

SECTION 072419 – WATER-DRAINAGE EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. EIFS-clad drainage-wall assemblies that are field applied over substrate.
2. Water-resistive barrier coatings.

B. Related Sections:

1. Section 061600 – Sheathing
2. Section 076200 – Sheet Metal Flashings and Trim
3. Section 079200 – Joint Sealants
4. Section 081113 – Hollow Metal Doors and Frames
5. Section 085113 – Aluminum Windows
6. Section 085123 – Fire-Rated Windows

C. Reference and Industry Standards

1. The following reference standards shall be applicable to this Section:
 - a. New York City Building Code, **current** edition, as amended, inclusive of:
 - Chapter 14 Exterior Walls
 - b. The current Enterprise Green Communities (EGC) Criteria, and the current New York City Overlay.
2. Industry Standards
 - ASTM (American Society for Testing and Materials)
 - AWCI (Association of the Wall and Ceiling Industry)

D. The current NYC Overlay of the current Enterprise Green Communities Criteria:

1. Mandatory Requirements: See the NYC Overlay of the EGC reference standard for full specifications.
 - a. All projects must achieve compliance with the mandatory criteria measures that are applicable:
 - Criterion 6.4: Healthier Material Selection
 - Criterion 6.9: Managing Moisture: Roofing and Wall Systems
 - Criterion 6.10: Construction Waste Management

2. Optional Project Requirements for Certification Points

- a. Additionally, rehab projects are required to achieve **55** optional points. Criteria with optional points related to this Specification Section include, but may not be limited to:
- Criterion 6.1: Ingredient Transparency for Material Health
 - Criterion 6.2: Recycled Content and Ingredient Transparency
 - Criterion 6.3: Chemical Hazard Optimization
 - Criterion 6.4: Healthier Material Selection
 - Criterion 6.5: Environmentally Responsible Material Selection
 - Criterion 6.10: Construction Waste Management

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each EIFS component, trim, and accessory, including water-resistive barrier coatings.
- B. Shop Drawings:
1. Include details for EIFS buildouts.
 2. Include details for parapet cap flashing.
- C. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

- A. Manufacturer certificates.
- B. Product certificates.
- C. Product test reports.
- D. Field quality-control reports.
- E. Sample warranty.
- F. Documentation for Enterprise Green Communities Criteria.
- G. Copy of approved DOB Form PW-1, Section 9c for Facade Alteration filed at the Department of Buildings, if permit required.
- H. Copy of Work Permit issued by the Department of Buildings, if required.
- **Note:** A Work Permit is not required for *minor* repair of EIFS: not to exceed 10 square feet in any given 100 square feet of continuous EIFS wall surface area.

- I. Copy of TR1: Department of Buildings Technical Report Statement of Responsibility for EIFS, BC 1704.13, with columns 3B and 3C completed.
 - **Note:** Special Inspections are required for all EIFS applications installed more than 15 feet above adjacent finished grades; and alterations to existing EIFS installations more than 15 feet above adjacent finished grades.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An installer who is certified in writing by AWCI International as qualified to install Class PB EIFS using trained workers.
- B. Installer Qualifications:
 1. An installer who is recognized by EIFS manufacturer as qualified to install manufacturer's system and has
 - a. Engaged in application of EIFS for a minimum of three (3) years.
 - b. Successfully completed minimum three (3) projects of similar size and complexity to the specified project.
 - c. Is able to provide the proper equipment, manpower and supervision on the job site to install the system in compliance with manufacturer's specifications and details and the project plans and specifications.

1.7 WARRANTY

- A. Manufacturer's Special Warranty: Manufacturer agrees to repair or replace components of EIFS-clad drainage-wall assemblies that fail in materials or workmanship within specified warranty period.
 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. EIFS Performance: Comply with ASTM E2568 and with the following:
 1. Weathertightness: Resistant to uncontrolled water penetration from exterior, with a means to drain water entering EIFS to the exterior.
 - a. EIFS shall have an average minimum drainage efficiency of 90 percent when tested in accordance with the requirements of ASTM E 2273, and is required on framed walls of Type V construction for residential Group R occupancies.

2. Impact Performance: ASTM E2568, [**Standard**] [**Medium**] [**High**] [**Ultra High**] impact resistance [**unless otherwise indicated**].
 3. Drainage Efficiency: 90 percent average minimum when tested according to ASTM E2273.
 4. Weather Resistance: EIFS shall comply with Chapter 14 Exterior Walls, Section 1403 Performance Requirements of the 2014 Building Code and shall be designed and constructed to resist winds and rain in accordance with Section 1408 EIFS and the manufactures application instructions.
- B. Structural Design: The underlying structural framing and substrate shall be designed and constructed to resist loads as required by Chapter 16 Structural Design of the 2014 Building Code.
- C. **Other Requirements**: See other applicable requirements for EIFS in Chapter 7 Fire and Smoke Protection Features, Chapter 14 Exterior Walls, Chapter 16 Structural Design, Chapter 17 Structural Tests and Special Inspections and Chapter 26 Plastic of the 2014 Building Code.

2.2 EIFS MATERIALS

- A. Water-Resistive Barrier Coating: EIFS manufacturer's standard formulation and accessories for use as water-resistive barrier coating; compatible with substrate.
1. Water-Resistance: Comply with physical and performance criteria of ASTM E2570.
- B. Flexible-Membrane Flashing: Cold-applied, self-adhering, self-healing, rubberized-asphalt, and polyethylene-film composite sheet or tape and primer; EIFS manufacturer's standard or product recommended in writing by EIFS manufacturer.
- C. Insulation Adhesive: EIFS manufacturer's standard formulation designed for indicated use; [**specifically formulated to be applied to back side of insulation in a manner that creates open vertical channels designed to serve as an integral part of the water-drainage system of the EIFS-clad drainage-wall assembly;**] compatible with substrate.
- D. Molded, (Expanded) Rigid Cellular Polystyrene Board Insulation: Comply with ASTM E2430.
1. Foam Buildouts: Provide with profiles and dimensions indicated on Drawings.
- E. Reinforcing Mesh: Balanced, alkali-resistant, open-weave, glass-fiber mesh treated for compatibility with other EIFS materials, made from continuous multi-end strands with retained mesh tensile strength of not less than 120 lbf/in. according to ASTM E2098.
- F. Base Coat: EIFS manufacturer's standard mixture.
- G. Water-Resistant Base Coat: EIFS manufacturer's standard water-resistant formulation.
- H. Primer: EIFS manufacturer's standard factory-mixed, elastomeric-polymer primer for preparing base-coat surface for application of finish coat.
- I. Finish Coat: EIFS manufacturer's [**standard acrylic-based coating**] [**standard acrylic-based coating with enhanced mildew resistance**] [**siliconized acrylic-based coating**] [**elastomeric coating**] <Insert coating>.

1. Colors: [As selected by Design-Professional-of-Record from manufacturer's full range]. [As selected by Owner from manufacturer's full range].
 2. Textures: [As selected by Design-Professional-of-Record from manufacturer's full range]. [As selected by Owner from manufacturer's full range].
- J. Trim Accessories: Type as designated or required to suit conditions indicated and to comply with EIFS manufacturer's written instructions; manufactured from UV-stabilized PVC; and complying with ASTM D1784, manufacturer's standard cell class for use intended, and ASTM C1063.

PART 3 - EXECUTION

3.1 EIFS INSTALLATION

- A. Comply with ASTM C1397, ASTM E2511, and EIFS manufacturer's written instructions for installation of EIFS as applicable to each type of substrate indicated.
- B. Water-Resistive Barrier Coating: Apply over [sheathing] <Insert substrate> to provide a water-resistive barrier.
- C. Flexible-Membrane Flashing: Install over water-resistive barrier coating, applied and lapped to shed water; seal at openings, penetrations, and terminations. Prime substrates with flashing primer if required and install flashing.
- D. Trim: Apply trim accessories at perimeter of EIFS, at expansion joints, at windowsills, and elsewhere as indicated. Coordinate with installation of insulation.
- E. Board Insulation: Adhesively attach insulation to substrate in compliance with ASTM C1397.
 1. Apply adhesive to insulation by notched-trowel method, with notches oriented vertically to produce drainage channels that remain functional after the insulation is adhered to substrate.
 2. Rasp or sand flush entire surface of insulation to remove irregularities projecting more than [1/32 inch] [1/16 inch] from surface of insulation and to remove yellowed areas due to sun exposure; do not create depressions deeper than 1/16 inch. Prevent airborne dispersal and immediately collect insulation raspings or sandings.
 3. Coordinate installation of flashing and insulation to produce wall assembly that does not allow water to penetrate behind flashing and water-resistive barrier coating.
- F. Expansion Joints: Install at locations indicated, where required by EIFS manufacturer.
- G. Water-Resistant Base Coat: Apply full-thickness coverage [to exposed insulation and] to exposed surfaces of [sloped shapes] [windowsills] [parapets] [foam build-outs] <Insert location> and to other surfaces indicated on Drawings.
- H. Base Coat: Apply full coverage to exposed insulation [and foam build-outs] with not less than [1/16-inch] <Insert dimension> dry-coat thickness.
- I. Reinforcing Mesh: Embed reinforcing mesh in wet base coat to produce wrinkle-free installation with mesh continuous at corners, overlapped not less than 2-1/2 inches or otherwise treated at

joints to comply with ASTM C1397. Do not lap reinforcing mesh within 8 inches of corners. Completely embed mesh, applying additional base-coat material if necessary, so reinforcing-mesh color and pattern are invisible.

- J. Double-Layer Reinforcing-Mesh Application: Where indicated or required, apply second base coat and second layer of reinforcing mesh, overlapped not less than 2-1/2 inches or otherwise treated at joints to comply with ASTM C1397 in same manner as first application. Do not apply until first base coat has cured.
- K. Additional Reinforcing Mesh: Apply strip-reinforcing mesh around openings, extending 4 inches beyond perimeter. Apply additional 9-by-12-inch strip-reinforcing mesh diagonally at corners of openings (re-entrant corners). Apply 8-inch-wide, strip-reinforcing mesh at both inside and outside corners unless base layer of mesh is lapped not less than 4 inches on each side of corners.
- L. Foam Buildouts: Fully embed reinforcing mesh in base coat.
- M. Double Base-Coat Application: Where indicated, apply second base coat in same manner and thickness as first application, except without reinforcing mesh. Do not apply until first base coat has cured.
- N. Finish Coat: Apply full-thickness coverage over dry [**primed**] base coat, maintaining a wet edge at all times for uniform appearance, to produce a uniform finish of color and texture matching approved sample and free of cold joints, shadow lines, and texture variations.
- O. Sealer Coat: Apply over dry finish coat, in number of coats and thickness required by EIFS manufacturer.

3.2 FIELD QUALITY CONTROL

- A. Special Inspections shall be required for all EIFS applications installed more than fifteen (15) feet above adjacent finished grades; and alterations to existing EIFS installations more than fifteen (15) feet above adjacent finished grades. The special inspection shall include verification of the following:
 - a. Compliance with approved construction documents for the attachment to structure;
 - b. Installation of waterproof membrane;
 - c. Weeps;
 - d. Drains;
 - e. Mold prevention features; and
 - f. Conformance with the manufacturer's installation guidelines.

Note: A water-resistive barrier coating complying with ASTM E2570 requires special inspection of the water-resistive barrier coating when installed over a sheathing substrate.
- B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- C. EIFS Tests and Inspections: According to ASTM E2359 <**Insert tests and inspections**>.

- D. EIFS will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

END OF SECTION 072419