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SECTION 072413 POLYMER-BASED EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)









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SECTION 072413

POLYMER-BASED EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- **A.** Section Includes:
 - 1. Exterior insulation and finish system (EIFS) applied over concrete/block substrate

1.3 SYSTEM DESCRIPTION

A. A non-load-bearing, exterior insulation and finish system that consists of an insulation board attached mechanically to the concrete/block substrate; an integrally reinforced base coat; and a textured protective finish coat.

1.4 DESIGN AND PERFORMANCE REQUIREMENTS

- **A.** No more than 150mm between ribs to which insulation board is fastened.
- **B.** Minimum insulation board thickness is $1\frac{1}{2}$ inches.
- **C.** 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. Weather tightness: Resistant to water penetration from exterior into 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.
- **D.** EIFS Shall have physical properties and structural performance that comply with the following:
 - 1. Abrasion Resistance: Sample consisting of 25.4-mm thick EIFS mounted on 12.7-mm thick gypsum board; cured for a minimum of 28 days; shall showing no









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cracking, checking, or loss of film integrity after exposure to 500 L of sand when tested per ASTM D 968, Method A.

- Accelerated Weathering: Five samples per ICC-ES AC219, shall showing no cracking, checking, crazing, erosion, rusting, blistering, peeling, delamination, or other characteristics that might affect performance as a wall cladding after testing for 2000 hours when viewed under 5 times magnification per ASTM G 53 method 1 or ASTM G 54.
- 3. Mildew Resistance of Finish Coat: Singapore Test SS 345 Appendix B 1990: No algae growth after 8 weeks, Mil.Std 810B Method 508: No fungus growth after 28d
- 4. Salt-Spray Resistance: Sample consisting of 25.4-mm thick EIFS mounted on 12.7-mm-thick gypsum board; cured for 28 days; shall showing no cracking, checking, crazing, erosion, rusting, blistering, peeling, or delamination after testing for 300 hours per ASTM B 117.
- 5. Water Penetration: Sample consisting of 25.4-mm thick EIFS mounted on 12.7-mm thick gypsum board, cured for 28 days, shall showing no water penetration into the plane of the base coat to extrunded-polystyrene board interface of the test specimen after 15 minutes at 299 Pa of air pressure difference or 20 percent of positive design wind pressure, whichever is greater, across the specimen during a test period when tested per ASTM E 331.
- 6. Water Resistance: Three samples, each consisting of 25.4-mm thick EIFS mounted on 12.7-mm thick gypsum board; cured for 28 days; shall showing no cracking, checking, crazing, erosion, rusting, blistering, peeling, or delamination after testing for 14 days per ASTM D 2247.
- 7. Wind-Driven-Rain Resistance: Resist wind-driven rain according to ICC-ES AC219.
- 8. Impact Resistance: Sample consisting of 25.4-mm thick EIFS when constructed, conditioned, and tested per EIMA 101.86; and meeting or exceeding the following:
 - a. Standard Impact Resistance: 2.8 to 5.6 J.
 - b. High Impact Resistance: 10.2 to 17 J.
 - c. Ultra-High Impact Resistance: More than 17 J.
- 9. Structural Performance Testing: EIFS assembly and components shall comply with ICC-ES AC219 when tested per ASTM E 330.

1.5 SUBMITTALS

- **A.** Product Data: For each type and component of EIFS indicated.
- **B.** Shop Drawings: For EIFS. 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 for Initial Selection: For each type of finish-coat color and texture indicated.
 - 1. Include similar Samples of joint sealants involving color selection.









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D. Samples for Verification: 600-mm square panels for each type of finish-coat color and texture indicated, prepared using same tools and techniques intended for actual work

including Corner Bead and an aesthetic reveal, a typical control joint filled with seal-ant of color selected.

- 1. Include sealants with Samples to verify color selected.
- **E.** Qualification Data: For Installer Only use Applicator approved by the System Manufacturer with a minimum of 5 years experience of installing EIFS Systems.
- **F.** Manufacturer Certificates: Signed by manufacturers certifying that EIFS and joint sealants comply with requirements.
- **G.** Material or Product Certificates: For each system or component of the system and for each insulation and joint sealant, from manufacturer.
- **H.** Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each insulation, base coat, reinforcing mesh, joint sealant, and coating.
- **I.** Compatibility and Adhesion Test Reports: For joint sealants from sealant manufacturer indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- **J.** Field quality-control reports.
- **K.** Evaluation Reports: For EIFS (including insulation).
- **L.** Maintenance Data: For EIFS to include in maintenance manuals.

1.6 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.
- **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. Fire-Test-Response Characteristics: Provide EIFS and system components with the following fire-test-response characteristics as determined by testing identical EIFS and system components per test method indicated below by UL or another testing and









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inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.

- 1. Fire-Resistance Characteristics: Provide materials and construction tested for fire resistance per ASTM E 119.
- Full-Scale Multistory Fire Test: Tested mockup, representative of completed multistory wall assembly of which EIFS is a part, complies with UBC Standard 26-4 for test method and required fire-test-response characteristics of exterior non-load-bearing wall panel assemblies containing foam-plastic insulation.
- 3. Full-Scale Diversified Fire Test: Tested mockup, representative of completed multistory wall assembly of which EIFS is a part, showing no significant contribution to vertical or horizontal flame spread per ASTM E 108 modified for testing vertical walls.
- 4. Intermediate-Scale Multistory Fire Test: Tested mockup, representative of completed multistory wall assembly of which EIFS is a part, complies with NFPA 285 and/or UBC Standard 26-9 for test method and required fire-test-response characteristics of exterior non-load-bearing wall panel assemblies containing foam-plastic insulation.
- 5. Radiant Heat Exposure: No ignition of EIFS when tested according to NFPA 268.
- 6. Potential Heat: Acceptable level when tested according to NFPA 259.
- 7. Surface-Burning Characteristics: Provide insulation board, adhesives, base coats, and finish coats with flame-spread index of 25 or less and smoke-developed index of 450 or less, per ASTM E 84.
- **D.** Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution and set quality standards for fabrication and installation.
 - 1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- **E.** Pre-installation Conference: Conduct conference at site prior to installation.

1.7 DELIVERY, STORAGE, AND HANDLING

- **A.** Deliver materials in original, unopened packages with manufacturers' labels intact and clearly identifying products.
- **B.** Store materials inside and under cover; keep them dry and protected from weather, direct sunlight, surface contamination, aging, corrosion, damaging temperatures, construction traffic, and other causes.
 - 1. Stack insulation board flat and off the ground.
 - 2. Protect plastic insulation against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.
 - 3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.









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1.8 PROJECT CONDITIONS

A. Weather Limitations: Do not apply EIFS adhesives or coatings during rainfall. Proceed with installation only when existing and forecasted weather conditions and ambient outdoor air, humidity, and substrate temperatures permit EIFS to be applied, dried, and cured according to manufacturers' written instructions and warranty requirements.

B. Survey of Existing Walls

- 1. Timing: Before starting work covered in this section.
- 2. Surface Tolerance +/- 6.4mm over 3 metres
- 3. Objective: To confirm suitability for application of external wall insulation system.
- 4. Survey report: Submit, covering all relevant matters listed below:
 - a. The form and condition of the metal supporting wall.
 - b. A schedule of repairs and/ or additional works necessary to render the substrate suitable to receive the system.
 - c. A schedule of services, fixtures and fittings requiring removal to facilitate installation of the system.

1.9 COORDINATION

A. Coordinate installation of EIFS with related Work specified in other Sections to ensure that wall assemblies, including sheathing, flashing, trim, joint sealants are protected against damage from the effects of weather, age, corrosion, moisture, and other causes. Do not allow water to penetrate behind flashing and barrier coating of EIFS.

1.10 WARRANTY

- **A.** Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of exterior insulation and finish system (EIFS)that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures, including rupturing, cracking, or puncturing.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Ten years from date of Substantial Completion.
- **B.** Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace exterior wall panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Finish Warranty Period: 5 years from date of Substantial Completion.









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PART 2 - PRODUCTS

2.1 MATERIALS

- **A.** Protective coating: Concrete/Block substrate shall be protected by damp proofing coating as specified.
- **B.** Compatibility: Provide adhesive, fasteners, insulation board, 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.
- C. Insulation Adhesive: Dry Base Coat, 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); and complying with the following:
 - 1. Factory-blended dry formulation of Portland cement, dry polymer admixture, and fillers specified for base coat.
- **D.** Extruded Polystyrene heat insulation board with following technical Characteristics:
 - 1. Extruded polystyrene board confirming to the ASTM C578 and BS 3837 part 2, rigid, closed cell type, with integral high density skin.
 - 2. Ozone Depleting Potential (ODP) = Zero
 - 3. Global Warming Potential(GWP) < 5, free CFC, HCFC & HFC.
 - 4. Thermal Resistance (DIN 52612 or DIN 52616 @ 10⁰c mean temp), K- value: 0.028 (W/m.k).
 - 5. Compressive Strength at 10% (DIN 53421): Minimum 300 Kpa.
 - 6. Flexural Strength, ASTM C203: , min. 60 psi
 - 7. Water Absorption by submersion(DIN53428) : 0.2% by volume maximum -28 days submersion on whole board :
 - 8. Water Vapor Permeance (ASTM C 355): 0.4 0.6 maximum
 - 9. Density (DIN 53420) : Minimum 35 Kg/m3
 - 10. Maximum use temperature: 74°C
 - 11. Flame spread (ASTM E84):0
 - 12. Flammability(DIN 4102: Class B1
- **E.** Reinforcing Mesh: High Impact, alkali-resistant, open-weave, glass-fiber mesh treated for compatibility with other EIFS materials, made from continuous multiend strands with retained mesh tensile strength of not less than (21 dN/cm) per ASTM E 2098, EIMA 105.01; complying with ASTM D 578 and the following:
 - 1. Standard-Impact Reinforcing Mesh: Not less than 142 g/sq. m.
 - 2. Intermediate-Impact Reinforcing Mesh (Intermediate 12): Not less than 373 g/sq. m.









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- 3. Heavy-Duty Reinforcing Mesh: Not less than 678 g/sq. m.
- 4. Beads/ Trims: Aluminum starter tracks and Aluminum angle beads (If Required)
- 5. Strip Reinforcing Mesh: Not less than 142 g/sq. m
- 6. Detail Reinforcing Mesh: Not less than 142 g/sq. m.
- 7. Corner Reinforcing Mesh: Not less than 142 g/sq. m and incorporating Aluminum Corner Piece.
- **F.** Adhesive/Base Coat: Dry Base Coat, high flexible dry mix polymer adhesive and base coat containing Portland cement and requiring only water for mixing.
- **G.** Primer: Tinted Primer standard factory-mixed, vapor barrier, 100% Acrylic primer for preparing base-coat surface for application of finish coat.
- **H.** Finish-Coat Materials: Acrylic-based coating with enhanced mildew resistance complying with the following requirements for material composition and method of combining materials:
- **I.** Factory-mixed formulation of 100 % acrylic polymer-emulsion binder, pigments, and fillers.
 - 1. Colors: As selected by Engineer/Project Manager from manufacturer's full range. Color Selection
 - 2. Select Finish Coat color with a light reflectance value (LRV) of 20% or higher. The use of dark colors (LRV less than 20%) is not recommended with EIF Systems that incorporate extruded polystyrene (XPS). XPS has a sustained service temperature limitation of approximately 71°C.
 - 3. Textures: As selected by Engineer/Project Manager from manufacturer's wide range selection.
- J. Water: Potable.
- **K.** Mechanical Fasteners: EIFS manufacturer's standard corrosion-resistant fasteners consisting of thermal cap, standard washer and shaft attachments, and fastener indicated below; selected for properties of pullout, tensile, and shear strength required to resist design loads of application indicated; capable of pulling fastener head below surface of insulation board; and of the following description:
 - 1. For attachment, provide manufacturer's standard fasteners suitable for substrate.
 - 2. Trim Accessories: Aluminum starter track and corner beads, if required.

2.2 LASTOMERIC SEALANTS

A. Elastomeric Sealant Products: 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 ASTM C 920, Type S, Grade NS, Class 25 and with properties below:









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- 1. Single-component, non-shrink, non-sag, non-staining low modulus Silyl Terminated Polyether (STPe) based joint sealant.
- 2. Expected Life 20 years
- 3. Movement Capability (ASTM C719) +100 to -50%
- 4. Tensile Strength (ASTM D412) 290psi
- 5. Ultimate Elongation at Break (ASTM D412) 865%
- 6. Rheological (sag in vertical displacement)at 49 deg C (ASTM C639) No sag
- 7. Extrudability (ASTM C603) 2-3 Seconds
- 8. Hardness at standard conditions (ASTM C661) 20
- 9. Weight Loss after heat aging (ASTM C792 <10%
- 10. VOC 2.07g/L
- **B.** Sealant Color: As selected by Engineer/Project Manager from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

- **A.** Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of EIFS.
- **B.** Examine concrete walls, block works, openings, substrates, and junctures at other construction for suitable conditions where EIFS will be installed.
- **C.** Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Begin coating application only after surfaces are dry.
 - 2. Application of coating indicates acceptance of surfaces and conditions.

3.2 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 EIFS and deterioration of substrates.
- C. Prepare and clean substrates to comply with EIFS manufacturer's written instructions









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3.3 EIFS INSTALLATION, GENERAL

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

3.4 TRIM INSTALLATION

- **A.** Trim: If required, 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.
 - 1. Drip Screed/Track: Use at bottom edges of EIFS unless otherwise indicated.
 - 2. Expansion Joint: Use where indicated on Drawings.
 - 3. Back-Wrap all termination point (at base, reveals, expansion joints and where indicated on Drawings).

3.5 INSULATION INSTALLATON

- **A.** Board Insulation: Mechanically attach insulation to substrate in compliance with ASTM C 1397, EIFS manufacturer's written instructions, and the following:
 - 1. Mechanically attach insulation to substrate by method complying with EIFS manufacturer's written instructions. Install top surface of fastener heads flush with plane of insulation.
 - 2. Apply insulation over dry substrates in courses with long edges of boards oriented horizontally.
 - 3. Begin first course of insulation from a level base line and work upward.
 - 4. Begin first course of insulation from screed/track and work upward. Work from perimeter casing beads toward interior of panels if possible.
 - 5. Stagger vertical joints of insulation boards in successive courses to produce running bond pattern. Locate joints so no piece of insulation is less than 300 mm wide or 150 mm high.
 - 6. Interlock ends at internal and external corners.
 - 7. Abut insulation tightly at joints within and between each course to produce flush, continuously even surfaces without gaps or raised edges between boards. If gaps greater than 1.6 mm occur, fill with insulation cut to fit gaps exactly; insert insulation without using adhesive or other material.
 - 8. Cut insulation to fit openings, corners, and projections precisely and to produce edges and shapes complying with details indicated.
 - 9. Rasp or sand flush entire surface of insulation to remove irregularities projecting more than 1.6 mm from surface of insulation and to remove yellowed areas due to sun exposure; do not create depressions deeper than 1.6 mm.
 - 10. Cut aesthetic reveals in outside face of insulation with heated EPS cutter configured to produce grooves, rabbets, and other features that comply with profiles and locations indicated. Do not reduce insulation thickness at aesthetic reveals to less than 19 mm.









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- 12. Interrupt insulation for expansion joints where indicated.
- 13. Form joints for sealant application by leaving gaps between adjoining insulation edges and between insulation edges and dissimilar adjoining surfaces. Make gaps wide enough to produce joint widths indicated after encapsulating joint substrates with base coat and reinforcing mesh. Back-wrap Reinforcing Mesh at all expansion joints.
- 14. Form joints for sealant application with back-to-back casing beads for joints within EIFS and with perimeter casing beads at dissimilar adjoining surfaces. Make gaps between casing beads and between perimeter casing beads and adjoining surfaces of width indicated.
- 15. After installing insulation and before applying reinforcing mesh, fully wrap board edges with strip reinforcing mesh. Cover edges of board and extend encapsulating mesh not less than 64 mm over front and back face unless otherwise indicated on Drawings.
- 16. Treat exposed edges of insulation as follows:
 - a. Except for edges forming substrates of sealant joints, encapsulate with base coat, reinforcing mesh, and finish coat.
 - b. Encapsulate edges forming substrates of sealant joints within EIFS or between EIFS and other work with base coat and reinforcing mesh.
 - c. At edges trimmed by accessories, extend base coat, reinforcing mesh, and finish coat over face leg of accessories.
- 17. Coordinate installation of flashing and insulation to produce wall assembly that does not allow water to penetrate behind flashing and EIFS.
- **B.** Expansion Joints: Install at locations indicated, where required by EIFS manufacturer, and as follows:
 - 1. At expansion joints in substrates behind EIFS.
 - 2. Where EIFS adjoin dissimilar substrates, materials, and construction, including other EIFS.
 - 3. Where wall height or building shape changes.
 - 4. Where EIFS manufacturer requires joints in long continuous elevations.
 - 5. Where panels abut one another.

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 1.6-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 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 204 mm of corners. Completely embed mesh, applying additional base-coat material if necessary, so reinforcing-mesh color and pattern are not visible.









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- C. Double-Layer Reinforcing Mesh Application: Where indicated, apply second base coat and second layer of standard impact reinforcing mesh, overlapped not less than 64 mm or otherwise treated at joints to comply with ASTM C 1397 and EIFS manufacturer's written instructions in same manner as first application. Do not apply until first base coat has cured.
- **D.** Additional Reinforcing Mesh: Apply strip reinforcing mesh around openings extending 100 mm beyond perimeter. Apply additional 230-by-300-mm strip reinforcing mesh diagonally at corners of openings (re-entrant corners). Apply 200-mm wide strip reinforcing mesh at both inside and outside corners unless base layer of mesh is lapped not less than 100 mm on each side of corners.
 - 1. At aesthetic reveals, apply strip reinforcing mesh not less than 200 mm wide.
 - 2. Embed strip reinforcing mesh in base coat before applying first layer of reinforcing mesh.
- **E.** Foam Shapes: Fully embed reinforcing mesh in base coat.
- **F.** 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.

3.7 FINISH-COAT INSTALLATION

- **A.** Primer: Apply over dry base coat according to EIFS manufacturer's written instructions.
- **B.** Finish Coat: Apply over dry, primed 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.
- **C.** Finish Coat:
 - 1. Apply Finish directly to the dry Base Coat/Reinforcing Mesh with a clean, stainless steel trowel.
 - 2. Apply and level Finish during the same operation to minimum obtainable thickness consistent with uniform coverage.
 - 3. Maintain a wet edge on Finish by applying and texturing continually over the wall surface.
 - 4. Work Finish to corners, joints or other natural breaks and do not allow material to set up within an uninterrupted wall area.
 - 5. Float Finish to achieve final texture.









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6. Verify Finished EIFS system is flat, free of any planar irregularities and within a tolerance of +/- 3mm over 3m.

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.
 - 6. Recess sealant sufficiently from surface of EIFS so an additional sealant application, including cylindrical sealant backing, can be installed without protruding beyond EIFS surface.

3.9 FIELD QUALITY CONTROL

- **A.** Special Inspections: Contractor to hire a qualified special inspector to perform the following special inspections:
 - 1. According to ICC-ES AC24, ICC-ES AC219.
- **B.** Testing Agency: Contractor to hire a qualified testing agency to perform tests and inspections as necessary.
- **C.** EIFS Tests and Inspections: For the following:
 - 1. According to ICC-ES AC24, ICC-ES AC219.
- **D.** Remove and replace EIFS where test results indicate that EIFS do not comply with specified requirements.
- **E.** Prepare test and inspection reports.

3.10 CLEANING AND PROTECTION

A. Remove temporary covering and protection of other work. Promptly remove coating materials from other surfaces outside areas indicated to receive EIFS coatings.

END OF SECTION







