SPECIFICATIONS FOR

CEI Composite Material, LLC
Featuring
D6000 – Dry Rubber Gasket System

Section 074243 Aluminum Composite Panels

(Based upon CEI Composite Materials D6000 System using PE core aluminum composite material (ACM))

1.00 **GENERAL REQUIREMENTS**

1.01 SCOPE OF WORK

A. Provide a water tight Rout and Return Dry Rubber Gasket panel system, as detailed on the drawings. The Rout and Return Dry Rubber Gasket panel system must consist of an ACM panel with matching or contrasting color Rubber Gasket.

B. The panel system as detailed, shall consist of extruded continuous perimeter extrusions, extruded stiffeners (if required) and related flashings.

1.02 QUALITY ASSURANCE

A. General: The details show the preferred profiles and performance requirements. Provide a rainscreen and structurally sound, self-draining wall panel system with minimal water penetration.

B. Substitutions: Any proposed system shall be compatible with adjacent materials and components such that the assembly as a whole will function satisfactorily, and shall include extruded aluminum perimeter clips to provide the designed architectural reveal. Modifications to structure or other components required by the proposed substitution shall be clearly delineated in the submittal and all resulting costs shall be included as part of the bid.

C. Fabrication History: Fabricator shall assume undivided responsibility for all components of the panel work and shall provide engineered support as required to demonstrate the ability to perform said work.

1.03 SYSTEM PERFORMANCE

1. Composite panel system shall be capable of withstanding building movements and weather exposures based on the following test standards required by the Architect and/or national and the local building code. Panel systems which have not been pre-tested prior to bid date will not be acceptable.

a. Wind Load:

i. Panels shall be designed to withstand the Design Wind Load based upon the local building code, but in no case less than 20 pounds per square foot (psf) and 30 psf on parapet and corner panels. Wind load testing shall be conducted in accordance with ASTM E330 to obtain the following results.

ii. Normal to the plane of the wall between supports, deflection of the secured perimeter-framing members shall not exceed L/175 or 3/4", whichever is less.

iii. Normal to the plane of the wall, the maximum panel deflection shall not exceed L/60.

iv. Maximum anchor deflection shall not exceed 1/16".

v. At 1-1/2 times design pressure, permanent deflections of framing members shall not exceed L/100 of span length 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".

b. Air/Water System Test:

i. Air Infiltration - When tested in accordance with ASTM E283, air infiltration at 1.57 psf must not exceed 0.06 cfm/ft² of wall area.

ii. Water Penetration - Water Penetration is defined as uncontrolled water in the wall. Systems not using a construction sealant at the panel joints shall be designed to drain any water leakage occurring at the joints. No water infiltration shall occur beyond the weather barrier under a differential static pressure of 6.24 psf after 15 minutes of exposure in accordance with ASTM E331.

E. Flatness Criteria
1. Maximum 1/4” in 20’-0” on panel in any direction for assembled units. (Non-accumulative)

F. General Approval
1. Composite panel fabricator shall have a test report from an accredited laboratory.

1.03.1 TESTS

A. Bond Integrity tested for resistance to delimitation as follows:

1. Peel strength: (ASTM D1781): 22.5 in-lb/in minimum.
2. Bond Strength (ASTM C297): 1500 psi minimum.
3. No degradation in bond performance after 8 hours of submersion in boiling water and after 21 days of immersion in water at 70 degrees F.

B. Fire Performance
1. Flame spread (ASTM E84): 25 maximum.

2. Smoke developed (ASTM E84): 450 maximum.

3. Surface flammability (modified ASTM E108): Pass.

4. V-0 Rating: Comply with UL94.

1.04 SUBMITTALS

A. Submittal: Submit pertinent catalog details and calculations, as required.

B. Samples: Submit 8” x 8” sample of panel system in specified finish, if available, fabricated into units representative of the actual calculations.

C. Shop Drawings: Submit CAD generated shop drawings showing profiles of panel units, details of forming, joint supports, anchorages, trim, flashings, sealants and accessories. Show details of weatherproofing at edge terminations, show elevations, and layout of entire work.

1.05 PRODUCT HANDLING

A. After acceptance of panels on a given elevation, protection shall be the responsibility of the General Contractor.

2.00 **PRODUCTS**

2.01 SPECIFIED MANUFACTURER

A. General
1. CEI Composite Materials, LLC D6000 System ACM wall panel assembly
800 E Duncan Street, Manchester, MI 48158
734.212.3006 or sales@ceicomposites.com

B. Description
1. The system shall consist of ACM panels, and a system of custom aluminum extrusions of size and shape indicated on drawing as specified herein. The panel shall utilize a continuous aluminum extrusion at this panel perimeter, fastened to the return leg with aluminum rivets. It shall also incorporate a series of custom flashing to terminate the panel system.

C. Aluminum Composite Material (ACM)
1. Composite: Two sheets of aluminum sandwiching a core of extruded thermoplastic, formed in a continuous process with no glues or adhesives between dissimilar materials. Total composite thickness is 4mm.

2. Face Sheets: 0.020” thick aluminum (alloy to be 3003 for coil-coated sheet or 5005 for anodized).

3. Finish: Exterior surfaces shall be coil coated with FEVE or PVDF based resin which meets or exceeds AAMA 2605-02 testing for durability..In particular, the coating must have successfully passed the following or equal tests:

a) Humidity Resistance
   I. Test Method: ASTM D-2247
      a). No formation of blisters when subjected to condensing water fog at 100% relative humidity and 100 degree Fahrenheit for 3000 hours.

      b). Salt Spray Resistance
         I. Test Method: ASTM B-117; expose coating system to 3000 hours, using 5% NaCl solution.
            i. Corrosion creepage from scribe line: 1/8" max. (1.6mm).

            ii. Minimum blister rating of 8 within the test specimen field.

      c). Weather Exposure
         I. Outdoor
            i. Ten year exposure at 45 degree angle facing south Florida exposure.

            ii. Maximum color change of 5 Delta E units as calculated in accordance with ASTM D-2244.

            iii. Maximum chalk rating of 8 in accordance with ASTM D-659.

            iv. No checking, crazing, adhesion loss.

4. Color
   a). The Manufacturers standard color as selected by architect.

5. Core
   a). Thermoplastics

D. Panel System
   1. Perimeter Edge Trim: Continuous aluminum extrusions which integrate to the sub-system clips as detailed on drawings, so as to provide the following essential features:
      a). Rout and return of the ACM on all perimeters.

      b). Return leg of ACM shall be supported by extrusions on all four sides.

      c). Maximum overall system thickness can vary as required by design. Absolute minimum is 1-3/16"

      d). The ACM panel shall be held in place by a minimum #12 fasteners at a maximum of 16" on center.

      e). Extrusions shall be mill finish.

   2. Stiffeners (if required)
      a). Aluminum sections secured to the perimeter extrusion of the panel and bonded to rear face of ACM with silicone, and of sufficient size and strength to maintain flatness of the panel within the specified tolerances. Stiffeners shall have a mill finish.

   3. Reveals at Panel
      a). Rubber Gasket joints shall be 1/2" wide, nominal.

      b). Rubber Gasket joints will be recessed approximately 1/4", normal.

      c). Rubber Gasket joints shall be the same color as the panels or an accent color if noted as such on the plans.

E. Flashings
   1. Fabricate flashing from aluminum sheet in matching color; where exposed to view finish to match adjacent panels. Provide lap strip under flashing at abutted conditions; with lapped surfaces sealed with a full-bed of non-hardening sealant.

2.02 FABRICATION

A. Fabricate panel units to dimensions indicated on the drawings based on an assumed design temperature of 70 degrees F.

B. Fabricate panels in sizes shown using composite aluminum panel material and perimeter extrusion so that the panel thickness at the joinery is as required by design. Completed panel shall be properly fabricated and designed so that no restraints can be placed on the panel, which might result in compressive skin stresses. The installation detailing shall be such that the installed panels shall remain flat due to temperature changes. Oil canning of panel surface is not acceptable.

C. Shop fabricate units ready for erection. If not shop assembled, pre-fabricate components at the shop as required for proper and expeditious field assembly

D. Design, fabricate, assemble, and erect wall panel units.

E. Where drawings indicate, factory curve panels to required radius. Special considerations for design required contact CEI Composite Materials Design DepartmentF.

F. If required, provide stiffeners adhered to rear face of panels and mechanically fastened to perimeter extrusion members, with spacing as required by specific job wind loading.

3.00 **EXECUTION**

3.01 DELIVERY AND STORAGE

A. Delivery: Deliver fabricated units and component parts identified per erection drawings.

B. Protection of Surfaces: Protect surfaces from damage during shipping and erection. Inspect work for damage upon delivery - no damaged work permitted on job site.

C. Storage: Coordinate with General Contractor for storage space.

D. Panel Penetrations: All panel penetrations shall be field cut by the trade involved or coordinated with the panel installers at time of installation.

3.02 INSPECTION

A. Examine supporting structure and conditions under which the work is to be erected, and notify the Contractor in writing of conditions detrimental to proper and timely completion of the work. Do not proceed with erection until unsatisfactory conditions have been corrected.

B. Verify weather barrier membrane has been installed properly over sheathing substrate to prevent air infiltration or water penetration.

3.03 INSTALLATION - ERECTION

A. General

1. Do not install component parts, which are observed to be defective, including warped, bowed, dented, abraded and/or broken members.

2. Do not cut, trim weld, or braze component parts during erection, in a manner which would damage finish, decrease strength, or result in a visual imperfection or a failure in performance of wall panels. Return component parts which require alteration to shop for re-fabrication, if possible, or for replacement by new parts.

3. Metal Separation: Apply a coat of bituminous paint, concealed, on one or both surfaces wherever dissimilar metals would otherwise be in contact. Use gasketed fasteners where needed to eliminate the possibility of corrosive or electrolytic action between metals.

4. Anchor component parts of the metal wall securely in place, allowing for necessary thermal structural movement.

3.04 CLEANING AND PROTECTION

A. After installation of panels on a given elevation, any additional protection shall be the responsibility of the General Contractor.

B. Deposit all trash from panel shipping crates in General Contractor's furnished debris dumpsters.

C. Make sure perimeter sealants have been installed next to adjacent perimeter materials.

D. Remove protective film at time of panel installation.

3.05 PANEL REPLACEMENT (Optional)

A. Owner shall be provided with _____sheets of ACM _____ X _____.

END OF SECTION