CLASSIC™

PRODUCT INFORMATION

USA

1. PRODUCT NAME

Classic™ (LD-C-50™)

ICYNENE Classic™ (hereafter known as LD-C-50®) is a trademark for light density, open celled, flexible, 100% water-blown polyurethane foam insulation manufactured by Icynene Inc. ICYNENE LD-C-50® spray formula is a nominal 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®, the 'classic' light density formulation of Icynene has been installed in buildings since 1986. Icynene is the pioneer of high yield, 100% water-blown polyurethane foam technology for air-sealing and insulating buildings.

ICYNENE LD-C-50® insulates and air-seals in one step for maximum energy conservation while minimizing the environmental impact during manufacturing and construction. Significantly reducing air leakage means ICYNENE LD-C-50® contributes to a healthier, quieter and more comfortable indoor environment, while reducing energy consumption and related greenhouse gas emissions by as much as 50%.

ICYNENE LD-C-50® is an effective vapor permeable air barrier material 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 wall 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/or cooling costs. Energy savings will vary depending on building design, location, etc.

ICYNENE LD-C-50® is applied by spraying liquid components onto an open wall, crawlspace, ceiling surface or cathedral ceiling. There it expands approximately 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 most construction materials, sealing out air infiltration. Excess material is easily trimmed off, leaving a surface ready for drywall or other code compliant finish.

4. TECHNICAL DATA

(Based on Core Samples)

Thermal Performance

Thermal resistance (ASTM C518)
- R/in = R3.7 hr. ft2 ºF/BTU

Average insulation contribution in a full fill stud wall:
- 2" x 4" = R13
- 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, windy conditions, settling, convection or air infiltration; nor will it be prone to traditional moisture intrusion via air leakage.

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.m2 @ 75 Pa for 3.5"

Air permeability of a 2" x 6" wood framed wall assembly:
ASTM E 2178 data
- 0.01 L/s.m2 @ 75 Pa for 5.5"

All buildings insulated and air-sealed with ICYNENE LD-C-50® must be designed to include adequate mechanical ventilation/ outdoor air supply. See ASHRAE Standard 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 Desiccant Method)
- 11 perms @ 5.5"

In those situations that warrant a vapor retarder, a supplemental layer of polyethylene may be used. Alternately, low vapor permeance paint either directly on the foam or as a primer for the interior drywall may be used.

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 Coeff. - 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 charred foam 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. Requirements for Thermal Barrier and Ignition Barrier coverings must be met as per the applicable building code having jurisdiction.

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U.S. Fire Testing Surface Burning Characteristics (ASTM E84) @ 5" thickness	
Flame Spread	≤25
Smoke Development	≤450

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

Electrical Wiring
ICYNENE LD-C-50® has been evaluated with energized 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 120ºF and 85% relative humidity conditions.

Plastic Piping
ICYNENE LD-C-50® is compatible in direct contact with CPVC piping systems, as per Paschal Engineering Study for the Spray Polyurethane Foam Alliance (SPFA).

Bacterial or Fungal Growth and Food Value
Independent testing conducted by Texas Tech University has confirmed that ICYNENE LD-C-50® is not a source of food for mold; and as an air barrier material, it resists the airborne introduction of moisture, nutrients, 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®.

Proper handling and use is required to avoid exposure to reactive chemicals in their unreacted state. For more information, contact the Spray Polyurethane Foam Alliance or the American Chemistry Council. Newly insulated areas have been shown to be safe for occupancy 24 hours after installation is complete.

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.

The reaction used to create ICYNENE LD-C-50® generates Carbon Dioxide to expand the foam. Carbon Dioxide has a very low Global Warming Potential (GWP of 1).

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

5. INSTALLATION

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.

For information on Health and Safety, refer to the Spray Polyurethane Foam Alliance Health and Safety guidance documents at www.spraypolyurethane.com.

6. AVAILABILITY

Contact Icynene at 1-800-758-7325 or visit our website at www.icynene.com.

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 and design details are available upon request.

9. REGULATORY

ICYNENE LD-C-50® has been tested as per the requirements of the International Code Council – Evaluation Service's AC377 Acceptance Criteria (June 2009). The following evaluation reports apply to this product:
- ICC ESR-1826

Based on the 3rd party test evidence submitted, this product was found to comply with:
- IRC: 2006 – 2009
- IBC: 2006 – 2009
- IECC: 2006 – 2009

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 of continuous improvement. Please confirm that technical data literature is current.

11. PACKAGING AND STORAGE

Packaging

Package	55 US gallon steel drums
Component 'A'	550 lb. per drum Base Seal® MDI
Component 'B'	500 lb. per drum ICYNENE LD-C-50® (Gold Seal®) Resin

Storage
Component A, Base Seal® MDI and Component B, ICYNENE LD-C-50® Resin ideally should be stored between 60ºF and 90ºF.

Component A, Base Seal®, should be protected from freezing.

Component B, ICYNENE LD-C-50® (Gold Seal®) Resin, can be frozen but must be protected from overheating 120°F and prolonged storage above 100°F.

Component B, ICYNENE LD-C-50® (Gold Seal®) Resin, may separate 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.

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HEALTH & SAFETY

CERTIFIED ICYNENE SPRAYER

Icynene products have an excellent health and safety record spanning more than 350,000 insulation 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 24 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 24 hours after spraying is complete: You 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 24 hours 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 24 hours after spray is complete.

Independent studies indicate that with 24 hours' active ventilation after spraying is completed, Icynene spray foam insulation is safely cured.

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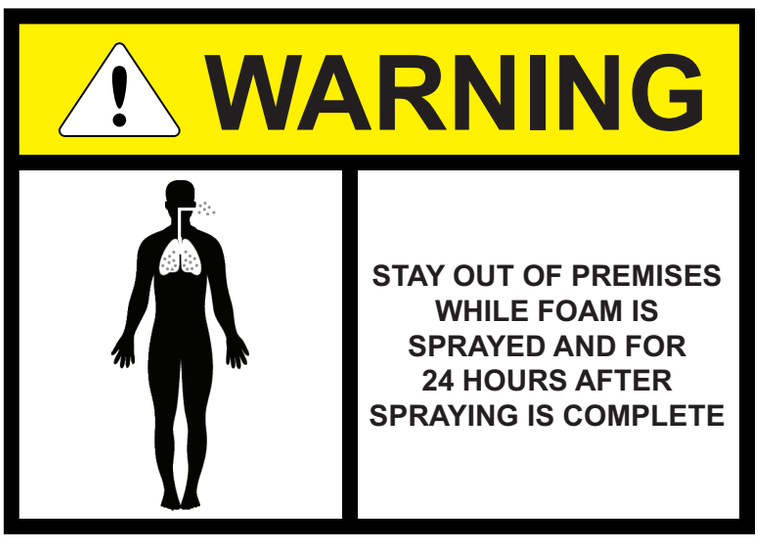
HEALTH & SAFETY
HOMEOWNERS

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

Icynene products have an excellent health and safety record spanning more than 350,000 insulation 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 24 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 indicate that with 24 hours' active ventilation after spraying is completed, Icynene spray foam insulation is safely cured.



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