## SECTION 07 42 43 - ALUMINUM COMPOSITE WALL PANELS (WET SEAL)

## PART 1 – GENERAL

### 1.01 Summary

1. An aluminum composite panel used as the exterior/interior cladding of new buildings and retrofit applications.

### 1.02 Related Sections

A. 05 10 00 Structural Metal Framing
B. 05 40 00 Metal Framing
C. 07 20 00 Thermal Protection
D. 07 60 00 Flashing and Sheet Metal
E. 07 90 00 Joint Protection

### 1.03 Submittals

A. Shop drawings shall show panel system including proprietary extrusions, attachment methods, joinery, non-exposed sealants/gaskets, size/type and location of all fasteners including rivets and stiffeners.

B. Finish samples shall be minimum 3.5” x 3.5” of aluminum composite material in the specified panel finish.

C. Material samples shall be minimum 12” square with perimeter extrusions in place, not necessarily in the specified panel finish.

D. Three copies of the manufacturers and fabricators literature.

### 1.04 Quality Assurance

A. Composite panel manufacture shall have a minimum of 15 years’ architectural experience in the manufacture of this product and be located within the continental United States.

B. Installer shall be approved by the fabricator. Supporting documentation shall be forwarded to the Architect.

C. Maximum deviation from the vertical and horizontal alignment of erected panels shall be not more than 1/4” in 20’-0”.

D. Painted surfaces of the aluminum composite panels shall meet the criteria printed in the manufacturer’s printed literature.

E. Where possible and without delaying project, field dimensions are to be taken by the installer prior to commencement of fabrication.

F. Coordinate fabrication schedule with construction progress as directed by the contractor to avoid delay of work.

### 1.05 Product Delivery, Handling & Storage

A. Protect panel finish and edges per panel manufacturer’s recommendations.

B. Store material in accordance with manufacturer’s recommendations, on skids & tarped.

C. Contractor to provide adequate space for storage for each panel elevation.

## PART 2 – PRODUCTS

### 2.01 Specified Manufacturer

A. General

1. Columbia Architectural Products Inc. Series WS composite wall panel assembly.

   10722 Tucker Street, Beltsville, Maryland 20705
   301-937-4383 www.capacm.com

B. Panels shall be 4mm PE core aluminum composite material, REYNOBOND, as manufactured by Alcoa Architectural Products or ALPOLIC as manufactured by Mitsubishi Plastics Composites America.

### 2.02 References

A. American Society for Testing and Materials

1. E330: Structural Performance of Exterior Windows, Curtain Walls and Doors under the influence of Wind Loads.
2. E283: Rate of Leakage Through Exterior Windows, Curtain Walls and Doors.
3. D1781: Climbing Drum Peel Test for Adhesive Materials.
4. E84: Surface-Burning Characteristics of Building Materials.

C. Composite panels shall have PE Core and a Class “A” building material rating when tested in accordance with ASTM E84 (Steiner Tunnel Test) and shall exhibit a flame spread of 15 and a smoke developed rating of 120, with a center panel joint.

D. Panels shall have passed the ASTM E108 modified test.

E. Panel thickness - RB160 (4mm),

F. Panel weight - RB160 (4mm) = 1.2 lbs/sq.ft.

G. Panel Finishes:

1. Coating shall be a fluoropolymer coating utilizing 70% Kynar 500 resins.

   a. Color as selected by owner/consultant from manufacturer’s standard colors.

   b. Coating shall be factory applied 2 coat process, continuous paint line. Coating shall consist of a 0.2 mil prime coat, a 0.8 mil color coat containing 70% Kynar resins, and a 0.5 mil clear coat containing 70% Kynar resins if a metallic coat is required.

2. Pencil Hardness – ASTM D3352
Shall be HB-H minimum (Eagle Turquoise).

3. Reverse Impact Adhesion – ASTM D2794
Coating shall show no cracking and no loss of adhesion

4. Abrasion Resistance-Falling Sand – ASTM D968
Coating shall withstand 50+ Liters.

5. Humidity Resistance – ASTM D2247
Coating shall show no blisters after 3000 hours of 100% humidity at 95`F.

6. Salt Spray Resistance – ASTM B117-85
After 3000 hours of exposure. Atlas Weather-Ometer Test – ASTM D822
Coating shall show no cracking, peeling, blistering or loss of adhesion after 2000 hours.

a. Chalk Resistance – ASTM D4214
Variability up to +/- 0.8 delta

b. Color Retention – ASTM D2244
Variability up to +/- 0.5 delta

c. After 5000 hours in Atlas Weather-Ometer coating shall show no objectionable chalking or color change.

**2.02 Panel Fabrication**

A. Composition

1. Aluminum composite material shall be composed of a thermoplastic core sandwiched between two aluminum sheets formed in a continuous process with no applied glues or adhesives.

2. Bond integrity per ASTM D1781-76 and ASTM C481 Cycle B, shall be a minimum of 40 in-lb.in. (Peel Strength)

B. Aluminum face sheets

1. Thickness .020” of 3105 H25 aluminum alloy.

C. Tolerances

1. Panel bow shall not exceed 3.8% of panel overall dimension in width or length.

2. Panel dimensions shall be such that there will be an allowance for field adjustment and thermal movement.

3. Panel lines, breaks and curves shall be sharp, smooth and free from warps or buckles.

D. Panel surfaces shall be free of scratches or marks caused during fabrication.

E. Ensure that entire project is manufactured from single color coil paint run to ensure color uniformity.

F. If a metallic color is selected ensure that panel grain is maintained. Under no circumstances are panel blank sizes to be rotated even if material waste in increased.

**2.03 Accessories**

A. All exposed fasteners shall be chemically coated or stainless steel.

B. All hidden fasteners shall be chemically coated or stainless steel.

C. System is to be a rout & return Wet Seal with exposed fasteners located in the return flanges.

D. Rod and sealant shall be used at panel-to-panel connections, covering exposed fasteners.

## PART 3 – EXECUTION

### 3.01 Inspection

A. Panel substructure shall be level and plumb.

B. Panel substructure shall be free of defects detrimental to work and installed in accordance with established building tolerances.

### 3.02 Installation

A. Install panels level and plumb, in proper alignment in relation to substructure framing and established lines.

B. Panels shall be erected in accordance with approved shop drawings.

C. Where aluminum materials come in contact with dissimilar materials, an isolation shim or tape shall be installed at fastening locations.

### 3.03 Adjusting and Cleaning

A. Replace any panels with irreparable damage.

B. Repair any panels with minor damage.

C. Remove strippable film coating from panels after adjacent materials have been cleaned.

## PART 4 – MATERIAL VARIATIONS

### 1.01 Submission Format

A. Alternate materials will only be considered if applied for in writing to the Architect 10 days prior to bid date.

**END OF SECTION**