

## 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 Icnene Inc. ICYNENE LD-C-50™ spray formula is a 0.5 lbs/ft<sup>3</sup> density, free rise material.

### 2. MANUFACTURER

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

### 3. PRODUCT DESCRIPTION

ICYNENE LD-C-50™ insulates and air seals in one step. It is an effective “breathing” [Vapor 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 R/in. (Rsi/25mm)  
 ASTM C518: R3.7 hr. ft<sup>2</sup> °F/BTU  
 RSI 0.65 m<sup>2</sup> °C/W

Average insulation contribution in a full fill stud wall:

$$2'' \times 4'' = R13 \quad 2'' \times 6'' = R20$$

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  
 0.009 L/S-m<sup>2</sup> @ 75 Pa for 3.5"

Air permeability of a 2" x 6" wood framed wall assembly:  
 ASTM E 2178 data  
 0.01 L/S-m<sup>2</sup> @ 75 Pa for 5.5"

In all buildings, adequate mechanical ventilation/air supply should be provided for optimum IAQ (Indoor Air Quality). See ASHRAE Guidelines #62 – Ventilation for Acceptable Indoor Air Quality.

#### Water Vapor Permeance

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

Water vapor transmission properties:  
 ASTM E96 data  
 11 perms, 627 ng/(Pa.s.m<sup>2</sup>) @ 5.5"

In those situations that warrant a vapor barrier, the use of low vapor 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 favorable drying potential, and upon drying all

chemical and physical properties are fully restored.

#### Acoustical Properties

Performance in a 2" x 4" wood stud wall:  
 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/State and County building codes regarding fire prevention and requirements for Thermal Barrier coverings must be met as per the applicable building code having jurisdiction.

#### U.S.A. Specifications

Surface Burning Characteristics of ICYNENE LD-C-50™	ASTM E84**
5" Insulation Thickness	
Flame Spread	<20
Smoke Development	<400
Fuel Contribution	0
Oxygen Index ASTM D2863	23%

\*\*Flame spread rating not intended to reflect hazards under actual fire conditions.

#### Electrical Wiring

ICYNENE LD-C-50™ has been evaluated with hot 14/3 and 12/2 residential wiring (max. 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 120°F and 85% relative humidity conditions.

**Bacterial or Fungal Growth and Food Value**

Independent testing conducted by Texas Tech University has confirmed that Icynene® is not a source of food for mold; and as an air barrier, Icynene® reduces the airborne introduction of moisture, food, and mold 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 for highly sensitive people.

ICYNENE LD-C-50™ is CHPS E.Q. 2.2/Section 01350 Compliant and listed as such in the Collaborative for High Performance Schools (CHPS) Low Emitting Materials (LEM) Table. Under LEED guidelines, products that are CHPS E.Q. 2.2/Section 01350 Compliant are considered Environmentally Preferable Products.

Not intended for exterior use. Not to be installed within 3" of heat emitting devices, where the temperature is in excess of 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 Icynene Inc. at 800-758-7325 or our website at www.Icynene.com for a local Icynene 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**

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

**9. REGULATORY**

ICYNENE LD-C-50™ has been tested as per the requirements of the International Code Council - Evaluations Service's AC377. ESR-1826 and ESR 0165 (IAPMO report) have been issued.

**10. 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 to enhance quality features. Please confirm that technical data literature is current.

**11. PACKAGING AND STORAGE**

Packaging	- 55 U.S. gallon open top steel drums
Component 'A' Base Seal®	- 550 lb. per drum
Component 'B' Gold Seal®	- Polyisocyanate MDI
	- 500 lb. per drum
	- 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 Icynene Licensed Dealers.

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



**ICYNENE™**  
HEALTHIER, QUIETER, MORE ENERGY EFFICIENT\*

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