

**SECTION 074213.16
ALUMINUM PLATE PANEL SYSTEM**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Aluminum Plate used as exterior or interior cladding

1.2 RELATED SECTIONS

- A. Division 05 "Cold Formed Metal Framing, as applicable
- B. Division 07 "Thermal Insulation" as applicable
- C. Division 07 "Fluid Applied Air Barriers" as applicable

1.3 REFERENCES

- A. American Architectural Manufacturer's Association (AAMA)
 - 1. AAMA 2605 – Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
- B. American Society of Civil Engineers (ASCE)
 - 1. ASCE 7 – Minimum Design Loads for Builders and Other Structures
- C. ASTM International (ASTM)
 - 1. ASTM B 117 – Standard Practice for Operating Salt Spray (fog) Apparatus
 - 2. ASTM D 1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes
 - 4. ASTM D 1781 - Standard Test Method for Climbing Drum Peel for Adhesives
 - 5. ASTM D 2244 – Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
 - 6. ASTM D 2247 – Standard practice for Testing Water Resistance of Coatings in 100 Percent Relative Humidity

7. ASTM D 2794 – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
8. ASTM D 3350 – Standard Test Method of Measuring Adhesion by Tape Test
9. ASTM D 3363 – Standard Test Method for Film Hardness by Pencil Test
10. ASTM D 4214 – Standard Test Method for Evaluating the Degree of Chalking of Exterior Paint Films
11. ASTM E 72 – Standard Test Method of Conducting Strength Test Panels for Building Construction
12. ASTM E 84 – Test Method for Surface Burning Characteristics of Building Materials
13. ASTM E 119 – Test Method for Fire Tests of Building Construction and Materials
14. ASTM E 283 – Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors under Specified Pressure Differences across the Specimen
15. ASTM E 330 – Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference
16. ASTM E 331 - Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference

D. Underwriters Laboratories, Inc. (UL)

1. UL 263 – Fire Resistance Test of Building Construction and Materials
2. UL 723 – Test for Surface Burning Characteristics of Building Materials
3. UL Fire Resistance Directory

1.4 PERFORMANCE REQUIREMENTS

A. Air Leakage

1. Panel system shall not have an air infiltration rate more than 0.12 cfm per sq. ft. of fixed wall area when tested in accordance with ASTM E 283 at static air pressure differential of 1.57 PSF.
2. Deflection Limits – Withstand test pressures of inward and outward wind load design pressures with maximum deflection of L/60 of the span with no failure

B. Structural – Provide metal wall panel assemblies capable of withstanding the effects of indicated loads and stresses from dead loads, wind loads, snow loads and normal thermal

movement without evidence of permanent defects of assemblies or components when tested in accordance with ASTM E 330.

C. Static Water Penetration – Panel system shall have no water penetration as defined by test method ASTM E 331 at inward static pressure differential of not less than 6.24 psf positive static air pressure difference for a 15 minute duration with a water application rate of 5 gallon/ft²/hour

1.5 SUBMITTALS

A. Product Data: For each type of product specified, include construction details, material description, dimensions of involved components and profiles and finishes for each type of metal faced composite wall panel and accessory.

B. Shop Drawings: Submit shop drawings detailing plan, elevation and section views as necessary to determine proper fabrication and installation methods. Coordinate building locations with those found in the architectural drawings.

C. Selection Samples: For each material finish specified, submit color sample representative of architect's selection

E. Engineering: If required, calculations supporting structural performance of wall panels shall be prepared and submitted by a professional structural engineer

F. Warranties: Samples of specified warranties.

1.6 QUALITY ASSURANCE

A. System Fabricator Qualifications: Minimum of 5 years of experience fabricating exterior wall panels similar to those specified

B. Installer qualifications: Acceptable to Fabricator

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver metal wall panels in Fabricator's original, containers with labels intact

B. Contractor to handle metal wall panels according to Fabricator's instruction, if any are indicated

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual supporting and adjoining construction by field measurements before fabrication and indicate actual measurements on final shop drawings.

1. Do not begin installation until substrates have been properly prepared

B. Install metal wall panels within environmental limits recommended by fabricator for optimum results

1.9 WARRANTY

A. The panel system Fabricator shall warrant that the specified system will be free from defect in material and workmanship for a period of two years.

B. Exposed Panel Finish warranty limits are as follows:

1. Color fading of no more than 5 Hunter units when tested according to ASTM D 244
2. Chalking will not be in excess of a No. 8 rating when tested according to ASTM D 4214
3. Cracking, checking, peeling or failure of paint to adhere to bare metal

C. Finish Warranty Period:

1. 10 years from date of substantial completion

PART 2 PRODUCTS

2.1 SYSTEM FABRICATOR

A. East Coast Metal Systems, Inc. 625 Distribution Road, Triadelphia, WV 26059; (800) 345-6755

2.2. ALUMINUM PLATE WALL PANEL SYSTEM:

1. Plate Alloy shall be 3003-H14/3105-H14 for painted finish. 5005-H34 for anodized finish
2. Thickness 0.125 inch [0.090 inch, 0.187 inch]
3. Aluminum Extrusions
 - a. Alloy 6063-T6 and/or 6061-T6
4. Tolerances
 - a. Panel Bow: maximum 0.8 of any 72 inch panel dimension
 - b. Panel Flatness: maximum deviation less than 1/8 inch in 5 ft. on panel in any direction for assembled units

2.3 WALL SYSTEM FABRICATION

A. System Type: EC-150, caulked-joint rout and return barrier aluminum plate wall panel system, fabricated by East Coast Metal Systems, Inc.

1. Tolerances: Reinforce panels with stiffeners where applicable to meet design criteria
2. Surfaces shall be free from warp or buckle

2.4 FINISHES – ALUMINUM PLATE

A. Panel Finishes

1. Coating shall be fluoropolymer coating utilizing 70% Kynar 500 resins.
2. Color as specified and selected by owner/designer
3. Relevant to color selected, material to be painted in accordance with either AAMA 2605 or 2604 (as specified by Architect)
4. Two (2) coat finish [3 coat] [4 coat]. Coating shall consist of a 0.2 mil prime coat, a 0.75 mil barrier coat, a 0.75 mil metallic or color coat containing 70% Kynar resins and a 0.5 mil clear coat containing 70% Kynar resins (mil thicknesses are nominal)

B. Pencil Hardness – ASTM D 3352-74

C. Shall be HB-H minimum

D. Impact Adhesion – ASTM D 294-84

1. Coating shall show no cracking or loss of adhesion

E. Cure test – NCCA 11-18

1. Coating shall withstand 50+ double rubs of MEK

F. Humidity Resistance – ASTM D 2247-87

1. Coating shall show no blisters after 3000 hours of 100% humidity at 95° F

G. Salt Spray Resistance – ASTM B117-85

1. After 300 hours of exposure to 5% salt fog, at 95° F; scored sample shall show none or few #8 blisters and less than 1/8" creepage from scribe

Note to Specifier: Select paragraphs H or I for anodized finish

H. Class 1 Clear Anodic Finish: AA-M12C22A41 (mechanical finish; non-specular as fabricated; chemical finish; etched, medium matte; anodic coating, architectural Class 1 clear coating 0.018 mm or thicker) complying with AAMA 607.1.

I. Class 1 Color Anodic Finish: AA-M12C22A42/A44 (mechanical finish; non-specular as fabricated; chemical finish, etched, medium matte; anodic coating: Class 1 integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 606.1 or AAMA 608.

1. Color as selected by architect from the full range of industry colors and color densities
2. Color: match approved sample within allowable range per industry standard and practice.

2.5 FIELD MEASURING

- A. Field verify all relevant building dimensions prior to fabrication

2.6 EXAMINATION

- A. Installation to begin after all substrates have been properly prepared

2.7 INSTALLATION

- A. Install in accordance with manufacturer's details and instructions

2.8 CLEANING AND PROTECTING

- A. Clean exposed surfaces of wall panels that are not protected by temporary covering to remove fingerprints and soil from construction
- B. Clean exposed surfaces with water and a mild detergent. Thoroughly rinse surface and dry
- C. Use temporary protective coverings, where needed, as approved by the wall panel manufacturer.

END OF SECTION