

SECTION 07415

ALUMINUM PLATE CEILING PANELS

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes
 - 1. The extent of panel system work is indicated on the drawings and in these specifications. The following specification is based on
 - 2. Ceiling panel system requirements include the following components:
 - a. Aluminum-faced composite panels with mounting system.
 - b. Panel mounting system including anchorages, furring, fasteners, gaskets and sealants, related flashing adapters and masking for a complete installation.
 - 3. Aluminum store front system, soffits, sills, border and filler items may be indicated as integral components of the panels system or as designed.
 - 4. System to be fabricated and installed per local code requirements.
- B. Related Documents
Drawings and general provisions of the contract, including general and supplementary conditions, division 1 specification sections and technical specification divisions 2 through 16, apply to this section.
- C. Related Work Specified Elsewhere
Section 05500: METAL FABRICATIONS
Section 07270: FIRESTOPPING/ SMOKE SEALS
Section 07900: JOINT SEALERS
Section 08423: EXTRUDED ALUMINUM BALANCED DOORS AND ENTRANCES

1.02 QUALITY ASSURANCE

- A. Composite panel manufacturer shall have a minimum of 10 years' architectural experience in the manufacture of this product and be located within the continental United States.
- B. It is recommended that fabrication and installation of composite panels shall be from a single source. If not single source, both panel fabricator and the installer must show proof of past successful collaboration.
- C. Fabricator shall be acceptable to composite panel manufacturer.

- D. Fabricator and Installer shall have a minimum 5 years' experience in architectural metal panel work similar in scope and size to this project.
- E. Coordinate fabrication schedule with construction progress as directed by the contractor to avoid delay of work.
- F. Shop drawings shall show the preferred joint details providing a structurally sound ceiling panel system that allows no uncontrolled water penetration, on the inside face of the panel system as determined by ASTM E331.
- H. Panel fabricator and installer shall assume undivided responsibility for all components of the ceiling panel system. including but not limited to, attachment to sub-construction, panel-to-panel joinery, panel-to-dissimilar-material joinery and joint seal associated with the panel system.

1.03 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.
- B. Underwriter's Laboratories:
 - 1. UL 1715: Room Fire Test Standard for Interior of Foam Plastic Systems.
- C. American Architectural Manufacturers Association
AAMA-620 1.

1.04 SUBMITTALS

- A. Submittals shall be in conformance with Division 1 General Requirements.
- B. Samples
 - 1. Panel Assembly: One 8"x8" sample including attachment methods.
- C. Shop Drawings: Submit shop drawings showing project layout and elevations; fastening and anchoring methods; detail and location of joints, sealants and gaskets, including joints necessary to accommodate thermal movement; trim; and accessories.
- D. Manufacturer's literature shall certify that material meets specifications.
- E. Documents showing product compliance with the local building code shall be submitted prior to the bid. These documents may include evaluation reports, test reports, supporting document and drawings, and manufacturer's data. The architect must approve alternate material prior to bid date.

1.05 WARRANTY

- A. The fabricator and installer will warrant the wall system for a period of 1 year that the fabrication and installation workmanship will be free from defects.
- B. The aluminum composite material manufacturer shall warrant for a period of 10 years against Max 5 fade based on ASTM D2244 and Max 8 chalk based on ASTM D4212 and delamination of the paint finish.

1.06 PACKAGING, SHIPPING AND HANDLING

- A. Follow manufacturer's recommendations.
 - 1. Store material in accordance with panel manufacturer's recommendations.

PART 2 – PRODUCTS

2.01 PANELS

- A. Composite Panels
 - 1. Panels shall be Reynobond[®] Aluminum Composite Material (ACM) as manufactured by Alcoa Architectural Products, 50 Industrial Boulevard, Eastman, Georgia 31023. Contact Eastman plant at 1-800-841-7774 or 478-374-4746 or at www.alcoaarchitecturalproducts.com.
 - 2. Firestone Metal Products, 1001 Lund Blvd., Anoka, MN 55330 Phone 800-426-7737, Fax 763-576-9596, www.unaclad.com Series 3000 - Aluminum Plate Wall Panel System
 - 3. Other manufacturers are acceptable as long as their product meets the same criteria as Reynobond or Unaclad in thickness, panel weight, bond integrity, fire rating, paint color and finish.
- B. Composite panels shall have 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.
- C. Panel Thickness
RB160 (4 mm) = 0.157" / RB240 (6 mm) = 0.236 panel
- D. Panel Weight
RB160PE (4 mm) = 1.12 lbs/sft / RB240 (6 mm) = 1.49 lbs/sft
- E. Product Performance
 - 1. Bond Integrity
When tested for bond integrity, in accordance with ASTM D1781 (simulating resistance to panel delamination), there shall not be a) an adhesive failure of the bond between the core and the skin or b) cohesive

failure of the core itself below the following values.

2. Peel Strength (PE):
 - a. 178 N mm/mm (40 in lb./in.) as manufactured
 - b. 178 N mm/mm (40 in lb./in.) after 21 days soaking in water at 70°F
3. Fire Performance
ASTM E84 – Passed Class A

F. Panel Finishes

1. Coating shall be Colorweld 300 (or Colorweld 300XL), a fluoropolymer coating utilizing 70% Kynar 500 resins.
2. Color: As selected by architect from manufacturer's standard or custom colors.
3. Coating shall be factory applied on a continuous process paint line.
Coating shall consist of a 0.2 mil (approx.) prime coat and a 0.8 mil (approx.) finish coat containing 70% Kynar resins.
(If Colorweld 300XL, coating shall consist of a 0.2 mil (approx.) prime coat, a 0.75 mil (approx.) barrier coat, a 0.75 mil (approx.) metallic/color coat containing 70% Kynar resins, and a 0.5 mil (approx.) clear coat containing 70% Kynar resins.)

2.02 PANEL FABRICATION

A. Composition

1. Aluminum composite material shall be composed of a thermoplastic compound core sandwiched between two aluminum sheets formed into a continuous process.
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". Aluminum Alloy shall be 3105 H25.

C. Tolerances

1. Panel bow shall not exceed 0.8% 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 of warps or buckles.

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

2.03 ACCESSORIES

- A. All exposed fasteners shall be self-tapping 300 Series Stainless Steel.

- B. All self-drilling fasteners shall be protected with a corrosion resistant finish.
- C. All sealants shall be compatible with panel materials.

PART 3 – EXECUTION

3.01 INSPECTION

- A. Panel substructure shall be level and plumb.
- B. Panel substructure shall be structurally sound as determined by Architect/Engineer.
- C. Panel substructure shall be free of defects detrimental to work and erected in accordance with established building tolerances.

3.02 INSTALLATION

- A. Erect panels level and plumb, in proper alignment and relation to substructure framing and established lines.
- B. Panels shall be erected in accordance with an approved set of shop drawings.
- C. Panel anchorage shall be structurally sound and per engineering recommendations, if required.
- D. Where aluminum materials come in contact with dissimilar materials, a bituminous paint or caulking tape shall be installed to insulate between the dissimilar materials. Factory applied protective paint or G-90 galvanized steel is considered adequate insulation.

3.03 ADJUSTING AND CLEANING

- A. Remove and replace panels damaged beyond repair as a direct result of panel installation. After installation, panel repair and replacement shall become the responsibility of the general contractor.
- B. Repair panels with minor damage.
- C. Remove masking film (if used) as soon as possible after installation. Masking intentionally left in place after panel installation on an elevation shall become the responsibility of the general contractor.
- D. Any additional protection, after installation, shall be the responsibility of the general contractor to remove.

END OF SECTION