

**SECTION 072119 - FOAMED-IN-PLACE INSULATION**

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Closed-cell spray polyurethane foam applied to Underside of Garage Slab above Conditioned Space.
2. Spray-foam insulation at gaps around glazing frames, door frames, penetrations, and similar items in exterior wall assemblies for tie-in of air/vapor barrier to frames.

B. Related Requirements:

1. Section 072100 "Thermal Insulation" for foam-plastic board insulation.
2. Section 078100 "Sprayed Fire-Resistive Materials " for Spray Applied fireproofing seal coating over foamed-in-place insulation.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product including:

1. Preparation instructions and recommendations
2. Storage and handling requirements and recommendations
3. Installation methods
4. Appropriate Fire Resistance Assembly approval per Type Building Construction and Wall design (NFPA 285, ASTM E119, UL 263).

1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports: For each product, for tests performed by a qualified testing agency to demonstrate compliance with applicable building code requirements.
- B. Evaluation Research reports: For spray-applied polyurethane foam-plastic insulation, from ICC-ES.
- C. Field Quality-Control Submittals:
  1. Field quality-control reports.
- D. Qualification Data: For Installer.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A spray foam contactor who is an authorized representative trained and approved by manufacturer.

## PART 2 - PRODUCTS

### 2.1 CLOSED-CELL SPRAY POLYURETHANE FOAM

- A. Closed-Cell Spray Polyurethane Foam: ASTM C1029, Type II, minimum density of 2.0 lb/cu. ft. and minimum aged R-value at 1-inch thickness of 6.9 deg F x h x sq. ft./Btu at 75 deg F.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Carlisle Spray Foam Insulation; "SealTite PRO" Closed Cell or comparable product by one of the following:
    - a. Dow Chemical Co.
    - b. BASF Corporation.
    - c. Dupont
    - d. Henry Company
    - e. Gaco Western LLC.
    - f. Huntsman Building Solutions
    - g. Or approved equal.
  2. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
    - a. Flame-Spread Index: 25 or less.
    - b. Smoke-Developed Index: 450 or less.
  3. Fire Propagation Characteristics: Passes NFPA 285 and NFPA 276 testing as part of an approved assembly.
  4. Compressive Strength: 47 psi.
  5. Air Permeance per 1 Inch: 0.004 cfm/sq. ft. at 1.57 lbf/sq. ft. or less.
  6. Water Vapor Permeance: In accordance with ASTM E96 water method.
    - a. 0.8 perms or less at 1 inch.
    - b. 0.23 perms or less at 3.5 inches.
  7. Dimensional Stability: Less than 9 percent change in volume per ASTM D2126.
  8. R-Value: R-Value when tested in accordance with ASTM C 518.
    - a. R-Value: 30 or greater at 4.25 inch average thickness.
- B. Spray Insulation at Perimeter of Frames and Penetrations: Provide closed-cell polyurethane foam insulation product to fill gaps, joints, etc. that both seals and insulates, equal to "Great Stuff Professional Foam" as manufactured by the Dow Chemical Co., or approved equal.

### 2.2 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by insulation manufacturer where required for adhesion of insulation to substrates.
- B. Thermal Barrier: Material barrier intended to prevent flame-source access to foam and delay temperature-rise of foam during a fire event.
1. Sprayed Fire-Resistive Materials: 3/4-inch minimum thickness.
  2. Thermal Barrier Coating: Fire-protective cementitious sprayed fire-resistive material coating formulated for application over polyurethane foam plastics, compatible with insulation, and passes NFPA 275 testing as part of an approved assembly.

3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Monokote Type MK-10HB; GCP Applied Technologies
  - b. Or approved equal.

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION**

- A. Verify that substrates are clean, dry, and free of substances that are harmful to insulation.
- B. Priming: Prime substrates where recommended by insulation manufacturer. Apply primer to comply with insulation manufacturer's written instructions. Confine primers to areas to be insulated; do not allow spillage or migration onto adjoining surfaces.

#### **3.2 INSTALLATION**

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Spray insulation to envelop entire area to be insulated and fill voids.
- C. Apply in multiple passes to not exceed maximum thicknesses recommended by manufacturer. Do not spray into rising foam.
- D. Ventilate enclosed spray areas during installation and for 24 hours after spray application has ended.
- E. Install ignition barrier material.
  1. Do not cover insulation prior to any required spray foam insulation inspections.
- F. Apply barrier coatings in accordance with manufacturer's written instructions and to comply with requirements for listing and labeling for fire-propagation characteristics and surface-burning characteristics specified.
  1. Use equipment and techniques best suited for substrate and type of material applied as recommended by coating manufacturer.
  2. Apply coatings to prepared surfaces as soon as practical after preparation and before subsequent surface soiling or deterioration.
  3. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Produce sharp lines and color breaks.

#### **3.3 FIELD QUALITY CONTROL**

- A. Field inspection and testing performed under provision of Section 014000 "Quality Requirements."

#### **3.4 PROTECTION**

- A. Protect installed insulation from damage due to harmful weather exposures, exposure to UV sunlight for more than 48 hours, physical abuse, and other causes.

- B. Touch-up, repair damaged foam or remove and replace defective foam as needed to meet requirements.

END OF SECTION 072119