SECTION 074243 - COMPOSITE WALL PANELS

TIPS:

To view non-printing **Editor's Notes** that provide guidance for editing, click on MasterWorks/Single-File Formatting/Toggle/Editor's Notes.

To read **detailed research, technical information about products and materials, and coordination checklists**, click on MasterWorks/Supporting Information.

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PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Exterior panelized fiber-cement rainscreen cladding system and accessories.
2. Interior panelized fiber-cement cladding system and accessories.

1.2 DEFINITIONS

A. DBVR: Drained and back-ventilated rainscreen system; designed to drain and dry cavity entering water through drainage channels, weeps, and air ventilation.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at [**Project site**] <**Insert location**>.

1. Meet with Owner, Architect, Owner's insurer if applicable, composite panel Fabricator and Installer, composite panel manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects composite panels, including installers of doors, windows, and louvers.
2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to composite panel installation, including manufacturer's written instructions.
4. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
5. Review flashings, special siding details, wall penetrations, openings, and condition of other construction that affect composite panels.
6. Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.
7. Review temporary protection requirements for composite panel assembly during and after installation.
8. Review procedures for repair of panels damaged after installation.
9. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Sustainable Design Submittals:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
2. Laboratory Test Reports: For ceilings and walls, indicating compliance with requirements for low-emitting materials.

C. Shop Drawings:

1. Include details of panel dimensions, profiles, edge conditions, joints, corners, anchorages, attachment assembly, trim, flashings, closures, and accessories; and special details.

2. Accessories: Include details of the flashing, trim, and anchorage, at a scale of not less than 1-1/2 inches per 12 inches (1:10).

D. Samples for Initial Selection: For each type of composite panel indicated with factory-applied color finishes.

1. Include similar Samples of trim and accessories involving color selection.

E. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.

1. Composite Panels: 12 inches (305 mm) long by actual panel width. Include fasteners, closures, and other composite panel accessories. Submit custom color samples in paint manufacturer's standard size.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Test Reports: For each product, tests performed by a qualified testing agency.

1. Composite Manufacturer's Material Test Reports: Certified test reports showing compliance with specific performance or third-party listing documenting compliance to comparable code sections IBC 1404.16.1 and IBC 1703.5.
2. Composite Panel System Fabricator's Certified System Tests Reports: Certified system test reports showing system compliance with specific performance or third-party listing documenting compliance code section. Base performance requirements on composite panel system type provided.

a. DBVR System: Tested to AAMA 509.

C. Field quality-control reports.

D. Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For composite panels to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by composite panel fabricator.

B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for composite panel fabrication and installation.

1. Build mockup of typical composite panel assembly [**as indicated on Drawings**] <**Insert size**>, including [**corner,**] [**soffits,**] supports, attachments, and accessories.
2. Water-Spray Test: Conduct water-spray test of mockup of composite panel assembly, testing for water penetration in accordance with AAMA 501.2.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, composite panels, and other manufactured items so as not to be damaged or deformed. Package composite panels for protection during transportation and handling.

B. Unload, store, handle, and erect composite panels in a manner to prevent bending, cracking, warping, twisting, and surface damage.

C. Stack composite panels on platforms or pallets no more than two pallets high, covered with suitable weathertight and ventilated covering.

D. Store composite panels to ensure dryness, with positive slope for drainage of water. Do not store composite panels in contact with other materials that might cause staining, denting, or other surface damage. Ensure panels are fully dry before installation.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of composite panels to be performed in accordance with manufacturers' written instructions and warranty requirements.

1.10 COORDINATION

A. Coordinate composite panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.11 WARRANTY

A. Warranty on Panel Material: Manufacturer agrees to replace fiber cement that fails within specified warranty period.

1. Warranty Period: [**15**] [**20**] years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer agrees to repair finish or replace composite panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than [**40**] <**Insert number**> percent.

B. Products shall comply with requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Products shall comply with requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

D. Products shall comply with requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." Formaldehyde emissions shall not exceed 16.5 mcg/cu. m or 13.5 ppb, whichever is less.

E. Products shall comply with requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

F. Physical Performance: Provide composite panel system in accordance with ASTM C1186.

1. Wet Flexural Strength: Result: 1418 psi (9777 kPa), Lower Limit: 1015 psi (6998 kPa).
2. Water Tightness: No water droplets observed on any specimen.
3. Freeze-Thaw: No damage or defects observed.
4. Warm Water: No evidence of cracking, delamination, swelling, or other defects observed.
5. Heat-Rain: No crazing, cracking, or other deleterious effects, or surface or joint changes observed in any specimen.

G. Structural Performance: Provide composite panel systems capable of withstanding the effects of the following loads, based on testing in accordance with ASTM E330/E330M:

1. Design Wind Loads: Minimum [**58 psf (2.78 kPa)**] <**Insert loads**>.
2. Other Design Loads: [**As indicated on Drawings**] <**Insert loads**>.
3. Deflection Limits: For wind loads, panel deflection no greater than L/120 of the span.
4. <**Insert serviceability requirements**>.

H. Thermal Expansion: Maximum 0.00000318 deg F to minus 1 (0.000005724 deg C to minus 1) when tested in accordance with ASTM E228.

I. Air Leakage: 1.53 cfm/sq. ft. (7.78 L/s/sq. m) or less in accordance with AAMA5094.

J. Water Penetration under Static Pressure: No water penetration to room side of assembly when tested for 15 minutes in accordance with ASTM E331 at the following test-pressure difference:

1. Test-Pressure Difference: [**2.86 lbf/sq. ft. (137 Pa)**] [**6.24 lbf/sq. ft. (300 Pa)**].

K. Fire Propagation Characteristics: Composite panel wall assembly passes NFPA 285.

L. Surface-Burning Characteristics: Provide composite panels that meet the following values when tested in accordance with ASTM E84:

1. Flame-Spread Index: Zero.
2. Smoke-Developed Index: 5.

M. Fire Resistance: Composite panel wall assembly passes ASTM E119.

N. Ignition Resistance: Composite panel passes NFPA 268.

2.2 COMPOSITE WALL PANELS <**Insert drawing designation**>

A. Composite Wall Panel Systems: Provide factory-formed and -assembled, composite wall panels fabricated from a pressed, stamped, and autoclaved mix of portland cement, fly ash, silica, recycled rejects, and wood fiber bundles; formed into profile for installation method indicated. Include attachment assembly components and accessories required for weathertight system.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Nichiha Architectural Wall Panels; Architectural Wall Panels or comparable product by one of the following:

a. Cembrit.
b. MEW USA Inc.
c. Swisspearl.
d. <**Insert manufacturer's name**>.

B. Lightly Textured, Wood Plank Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 71-9/16 inches (455 by 1818 mm)**] [**17-7/8 by 119-5/16 inches (455 by 3030 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: Wood plank texture [**with 3/8-inch (10-mm) grooves**] [**as indicated on Drawings**], running lengthwise [**at 6 inches (152 mm) o.c.**] [**as indicated on Drawings.**]
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

C. Moderately Textured, Wood Plank Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 119-5/16 inches (455 by 3030 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: Wood plank texture [**with 3/8-inch (10-mm) grooves**] [**as indicated on Drawings**], running lengthwise [**at 4-1/2 inches (114.3 mm) o.c.**] [**as indicated on Drawings.**]
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

D. Smooth, Semigloss Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 71-9/16 inches (455 by 1818 mm)**] [**17-7/8 by 119-5/16 inches (455 by 3030 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: None.
5. Color: [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

E. Smooth, High-Gloss Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 71-9/16 inches (455 by 1818 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: None.
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: None.

F. Simulated Tile Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 71-9/16 inches (455 by 1818 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**13/16 inch (21 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: Simulated tile texture [**with 3/8-inch (9-mm) deep grooves**] [**as indicated on Drawings**], running vertically [**at 23-7/8 inches (606 mm) o.c.**] [**as indicated on Drawings**] and horizontally [**at 6 inches (152 mm)**] [**as indicated on Drawings**].
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

G. Lightly Textured, Matte Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 71-9/16 inches (455 by 1818 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: None.
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3.5-inch (89-mm) returns**] [**as indicated on Drawings**].

H. Moderately Textured, Matte Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 71-9/16 inches (455 by 1818 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: None.
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

I. Ribbed, Textured Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 119-5/16 inches (455 by 3030 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: [**1-3/8-inch (35-mm) chamfered ribs**] [**As indicated on Drawings**], moderately textured [**with 3/8-inch (10-mm) smooth grooves**] [**as indicated on Drawings**].
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

J. Distressed Brick-Textured Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 71-9/16 inches (455 by 1818 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**3/4 inch (18 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: Modular running brick texture with faux mortar joints.
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

K. Ashlar Stone-Textured Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 71-9/16 inches (455 by 1818 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**3/4 inch (18 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: Stone texture [**with 1/4-inch (6-mm) faux vertical joint**] [**as indicated on Drawings**] [**at midpoint**] [**as indicated on Drawings**].
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

L. Brick-Textured Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 71-9/16 inches (455 by 1818 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: Modular running brick texture with faux mortar joints.
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

M. Concrete-Textured, Matte Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 119-5/16 inches (455 by 3030 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: None.
5. Color: Standard.
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

N. Concrete-Textured, Dimpled Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 119-5/16 inches (455 by 3030 mm)**] [**As indicated on Drawings**].
2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: Smooth concrete texture with faux form-tie dimples [**at 22-1/16 inches (560 mm) long**] and [**11-1/2 inches (292 mm) high**] [**as indicated on Drawings**].
5. Color: Standard.
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

O. Rough-Face, Brick-Textured Composite Wall Panels <**Insert drawing designation**>:

1. Panel Dimensions: [**17-7/8 by 71-9/16 inches (455 by 1818 mm)**] [**As indicated on Drawings**].

2. Panel Thickness: [**5/8 inch (16 mm)**] [**As indicated on Drawings**].
3. Panel: Factory sealed on all six sides.
4. Profiles: Rough-faced modular running brick texture with faux mortar joints.
5. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].
6. Accessory Components: Manufactured corners [**with 3-1/2-inch (89-mm) returns**] [**as indicated on Drawings**].

2.3 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C645, cold-formed, metallic-coated steel sheet with ASTM A653/A653M, G90 (Z275) hot-dip galvanized coating designation or ASTM A792/A792M, Class AZ50 (Class AZM150) aluminum-zinc-alloy coating designation unless otherwise indicated. Provide Fabricator's standard sections as required for support and alignment of composite panel system.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Nichiha Architectural Wall Panels; Ultimate [**Horizontal**] [**and**] [**Vertical**] Starter Track or comparable product by one of the following:

    a. Cembrit.
    b. MEW USA Inc.
    c. Swisspearl.
    d. <**Insert manufacturer's name**>.

B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of composite panels unless otherwise indicated.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Nichiha Architectural Wall Panels; Ultimate Clip System or comparable product by one of the following:

    a. Cembrit.
    b. MEW USA Inc.
    c. Swisspearl.
    d. <**Insert manufacturer's name**>.

C. Flashing and Trim: Provide [**anodized**] [**galvanized**] [**or**] [**PVC-coated**] aluminum flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, endwalls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Nichiha Architectural Wall Panels; Essential Flashing System or comparable product by one of the following:

    a. Cembrit.

b. MEW USA Inc.
c. Swisspearl.
d. <**Insert manufacturer's name**>.

2. Aluminum Trim: Formed with 0.040-inch (1.00-mm-) thick, coil-coated aluminum sheet facings.
3. Color: [**As indicated by manufacturer's designations**] [**As selected by Architect from manufacturer's full range**] [**As indicated on drawing schedule**].

D. Panel Fasteners: Provide corrosion-resistant fasteners as required for construction method used.

E. Panel Sealants: ASTM C920, Class 35; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in composite panels and remain weathertight; and as recommended in writing by composite panel manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, composite panel supports, and other conditions affecting performance of the Work.

1. Examine wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by composite panel manufacturer.
2. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by composite panel manufacturer.

a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Examine roughing-in for components and assemblies penetrating composite panels to verify actual locations of penetrations relative to seam locations of composite panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages in accordance with composite panel manufacturer's written instructions.

3.3 COMPOSITE PANEL INSTALLATION

A. General: Install composite panels in accordance with Fabricator's written instructions in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to supports unless otherwise indicated. Anchor composite panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving composite panels.
2. Flash or seal composite panels at perimeter of all openings. Fasten flashing with manufacturer-approved fasteners. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by composite panels are installed.
3. Install screw fasteners in predrilled holes.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Install flashing and trim as composite panel work proceeds.
6. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:

1. Composite Panels: Use hot-dip galvanized, ceramic-coated, or stainless steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.

C. Attachment Assembly, General: Install attachment assembly required to support composite wall panels and to provide a complete weathertight wall system, including subgirts, perimeter extrusions, tracks, drainage channels, panel clips, and anchor channels.

1. Include attachment to supports, panel-to-panel joinery, panel-to-dissimilar-material joinery, and panel-system joint seals.

D. Panel Installation: Attach composite wall panels to supports at locations, at spacings, and with fasteners recommended in writing by Fabricator to achieve performance requirements specified.

1. DBVR Rainscreen System: Install using Fabricator's standard assembly with horizontal channel that provides support and secondary drainage assembly, draining at base of wall. Attach composite wall panels by placing panel clips to supports at locations, at spacings, and with fasteners recommended in writing by Fabricator.

a. Track-Support Installation: Install support assembly at locations, at spacings, and with fasteners recommended in writing by manufacturer. Use Fabricator's standard horizontal [**tracks**] [**drain channels**] that provide support and secondary drainage assembly.

b. Panel Installation:

1) Attach composite wall panels by interlocking panel edges with Fabricator's standard clips.

c. Joint Sealing: Seal all joints in accordance with AAMA 509. Do not apply sealants to joints unless otherwise indicated.

E. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete composite panel assembly including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by composite panel Fabricator; or, if not indicated, provide types recommended in writing by composite system Fabricator.

F. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, or SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

1. Install exposed flashing and trim that is without buckling and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 ft. (3 m) with no joints allowed within 24 inches (605 mm) of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

3.4 ERECTION TOLERANCES

A. Site Verifications of Conditions:

1. Verify that conditions of substrate previously installed under other Sections are acceptable for composite system installation. Provide documentation indicating detrimental conditions to composite system performance.
2. Once conditions are verified, composite system installation tolerances are as follows:

a. Shim and align composite wall panel units within installed tolerance of 1/4 inch in 20 ft. (6 mm in 6 m), non-accumulative, on level, plumb, and location lines as indicated, and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.5 FIELD QUALITY CONTROL

A. Testing Agency: [**Owner will engage**] [**Engage**] a qualified testing agency to perform tests and inspections.

B. Water-Spray Test: After installation, test area of assembly [**indicated on Drawings**] [**as directed by Architect**] <**Insert area**> for water penetration in accordance with AAMA 501.2.

C. Fabricator's Field Service: Engage a factory-authorized service representative to test and inspect completed composite wall panel installation, including accessories.

D. Composite wall panels will be considered defective if they do not pass test and inspections.

E. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.

F. Prepare test and inspection reports.

3.6 CLEANING AND PROTECTION

A. Remove temporary protective coverings, if any, as composite panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of composite panel installation, clean finished surfaces as recommended by composite panel manufacturer. Maintain in a clean condition during construction.

B. After composite panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

C. Replace composite panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074243