

**PRODUCT SPECIFICATION**



**ICYNENE INC.**

**1. PRODUCT NAME**

ICynene® and The ICynene Insulation System® are registered trademarks for polyicynene insulation manufactured by ICynene Inc. ICynene® spray formula is a 1/2 lb density free rise, open celled material.

**2. MANUFACTURER**

ICynene® 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® insulates and “draftproofs” a building at the same time. Its performance is less installation sensitive than factory manufactured insulation materials. It is an effective “breathing” air barrier that can adjust with the building to maintain a seal 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 cooling costs. Energy savings vary depending on building design and location etc.

ICynene® is applied by spraying liquid components onto an open wall, crawl space or ceiling surface. There they expand 100:1 in just seconds to provide a flexible foam blanket of millions of tiny air cells, filling building cavities and sealing 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-value) ASTM C518:  
 R3.6 hr. ft<sup>2</sup> °F/ BTU  
 Rsi 0.62 m<sup>2</sup> °C/W per 25 mm

Average insulation contribution in stud wall:  
 2" x 4" = R13      2" x 6" = R20

The ICynene Insulation System® provides more effective performance than the equivalent R-value of hand fitted air permeable insulation materials. It is not subject to loss of R-value due to aging, windy conditions, settling, convection or air infiltration; nor is it likely to be affected by moisture related conditions. A FACT SHEET with R-value data is available upon request.

**Air Permeance/Air Barrier /Air Seal**

The ICynene Insulation System® completely fills any shaped cavity, and adheres to other materials, creating assemblies with very low air permeance. No additional interior or exterior air infiltration protection is necessary.

Air permeability of core foam:  
 ASTM E283 data  
 0.0049 L/S-m<sup>2</sup> @75 Pa for 5.25"  
 0.0080 L/S-m<sup>2</sup> @75 Pa for 3.25"

Spaces where ICynene® is not installed, such as between double studs and between flooring and base plates, should be caulked for maximum performance.

In all buildings, adequate mechanical ventilation/air supply should be provided for optimum IAQ (Indoor Air Quality). Inadequate ventilation can be a health hazard.

**Water Vapor Permeance**

ICynene® is slightly water vapor permeable and allows structural moisture to diffuse and dissipate. It will not entrap moisture in materials to which it is applied.

Water vapor transmission properties:  
 ASTM E96 data

16 perms 941 ng/(Pa•s•m<sup>2</sup>) @ 3" (76mm) thick  
 10 perms 565 ng/(Pa•s•m<sup>2</sup>) @ 5" (127mm) thick

Because of its low air permeance, ICynene® is not infiltrated by moisture laden air. When applied to a vapor permeable surface, condensation will not occur within it. It does not require a vapor barrier unless applied to a non-vapor permeable surface in extreme vapor driven conditions. A vapor retardant paint is adequate in such situations.

**Water Absorption Properties**

ICynene® is hydrophobic and does not exhibit any capillary properties. It does not wick and is water repellent. Water can be forced into the foam under pressure because it is open celled. Water will drain by gravity rather than travel horizontally or vertically through the foam. Upon drying, thermal performance is fully restored.

**Acoustical Properties**

Performance in a 2"x4" wood stud wall at:

STC Sound Transmission Cass - 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 E90 .11 .43 .89 .72 .71 .67

Actual performance is superior than reported test results because of ICynene's® ability to control air leakage.

**Burn Characteristics**

ICynene® will be 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. It should be applied in accordance with applicable building codes.

U.S.A. Specifications

Surface Burning Characteristics of Building Materials ASTM E84	
Flame Spread	<20
Smoke Development	<400
Fuel Contribution	0
Oxygen Index ASTM D2863	23%
N.Y. State Fire gas toxicity	LC <sub>50</sub> -12

CANADA Specifications

Corner Wall Test CAN4-S102 FSC3	
Flame Spread	510-530
Smoke Development	95-150

**Electrical Wiring**

ICynene® has been evaluated with both 14/3 and 12/2 residential wiring (max. 122°F/50°C). It is chemically compatible with all electrical wiring coverings.

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