

## Technical Product Data

### THERMAL INSULATION CCMC 13593-L

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

### PRODUCT DESCRIPTION

Icynene MD-C-200™-v2 is a spray-in-place is a closed cell spray applied polyurethane foam insulation material with low air permeance. MD-C-200™-v2 has Type 1 thermal resistance performance and meets the requirements of CAN/ULC-S705.1-01 (with Amendments No. 1 and 2). In all buildings the product is for use as a thermal insulation 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 Metric (Imperial)
Core Density	ASTM D 1622	35.7 kg/m <sup>3</sup> (2.2 lb/ft <sup>3</sup> )
Initial Thermal Resistance at 50 mm	ASTM C 518	2.4 (m <sup>2</sup> •K)/W (R14 at 2")
Colour		Platinum
Air Permeance at 50mm	ASTM E 2178	0.0006 L/s.m <sup>2</sup>
Water Vapour Permeance at 50 mm	ASTM E 96	56 ng/Pa.s.m <sup>2</sup> (0.98 Perm at 2")
Open Cell Content (by Volume)	ASTM D 6226	5%
Compressive Strength	ASTM D 1621	259 kPa (38 psi)
Tensile Strength	ASTM D 1623	488 kPa (71 psi)
Dimensional Stability at 28 days (Volume Change)	ASTM D 2126	+0.1% at -20°C
		+2.5% at 80°C
		+14% at 70°C and 97% RH
Water Absorption (by Volume)	ASTM D 2842	0.4%
Surface Flame Spread Rating	CAN/ULC-S127	290
Time to Occupancy <sup>1</sup>	CAN/ULC-S774	24 Hours
Fungus Testing	ASTM C 1338	No growth

<sup>1</sup> 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 <sup>2</sup> -hr)/BTU	RSI (m <sup>2</sup> •°C)/W
25.0 (0.98)	6	1.0
50.0 (1.97)	11	1.93
51 (2.0)	11	2.0
64 (2.5)	15	2.6
75 (2.9)	17	3.1
76 (3.0)	18	3.1
89 (3.5)	23	3.6
100 (3.9)	24	4.1
102 (4.0)	24	4.2
127 (5.0)	29	5.2
130 (5.1)	30	5.3
152 (6.0)	35	6.2
178 (7.0)	41	7.2
203 (8.0)	47	8.3
217 (8.5)	50	8.8
229 (9.0)	53	9.3

### AIR BARRIER/ MECHANICAL VENTILATION

- Icynene MD-C-200™-v2 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 MD-C-200™-v2 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 MD-C-200™-v2 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 MD-C-200™-v2 is compatible in direct contact with the following piping systems, as per Paschal Engineering Study:
  - CPVC
  - ABS
  - PVC
  - PP-R

## INSTALLATION

- Icynene MD-C-200™-v2 is installed by a network of Licensed Dealers, trained in its installation.
- Maximum thickness per each pass is 50 mm (2"). Wait until first layer cools before applying a second layer/lift over the initial layer/lift.
- This product should not be installed within 76 mm (3") of heat emitting devices or where the temperature is in excess of 82°C (180°F) in accordance with applicable codes.
- It can be installed in ambient/substrate temperature conditions between -5°C and 50°C (23°F and 122°F).
- Icynene MD-C-200™-v2 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](http://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](http://www.Icynene.com).

## REGULATORY

Icynene MD-C-200™-v2 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 MD-C-200™-v2 in Canada, please see CCMC Evaluation Report 13593-L, The NBCC (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, closed top steel drums
- Component 'A' – 550 lb. per drum. Base Seal® MDI
- Component 'B' – 500 lb. per drum. ICYNENE MD-C-200™-v2 – Resin
- Icynene MD-C-200™-v2 (Component A) and (Component B) ideally should be stored between 15°C (60°F) and 29°C (85°F).
- Component A should be protected from freezing.
- Shelf life is 12 months.



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# 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.

## WARNING

**WEAR PROPER PERSONAL PROTECTIVE EQUIPMENT AT ALL TIMES ON PREMISES DURING SPRAYING & FOR AT LEAST 1 HOUR\* AFTER SPRAYING IS COMPLETE.**

\*FOR APPLICATIONS OF LOW VOC ICYNENE CLASSIC ULTRA, ICYNENE PROSEAL, ICYNENE PROSEAL LE AND ICYNENE PROSEAL HFO ONLY WITH VENTILATION AS SPECIFIED ON THIS PAGE.



### 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

# 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.

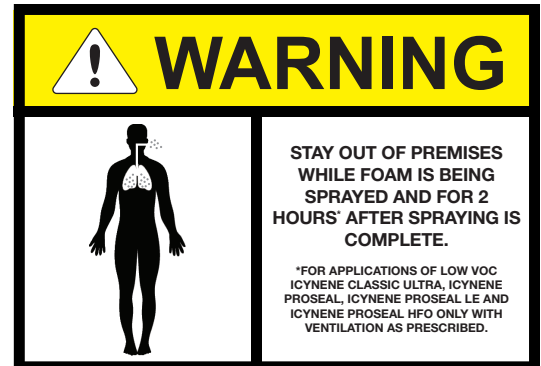
**\* For installations of low VOC products Icynene ProSeal and Icynene ProSeal LE in the United States only, re-occupancy of the job site is permitted after 2 hours provided that the rate of air exchange during spraying and for 2 hours thereafter equals or exceeds 40 Air Changes per Hour (ACH). For applications 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](mailto:hsagreements@icynene.com) or fax 1-888-340-2552.

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