

SECTION 074213.16
METAL PLATE WALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Perforated metal plate wall panels with related accessory components.
- B. Rain Screen System:
 - 1. Drained/back ventilated (D/BV) rain screen based system.

1.02 RELATED REQUIREMENTS

- A. Section 054000 - Cold-Formed Metal Framing: Wall panel substrate sheathing.
- B. Section 061000 - Rough Carpentry: Wall panel substrate sheathing.
- C. Section 061000 - Rough Carpentry: Air-water barrier behind wall panels.
- D. Section 072100 - Thermal Insulation.
- E. Section 072500 - Weather Barriers: Air-water barrier behind wall panels.
- F. Section 079200 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.
- G. Section 092116 - Gypsum Board Assemblies: Wall panel substrate sheathing.
- H. Section 092213 - Metal Furring

1.03 REFERENCE STANDARDS

- A. ASTM G101, Standard Guide for Estimating the Atmospheric Corrosion Resistance of Low-Alloy Steels.
- B. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems 2015.
- C. AAMA 509 - Voluntary Test and Classification Method for Drained and Back Ventilated Rain Screen Wall Cladding Systems 2014.
- D. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document) 2015.
- E. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2014 (2015 Errata).
- F. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels, current standard.
- G. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels, current standard.
- H. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- I. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- J. ASTM B69 - Standard Specification for Rolled Zinc 2016.
- K. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- L. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- M. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2014.
- N. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2013.
- O. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.

- P. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014.
- Q. NAAMM AMP 500-06 - Metal Finishes Manual 2006.
- R. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components 2019.

1.04 REFERENCE STANDARDS

- A. ASTM G101, Standard Guide for Estimating the Atmospheric Corrosion Resistance of Low-Alloy Steels.
- B. AAMA 501.2 - Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems 2015.
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- E. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2014 (2015 Errata).
- F. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2017a.
- G. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2017a.
- H. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- I. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- J. ASTM B69 - Standard Specification for Rolled Zinc 2020.
- K. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- L. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- M. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2014.
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- O. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- P. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014.
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1.05 PREINSTALLATION MEETINGS

- A. Pre-Installation Meeting: Schedule and conduct a pre-installation meeting one week before starting work of this section. Attendees shall include, but are not limited to:
 1. Contractor.
 2. Air-Water Barrier (AWB) Installation Superintendent.
 3. Wall Sheathing Installation Superintendent.
 4. Wall Cavity Insulation Installation Superintendent.
 5. Manufacturer's representative.

6. Architect.
 7. Owner's representative.
 8. Other subcontractors of adjacent work.
- B. Review procedures for coordinated installation of all wall assembly components by multiple installers and to maintain proper air-water barrier (AWB) and panel substrate performance requirements.
 - C. Review schedule.
 - D. Review details, installation and temporary protection procedures.

1.06 SUBMITTALS

- A. [See Section 013000 - Administrative Requirements for submittal procedures.] **OR** [See Division 01, Administrative Requirements for submittal procedures.]
- B. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
 1. Physical characteristics of components shown on shop drawings.
 2. Storage and handling requirements and recommendations.
 3. Installation instructions and recommendations.
- C. Shop Drawings: Indicate dimensions, layout, joints, construction details, support clips, [____], engineering for cladding anchorage and methods of anchorage.
- D. Samples: Submit two samples of wall panel and soffit panel, [____] inch ([____] mm) by [____] inch ([____] mm) in size illustrating finish color, sheen, and texture.
 1. If requested, provide up to six different powder coat samples for submittal review.
 2. [3 inch by 6 inch samples of powder coat] **OR** [2 inch by 2 inch Kynar color chips or anodized aluminum samples].
 3. Pattern Sample: [Submit 12 inch by 12 inch flat panel, without finish] **OR** [Submit **[Insert number of panels]** full size panel samples]. Pattern scaling may vary depending on selection.
- E. Coordination Drawings: Submit exterior elevations drawn to scale showing and coordinating the following items:
 1. Metal plate wall panels and attachments.
 2. Girts.
 3. Wall-mounted items including doors, windows, louvers, and lighting fixtures.
 4. Penetrations of wall by pipes and utilities.
- F. Sustainable Design Submittals:
 1. In accordance with Division 01 sustainable design requirements.
OR
 2. Submit Product Data for Credits **[Insert Sustainable Design program credits here]**
 3. For products having recycled content, documentation indicating percentages by weight of post consumer and pre-consumer recycled content. Include statement indicating costs for each product having recycled content.
- G. Maintenance Data: Manufacturer's instructions for care and cleaning.
- H. Source Quality Control Submittals.
- I. Field Quality Control Submittals.
- J. Designer's Qualification Statement.
- K. Manufacturer's Qualification Statement.
- L. Installer's Qualification Statement.
- M. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

- N. Warranty Documentation for Installation of Building Rainscreen Assembly: Submit installer warranty and ensure that forms have been completed in Owner's name and registered with installer.

1.07 QUALITY ASSURANCE

- A. Verification and Coordination:
1. Verify actual locations of walls and other construction contiguous with the work of this Section using field measurements before fabrication. Indicate measurements on Shop Drawings.
 2. Embedded Anchor Plates and Structural Connections: Coordinate support sizes and locations.
- B. Engineering:
1. System to be engineered by manufacturer for standard loading criteria and geometry layout.
 2. Custom Systems: Structural design to be performed by the manufacturer or a Registered Structural Engineer licensed in the State in which the Project is located.
 3. Engineering for assembly will be provided by manufacturer.
 4. Structural attachment or connections to be engineered by the Engineer of Record for the Project.
- C. Installer Qualifications: Company specializing in installation of panel systems with a minimum of five years of documented experience and certified or approved by manufacturer.
- D. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with not less than ten years of documented experience.
- E. Fabricator Qualifications: Company specializing in fabrication of products of the type specified in this Section with a minimum of 8 years of documented experience and sufficient production capacity to produce the required units within the Project schedule.
- F. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.08 MOCK-UP

- A. Construct mock-up, [] feet ([] m) long by [] feet ([] m) wide; include in mock-up:
1. Vertical and horizontal panel systems.
 2. Glazing.
 3. Attachments to building frame.
 4. Associated air/water barrier materials.
 5. Drainage system including weeps.
 6. Sealants.
 7. Seals
 8. Related wall insulation.
- B. Include at least four panels to represent a four-way panel joint and showing full thickness.
- C. Locate where directed.
- D. Approval of mockups does not constitute approval of deviation from Contract Documents within mockups unless these deviations are approved by Architect in writing.
- E. Subject to compliance with requirements, approved mockups **[may]** or **[may not]** become part of completed Work if undisturbed upon Date of Substantial Completion.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- B. Deliver materials in manufacturer's original protective coverings and packaging with corresponding labels and identifying information.

- C. Protect materials against damage during transit, delivery, storage, and installation at site. Protect against bending, warping, twisting or surface damage.
- D. Inspect materials upon delivery for damage. Repair damage to be indistinguishable from undamaged areas; if damage cannot be repaired to be indistinguishable from undamaged parts and finishes, replace damaged items.
- E. Store in accordance with manufacturers written instructions. Do not stack panels. Store prefinished material off ground and protected from weather; prevent twisting, bending, or abrasion, and provide ventilation to stored materials; slope metal sheets to ensure drainage. Provide protection between panels.
- F. Prevent contact with materials that may cause discoloration or staining of products.

1.10 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion for degradation of panel finish, including color fading caused by exposure to weather.
- C. Warranty: Manufacturer's standard five year warranty against defects in materials, fabrication, finishes, and installation commencing on Date of Substantial Completion.
- D. Warranty on FEVE and PVDF Finishes: Provide [manufacturer's standard 10 year warranty] **OR** [manufacturer's extended 20 year warranty] on finish. Not all colors are available with extended warranties. If extended warranty is required, confirm color selection with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. BOK Modern, Inc.; www.bokmodern.com.
- B. Substitutions: See Section 016000 - Product Requirements or Not permitted..

2.02 DESIGN CRITERIA

- A. Metal Plate Wall Panels System: Factory fabricated prefinished metal panel system, site assembled.
 - 1. Type of Wall Panel System: Drained and Back-Ventilated Rain Screen (D/BV) in compliance with AAMA 509.
 - 2. Provide design for exterior wall panels, soffit panels, and subgirt framing assembly.
 - 3. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of wall.
 - 4. Design Pressure: In accordance with applicable codes.
 - 5. Design Pressure:
 - a. Positive Design Pressure: [] psf ([] Pa)
 - b. Negative Design Pressure: [] psf ([] Pa)
 - 6. Wind Load Testing: By calculation or in compliance with ASTM E330/E330M to obtain the following results:
 - a. Maximum Allowable Deflection of Non-Exposed Panels: L/60 for length(L) of span or 3/4-inch under structural design loads (ASD); no permanent deformation of panel system is allowed.
 - 7. Fire Performance: Include as part of an assembly tested in accordance with, and complying with acceptance criteria of NFPA 285.
 - 8. Intermediate Panel Stiffeners: Provide as required by design loads applied to panels, and secured to rear face of panel with silicone based adhesive and of size and strength to maintain panel flatness; stiffener material is compatible with silicone.
 - 9. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to [] degrees F ([] degrees C) seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.

10. Drainage: Provide drainage to exterior for moisture entering or condensation occurring within panel system.
11. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
12. Corners: Factory-fabricated in one continuous piece with minimum [] inch ([] mm) returns.
13. Provide continuity of air/water barrier (AWB) at wall panel substrate and/or wall sheathing in coordination with materials specified in Section 072500 and Section 061000.

2.03 MANUFACTURED METAL PANELS

- A. Perforated Metal Plate Wall Panels:
 1. Orientation: []; style as indicated.
 2. Joint Layout: As indicated on Drawings.
 3. Material: Aluminum, [] inch ([] mm) minimum thickness.
 4. Material: Stainless steel, [] gauge, [] inch ([] mm) minimum thickness.
 5. Material: Corten Weathering Steel, [] gauge, [] inch ([] mm) minimum thickness.
 6. Material: Hot Rolled Steel, [] gauge, [] inch ([] mm) minimum thickness.
 7. Panel Width: [] inch ([] mm).
- B. Metal Plate Soffit Panels:
 1. Joint Layout: Style as indicated for wall panels.
 2. Material: Aluminum, [] inch ([] mm) minimum thickness.
 3. Material: Stainless steel, [] gauge, [] inch ([] mm) minimum thickness.
 4. Material: Corten Weathering Steel, [] gauge, [] inch ([] mm) minimum thickness.
 5. Material: Hot Rolled Steel, [] gauge, [] inch ([] mm) minimum thickness.
 6. Panel Width: [] inch ([] mm).
- C. Flashings: See Section 076200, Sheet Metal Flashings and Trim.
- D. SubGirts: See Section [].
- E. Fasteners: **[Stainless Steel fasteners] OR [Corten fasteners]**.

2.04 MATERIALS

- A. Metal Surfaces: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations or blemishes; unless allowed for specific metal types and finishes.
- B. Perforated Aluminum Sheet: AA5052-H32, **[0.125-inch (3.17 mm)] [0.080-inch (2.03 mm)] [Insert custom thickness]** thick.
- C. Perforated Stainless Steel Sheet: ASTM A240/A240M, **[Type 304] [Type 316L] [0.062- inch (1.57 mm)] [Insert custom thickness]** thick.
- D. Perforated Cold-Rolled Steel Sheet: ASTM A1008/A1008M, commercial steel Type B, **[0.074-inch (1.88 mm)] [Insert custom thickness]** thick.
- E. Perforated Corten Steel Sheet: ASTM A242/A242M, **[0.074-inch (1.88 mm)] [Insert custom thickness]** thick.
- F. Laser Cut Proprietary Pattern: **[As selected by the Architect from manufacturer's full library] OR [Insert name of custom design and pattern scale here]**.
- G. Concealed Structural Supports: Aluminum, stainless steel or steel coated for corrosion resistance and dissimilar metal isolation.
- H. Fasteners: ASTM F593 stainless steel or ASTM A307 carbon steel.
- I. Stainless Steel Tensioning Tubes: ASTM A276/A276M.
- J. Aluminum Plate: ASTM B209 (ASTM B209M), 3003 alloy, H14 temper.
 1. Surface Texture: Smooth.
- K. Stainless Steel Plate: Alloy Type 304, in compliance with ASTM A666.

1. Finish: No. 4 - Brushed in compliance with NAAMM AMP 500-06.
 2. Surface Texture: Smooth.
- L. Air/Water Barrier (AWB): Refer to Section 072500 for additional information.
- M. Substrate Wall Sheathing: Refer to Section 061000 for additional information.
- N. Substrate Wall Insulation: Refer to Section 072100 for additional information.

2.05 FINISHES GENERAL

- A. Comply with NAAMM's MFM for recommendations for applying and designating finishes.
1. Appearance of Finished Work:
 - a. Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved samples.
 - b. Noticeable variations in same piece are not acceptable except for steel and anodized aluminum.
 - c. 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.
- B. Finishes for Aluminum; Anodized :
1. Clear Anodic Finish: AAMA 611, AA-M10C22A41 CLASS I, Architectural Class 1, 0.7 to 1.2 mil coating thickness.
 2. Color Anodic Finish: AAMA 611, AA-M10C22A44 CLASS II, Architectural Class 1, 0.7 to 1.2 mil coating thickness.
 - a. Color: As selected by Architect from manufacturers full range
 - b. Color [_____].

Finishes for Aluminum; Powder Coating to meet AAMA 2604:

3. Pretreat according to manufacturers instructions and AAMA 2604 to withstand a minimum of 2000 hours (ASTM B117) or 1500 hours (ASTM G85) salt spray testing.
4. Apply Architectural Grade AAMA 2604 compliant topcoat at a minimum of 2.5 mils and process according to manufacturer's recommendations.
5. Color and Gloss: [As selected by Architect from manufacturer's full range of choices]

Finishes for Aluminum; Fluoropolymer Coating to meet AAMA:

6. Pretreat according to manufacturer's instructions and AAMA 2605 to withstand a minimum of 3000 hours (ASTM B117) or 2000 hours (ASTM G85) salt spray testing.
7. Apply standard available colors, high volume RAL, or high volume custom color matches in single coat powder finish containing no less than 100% FEVE (fluorinated ethylene vinyl ether) at a minimum of 2.0 mils and process according to manufacturer's recommendations.
8. Apply custom color matches for low volume as a 2-coat 70% min. PVDF (poly vinylidene fluoride) resin fluoropolymer powder or liquid system including specially formulated inhibitive primer where required by manufacturer and top color coat to total dry film thickness of 2-3 mils.
9. Apply specifically available pallet colors only as a 3-coat system including clear fluorocarbon topcoat using 70% min. PVDF (poly vinylidene fluoride) resin fluoropolymer liquid to total dry film thickness of 2-3 mils.

C. Finishes for Steel:

1. Mill finish.
2. Powder Coating:
 - a. Pretreat according to AAMA 2604 to withstand a minimum of 2000 hours (ASTM B117) or 1500 hours (ASTM G85 Annex A2).
 - b. Apply zinc rich primer for steel at minimum of 2.0 mils 50 percent or less cure to ensure proper inter coat adhesion to topcoat.
 - c. Apply AAMA 2604 compliant topcoat at a minimum of 2.0 mils and process according to manufacturer's written recommendations.
 - d. Color and Gloss: As selected by Architect from manufacturers standard range.

- D. Stainless Steel:
 - 1. Polished Finishes:
 - a. Grind and polish surfaces to produce uniform finish free of cross scratches.
 - 2. Mill finish with no additional treatment to surfaces.
 - 3. Orbital sanding
- E. Pre-grained #4 finish on available gauge material.
- F. Cor-ten or weathering steel unfinished mill material with no significant scratches or gouges.

2.06 FABRICATION

- A. Fabricate assemblies to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish and anchorage, but not less than required to support structural loads.
- B. Fabricate in accordance with approved shop drawings and manufacturers written instructions. Form work true to line and level with accurate angles and surfaces.
- C. Assemble in the shop to greatest extent possible to minimize field splicing and assembly.
- D. Cut, drill and laser cut metals cleanly and accurately. Remove burrs and ease edges; unless allowed for specific metal types and finishes. Remove sharp or rough areas on exposed surfaces.
- E. Cut, reinforce, drill and tap as indicated to receive finish hardware, screws and similar items.
- F. Use grommets, bushings and washers or methods as recommended by the manufacturer for separation of dissimilar metals.

2.07 ACCESSORIES

- A. Cladding Support Clips: See Section [_____].
- B. Gaskets: Manufacturer's standard type suitable for use with system; ultraviolet and ozone resistant.
- C. Sealants: Comply with ASTM C920, and refer to Section 079200 for additional requirements.
 - 1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
 - 2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
 - 3. Seam Sealant: Factory-applied, non-skinning, non-drying type.
- D. Extruded Aluminum: Comply with ASTM B221 (ASTM B221M).
- E. Universal Bracket:
 - 1. Stainless steel 2-part bracket. System installed per manufacturers instructions.
 - 2. Finish: Powder coat.
 - 3. Color: As selected by Architect from manufacturers standard range.
 - 4. Manufacturer: BOK Modern, Inc.; www.bokmodern.com.
- F. Anchors and Fasteners:
 - 1. Fasteners: **[Stainless Steel fasteners] OR [Corten fasteners]**.
 - 2. Select fasteners of type, grade and class required to achieve connections for anchoring metal panels to other types of construction indicated and capable of withstanding design loads.
 - 3. Provide anchors and other materials as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
 - 4. Do not use metals that are corrosive or non-compatible with materials joined. Avoid fastening dissimilar materials and separate with isolating hardware where necessary.
 - a. For anchorage to concrete, provide inserts to be cast into concrete for bolt anchors.
 - b. For anchorage to masonry, provide brackets to be embedded in masonry for bolt anchors.
 - c. For anchorage to stud walls, provide backing plates for bolt anchors.

- 5. Carbon Steel Bolts and Nuts: ASTM A307.
- G. Field Touch-up Paint: As recommended by panel manufacturer.
- H. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
- I. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.
- J. Bituminous Coating: Cold-applied asphalt mastic, noncorrosive compound free of asbestos, sulfur, and other deleterious impurities; 0.015 inch (0.4 mm) dry film thickness per coat complying with ASTM D1187.
- K. Column Covers: Refer to Section 057500.

2.08 SOURCE QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for additional requirements.
- B. Testing of Drained and Back Ventilated (D/BV) Rain Screen Panel System: Submit results in compliance with AAMA 509 test methods for D/BV metal plate wall panel system similar to system specified.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate framing members are ready to receive panels.
- B. Verify that air/water barrier (AWB) has been properly installed over substrate, refer to Section 072500 for additional information.
- C. Examine substrates and site area for conditions that might prevent satisfactory installation.
- D. Verify that dimensions of supporting structure are within plus/minus 1/8 inch (3.175 mm) of dimensions indicated on shop drawings.
- E. Verify that all adjacent painting, roofing, masonry work, and other work that might damage finish has been completed prior to installation of panels.
- F. Do not proceed with installation until all conditions are satisfactory.
- G. Notify Architect immediately of conditions that would prevent satisfactory installation.
- H. Do not proceed with work until detrimental conditions have been corrected.
- I. Examine rough-in and coordinate penetration locations.
- J. Furnish components to be installed in other work to installer of that other work, including but not limited to blocking, sleeves, inserts, anchor bolts, embedded plates, and supports for attachment of anchors.

3.02 PREPARATION

- A. Install subgirts in accordance with layout shown on the approved shop drawings, securely fastened to substrates, shimmed and leveled to uniform plane, and spaced at intervals indicated.
- B. Confirm that all sub-framing fasteners penetrate directly into wall primary framing members.

3.03 INSTALLATION

- A. Install panels on walls and soffits in accordance with manufacturer's instructions and approved shop drawings.
- B. Install wall panels in accordance with manufacturer's written installation instructions including pressure equalized rainscreen installation method and installation guidelines.
 - 1. Wall panels consist of single sheets of metal formed with interlocking gutter and drainage system integral to the panel with single horizontal attachment for dry-joint rainscreen assembly.

2. Use of secondary drainage channels, brackets, support pins, joint sealants or gaskets to manage the drainage of wall panel system is not permitted.
 3. Attach panels using progressive interlocking method, engaging bottom of panel in top of previous panel working bottom up, and left to right.
 4. Install wall panels with single top attachment in pre-punched holes to allow individual panels to move due to thermal expansion.
 5. Do not compromise internal gutter.
- C. Install wall panels with proper anchorage and other components as specified above for this Work securely in place.
 - D. Install wall panels with provisions for thermal and structural movement as specified above.
 - E. Weather Barrier: Install weather barrier behind panels and over substrate in accordance with the requirements of the Weather Barriers Section.
 - F. Install weather tight seals at perimeter of panel openings.
 - G. Test for proper adhesion of sealant on small unexposed area of solid surfacing prior to sealant installation.
 - H. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA - Architectural Sheet Metal Manual.
 1. Provide concealed fasteners where possible, and set units true to line and level as indicated.
 2. Install work with laps, joints, and seams to be watertight and weather resistant.
 3. Install flashing and trim as panel work proceeds.
 - I. Install weather tight escutcheons for pipe and conduit penetrating exterior walls.
 - J. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action as recommended by wall panel manufacturer.
 - K. Install attachment system to support panels including provisions to provide a complete weather tight wall system such as sub girts, extrusions, flashings and trim.
 1. Include attachment to supports and trims at locations using dissimilar materials.
 2. Install starter extrusion at base course and at cut panel locations.
 - L. Install accessories with anchorage to building, weather tight mounting, provisions for thermal expansion and coordinate installation with flashings and other components.
 - M. Install components required for a complete wall panel assembly including trim, copings, flashings and other accessory items.
 - N. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint; allow time to properly dry prior to wall panel installation.
 - O. Fasten panels to substrate structural supports; aligned, level, and plumb.
 - P. Locate joints over supports and lap panel ends minimum 1 inch (25 mm). Confirm requirements with Architect prior to installation.
 - Q. Provide expansion and control joints where indicated on Drawings.
 - R. Use concealed fasteners unless otherwise indicated and approved by Architect.
 - S. Universal Bracket: Install per manufacturers printed instructions.
 - T. Seal and place gaskets to prevent weather penetration; maintain neat appearance.

3.04 TOLERANCES

- A. Maximum Offset From True Alignment Between Adjacent Members Butting or In Line: 1/16 inch (1.6 mm).
- B. Maximum Variation from Plane or Location Indicated on Drawings: 1/4 inch (6.4 mm).

3.05 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for additional requirements.

- B. Field Services: Provide the services of the manufacturer for field observation of installation.
- C. Barrier Wall Water-Spray Test: Test assembled area as directed by Architect for water penetration in accordance with AAMA 501.2.
- D. Do not cover installed air/water barriers until required inspections have been completed.
- E. Obtain approval of installation procedures by air/water barrier manufacturer based on a mock-up installed in place, prior to proceeding with remainder of installation.
- F. Take digital photographs of each portion of installation prior to covering up.

3.06 CLEANING

- A. Remove site cuttings from finish surfaces.
- B. Remove protective material from wall panel surfaces.
- C. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.
- D. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.
- E. Upon completion of installation, thoroughly clean prefinished aluminum surfaces in accordance with AAMA 609 & 610.

3.07 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION