

CONSTRUCTION SPECIFICATION
SEALECTION® 500
Spray-in-Place Semi Rigid Urethane Foam Insulation

Note: This specification should be adopted for each project. All notes are for guidelines only.

1. GENERAL

1.1. **Work Included** - Spray application of **SEALECTION® 500** is for providing insulation and air-seal. *Note: Areas to be insulated and air-sealed can be described here if desired, referenced on drawings or covered in greater detail in Section **3. Execution**.*

1.2. **Related Sections** - *Note: Amend to suit project.*

| | | |
|-----------|---------------------------------------|---------------|
| 1.2.1.1. | Cast in place concrete | Section 03300 |
| 1.2.1.2. | Structural Pre-cast Concrete | Section 03400 |
| 1.2.1.3. | Unit Masonry | Section 04200 |
| 1.2.1.4. | Metal Decking | Section 05300 |
| 1.2.1.5. | Cold Formed Metal Framing | Section 05400 |
| 1.2.1.6. | Rough Carpentry | Section 06100 |
| 1.2.1.7. | Waterproofing | Section 07100 |
| 1.2.1.8. | Vapor Barrier | Section 07260 |
| 1.2.1.9. | Preformed Roofing and Cladding/Siding | Section 07400 |
| 1.2.1.10. | Fireproofing | Section 07800 |
| 1.2.1.11. | Thermal Barrier | Section 07840 |
| 1.2.1.12. | Flexible flashing | Section 07650 |
| 1.2.1.13. | Metal Support Systems | Section 09110 |
| 1.2.1.14. | Gypsum board | Section 09250 |

1.3. References

1.3.1. International Code Council – International Residential Code

1.3.1.1. Section 103.7 Alternate Materials and Methods

1.3.1.2. Section R314 Foam Plastic Insulation

1.3.1.3. Section 806.4 Conditioned Attic Assemblies

1.3.2. International Code Council – International Building Code, Section 2603.0 Foam Plastic

1.3.3. International Code Council Evaluation Services Report #1172

1.3.4. ASTM E84 Surface Burning Characteristics

- 1.3.5. Uniform Mechanical Code 1997, Section 703
- 1.3.6. New York State Uniform Fire Prevention and Building Code
- 1.3.7. Warnock Hersey Evaluation # 193-7081
- 1.3.8. CCMC Evaluation # 12697-R
- 1.3.9.** EcoLogo^M ECP – 40

1.4. Submittals and Samples

- 1.4.1. Before commencing work, submit in accordance with local code.
- 1.4.2. Submit independent laboratory test reports, data sheets, physical properties, and samples as required by local code officials.
- 1.4.3. Submit the technical data sheet from the manufacturer showing the test results from the ASTM E84 (Surface Burning Characteristics) and ICC ESR #1172.

- 1.5. **Quality Assurances** - Contractor performing work under this section must be trained by DEMILEC (USA) LLC in the art of applying *SEALECTION*[®] 500 and maintain In*SEAL*-Right Certification.

1.6. Delivery, Storage and Handling

- 1.6.1. Materials shall be delivered in manufacturer's original sealed containers clearly labelled with manufacturer's name, product identification, safety information, net weight of contents and expiration date.
- 1.6.2. Material is to be stored in a safe manner and where the temperatures are in the limits specified by the material manufacturer.
- 1.6.3. Empty containers must be removed from site on a daily basis.

1.7. Protection

- 1.7.1. Ventilate area to receive insulation to maintain safe working conditions.
- 1.7.2. Protect workers as recommended by standards and manufacturer's recommendations.
- 1.7.3. Protect adjacent surfaces, windows, equipment and site areas from damage of overspray.

2. PRODUCTS

2.1. Materials

- 2.1.1. Spray Applied Semi Rigid Polyurethane Foam Insulation System
- 2.1.2. Product: *SEALECTION*[®] 500 Manufactured by DEMILEC (USA) LLC, Arlington, TX

Spray-in-Place Semi Rigid Urethane Foam Insulation- *SEALECTION*® 500

2.2. Physical Properties

| PHYSICAL PROPERTIES | | |
|------------------------|---|--|
| ASTM | Description | Value |
| D 1622 | Density | 0.45 – 0.5 lb/ft³ |
| C 518 | Thermal Resistance 2 days @ 76° F, per inch | 3.81 ft².h°F/BTU |
| | Thermal Resistance 90 days @ 76° F, per inch | 3.81 ft².h°F/BTU |
| E 283-04 | Air Leakage | |
| | 3.5" @ 75Pa (25 mph wind) | 0.001 L/s·m² |
| | 5.5" @ 75Pa (25 mph wind) | 0.001 L/s·m² |
| | 10" @ 75Pa (25 mph wind) | 0.002 L/s·m² |
| | Sustained Wind Load for 60 minutes @ 1000 Pa (90 miles/hr. wind) | No Damage |
| | Gust Wind Load Test @ 3000 Pa (160 miles/hr.) | No Damage |
| D 1621 | Compressive Strength | 0.7 psi |
| D 1623 | Tensile Strength | 5.6 lbf/in² |
| E 413-87 (1999) | Sound Transmission Class (STC) | 49-51 Based on Specific wall design |
| C 423 | Noise Reduction Coefficient (NRC) | 75 |
| E 96 | Water Vapor Transmission | |
| | 3.5" | 6.6 Perms |
| | 5.5" | 4.2 Perms |
| | 7" | 3.3 Perms |
| | 10" | 2.3 Perms |
| CGSB 51.23-92 | Off Gassing Tests (VOC Emissions) | Pass (No toxic vapors) |
| E 84 | Surface Burning Characteristics (6") | Class I |
| | • Flame Spread Index | 21 |
| | • Smoke Development | 216 |

2.3. **Equipment** - Equipment used to apply the foam insulation shall have fixed ratio positive displacement pumps and approved by foam manufacturer.

3. **EXECUTION** *Note: check the adhesion compatibility with: flashing, membranes and coatings.*

3.1. **Examination**

- 3.1.1. Verify that surfaces and conditions are suitable to accept work as outlined in this section.
- 3.1.2. Report in writing, any defects in surfaces or conditions which may adversely affect the performance of products installed under this section to the consultant prior to commencement of work.
- 3.1.3. Commencement of work outlined in this section shall be deemed as acceptance of existing work and conditions.

3.2. **Application**

- 3.2.1. Spray-application of polyurethane foam shall be performed in accordance with manufacturer recommendations.
- 3.2.2. Apply only when surfaces and environmental conditions are within limits prescribed by the material manufacturer. Refer to technical data sheets.
- 3.2.3. Apply in consecutive passes as recommended by manufacturer to thickness as indicated on drawings.

Residential Construction

| Location | Recommended Thickness | R-value of Insulation |
|--------------------|-----------------------|---|
| Exterior walls | 3.5 - 5.5 inches | 13.34 –20.96 ft ² .h. ⁰ F/BTU |
| Pony and Hip walls | 3.5 - 5.5 inches | 13.34-20.96 ft ² .h. ⁰ F/BTU |
| Attic Assembly | 3.5 - 10 inches | 13.34 – 38 ft ² .h. ⁰ F/BTU |

Note: Recommended thickness is dependent on the type of wall construction 2"x 4" vs. 2"x 6".

3.3 **Protection** - Except as provided in Section 314.5.3 and Section 314.5.4 of the International Residential Code, all plastic insulation shall be separated from the interior of the building by an approved thermal barrier of ½ -inch gypsum wallboard or equivalent thermal barrier material.

Note: Work related to thermal barrier installation should be specified under appropriate sections.