

PRODUCT SPECIFICATION

1. PRODUCT NAME

ICYNENE LD-C-50™

ICYNENE LD-C-50™ is a trademark for light density, open celled, flexible, all water-blown polyurethane foam insulation manufactured by Icynene Inc. ICYNENE LD-C-50™ spray formula is an 8 kg/m³ [0.5 lbs/ft³] density, free rise material.

2. MANUFACTURER

ICYNENE LD-C-50™ is made on-site from liquid components manufactured by Icynene Inc. Installation and on-site manufacturing is supplied by independent Icynene Licensed Dealers.

3. PRODUCT DESCRIPTION

ICYNENE LD-C-50™ insulates and air seals in one step. It is an effective “breathing” [Vapour Permeable] air barrier that can move with the building to maintain the air barrier characteristic against energy-robbing air leakage for the life of the building. Convective air movement inside cavities is virtually eliminated, providing more uniform temperatures throughout the building. The result is superior quality construction, with higher comfort levels and lower heating and cooling costs. Energy savings vary depending on building design, location, etc.

ICYNENE LD-C-50™ is applied by spraying liquid components onto an open wall, crawl space, ceiling surface or cathedral ceiling. There it expands 100:1 in seconds to provide a flexible foam blanket of millions of tiny air cells, filling building cavities, cracks and crevices in the process. It adheres to virtually all surfaces, sealing out air infiltration. Excess material is easily trimmed off, leaving a surface ready for drywall or other finish.

4. TECHNICAL DATA

(Based on Core Samples)

Thermal Performance

Thermal resistance
ASTM C518:
RSI/25.4 mm @ 24°C
RSI - 0.65 m² °C/W

(R/in @ 75°F).
R3.7 hr. ft² °F/BTU

Average insulation contribution in a full fill stud wall:
38mm x 89mm = RSI 2.3 [2" x 4" = R13]
38mm x 140mm = RSI 3.6 [2" x 6" = R20]

ICYNENE LD-C-50™ provides more effective performance than the equivalent R-value of air permeable insulation materials. ICYNENE LD-C-50™ is not subject to loss of R-value due to aging, settling, convection or air infiltration; nor will it be prone to traditional moisture intrusion via convective air flow. A FACT SHEET with R-value data is available upon request.

Air Permeance/Air Barrier /Air Seal

ICYNENE LD-C-50™ fills any shaped cavity, and adheres most construction materials, creating assemblies with very low air permeance. Additional interior or exterior air infiltration protection is subject to applicable codes.

Air permeability of core foam:
ASTM E283 data
0.0049 L/S-m² @75 Pa for 133.4mm [5.25"]
0.0080 L/S-m² @75 Pa for 82.6mm [3.25"]

Air permeability of a 2" x 6" wood framed wall assembly:
ASTM E 2178 data
0.01 L/S-m² @ 75 Pa for 140mm [5.5"]

All buildings insulated and air sealed with ICYNENE LD-C-50™ must be designed to include adequate mechanical ventilation/air supply. See 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.

Water Vapour Permeance

ICYNENE LD-C-50™ is water vapour permeable and allows moisture to diffuse through the insulation and dissipate from the building envelope.

Water vapour transmission properties:
ASTM E96 data- [Desiccant Method]
1218 ng/[Pa.s.m²] @ 25.4mm [21 Perms @ 1"]
941 ng/[Pa.s.m²] @ 76mm [16 Perms @ 3"]
565 ng/[Pa.s.m²] @ 127mm [10 Perms @ 5"]

In those situations that warrant a vapour barrier, the use of low vapour permeable paint on the interior drywall is adequate.

Water Absorption Properties

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

Acoustical Properties

Performance in a full fill 38mm x 89mm wood stud wall @ 400mm O.C., Single layer 15.9mm gypsum on each side [2"x4" wood stud wall @16" OC, Single layer 5/8" gypsum on each side]:

STC Sound Transmission Class - 37
Hz. Freq. 125 250 500 1000 2000 4000
ASTM E90 19 30 31 42 38 46

NRC Noise Reduction Coefficient - 70
Hz. Freq. 125 250 500 1000 2000 4000
ASTM C423 .11 .43 .89 .72 .71 .67

Burn Characteristics

ICYNENE LD-C-50™ is a combustible product and is therefore, consumed by flame, but will not sustain flame upon removal of the flame source. It leaves a charcoal residue. It will not melt or drip. ICYNENE LD-C-50™ is subject to all applicable National and/or Provincial building codes regarding fire prevention and requirements for Thermal Barrier coverings must be met as per the applicable building code having jurisdiction.

CANADA Specifications
CAN/ULC-S127-04
Flame Spread [FSC2] 450
CAN/ULC-S102
Smoke Development 275

Electrical Wiring

ICYNENE LD-C-50™ has been evaluated with hot 14/3 and 12/2 residential wiring (max. 50°C/122°F). It is chemically compatible with typical electrical wiring coverings.

Note: For any insulation of knob and tube wiring, please reference local electrical code.

Corrosion

ICYNENE LD-C-50™ did not cause corrosion when evaluated in contact with steel at 48°C (120°F) and 85% relative humidity conditions.

Bacterial or Fungal Growth and Food Value

Independent testing conducted by Texas Tech University has confirmed that Icnene® is not a source of food for mould; and as an air barrier, Icnene® reduces the airborne introduction of moisture, food, and mould spores into the building envelope.

Environmental / Health / Safety

ICYNENE LD-C-50™ is 100% water-blown and therefore contains no ozone-depleting blowing agents. It is also PBDE-free. It has been thoroughly evaluated for in-situ emissions by industry and government experts. VOC emissions are below 1/100th of the safe concentration level (TLV) within hours following the application of ICYNENE LD-C-50™. A 24 hr. time to occupancy period is recommended after the installation of ICYNENE LD-C-50™ as per [The University of Saskatchewan Toxicological report](#).

Not intended for exterior use. Not to be installed within 75mm (3") of heat emitting devices, where the temperature is in excess of 93°C (200°F), as per ASTM C411 or in accordance with applicable codes

5. INSTALLATIONS

ICYNENE LD-C-50™ is installed by a network of Licensed Dealers, trained in

the installation of ICYNENE LD-C-50™. Installation is generally independent of environmental conditions. It can be installed in hot, humid or freezing conditions. Surface preparation is generally not necessary. Within seconds, the foaming process is complete.

6. AVAILABILITY

Check regional Yellow Pages™ or contact Icnene Inc. at 800-758-7325 or our website at www.Icnene.com for a local Icnene Licensed Dealer.

7. WARRANTY

WHEN INSTALLED PROPERLY IN ACCORDANCE WITH INSTRUCTIONS, THE COMPANY WARRANTS THAT THE PROPERTIES OF THE PRODUCT MEET PRODUCT SPECIFICATIONS AS OUTLINED IN THIS PRODUCT SPECIFICATION SHEET. SAVE AND EXCEPT ANY EXCLUSIONS REFERENCED IN THE WARRANTY.

8. TECHNICAL

Icnene Licensed Dealers and Icnene Inc. provide support on both technical and regulatory issues. Architectural specifications in CSI 3-Part format are available upon request.

9. REGULATORY

For regulatory issues concerning ICYNENE LD-C-50™ in Canada please see CCMC (Canadian Construction Materials Centre) Evaluation Report I2070-R, The NBCC (National Building Code of Canada) or applicable Provincial Building Codes.

10. RELATED REFERENCES

All physical properties were determined through testing by accredited third party agencies. Icnene Inc. reserves the right to change specifications in its effort to enhance quality features. Please confirm that technical data literature is current.

11. PACKAGING AND STORAGE

Packaging	- 208 L (55 U.S. gallon) open top steel drums
Component 'A'	- 250 kg (550 lb.) per drum
Base Seal®	- Polyisocyanate MDI
Component 'B'	- 226 kg (500 lb.) per drum
Gold Seal®	- Resin

Storage

Component A, Base Seal®, Polymeric Isocyanate and ICYNENE LD-C-50™ Resin (Component B) ideally should be stored between 15°C (60°F) and 32°C (90°F).

Component A should be protected from freezing.

Component B can be frozen but must be protected from overheating (49°C /120°F) and prolonged storage above 38°C /100°F. Component B separates during storage and should be mixed thoroughly prior to use.

12. INSTALLATION SPECIFICATIONS

Must be installed by Icnene Licensed Dealers.

Refer to the Icnene Installer's Manual for expanded information.



ICYNENE™

HEALTHIER, QUIETER, MORE ENERGY EFFICIENT*

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