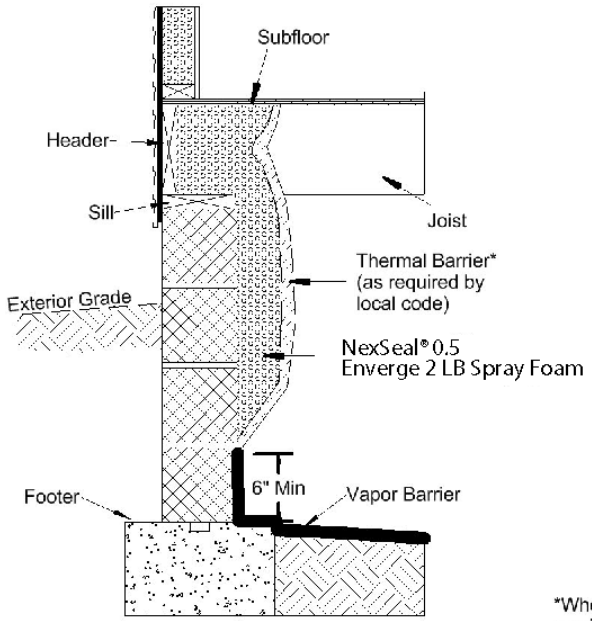


NexSeal® 2 LB Enverge 2 LB Spray Foam	VENTED ATTIC: FLOOR / SOFFIT	Enverge 05-3	032425



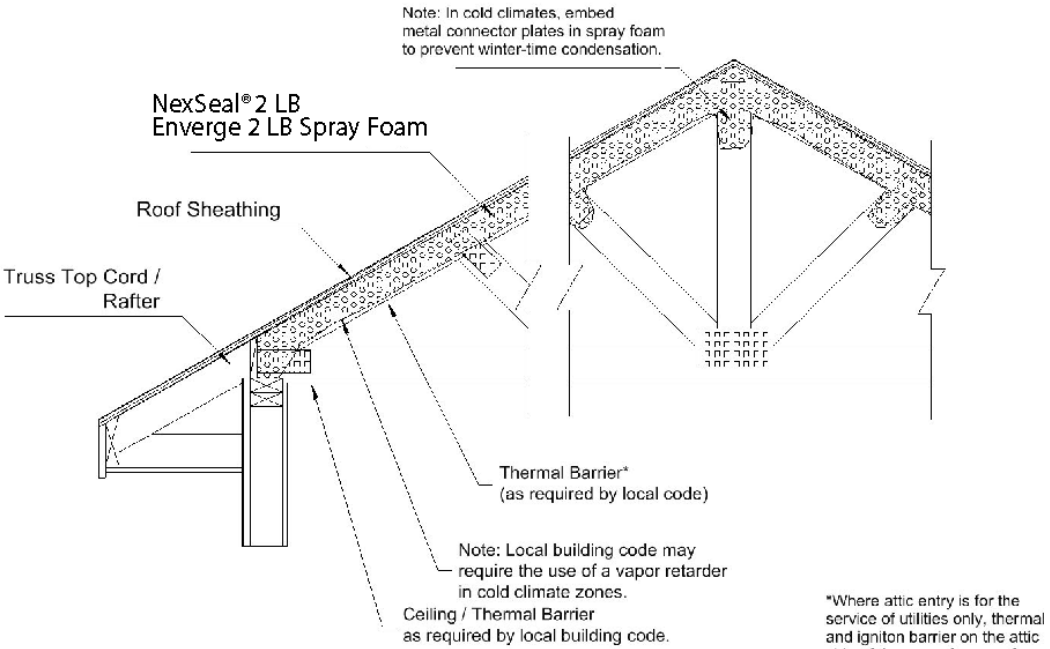
*Where crawlspace entry is for the service of utilities only, thermal and igniton barrier on the crawlspace side of the spray foam surface may be omitted.

NexSeal® 0.5 Enverge 0.5 LB Spray Foam	CRAWLSPACE: VENTED	Enverge 05-4	032425

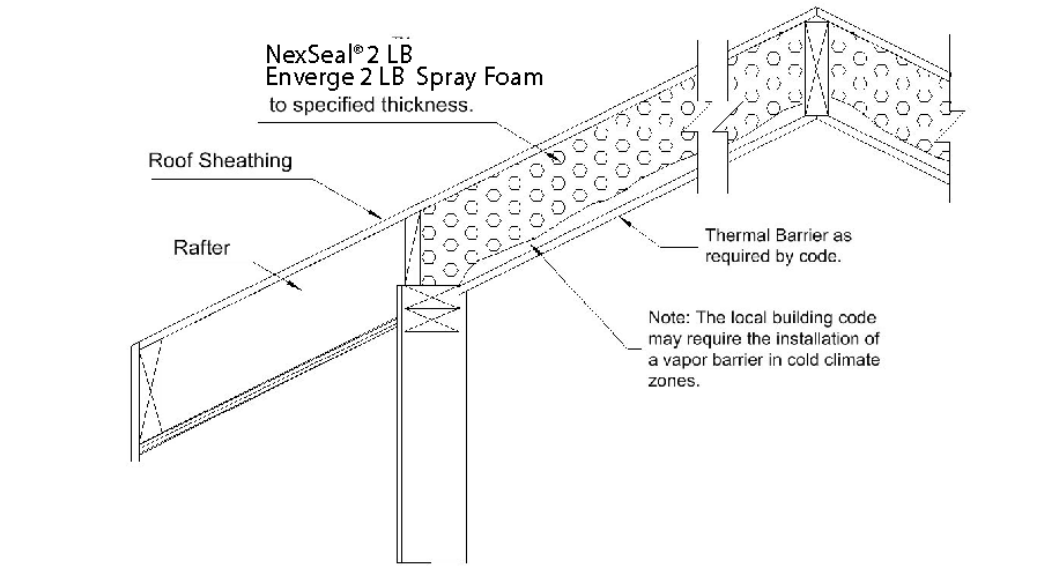


*Where crawlspace entry is for the service of utilities only, thermal and igniton barrier on the crawlspace side of the spray foam surface may be omitted.

NexSeal® 2 LB Enverge 2 LB Spray Foam	CRAWLSPACE: UNVENTED	Enverge 05-5	032425



NexSeal® 2 LB Enverge 2 LB Spray Foam	UNVENTED ATTIC / INSULATED ROOF DECK	Enverge 05-6	032425



NexSeal® 2 LB Enverge 2 LB Spray Foam	CATHEDRAL CEILING	Enverge 05-7	032425