

### THERMAL INSULATION AND AIR BARRIER ICC-ES ESR-3493

Specification Sections: 07 21 19 Foamed-in-Place Insulation,  
07 27 00 Spray Polyurethane Foam Air Barriers

#### PRODUCT DESCRIPTION

Icynene ProSeal Eco™ (MD-R-210) is a 100% water blown, closed cell spray applied polyurethane foam insulation and air barrier material suitable for buildings in accordance with the IRC and the IBC including Type I, II, III, IV and V construction. It delivers high R-value and Class II water vapor permeance required in certain climate zones. The product is for use as a thermal insulation and air barrier in:

- exterior walls as continuous insulation
- wall cavities
- floor assemblies
- ceiling assemblies
- attics (vented and unvented)
- crawl spaces (vented and unvented)

#### PROPERTIES OF CURED FOAM

Characteristic	Test Method	Value Metric (Imperial)
Core Density	ASTM D 1622	2.2 lb/ft <sup>3</sup>
Color		Cream
Aged Thermal Resistance at 1"	ASTM C 518	R-4.9
at 3½" (Calculated)		R-17
at 4"		R-19
Air Permeance	ASTM E 2178	0.00049 L/s.m <sup>2</sup> at 1.4"
Water Vapor Permeance	ASTM E 96	0.87 perm at 2.4"
Dimensional Stability at 7 days (% Volume)	ASTM D 2126	3.2% at 158°F and 97% RH
Compressive Strength	ASTM D 1621	26 lb/in <sup>2</sup>
Tensile Strength	ASTM D 1623	31 lb/in <sup>2</sup>
Water Absorption (% Volume)	ASTM D 2842	0.69%
Fungus Testing	ASTM C 1338	No Growth

#### BURN CHARACTERISTICS

Surface Burning at 4"	ASTM E 84	Class 1
Flame Spread Index		20
Smoke Development		350

Commercial Fire Resistance	NFPA 285	Assembly Passed*
Commercial Fire Resistance	ASTM E 119	1,2 & 3 Hour Ratings*
DC 315 Thermal Barrier	NFPA 286	> 15 minutes
Wall & Ceiling Application Maximum Thickness	NFPA 286	Walls- 8" Ceiling- 14"
Limited Access Attic & Crawl Space Maximum Thickness (Coated)	ACC377 Appendix X	Walls - 8" Roof/Floors - 14" (DC 315 at 6 wet mils)

\* consult Icynene Engineering Department for details

- Icynene ProSeal Eco™ 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 ProSeal Eco™ must be covered with ½" of gypsum board, DC-315 intumescent paint coating @ 24 wet mils or approved thermal barrier.
- Icynene ProSeal Eco™ 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 as required by the authority having jurisdiction.

#### AIR BARRIER/ MECHANICAL VENTILATION

- Icynene ProSeal Eco™ 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.
- All buildings insulated and air sealed with Icynene ProSeal Eco™ must be designed to include adequate mechanical ventilation/ outdoor air supply for optimum IAQ (Indoor Air Quality).
- For mechanical ventilation see ASHRAE Standard 62 – Ventilation for Acceptable Indoor Air Quality or any other acceptable good engineering practice.

#### WATER VAPOR PERMEANCE & ABSORPTION

- Icynene ProSeal Eco™ is a Class II vapor retarder, at 2.4" thickness, which reduces the amount of moisture that can diffuse through the insulation.
- Icynene ProSeal Eco™ meets FEMA criteria for resisting water absorption.
- It is resistant to moisture allowing it to be used below the base flooding elevation in flood prone areas.



## ENVIRONMENTAL AND HEALTH

- Icynene ProSeal Eco™ is California Department of Public Health EHLB v1.1-2010 Emissions Specification Section 01350 compliant for offices and classrooms.

## INSTALLATION

- Icynene ProSeal Eco™ is installed by a network of Licensed Dealers, trained in its installation.
- Maximum thickness per pass is 2 inches. Wait until first layer cools before applying a second layer/lift over the initial layer/lift.
- This product should not be installed within (3") of heat emitting devices, (or as specified by Code) where the temperature is in excess of 180°F, in accordance with applicable codes.
- It can be installed in hot, humid or freezing conditions. Minimum substrate temperature for application is 5°F (-15°C).
- Surface preparation is generally not necessary.
- Within seconds, the foaming process is complete.

## HANDLING AND SAFETY

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).

## AVAILABILITY

Contact Icynene Inc. at 800-758-7325 or visit our website at [www.Icynene.com](http://www.Icynene.com).

## WARRANTY

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

## 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 at our website at [www.Icynene.com](http://www.Icynene.com).

## REGULATORY

- ESR-3493 has been issued by the ICC-ES for Icynene ProSeal Eco™.
- Icynene ProSeal Eco™ has been tested as per the requirements of the International Code Council Evaluation Service's AC377 Acceptance Criteria (November 2012).
- For regulatory issues concerning Icynene ProSeal Eco™ contact Icynene at 800-758-7325.

## 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.

## PACKAGING AND STORAGE

- Packaging - 55 US gallon, closed top steel drums
- Component 'A' - 550 lb. per drum. Base Seal® MDI
- Component 'B' - 500 lb. per drum. Icynene ProSeal Eco™ - Resin
- Icynene ProSeal Eco™ (Component A and Component B) ideally should be stored between 60°F (15°C) and 85°F (30°C).
- Component A should be protected from freezing.
- Shelf life is 6 months.



**Telephone: 905.363.4040**  
**Toll Free: 800.758.7325**  
**[www.Icynene.com](http://www.Icynene.com)**  
**[inquiry@icynene.com](mailto:inquiry@icynene.com)**

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