





## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Metal Composite Material Sheet Manufacturers:
1. 3A Composites USA; Alucobond: [www.alucobondusa.com](http://www.alucobondusa.com)
  2. Alcoa, Inc; Reynobond ACM: [www.alcoa.com](http://www.alcoa.com)
  3. Alpolic Materials; Mitsubishi Plastics Composites: [www.alpolic-northamerica.com](http://www.alpolic-northamerica.com)
  4. ACPEXPRESS™: [www.acpexpress.com](http://www.acpexpress.com)
- B. Wall Panel System Manufacturer: **ACPEXPRESS™ H-100-A-3D-C**  
[www.acpexpress.com](http://www.acpexpress.com)      **1-844-227-3977**

### 2.2 WALL PANEL SYSTEM

- A. Wall Panel System: Metal panels, fasteners, and anchors designed to be supported by framing or other substrate provided by others; provide installed panel system capable of maintaining specified performance without defects, damage or failure.
1. Provide panel jointing and gaskets indicated as a Rout and Return Dry System
  2. Anchor panels to supporting framing without exposed fasteners.
- B. Performance Requirements:
1. Thermal Movement: Provide for free and noiseless vertical and horizontal thermal movement due to expansion and contraction under material temperature range of minus 20 degrees F to 180 degrees F without buckling, opening of joints, undue stress on fasteners, or other detrimental effects; allow for ambient temperature at time of fabrication, assembly, and erection procedures.
  2. Wind Performance: Provide system tested in accordance with ASTM E330 without permanent deformation or failures of structural members.
    - a. To withstand a Uniform Structural Load of [+105 psf] [-90 psf] held for 10 seconds.
    - b. Maximum deflection of perimeter framing member of L/175 normal to plane of the wall; maximum deflection of individual panels of L/60.
    - c. Maximum anchor deflection in any direction of 1/16 inch at connection points of framing members to anchors.
  3. Air Infiltration: 0.11 cfm/sq ft of wall area, maximum, when tested at [12.0 psf] in accordance with ASTM E283.
  4. Water Penetration: No water penetration under static pressure when tested in accordance with ASTM E331 at a differential of 10 percent of inward acting design load, [15.0 psf] minimum, after 15 minutes.
    - a. Water penetration is defined as the appearance of uncontrolled water on the interior face of the wall.
    - b. Design to drain leakage and condensation to the exterior face of the wall.

### 2.3 MATERIALS

- A. Metal Composite Material (MCM) Sheet: Two sheets of aluminum sandwiching a solid core of extruded thermoplastic material formed in a continuous process with no glues or adhesives between dissimilar materials; core material free of voids and spaces; no foamed insulation material content.
1. Overall Sheet Thickness: 4 mm.
  2. Face Sheet Thickness: 0.019 inches, minimum.
  3. Alloy: Manufacturer's standard, selected for best appearance and finish durability.
  4. Bond and Peel Strength: No adhesive failure of the bond between the core and the skin nor cohesive failure of the core itself below 22.4 inch-pound/inch with no degradation in bond performance, when tested in accordance with ASTM D1781, simulating resistance to panel delamination, after 8 hours of submersion in boiling water and after 21 days of

- immersion in water at 70 degrees F.
5. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
  6. Flammability: Self-ignition temperature of 650 degrees F or greater, when tested in accordance with ASTM D1929.
- B. Metal Framing Members: Include all sub-girts, zee-clips, base and sill angles and channels, hat-shaped and rigid channels, and furring channels required for complete installation.
1. Provide material strength, dimensions, configuration as required to meet the applied loads applied and in compliance with applicable building code.
  2. Sheet Steel Components: ASTM A653/A653M galvanized to G90/Z275 or zinc-iron alloy coated to A60/ZF180; or ASTM A792/A792M aluminum-zinc coated to AZ60/AZM180.
  3. Stainless Steel Sheet Components: ASTM A480/A480M.
- C. Flashing: Sheet aluminum; 0.040 inch thick, minimum; finish and color to match MCM sheet.
- D. Anchors, Clips and Accessories: Use one of the following:
1. Stainless steel complying with ASTM A480/A480M, ASTM A276 or ASTM A666.
  2. Steel complying with ASTM A36/A36M and hot-dipped galvanized to ASTM A153/A153M.
  3. Steel complying with ASTM A36/A36M and hot-dipped galvanized to ASTM A123/A123M Coating Grade 10.
- E. Fasteners:
1. Exposed fasteners: Stainless steel; permitted only where absolutely unavoidable and subject to prior approval of the Architect.
  2. Screws: Self-drilling or self-tapping Type 410 stainless steel or zinc-alloy steel hex washer head, with EPDM or PVC washer under heads of fasteners bearing on weather side of metal wall panels.
  3. Bolts: Stainless steel.
  4. Fasteners for Flashing and Trim: Blind fasteners of high-strength aluminum or stainless steel.
- F. Provide panel system manufacturer's and installer's standard corrosion resistant accessories, including fasteners, clips, anchorage devices and attachments.

### 3.1 EXAMINATION

- A. Verify dimensions, tolerances, and interfaces with other work.
- B. Verify substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturers written instructions.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Notify Architect in writing of conditions detrimental to proper and timely completion of work. Do not proceed with erection until unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Protect adjacent work areas and finish surfaces from damage during installation.

### 3.3 INSTALLATION

- A. Do not install products that are defective, including warped, bowed, dented, and broken members, and members with damaged finishes.
- B. Comply with instructions and recommendations of MCM sheet manufacturer and wall system manufacturer, as well as with approved shop drawings.

- C. Install wall system securely allowing for necessary thermal and structural movement; comply with wall system manufacturer's instructions for installation of concealed fasteners.
- D. Do not handle or tool products during erection in manner that damages finish, decreases strength, or results in visual imperfection or failure in performance. Return component parts that require alteration to shop for refabrication, if possible, or for replacement with new parts.
- E. Do not form panels in field unless required by wall system manufacturer and approved by the Architect; comply with MCM sheet manufacturer's instructions and recommendations for field forming.
- F. Separate dissimilar metals; use gasket fasteners, isolation shims, or isolation tape where needed to eliminate possibility of electrolytic action between metals.
- G. Install flashings as indicated on shop drawings at flashing butt joints, provide a lap strap under flashing and seal lapped surfaces with a full bed of non-hardening sealant.
- H. Install square, plumb, straight, and true, accurately fitted, with tight joints and intersections maintaining the following installation tolerances:
  - 1. Variation From Plane or Location: 1/2 inch in 30 feet of length and up to 3/4 inch in 300 feet, maximum.
  - 2. Deviation of Vertical Member From True Line: 0.1 inch in 25 feet run, maximum.
  - 3. Deviation of Horizontal Member From True Line: 0.1 inch in 25 feet run, maximum.
  - 4. Offset From True Alignment Between Two Adjacent Members Abutting End To End, In Line: 0.03 inch, maximum.
- I. Replace damaged products.
  - 1. Exception: Field repairs of minor damage to finishes are permitted only when approved in writing by Owner, panel manufacturer, and fabricator.
  - 2. Field Repairs to Finishes: Using materials and methods sufficient that repairs are not discernible when viewed at distance of 10 feet under all typical light conditions experienced at the project.

### **3.4 FIELD QUALITY CONTROL**

- A. Wall System Manufacturer's Field Services: Provide field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with instructions.

### **3.5 CLEANING**

- A. Ensure weep holes and drainage channels are unobstructed and free of dirt and sealants.
- B. Remove protective film after installation of joint sealers, after cleaning of adjacent materials, and immediately prior to completion of work.
- C. Remove temporary coverings and protection of adjacent work areas.
- D. Clean installed products in accordance with manufacturer's instructions.

### **3.6 PROTECTION**

- A. Protect installed panel system from damage during construction.

**END OF SECTION**