SPECIFICATION

**FACADESXi**

**WATERSHIELD-CB**

**WALL ASSEMBLY**

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FACADESXi WATERSHIELD CB WALL ASSEMBLY

CSI SECTION 07 24 23 DIRECT APPLIED FINISH SYSTEM

**This specification is to assist in correctly specifying the FACADESXi WaterShield CB Assembly, products and installation and should be used in conjunction with Assembly Details. The assembly includes WaterShield water resistive air barrier, means of drainage, cement board, joint reinforcement, reinforced polymer modified base coat, primer and acrylic finish.**

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 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.

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

* The system is generally recommended for low rise construction and commercial construction less than 5 stories. see wind load data and verify requirements.
* Minor crack is possible at cement board joints.
* Ghosting of fasteners is possible during certain temperatures and humidity.
* The cement board basecoat surface must be in plane for the for best aesthetics. Outside of the limitations may cause visible irregularities in the finished wall surface. Heavy texture finishes and or 2 layers of base coat will minimize these effects. The base coat cannot be used in thicker applications to level out the cement board.
* For use on vertical above grade services. Do not use below grade or horizontally.
* Control joints and expansion joints are required as listed in the specification.
* Ambient / surface temperature must remain above 40ºF (4ºC) 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.
* For use on vertical above grade walls only.
* 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).

This system incorporates the FXI Water and Air Barrier and is required for this system. When using a water/air barrier by others, see the Direct Applied Assembly specifications for the installation of the FXI products over the assembly by others.

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. Choose one and delete the remaining options. Delete the brackets and un-bold the selected option(s).*

*<Text> Include the appropriate information.*

*FacadesOneStucco base can be installed in one pass at ⅜" ½" – in one or two passes. Choose the thickness desired.*

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

# PART 1 - GENERAL

## SECTION INCLUDES

### Materials and installation of an exterior ultra-high impact water managed cement board assembly including: WaterShield water resistive and barrier, means of drainage, cement board, joint reinforcement, reinforced base coat for crack resistance, [primer] and 100% acrylic textured finish coat

## RELATED SECTIONS

### A. Section 06 11 00 Wood Framing

### Section 06 16 00 Sheathing

### Section 07 27 00 Air barriers

### Section 07 60 00 Flashing and Sheet Metal

### Section 07 90 00 Joint Protection

### Section 08 40 00 Entrances, storefronts, curtain walls

### Section 08 50 00 Windows

### Section 09 22 00 Supports for Plaster and Gypsum Board

### Section 09 21 16 Gypsum Board Assemblies

## REFERENCES

### ASTM

####  C1177 Specification for Glass Mat Gypsum for Use as Sheathing

####  D1784 Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compound

#### E84 Test Method for Surface Burning Characteristics of Building Material

#### E119 Standard Test Methods for Fire Tests of Building Construction and Materials

#### E330 Test Method for Structural Performance of Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference

#### E2430 Standard Specification for Expanded Polystyrene (“EPS”) Thermal Insulation Boards For Use in Exterior Insulation and Finish Systems (“EIFS”)

#### G155 Standard Practice For Operating Xenon Arc Light Apparatus For Exposure Of Non-Metallic Materials

### APA

#### Voluntary Product Standard: PS 1, Structural Plywood

#### Voluntary Product Standard: PS 2, Performance Standard for Wood Based Wood structural panels.

### C. NFPA

#### NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components

#### NFPA 268 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source

## SUBMITTALS

### Submit under the provisions of Section [01 33 00]

### Product data on assembly materials, including specifications, assembly details, installation and warranty information.

### Shop drawings to be provided by the subcontractor.

### Samples: two 6 inches by 6-inch finish coat sample per designers’ request

## DESIGN CRITERIA

### Structural

#### Maximum deflection not to exceed L /360 of the span under positive or negative design load.

#### Design for Design for wind load in conformance with local building requirements

#### Maximum stud spacing: 16 inches (406 mm) on center.

### Moisture / air control

#### The wall must be allowed to drain in accordance with the International Building codes.

#### Do not use vapor retarders on the interior side of the wall.

#### Provide flashing to direct water to the exterior, including above window and door heads, window and door sills, at roof wall intersections, decks, high to low wall intersections, at the base of the wall, and where required by code and in the project details.

#### Provide continuity of the air barrier system at every transition and termination on the wall.

**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.

### System Joint

#### Locate control joints approx. every 600 square foot of wall surface area with a maximum length or width of 24 lineal ft. and a maximum length to width ration of 2.5:1.

#### Expansion joints are required at building expansion joints, wood framed floor lines and where structural movement is anticipated. Locations must be called out in construction drawings.

#### Control joints must be placed in line with cement board joints and additional framing will be needed for the attachment of the cement board at vertical control joints.

#### Minimum 3/8” joints are required at all penetrations and transitions to dissimilar materials.

#### Accessories are required at cement board terminations.

### Fire Rated Assemblies / Non-combustible Assembly

#### Ensure that the assembly complies with an associated UL assembly, Fire rated assembly, Non- combustible, NFPA 285 tested, or listed in the code compliance report.

### Stucco Installation

#### Not to be used below grade or on walls with negative water pressure.

#### System terminates a minimum of 4 inch (100 mm) above earth grade, minimum 2 inch (51 mm) above finished grade.

#### System should be used on vertical walls only.

### Foam Shapes

#### Horizontal/Sloped surfaces of Foam shapes must be coated with FACADESXi - WaterLock.

#### Slope Minimums; Standing Snow areas – 6:12, No Standing Snow - 3:12

#### Horizontal surfaces will gather dirt easier than vertical walls and require more consistent maintenance.

## QUALITY ASSURANCE

### Manufacturer

* + - 1. Manufacturer’s products have been installed for over 20 years on over 10 million square feet.

### Applicator

#### Listed by FACADESXi Wall Systems. Licensed, insured and engaged in application of stucco and coatings for a minimum of 3 years.

#### Employ mechanics who are skilled and experienced in stucco applications and knowledgeable in the FACADESXi WaterShield Cement Board Assembly.

### Conform to all applicable building code requirements.

### 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

### 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.

## PERFORMANCE CRITERIA

### Air /Weather Barrier Coatings: Compliant with Acceptance Criteria AC 212/ASTM E2570 Water-resistive Coatings Used as Water-resistive Barriers over Exterior Sheathing

### Cement Board must comply with ASTM C1325 for exterior use.

### Cement Board Coatings: Compliant with Acceptance Criteria AC 59 Direct Applied Exterior Finish Systems (DEFS)

## DELIVERY/STORAGE/HANDLING

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

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

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

### Protect Portland cement-based material (bag products) from moisture and humidity. Store under cover and off the ground in a dry location.

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

## PROJECT CONDITIONS

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

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

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

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

## COORDINATION AND SCHEDULING

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

### Coordinate and schedule installation of FACADESXi with related work; windows, doors, flashing, AC units, foundation waterproofing, roofing, trim, flashing, and joint sealers; to prevent water infiltration behind and the drainage of the system.

### Protect sheathing per industry and/or sheathing manufacturer’s instructions.

### Install sealant immediately after stucco finish has dried.

### Attach penetrations through the stucco per FACADESXi Application Details.

## WARRANTY

### A Provide FACADESXi Wall systems limited material warranty under project provisions.

### 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**](http://www.FACADESXi.com/)

## 2.2 SYSTEM/MATERIALS

### A. System: FacadesXi WaterShield CB Cement Board Assembly: Substrate, water resistive barrier, drainage plane, cement board, joint reinforcement, fiberglass mesh reinforced base coat, [primer], acrylic integrally colored finish coat.

### B. Materials

#### Air/Weather Barrier

##### WaterShield Assembly

###### WaterShield – Liquid applied air/ water barrier.

###### WaterShield Joint Mesh– Reinforcement for Watershield over joints and gaps

###### WaterShield - SAF Self Adhered Flashing peel and stick WaterShield Flashing Tape: Primer-Free peel and stick Tape designed for use with stucco and EIFS systems The polyester fabric top layer provides an excellent bonding surface for cementitious and synthetic stucco coatings.

###### Xi-FlashFill: Gunnable, or Trowelable waterproofing Sealant applied at 12 mils.

*This system requires a means of drainage between the water barrier and the cement board.*

#### Drainage Plane

#### Drainage Mat: Randomly oriented, geometric patterned drainage and ventilation mat or equal.

#### Polyolefin sheet good with drainage grooves.

#### Other as approved by FXI.

#### Cement Board (by others): ½” PermaBase™ Cement Board in Compliance with ASTM C1325

#### Cement Board Fasteners (by others): Per National Gypsum PermaBase installation instructions and code compliance for the required wind load.

#### Accessories:

#### Starter Track, Casing Bead, Control Joints, Corner Bead PVC in compliance with ASTM D1784.

##### Sheathing attachment: 3/8” Stainless steel staple (1/2" crown.)

##### Framing/Wood Sheathing attachment: Stainless steel nails or pan head screws

#### Cement Board Joint Reinforcement

##### Base Coat: [Xi-Dry Acrylic Base Coat or Xi-Acrylic Base Coat: Dry polymer containing Portland cement mixed with water in the field or 100% acrylic base coat mixed with Portland cement in the field.]

##### Reinforcing Mesh: 4” Xi-Mesh Standard Reinforcing Mesh: 4.2 oz/ yd2 open weave glass fiber coated reinforcing mesh.]

#### Cement Board Coating

##### Base Coat: [Xi-Dry Acrylic Base Coat or Xi-Acrylic Base Coat: Dry polymer containing Portland cement mixed with water in the field or 100% acrylic base coat mixed with Portland cement in the field.]

##### Reinforcing Mesh: Xi-Mesh Standard Reinforcing Mesh: 4.2 oz/ yd2 open weave glass fiber coated reinforcing mesh.]

#### [Foam Shapes

##### Insulation board: Expanded Polystyrene (EPS), Nominal 1.0 lb/ft3 (16 kg/m3) in compliance with ASTM C578 Type I /ASTM E2430.

##### Foam shape thickness for Non-combustible construction is limited to 4″ in thickness.

##### Base Coat:

###### Xi-WaterLock: Waterproof Base Coat for Sloped surfaces - acrylic-based, fiber-reinforced, waterproofer mixed with Portland cement in the field.

###### 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.

##### 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.

#### [Xi-Primer (OPTIONAL PER SPECIFIER): 100% Acrylic tintable primer]

#### Xi-Textured Acrylic Finish Coat

##### 100% Acrylic polymer, dirt pick up resistant textured finish coat water based acrylic coating with integral color and texture.

##### Color:

##### 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:

#### Substrate is allowable and code compliant.

#### Surfaces must be free of mildew, dirt, efflorescent, oils, damage deterioration or any foreign materials.

#### Surfaces must be free from excessive moisture; moisture content should be recorded before installation of the water barrier materials.

#### Openings, Roofs, terminations have been properly flashed

### B. Substrate – Fire Rated wall should be per the assembly - Choose one

[½” minimum Exterior Glass mat gypsum Sheathing complying with ASTM C1177]

[½” minimum Exterior fiber reinforced cement sheathing complying with ASTM C1325]

[½” minimum APA Exposure 1 or exterior plywood (Grade C/D or better)]

[½” minimum APA Exposure I OSB]

[Gypsum sheathing (ASTM C79/C1396)]

[Other substrate, or Painted as approved by Facades XI]

### 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.

## PREPARATION

### Framing, Sheathing, Substrate

#### Sheathing must be installed per the applicable manufacturer /industry standards.

### Flashing

#### 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.

#### Roof Flashing, Kick out Flashing must be installed per project design.

#### Install copings and sealants after Stucco assembly has been installed and is completely dry.

#### Do not proceed until all unsatisfactory conditions have been corrected.

## APPLICATION

### Mixing

#### Mix each product in accordance with the must current product datasheet.

#### No additives are permitted to any components unless specifically approved by FXI.

The transition of water barriers on the project with other materials and/or with other water barriers on the project must be considered by the designer before installation.

### Air/Water Barrier

#### Coordinate installation with all flashing, terminations, roofing, accessories, windows, other adjacent water barrier materials to provide an air/watertight assembly.

#### Install WaterShield and WaterShield accessory products in accordance with the WaterShield Product datasheet and system details.

#### Treat all Gaps, joints, corners and dissimilar transitions with the appropriate Joint Treatments to ensure a water and airtight assembly.

#### After Flashings, window fins, penetrations are installed, install Watershield transition treatment per project details to create a waterproof connection and positive drainage.

#### Watershield Field Application: Install in accordance with the WaterShield Product datasheet and system details.

#### The wet mil will be approximately 10-12 wet mils.

##### OSB/Plywood: Plywood/OSB surface may create imperfections in the WaterShield. The WaterShield must be re applied in any areas that are not completely covered.

##### Apply 2 coats, allowing the first coat to fully dry. It may require back rolling with a ¾” nap roller for complete coverage without pinholes.

#### Transition between Water Resistive Barriers: When there is a transition between WaterShield and Non-FacadesXi materials, consult FacadesXi Technical Services. The adhesion between products is not always known and testing may be necessary.

### Drainage Plane. Temporarily install with as few fasteners as possible to hold the paper in place until the installation of the lath.

### Accessories

#### If the accessory does not lay flat on the wall, blocking may be required.

#### Base of Wall: Attach the starter track at the base of wall as shown on details at 16” o.c. with the proper fastener. Abut pieces together and miter outside corners.

#### All Terminations: At all cement board terminations such as windows, doors, floor lines, roof lines, et.at.; attach the accessories, starting at least 1” from each end, at 16” o.c. into the framing 1/2" into wood studs and 3 screw threads into steel studs. Adhesive approved by FXI are allowed to level out the mechanical attachment.

#### Expansion Joints: Install back to back casing beads or expansion joint accessories at building expansion joints, through wall joints,at dissimilar substrates, building height changes, floor lines if required.

#### Trim intersections: Gap abutting pieces approx.1/8” apart and set intersection in bed of adhesive. Vertical trims should be continuous.

### Cement Board

#### Install Cement board over the drainage medium, vertically or horizontally.

#### Offset cement board joints from sheathing joints a min of 6 inches.

#### Stagger vertical joints of the cement board, butt edges close and flush at the surface.

#### Boards must be “L” shaped around openings and large penetrations. Alternative to L shaped cement boards, 9” wide strips of reinforcing mesh can be installed in diagonals at corners.

#### Install edges into starter tracks and casing beads as indicated on drawings.

#### Fasten boards through the sheathing and into the framing 8” oc around the perimeter and 12” in the field of the boards along the studs; the fasteners must be flush with the surface of the cement board. Fastener locations may depend upon designed wind loads.

### Face Mounted Accessories: As shown on details install one piece control joints, inside and outside corners to the face of the cement board with adhesive or mechanical fasteners. In lieu of fastening, the accessory may be attached by completely embedding the front flange in Xi-Base Coat and Reinforcing mesh.

### Joint Reinforcement: Apply mixed Base coat and reinforce with 4” Xi Mesh centered at all cement board joints, over accessory flanges and 9” x 12” Xi-Mesh diagonally at corners without” L” Shaped Cement board.

### [Foam Shapes

#### 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).

#### Immediately install foam shapes, ornamental pieces applying uniform pressure to promote maximum adhesive contact.

#### Allow the foam insulation shapes to set undisturbed overnight. Cold and humid conditions may require greater than 24 hours before rasping.

#### Rasp the surface of the insulation board smooth, if applicable.

#### 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".

#### 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.

#### 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.

#### The foam shape can be coated with lath and stucco or with foam shape base coat and reinforcing mesh, both must be tied into the stucco wall

### Cement Board Coating

#### Apply mixed Base coat and reinforce with Xi reinforcing mesh to the entire surface the cement board with a stainless-steel trowel to a minimum thickness of 1/16”.

#### Reinforcing Mesh must be discontinuous at control and expansion joint and lapped over accessory trims.

#### Allow the base coat to completely dry before installation of the primer/finish coat.]

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

### Apply Selected Finish coat per the product datasheet.

## 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.

All information contained in this specification conforms to standard detail and product recommendations for the installation of FACADESXi products and should be used for guidance only. There may be additional information and/or equivalent means of installation that are not referenced in FACADESXi’s specifications. All FACADESXi products shall be installed in accordance with FACADESXi product datasheets and all applicable building codes and industry standard practices.

The design, engineering and final details incorporating any FACADESXi product are the sole responsibility of the project design professional. FACADESXi is not responsible for determining the acceptability and/or applicability of any FACADESXi product for any specific project or condition. FACADESXi disclaims all liability for improper installation, workmanship, or design by a third-party. EXCEPT FOR ANY EXPRESS REPRESENTATIONS AND WARRANTIES BY FACADESXi, ALL IMPIED WARRANTIES OF ANY KIND, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COMPLIANCE WITH LAWS OR GOVERNMENT RULES OR REGULATIONS APPLICABLE TO THE PROJECT, ARE HEREBY DISCLAIMED.

FACADESXi ’s website should always be consulted for the latest version of any details, specifications and/or product information. Contact FACADESXi for any technical assistance.



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