

SECTION 07400 - ALUMINUM COMPOSITE PANEL SYSTEM (DRY SET)

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

- .1 05100 Structural Metal Framing
- .2 05400 Metal Framing
- .3 07200 Insulation and Air Vapour Barriers
- .4 07600 Metal Flashing
- .5 07900 Sealants

1.03 Submittals

- .1 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, provisions for thermal movement and shall bear the stamp of a professional engineer licensed in the governing city/province or state.
- .2 Finish samples shall be minimum 3" x 5" of aluminum composite material in the specified panel finish.
- .3 Material samples shall be minimum 12" square with perimeter extrusions in place, not necessarily in the specified panel finish.
- .4 Six copies of the manufacturers and fabricators literature.
- .5 Written certification that the erector is qualified shall be submitted with samples and drawings.

1.04 Quality Assurance

- .1 Panel fabricator shall be approved by the aluminum composite manufacturer. Erector if not the fabricator shall be approved by the fabricator. Supporting documentation shall be forwarded to the consultant.
- .2 Maximum deviation from the vertical and horizontal alignment of erected panels shall be not more than 1/2" in 20'0".
- .3 Painted surfaces of the aluminum composite panels shall meet the criteria printed in the manufacturer's printed literature.
- .4 Where possible and without delaying project, field dimensions are to be taken prior to commencement of fabrication.

1.05 Product Delivery, Handling & Storage

- .1 Protect panel finish and edges per panel manufacturer's recommendations.
- .2 Store material in accordance with manufacturer's recommendations, on skids & tarped.
- .3 Contractor to provide adequate space for storage for each panel elevation.

PART 2 – PRODUCTS**2.01 Aluminum Composite Material Building Panels**

- .1 Panels shall be 4mm or 6mm PE core REYNOBOND or ALPOLIC, aluminum composite material as manufactured by ALCOA or MITSUBISHI.
- .2 DRY-SET panel system shall be furnished and fabricated by Kanalco Ltd., Bowmanville, Ontario (phone 905-623-2303#25, fax 905-623-3218).
- .3 FABRICATOR must be endorsed by the manufacturer and shall have tested systems in place. 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.
- .4 Panels shall have passed the ASTM E108 modified test.
- .5 Panel thickness - RB160 (4mm), RB200 (6mm)
- .6 Panel weight - RB160 (4mm) = 1.2 lbs/sq.ft.
RB240 (6mm) = 1.49 lbs/sq.ft.
- .7 Panel Finishes:
 1. Coating shall be Colorweld 500 or Colorweld 500XL, a fluoropolymer coating utilizing 70% Kynar 500 resins.
 - .1 Color as selected by owner/consultant from manufacturer’s standard or custom colors.
 - .2 Coating shall be factory applied on a continuous process paint line. Coating shall consist of a 0.2 mil prime coat, a 0.75 mil barrier coat, a 0.75 mil metallic/color coat containing 70% Kynar resins, and a 0.5 mil clear coat containing 70% Kynar resins
***Note mil thickness is approximate.
 2. Pencil Hardness – ASTM D3352-74
Shall be HB-H minimum (Eagle Turquoise).
 3. Impact Adhesion – ASTM D294-84
Coating shall show no cracking and no loss of adhesion
 4. Cure Test – NCCA 11-18
Coating shall withstand 50+ double rubs of MEK.
 5. Humidity Resistance – ASTM D2247-87
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 to 5% salt fog, at 95°F, scored sample shall show none or few #8 blisters, and less than 1/8” average creepage from scribe (1/16” for Colorweld 500XL)
 7. Weatherometer Test – ASTM D882-86/G23-88
Coating shall show no cracking, peeling, blistering or loss of adhesion after 2000 hours.
 - .1 Chalking Resistance – ASTM D659-86
No chalking greater than #8 after 10 years Florida exposure at 45°S.
 - .2 Color Change – ASTM D2244-74
Color change shall not exceed 5 NBS units after 10 years Florida exposure at 45°S.
 - .3 After 5000 hours in Atlas Weatherometer coating shall show no objectionable chalking or color change.
 8. Abrasion Resistance – ASTM D968-81
Coating shall resist 65+/- 15 liters/mil minimum of falling sand.

2.02 Panel Fabrication

- .1 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)
- .2 Aluminum face sheets
 - .1 Thickness .020" of 3105 H25 aluminum alloy.
- .3 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.
- .4 Panel surfaces shall be free of scratches or marks caused during fabrication.
- .5 Ensure that entire project is manufactured from single color coil paint run to ensure color uniformity.
- .6 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 is increased.

2.03 Accessories

- .1 All exposed rivets/fasteners shall be stainless steel.
- .2 All hidden fasteners shall Climaseal coated or stainless steel.
- .3 All proprietary extrusions and gaskets supplied by fabricator. System is to be Dry Set with exposed stainless steel rivets located in the return flange.
- .4 No exposed sealant to be used at panel-to-panel connections.

PART 3 – EXECUTION

3.01 Inspection

- .1 Panel substructure shall be level and plumb.
- .2 Panel substructure shall be structurally sound as determined by that subcontractor's engineer.
- .3 Panel substructure shall be free of defects detrimental to work and erected in accordance with established building tolerances.

3.02 Installation

- .1 Erect panels level and plumb, in proper alignment in relation to substructure framing and established lines.
- .2 Panels shall be erected in accordance with approved shop drawings.
- .3 Panel anchorage shall be structurally sound and per engineering recommendations.
- .4 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

- .1 Replace any panels with irreparable damage.
- .2 Repair any panels with minor damage.
- .3 Remove strippable film coating from panels after adjacent materials have been cleaned. If such cleaning is not done staining of composite panels to be cleaned by general contractor.

END OF SECTION