

Specifications

Preformed Metal Wall and Roof Panels

Alcoa Cladding Systems
Manufacturing Plant
100 Industrial Boulevard
Eastman, Georgia 31023

Section 07410
Preformed Metal Wall and Roof Panels
Structural and Architectural Insulated Panel Systems

Part 1 - GENERAL

1.01 Section Includes

A. Furnish and install metal wall and/or roof panels and accessories in accordance with applicable drawings and this specification. Alternate products to be considered equal must be approved by the Architect via an addendum 10 days prior to bid date.

1.02 Related Sections

- A. 05100 Structural Metal Framing
- B. 05400 Cold-Formed Metal Framing
- C. 07200 Building Insulation
- D. 07600 Flashing and Sheet Metal
- E. 07900 Sealants (Joint Sealers)
- F. 09800 Finishes

1.03 Submittals

A. Shop drawings shall be prepared for architect's approval and shall show metal panel wall and/or roof system, including fastening (attachment) methods, joinery, sealing methods, accommodations of thermal movement, accessories required and erection procedures. Details shall not be drawn less than one-half (1/2) size.

B. Samples

1. If required, ___ samples of panel material shall be furnished.
2. ___ samples of each standard or custom color shall be submitted for Architect's approval.

C. Two copies of manufacturer's literature for the metal panel wall or roof system.

D. A manufacturer's Certificate of Compliance certifying that the metal panel to be supplied meets or exceeds the requirements specified.

1.04

Quality Assurance

A. Alcoa Cladding Systems products establish the level of quality required.

B. Panel system installer shall be experienced with the installation of metal wall and roof systems on projects with similar scope and complexity, and acceptable to panel manufacturer.

C. Panel supplier shall furnish calculations confirming structural adequacy if requested.

D. Painted surfaces of metal panels shall meet all specified criteria printed in the manufacturer's literature. Where possible, field measurements shall be taken prior to metal panel and flashing fabrication.

1.05

Product Delivery, Handling and Storage

A. Protect panel finish per panel manufacturer's recommendations. Store materials in accordance with panel manufacturer's recommendations. Store any mill finish aluminum materials in accordance with the Aluminum Association and manufacturer's recommendations.

Part 2 - PRODUCTS

2.01

Panel System

The panel system shall be of such profile and gauge to withstand a load requirement of ___ psf, with a deflection limitation of L/60 for aluminum and L/180 for steel.

2.02

All metal panels required to complete the installation shall be manufactured by Alcoa Cladding Systems and consist of:

A. Interior Liner [select one] -

(If interior liner panel is not to be specified, delete 2.02A and other references to liner panels and subgirts.):

* 24" wide Reynoliner

* Planewall

* 1/2" Corrugated

* 7/8" Corrugated

* 7/8" Corrugated Perforated. Perforations to be 1/8" diameter holes on 5/16" staggered centers for a 14% open area.

* Rainlock® Rib

Fabricated From [select one]:

* (.032") or (.040") or (.050") aluminum, alloy 3004 mill finish conforming to ASTM B209-96.

* (24[.0236" min.]) or (22[.0296" min.]) or (20[.0356" min.]) gauge G-90 galvanized steel conforming to ASTM A653-96.

(Option) Interior liner panels shall receive a factory applied Colorweld® 100 (polyester) white coating on interior surface.

* Interior liner panels shall have a stucco embossed or non-embossed finish.

* Side and end laps of interior liner panels shall be field or factory caulked with a good grade sealant, tape or vinyl gasket.

B. Insulation - Glass fiberboard _____ " thick with a "k" factor of 0.24 or less.

C. Exterior panel profile shall be [select one]:

* 1/2" Corrugated

* 7/8" Corrugated

* 4" Rib

* 8" Rib or 8" Rib-R

* 7.2" Rib

* V-Beam

* Reynorib

* Vanguard

* Modified Vanguard

* Mesawall

* Planewall

* Muraline

* Rainlock® Rib

Fabricated From [select one]:

* (.032") or (.040") or (.050") aluminum, alloy 3004 mill finish conforming to ASTM B209-96

* (24[.0236" min.]) or (22[.0296" min.]) or (20[.0356" min.]) or (18 [.0475" min.]) gauge G-90 galvanized steel conforming to ASTM A653-96 Grade A structural Quality.

(Color Coating Option) The outside exposed surface of all exterior panels and flashings shall receive a nominal one (1.0) mil two-coat factory color finish of [select one]:

* Colorweld® SP Siliconized Polyester Coating, Color _____.

* Colorweld® 300 Fluoropolymer (70% Kynar/PVDF) Coating, Color _____.

* (Colorweld® Coating performance specification shall be inserted here).

* Exterior panels shall have a stucco embossed finish.

D. Subgirts - Fabricated from 16 (.0575" min.) or 18 (.0466" min.) gauge galvanized steel located at each structural girt and spaced not more than 6'0" on centers, depending on exterior profile load carrying capacity. Subgirts are field attached to outstanding ribs of steel liner panels. If aluminum liner panels are used, subgirts must be screw fastened through the liner panel into the structural girt. Subgirts are not required when rigid insulation and corrugated liner panels are specified for sandwich walls; zee-shaped or channel shaped subpurlins must be used for sandwich roofs, located over the structural purlins and spaced not more than 4'0" on centers. (Consult for use of aluminum subgirts.)

E. Flashings and Closures - Metal flashings shall be fabricated from the same metal, gauge and finish as the exterior panels, unless shown otherwise on the drawings. Profile closure strips shall be placed where shown on the drawings and fabricated from metal or synthetic rubber.

F. Fasteners - Interior liner panels shall be fastened with [select one]:

- * One cadmium-plated carbon steel No.14 self-tapping screw per panel per girt or purlin for the 12" wide liner panels
- * Two cadmium-plated carbon steel No.14 self-tapping screws per panel per girt or purlin for the 24" wide Reynoliner panels.
- * Four cadmium-plated carbon steel No.14 self-tapping screws per panel per girt or purlin for the corrugated liner panels.

Exterior panels shall be fastened with [select one]:

- * Concealed No.14 cadmium-plated carbon steel self-tapping screws and clips for Muraline panels using one screw and clip fastener per panel per subgirt. Interlocking side laps shall be die clinched on 4'0" centers approximately.
- * Concealed No.14 cadmium-plated carbon steel self-tapping screws for the [select one] (Mesawall) or (Planewall) panels using one screw per panel per subgirt.
- * Exposed No.14 stainless steel self-tapping and sheet metal screws with combination washers for the [select one] (Corrugated) or (4" Rib) or (8" Rib-R) or (7.2" Rib) or (V-Beam) or (Reynorib) or (Rainlock® Rib) panels placing the self-tapping screws in the corrugation valleys (rib crowns for roofing applications) on approximately 8" to 10" centers and the sheet metal screws at side and end laps on 16" centers maximum. Self-tapping screws are to be thru-fastened into the structural girts. All fastener heads shall be factory color coated to match the exterior panels.
- * Metal flashings shall be fastened with No.14 stainless steel self-tapping and sheet metal screws with combination washers at 16" centers maximum.
- * Consult for Vanguard and Modified Vanguard concealed fastening procedures.

G. Panel Laps - Side laps for all exposed fastened panels shall be [select one]: (Note: if concealed fasteners are specified, delete this side lap sentence.)

- * One corrugation crest for siding and one and one-half or two corrugations for roofing for all [select one] (Corrugated) or (Rainlock® Rib) panels.
- * One corrugation valley for all [select one] (4" Rib) or (8" Rib) or (8" Rib-R) or (Reynorib) siding panels.
- * One corrugation crest for all [select one] (V-Beam) or (7.2" Rib) or (Rugged Rib) panels. End laps shall be centered on structural girts or purlins and shall be 2" minimum for liner panels and [select one]:
- * Not less than 2" for concealed fastened exterior siding panels.
- * Not less than 4" for exposed fastened exterior siding panels.
- * Not less than 6" for exposed fastened exterior roofing panels where roof slopes are 3:12 or steeper.
- * Not less than 9" for exposed fastened exterior roofing panels where the roof slopes steeper than 2:12 and less than 3:12, also utilizing a high quality caulking sealant at all side and end laps. (Note to Architect - if lap caulking is desired for roof sheeting regardless of the roof pitch, specify it here.)

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. If aluminum panels are specified, only 300 series stainless steel fasteners are to be used (see 2.02 F above).

D. All Sealants (caulking) shall be compatible with panel materials.

PART 3 - EXECUTION

3.01 Inspection

A. Structural steel (or substructure) required for metal panel attachment shall be level and plumb.

B. Structural steel (or substructure) shall be structurally sound as determined by Architect/Engineer.

C. Structural steel (or substructure) shall be free of defects detrimental to metal panel work

D. The contractor shall examine the alignment of the structural steel (or substructure) before installing any metal panels and shall not proceed with installation if the structural steel (or substructure) is not aligned to the tolerances established by the AISC Code of Standard Practice.

3.02 Installation

A. Field erection of all metal panels and accessories to be accomplished using qualified field mechanics and safety practices.

B. Metal panels should be erected level and plumb, in proper alignment and relation to structural steel (or substructure) and established lines. Panel erection must be started correctly and held true to line.

C. Metal panel and accessory erection shall be in accordance with an approved set of shop drawings.

D. Panel and accessory attachments (anchorage) shall be structurally sound, and per engineering recommendations, if required.

E. (If concealed fastener panels are specified, add this sentence.) (Where design loads exceed 20 psf and at elevations above 50 feet, exterior panels shall be face fastened with exposed self-tapping screws.)

F. 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 coatings or G-90 galvanized steel is considered adequate insulation.

3.03 Adjusting and Cleaning

A. Replace panels that have received irreparable damage.

B. Repair panels with minor damage.

C. Clean all foreign material from panel (building) gutter system when applicable.

D. Remove strippable film coating (if used) as soon as possible after surrounding material has been installed.