

ULTRATITE

SOLUTIONS



THERMAL INSULATION
SECTION 07 21 19
Foamed-in-Place Insulation

UltraTite 500-450

This specification utilizes the Construction Specifications Institute's (CSI) 3-Part formatting. The specification is a manufacturer-specific product specification to be used by design professionals as a guide specification. Editing notes are indicated in *red italics* and precede specification text. Delete editing notes in final specification.

This specification specifies low density spray foam insulation by ULTRATITE SOLUTIONS. Revise section number and title below to suit project requirements.

The specified product may contribute to the following credits/points for the respective rating system:

LEED V.4.1

National Green Building Standard (NGBS, ICC-700)

ERI (Energy Rating Index)

PART 1 GENERAL

1.1 SECTION INCLUDES

**** NOTE TO SPECIFIER **** *Delete items below not required for project.*

- A. Spray-in-place semi-rigid open-cell 1/2-pound polyurethane foam insulation in various assemblies, to provide an air barrier and improved thermal resistance.

1.2 RELATED SECTIONS

**** NOTE TO SPECIFIER **** *Delete any sections below not relevant to this project; add others as required.*

- A. Section 03 30 00 - Cast in Place Concrete.
- B. Section 03 40 00 - Structural Pre-cast Concrete.
- C. Section 04 20 00 - Unit Masonry.
- D. Section 05 30 00 - Metal Decking.
- E. Section 05 40 00 - Cold Formed Metal Framing.

FOAMED-IN-PLACE INSULATION

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07 21 19

- F. Section 06 10 00 - Rough Carpentry.
- G. Section 07 10 00 - Waterproofing.
- H. Section 07 26 00 - Vapor Barrier.
- I. Section 07 40 00 - Preformed Roofing and Cladding/Siding.
- J. Section 07 65 00 - Flexible Flashing.
- K. Section 07 80 00 – Fire protection.
- L. Section 07 81 00 - Applied Fireproofing.
- M. Section 09 20 00 - Gypsum Board.
- N. Section 09 22 00 - Metal Support Systems.

1.3 REFERENCES

***** NOTE TO SPECIFIER ** Delete references from the list below that are not actually required by the text of the edited section.***

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM C423 Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
 - 2. ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
 - 3. ASTM D1622 Standard Test Method for Apparent Density of Rigid Cellular Plastics
 - 4. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
 - 5. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials
 - 6. ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials
 - 7. ASTM E283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
- B. Other standards:
 - 1. AC377 Acceptance Criteria for Spray-Applied Foam Plastic Insulation
- C. National Fire Protection Association (NFPA):
 - 1. NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components
 - 2. NFPA 286 Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth
- D. International Code Council – International Residential Code:
 - 1. Section R104.11 Alternate materials, design and methods of construction and equipment.
 - 2. Section R316 - Foam Plastic Insulation.
 - 3. Section R806.5 Unvented attic and unvented enclosed rafter assemblies.

E. International Code Council – International Building Code:

1. Section 104.11 Alternative materials, design and methods of construction and equipment.
2. Section 1203.3 Unvented attic and unvented enclosed rafter assemblies
3. Section 2603 Foam Plastic Insulation.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Before commencing work, submit in accordance with local code.

1. Submit technical data sheets and samples as required by local code officials.
2. Submit the technical data sheet from the manufacturer showing the test results from the ASTM E84 (Surface Burning Characteristics).

C. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications:

1. Contractor performing work under this section shall be authorized by UltraTite Solutions in the art of applying spray polyurethane foam insulation.
2. Provide current ULTRATITE SOLUTIONS Authorized Contractor Certificate.

**** NOTE TO SPECIFIER **** *Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.*

B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Finish areas designated by Architect.
2. Do not proceed with remaining work until installation is approved by Architect.
3. Rework mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Materials shall be delivered in manufacturer's original containers clearly labelled with manufacturer's name, product identification, safety information, net weight of contents and expiration date.

B. Material shall be stored in a safe manner and where the temperatures are in the

limits specified by the material manufacturer.

- C. Empty containers shall be removed from site on a daily basis.
- D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Ventilate insulation application area in accordance with the Spray Foam Coalition's Guidance on best practices for the installation of Spray Polyurethane Foam.
- C. Protect workers as recommended by the Spray Foam Coalition's Guidance on best practices for the installation of Spray Polyurethane Foam.
- D. Protect adjacent surfaces, windows, equipment and site areas from damage of overspray.

1.8 WARRANTY

- A. Manufacturer's Warranty: ULTRATITE SOLUTIONS warrants spray-in-place urethane foam insulation, when installed by certified contractors using factory-trained applicators and applied in accordance with the Installation Instructions, will perform as stated in the Product Technical Data Sheet.
 - 1. This warranty is in effect throughout the life of the building provided the original purchaser registers with the Warranty Department of the Manufacturer within thirty days of occupancy.
 - 2. Manufacturer's sole responsibility under this Limited Lifetime Warranty shall be to repair or replace any defective Product at the cost of the material only.
 - 3. Manufacturer shall not be responsible for labor cost or any other costs whatsoever related to, or in connection with the removal or installation of either the original or replacement product.
 - 4. Refer to <https://www.UltraTite.com> for full warranty terms.

PART 2 PRODUCTS

2.1 ENVIRONMENTAL REQUIREMENTS

- A. The product shall have a product generic Environmental Product Declaration (EPD).

2.2 MANUFACTURERS

- A. Acceptable Manufacturer: ULTRATITE SOLUTIONS
40 Cypress Creek Parkway, Houston, TX 77090.
(832) 957-3973

***** NOTE TO SPECIFIER ** Delete two of the following three paragraphs: coordinate with requirements of Division 1 section on product options and substitutions.***

- B. Substitutions: Equivalent as judged by Architect
 - 1. Contact ULTRATITE SOLUTIONS Building Science and Engineering Department for product comparison data
 - a. (832) 957-3973
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.3 SPRAY FOAM INSULATION

- A. Spray Applied Semi-Rigid Polyurethane Foam Insulation System: UltraTite 500-450
 - 1. Manufacturer: ULTRATITE SOLUTIONS, Houston, TX
 - 2. Product Approval:
 - a. Code Compliance Research Report CCRR-0619
 - b. Approved for use in building types I, II, III, IV, and V construction under IBC and dwellings for IRC.
 - c. Passed NFPA 286 in accordance with IBC 803.1.1.1.
 - d. End-Use Configuration Testing per IBC Section 2603.9 and IRC Section R316.6.
 - 3. Application Options:
 - a. Application with a prescriptive Thermal Barrier:
 - 1) There is no thickness limit when installed in floors or ceilings behind 1/2-inch gypsum wall board or equivalent 15-minute thermal barrier in accordance with IBC 2603.4 or IRC R316.4.
 - b. Application without a prescriptive Thermal Barrier:
 - 1) Up to 14 inches (356 mm) on the underside of the roof sheathing or in floor assemblies and 8 inches (203 mm) on vertical surfaces with:
 - (a) A minimum of 16 wet mils (11 dry mils) of No-Burn Plus ThB intumescent coating
 - 2) Up to 11-1/2 inches (292 mm) on the underside of the roof sheathing or in floor assemblies and 7-1/2 inches (191 mm) on vertical surfaces with:
 - (a) A minimum of 18 wet mils (12 dry mils) of DC-315 intumescent coating
 - or
 - (b) A minimum of 17 wet mils (11 dry mils) of Fireshell F10E intumescent coating
 - c. Attics and Crawlspace: End-Use Configuration Compliant Application without a Thermal or Ignition Barrier (exposed foam) – CCRR-0619 Section 5.4.2.3

- 1) Minimum application of 3 inches (76 mm) and up to 13 inches (330 mm) on the underside of the roof sheathing, in floor assemblies or on vertical surfaces.
 - d. Attics and Crawlspace: AC 377 Appendix X compliant NFPA 286 (Entry to the attic or crawlspace is only to service utilities and NO storage is permitted).
 - 1) Up to 11-1/4 inches (286 mm) on the underside of the roof sheathing or in floor assemblies and 7-1/4 inches (184 mm) on vertical surfaces with:
 - (a) A minimum of 4 wet mils (3 dry mils) of DC-315 intumescent coating
 - 2) Up to 11-1/4 inches (286 mm) on the underside of the roof sheathing or in floor assemblies and 9-1/2 inches (241 mm) on vertical surfaces with:
 - (a) A minimum of 10 wet mils (6 dry mils) of No-Burn Plus XD intumescent coating
 - e. NFPA 285 tested Wall Assembly:
 - 1) Refer to CCRR-0619 Section 5.5
 - f. ASTM E119 – 1 Hour Rated Wall Assembly
 - 1) Refer to CCRR-0619
4. Physical Properties:

Density	ASTM D1622	0.45 - 0.5 lb/ft ³	7.2 - 8.0 Kg/m ³
Thermal Resistance	ASTM C518 at 1"	R-3.81	0.67 RSI
Surface burning characteristics	ASTM E84	Class 1	
Flame spread index	ASTM E84	≤ 25	
Smoke development	ASTM E84	≤ 450	
Air Permeance	ASTM E283 at 75 Pa	<0.02 L/s · m ² at 3.5"	
Water vapor permeance	ASTM E96	3.5" – 6.33 perms	
NRC Noise Reduction Coefficient	ASTM C423	.75	

2.4 ACCESSORY PRODUCTS

- A. Water Based Intumescent coating:
 1. Product: DC315, Manufactured by International Fireproof Technology, Inc.
 2. Product: Fireshell F10E, Manufactured by ICP Building Solutions Group
 3. Product: No-Burn Plus ThB, Manufactured by No-Burn, Inc.
- B. Primers:
 1. Product: Adbond manufactured by Adfast
 - a. Application: Follow manufacturer's application recommendations.

- b. Recommended for oily surfaces and galvanized steel like Z-bar, PVC, curtain walls and steel decks

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify General Contractor, Architect or other point of contact of unsatisfactory preparation before proceeding.
- C. Commencement of work outlined in this section shall be deemed as acceptance of existing work and conditions.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Apply only when surfaces and environmental conditions are within limits prescribed by the material manufacturer.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- D. It is recommended to install primer on oily surfaces and galvanized steel

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Apply as recommended by manufacturer to thickness as indicated on drawings.
- C. Equipment used to apply the foam insulation shall have fixed ratio positive displacement pumps approved by foam manufacturer.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 07 21 19