

**PRODUCT SPECIFICATION**

**1. PRODUCT NAME**

**ICYNENE MD-R-200™**

ICYNENE MD-R-200™ is a trademark for medium density, 100% water-blown polyurethane spray foam manufactured by Icynene. ICYNENE MD-R-200™ is a nominal 2 lbs/ft<sup>3</sup> density, free rise material.

**2. MANUFACTURER**

ICYNENE MD-R-200™ is made on-site from liquid components manufactured by Icynene Inc. Installation and on-site manufacturing are supplied by independent Icynene Licensed Dealers.

**3. PRODUCT DESCRIPTION**

Icynene’s next generation of high performance products includes ICYNENE MD-R-200™, a 100 % water-blown foam insulation and air barrier material containing resins with pre- and post-consumer recycled content. This unique product is a tough, low water absorption product with applicability across a broad range of substrates, environmental conditions and climate zones.

It is a type III vapor retarder, with low vapor permeance. It can be used to limit diffusion of moisture through building assemblies.

ICYNENE MD-R-200™ 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 MD-R-200™ contributes to a healthier, quieter and more comfortable indoor environment, while reducing energy consumption and related greenhouse gas emissions by as much as 50%.

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 MD-R-200™ is applied by spraying liquid components onto an open wall, crawlspace, ceiling surface or cathedral ceiling. There it expands approximately 30:1 in seconds to provide a 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 trimmed off, leaving a surface ready for drywall or other code-compliant finish.

**4. TECHNICAL DATA**

(Based on Core Samples)

**Contains Recycled Content**

**Thermal Performance**

Thermal resistance (ASTM C518)

- R/in = R5.2 hr. ft<sup>2</sup> °F/BTU

Average insulation contribution in a stud wall:

- 2" x 4" = R16 (3" foam)

- 2" x 6" = R26 (5" foam)

ICYNENE MD-R-200™ provides more effective performance than the equivalent R-value of air permeable insulation materials. ICYNENE MD-R-200™ is not subject to loss of R-value due to aging, windy conditions, settling, convection or air infiltration; nor is it 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 MD-R-200™ 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.

Air permeability of core foam:

ASTM E283 data:

- 0.0016 L/s·m<sup>2</sup> @ 75 Pa for 2".

ASTM E2178 data

- 0.0015 L/s·m<sup>2</sup> @ 75 Pa for 2".

All buildings, insulated and air-sealed with ICYNENE MD-R-200™ 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 MD-R-200™ is a type III vapor retarder with low water vapor permeability reducing the amount of moisture that can

diffuse through the insulation. Water vapor transmission properties: (ASTM E96 Desiccant Method)

- 1.3 Perms @ 3"

**Water Absorption Properties**

The absorption of liquid water is very low.

Water Absorption, % by volume

- ASTM D2842: 0.57%

**Burn Characteristics**

ICYNENE MD-R-200™ 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 MD-R-200™ is subject to all 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.

U.S. Fire Testing

Surface Burning Characteristics (ASTM E84) @ 2" thickness

Flame Spread ≤25

Smoke Development ≤450

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

**Plastic Piping**

ICYNENE MD-R-200™ is compatible in direct contact with CPVC piping systems, as per Paschal Engineering Study for the Spray Polyurethane Foam Alliance.

**Bacterial or Fungal Growth and Food Value**

Independent testing conducted as per ASTM CI338 showed that ICYNENE MD-R-200™ is not a source of food for mold; and as an air barrier material, ICYNENE MD-R-200™ restricts the airborne introduction of moisture, nutrients, and mold spores into the building envelope.

**Environmental / Health / Safety**

ICYNENE MD-R-200™ is 100% water-blown and therefore contains no ozone-depleting blowing agents. It is also PBDE-free.

Proper handling and use is required to avoid exposure to reactive chemicals in their unreacted state. For more information, contact 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 MD-R-200™ is CHPS E.Q. 2.2/Section O1350 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 O1350 Compliant are considered Environmentally Preferable Products.

The reaction used to create ICYNENE MD-R-200™ generates Carbon Dioxide to expand the foam. Carbon Dioxide has a very low Global Warming Potential (GWP of 1).

Not to be installed within 3" of heat emitting devices or where the temperature is in excess of 180°F, in accordance with applicable codes.

**5. INSTALLATION**

ICYNENE MD-R-200™ is installed by a network of Licensed Dealers, trained in the installation of ICYNENE MD-R-200™.

Installation is generally independent of environmental conditions. ICYNENE MD-R-200™ 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](http://www.spraypolyurethane.com)

**6. AVAILABILITY**

Check regional Yellow Pages™ or contact Icynene Inc. at 800-758-7325 or visit our website at [www.Icynene.com](http://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 and design details are available upon request.

**9. REGULATORY**

ICYNENE MD-R-200™ has been tested as per the requirements of the International Code Council – Evaluation Service’s AC377 Acceptance Criteria (June 2009).

The following Evaluation Service report applies to this product:

- ICC ESR – 3005

Based on the evidence submitted, this product was found to comply with:

- IRC – 2006
- IBC – 2006
- IECC – 2006

when installed in suitable thicknesses and assemblies listed in the ESR report.

For regulatory issues concerning ICYNENE MD-R-200™, contact Icynene Inc. at 800.758.7325.

**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	55 U.S. gallon steel drums
Component ‘A’	550 lb. per drum
	Base Seal® MDI
Component ‘B’	500 lb. per drum
	ICYNENE MD-R-200™ Resin

**Storage**

Component A, Base Seal® MDI and Component B, ICYNENE MD-R-200™ Resin ideally should be stored between 60°F and 90°F and never exceed 100°F.

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

Component B, ICYNENE MD-R-200™ Resin must be mixed prior to use.

**12. INSTALLATION SPECIFICATIONS**

Must be installed by Icynene Licensed Dealers. Refer to the ICYNENE MD-R-200™ Technical Data Sheet.



**ICYNENE®**

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