**THERMAL INSULATION AND AIR BARRIER ESR-1826**

Specification Sections: 07 21 19 Foamed-in-Place Insulation, 07 27 00 Spray Polyurethane Foam Air Barriers

**PRODUCT DESCRIPTION**

Icynene Classic Ultra™, which replaces Icynene Classic Max, is a spray-in-place low density, open celled, flexible, nominal 0.5 lbs/ft³ density, 100% water-blown polyurethane foam insulation manufactured by Icynene Inc. It is an ultra-low VOC product allowing for 1 hour job site re-entry and 2 hour job site re-occupancy at applicable ventilation rates. It is capable of being installed in unvented attics without an ignition barrier or a coating.

Icynene Classic Ultra™ has an industry leading yield of 20,000 board feet (annual average). It is suitable for buildings in accordance with the IRC and the IBC including Type I, II, III, IV and V construction. The product is for use as a thermal insulation and air barrier in:

- wall cavities
- floor assemblies
- ceiling assemblies
- roof assemblies (interior)
- attics (vented and unvented)
- crawl spaces (vented and unvented)

**PROPERTIES OF CURED FOAM**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Test Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Density</td>
<td>ASTM D 1622</td>
<td>0.5 lb/ft³</td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td>Cream</td>
</tr>
<tr>
<td>Aged Thermal Resistance at 1&quot;</td>
<td>ASTM C 518</td>
<td>R-3.7</td>
</tr>
<tr>
<td>Air Permeance at 3&quot;</td>
<td>ASTM E 2178</td>
<td>0.014 L/s.m²</td>
</tr>
<tr>
<td>Water Vapor Permeance at 5.5&quot;</td>
<td>ASTM E 96</td>
<td>11 perm</td>
</tr>
<tr>
<td>Water Absorption</td>
<td>ASTM D 2842</td>
<td>5%</td>
</tr>
<tr>
<td>Dimensional Stability at 28 days</td>
<td>ASTM D 2126</td>
<td>0.0% at 158°F and 95% RH</td>
</tr>
<tr>
<td>(Volume Change)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BURN CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Test Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Burning at 5&quot;</td>
<td>ASTM E 84</td>
<td>Class 1</td>
</tr>
<tr>
<td>Flame Spread Index</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Smoke Development</td>
<td></td>
<td>340</td>
</tr>
<tr>
<td>Commercial Fire Resistance</td>
<td>NFPA 285</td>
<td>Assembly Passed*</td>
</tr>
<tr>
<td>Commercial Fire Resistance</td>
<td>ASTM E 119</td>
<td>1,2 &amp; 3 Hour Ratings*</td>
</tr>
</tbody>
</table>

**UNVENTED ATTICS**

Icynene Classic Ultra™ can be applied to the underside of the roof deck to a maximum of 20 inches and be left bare if its thickness is a minimum of 3½ inches at roof decking. Consult Icynene Engineering Department for details.

**ACOUSTICAL PROPERTIES**

Performance in a 38 x 89 mm (2 x 4") wood stud wall:

**STC Sound Transmission Class - 37**

<table>
<thead>
<tr>
<th>Hertz Frequency</th>
<th>125</th>
<th>50</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
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</thead>
<tbody>
<tr>
<td>ASTM E90</td>
<td>19</td>
<td>30</td>
<td>31</td>
<td>42</td>
<td>38</td>
<td>46</td>
</tr>
</tbody>
</table>

**NRC Noise Reduction Coeff. - .70**

<table>
<thead>
<tr>
<th>Hertz Frequency</th>
<th>125250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM C423</td>
<td>.11</td>
<td>.43</td>
<td>.89</td>
<td>.72</td>
<td>.71</td>
</tr>
</tbody>
</table>

**AIR BARRIER/MECHANICAL VENTILATION**

- Icynene Classic Ultra™ fills any shaped cavity, and adheres to most construction materials, creating assemblies with very low air permeance.
- Additional interior or exterior air infiltration protection is subject to applicable codes.
- All buildings insulated and air sealed with Icynene Classic Ultra™ must be designed to include adequate mechanical ventilation/ outdoor air supply for optimum IAQ (Indoor Air Quality).
For mechanical ventilation see ASHRAE Standard 62 – Ventilation for Acceptable Indoor Air Quality or any other acceptable good engineering practice.

**WATER ABSORPTION PROPERTIES**
- Water can be forced into the foam under pressure because it is open celled.
- Water will drain by gravity, given favorable drying potential, and upon drying all chemical and physical properties are fully restored.

**ELECTRICAL WIRING**
- Icynene Classic Ultra™ has been evaluated with energized 14/3 and 12/2 residential wiring (max. 122°F/50°C).
- It is chemically compatible with typical electrical wiring coverings.
- For any insulation of older knob and tube wiring, please reference local electrical code.

**CORROSION**
- Icynene Classic Ultra™ did not cause corrosion when evaluated in contact with steel and copper at 120°F (48°C) and 95% relative humidity conditions.

**PLASTIC PIPING**
- Icynene Classic Ultra™ is compatible in direct contact with the following piping systems, as per Paschal Engineering Study:
  - CPVC
  - ABS
  - PVC
  - PP-R

**ENVIRONMENTAL AND HEALTH**
- Icynene Classic Ultra™ is 100% water-blown and therefore has zero ozone-depletion potential.
- The reaction used to create Icynene Classic Ultra™ generates carbon dioxide to expand the foam. Icynene Classic Ultra™ has the lowest Global Warming Potential (GWP of 1) value for foam insulation products.
- Icynene Classic Ultra™ is PBDE-free.

**INSTALLATION**
- Icynene Classic Ultra™ is installed by a network of Licensed Dealers, trained in its installation.
- Not intended for exterior use. Not to be installed within 3” (76 mm) of heat emitting devices or where the temperature is in excess of 180°F (maximum service temperature), as per ASTM C411 or in accordance with applicable codes.
- Installation is generally independent of environmental conditions.
- Icynene Classic Ultra has excellent adhesion to a wide variety of substrates including common construction materials.
- It can be installed in hot, humid or freezing conditions.
- Minimum substrate temperature for application is 14°F (-10°C).
- Surface preparation is generally not necessary.
- Within seconds, the foaming process is complete.

**RELEVANT REFERENCES**
All physical properties were determined through testing by accredited third party agencies. Icynene Inc. reserves the right to change specifications in its effort of continuous improvement. Please confirm that technical data literature is current.

**HANDLING AND SAFETY**

**AVAILABILITY**
Contact Icynene Inc. at 800-758-7325 or visit our website at www.icynene.com.

**WARRANTY**
When installed properly in accordance with instructions, the company warrants that the properties of the product meet product specifications as outlined in this technical data sheet. Save and except any exclusions referenced in the warranty.

**TECHNICAL**
Icynene Licensed Dealers and Icynene Inc. provide support on both technical and regulatory issues. Architectural specifications in CSI 3-Part format and design details are available at our website at www.icynene.com.

**REGULATORY**
- ESR-1826 has been issued by the ICC-ES for Icynene Classic Ultra™ and all Icynene low density products. ICC-ES Evaluations are the most widely accepted by building code officials.
- For additional information on the use of Classic Ultra in unvented attics without an ignition barrier or a coating refer to the Technical Evaluation Report issued by DrJ Engineering.
- Icynene Classic Ultra™ has been tested as per the requirements of the International Code Council Evaluation Service’s AC377 Acceptance Criteria (April 2016).
- For regulatory issues concerning Icynene Classic Ultra™ contact Icynene at 800-758-7325.

**PACKAGING AND STORAGE**
- Packaging - 55 US gallon, steel drums
- Component ‘A’ – 520 lb. per drum. Base Seal® MDI
- Component ‘B’ – 480 lb. per drum. Icynene Classic Ultra™ – Resin
- Icynene Classic Ultra™ (Component A) and (Component B) ideally should be stored between 60ºF (15°C) and 85ºF (30°C).
- Component A should be protected from freezing.
- Shelf life is 6 months

**ICYNENE®**
The Evolution of Insulation

**OSHA CONFINED SPACE INFORMATION**
- An ASTM E-918 test of Icynene Classic Ultra™ for flammability at 140°F concluded that it is not flammable. Consult Safety Data Sheets for details.
Icynene spray foam insulation products have an excellent health and safety record spanning more than 425,000 projects over more than 25 years. Nonetheless, safe handling practices during and immediately following installation are required to eliminate the possibility of health effects from exposure to isocyanates. Asthma, other lung problems, and irritation of the nose and throat can result from inhalation of isocyanates. Direct contact with the skin and eyes can result in irritation. Different individuals will react differently to the same exposures; some will be more sensitive than others. Severe asthma attacks have been reported in some sensitized workers exposed repeatedly to isocyanates while not wearing proper protective equipment. Some reports indicate a reaction and sensitization can occur following a single, sustained occupational exposure to isocyanates without proper protective equipment above the OSHA permissible exposure limit. But sensitization might not occur immediately in some individuals. Consistent use of personal proper protective equipment to prevent exposure during spraying and within the 1 hour**-period after spraying is completed is critical to eliminating the health hazard. Once sensitization has occurred, a worker might not be able work safely with spray foam insulation again.

Sprayers, sprayer helpers, and anyone else present during spraying or within 1 hour** after spraying is complete: You must ventilate at levels prescribed on this page and must wear proper Personal Protective Equipment (PPE) at all times during spraying, including full-body-coverage, chemical-protective clothing and a NIOSH-certified respirator with fresh air supply. While spraying and for 1 hour** after spraying is completed, no one must be allowed within 50 feet of the sprayed foam without wearing this type of PPE at all times. Adequate active, negative pressure ventilation (exhaust fans) of the job site must be in place during spray and for 2 hours** after spray is complete to allow for re-occupancy.

For installations of low VOC products Icynene Classic Ultra, Icynene OC No-Mix, Icynene ProSeal, Icynene ProSeal LE and Icynene ProSeal HFO in the United States only, re-entry of the job site is permitted after 1 hour** and re-occupancy of the job site is permitted after 2 hours** (4 hours for Icynene OC No-Mix) provided that ventilation rates are followed as recommended on this page.

Independent studies and third party toxicologist verification indicates that when the prescribed ventilation rates and periods are followed, Icynene spray foam insulation is safely cured.
Health & Safety
Homeowners

COMMITTED TO THE RESPONSIBLE USE OF SPRAY FOAM CHEMISTRY FOR OVER 25 YEARS.

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Everyone (other than Icynene-certified spray technicians) must vacate the job site, remaining completely out of the building or at least 50 feet away, while the spray is applied and for at least 2 hours* after spraying is completed to allow active ventilation of the job site and to ensure the foam chemicals are completely cured. No exceptions.

Independent studies and third party toxicologist verification indicates that when the prescribed ventilation rates and periods are followed, Icynene spray foam insulation is safely cured.

* For installations of low VOC products Icynene ProSeal and Icynene ProSeal LE in the United States only, re-occupancy of the job site is permitted after 2 hours provided that the rate of air exchange during spraying and for 2 hours thereafter equals or exceeds 40 Air Changes per Hour (ACH). For applications of low VOC Icynene ProSeal HFO in the United States only, re-occupancy is permitted after 2 hours provided rate of air exchange during and for 2 hours thereafter equals or exceeds 18 Air Changes per Hour. For applications of low VOC Icynene Classic Ultra in the United States only, re-occupancy is permitted after 1 hour provided rate of air exchange during and for 2 hours thereafter equals or exceeds 10 Air Changes per Hour. For applications of Icynene OC No-Mix in the United States only, re-occupancy is permitted after 4 hours provided rate of air exchange during and for 4 hours thereafter equals or exceeds 20 Air Change per Hour.

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Mississauga, Ontario L5N 2L7 Canada
Ph: 1.800.758.7325   •   ICYNENE.COM

SL-519 • Updated March 2019

CLIENT ACKNOWLEDGEMENT

NAME:______________________________________________________
BUILDING ADDRESS:________________________________________
CITY:______________________________________________________
STATE / PROVINCE:__________________________________________
ZIP / POSTAL CODE:________________________________________

☐ I have read and understand the information on this document. I understand that I must vacate the premises during spraying and for at least 2 hours* after spraying has been completed.

SIGNATURE:________________________________________________
DATE:______________________________________________________

Email completed form to hsagreements@icynene.com or fax 1-888-340-2552.