

Product Guide Specification

BioBased 501 Spray Foam Insulation System

Specifier Notes: This Product Guide Specification follows the Construction Specification Institute's MasterFormat™, SectionFormat™, 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 unused text below after selecting one or none of the choices.

Section 07218 Semi-rigid Polyurethane Spray Foam Insulation System

This section incorporates BioBased 501 (0.5 lb/ft³) spray formula insulation. Insulation may be applied on an open wall or ceiling surface. Consult your local representative for assistance in editing this section.

PART 1: GENERAL

1.1 Section Includes

- A. BioBased spray insulation at wall and ceiling surfaces.

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

1.2 Related Sections

- A. Section 03300 – Cast-in-Place Concrete.
- B. Section 04200 – Unit Masonry
- C. Section 06100 – Rough Carpentry
- D. Section xxxxx – [_____]

1.3 References

- 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
 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

Specifier Notes: *Include only those submittals necessary to confirm the intent of the contract documents. Delete those that are not required*

- A. Product Data: Provide data on materials, describing insulation properties, surface burning characteristics, and] [_____].
- B. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special treatment, and [_____]
- C. 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 of [___] 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

- 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

- A. Provide a mock-up of spray foam insulation.
- B. Construct a mock-up [___] feet long by [___] feet wide, including [substrate construction] [_____].
- C. Locate [where directed] [_____]

1.8 Environmental Requirements

- A. Base material: Products shall be based on SoyOyl™ [or other annually renewable biological oil stock.
- B. Toxicity/Hazardous Materials—Outgassing/Reactivity
 - 1. Formaldehyde: Products containing urea-formaldehyde will not be permitted.
 - 2. Chlorofluorocarbons (CFCs)/HCFCs: Products and equipment requiring or using CFCs or HCFCs during the manufacturing or installation process will not be permitted.

Specifier Notes: *Include the following paragraph where the building is designed to meet the specific airtightness standards of the Energy Star Program:*

- C. 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. Observe all safety precautions and handling instructions on Material Safety Data Sheets for products.
- B. Deliver materials to site in manufacturer’s original, unopened containers and packaging, with labels clearly indicating manufacturer and material.
- C. Store materials in a dry area protected from precipitation, freezing and overheating, at temperatures not lower than 60°F (16°C) or above 90°F (32°C).
- D. Protect materials during handling and application to prevent damage and contamination.

PART 2: PRODUCTS

2.1 Manufacturer

- A. Products shall be provided by:
BioBased Systems, LLC
 1315 N. 13th Street
 Rogers, AR 72756
 800-803-5189 or 815-664-5100 Fax: (815) 664-5124 Email: info@biobased.net Website: www.biobased.net

Specifier Notes: Delete one of the following two paragraphs; coordinate with Division 1 requirements.

- B. Substitutions are not acceptable.
- C. Submit requests for substitutions in accordance with provisions of Section 01600.

2.2 Materials

- A. BioBased 501 spray foam polyurethane semi-open cell insulation, conforming to the following:
 - 1. Foam Density (pounds per cubic foot): ASTM D1622; 0.50
 - 2. Thermal Resistance (liters / second / meter²): ASTM E283;
 test at 3.25" and 75 Pa pressure) 0.0080
 test at 5.25" and 75 Pa pressure) 0.0049
 - 3. Air Permeance
 - Test Standard..... ASTM E283
 - Unit of measureliters / second / meter²
 - Test at 3.25" and 75 Pa pressure..... .0080
 - Test at 5.25" and 75 Pa pressure..... .0049
 - 4. Water Vapor Transmission
 - Test Standard..... ASTM E96
 - Test at 3.5" thickness 16 perms
 - Test at 5.5" thickness 10 perms
 - 5. Sound Transmission Class
 - Test Standard..... ASTM E90
 - STC Sound Transmission Class 37

- 6. Noise Reduction Coefficient
 - *Test Standard* *ASTM C423*
 - *NRC Noise Reduction Coefficient* *70*

 - 7. Corrosion: No significant corrosion when in contact with steel under 85 percent relative humidity.
 - 8. Bacterial or Fungal Growth: No growth; no material deterioration
 - 9. Flame Spread and Smoke Developed Rating: ASTM E84: 20/400
 - 10. Fuel Contribution: ASTM E84: 2
 - 11. Oxygen Index: ASTM D2863; Average value 23.5 per cent
- B. Vapor Retarder: Vapor retarder paint or vapor diffusion retarder recommend by insulation manufacturer
 [_____]

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.

3.2 Preparation

Comply with manufacturers written installation instructions for preparing substrates indicated to receive insulation.

Mask and protect adjacent surfaces from overspray or damage.

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

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.

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

- C. Apply to a minimum cured thickness [of _____ inch +/- ___ 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].

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

- 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].

Specifier Notes: *Verify whether local building codes require ventilation and air spaces in roofs and cathedral ceiling areas. If so, delete the following paragraph.*

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

Specifier Notes: *Include the following paragraph where the building is designed to meet the specific airtightness standards of the Energy Star Program.*

- 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.

3.4 Field Quality Control

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

3.5 Protection of Finished Work

- A. Do not permit subsequent work to disturb applied insulation.
- B. Any “hot work” repairs such as welding or soldering etc. must follow appropriate standards and practices (such as “fire watch”) to prevent fire.
- C. Exposed foam must be covered with wall board as soon as possible. Insulation shall be separated from the interior of the building by 1/2" (12.7 mm) gypsum board or equivalent approved 15 minute thermal barrier.

3.6 Schedules

Specifier Notes: *Include schedules if project includes different insulation thicknesses at different locations. Edit schedule below as appropriate to specific project.*

A. Schedule 1: Installation Thickness

- Interior surface of exterior basement walls above [and below] grade[] in [] cm
- Exterior above grade walls[] in [] cm
- Garage ceiling between joists and over air ducts[] in [] cm
- Cathedral ceilings[] in [] cm
- Unvented roof spaces[] in [] cm
- Voids in overhangs – such as bay windows and cantilevered floors.....[] in [] cm
- Floor headers[] in [] cm
- Sound insulation around main drain[] in [] cm
- Sound insulation within interior [walls / ceilings] of bedrooms / bathrooms / recreation room and other locations as indicated on drawings[] in [] cm
- Other locations as specified.....[] in [] cm