CENTRAL URETHANES
1400 West Main Street
Lagro, Indiana 46941
(260) 330-1658
www.centralurethane.com

XPRESS SEAL 200

CSI Section:
07 21 00 Thermal Insulation

1.0 RECOGNITION

Central Urethane's Xpress Seal 200 recognized in this report has been evaluated for use as thermal insulation. The physical properties, thermal resistance, surface burning characteristics, and water vapor transmission of Xpress Seal 200 comply with the intent of the provisions of the following codes and regulations:

- 2021, 2018, and 2015 International Building Code® (IBC)
- 2021, 2018, and 2015 International Residential Code® (IRC)
- 2021, 2018, and 2015 International Energy Conservation Code (IECC)

2.0 LIMITATIONS

Use of Xpress Seal 200 recognized in this report is subject to the following limitations:

2.1 Xpress Seal 200 shall be installed in accordance with the applicable code, the manufacturer's published installation instructions, and this report. Where there is a conflict, the most restrictive requirements shall govern.

2.2 In accordance with Section 3.2.3 of this report, the insulation shall be separated from the interior of the building by a code-complying thermal barrier or ignition barrier as required by the applicable code

2.3 The insulation shall not exceed the nominal density and thickness for the installation conditions described in this report.

2.4 During application, the insulation shall be protected from exposure to weather.

2.5 The insulation shall be installed by professional spray polyurethane foam installers approved by Central Urethanes, or by the Spray Polyurethane Foam Alliance (SPFA).

2.6 Use of the insulation in areas of "very heavy" termite infestation probability shall be in accordance with IBC Section 2603.8 or IRC Section R318.4, as applicable.

2.7 When required by the applicable code, a Class I vapor retarder shall be installed.

2.8 Labeling and jobsite certification of the insulation and coatings shall comply with the following code sections as applicable:

- IBC Section 2603.2
- IRC Section R316.2
- IRC Section N1101.10.1.1
- IECC Sections C303.1.1.1 or R303.1.1.1

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

2.10 Use in exterior walls of Types I – IV construction is beyond the scope of this report.

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

2.12 Xpress Seal 200 recognized in this report is produced by Central Urethanes in Lagro, Indiana**.**

3.0 PRODUCT USE

3.1 General: Xpress Seal 200 complies with IBC Section 2603, IRC Section R316 and IECC Sections C303, C402, R303, and R402. When installed in accordance with Section 4.0 of this report, the foam plastic insulation can be used in wall cavities, floor assemblies or ceiling assemblies, interior side of vertical foundations, and/or in attics and crawl spaces as nonstructural thermal insulation material. Xpress Seal 200 is used in Type V-B construction under the IBC and in one- and two-family dwellings under the IRC.

3.2 Design:

3.2.1 Thermal Resistance (R-Values): Xpress Seal 200 has thermal resistance (R-Value) at a mean temperature of 75°F±5°F (23.8°C ±2.8°C) as shown in Table 1 of this report.

TABLE 1 - Thermal Resistance (R-Values)	
Thickness (inch)	**Xpress Seal 200** **R-Value** (°F•ft²•h/Btu)
1	7.0
2	14
3	21
3.5	24
4	27
5	34
5.5	37
6	41
7	47
7.25	49
8	54
9	61
9.25	63
10	68
11	74
12	81

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

3.2.2 Surface Burning Characteristics: At a maximum thickness of 4 inches (102 mm) and a nominal density of 2.0 pcf (32 kg/m^3), the Xpress Seal 200 spray-applied polyurethane foam plastic insulation yields a flame spread index of 25 or less and smoke-developed index of 450 or less when tested in accordance with ASTM E84. Greater thicknesses, depending on the end use, are recognized when installed in accordance with this report.

Foam insulation thicknesses are not limited for ceiling cavities and wall cavities when covered by a code complying prescriptive thermal barrier and installed in accordance with Section 3.2.3 of this report.

3.2.3 Thermal Barrier: Xpress Seal 200, in any thickness, in ceiling cavities and in wall cavities shall be separated from the interior by an approved thermal barrier. The thermal barrier shall comply with and be installed in accordance with IBC Section 2603.4 and IRC Section R316.4.

Exception: The thermal barrier is not required when the insulation is installed in attics or crawlspaces as described in Section 3.2.4 but shall be installed between the insulation and the interior of the building.

3.2.4 Installation in Attic and Crawlspace: Installation in Attics or Crawl Spaces: Xpress Seal 200 may be installed in attics or crawl spaces when installed in accordance with this section.

When installed in attics or crawl spaces where entry is made only for the service of utilities, Xpress Seal 200 spray-applied polyurethane foam plastic insulation may be installed in accordance with this section. Xpress Seal 200 need not be surfaced with a thermal barrier. However, such attic and crawl space areas shall be separated from the interior of the building by a thermal barrier in accordance with Section 3.2.3 of this report or as permitted in Section 3.2.4.1 of this report.

3.2.4.1 Installation in Attics and Crawl Spaces Without a Prescriptive Ignition Barrier: Xpress Seal 200 spray-applied polyurethane foam plastic insulation may be installed in attics and crawl spaces without a prescriptive ignition barrier provided:

a. Entry is only to service utilities in the attic or crawl space and no storage is permitted.
b. Attic or crawl space areas cannot be interconnected.
c. Air from the attic or crawl space cannot be circulated to other parts of the building.
d. Attic ventilation is provided as required by 2021 and 2018 IBC Section 1202.2, 2015 IBC Section 1203.2 or IRC Section R806 except where air-impermeable insulation is permitted in unvented attics and shall comply with the following code sections as applicable:

   For Unvented Attics:
   - 2021 and 2018 IBC Section 1202.3
   - 2015 IBC Section 1203.3
   - IRC Section R806.5

   Unvented crawl spaces shall meet the requirements of Section 3.2.4.2 of this report.

   Ventilated crawl spaces shall be provided with ventilation as required by the following code sections as applicable:
   - 2021 and 2018 IBC Section 1202.4
   - 2015 IBC Section 1203.4
   - IRC Section R408.1

e. Xpress Seal 200 may be applied at a maximum density of 2.0 pcf to the underside of roof sheathing or roof rafters and vertical surfaces of attics and in crawl spaces without a prescriptive ignition barrier or coating. When applied to the underside of the top of the space, the thickness of the Xpress Seal 200 shall not exceed 8 inches (203 mm), and when applied to vertical surfaces or floor, the maximum thickness shall not exceed 6 inches (152 mm).
f. In accordance with IMC (International Mechanical Code®) Section 701, combustion air is provided.

3.2.4.2 Unvented Crawl Spaces: When installed in an unvented crawl space, Xpress Seal 200 shall be protected against ignition, using a prescriptive ignition barrier when complying with IRC Section R408.3.

Exception: Where air from the crawl space is not circulated to other parts of the building, an alternative ignition barrier assembly can be used.

3.2.5 Water Vapor Transmission: When tested to the requirements of ASTM E96, desiccant method, at a thickness

of 1.54 inches (39.1 mm), Xpress Seal 200 has a Vapor Retarder Classification of Class II.

3.3 Installation: Xpress Seal 200 shall comply with Sections C402.1 or R402.1 of the IECC, as applicable.

The manufacturer's published installation instructions for Xpress Seal 200 and this report shall be available on the jobsite during installation. Where conflicts occur, the most restrictive governs.

Xpress Seal 200 shall be spray-applied on the jobsite using equipment specified in the manufacturer's published installation instructions. The maximum in-service temperature for all areas shall not exceed the maximum temperature stated in the manufacturer's published installation instructions. The insulation shall be sprayed onto a substrate that is protected and clean from any debris or weather-related conditions during and after application and shall not be used in electrical outlets or junction boxes or in contact with rain, or water.

4.0 PRODUCT DESCRIPTION

Xpress Seal 200 is a medium-density, closed-cell, spray-applied polyurethane foam plastic insulation in accordance with Section 3.1.1 and Table 1 of AC377. The insulation has a nominal in-place density of 2.0 pcf (32 kg/m^3). The two-component spray foam plastic is produced in the field by combining a polymeric isocyanate (A component) and a polymeric resin (B component). The liquid components shall be stored in 55-gallon (208 L) drums at temperatures between 60°F and 80°F (16°C and 27°C). When Component A and Component B are stored in factory-sealed containers at the recommended temperatures, the shelf life is six months.

5.0 IDENTIFICATION

Xpress Seal 200 is identified by the following:

a. Manufacturer's name (Central Urethanes)
b. Address and telephone number
c. Product trade name (Xpress Seal 200)
d. Use instructions
e. Density, flame-spread and smoke-development indices
f. Date of manufacture or batch/run number
g. Thermal resistance values
h. Evaluation report number (ER-834)

The IAPMO Uniform Evaluation Service Mark of Conformity may be used as shown below:

IAPMO UES ER-834

6.0 SUBSTANTIATING DATA

6.1 Data in accordance with the Acceptance Criteria for Spray-applied Foam Plastic Insulation, AC377, including Appendix X, dated April 2020 and editorially revised July 2020.

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

6.3 Report of testing of water vapor transmission in accordance with ASTM E96, desiccant method.

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

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research completed by IAPMO Uniform Evaluation Service on Central Urethane's Xpress Seal 200 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 locations noted in Section 2.12 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