THIS GUIDE SPECIFICATION DOCUMENT IS INTENDED FOR:

BEMO’s **ASPECT** Aluminum Plate Wall Panel System.

THESE SPECIFICATIONS WERE CURRENT AT THE TIME OF PUBLICATION BUT ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE.

THIS GUIDE SPECIFICATION IS WRITTEN ACCORDING TO THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI) FORMATS, INCLUDING MASTER FORMAT, SECTION FORMAT, AND PAGE FORMAT.

CAREFULLY REVIEW AND EDIT THIS SECTION TO MEET THE REQUIREMENTS OF THE PROJECT, LOCAL BUILDING CODE AND AUTHORITIES HAVING JURISDICTION. COORDINATE THIS SECTION WITH OTHER SPECIFICATION SECTIONS AND DRAWINGS.

DELETE ALL "SPECIFIER NOTES" IN BLUE FONT WHEN EDITING THIS SECTION.

Edit document to suit project specific requirements and specifier practice.

Text edits are required at sections shown in red font.

Remove unused optional text in final version of the specification document.

SECTION 07 42 13.16 – ALUMINUM PLATE WALL PANELS

1. GENERAL
   * + 1. SUMMARY
          1. Work of this section includes but is not limited to the design, fabricating, finishing, and erecting of the aluminum plate panel system.
          2. Provide an aluminum plate panel rain screen system and support system mounting hardware, where shown on the drawings as specified, and as needed for proper installation.
       2. RELATED REQUIREMENTS BY OTHERS
          1. Section 06 XX XX – Rough Carpentry
          2. Section 07 XX XX – Thermal Insulation
          3. Section 07 XX XX – Air Barrier
          4. Section 07 XX XX – Joint Sealants
       3. QUALTIY ASSURANCE
          1. Aluminum Plate Wall Panel Manufacturer Qualifications: Minimum 3 years’ experience in metal fabrication and supplying metal wall panel systems.
          2. Aluminum Plate Wall Panel Installer Qualifications: Minimum 3 years’ experience installing commercial metal wall panel systems.
       4. PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" Paragraph below if Work of this Section is extensive or complex enough to justify a conference.

* + - * 1. Preinstallation Conference: Conduct conference at [**Project site**] <**Insert location**>.

If needed, insert list of conference participants not mentioned in Section 13100 "Project Management and Coordination."

Meet with Owner, Architect, Owner's insurer if applicable, metal panel Installer, metal panel manufacturer's representative, structural-support Installer, and installers whose work interfaces with or affects metal panels, including installers of doors, windows, and louvers.

Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

Review methods and procedures related to metal panel installation, including manufacturer's written instructions.

Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.

Review flashings, special siding details, wall penetrations, openings, and condition of other construction that affect metal panels.

Review governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.

Review temporary protection requirements for metal panel assembly during and after installation.

Review procedures for repair of metal panels damaged after installation.

Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

* + - 1. ACTION SUBMITTALS
         1. Product Data: For each type of product.

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

* + - * 1. Shop Drawings:

Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment assembly, trim, flashings, closures, and accessories; and special details.

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

Retain "Samples for Initial Selection" and "Samples for Verification" paragraphs for two-stage Samples.

* + - * 1. Samples for Initial Selection: For each type of metal panel indicated with factory-applied color finishes.

Include similar Samples of trim and accessories involving color selection.

* + - * 1. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.

Metal Panels: 12 inches long by actual panel width. Include fasteners, closures, and other metal panel accessories.

* + - 1. INFORMATIONAL SUBMITTALS

Coordinate "Qualification Data" Paragraph below with qualification requirements in Section 014000 "Quality Requirements" and as may be supplemented in "Quality Assurance" Article.

* + - * 1. Qualification Data: For Installer.
        2. Product Test Reports: For each product, tests performed by a qualified testing agency.

Retain "Field quality-control reports" Paragraph below if Contractor is responsible for field quality-control testing and inspecting.

* + - * 1. Field quality-control reports.
        2. Sample Warranties: For special warranties.
      1. CLOSEOUT SUBMITTALS
         1. Maintenance Data: For metal panels to include in maintenance manuals.
      2. QUALITY ASSURANCE
         1. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
         2. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

Retain first subparagraph below for large-scale mockup. Indicate portion of building represented by mockup on Drawings or draw mockup as separate element. Revise to suit Project or if larger mockup is needed for field performance testing.

Build mockup of typical metal panel assembly [**as shown on Drawings**] <**Insert size**>, including [**corner,**] [**soffits,**] supports, attachments, and accessories.

Water-Spray Test: Conduct water-spray test of mockup of metal panel assembly, testing for water penetration according to AAMA 501.2.

Retain first subparagraph below if mockups are not only for establishing appearance factors.

Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

Retain subparagraph below if the intention is to make an exception to the default requirement in Section 014000 "Quality Requirements" for demolishing and removing mockups.

Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

* + - 1. DELIVERY, STORAGE, AND HANDLING
         1. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
         2. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
         3. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.
         4. Retain strippable protective covering on metal panels during installation.
      2. FIELD CONDITIONS
         1. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.
      3. COORDINATION
         1. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.
      4. WARRANTY

When warranties are required, verify with Owner's counsel that special warranties stated in this article are not less than remedies available to Owner under prevailing local laws.

* + - * 1. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

Failures include, but are not limited to, the following:

Structural failures including rupturing, cracking, or puncturing.

Deterioration of metals and other materials beyond normal weathering.

Verify available warranties and warranty periods for metal panels.

Warranty Period: [**Two**] <**Insert number**> years from date of Substantial Completion.

* + - * 1. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

Usually retain "Exposed Panel Finish" Subparagraph below for fluoropolymer finishes; verify availability with manufacturer.

Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

Color fading more than 5 Hunter units when tested according to ASTM D2244.

Chalking in excess of a No. 8 rating when tested according to ASTM D4214.

Cracking, checking, peeling, or failure of paint to adhere to bare metal.

Verify available warranties for metal panel finishes and insert number in "Finish Warranty Period" Subparagraph below. A 20-year period is available for fluoropolymer finish and is the maximum included with manufacturers' published data. Longer periods for premium finishes may be available.

Finish Warranty Period: [**20**] [**10**] <**Insert number**> years from date of Substantial Completion.

1. PRODUCTS
   * + 1. ALUMINUM PLATE WALL PANELS <Insert drawing designation, or remove>
          1. Provide factory-formed, aluminum metal plate wall panels fabricated from single sheets of metal formed into profile for installation method indicated. Include attachment assembly components, [panel stiffeners], and accessories required for weathertight system.

Basis of Design:

**BEMO ASPECT** as manufactured by BEMO USA Corporation, 1755 N. 48th Street, Mesa, Arizona 85205. Tel 877-530-BEMO (2366) or 480-545-7900; wwww.bemousa.com.

Alternate:

Subject to Architectural Approval.

* + - * 1. Joint Width: ¾”
        2. System Depth: 2 3/8”
        3. Aluminum Sheet: Tension-leveled, smooth aluminum sheet, ASTM B209, [0.125”] [0.080”] thick
        4. Exterior Finish: [Two-coat fluoropolymer] [Three-coat fluoropolymer] [Mica fluoropolymer] [Metallic fluoropolymer] [FEVE fluoropolymer] [Clear anodized] [Color anodized] <Insert finish>.
        5. Aluminum Extrusions: BEMO ASPECT continuous male-female 6061-T6 and/or 6063-T6.
        6. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

Delete next paragraph if a coil coated exterior paint finish is desired.

* + - * 1. Concealed Finish: The unexposed sheet surfaces shall be bare as furnished by the mill. Overspray of primer and/or top coat(s) will not will not affect the use or performance of the unexposed surface of the material.
      1. PERFORMANCE REQUIREMENTS
         1. Design, fabricate and install an Aluminum Plate material as pressure equalized rain-screen panel system to the following standards & requirements:
         2. The Aluminum Plate Wall Panel system MUST be the BEMO ASPECT design. All mounting hardware must also be fully concealed with color matched splines utilizing the same AAMA 2605 approved 70% PVDF paint technology as the exterior finish, provided by manufacturer.
         3. Only a progressive system (independent panel, one-from-another), using sliding male-female clip components, which are held to the panels perimeter extrusion using screws. This design must enable a single panel to be independently removed and re-installed.
         4. Any Aluminum Plate panel system not meeting the standards & requirements outlined herein, or any panel system utilizing a track or grid layout, or one that involves a “picture frame style” post-painted extrusion incorporating a face panel, or one that utilizes adhesives in place of mechanical fasteners in the panel design, are NOT considered as equal or comparable in design or performance, to the BEMO ASPECT panel system.
         5. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E330:

Wind Loads: As indicated on Drawings.

Other Design Loads: [**As indicated on Drawings**] <**Insert loads**>.

Deflection Limits: For wind loads, no greater than [**1/180**] [**1/240**] <**Insert deflection**> of the span.

* + - * 1. Air Infiltration: Air leakage of not more than 0.01 cfm/sq. ft. when tested according to ASTM E283 at the following test-pressure difference:

Test-Pressure Difference: [**1.57 lbf/sq. ft.**] [**6.24 lbf/sq. ft.**].

* + - * 1. Water Penetration under Static Pressure: No uncontrolled water penetration when tested according to ASTM E331 over a period of 15 continuous minutes.
        2. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

Differential values (for aluminum in particular) in "Temperature Change (Range)" Subparagraph below are suitable for most of the U.S.; revise to suit Project.

Temperature Change (Range): [**120 deg F, ambient; 180 deg F, material surfaces**] <**Insert temperature range**>.

Retain "Fire-Resistance Ratings" Paragraph below only if products specified are part of a fire-resistance-rated assembly. Indicate rating, testing agency, and testing agency's design designation on Drawings.

* + - * 1. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

Fire Propagation Characteristics: Aluminum Plate wall panel system NFPA 285 testing.

* + - 1. MISCELLANEOUS MATERIALS
         1. Miscellaneous Metal Subframing and Furring: ASTM C645, cold-formed, metallic-coated steel sheet, ASTM A653/A653M, G90 coating designation or ASTM A792/A792M, Class AZ50 aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

Retain panel accessories, flashing, and trim as required and coordinate with those specified in Section 076200 "Sheet Metal Flashing and Trim."

* + - * 1. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fascia, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
        2. Flashing and Trim: Provide flashing and trim formed from same material as metal panels 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. Finish flashing and trim with same finish system as adjacent metal panels.
        3. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.
        4. Panel Sealants: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer. Provide sealant types that are compatible with panel materials, are nonstaining, and do not damage panel finish.
      1. FABRICATION
         1. Fabrication Method: Rout and return or radius bent system with non-welded corners and 1/8” radius pan formed edges [back-cut 90º edges].
         2. Prepare mitered BEMO ASPECT perimeter extrusions and secure with rivets prior to corner brackets, while ensuring weep hole is positioned downward.
         3. Fabricated Panel Tolerances

Length: Plus 1.6 mm (0.062 inch).

Width: Plus 1.6 mm (0.062 inch).

Depth: Plus or minus 0.2 mm (0.008 inch).

Depth: Plus or minus 0.2 mm (0.008 inch).

Squareness: 5 mm (0.2 inch) maximum.

* + - * 1. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

Retain first paragraph below if gaskets or sealants are factory installed. Contact BEMO USA.

* + - * 1. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.
        2. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.

Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.

Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.

Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.

Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.

Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal wall panel manufacturer for application but not less than thickness of metal being secured.

* + - 1. FINISHES
         1. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
         2. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
         3. Aluminum Panels and Accessories:

Retain one fluoropolymer or anodized finish from subparagraphs below. Verify availability of finishes for products specified. If retaining more than one, indicate location of each on Drawings or by inserts. To obtain a proprietary finish system, insert names of coating manufacturers and products.

Revise or insert additional testing requirements in five fluoropolymer subparagraphs below if performance levels indicated in AAMA 2605 are insufficient.

Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

Three-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

Mica Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

Metallic Fluoropolymer: AAMA 2605. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

FEVE Fluoropolymer: AAMA 2605. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

Exposed Anodized Finish:

Retain one of two options in "Clear Anodic Finish" Subparagraph below. Class I finish is heavy anodized. Verify availability with BEMO USA.

Clear Anodic Finish: AAMA 611, [**AA-M12C22A41, Class I, 0.018 mm**] [**AA-M12C22A31, Class II, 0.010 mm**] or thicker.

Retain one of two options in "Color Anodic Finish" Subparagraph below. Verify availability with BEMO USA.

Color Anodic Finish: AAMA 611, [**AA-M12C22A42/A44, Class I, 0.018 mm**] [**AA-M12C22A32/A34, Class II, 0.010 mm**] or thicker.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.

Retain one or both subparagraphs below.

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 metal wall panel manufacturer.

Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal wall panel manufacturer.

Retain subparagraph below with subparagraph above for systems that depend on air- or water-resistive barriers to prevent air infiltration or water penetration.

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

* + - * 1. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.
        2. Proceed with installation only after unsatisfactory conditions have been corrected.
      1. PREPARATION
         1. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.
      2. INSTALLATION
         1. General: Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

Shim or otherwise plumb substrates receiving metal panels.

Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.

Install screw fasteners in predrilled holes.

Locate and space fastenings in uniform vertical and horizontal alignment.

Install flashing and trim as metal panel work proceeds.

Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.

Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.

Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

* + - * 1. Fasteners:

Aluminum Panels: Use aluminum or stainless steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized-steel fasteners for surfaces exposed to the interior.

* + - * 1. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.

Usually retain "Attachment Assembly, General" Paragraph below with either "Installation" Paragraph or "Subgirt-and-Spline Installation," "Track-Support Installation," "Rail-Support Installation," or "Rainscreen-Principle Installation" paragraphs below.

* + - * 1. Attachment Assembly, General: Install attachment assembly required to support metal plate wall panels and to provide a complete weathertight wall system, including subgirts, perimeter extrusions, tracks, drainage channels, panel clips, and anchor channels.

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

"Clip Installation" Paragraph below describes universal panel installation methods and may require editing for project specific conditions. Delete if not applicable.

* + - * 1. Clip Installation: Attach panel clips to supports at locations, spacings, and with fasteners recommended by manufacturer. Attach flanges of metal plate wall panels to panel clips [**with fasteners**] [**by welding**] [**with fasteners or by welding**], as recommended by manufacturer.

Seal horizontal and vertical joints between adjacent metal plate wall panels with sealant backing and sealant. Install sealant backing and sealant according to requirements specified in Section 079200 "Joint Sealants."

Seal horizontal and vertical joints between adjacent metal plate wall panels with manufacturer's standard gaskets.

"Subgirt-and-Spline Installation" Paragraph below describes universal installation methods and may require editing for project specific conditions. Delete if not applicable.

* + - * 1. Subgirt-and-Spline Installation: Install support assembly at locations, spacings, and with fasteners recommended by manufacturer. Use manufacturer's standard subgirts and splines that provide support and complete secondary drainage assembly, draining to the exterior at horizontal joints. Attach metal plate wall panels by interlocking perimeter extrusions attached to panels with subgirts and splines. Fully engage integral subgirt-and-spline gaskets and leave horizontal and vertical joints with open reveal. Terminate edge of panels flush with perimeter extrusions.

Install metal plate wall panels to allow individual panels to be installed and removed without disturbing adjacent panels.

Do not apply sealants to joints unless otherwise indicated.

"Track-Support Installation" Paragraph below describes universal installation methods and may require editing for project specific conditions. Delete if not applicable.

* + - * 1. Track-Support Installation: Install support assembly at locations, spacings, and with fasteners recommended by manufacturer. Use manufacturer's standard horizontal tracks and vertical [**tracks**] [**drain channels**] that provide support and secondary drainage assembly, draining to the exterior at horizontal joints through drain tube. Attach metal plate wall panels to tracks by interlocking panel edges with manufacturer's standard "T" clips.

Install metal plate wall panels to allow individual panels to be installed and removed without disturbing adjacent panels.

Seal horizontal and vertical joints between adjacent metal plate wall panels with sealant backing and sealant. Install sealant backing and sealant according to requirements specified in Section 079200 "Joint Sealants."

"Rail-Support Installation" Paragraph below describes universal installation methods and may require editing for project specific conditions. Delete if not applicable.

* + - * 1. Rail-Support Installation: Install rails at locations, spacings, and with fasteners recommended by manufacturer. Use manufacturer's standard interlocking rails that provide support and complete secondary drainage assembly, draining to the exterior at horizontal joints. Attach metal plate wall panels by overlapping and interlocking support rails with perimeter rails attached to panels. Apply sealant, foam sealant, and tape sealant at locations recommended by manufacturer. Leave horizontal and vertical joints with open reveal.

Install metal plate wall panels to allow individual panels to be installed and removed without disturbing adjacent panels.

Install backer plates before installing support rails.

Do not apply sealants to joints unless otherwise indicated.

"Rainscreen-Principle Installation" Paragraph below describes universal installation methods and may require editing for project specific conditions. Delete if not applicable.

* + - * 1. Rainscreen-Principle Installation: Install using manufacturer's standard assembly with vertical channel that provides support and secondary drainage assembly, draining at base of wall. Notch vertical channel to receive support pins. Install vertical channels supported by channel brackets or adjuster angles and at locations, spacings, and with fasteners recommended by manufacturer. Attach metal plate wall panels by inserting horizontal support pins into notches in vertical channels and into flanges of panels. Leave horizontal and vertical joints with open reveal.

Install metal plate wall panels to allow individual panels to be installed and removed without disturbing adjacent panels.

Do not apply sealants to joints unless otherwise indicated.

* + - * 1. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

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

* + - * 1. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and 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.

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.

Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches 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 deep, filled with mastic sealant (concealed within joints).

* + - 1. ERECTION TOLERANCES
         1. Installation Tolerances: Shim and align metal plate wall panel units within installed tolerance of 1/4 inch in 20 feet, non-accumulative, on level, plumb, and location lines as indicated, and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
      2. FIELD QUALITY CONTROL

Retain "Testing Agency" Paragraph below to identify who performs tests and inspections. If retaining second option, retain "Field quality-control reports" Paragraph in "Informational Submittals" Article.

* + - * 1. Testing Agency: [**Owner will engage**] [**Engage**] a qualified independent testing agency to perform field tests and inspections.

Retain "Water-Spray Test" Paragraph below to check system's resistance to water penetration. Revise indicated test-area requirements to suit Project.

* + - * 1. Water-Spray Test: After installation, test area of assembly [**shown on Drawings**] [**as directed by Architect**] <**Insert area**> for water penetration according to AAMA 501.2.

Retain "Manufacturer's Field Service" Paragraph below to require a factory-authorized service representative to perform tests and inspections.

* + - * 1. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect completed metal wall panel installation, including accessories.
        2. Remove and replace metal wall panels where tests and inspections indicate that they do not comply with specified requirements.
        3. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.
        4. Prepare test and inspection reports.
      1. CLEANING AND PROTECTION
         1. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
         2. After metal panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.
         3. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074213.16