

SECTION 07240

EXTERIOR INSULATION AND FINISH SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Exterior Insulation and Finish System (EIFS), Class PM, in accordance with EIMA (PM).
- B. Exterior Insulation and Finish System (EIFS), Class PB, in accordance with EIMA (PB).
- C. Exterior Insulation and Finish System (EIFS), Class PB, in accordance with EIMA (PB), with drainage cavity and secondary weather-resistive barrier.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete.
- B. Section 04810 - Unit Masonry Assemblies.
- C. Section 05400 - Cold Formed Metal Framing.
- D. Section 06100 - Rough Carpentry.
- E. Section 07620 - Sheet Metal Flashing and Trim.
- F. Section 07900 - Joint Sealers.
- G. Section 09260 - Gypsum Board Assemblies.

1.3 REFERENCES

- A. ASTM B 117 - Standard Practice for Operating Salt Spray (Fog) Testing Apparatus.
- B. ASTM C 67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
- C. ASTM C 150 - Standard Specification for Portland Cement.
- D. ASTM C 297 - Standard Test Method for Tensile Strength of Flat Sandwich Constructions in Flatwise Plane.
- E. ASTM C 578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.

- F. ASTM C 1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
- G. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- H. ASTM D 968 - Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive.
- I. ASTM D 1784 - Standard Specification for Rigid PolyVinyl Chloride (PVC) Compounds and Chlorinated PolyVinyl Chloride (CPVC) Compounds.
- J. ASTM D 2247 - Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
- K. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
- L. ASTM D 4258 - Standard Practice for Surface Cleaning Concrete for Coating.
- M. ASTM D 4261 - Standard Practice for Surface Cleaning Concrete Unit Masonry for Coating.
- N. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- O. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
- P. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
- Q. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- R. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

- S. ASTM E 695 - Standard Method of Measuring Relative Resistance of Wall, Floor, and Roof Construction to Impact Loading.
- T. ASTM G 23 - Standard Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials.
- U. ASTM G 53 - Standard Practice for Operating Light- and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials.
- V. BOCA National Building Code, Section 1406.0; Building Officials and Code Administrators International (BOCA).
- W. C & I 2000 - Carry & Ivey Test Method 2000 for Drainage Performance of Exterior Finish Systems.
- X. EIMA 101.01 - Standard Test Method for Freeze-Thaw Resistance of Exterior Insulation and Finish Systems (EIFS), Class PB (modified ASTM C 67); EIFS Industry Members Association (EIMA).
- Y. EIMA 101.02 - Standard Test Method for Resistance to Water Penetration of Exterior Insulation and Finish Systems (EIFS), Class PB (modified ASTM E 331); EIFS Industry Members Association (EIMA).
- Z. EIMA 101.03 - Standard Test Method for Determining Tensile Adhesion Strength of Exterior Insulation and Finish Systems (EIFS) and Components, Class PB (modified ASTM C 297); EIFS Industry Members Association (EIMA).
- AA. EIMA 101.86 - Standard Test Method for Resistance of Exterior Insulation and Finish Systems (EIFS), Class PB, to the Effects of Rapid Deformation (Impact); EIFS Industry Members Association (EIMA).
- BB. EIMA 105.01 - Standard Test Method for Alkali Resistance of Glass Fiber Reinforcing Mesh Used in Exterior Insulation and Finish Systems (EIFS), Class PB; EIFS Industry Members Association (EIMA).
- CC. EIMA 300.01 - Guide for Use of Sealants with Exterior Insulation and Finish System (EIFS), Class PB; EIFS Industry Members Association (EIMA).

- DD. EIMA (PB) - Guideline Specification for Exterior Insulation and Finish System (EIFS), Class PB; EIFS Industry Members Association (EIMA).
- EE. EIMA (PM) - Guideline Specification for Exterior Insulation and Finish System (EIFS), Class PM; EIFS Industry Members Association (EIMA).
- FF. EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board; EIFS Industry Members Association (EIMA).
- GG. GA-253 - Application of Gypsum Sheathing; Gypsum Association (GA).
- HH. GA-600 - Fire Resistance Design Manual; Gypsum Association (GA).
- II. MIL-STD-810 - Environmental Test Methods and Engineering Guidelines; Fungus.
- JJ. SBCCI Standard Building Code, Section 2603.5; Southern Building Code Congress International (SBCCI).
- KK. UBC Standard 26-4 (formerly UBC 17-6) - Method of Test for the Evaluation of Flammability Characteristics of Exterior, Nonload-Bearing Wall Panel Assemblies Using Foam Plastic Insulation; Uniform Building Code; International Conference of Building Officials (ICBO).

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's descriptive literature and specifications for components of specified EIF systems, demonstrating compliance of products to specified requirements.
- C. Selection Samples: For each finish coating specified, two sets of color chips representing manufacturer's full range of available colors and finishes.
- D. Verification Samples: For each color and finish selected, two samples, minimum size 8 inches (200 mm) square, representing actual color and finish of products to be installed.

- E. Test reports: Certified reports from independent testing laboratory supporting compliance of EIF systems to specified requirements.
- F. Manufacturer Qualifications.
- G. Installer Qualifications: Include list of previous projects which identifies the following for each project:
 - 1. Project location and date of completion.
 - 2. Architect's name, address, and telephone number.
 - 3. Owner's name, address, and telephone number.
- H. Specimen of manufacturer's warranty documents.
- I. Manufacturer's printed installation instructions for each specified product, including product storage requirements and recommendations for specific project conditions.
- J. Operation and Maintenance Data: Manufacturer's printed instructions and recommendations for maintaining and cleaning of finish coatings.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum fifteen years documented experience as single-source producer of products specified in this section, and current member in good standing of Sealant Waterproofing and Restoration Institute (SWRI).
- B. Installer Qualifications: Minimum three years documented experience installing finishes specified in this section, capable of demonstrating successful completion of a minimum of three previous projects of similar size and complexity indicated in the Contract Documents, and employing applicators having minimum three years experience applying products specified in this section.
- C. Mock-Up: Construct mock-up for each specified finish coating color and texture, using materials specified in this section.
 - 1. Construct mock-up as directed, at location indicated or directed.
 - 2. Construct mock-up at location indicated or directed, size __ feet (__ m) by __ feet (__ mm).

3. Obtain Architect's acceptance of mock-up before beginning construction activities of this section; accepted mock-up will be standard by which completed construction activities of this section is judged.
 4. Mock-ups may not remain as part of Work.
 5. Accepted mock-ups may remain as part of Work.
- D. Pre-Installation Meeting:
1. Convene at job site seven calendar days prior to scheduled beginning of construction activities of this section to review requirements of this section.
 2. Require attendance by representatives of the following:
 - a. Installer of this section.
 - b. Other entities directly affecting, or affected by, construction activities of this section.
 3. Notify Architect four calendar days in advance of scheduled meeting date.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products of this section in manufacturer's unopened packaging until installation.
- B. Maintain storage area conditions for products of this section in accordance with manufacturer's instructions until installation.

1.7 PROJECT CONDITIONS

- A. Do not apply coating materials to exterior surfaces until ambient temperature, and surface temperature of surfaces to receive coating materials, is above 40 degrees F (4 degrees C) and is expected to remain so for 24 hours after application of finish coating.

1.8 SEQUENCING

- A. Sequence construction activities of this section with construction activities of other sections to prevent penetration of substrates after application of finish coatings, and to prevent damage to finish coatings by subsequent construction activities.
- B. Ensure that sheet metal flashings and trim adjacent to EIF system installations are installed immediately after finish coating has dried.

- C. Ensure that joint sealers adjacent to EIF system installations are installed immediately after finish coating has dried.

1.9 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's standard warranty against defects in materials.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Sto Finish Systems Division of Sto Corporation; P.O. Box 44609, Atlanta, GA 30336-5609; ASD. Tel: (800) 221-2397 or (404) 346-3666, Fax: (404) 346-3119.
- B. Requests for substitution will be considered in accordance with provisions of Section 01600.
- C. Substitutions: Not permitted.
- D. Unless otherwise specified for an individual product or material, supply all products specified in this section from the same manufacturer.

2.2 EXTERIOR INSULATION AND FINISH SYSTEM - CLASS PM

- A. Exterior Insulation and Finish System: Sto Toughwall Class PM System, with the following properties:
 1. Listed in GA-600.
 2. Abrasion resistance, when tested in accordance with ASTM D 968: No cracking, checking, or loss of film integrity at 528 quarts (500 l) sand.
 3. Accelerated weathering resistance, when tested in accordance with ASTM G 23 or ASTM G 53: No deleterious effects at 5-power magnification after 2000 hours.
 4. Freeze/thaw resistance, when tested in accordance with EIMA 101.01: No deleterious effects after 50 cycles.
 5. Mildew resistance, when tested in accordance with Mil Std 810, Method 508: No growth supported after 28 days.
 6. Salt spray resistance, when tested in accordance with ASTM B 117: No deleterious effects after 300 hours.

7. Water penetration, when tested in accordance with ASTM E 331: No water penetration.
 8. Water resistance, when tested in accordance with ASTM D 2247: No deleterious effects after 14 days.
 9. Fire resistance rating effect on wall assembly, when tested in accordance with ASTM E 119: No change.
 10. Full-scale diversified fire test, in accordance with ASTM E 108 (modified): No significant contribution to vertical or horizontal flame spread.
 11. Full-scale multi-story fire test, in accordance with UBC Std 26-4: Pass the following:
 - a. Resistance to vertical spread of flame within core of panel from one story to the next.
 - b. Resistance to flame propagation over exterior surface.
 - c. Resistance to vertical spread of flame interior surface from one story to the next.
 - d. Resistance to significant lateral spread of flame from compartment of fire origin to adjacent spaces.
 12. Radiant heat exposure, in accordance with National Building Code, Section 1406.0, and Standard Building Code, Section 2603.5: No ignition at 20 minutes.
 13. Impact resistance, when tested in accordance with ASTM E 695: No cracking or denting after 6-foot (1.8 m) drop of 30-pound (13.6 kg) weight.
 14. Impact classification, in accordance with EIMA 101.86: High.
 15. Wind load resistance of assembly on 18 gage (1.27 mm) metal framing spaced at 16 inches (400 mm) on center, when tested in accordance with ASTM E 330: 200 pounds per square foot (9.6 kPa) positive pressure, 180 pounds per square foot (8.6 kPa) negative pressure.
 16. Surface burning characteristics, when tested in accordance with ASTM E 84: Adhesive, insulation board, reinforced base coat, and finish coat each have flame spread of 25 or less, and smoke developed of 450 or less.
- B. Insulation Board: STYROFOAM(R) Brand extruded polystyrene board, manufactured by Dow Chemical Company; extruded polystyrene (XEPS) insulation board complying with ASTM C 578, Type IV.
- C. Mechanical Fastening Components: Mechanical fasteners of type and size specified in EIFS manufacturer's

instructions for indicated substrate, and having pull-out strength required for indicated windload requirements, with EIFS manufacturer's recommended proprietary fastening accessories.

- D. Trim: Provide casing beads, corner beads, starter track, expansion joint assemblies, and control joint assemblies indicated on drawings.
 - 1. Comply with ASTM C 1063.
 - 2. Material: Vinyl, conforming to ASTM D 1784.
 - 3. Material: Zinc alloy, conforming to ASTM B 69.
 - 4. Material: Galvanized steel, conforming to ASTM A 653/A 653M.

- E. Base Coat: Sto Toughwall; single-component, fiber-reinforced, polymer-modified cementitious base coat material.

- F. Reinforcing Mesh: Sto Mesh C; nominal 5.4 ounces per square yard (183 g/sq m) symmetrical, interlaced, open-weave glass-fiber fabric, with alkaline-resistant coating for compatibility with coating materials.

- G. Finish Coating:
 - 1. Type: Acrylic-based textured coating, with acrylic primer tinted to match.
 - 2. Type: Silicone-enhanced textured coating, with silicone-enhanced primer tinted to match.
 - 3. Color and texture: Selected from full range of manufacturer's standard selections.
 - 4. Color _____; _____ texture.
 - 5. Colors and textures: Specified in SCHEDULES Article of this section.

2.3 EXTERIOR INSULATION AND FINISH SYSTEM - CLASS PB

- A. Exterior Insulation and Finish System: Sto Class PB System, with the following properties:
 - 1. Listed in GA-600.
 - 2. Abrasion resistance, when tested in accordance with ASTM D 968: No cracking, checking, or loss of film integrity at 1057 quarts (1000 l) sand.
 - 3. Accelerated weathering resistance, when tested in accordance with ASTM G 23: No deleterious effects at 5-power magnification after 2000 hours.

4. Accelerated weathering resistance, when tested in accordance with ASTM G 53: No deleterious effects at 10-power magnification after 5000 hours.
5. Freeze/thaw resistance, when tested in accordance with EIMA 101.01: No deleterious effects after 90 cycles.
6. Mildew resistance, when tested in accordance with ASTM D 3273: No growth supported after 42 days.
7. Salt spray resistance, when tested in accordance with ASTM B 117: No deleterious effects after 700 hours.
8. Water penetration, when tested in accordance with EIMA 101.02: No water penetration.
9. Water resistance, when tested in accordance with ASTM D 2247: No deleterious effects after 28 days.
10. Fire resistance rating effect on wall assembly, when tested in accordance with ASTM E 119: No change.
11. Full-scale diversified fire test, in accordance with ASTM E 108 (modified): No significant contribution to vertical or horizontal flame spread.
12. Full-scale multi-story fire test, in accordance with UBC Standard 25-4: Pass the following:
 - a. Resistance to vertical spread of flame within core of panel from one story to the next.
 - b. Resistance to flame propagation over exterior surface.
 - c. Resistance to vertical spread of flame interior surface from one story to the next.
 - d. Resistance to significant lateral spread of flame from compartment of fire origin to adjacent spaces.
13. Radiant heat exposure, in accordance with National Building Code, Section 1406.0, and Standard Building Code, Section 2603.5: No ignition at 20 minutes.
14. Impact resistance: Conform to the following EIMA 101.86 classifications:
 - a. Standard: 25 inch-pounds (2.83 J) to 49 inch-pounds (5.54 J).
 - b. Medium: 50 inch-pounds (5.65 J) to 89 inch-pounds (10.1 J).
 - c. High: 90 inch-pounds (10.2 J) to 150 inch-pounds (17.0 J).
 - d. Ultra-high: Over 150 inch-pounds (17.1 J).
15. Wind load resistance of assembly on 18 gage (1.27 mm) metal framing spaced at 16 inches (400 mm) on center, when tested in accordance with ASTM E 330: 323 pounds per square foot (15.5 kPa) positive pressure,

239 pounds per square foot (11.4 kPa) negative pressure.

16. Surface burning characteristics, when tested in accordance with ASTM E 84: Adhesive, insulation board, reinforced base coat, and finish coat each have flame spread of 25 or less, and smoke developed of 450 or less.
 17. Alkali resistance of reinforcing mesh, in accordance with EIMA 105.01: Greater than 120 pounds per linear inch (21 dN/cm) tensile strength retained.
 18. Tensile adhesion, in accordance with EIMA 101.03: No failure in adhesive, base coat, or finish coat; minimum 5 pounds per square inch (34 kPa) before and after accelerated weathering and freeze/thaw exposure.
- B. Surface Preparation Materials: Manufacturer's proprietary materials indicated, specified in manufacturer's instructions, or recommended by manufacturer to prepare substrates for correct application of EIFS materials, including the following:
1. Surface conditioner: Acrylic-based surface sealer and hardener for chalking substrates or highly-absorptive substrates.
 2. Patching and leveling material for applications up to 1/16 inch (1.5 mm) thick: Single-component, polymer-modified, cement-based material containing fiber reinforcement.
 3. Patching and leveling material for applications up to 1/4 inch (6 mm) thick: Single-component, polymer-modified, cement-based material containing fiber reinforcement; used with or without specified fiber reinforcement material.
- C. Adhesive: Type as recommended by system manufacturer for substrate and exposure.
- D. Insulation Board for Above-Grade Applications: Expanded polystyrene insulation board supplied by EIFS materials manufacturer, conforming to ASTM C 578, Type I, and EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board, nominal 1.0 pound per cubic foot (16 kg/cu m) density.
- E. Insulation Board for Below-Grade Applications: Expanded polystyrene insulation board supplied by EIFS materials manufacturer, conforming to ASTM C 578, Type IV, nominal 2.0 pounds per cubic foot (32 kg/cu m) density.

- F. Insulation Board for Below-Grade Applications: Rigid extruded polystyrene (XEPS) insulation board supplied by EIFS materials manufacturer, conforming to ASTM C 578, Type IV, nominal 2.0 pounds per cubic foot (32 kg/cu m) density.
- G. Base Coat: Sto RFP; non-cementitious, fiber-reinforced, acrylic base coating.
- H. Base Coat: Sto BTS-B; single-component, polymer-modified cementitious base coating containing less than 33 percent Portland cement by weight.
- I. Base Coat: Sto Flexyl; fiber-reinforced acrylic base coating mixed with Portland cement.
- J. Reinforcing Mesh: Open-weave glass-fiber fabric with alkaline-resistant coating.
 - 1. Standard Mesh: Sto Mesh; nominal 4.8 ounces per square yard (163 g/sq m) symmetrical, interlaced fabric, with minimum 25 percent by weight alkaline-resistant coating.
 - 2. High-Impact Mesh: Sto Intermediate Mesh; nominal 11.2 ounces per square yard (380 g/sq m) interwoven fabric.
 - 3. Ultra High-Impact Mesh: Sto Armor Mat; nominal 15 ounces per square yard (509 g/sq m) ultra high-impact, double-strand, interwoven fabric.
 - 4. Use standard mesh over entire area; use high-impact mesh at _____; use ultra high-impact mesh at _____.
- K. Detailing Mesh: Sto Detail Mesh; nominal 4.5 ounces per square yard (153 g/sq m) flexible symmetrical, interlaced, glass-fiber fabric, with alkaline-resistant coating.
- L. Corner Reinforcing Mesh: Sto Corner Mat; nominal 6.25 ounces per square yard (212 g/sq m) pre-creased open-weave woven glass-fiber fabric, with alkaline-resistant coating.
- M. Finish Coating:
 - 1. Type: Acrylic-based textured coating, with acrylic primer tinted to match.
 - 2. Type: Silicone-enhanced textured coating, with silicone-enhanced primer tinted to match.

3. Color and texture: Selected from full range of manufacturer's standard selections.
4. Color _____; _____ texture.
5. Colors and textures: Specified in SCHEDULES Article of this section.

2.4 EXTERIOR INSULATION AND FINISH SYSTEM - CLASS PB WITH DRAINAGE CAVITY AND SECONDARY WEATHER-RESISTIVE BARRIER

A. Exterior Insulation and Finish System: Sto Rainscreen System, with the following properties:

1. Listed in GA-600.
2. Abrasion resistance, when tested in accordance with ASTM D 968: No cracking, checking, or loss of film integrity at 1057 quarts (1000 l) sand.
3. Accelerated weathering resistance, when tested in accordance with ASTM G 23: No deleterious effects at 5-power magnification after 2000 hours.
4. Accelerated weathering resistance, when tested in accordance with ASTM G 53: No deleterious effects at 5-power magnification after 5000 hours.
5. Freeze/thaw resistance, when tested in accordance with EIMA 101.01: No deleterious effects after 90 cycles.
6. Mildew resistance, when tested in accordance with ASTM D 3273: No growth supported after 28 days.
7. Salt spray resistance, when tested in accordance with ASTM B 117: No deleterious effects after 700 hours.
8. Water penetration, when tested in accordance with EIMA 101.02: No water penetration beyond plane of base coat after 15 minutes at 6.24 pounds per square foot (299 Pa).
9. Water resistance, when tested in accordance with ASTM D 2247: No deleterious effects after 28 days.
10. Fire resistance rating effect on wall assembly, when tested in accordance with ASTM E 119: No change.
11. Impact resistance: Conform to the following EIMA 101.86 classifications:
 - a. Standard: 25 inch-pounds (2.83 J) to 49 inch-pounds (5.54 J).
 - b. Medium: 50 inch-pounds (5.65 J) to 89 inch-pounds (10.1 J).
 - c. High: 90 inch-pounds (10.2 J) to 150 inch-pounds (17.0 J).
 - d. Ultra-high: Over 150 inch-pounds (17.1 J).
12. Wind load resistance of assembly on 18 gage (1.27 mm) metal framing spaced at 16 inches (400 mm) on center,

- when tested in accordance with ASTM E 330: 193 pounds per square foot (9.24 kPa) positive pressure, 53 pounds per square foot (2.54 kPa) negative pressure.
13. Wind load resistance of assembly on 18 gage (1.27 mm) metal framing spaced at 16 inches (400 mm) on center, when tested in accordance with ASTM E 330: 193 pounds per square foot (9.24 kPa) positive pressure, 82 pounds per square foot (3.93 kPa) negative pressure.
 14. Surface burning characteristics, when tested in accordance with ASTM E 84: Adhesive, insulation board, reinforced base coat, and finish coat each have flame spread of 25 or less, and smoke developed of 450 or less.
 15. Alkali resistance of reinforcing mesh, in accordance with EIMA 105.01: Greater than 120 pounds per linear inch (21 dN/cm) tensile strength retained.
 16. Drainage efficiency, when tested in accordance with C & I 2000: 95 percent.
- B. Secondary Weather-Resistive Barrier: Either asphalt-impregnated glass-fiber felt conforming to ASTM D 226, Type I, or Kraft waterproof building paper.
- C. Flexible Flashing: Sto Flexible Flashing; rubberized asphalt cold-applied, self-adhering membrane flashing supplied by EIFS materials manufacturer.
- D. Sheet Metal Flashing: Galvanized or corrosion-resistant metal, minimum 26 gage (0.48 mm).
- E. Starter Track: Rigid polyvinyl chloride extrusion, with weepholes and drip edge; supplied by EIFS materials manufacturer.
- F. Insulation Board for Above-Grade Applications: Sto Drainage Expanded Polystyrene (EPS) Board; expanded polystyrene insulation board, with drainage grooves one face, supplied by EIFS materials manufacturer.
1. Comply with ASTM C 578, Type I, and EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board.
 2. Density: 1.0 pound per cubic foot (16 kg/cu m) nominal.
 3. Thickness: 1-1/2 inches (38 mm), minimum.

- G. Insulation Board for Below-Grade Applications: Sto Drainage Expanded Polystyrene (EPS) Board; expanded polystyrene insulation board, with drainage grooves one face, supplied by EIFS materials manufacturer.
 - 1. Comply with ASTM C 578, Type IV.
 - 2. Density: 2.0 pounds per cubic foot (32 kg/cu m) nominal.
 - 3. Thickness: 1-1/2 inches (38 mm), minimum.

- H. Insulation Board for Below-Grade Applications: Rigid extruded polystyrene (XEPS) insulation board, with drainage grooves one face, supplied by EIFS materials manufacturer.
 - 1. Comply with ASTM C 578, Type IV.
 - 2. Density: 2.0 pounds per cubic foot (32 kg/cu m), nominal.
 - 3. Thickness: 1-1/2 inches (38 mm), minimum.

- I. Base Coat: Sto RFP; non-cementitious, fiber-reinforced, acrylic base coating.

- J. Base Coat: Sto BTS-B; single-component, polymer-modified cementitious base coating containing less than 33 percent Portland cement by weight.

- K. Base Coat: Sto BTS-PLUS; single-component, polymer-modified high-build cementitious base coating containing less than 33 percent Portland cement by weight.

- L. Base Coat: Sto Flexyl; fiber-reinforced acrylic base coating mixed with Portland cement.

- M. Reinforcing Mesh: Open-weave glass-fiber fabric with alkaline-resistant coating.
 - 1. Standard Mesh: Sto Mesh; nominal 4.8 ounces per square yard (163 g/sq m) symmetrical, interlaced fabric, with minimum 25 percent by weight alkaline-resistant coating.
 - 2. High-Impact Mesh: Sto Intermediate Mesh; nominal 11.2 ounces per square yard (380 g/sq m) interwoven fabric.
 - 3. Ultra High-Impact Mesh: Sto Armor Mat; nominal 15 ounces per square yard (509 g/sq m) ultra high-impact, double-strand, interwoven fabric.
 - 4. Use standard mesh over entire area; use high-impact mesh at _____; use ultra high-impact mesh at _____.

- N. Detailing Mesh: Sto Detail Mesh; nominal 4.5 ounces per square yard (153 g/sq m) flexible symmetrical, interlaced, glass-fiber fabric, with alkaline-resistant coating.
- O. Corner Reinforcing Mesh: Sto Corner Mat; nominal 6.25 ounces per square yard (212 g/sq m) pre-creased open-weave woven glass-fiber fabric, with alkaline-resistant coating.
- P. Finish Coating:
 - 1. Type: Acrylic-based textured coating, with acrylic primer tinted to match.
 - 2. Type: Silicone-enhanced textured coating, with silicone-enhanced primer tinted to match.
 - 3. Color and texture: Selected from full range of manufacturer's standard selections.
 - 4. Color _____; _____ texture.
 - 5. Colors and textures: Specified in SCHEDULES Article of this section.

2.5 ACCESSORY MATERIALS

- A. Joint Sealant: Comply with EIMA Standard 300.01; minimum 50 percent elongation.
- B. Portland Cement: ASTM C 150, Type I.
- C. Water: Clean, potable, not containing materials which would impair appearance or performance of coating materials.

2.6 MIXES

- A. Mix materials specified to be site-mixed in accordance with manufacturer's mixing instructions; do not dilute finish coatings except as instructed.
- B. Mix only enough materials that can be applied during working time recommended by manufacturer; do not retemper mixes.
- C. Do not add anti-freeze admixtures or other admixtures which may adversely affect performance or appearance of coating materials.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect substrates to receive EIF systems for the following:
 - 1. Contamination: Presence of foreign matter which might affect coating performance or appearance.
 - 2. Delamination, damage, defects, or deterioration.
 - 3. Cracking: Measure widths of cracks; record locations.
 - 4. Surface absorption and chalking.
 - 5. Moisture content: Use moisture meter of type recommended by manufacturer to determine if moisture content is within limits recommended by manufacturer.
 - 6. Surface plane within tolerances required in manufacturer's instructions.
 - 7. Installation of exterior gypsum sheathing conforming to GA 253.
 - 8. Installation of Exterior Grade and Exposure 1 wood-based sheathing conforming to APA J20G.
 - 9. Installation of glass-fiber mat faced gypsum sheathing conforming to sheathing manufacturer's instructions.
 - 10. Installation of cementitious sheathing conforming to sheathing manufacturer's instructions.
- B. Verify that joints in substrates are in accordance with EIFS manufacturer's recommendations.

3.2 PREPARATION

- A. Correct unacceptable conditions before proceeding.
- B. Protect surfaces adjacent to locations of EIF system installation; do not allow EIF system materials on surfaces not indicated to receive them.
- C. Prepare substrates to receive EIF system materials in accordance with manufacturer's instructions and as follows:
 - 1. Remove loose, damaged, or deteriorated materials.
 - 2. Remove surface contaminants on concrete surfaces in accordance with ASTM D 4258.
 - 3. Remove surface contaminants on concrete masonry surfaces in accordance with ASTM D 4261.
 - 4. Repair surface defects using patching and leveling material.

5. Repair surface cracks using patching and leveling material, or patching and leveling material with fabric reinforcement, according to manufacturer's recommendations for crack size.
6. Replace damaged sheathing.
7. Apply surface conditioner to chalked or absorbent surfaces.
8. Apply skim coat to level substrates to required plane tolerances.

3.3 INSTALLATION

- A. Install EIF system components in accordance with manufacturer's instructions and recommendations.
- B. Apply prime and finish coats in accordance with manufacturer's instructions; do not exceed manufacturer's recommended spread rate for coating materials.
- C. Do not apply coatings over sealant joints, cold joints, expansion joints, or control joints.
- D. Finish final coats to match accepted mock-ups.
- E. Seal all joints between EIF system and adjacent materials using specified sealant.

3.4 PROTECTION

- A. Protect installed EIF system from damage by subsequent construction activities.
- B. Repair installed EIF system, if damaged by subsequent construction activities, in accordance with manufacturer's recommendations, to Architect's acceptance; if damaged areas of EIF system cannot be repaired to Architect's acceptance, replace system components to nearest adjacent joints.

3.5 SCHEDULES

- A. Location: Exterior concrete walls.
 1. System type: Class PM.
 2. Color: _____.
 3. Texture: _____.
- B. Location: Exterior metal stud framing with exterior glass-fiber mat gypsum sheathing.

1. System type: Class PB with drainage cavity and secondary weather-resistive barrier.
2. Color: _____.
3. Texture: _____.

END OF SECTION