

**SECTION 07 21 19
SPRAYED FOAM INSULATION**

PART 1 GENERAL**1.1 DESCRIPTION**

This section specifies medium density, closed-cell polyurethane spray foam insulation.

1.2 RELATED WORK

A. Section 07 21 13, THERMAL INSULATION.

1.3 REFERENCES

- A. American Society for Testing and Materials International (ASTM)
1. ASTM C 518: Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
 2. ASTM E 84: Test Method for Surface Burning Characteristics of Building Materials
 3. ASTM E 96: Standard Test Methods for Water Vapor Transmission of Materials
 4. ASTM E 283: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Product test reports performed by a qualified third-party testing agency evidencing compliance of insulation products with specified requirements including those for thermal resistance, fire-test-response characteristics, water-vapor transmission, and other properties, based on comprehensive testing of current products.
- C. Evaluation Report: Evidence of compliance of foam-plastic insulations with International Building Code (IBC), International Residential Code (IRC), International Energy Conservation Code (IECC).
- D. Manufacturer's certificate certifying insulation provided meets or exceeds specified requirements.
- E. Installer's certificate showing the manufacturer's installation certification.
- F. Sample warranty.

1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Product produced in an ISO 9001 registered factory.
- B. Single Source Responsibility: Single source product from one manufacturer.
- C. Installer Qualifications: Engage an Manufacturer Licensed Dealer (installer) who has been trained and certified by the product company.
- D. Fire-Test-Response Characteristics: Provide materials specified as determined by testing identical products per test method indicated below by a testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 1. Surface-Burning Characteristics: ASTM E 84
- E. Toxicity/Hazardous Materials
 - 1. Provide products that contain no urea-formaldehyde
 - 2. Provide products that contain no PBDEs
 - 3. Provide products that are "Low-emitting"

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturers written instructions for handling and protection prior to and during installation.
- B. Store both components in a temperature controlled area between 65 and 85 degrees F. Do not allow product to freeze.
- C. Use only those components that are supplied by the Manufacturer.

1.7 PROJECT CONDITIONS

- A. Do not expose to sunlight, except to extent necessary for period of installation and concealment.

1.8 WARRANTY

- A. Manufacturer's standard limited lifetime warranty.

PART 2 - PRODUCTS**2.1 MATERIALS**

- A. General: Provide insulating materials that comply with requirements and with referenced standards.
- B. Medium-density, conforming to the following:
 - 1. Thermal Resistance (for 1 inch of material) (R-Value/inch @75 deg F):
ASTM C 518; 6.5 hr.sq ft.degree F/BTU

2. Air Permeance (for 1 inch of material): ASTM E 283: $<0.02 \text{ L/s.m}^2 @75 \text{ Pa}$
3. Water Vapor Transmission (for 1.5 inches of material): ASTM E 96; 0.9 perms
4. Flame Spread and Smoke Developed Rating: ASTM E 84
 - a. Flame Spread: Less than 25
 - b. Smoke Development: Less than 450

C. Product Description:

1. ICC/ES Evaluation Report No. ESR 3199
2. "Low-emitting material" per CA 01350 Criteria

2.2 SOURCE QUALITY CONTROL

- A. Product produced in an ISO 9001 registered factory.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected.
 1. Review placement area to determine final location will not be within 3 inches of any heat source where the temperature will exceed 180 deg F per ASTM C 411 or in accordance with authorities having jurisdiction.

3.2 PREPARATION

- A. Clean substrates and cavities of loose materials capable of interfering with insulation placement.

3.3 APPLICATION

- A. Site mix liquid components supplied by manufacturer and installed by Independent Licensed Dealer.
- B. Apply insulation to substrates in compliance with manufacturer's written instructions.
- C. Apply insulation to produce thickness required for indicated R Value.
- D. Extend insulation in thickness indicated to envelop entire area to be insulated.
- E. Water-Piping Coordination: If water piping is located within insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.

3.4 REPAIRS

- A. Any repairs must be effected by a Manufacturer's Licensed Dealer.

3.5 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings where insulation is subject to abuse.

- - - E N D - - -