

SECTION 07 24 19 - EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Water-drainage exterior insulation and finish system (EIFS) applied over water-resistive coating.

1.2 PERFORMANCE REQUIREMENTS

A. EIFS Performance: Comply with the following:

1. Bond Integrity: Free from bond failure within EIFS components or between system and supporting wall construction, resulting from exposure to fire, wind loads, weather, or other in-service conditions.
2. Weathertightness: Resistant to water penetration from exterior into water-drainage EIFS and assemblies behind it or through them into interior of building that results in deterioration of thermal-insulating effectiveness or other degradation of EIFS and assemblies behind it, including substrates, supporting wall construction, and interior finish, and including a means that allows water entering into an EIFS assembly to drain to the exterior.

B. Class PB EIFS: Provide EIFS having physical properties and structural performance that comply with the following:

1. Water Penetration: No water penetration when tested in accordance with ASTM E331 and EIMA 101.02.
2. Moisture Resistance: No deleterious effects after 14 days when tested in accordance with ASTM D 2247.
3. Drainage: Greater than 90 percent efficiency when tested in accordance with ASTM E2273.
4. Salt Spray Resistance: No deleterious effects after 300 hours when tested in accordance with ASTM B117.
5. Freeze/Thaw: No deleterious effects when tested in accordance with EIMA 101.01.
6. Mildew Resistance: No growth supported during 28 day exposure period when tested in accordance with ASTM D3273.
7. Impact Resistance: Standard and heavy duty (below 96") as indicated.

1.3 SUBMITTALS

A. Product Data: For each type and component of EIFS indicated.

- B. Shop Drawings: Include plans, elevations, sections, details of components, details of penetration and termination, flashing details, joint locations and configurations, fastening and anchorage details including mechanical fasteners, and connections and attachments to other work.
- C. Samples: 1 sq. ft. (93 sq. mm) square panels for each type of finish-coat color and texture indicated, prepared using same tools and techniques intended for actual work.
- D. Qualification Data: For Installer.
- E. Affidavits:
 - 1. Where mandated by applicable building codes, provide affidavits from EIFS and sealant applicators confirming full compliance to manufacturer's application requirements.
 - 2. Refer to Exterior Insulation and Finish Affidavit at the end of this Section. Complete the document and submit it as an attachment to the EIFS warranty.
- F. Field Inspection Reports: From EIFS manufacturer confirming the following:
 - 1. The EIFS as installed has been tested per Code requirements and does not affect the fire rating of the exterior wall assembly.
 - 2. The EIFS application and installation has been inspected by manufacturer's representative and are confirmed to be in full compliance to the manufacturer's minimum application requirements.
 - 3. The specific brand and type of sealants used on this project are compatible with the correctly installed in conjunction with the approved EIFS. Document to also list the approved sealant manufacturer.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An installer who is certified in writing by EIFS manufacturer as qualified to install manufacturer's system using trained workers and shall have had a minimum of five years experience installing the specified product on projects similar in scope, and with a record of successful in-service performance.
- B. Source Limitations: Obtain EIFS from single source from single EIFS manufacturer and from sources approved by EIFS manufacturer as compatible with system components.
- C. Build mock-up adjacent to or as part of unit masonry mock-up as specified in Division 04 Section "Common Work Results for Masonry." Construct EIFS mock-up 4 foot (1219 mm) by 8 foot (2438 mm) by actual thickness minimum dimensions, to represent completed EIFS work for qualities of appearance, materials and construction to be approved by the Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products:

1. BASF Corporation; Senergy, Senerflex Channeled Adhesive CI Design.
2. BASF Corporation; Finestone, Pebbletex CI DCA Design.
3. Dryvit Systems, Inc.; Outsulation Plus MD System.
4. Master Wall, Inc.; Rollershield Drainage CIFS Standard.
5. Omega Products International, Inc.; AkroFlex Plus PB.
6. Parex, Inc.; Standard Water Master.
7. Sto Corp.; StoTherm ci.
8. Total Wall, Inc.; Total Stop MD.

2.2 MATERIALS

- A. Compatibility: Provide water-resistive coating, adhesive, fasteners, board insulation, reinforcing meshes, base- and finish-coat systems, sealants, and accessories that are compatible with one another and with substrates and approved for use by EIFS manufacturer for Project.
- B. Water-Resistive Coatings: EIFS manufacturer's standard formulation and accessories for use as water/weather-resistive barriers, compatible with substrate, and complying with physical and performance criteria of ICC-ES AC212.
 1. Sheathing Joint Tape: Type recommended by EIFS manufacturer for sealing joints between and penetrations through sheathing.
- C. Flexible-Membrane Flashing: Cold-applied, fully 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.
- D. Insulation Adhesive: EIFS manufacturer's standard formulation designed for indicated use; compatible with substrate; with VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24);.
- E. Molded, Rigid Cellular Polystyrene Board Insulation: Comply with ASTM C 578, Type I; EIFS manufacturer's requirements; and EIMA's "EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board" for most stringent requirements for material performance and qualities of insulation, including dimensions and permissible variations, and the following:
 1. Aging: Before cutting and shipping, age insulation in block form by air drying for not less than six weeks or by another method approved by EIMA that produces equivalent results.
 2. Flame-Spread and Smoke-Developed Indexes: 25 and 450 or less, respectively, per ASTM E 84.
 3. Dimensions: Provide insulation boards not more than 24 by 48 inches (610 by 1219 mm) and in thickness indicated but not more than 4 inches (102 mm) thick or less than thickness allowed by ASTM C 1397.
 4. Foam Shapes: Provide with profiles and dimensions indicated on Drawings.
- F. Reinforcing Mesh: Balanced, alkali-resistant, open-weave, glass-fiber mesh treated for compatibility with other EIFS materials and complying with EIMA 105.01 and ASTM D 578.
 1. Standard-Impact Reinforcing Mesh: Not less than 4.3 oz./sq. yd. (146 g/sq. m).
 2. Heavy-Duty Reinforcing Mesh: Not less than 20 oz./sq. yd. (678 g/sq. m).

- G. Base-Coat Materials: EIFS manufacturer's standard mixture complying with Type I, white or natural color; and manufacturer's standard polymer-emulsion adhesive.
- H. Finish-Coat Materials: EIFS manufacturer's standard acrylic-based coating.
 - 1. Colors, Textures, and Patterns: As specified in Division 01 Section "Exterior Finishes and Colors."
- I. Mechanical Fasteners: EIFS manufacturer's standard corrosion-resistant fasteners consisting of thermal cap, standard washer and shaft attachments suitable for substrate.
- 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 D 1784, manufacturer's standard Cell Class for use intended, and ASTM C 1063.

2.3 WALL SHEATHING

- A. Glass-Mat Gypsum Wall Sheathing: As specified in Division 06 Section "Miscellaneous Carpentry."

2.4 ELASTOMERIC SEALANTS

- A. Elastomeric Sealant Products: Provide EIFS manufacturer's listed and recommended chemically curing, elastomeric sealant that is compatible with joint fillers, joint substrates, and other related materials, and complies with requirements for products and testing indicated in EIMA's "EIMA Guide for Use of Sealants with Exterior Insulation and Finish Systems, Class PB" and with requirements in Division 7 Section "Joint Sealants."
 - 1. Sealant Color: As specified in Division 01 Section "Exterior Finishes and Colors."

2.5 MIXING

- A. General: Comply with EIFS manufacturer's requirements for combining and mixing materials. Do not introduce admixtures, water, or other materials except as recommended by EIFS manufacturer. Mix materials in clean containers. Use materials within time period specified by EIFS manufacturer or discard.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect contiguous work from moisture deterioration and soiling caused by application of EIFS. Provide temporary covering and other protection needed to prevent spattering of exterior finish coats on other work.

- B. Protect EIFS, substrates, and wall construction behind them from inclement weather during installation. Prevent penetration of moisture behind drainage plane of EIFS and deterioration of substrates.
- C. Prepare and clean substrates to comply with EIFS manufacturer's written instructions to obtain optimum bond between substrate and adhesive for insulation.

3.2 EIFS INSTALLATION, GENERAL

- A. General: Comply with ASTM C 1397 and EIFS manufacturer's written instructions for installation of EIFS as applicable to each type of substrate indicated.

3.3 SUBSTRATE PROTECTION APPLICATION

- A. Primer/Sealer: Apply over gypsum sheathing substrates to protect substrates from degradation and where required by EIFS manufacturer for improving adhesion of insulation to substrate.
- B. Water-Resistive Coatings: Apply over substrates to protect substrates from degradation and to provide water-/weather-resistive barrier. Tape and seal joints, exposed edges, terminations, and inside and outside corners of sheathing unless otherwise indicated by EIFS manufacturer's written instructions.
- C. Flexible-Membrane Flashing: Install over weather-resistive barrier, applied and lapped to shed water; seal at openings, penetrations, terminations, and where indicated by EIFS manufacturer's written instructions to protect wall assembly from degradation. Prime substrates, if required, and install flashing to comply with EIFS manufacturer's written instructions and details.

3.4 TRIM INSTALLATION

- A. Trim: Apply trim accessories at perimeter of EIFS, at expansion joints, and elsewhere as indicated, according to EIFS manufacturer's written instructions. Coordinate with installation of insulation.

3.5 INSULATION INSTALLATION

- A. Board Insulation: Adhesively attach insulation to substrate by notched-trowel method in compliance with ASTM C 1397, EIFS manufacturer's written instructions.
- B. Expansion Joints: Install at locations indicated; where required by EIFS manufacturer; where expansion joints are indicated in substrates behind EIFS; where EIFS adjoin dissimilar substrates, materials, and construction; at floor lines in multilevel wood-framed construction; and where wall height changes.

3.6 BASE-COAT INSTALLATION

- A. Base Coat: Apply to exposed surfaces of insulation and foam shapes in minimum thickness recommended in writing by EIFS manufacturer, but not less than **1/16-inch (1.6-mm)** dry-coat thickness.
- B. Reinforcing Mesh: Embed type indicated below in wet base coat to produce wrinkle-free installation with mesh continuous at corners and overlapped not less than **2-1/2 inches (64 mm)** or otherwise treated at joints to comply with ASTM C 1397 and EIFS manufacturer's written instructions. Do not lap reinforcing mesh within **8 inches (204 mm)** of corners. Completely embed mesh, applying additional base-coat material if necessary, so reinforcing-mesh color and pattern are not visible.
 - 1. Install standard impact reinforcing mesh in all areas 8 foot above finish floor and above.
 - 2. Install heavy duty reinforcing mesh in all areas 8 foot above finish floor and below.
- C. Additional Reinforcing Mesh: Apply strip-reinforcing mesh at areas as recommended by EIFS manufacturer. Embed strip reinforcing mesh in base coat before applying first layer of reinforcing mesh.

3.7 FINISH-COAT INSTALLATION

- A. Finish Coat: Apply over dry base coat, maintaining a wet edge at all times for uniform appearance, in thickness required by EIFS manufacturer to produce a uniform finish of color and texture matching approved sample and free of cold joints, shadow lines, and texture variations.

3.8 INSTALLATION OF JOINT SEALANTS

- A. Prepare joints and apply sealants, of type and at locations indicated, to comply with applicable requirements in Division 07 Section "Joint Sealants" and in ASTM C 1481.
 - 1. Apply joint sealants after base coat has cured but before applying finish coat.
 - 2. Clean surfaces to receive sealants to comply with indicated requirements and EIFS manufacturer's written instructions.
 - 3. Apply primer recommended in writing by sealant manufacturer for surfaces to be sealed.
 - 4. Install sealant backing to control depth and configuration of sealant joint and to prevent sealant from adhering to back of joint.
 - 5. Apply masking tape to protect areas adjacent to sealant joints. Remove tape immediately after tooling joints, without disturbing joint seal.

3.9 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform inspections according to ICC-ES AC235 or as required by authority having jurisdiction.
- B. EFIS Inspection: Arrange for EFIS system manufacturer's technical personnel to inspect EFIS installation at the following times.

1. During installation of Insulation and flashings.
2. During installation of base coat.
3. At start of installation of finish coat.
4. At completion of finish coat.

3.10 CLEANING AND PROTECTION

- A. Remove temporary covering and protection of other work. Promptly remove coating materials from window and door frames and other surfaces outside areas indicated to receive EIFS coatings.
- B. Clean finished surfaces in a timely manner to prevent permanent discoloration.
 1. If discoloration or contamination occurs and cannot be removed, or if system suffers damage prior to substantial completion, then restore, or remove and replace, affected portions (reworking entire planar surfaces as necessary to conceal reworked area), using manufacturer's recommended restoration coatings or new materials meeting the requirements of this specification, as acceptable to the Owner.

3.11 EXTERIOR INSULATION AND FINISH AFFIDAVIT

(See following page for Exterior Insulation and Finish Affidavit)

EXTERIOR INSULATION AND FINISH AFFIDAVIT
(ATTACH TO EIFS PROJECT WARRANTY)

EIFS Applicator:

(Type Name)

Completion Date:

THE EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) INSTALLED ON THE STRUCTURE LOCATED AT THE ADDRESS BELOW:

☐ **CONFORMS** ☐ **DOES NOT CONFORM**

TO:

(EIFS Manufacturer)

RECOMMENDED INSTALLATION PRACTICES AND PROJECT MANUAL DIVISION 07 SECTION "EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)"

Name & Address of Structure	Product Component Names	
	Adhesive(s):	
	EPS Molder's Name:	
	Fasteners (mechanical):	
	Base Coat:	
	Reinforcing Fabric:	
	Finish Coat(s):	

Installation	Conforms	Does Not Conform
A. Substrate Type and Installation		
B. EIFS		
1) Adhesive and/or Fasteners		
2) Insulation		
3) Reinforcing Fabric		
4) Base Coat		
5) Finish		

The information entered above is offered in **testimony** that the **EIFS** installation conforms with the listed EIFS manufacturer's installation methods and procedures and all applicable model or jurisdictional building codes.

Note: *An affidavit shall be received from the sealant installer indicating that the sealant installation conforms with the EIFS minimum application requirements and sealant manufacturer's installation methods and procedures and must accompany this declaration. These affidavits must be attached to the EIFS project warranty for this project.*

EIFS Contractor Company Name & Address:

Signature of responsible officer:

Typed Name and Title of Officer:

Telephone Number:

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END OF SECTION 07 24 19