



FACADESXi

FACADESTHREE WALL
DIRECT TO CMU /CONCRETE
ASSEMBLY

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FACADESXi FACADESTHREE WALL ASSEMBLY

CSI SECTION 09 24 23 CEMENT STUCCO

This specification is to assist in correctly specifying the FACADESXi FacadesThree Wall Assembly directly applied to cast in place concrete, precast concrete, brick or CMU, products and installation and should be used in conjunction with Assembly Details. The stucco assembly includes a code cement-based stucco (3/8 – 5/8 inch thick), primer and acrylic finish over unpainted cleaned substrate .

The specifier MUST edit these specifications to fit the needs of each specific project and the design is the responsibility of the specifier to determine if a product is applicable.

FACADESXi Wall systems provides these specifications, Typical Assembly details, and product data sheets for use in the design of the project.

FACADESXi is not liable for any errors or omissions in design details, structure capability, attachment details, or shop drawings. See Full Disclaimer at end of document.

Although not a part of the FacadesThree Assembly, flashings and sealants are elements of all exterior wall assemblies and must be designed, integrated and installed, in conjunction with the wall cladding to create an air and water-resistant assembly. Stucco Wall assemblies will allow water to flow through it; the wall should be designed for this consideration.

Construction Types: I-V, Fire Rated and Non-combustible, Commercial and Residential Non-combustible and Fire Rated construction: ensure that the system chosen has been tested and is compliant with the necessary tests for these assemblies.

LIMITATIONS

- Ambient / surface temperature must remain above 40°F (4°C) during and for 24-hours after set occurs.
- Efflorescence is a natural occurrence when using cement-based products subject to exterior or wet environments and is not a defect of the product.
- Cracking will occur in portland cement stucco, as is with any Portland cement-based product, and is not a defect of the product. Cracking can be minimized by following best practices, including proper installation of lath, proper use of control and expansion joints, proper sand selection, proper mix proportions, limit excess water, moist curing of the stucco, and proper sequencing of construction to avoid stresses. When installing stucco directly to CMU, if the CMU cracks, the stucco will also crack and is not a defect in the stucco product. A FractureStop layer will not diminish this type of cracking.
- For use on vertical above grade walls only.
- Moist curing must be provided per the applicable building code.
- Where snow may occur, increase the distance required between grade and the stucco and increase the slope requirement of the Stucco and Foam Shapes
- Maintenance is Required with periodic cleaning, repair of cracks and impact damage, if they occur, and/or recoating to enhance appearance of weathered finish.
- Dark colors show more efflorescence and imperfection in the stucco base coat compared to light colors. With Foam Shapes, select a color with a light reflectance value (LRV) of 20 percent or higher. EPS has a service temperature limitation of approximately 160 degrees F (71 degrees C).

Contact FACADESXi technical services to assist in appropriate product selection

Notes to Specifier are in White Italics and should be deleted before publishing.

[Select or Delete] Assembly Options. Select one and delete the remaining options. Delete the brackets and un-bold the selected option(s).

Primer is an Optional Layer that will enhance the color uniformity of the acrylic finish coat, especially in hot weather.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. **Materials and installation of an exterior stucco assembly including stucco base coat, [primer] and 100% acrylic textured finish coat**

1.2 RELATED SECTIONS

- A. **Section 03 30 00 Cast in Place Concrete**
- B. **Section 04 20 00 Unit Masonry**
- C. **Section 07 60 00 Flashing and Sheet Metal**
- D. **Section 07 90 00 Joint Protection**
- E. **Section 08 40 00 Entrances, storefronts, curtain walls**
- F. **Section 08 50 00 Windows**

1.3 REFERENCES

A. **ASTM**

1. E84 Test for surface burning characteristics of building materials
2. C144 Specification for Aggregate for Masonry Mortar
3. C847 Standard Specification for Metal Lath
4. C897 Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plaster
5. C926 Standard Specification for Application of Portland Cement-Based Plaster
6. D1784 Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compound
7. E84 Test Method for Surface Burning Characteristics of Building Material
8. E119 Standard Test Methods for Fire Tests of Building Construction and Materials
9. E2430 Standard Specification for Expanded Polystyrene ("EPS") Thermal Insulation Boards For Use in Exterior Insulation and Finish Systems ("EIFS")

B. **APA**

1. Voluntary Product Standard: PS 1, Structural Plywood
2. Voluntary Product Standard: PS 2, Performance Standard for Wood Based Wood structural panels.

1.4 SUBMITTALS

- A. **Submit under the provisions of Section [01 33 00]**
- B. **Product data on assembly materials, including specifications, assembly details, installation and warranty information**
- C. **Samples: two 6 inches by 6-inch finish coat sample per designers' request**

1.5 DESIGN CRITERIA

A. **Moisture / air control**

1. This system is directly applied to the substrate, it does not contain a water barrier or means of drainage.
2. The substrate may be considered an air barrier by the International Energy Code.
3. Do not use vapor retarders on the interior side of the wall.

B. **Fire Rated Assemblies / Non-combustible Assembly**

1. Ensure that the assembly complies with an associated code listed Fire rated assembly or Noncombustible.

NOTE TO SPECIFIER: It is not the responsibility of the contractor to determine the placement of control and expansion joints or their design. The project designer must determine the placement and size of all joints.

C. System Joints

1. The placement of the control joints, expansion joints, is not the responsibility of the contractor.
2. Designer to show placement on the project drawings.
3. Install control joints in the plaster coat directly over and aligned with any control joints in the solid base.
4. Stucco expansion joints are required where expansion joints occur in the building envelope substrate or movement is expected.

1.6 QUALITY ASSURANCE

A. Manufacturer

1. Stucco product has been installed for over 20 years on over 10 million square feet.

B. Applicator

1. Listed by FACADESXi Wall Systems. Licensed, insured and engaged in application of stucco and coatings for a minimum of 3 years.
2. Employ mechanics who are skilled and experienced in stucco applications.

C. Conform to all applicable building code requirements

D. Construct one sample panel <SIZE> in the field for each color and texture, using the same methods to be used in the actual construction. Maintain on jobsite

E. Third party inspection where required by code or contract documents, are to be contracted by the owner. Inspections are not performed by the stucco manufacturer.

1.7 DELIVERY/STORAGE/HANDLING

A. Deliver, store and handle products per product data and under Section []

B. Deliver FACADESXi materials in original unopened packages with labels intact.

C. Protect FACADESXi materials during transportation and installation to avoid physical damage

D. Protect Portland cement-based material (bag products) from moisture and humidity. Store undercover and off of the ground in a dry location.

E. Store FACADESXi materials in cool, dry place, out of direct sunlight, protect from freezing.

F. Store insulation boards in original packaging, flat and out of heat and direct sunlight.

1.8 PROJECT CONDITIONS

A. Ambient and surface temperature must be above 40 degrees F during application and for 24 hours after application of FACADESXi materials

B. Provide supplementary heat /shading for installation, if necessary, to maintain minimum or maximum allowable temperatures.

C. Prevent uneven or excessive evaporation of moisture from base coat during dry, hot weather. Do not install coatings in temperatures above 100 F.

D. Protect surrounding areas and adjacent surfaces from application of materials.

1.9 COORDINATION AND SCHEDULING

A. Interior drywall, all floor, roof construction and other work that imposes dead loads on the walls should be completed prior to the FacadesThree Wall System to prevent excessive deflection and help prevent cracking of the stucco.

B. Coordinate and schedule installation of FACADESXi with related work; windows, doors, flashing, AC units, foundation waterproofing, roofing, trim, flashing, and joint sealers.

C. Protect sheathing per industry and/or sheathing manufacturer's instructions.

D. Install sealant immediately after stucco finish has dried.

1.10 WARRANTY

- A. Provide FACADESXi Wall systems limited material warranty under project provisions.
- B. See FACADESXi Warranty Technical Document for specific warranties available.

PART 2 - PRODUCTS

2.1 MANUFACTURER

FACADESXi, 15262 Capital Port, San Antonio TX 78249 | 1.800.611.6602 | www.FACADESXi.com

2.2 SYSTEM/MATERIALS

- A. System: FacadesThree Wall system direct to CMU: Substrate, Scratch and Brown stucco base coat, [primer], acrylic integrally colored finish coat.

Specifiers note: the use of Xi-Admix & Bond Agent as an admix will enhance the strength, decrease cracking and efflorescence by allowing the stucco base to curing more slowly. As a Bonding agent directly to the surface will increase adhesion - be sure to specify use.

B. Materials

1. [Xi-Admix and Bonding Agent: 100% acrylic that can be used as an admix to increase bond, hardness and strength in the Facades Stucco base or as a bonding agent directly to the surface of the solid plaster base to promote adhesion.]
2. Stucco
 - a. FacadesThree Concentrate: Proprietary fiber reinforced portland cement stucco concentrate, mixed with sand in the field.
 - b. FacadesThree Sanded: Proprietary pre-Blended, sanded, fiber reinforced portland cement stucco mixed with water in the field.
 - c. Sand: ASTM C 897 or ASTM C 144, per ASTM C926
 - d. Water: Clean and potable.
3. [Foam Shapes
 - a. Insulation board: Expanded Polystyrene (EPS), Nominal 1.0 lb/ft³ (16 kg/m³) in compliance with ASTM C578 Type I / ASTM E2430.
 - b. Foam shape thickness for Non-combustible construction are limited to 4" in thickness.
 - c. Base Coat:
 - 1) Xi-WaterLock: Waterproof Base Coat for Sloped surfaces - acrylic-based, fiber-reinforced, waterproofer mixed with Portland cement in the field.
 - 2) Xi-Acrylic Base Coat/Xi-Dry Acrylic Base Coat: 100% acrylic base coat mixed with Portland cement in the field or Dry polymer mix containing Portland cement mixed with water in the field
 - d. Reinforcing Mesh: Facades Xi-Mesh Standard Reinforcing Mesh: 4.5 oz/ yd² open weave glass fiber coated reinforcing mesh.

Specifiers note: the use of primer will enhance the color uniformity of the acrylic finish coat, especially in hot weather. If the pH of the stucco surface is greater than 10, the primer must be used to lower the pH.

4. [Xi-Primer (OPTIONAL PER SPECIFIER): 100% Acrylic tintable primer]
5. Xi-Textured Acrylic Finish Coat
 - a. 100% Acrylic polymer, dirt pick up resistant textured finish coat water based acrylic coating with integral color and texture.
 - b. Color:

- c. Texture: Xi-Smooth, XI- Ultra Fine Sand .75 Xi-Fine Sand 1.0 Xi-Medium Sand 1.25 Xi Coarse Sand 1.5 Xi-Fine Swirl 1.5 Xi- Coarse Swirl 2.0

PART 3 - INSTALLATION/EXECUTION

3.1 EXAMINATION

- A. **Verify the following:**
 - 1. Substrate is allowable and code compliant.
 - 2. Surfaces must be free of paint, mildew, dirt, efflorescent, oils, damage deterioration or any foreign materials.
 - 3. Surfaces must be free from excessive moisture; moisture content should be recorded before installation.
 - 4. Openings, Roofs, terminations have been properly flashed as designed.
- B. **Solid Plaster Base - unpainted**
 - [Concrete Masonry Units]
 - [PreCast Concrete]
 - [Cast in Place Concrete]
 - [Stone Masonry]
 - [Clay Brick]
 - [Tile]
- C. **Unsatisfactory conditions shall be corrected before the installation of any FACADESXi System materials. The contractor must notify the general contractor and/or owner and / or architect of all discrepancies. Do not proceed with water/air barrier until conditions are resolved.**

3.2 PREPARATION

- A. **Solid Plaster Bases**
 - 1. **Materials/Application**
 - a. Must be installed per the applicable manufacturer /industry standards.
 - b. Concrete masonry units should be laid with flush with non-tooled joints.
 - c. New concrete masonry walls should be properly aligned and free from any surface contamination, such as mortar droppings or sand.
 - d. Must be properly cured and carrying almost all of its design dead load before the plaster is applied.
 - e. CMU and mortar joints must be completely cured and dry otherwise the mortar joints may be visible through the stucco base coat.
 - 2. **Surface Preparation**
 - a. Remove any contaminants, oils, form release agents and any other materials from the surface before application of the water barrier coating. Adhesion should be tested before application.
 - b. Repair cracks, fill holes, and remove projections in the surface and allow to dry before installing the water barrier coating.
 - c. Smooth or nonabsorbent solid surfaces, such as cast in place or precast concrete, shall be Sandblasted, wire brushed, acid etched, or chipped or a combination thereof, or an application of a dash-bond coat applied force fully against the surface, left un troweled, undisturbed, and moist cured for at least 24 hours
 - d. High-suction bases shall be evenly dampened with clean water prior to the application of plaster. Do not dampen low-suction solid bases, such as dense concrete or smooth brick.
 - e. All bee holes and missing mortar joints shall be tuck pointed in accordance with ASTM C270 prior to plastering.
 - f. All cracks in masonry or concrete surfaces to receive plaster shall be repaired.
 - 3. **Planar Tolerances**

- a. Surfaces of solid bases to receive plaster, such as masonry, stone, cast-in-place or precast concrete shall be straight and true within 1/4 in. (6 mm) in 10 ft (3 m)
- b. Conditions where the surfaces are out of tolerance shall be corrected prior to the application of the plaster.
- c. Where masonry or concrete surfaces vary in plane, plaster thickness required to produce level surfaces shall not be required to be uniform.

B. Flashing

1. Head, jamb and sills of all openings must be flashed in conjunction with the water /air barrier per project details and to create positive drainage.
2. Roof Flashing, Kick out Flashing must be installed per project design.
3. Install copings and sealants after Stucco assembly has been installed and is completely dry.
4. Do not proceed until all unsatisfactory conditions have been corrected.

3.3 APPLICATION

A. Mixing

1. Mix each product in accordance with the most current product datasheet.
2. No additives are permitted to any components unless specifically approved by FXI.
3. Mix Xi-Admix and Bonding Agent into the Stucco base in accordance with the product datasheet if specified.

Bonding agents are only as good as the material surface to which they are applied; therefore, form release materials must be removed from concrete.

B. Xi-Admix & Bonding Agent as a bonding agent, if applicable

C. Apply Xi-Admix & Bonding Agent to the surface in accordance with the product datasheet.

D. Accessories /Lath

1. Install Weep Screed in accordance with ASTM C1063.
2. Install Casing Bead, Trim accessories, and Expansion joints in accordance with ASTM C1063.

E. Stucco Base Coat, for complete application see ASTM C926

1. Systems
 - a. Two-coat systems over masonry consist of: first coat = 3/8 inch thick and finish coat = 1/8 inch thick
 - b. Two-coat systems over cast concrete consist of: first coat = 1/4 inch thick and finish coat = 1/8 inch thick.
 - c. Three-coat systems consist of: first coat = 1/4 inch thick, second coat = 1/4 inch thick, and finish coat = 1/8 inch thick over both masonry and cast concrete.
2. Application
 - a. The first coat shall be applied with sufficient material and pressure to ensure tight contact and complete coverage of the solid base the correct thickness. As soon as the first (scratch) coat becomes firm, the entire surface shall be scored in one direction only. The vertical surfaces shall be scored horizontally. The scratch coat should be moist cured for 48 hours.
 - b. The second (brown) coat shall be applied with sufficient material and pressure to ensure tight contact with the first (scratch) coat and to bring the combined thickness of the base coat to the nominal thickness shown per Section E.1.
 - c. The surface of the second (brown) coat shall be brought to a true, even plane with a rod or straightedge, filling surface defects in plane with plaster. Dry rodding the surface of the brown coat shall be permitted. The brown coat should be moist cured for 48 hrs.
 - d. Double Back Method: The second coat may be applied as soon as the first coat has attained sufficient hardness. Although this is allowable by ASTM C926, moist cure is recommended.

3. Moist Curing
 - a. Moist curing is the single most important thing you can do to prevent cracking in stucco.
 - b. Provide sufficient moisture in the plaster mix or by moist or fog curing to permit continuous hydration of the cementitious materials.
 - c. Sufficient time between coats shall be allowed to permit each coat to cure or develop enough rigidity to resist cracking or other physical damage when the next coat is applied.

F. [Foam Shapes]

1. Apply the base coat to the entire surface on one face of the insulation board, then using a 5/8" x 5/8" x 5/8" (16mm x 16mm x 16mm) notched trowel, run the adhesive in ribbons to a uniform thickness to run vertically when positioned on the wall (do not install adhesive directly to the stucco base coat).
2. Immediately install foam shapes, ornamental pieces applying uniform pressure to promote maximum adhesive contact.
3. Allow the foam insulation shapes to set undisturbed overnight. Cold and humid conditions may require greater than 24 hours before rasping.
4. Rasp the surface of the insulation board smooth, if applicable.
5. Uniformly cover the entire foam board surface with the base coat to approximately 1/16" - 1/8" thick. With the flat edge of a stainless-steel trowel, embed reinforcing mesh into the base coat, from the center to the edges, wrapping it around the edges and system terminations, extending as far onto the structural elements as possible. Use the mesh to gauge base coat thickness. The mesh-reinforced surface should be flat and smooth with no wrinkles. A damp, NOT WET, brush may be used on fresh or uncured base coat to maintain sharp edges of grooves or for smoothing trowel marks. The thickness must be such that the mesh color is not visible at a minimum of 1/16".
6. The base coat and mesh can either be backwrapped behind the shape or lapped onto the stucco surface. You must ensure to feather out the base coat and mesh onto the stucco surface.
7. On the sloped surface of foam shapes slope or shapes greater than 12", WaterLock Waterproof Cementitious base coat must be used on these areas over the Reinforced Base coat.

G. Apply primer to the base coat per the product datasheet.

H. Apply Selected Finish coat per the product datasheet.

3.4 QUALITY CONTROL

- A. The contractor is responsible for the proper application of the FACADESXi wall System products.
- B. FACADESXi is not responsible for on-site inspections, if inspections are required, the owner must engage a third-party inspector.

3.5 CLEANING

- A. Clean under the provisions of Section [01 74 00]
- B. All excess materials must be removed from the project siter per the project Provisions
- C. Clean adjacent surfaces of excess materials or debris.

3.6 PROTECTION

- A. Protect installed materials under provisions of Section [01 74 00]

END OF SECTION

Disclaimer prepared in good faith based on the information available at the time of publication.

FACADESXi

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