

PRODUCT GUIDE SPECIFICATION

The Icynene Insulation System® Spray Formula

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Specifier Notes: This Product Guide Specification follows the Construction Specification Institute's MasterFormat™, SectionFormat™, and PageFormat™.

This section must be carefully reviewed and edited by the user to meet the requirements of the project and local building codes. Coordinate with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section. Delete text in brackets [____] below after selecting one of the choices.

This section includes references to the U.S. Green Building Council's LEED Green Building Rating System. The use of Icynene insulation can contribute to achieving certain prerequisites and credits offered by the system. Version 2.1 of the system requires the submittal of letter templates to confirm the attainment of those prerequisites and credits. Include requirements for the appropriate documentation in the "Submittals" article of this section. If a project does not require the use of the LEED Rating System, delete those references throughout the section.

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SECTION 07218

POLYICYNENE SPRAY INSULATION

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Specifier Notes: This section incorporates Icynene Inc. spray formula polyicynene insulation. Insulation may be applied on an open wall or ceiling surface. Consult your local representative for assistance in editing this section.

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Polyicynene spray insulation at [wall] [and] [ceiling] surfaces.

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Specifier Notes: Add other sections containing work that is directly related to the insulation. Edit the following list as required for the project.

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1.2 RELATED SECTIONS

- A. Section 01575 – Construction Waste Management.

- B. Section 03300 – Cast-in-Place Concrete.

- C. Section 04200 – Unit Masonry.

- D. Section 06100 – Rough Carpentry.

- E. Section [____] – [_____].

1.3 REFERENCES

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Specifier Notes: List reference standards that appear in this section. Edit this article as required. Use most current edition of standard unless indicated otherwise by manufacturer.

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- A. American Society for Testing and Materials (ASTM):

1. ASTM C518-[____], Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
2. ASTM D2863-[____], Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-

- like Combustion of Plastics (Oxygen Index).
- 3. ASTM E84-[], Test Method for Surface Burning Characteristics of Building Materials.
- 4. ASTM E90-[], Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
- 5. ASTM E96-[], Test Methods for Water Vapor Transmission Rate of Building Materials.
- 6. ASTM E283-[], Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Differences Across the Specimen.

1.4 SUBMITTALS

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Specifier Notes: Include only those submittals necessary to confirm the intent of the contract documents. Delete those that are not required.
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- A. Product Data: Provide data on materials, describing insulation properties, surface burning characteristics, [and] [].

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Specifier Notes: In the following paragraph indicates submittals required to demonstrate compliance with LEED Material & Resources Credit 2 – Construction Waste Management.
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- B. LEED Information: Indicate percentage of waste materials by weight diverted from landfill and recycled.
- C. Manufacturer’s Installation Instructions: Indicate special procedures, perimeter conditions requiring special treatment, and [].
- D. Manufacturer’s Certificate: Certify that products meet or exceed specified requirements.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum [three (3)]

[] years [documented] experience.

- B. Applicator: Company specializing in performing the work of this section [with minimum { } years {documented} experience] [and] [certified by the manufacturer].

1.6 REGULATORY REQUIREMENTS

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Specifier Notes: Use this article if a specific code or regulation applies to the project; delete this article if there are none. Verify that the product’s flame and smoke ratings comply with the requirements of local regulatory agencies. Coordinate the flame and smoke ratings specified in this article with requirement specified in Part 2 Products.
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- A. Conform to [UL] [Warnock Hersey] Assembly Design No. [].
- B. Conform to [applicable] [] code for [flame and smoke ratings,] [non-combustibility,] [and] [].

1.7 MOCK-UP

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Specifier Notes: Include this article if a full sized assembly is required for review of construction, to coordinate the work of multiple sections, or testing. Delete article if a mock-up is not required. The mock-up can demonstrate the capabilities of the installer and the bonding ability of the insulation to the substrate.
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- A. Provide mock-up of polyisocyanurate spray insulation.
- B. Construct mock-up, [] feet long by [] feet wide, including [substrate construction] [].
- C. Locate [where directed] [].
- D. Mock-up may [not] remain as part of the Work.

1.8 ENVIRONMENTAL REQUIREMENTS

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Specifier Notes: This article specifies environmental performance requirements. Coordinate requirements with material specifications under Part 2 Products.
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- A. Toxicity/Hazardous Materials:
1. Outgassing/Reactivity:
a. Formaldehyde: Products containing urea-formaldehyde will not be permitted.
b. Chlorofluorocarbons (CFCs)/HCFCs: Products and equipment requiring or using CFCs or HCFCs during the manufacturing process will not be permitted.

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Specifier Notes: Include the following paragraph where the building is designed to meet the specific airtightness standards of the Energy Star Program.
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- B. Airtightness: Meet specific standards of the Energy Star Program of 1.5 Air Changes/Hour at 50 Pa.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly indicating manufacturer and material.
B. Store materials in an area protected from [freezing and overheating] damage and in accordance with manufacturer's instructions.
C. Protect materials during handling and application to prevent damage and contamination.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Icynene Inc., 6747 Campobello Rd. Mississauga, Ontario L5N 2L7 Canada. Tel 800-758-7325. Fax 905-363-0102. Web Site: www.icynene.com.

2.2 MATERIALS

- A. Polyicynene Spray Insulation: Icynene; hydrophobic, low-density, open-cell modified polyicynene; conforming to the following:

- 1. Thermal Resistance (R-Value/inch): ASTM C518; 3.6 hr/sq ft/degree F/BTU. In.
2. Air Permeance (for 5.25 inches of material): ASTM E283; 0.0049 l/m^2/second.
3. Water Vapor Transmission (for 5 inches of material): ASTM E96; 10 perms.
4. Sound Transmission Class (STC): ASTM E90; STC 37 in wood stud wall.
5. Noise Reduction Coefficient (NRC): ASTM E90; NRC-0.7 in wood stud wall.
6. Corrosion: No significant corrosion when in contact with steel under 85 percent relative humidity.
7. Bacterial or Fungal Growth: No growth; no material deterioration.

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Specifier Notes: Select one of the following based upon the location of the project. The first option applies in the United States while the second option applies in Canada.
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- 8. Flame Spread and Smoke Developed Rating: ASTM E84; <20/<400.

***** [OR] *****

- 8. Flame Spread and Smoke Developed Rating: CAN 4-S102 PSC 3 Corner Wall Test; 510-530/95-150.
9. Fuel Contribution: ASTM E84; 0.
10. Oxygen Index: ASTM D2863; average value 23.1 percent.

B. Vapor Retarder: [Vapor retarder paint or vapor diffusion retarder recommended by insulation manufacturer] [_____].

C. Apply to minimum cured thickness [of {_____} inch +/- 1/2 inch] [as scheduled].

D. Apply insulation to fill voids around doors and windows.

E. Apply insulation to fill voids around accessible service and equipment penetrations [as noted on drawings].

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that substrate is free of any foreign material that will impede application.

C. Verify that other work on and within spaces to be insulated is complete prior to application.

D. Notify Architect of conditions that would adversely affect the application.

E. Beginning of installation means applicator accepts existing conditions.

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Specifier Notes: Delete paragraphs below which are not applicable to project. Add paragraphs as appropriate to specific conditions on encountered project.
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3.2 PREPARATION

A. Comply with manufacturer's written installation instructions for preparing substrates indicated to receive insulation.

B. Mask and protect adjacent surfaces from overspray or damage.

C. Remove foreign materials, dirt, grease, oil, paint, laitance, efflorescence, and other substances that will affect application.

F. Apply insulation to seal voids at truss ends to prevent wind scouring of ceiling insulation.

G. Seal plumbing stacks, electrical wiring and other penetrations into attic to control air leakage.

H. Apply insulation to fill voids around bathtubs to point of accessibility [as indicated on drawings].

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Specifier Notes: Verify whether local building codes require ventilation and air spaces in roofs and cathedral ceilings areas. If they do, delete the following paragraph.
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3.3 APPLICATION

A. Apply insulation in accordance with manufacturer's written application instructions.

B. Apply insulation to a reasonably uniform monolithic density without voids.

I. Apply insulation in unvented roof spaces and cathedral ceiling areas [as indicated on drawings].

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Specifier Notes: Include the following paragraph where the building is designed to meet the specific airtightness standards of the Energy Star Program.
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J. Where building is designed to meet the specific airtightness standards of the Energy Star Program, apply insulation as recommended by manufacturer to provide airtight construction. Apply caulking to seal joints between structural assemblies.

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Specifier Notes: Site verification of applied insulation thickness is necessary. Where thickness varies with location, include a schedule at end of this section.
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3.4 FIELD QUALITY CONTROL

- A. Inspect application for insulation thickness [and density].

Sound insulation within interior [walls/ceilings] of the [bedrooms/bathrooms/recreation room] and other locations as indicated on drawings. [] inches

3.5 PROTECTION OF FINISHED WORK

- A. Do not permit subsequent work to disturb applied insulation.

Cathedral ceilings [] inches

Unvented roof spaces [] inches

3.6 CONSTRUCTION WASTE MANAGEMENT

VOIDS IN OVERHANGS SUCH AS BAY WINDOWS AND CANTILEVERED FLOORS [] inches

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Specifier Notes: LEED requires recycling and/or salvaging construction waste. Retain this article and coordinate with Division 1 Section "Construction Waste Management."
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Exterior above grade walls [] inches

Floor headers [] inches

END OF SECTION

- A. Plan and coordinate the insulation work to minimize the generation of offcuts and waste. Reuse insulation scraps to the maximum extent feasible.
- B. Separate and recycle waste materials in accordance with the Waste Management Plan and to the extent economically feasible.

3.7 SCHEDULES

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Specifier Notes: Include schedules if project includes different insulation thicknesses at different locations.
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Edit schedule below as appropriate to specific project.
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Location	Average Cured Thickness
Interior surface of exterior basement walls above [and below] grade	[] inches
Sound insulation around main drain	[] inches
Garage ceiling between joists and over air ducts	[] inches