

SECTION 074244

COMPOSITE WALL PANELS (ALUMINUM-FACED)

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Prefinished composite panel system with a public listing of certified tests, including NFPA 285.
 2. Full IBC 2015 compliance, including IBC 1703.5. Quality assurance measures include but are not limited to:
 - a. Third-party quality assurance.
 - b. A factory audit manual, approved by the third-party.
 - c. Product labeling.
 - d. Authorization to use third-party mark in the product label.
 - e. Listed test results with traceable material specimens.
 - f. Semiannual audits.
 3. Extruded aluminum mounting system.
 - a. System summary: drained/back-ventilated aluminum composite panel mounting system, tested to V2 or higher, and to W1, in accordance with AAMA 509. System: fabricated by a Premium MCM Fabricator, as defined by the Metal Construction Association.
- B. Related Requirements: Comply with following:
1. Metal Finishes: Section 050510.
- C. Related Sections:
1. Section 054100 - Structural Metal Stud Framing.
 2. Section 072100 – Thermal Insulation.
 3. Section 072700 - Weather-Resistant Barriers.
 4. Section 076200 - Sheet Metal Flashing and Trim.
 5. Section 061690 - Sheathing on Metal Framing.
- D. References:
1. American Architectural Manufacturers Association (AAMA)
 - a. AAMA 509-09: Voluntary Test and Classification Method for Drained and Back Ventilated Rain Screen Wall Cladding Systems
 - b. AAMA 2605-05: Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels
 2. ASTM International (ASTM)
 - a. ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus
 - b. ASTM B221-08 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
 - c. ASTM D822: Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings
 - d. ASTM D1308: Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes
 - e. ASTM D1781: Standard Test Method for Climbing Drum Peel for Adhesives
 - f. ASTM D1929: Standard Test Method for Determining Ignition Temperature of Plastics
 - g. ASTM D2244: Standard practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
 - h. ASTM D2247: Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity

- i. ASTM D2794: Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
 - j. ASTM D3359: Standard Test Methods for Measuring Adhesion by Tape Test
 - k. ASTM D3363: Standard Test Method for Film Hardness by Pencil Test
 - l. ASTM D4214: Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
 - m. ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials
 - n. ASTM E283: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
 - o. ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, Curtain Walls by Uniform Static Air pressure Difference
 - p. ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
3. ICC Evaluation Service (ICC-ES)
 - a. ICC-ES Acceptance Criteria 25: Acceptance Criteria for Metal-Faced Plastic Core Wall Panels on Noncombustible Exterior Walls
 4. International Building Code (IBC): 2015.
 5. International Organization For Standardization (ISO)
 - a. ISO 17025: General requirements for the competence of testing and calibration laboratories
 6. National Fire Protection Association (NFPA)
 - a. NFPA 285: Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-bearing Wall Assemblies Containing Combustible Components

1.2 SYSTEM DESCRIPTION

- A. System Requirements:
 1. Rainscreen System: Panel system utilizing aluminum extrusion with integral concealed support system. Continuous joint spline: 4mm thick, in material and finish as required by finish schedule. No field sealant, gasketing, exposed flashing or trim required (coping required at parapet conditions). System requires a properly-integrated air barrier over sheathing back-up. Trades responsible for penetrations through air barrier will seal penetrations according to membrane manufacturer's recommendations.
- B. Delegated Design Requirements:
 1. Fabricator: Responsible for designing system, including anchorage to structural system and necessary modifications to meet specified requirements and maintain visual design concepts.
 - a. Employ registered professional engineer, licensed to practice structural engineering in jurisdiction where Project is located, to certify compliance with system performance requirements.
 - b. Drawings: Diagrammatic and are intended to establish basic dimension of units, sight lines, and profiles of units.
 - c. Provide concealed fastening.
 - d. Attachment Considerations: Account for site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening and fracturing connections.
- C. Structural performance: Panels shall be tested to withstand the Design Wind Load based upon the local building code, but in no case less than the following test criteria, in accordance with ASTM E330:
 1. Structural load: +150 psf, -118 psf.
 2. Deflection load: +100 psf, -80 psf, in compliance with paragraph 1.2D below.

- D. Performance Requirements: Certify compliance with requirements specified in Section 018300 and as listed below, based on manufacturer's test data for testing conducted by independent laboratory. Laboratory results older than eight (8) years from date of submittal shall not be acceptable. If current test results are unavailable or unacceptable, subcontractor shall conduct testing to certify compliance, without impact to the construction schedule.
1. Maximum Perimeter Framing Deflection: Normal to plane of wall between supports, deflection of secured perimeter framing members shall not exceed L/175 or 3/4 inch, whichever is less.
 2. Maximum Panel Deflection: Not exceed L/60 of full span normal to plane of wall.
 3. Maximum Anchor Deflection: Not exceed 1/16 inch.
 4. Maximum Permanent Deflection of Framing Members: Not exceed L/100 of span length at 1-1/2 times design pressure and components shall not experience failure or gross permanent distortion. At connection points of framing members to anchors, permanent set shall not exceed 1/16 inch.
 5. Rainscreen classification: tested with traceable materials to V2 or higher, and to W1, in accordance with AAMA 509.
 6. Air infiltration: not to exceed 0.01cfm per square foot of wall specimen area, when tested on traceable material to 6.27psf in accordance with ASTM E283.
 7. Static water infiltration: no uncontrolled water shall pass into the room-side of the wall assembly when tested on traceable material at a differential static pressure of 15psf in accordance with ASTM E331.
 8. Bond Integrity: When tested for bond integrity, ASTM D1781 (simulating resistance to panel delamination), there shall be no adhesive failure of bond between core and skin nor cohesive failure within core, based on following values.
 - a. Bond Strength: 214 PSI (Vertical Pull)
 - b. Peel Strength:
 - 1) 22.5 inch pound/inch dry.
 - 2) 22.5 inch pound/inch after 8 hours in boiling water at.
 - 3) 22.5 inch pound/inch after 21 days soaking in water at 70° F.
- E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, disengagement at panel 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.
1. Temperature Change (Range): Minus 20 to plus 180 deg F minus 29 to plus 82 deg C ambient; 180 deg F 100 deg C material surfaces.
- F. Interface With Adjacent Systems:
1. Accommodate allowable tolerances and deflections for structural members in installation.
 2. Attachments of panel support system are to be to minimum 16" gauge metal stud system.

1.3 SUBMITTALS

- A. General: Submit in accordance with Section 013300.
- B. Product Data: Submit following:
1. Product data for entire system, including panels, concealed flashings, and finishes.
 2. Color charts for finish indicating manufacturer's colors available for selection.
 3. Samples of warranties customized for this project.
- C. Shop Drawings: Submit for installation of system, including panel fabrication, jointing, corners, concealed flashings, gutters, weeps, copings, fascia, soffits, and accessories.
1. Stamp with seal and signature of professional engineer responsible for design.
 2. Submit detail drawings of panel connections, draining, ventilating and weep details.
 3. General contractor to coordinate details for sheathing and metal stud system support for the panel system.

4. Detail connections, fastener penetrations through air barrier, method and materials used to seal penetrations.
 5. General contractor to coordinate transitions and interfacing with all surrounding fenestration products or adjacent construction.
 6. General contractor to coordinate how trim members are spliced, sealed, terminated and provide water tight conditions with fenestration products and surrounding conditions.
 7. General contractor to coordinate how the sheathing and air barrier terminate, interface and seal to fenestration products and surrounding conditions to make water tight installation.
- D. Samples: Submit minimum 3 by 5 inch in size illustrating composition and color. Draw-down lines are only acceptable for new custom formulations.
- E. Informational Submittals: Submit following packaged separately from other submittals:
1. Design data for system indicating compliance with delegated design requirements.
 2. Test Reports: Certified test reports showing compliance with any performance requirements of 1.2C and 1.2D, above.
 3. Copy of public third-party listing.
 4. Sample of component traceability log, per 074244 2.6C6g below.
 5. Sample adhesive product label, which cannot be removed without being destroyed.
 6. Sample adhesive product QR code, with a link to the system's public listing.
 7. Sample panel fabrication ticket, with shop QC checklist stamp.
 8. Affidavit of QC/operations separation at the executive level.
 9. For fabricators with multiple systems, submit a description of material segregation.
 10. Qualification Data: All required qualification data.
 11. Fabricator instructions.
 12. Manufacturer's field reports.
- F. Close-out submittals:
1. Submit warranty in accordance with paragraph 1.9, below.
 2. Submit job-specific corrective action log, in accordance with the factory audit manual.
 3. Submit job-specific log of unlabeled material, if any.

1.4 QUALITY ASSURANCE

- A. Engineer Qualifications: Registered professional engineer licensed to practice structural engineering in jurisdiction where Project is located, with minimum of five years' experience in design of metal wall systems and structural stud design.
- B. Manufacturer Qualifications: Company specializing in manufacturing Products specified in this Section with minimum 20 years' experience.
- C. Fabricator Qualifications: Company specializing in fabricating work specified in this Section with minimum 10 years' experience. Fabricator shall be a certified as a Premium MCM Fabricator by Metal Construction Association Fabricator's Council, and shall be preauthorized by aluminum-faced composite panel manufacturer. Fabricator shall document 10 projects of similar nature in past five years. Fabricator shall demonstrate ability to comply with section 3.1B below. All material measurements to be verified in field.
- D. Installer Qualifications: Certified acceptable to fabricator, with experience on at least 10 projects of similar nature in past five years.
- E. Certifications:
1. Fabricator's certification that Installer is approved to perform work.
 2. Fabricator's certification that products furnished for Project meet or exceed specified requirements.
 3. Engineer's Certifications.
- F. Pre-installation Conference: Conduct conference at project site to review methods and procedures related to metal wall panel assemblies including, but not limited to, the following:

1. Panel fabricator/installer shall meet with Owner, Architect, Composite Material Manufacturer's Representative, and other trade Contractors whose work interfaces with or affects metal wall panels including installers of doors, windows, and louvers. A direct employee of the fabricator must be present at the conference.
2. Review and finalize construction schedule and verify availability of materials, fabricator/installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to metal wall 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 details, wall penetrations, openings, and condition of other construction that will affect metal wall panels.
6. Review governing regulation and requirements for insurance, certificates, and testing and inspecting if applicable.
7. Review temporary protection requirements for metal wall panel assembly during and after installation.
8. Review wall panel observation and repair procedures after metal wall panel installation.
9. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.5 FIELD MOCK-UPS

- A. General: Comply with Section 014000.
- B. Sample Installation:
 1. Construct on-site mock-up 10 feet long by 10 feet tall as directed.
 2. Show jointing, corners, weeps, and typical construction techniques.
 3. Accepted Field Sample: May remain part of completed Work.

1.6 PRE-INSTALLATION CONFERENCE

- A. General contractor to conduct pre-installation conference in accordance with Section 013119.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with Section 016000.
- B. Packing, Shipping, Handling, and Unloading: Protect finish panel faces, including plastic sheet protection wrap.
- C. Acceptance at Site: Inspect each panel and accessory as delivered and confirm that finish is undamaged. Do not install damaged panels.
- D. Storage and Protection: Comply with fabricator's printed requirements.

1.8 PROJECT CONDITIONS

- A. Environmental Requirements: Comply with manufacturer's written requirements under which products can be installed.

1.9 WARRANTY

- A. Special Warranties: Prepare and submit in accordance with Section 017800.
 1. Factory Finish: 30-year Warranty Stating Finish will be:
 - a. Free of fading or color change in excess of 5 Delta E units, ASTM D2244;
 - b. Will not chalk in excess of numeral rating of 8 for colors and 6 for whites, ASTM D4214;

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: 8000 System, fabricated by NOW Specialties Inc., Carrollton, TX 75006
- B. Acceptable Manufacturers:
 - 1. Alucobond, manufactured by 3A Composites USA, Inc., Benton, KY 42025.
 - 2. Alpolic, manufactured by Mitsubishi Plastics Composites America, Inc., Chesapeake, VA 23320
 - 3. Reynobond, manufactured by Arconic, Eastman GA 31023.
 - 4. Substitutions: Manufacturer shall document 1 million square feet of successful product installation on domestic projects, compliant with quality assurance, testing, and performance requirements specified herein. Document full compliance with IBC 2015 and ICC-ES Acceptance Criteria 25.

2.2 MATERIALS

- A. Composite Panels:
 - 1. Aluminum-faced panel with thermoplastic core.
 - a. Overall Panel thickness: 0.157 inches.
 - b. Aluminum Face: 0.0197 inches, with strippable protective film. Protective film: heavy and opaque if required to indicate finish grain direction.
 - c. Aluminum Backer Sheet thickness: 0.0197 inches.
 - d. Face Sheet Aluminum Alloy: 3105-H14.
- B. Composition: Two sheets of aluminum sandwiching core of extruded thermoplastic material formed in continuous process with no glues or adhesives between dissimilar materials. Products laminated sheet by sheet or in batch process using glues or adhesives between materials shall not be acceptable.
 - 1. Standard Polyethylene Core: For signage, trim and embellishments only.
 - a. Flame-Spread Index: 0
 - b. Smoke-Developed Index: 0
 - 2. Fire-Retardant Core: Complies with the current version of NFPA 285, and meets or exceeds the following ASTM E 84 results:
 - a. Flame-Spread Index: 0
 - b. Smoke-Developed Index: 10

2.3 ACCEPTABLE FABRICATORS

- A. NOW Specialties – Dallas 972-416-7065, Austin 972-416-8618.
- B. Substitutions: Other Premium MCM Fabricators, as certified by the Metal Construction Association and approved by Architect. ten (10) days prior to bid and in accordance with:
 - 1. Section 012500.
 - 2. Section 013300.

2.4 MISCELLANEOUS METAL FRAMING

- A. Miscellaneous Metal Framing, General: ASTM C 645, cold-formed metallic-coated steel sheet, ASTM A 653/A 653M, G40 Z120 hot-dip galvanized or coating with equivalent corrosion resistance unless otherwise indicated.
- B. Subgirts: As required by structural calculations. Minimum requirement is manufacturer's standard C- or Z-shaped sections 0.079-inch nominal thickness.
- C. Zee Clips: As required by structural calculations. Minimum requirement is 0.079-inch nominal thickness.

- D. Base or Sill Angles: As required by structural calculations. Minimum requirement is 0.079-inch nominal thickness.
- E. Hat-Shaped, Rigid Furring Channels:
 1. Nominal Thickness: As required by structural calculations. Minimum requirement is as required to meet performance requirements.
 2. Depth: 7/8 inch.
- F. Cold-Rolled Furring Channels: As required by structural calculations. Minimum requirement is minimum 1/2-inch wide flange.
 1. Nominal Thickness: As required by structural calculations. Minimum requirement is as required to meet performance requirements.
 2. Depth: 3/4 inch.
 3. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with nominal thickness of 0.079-inch.
- G. Fasteners for Miscellaneous Metal Framing: As required by structural calculations. Minimum requirement is of type, material, size, corrosion resistance, holding power, and other properties required to fasten miscellaneous metal framing members to substrates.

2.5 ACCESSORIES

- A. Joint spline: 4mm thick, 3 1/4-inch minimum width, in material and finish as required by finish schedule. Continuous along the short panel dimension, terminating in hairline seams along the long panel dimension.
- B. Panel Extrusions: Extruded aluminum, ASTM B 221.
- C. Concealed Flashings: Formed aluminum sheet, minimum 0.040 inch, ASTM B 209, post-finished to match panels.
- D. Stiffeners: formed of extruded aluminum, adhered to interior side of metal wall panel with structural silicone and VHB tape, and designed to tie-in to extrusions. Spacing: single, full-width span per every 19.99 square feet of panel area. Demonstrate compliance with structural review and IBC 2015: in event of a contradiction, more stringent requirement will govern. No alternate type stiffeners shall be permitted, such as galvanized steel angles, plates, subgirt or aluminum composite material.
- E. Escutcheon plates: 2" thick, or as directed by architect. Plates: fabricated from the same sheet stock and batch as the face material. Hem outside edge to conceal material core. Maintain 1/16-inch joint between inside edge and adjacent material.

2.6 FABRICATION

- A. General: Fabricate and finish metal-faced composite wall panels and accessories at the factory to greatest extent possible, by fabricator'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.
- B. Fabricate metal-faced composite wall panels in a manner that allows proper ventilation on interior side of panel and with joints between panels designed to minimize bulk water penetration.
- C. Metal-Faced Composite Wall Panels: Factory form panels in a continuous process with no glues or adhesives between dissimilar materials. Trim and square edges of sheets with no displacement of face sheets or protrusion of core material.
 1. For every panel, prepare a unique panel fabrication ticket with project name or number, panel identification number, dimensions, extrusions, stiffener, material thickness color, and all other pertinent information.
 2. Form panel lines, breaks, and angles to be sharp and true, with surfaces free from warp and buckle. Exposed gaps or pinholes will not be acceptable.

3. Fabricate panels with panel stiffeners, as required to comply with deflection limits, attached to back of panels with structural silicone sealant or VHB tape.
 4. Fabricate material as necessary to install all panels with finish grain direction arrows oriented as shown on approved shop drawings.
 5. Dimensional Tolerances:
 - a. Length: Plus or minus 1/16 inch.
 - b. Width: Plus or minus 1/16 inch.
 - c. Thickness: Plus or minus 0.008 inch.
 - d. Panel Bow: 0.8 percent maximum of panel length or width.
 - e. Squareness: 1/16 inch maximum.
 6. Shop quality control:
 - a. Confirm that panel dimensions comply with the panel fabrication ticket.
 - b. Confirm that panel extrusions comply with the panel fabrication ticket, and are mounted in compliance with the factory audit manual or delegated design data.
 - c. Confirm that panel stiffeners comply with the panel fabrication ticket, and are mounted in compliance with the factory audit manual or delegated design data.
 - d. In the event of any fabrication error, return the panel to operations personnel for rework. Trace all rework.
 - e. Log all manufacturing lot numbers per panel and per component, including but not limited to MCM sheet, extrusions, stiffeners, sealants, fasteners and tapes. Maintain all pertinent records, including purchase orders, packing lists, certificates of compliance and panel fabrication tickets for 3 years. Records should allow traceability of component lot numbers given any panel number, and traceability of panel numbers given any component lot number.
 - f. Label only compliant and logged material with pre-printed adhesive label, which displays the third-party agency's identification. Record on the label the job number, panel number, table number, date and inspector's initials.
 - g. Affix an adhesive QR code label to the panel, with ink to the system's public listing.
- D. Sheet Metal Accessories: Fabricate concealed flashings to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.
1. 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.
 2. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
 3. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
 4. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended by metal-faced composite wall panel manufacturer.
 - a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal-faced composite wall panel manufacturer for application, but not less than thickness of metal being secured.
- E. System characteristics:
1. Concealed fastener, drained/back-ventilated rainscreen principle.
 2. Weight: 2.29 pounds per square foot.
 3. Pan depth: 1 inch, formed out of 1" route-and-return perimeter panel legs.
 4. System depth (dimension from exterior face of panel to exterior side of bearing surface): 1 1/2 inch.

5. Horizontal joint: Continuous, concealed tongue-in-groove extrusions, engineered with profiles to receive the continuous joint spline, as specified. Air barrier shall not be visible through the horizontal joint. Ventilate as required by 074244 1.1A3a, above. Exposed fasteners within the joint will not be acceptable.
6. Vertical joint: similar to horizontal joint, with concealed tongue-in-groove extrusions, engineered with profiles to receive the continuous joint spline, as specified. Air barrier shall not be visible through the vertical joint. Exposed fasteners within the joint will not be acceptable.
7. Base detail: Continuous, extruded horizontal clip attachment. Concealed base flashing: controls bulk water and condensation by shedding moisture to the outside of the building. Allow 8 inches of vertical clearance between base of panel and landscaping. Grade must allow proper drainage of ground water. Submersion of panel system or any other components of the wall assembly shall not be permitted. Exposed fasteners within the joint will not be acceptable.
8. Top detail: coping material shall be offset 1/4-inch from face of material to allow for proper ventilation. Joint spline deleted to allow for proper ventilation. Exposed fasteners within the joint will not be acceptable.

2.7 FINISH

1. Coil-coated, fluoropolymer resin finish in conformance with AAMA 2605-05. Acceptable Color: Any one color selected from manufacturer's architectural stocking program.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. General contractor shall examine substrates, areas, and conditions, with Fabricator present, for compliance with requirements for installation tolerances, metal-faced composite wall panel supports, and other conditions as shown on reviewed and accepted shop drawings for conditions affecting performance of the Work.
 1. General contractor shall 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-faced composite wall panel manufacturer.
 2. General contractor shall examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal-faced composite wall panel manufacturer.
 3. General contractor shall verify that weather-resistant membrane has been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Fabricator shall field-verify all material measurements prior to fabrication. Measurements shall have no impact to the construction schedule. Communicate to the General Contractor if material measurements will impact the design intent.
- C. Examine roughing-in for components and systems penetrating metal-faced composite wall panels to verify actual locations of penetrations relative to panel joint locations of panels before panel installation.
- D. General contractor shall, for the record, prepare written report, endorsed by Fabricator, listing conditions detrimental to performance of the Work, and issue to Architect as formal submittal.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Miscellaneous Framing: Install subgirts, base angles, sills, furring, and other miscellaneous wall panel support members and anchorage according to ASTM C 754 and structural engineer's written instructions. Confirm that all penetrations through the air barrier have been sealed.

3.3 METAL-FACED COMPOSITE WALL PANEL INSTALLATION

- A. General: Install metal-faced composite wall panels according to Fabricator's written instructions in orientation, sizes, and locations indicated on Drawings. Install panel's perpendicular to girts and subgirts unless otherwise indicated. Anchor panels and other components of the Work securely in place to the structural studs, with provisions for thermal and structural movement.
 - 1. Commence metal-faced composite wall panel installation and install minimum of 300 sq. ft. in presence of Fabricator's general superintendent or authorized representative.
 - 2. Install all panels with finish grain direction arrows oriented as shown on approved shop drawings.
 - 3. Flash metal-faced composite wall panels at perimeter of all openings. Do not begin installation until air barrier and flashings that will be concealed by panels are installed, properly sealed and tested for water tightness and conditions inspected and accepted by independent inspector before being concealed by the panel system.
 - 4. Install flashing and trim as metal-faced composite wall panel work proceeds.
 - 5. Provide aesthetic escutcheons for pipe and conduit penetrating the air barrier and exterior walls.
- B. Fasteners:
 - 1. Aluminum Wall Panels: Use Dril-Flex with Stalgard coating for attachment of the girts and sub-girts.
- C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action as recommended by metal-faced composite wall panel manufacturer.
- D. Attachment System Installation, General: Install attachment system required to support metal-faced composite wall panels and to provide a complete system per contract documents, including subgirts, extrusions, tracks, panel clips, and anchor channels.
 - 1. Include attachment to supports, panel-to-panel joinery, panel-to-dissimilar-material joinery.
 - 2. Do not begin installation until weather barrier and flashings that will be concealed by composite panels are installed.
- E. Drained/Back-Ventilated Installation: Provide fabricator's standard track, clips, and stiffeners for a complete outer leaf, draining to the exterior at base. Install support system at locations and, spacing, required by structural engineer. Attach wall panels by interlocking extruded profiles within routed-and-returned flanges of wall panels.
 - 1. Do not apply sealants to joints unless otherwise indicated on Drawings.

3.4 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and provide for thermal expansion. Coordinate installation with flashings and other components.
 - 1. Install components required for a complete metal-faced composite wall panel assembly including corners, joint splines, concealed flashings, baffles, gussets, closure strips, and similar items.
- B. Flashing: Comply with performance requirements, Fabricator's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
 - 1. Install concealed flashing free of visible oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.
 - 2. Expansion Provisions: Provide for thermal expansion of concealed flashing. 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 weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep.

3.5 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align metal-faced composite wall panel units within installed tolerance of 1/4 inch in 20 feet, non-cumulative, on level, plumb, location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.6 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage authorized service representative to inspect, observe testing, and adjust completed metal-faced composite wall panel installation, including accessories.
- B. Additional tests and inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- C. Prepare test and inspection reports.

3.7 CLEANING

- A. Remove temporary protective coverings and strippable films as metal-faced composite wall panels are installed unless otherwise indicated in manufacturers written installation instructions. General contractor to maintain in original condition after installation and document damage by other trades.
- B. After metal-faced composite wall panel installation, clear weep holes of obstructions and dirt.
- C. Replace metal-faced composite wall panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION