

THERMAL INSULATION AND AIR BARRIER MATERIAL CCMC 14064-L

Specification Sections: 07 21 19 Foamed-in-Place Insulation

PRODUCT DESCRIPTION

Icynene ProSeal LE™ is a spray-in-place closed cell spray applied polyurethane foam insulation with low air permeance. Icynene ProSeal LE™ has Type 2 thermal resistance performance and meets the requirements of CAN/ULC-S705.1-01 (with Amendments No. 1, 2 and 3). In all buildings the product is for use as a thermal insulation and air barrier material in:

- exterior walls as continuous insulation on the exterior or interior
- wall cavities
- floors separating living spaces from a garage
- cathedral ceiling assemblies
- attic floors
- overhanging floor assemblies
- below or above grade foundation walls on the interior or exterior
- under floor slabs

PROPERTIES OF CURED FOAM

Characteristic	Test Method	Value
Core Density	ASTM D 1622	38.2 kg/m ³ (2.4 lb/ft ³)
Initial Thermal Resistance at 50 mm	ASTM C 518	2.4 (m ² ·K)/W (R14 at 2")
Colour		Platinum
Conditioned Thermal Resistance at 50 mm	ASTM C 518	2.3 (m ² ·K)/W (R13 at 2")
Air Permeance at 35 mm	ASTM E 2178	0.0005 L/s.m ²
Water Vapour Permeance at 50 mm	ASTM E 96	34 ng/Pa.s.m ² (0.6 Perm at 2")
Open Cell Content (by Volume)	ASTM D 6226	2%
Compressive Strength	ASTM D 1621	262 kPa (38 psi)
Tensile Strength	ASTM D 1623	283 kPa (41 psi)
Dimensional Stability at 28 days (Volume Change)	ASTM D 2126	-0.1% at -20°C -0.5% at 80°C +12.1% at 70°C and 97% RH
Water Absorption (by Volume)	ASTM D 2842	0.6%
Surface Flame Spread Rating	CAN/ULC-S127	340
Smoke Developed Classification	CAN/ULC-S102	325
Time to Occupancy ⁽¹⁾	CAN/ULC-S774	24 Hours
Fungus Testing	ASTM C 1338	No growth

(1) Volatile organic compound (VOC) emissions were evaluated in accordance with CAN/ULC-S705.1 requirements.

LONG TERM THERMAL RESISTANCE PER CAN/ULC- 770-03

Thickness mm (inches)	R Value (°F·ft ² ·hr)/BTU	RSI (m ² ·°C)/W
25.0 (0.98)	6	1.0
50.0 (1.97)	11	2.02
51 (2.0)	12	2.0
64 (2.5)	15	2.6
75 (2.9)	18	3.1
76 (3.0)	18	3.2
89 (3.5)	22	3.8
100 (3.9)	24	4.3
102 (4.0)	25	4.4
124 (4.9)	30	5.3
130 (5.1)	31	5.4
152 (6.0)	37	6.5
178 (7.0)	43	7.6
203 (8.0)	49	8.7
217 (8.5)	50	8.8
229 (9.0)	55	9.8

AIR BARRIER/ MECHANICAL VENTILATION

- Icynene ProSeal LE™ 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 ProSeal LE™ must be designed to include adequate mechanical ventilation/outdoor air supply.
- For mechanical ventilation see CAN/CSA F-326 - Residential Mechanical Ventilation, HRAI (Heating, Refrigeration and Air Conditioning Institute of Canada) Digest, ASHRAE (American Society of Heating, Refrigeration and Air-Conditioning Engineers) guidelines, or any other acceptable good engineering practice.

BURN CHARACTERISTICS

- Icynene ProSeal LE™ is subject to all applicable National and/or Provincial building codes regarding fire prevention. Requirements for thermal barrier coverings must be met as per the applicable building code having jurisdiction.

PLASTIC PIPING

- Icynene ProSeal LE™ is compatible in direct contact with the following piping systems, as per Paschal Engineering Study:
 - CPVC
 - ABS
 - PVC
 - PP-R

INSTALLATION

- Icynene ProSeal LE™ is installed by a network of Licensed Dealers, trained in its installation.
- Icynene ProSeal LE™ can be sprayed up to 127 mm (5") without waiting between passes. Maximum thickness per pass is 50 mm (2").
- For thickness greater than 127 mm (5"), the above procedure can be repeated after 30 minutes or until the surface temperature drops below 32°C (90°F).
- This product should not to be installed within 76 mm (3") of heat emitting devices or where the temperature is in excess of 82°C (maximum service temperature), as per ASTM C411 or in accordance with applicable codes.
- It can be installed in ambient temperature conditions between -5°C and 50°C (23°F and 122°F).
- Icynene ProSeal LE™ has excellent adhesion to a wide variety of substrates including common construction materials.
- Surface preparation is generally not necessary.
- Within seconds the foaming process is complete.

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 CSC 3-Part format and design details are available at our website at www.icynene.com.

REGULATORY

Icynene ProSeal LE™ has been independently evaluated by the Canadian Construction Materials Centre (CCMC) as a thermal insulation in compliance with CAN/ULC-S705.1. For regulatory issues concerning Icynene ProSeal LE™ in Canada, please see CCMC Evaluation Report 14064-L, The NBC (National Building Code of Canada) or applicable Provincial Building Codes.

RELATED 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.

PACKAGING AND STORAGE

- Packaging - 55 US gallon, steel drums
- Component 'A' - 236 kg (520 lb.) per drum. Base Seal® MDI
- Component 'B' - 218 kg (480 lb.) per drum. Icynene ProSeal LE™ Resin
- Icynene ProSeal LE™ (Component A) and (Component B) ideally should be stored between 15°C (60°F) and 30°C (86°F).
- Components should be protected from freezing.
- Shelf life is 12 months.



PRODUCT CERTIFIED
FOR LOW CHEMICAL
EMISSIONS

Health & Safety Certified Sprayer

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 spray, 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 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** 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.



RE-ENTRY AND RE-OCCUPANCY PERIODS

Times based upon ventilating during and after a spray application.

Ventilation Rate (Air Changes per Hour)	Re-entry period for sprayers, helpers, informed trade workers and contractors	Re-occupancy period for all others
At 0.3 ACH	24 hours	24 hours
At 1.0 ACH	12 hours*	24 hours
At 10.0 ACH	4 hours*	24 hours
At 10.0 ACH For Icynene Classic Ultra	1 hour**	2 hours**
At 18.0 ACH For Icynene ProSeal HFO	1 hour**	2 hours**
At 40.0 ACH	1 hour**	2 hours**

* Twelve (12) and four (4) hour re-entry for trades applies to all Icynene products sold in the United States.

** One (1) hour re-entry and two (2) hour re-occupancy applies only to low VOC products:

- Icynene Classic Ultra at 10 ACH
- Icynene ProSeal HFO at 18 ACH
- Icynene ProSeal / Icynene ProSeal LE at 40 ACH

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Health & Safety Homeowners

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

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.

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.

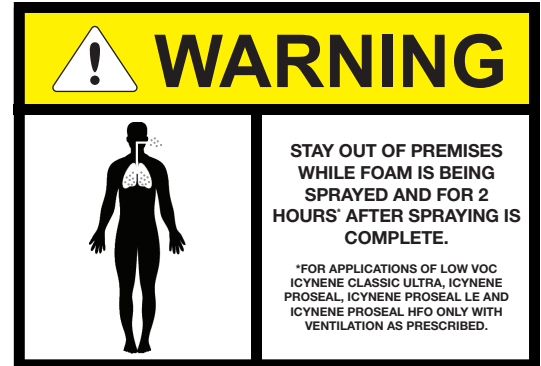
*** For installations of low VOC products Icynene ProSeal and Icynene ProSeal LE in the United States only, re-occupancy of the job site is permitted after 2 hours provided that the rate of air exchange during spraying and for 2 hours thereafter equals or exceeds 40 Air Changes per Hour (ACH). For applications 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 2 hours provided rate of air exchange during and for 2 hours thereafter equals or exceeds 10 Air Changes per Hour.**



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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.

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