



Part 1 – General

1.1 SUMMARY

1. **Scope:** Provide design and engineering, labor, material, equipment, related services, and supervision required, including, but not limited to, manufacturing, fabrication, erection, and installation for metal-faced composite wall panels as required for the complete performance of the work, and as shown on the Drawings and as herein specified.
2. **Section Includes:** The work specified in this Section includes, but shall not be limited to, aluminum composite panels (ACM/ACP), aluminum attachment extrusions, supports, anchors, fasteners, and sealants required for rain screen type panel system according to custom design indicated on the Drawings.

1.2 REFERENCES

1. **General:** The publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only. The edition/revision of the referenced publications shall be the latest date as of the date of the Contract Documents, unless otherwise specified.
2. **American Architectural Manufacturers Association (AAMA):**
 - a. AAMA 2605, "Voluntary Specification, Performance Requirements, and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels."
3. **ASTM (ASTM):**
 - a. ASTM B 209/B 209M, "Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate."
 - b. ASTM B 221/B 221M, "Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes."
 - c. 3. ASTM D 1781, "Standard Test Method for Climbing Drum Peel for Adhesives."
 - d. 4. ASTM E 84, "Standard Test Method for Surface Burning Characteristics of Building Materials."
 - e. 5. ASTM E 330, "Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference."
4. **National Association of Architectural Metal Manufacturers (NAAMM):**
 - a. NAAMM MFM, "Metal Finishes Manual."
5. **South Coast Air Quality Management District (SCAQMD):**
 - a. SCAQMD Rule #1168, "Adhesive and Sealant Applications," including most recent amendments.

1.3 SYSTEM DESCRIPTION

1. **QuickPanel System comprised as follows:**
 - a. Aluminum-faced FR (fire-rated mineral core) panels with high performance PVdF PPG Duranar coatings
2. **Panel Platform creating 6063-T6 extruded aluminum back plates consist of following profiles:**
vertical, horizontal, outside corner, multi-angle inside corner, multi-angle outside corner, vertical material transition, outside corner material transition, soffit, alternate soffit, horizontal wall penetration, vertical wall penetration, base section, window jamb and window sill.
3. **Panel Platform creating 6063-T6 extruded aluminum single profile:**
inside corner, 6063-T6 extruded aluminum top caps with high performance PVdF PPG Duranar coatings, rainscreen Furring Spacers, brake metal flashings, perforated vented through-wall flashing, concealed sealant, concealed weather sealed fasteners, adhesive tape.



1.4 DEFINITION

1. **Aluminum-Faced Composite Wall Panel Assembly:** composite wall panels, attachment system components, and accessories necessary for a complete rain screen type wall system.

1.5 SUBMITTALS

1. Comply with requirements of Division 01.
2. **Product Data:** Submit product data showing material proposed. Submit sufficient information to determine compliance with the Drawings and Specifications. Product data shall include, but shall not be limited to, construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of metal-faced composite wall panel and accessory.
3. **Shop Drawings:** Submit shop drawings for each product and accessory required. Include information not fully detailed in manufacturer's standard product data, including, but not limited to, installation layouts of metal-faced composite wall panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
4. **Samples:**
 - a. Submit samples for initial color selection. Submit samples for each type of metal-faced composite wall panel indicated with factory-applied color finishes. Submit samples in form of manufacturer's color charts showing full range of colors and finishes available. Where finishes involve normal color variations, include samples showing the full, range of variations expected.
5. **Contract Closeout Submittals:**
 - a. **Warranty Data:** Submit samples of special warranties.

1.6 QUALITY ASSURANCE

1. **Qualifications:**
 - a. **Inspecting and Testing Agency Qualifications:** To qualify for acceptance, an independent inspecting and testing agency hired by the Contractor or manufacturer to test products shall demonstrate to the Architect's satisfaction that they are qualified according to ASTM E 329 to conduct testing indicated.
2. **Regulatory Requirements:** Comply with applicable requirements of the laws, codes, ordinances, and regulations of Federal, State, and local authorities having jurisdiction. Obtain necessary approvals from such authorities.
3. **Pre-Installation Conference:** Conduct pre-installation conference. Prior to commencing the installation, meet at the Project site to review the material selections, installation procedures, and coordination with other trades. Pre-installation conference shall include, but shall not be limited to, the Contractor, the Installer, and any trade that requires coordination with the work. Date and time of the pre-installation conference shall be acceptable to the Owner and the Consultant.
4. **Coordination:** Coordinate composite panel systems with rain drainage work, flashing, trim, and construction of walls and other adjoining work to provide a leak proof, secure, and non-corrosive installation.
5. **Mock-Ups:** Create a complete mock-up in accordance with instructions by Architect, Consultant, Engineer. Mock-up shall demonstrate prepared substrate, support/attachment framing, panel façade, exterior finishes and aesthetic appearance. Confirm mock-up conforms with manufacturer's instructions and provisions of contract documents. Mock-up shall be accepted in writing by Architect, Consultant, Engineer before commencement of work.



1.7 DELIVERY, STORAGE, AND HANDLING

1. Deliver materials to the Project site in supplier's or manufacturer's original wrappings and containers, labeled with supplier's or manufacturer's name, material or product brand name, and lot number, if any.
 - a. Deliver components, sheets, aluminum composite wall panels, and other manufactured items so as not to be damaged or deformed. Package aluminum composite wall panels for protection during transportation and handling.
2. Store materials in their original, undamaged packages and containers, inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.
 - a. Unload, store, and erect metal-faced composite wall panels in a manner to prevent bending, warping, twisting, and surface damage.
 - b. Store metal-faced composite wall panels, covered with suitable weathertight and ventilated covering. Store metal-faced composite wall panels to ensure dryness, with positive slope for drainage of water. Do not store metal-faced composite wall panels in contact with other materials that might cause staining, denting, or other surface damage. Do not allow storage space to exceed 120 °F (67 °C).
3. Retain strippable protective covering on composite wall panel for period of panel installation.

1.8 WARRANTY

1. **Panel System:** 15-Year Limited Product Warranty against faults and defects in materials and workmanship attributed to the manufacturer. The panel system warranty shall be countersigned by the manufacturer and the Installer.
 - a. **Failures include, but are not limited to, the following:**
 1. Structural failures, including rupturing, cracking, or puncturing.
 2. Deterioration of metals and other materials beyond normal weathering.
2. **Special PVdF and FEVE Finish Warranty:** Submit a written warranty, signed by manufacturer, covering failure of the factory-applied exterior finish within the specified warranty period. Deterioration of finish includes, but shall not be limited to, color fade, chalking, cracking, peeling, and loss of film integrity.
 - a. **Warranty Period for PVdF Finish:** Warranty period shall be 30 years from date of Substantial Completion.
3. **Additional Owner Rights:** The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.



Part 2 – Products

2.1 MANUFACTURERS

1. **Basis of Design:** ACM QuickPanel® System as manufactured by Engage Building Products™.

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2.2 MATERIALS AND ACCESSORIES

1. **Aluminum:**
 - a. **Aluminum Extrusions:** ASTM B 221/B 221M, Alloy 6063-T6.
 - b. **Rain Screen Furring Spacers:** UV resistant and ROHS compliant rigid PVC compound.
 - c. **Perforated Vented & Non Vented Through-Wall Flashing:** Provide 0.013 inch (.33 mm) painted 2 sides galvanized steel
 - d. **Fasteners:** Provide weather sealed screws and 3/4 inch 18g brad nails.
 - e. **Sealants Within Panel System:** Provide Tremco Spectrum 1 Sealant.

2.3 COMPOSITE METAL PANELS

1. **General:** Provide 4mm aluminum-faced composite wall panels fabricated from two metal facings bonded, using heat activated film, to solid, extruded thermoplastic core.
 - a. **Aluminum Face Sheets:**
 1. Thickness: 0.020 inch (0.508 mm).
 2. Aluminum Alloy: 3000 Series or equivalent.
2. **Fire Resistant (FR) Core:** Flame spread rating of 15 and a smoke developed rating of 30 with a center panel joint; flame spread of 0 and a smoke developed of 0 with no joint; tested in accordance with ASTM E 84, Class A building material rating. NFPA 285 Testing Compliant.
3. **Panel Thickness:** 0.157 inch (4 mm).
4. **Bond Integrity:** When tested for bond integrity, in accordance with ASTM D 1781 (simulating resistance to panel delamination), there shall not be an adhesive failure of the bond between the core and the skin, or cohesive failure of the core itself below the following values:
 - a. **Peel Strength:**
 1. **FR Core:** 22.5 in.lb./inch (115 N-mm/mm) as manufactured, 22.5 in.lb./inch (115 N-mm/mm) after 21 days soaking in water at 70 °F (21 °C)



5. Tolerances:

- a. **Width:** ± 0.08 inch (2.03 mm).
- b. **Length:** ± 0.16 inch (4.06 mm).
- c. **Panel Bow:** Maximum 0.8 percent of any 72 inch (1829 mm) panel dimension.
- d. **Squareness:** Maximum 0.20 inch (5.08 mm).
- e. **Flatness:** Maximum deviation from panel flatness shall be 1/8 inch (3 mm) in 5 feet (1524 mm) on panel in any direction for assembled units (non-accumulative, no oil-canning).

2.4 FINISHES

1. Comply with NAAMM MFM for architectural metal products for recommendations for applying and designating finishes.
 - a. **Aluminum Finishes:** Finish designations prefixed by AA comply with system established by the Aluminum Association for designating aluminum finishes.
 1. **Standard Two-Coat Polyvinylidene Fluoride (PVdF) Finish Coating:** Manufacturer's standard thermo cured system, complying with AAMA 2605, composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent PVdF resin by weight, as produced by Arkema, Inc. ("Kynar 500"). Provide minimum 1.0 mil (0.0254 mm) total dry film thickness. Provide color to match the Consultant's sample, or, if no sample, as selected by the Consultant from manufacturer's standard choices for color and gloss.



Part 3 – Execution

3.1 EXAMINATION

1. **Verification of Conditions:** Examine areas and conditions under which the work is to be installed, and notify the Contractor in writing, with a copy to the Owner and the Architect, of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.
 - a. Examine substrates, areas, and conditions, with the Installer present, for compliance with requirements for installation tolerances, metal-faced composite wall panel supports, and other conditions affecting performance of the work.
 - b. 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.
 - c. 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.
 - d. Verify that weather-resistant sheathing paper has been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
 - e. Examine roughing-in for components and systems penetrating metal-faced composite wall panels to verify actual locations of penetrations relative to seam locations of panels before panel installation.
 - f. Beginning of the work shall indicate acceptance of the areas and conditions as satisfactory by the Installer.

3.2 PREPARATION

1. **Coordination:** Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to the Project Site.

3.3 COMPOSITE WALL PANEL INSTALLATION

1. **General:** General: Install metal-faced composite wall panels in accordance with manufacturer's written instructions in orientation (note Metallic and Mica finished panels are directional), sizes, and locations indicated on the Drawings. Install panels perpendicular to girts and sub-girts unless otherwise indicated.
 - a. Install panel system in accordance with manufacturer's installation instructions and drawings.
 - b. Ensure continuity of building envelope air barrier and vapor.
 - c. Shim or otherwise plumb substrates receiving metal-faced composite wall panels.
 - d. Anchor panels securely in accordance with reviewed shop drawings to allow for necessary thermal movement and structural support.
 - e. Conform to panel fabricator's instructions for installation of concealed fasteners.
 - f. Do not install component parts that are observed to be defective, including, but not limited to, warped, bowed, dented, scraped, and broken members.
 - g. Do not cut, trim, weld, or braze component parts during erection in manner which would damage finish, decrease strength, or result in visual imperfection or failure in performance. Return component parts, which require alteration to shop for re-fabrication, if possible, or for replacement with new parts.



2. Erection Tolerances:

- a. Maximum variation from plane or location shown on shop drawings shall be 1/2 inch (13 mm) in 30 feet (9.14 m) of length and up to 3/4 inch (19 mm) in 300 feet (91.44 m).
- b. Maximum deviation for vertical member shall be 0.10 inch (2.54 mm) in 25 feet (7.62 m) run.
- c. Maximum deviation for a horizontal member shall be 0.10 inch (2.54 mm) in 25 feet (7.62 m) run.
- d. Maximum offset from true alignment between two adjacent members abutting end to end, in line shall be 0.03 inch (0.76 mm).

3.4 ADJUSTING AND CLEANING

1. Remove temporary protective coverings and strippable films, if any, as metal-faced composite wall panels are installed unless otherwise indicated in manufacturer's written installation instructions.
2. On completion of metal-faced composite wall panel installation, clean finished surfaces as recommended by panel manufacturer. Maintain in a clean condition during construction.
3. After metal-faced composite wall panel installation, clear base drainage channels of obstructions, dirt, and sealant.
4. Replace metal-faced composite wall panels that have been damaged or have deteriorated beyond successful repair by finish touch-up or similar minor repair procedures.
5. Any additional protection, after installation, shall be the responsibility of the general contractor to remove.
6. Final cleaning shall not be part of the work of this Section.

3.5 PROTECTION

1. Protect installed products and components from damage during construction.
2. Repair damage to adjacent materials caused by composite metal building panel installation.