



Safety & Buildings Division  
201 West Washington Ave.  
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Approval #

201103-I  
FN 20119003

## Wisconsin Building Product Evaluation

Material

ICYNENE MD-R-210™  
SPRAY-APPLIED FOAM PLASTIC INSULATION

Manufacturer

ICYNENE, INC.  
6747 CAMPOBELLO ROAD  
MISSISSAUGA, ONTARIO L5N 2L7

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### SCOPE OF EVALUATION

Icynene MD-R-210™ Spray-Applied Foam Plastic Insulation has been evaluated against the current **Wisconsin Commercial Building Code (WCBC)** including both the 2006 and 2009 editions of the International Building Code (IBC) and International Energy Conservation Code (IECC). The material was also evaluated against the current **Wisconsin Uniform Dwelling Code (UDC)**.

The following properties were evaluated:

- Surface burning characteristics
- Physical properties
- Thermal performance (R-values)
- Air permeance
- Water absorption
- Water vapor permeance

### DESCRIPTION AND USE

Icynene MD-R-210™ is a medium-density, closed-cell, spray-applied polyurethane foam plastic insulation and air barrier material that is 100 percent water-blown with an installed nominal density of 2.0 pcf.

Icynene MD-R-210™ is used to provide thermal insulation and to create an air barrier to seal against air infiltration in buildings under the **Wisconsin Commercial Building Code (WCBC)** and dwellings under the **Wisconsin Uniform Dwelling Code (UDC)**.

**REPORTS AND RESULTS**

The Icynene MD-R-210™ Spray-Applied Foam Plastic Insulation was tested against the following standards:

- ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- ASTM E 96 Standard Test Method for Water Vapor Transmission of Materials.
- ASTM E 2178 Standard Test Method for Air Permeance of Building Materials.
- CAN/ULC S705.1 Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material – Specification..

The tests using ASTM E 84, ASTM E 2178 and CAN/ULC-S705.1 were conducted by Exova. The test using ASTM E 96 was conducted by Intertek.

Copies of the test reports are on file.

<b>Test</b>	<b>Characteristic</b>	<b>Result</b>
ASTM E 84	Flame Spread Index	25
ASTM E 84	Smoke Developed Index	375
ASTM E 96	Water Vapor Permeance	0.95 Perms
ASTM E 2178	Air Permeance	0.0004 L/(s m <sup>2</sup> ) @ 75 Pa [0.00009 cfm/ft <sup>2</sup> @ 1.57 lbs/ft <sup>2</sup> ]
CAN/ULC S705.1	Water Absorption	0.69% by volume

**WISCONSIN COMMERCIAL BUILDING CODE (WCBC)**

Icynene MD-R-210™ spray applied foam plastic insulation meets the flame spread index (FSI) and smoke developed index (SDI) limitations (max 75 FSI and max 450 SDI) of the **Wisconsin Commercial Building Code (WCBC)**.

The insulation meets the criteria necessary to be a Class II Vapor Retarder.

**WISCONSIN UNIFORM DWELLING CODE (UDC)**

Icynene MD-R-210™ spray applied foam plastic insulation meets the flame spread index (FSI) and smoke developed index (SDI) limitations (max 75 FSI and max 450 SDI) of the **Wisconsin Uniform Dwelling Code (UDC)**.

**ADDITIONAL LIMITATIONS OF APPROVAL – WISCONSIN COMMERCIAL BUILDING CODE (WCBC) AND WISCONSIN UNIFORM DWELLING CODE (UDC)**

The Wisconsin Building Product Evaluation Number must be provided when plans that include this product are submitted for review.

The manufacturer's published installation instructions and this report must be strictly adhered to. Icynene MD-R-210™ must be applied using spray equipment specified by Icynene, Inc. and installed only by factory certified applicators. The insulation as covered by this evaluation is limited to a thickness of 4 inches.

The insulation must be separated from the interior of commercial buildings by an approved 15 minute thermal barrier in accordance with IBC Section 2603.4, except where other provisions of the IBC allow installation without a barrier. For one and two family dwellings the thermal barrier shall be provided as specified within **Comm 21.11(1)(b)** of the current **Wisconsin Uniform Dwelling Code (UDC)**.

**DISCLAIMER**

The department is not endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive or modify any code requirement not specified in this document.

**EXPIRATION**

This approval will be valid through December 31, 2016, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department.

Reviewed by: JBS

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Approval Date: August 31, 2011      By James B. Smith, P.E.  
: Program Manager  
Bureau of Program Development