

SECTION 07 42 13
PREFORMED METAL WALL PANELS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Preformed metal wall panels.
- B. Related Sections include but are not necessarily limited to:
 - 1. Division 00 - Procurement and Contracting Requirements.
 - 2. Division 01 - General Requirements.
 - 3. Section 07 21 00 - Building Insulation.
 - 4. Section 07 61 13 - Metal Roofing.
 - 5. Section 13 34 19 – Metal Building Systems.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Society of Civil Engineers (ASCE):
 - a. 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
 - 2. ASTM International (ASTM):
 - a. A653/A653M, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - b. E84, Standard Test Method for Surface Burning Characteristics of Building Materials.
 - c. E283, Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
 - d. E331, Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
 - 3. Underwriters Laboratories, Inc. (UL):
 - a. Building Materials Directory.
 - b. Fire Resistance Directory.
- B. Qualifications:
 - 1. Installer shall be licensed or approved in writing by manufacturer.
 - 2. Installer shall have minimum of 10 years of experience in the installation of metal wall panel systems similar to system specified.
 - 3. Installer shall have successfully completed two projects of similar size, scope and complexity within past three years.

1.3 DEFINITIONS

- A. Installer or Applicator:
 - 1. Installer or applicator is the person actually installing or applying the product in the field at the Project site.
 - 2. Installer and applicator are synonymous.

1.4 SYSTEM DESCRIPTION

- A. Metal wall panel system consisting of exterior panel, [and interior liner panel].

1.5 SUBMITTALS

- A. Shop Drawings:
 - 1. See Specification Section 01 33 00 for requirements for the mechanics and administration of the submittal process.

2. Fabrication and/or layout drawings: Drawings, prepared by manufacturer, showing anchorage, flashing, jointing and any special detailing different from or not indicated on the Drawings.
 3. Product technical data including:
 - a. Acknowledgement that products submitted meet requirements of standards referenced.
 - b. Manufacturer's complete installation and erection instructions and details showing all accessories required.
- B. Samples:
1. For initial color selection, provide 2 x 3 IN panel samples for each color offered by manufacturer for Engineer's color selection.
- C. Informational Submittals:
1. Installer qualifications and listing of projects completed in past three years.
 2. Letter of acceptance of Installer from manufacturer.
 3. Instructions on proper cleaning methods and materials for Owner reference.
 4. Warranty.
 5. Product data on insulation for field-insulated panels.
 6. Test data:
 - a. Certification that all tests identified under Article 2.4 have been performed on panel being provided and that panel has passed minimum requirements of those tests.

1.6 WARRANTY

- A. Provide listed manufacturer's standard 20 year warranty on panel finish against fading, chipping, cracking and peeling.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
1. Assembled fastener metal wall panels:
 - a. CENTRIA by NCI Building Systems.
 - b. Merchant & Evans, Inc.
 - c. Alcoa Corporation.
 - d. ASC Profiles LLC.
 - e. MBCI by NCI Building Systems.
 2. PVDF coating:
 - a. PPG IdeaScapes - DURANAR.
 - b. Valspar - Fluropon.
 - c. Arkema - Kynar 500.
 - d. Solvay - Hylar 5000.
- B. Submit request for substitution in accordance with Specification Section 01 25 00.

2.2 MATERIALS

- A. Wall Panels:
1. General:
 - a. Galvanized Steel, ASTM A653/A653M, G60
- B. Perimeter Trim Pieces and Flashing: Same material as wall panels.
- C. Fasteners: 300 Series stainless steel.
- D. Intermediate support items:
1. Steel, galvanized per ASTM A653/A653M with G90 (1.25 OZ) coating.
 2. Minimum 18 GA.
 3. Panel manufacturer shall design subgirt for loading conditions specified.

- E. Insulation: Continuous rigid insulation and fiberglass batts with and without vapor retarder per Section 07 21 00.
- F. Sealant: Manufacturer's standard.

2.3 FABRICATION

- A. General:
 - 1. Fabricate to shapes indicated on Drawings.
 - a. Provide custom fabricated trim pieces as required.
 - 2. Completely fabricate in shop and label all items for field assembly or, if approved in writing by Engineer, fabricate on-site using same equipment used in the fabrication shop.
 - 3. System shall be designed for wind loading in accordance with ASCE 7 and the building code.
 - 4. Length of exterior panels shall be sufficient to cover minimum 40 FT without horizontal joints.
 - 5. Length of interior liner panel shall be sufficient to cover minimum 20 FT without horizontal joints.
 - 6. Fasteners: Painted to match wall panel.
- B. Panels:
 - 1. Exterior Panel (Exposed fastener):
 - a. Profile No 1: Box rib (Horizontal).
 - b. Profile No 2: Reverse box rib (Vertical)
 - c. Gage: Minimum 24 GA.
 - d. Width: Minimum 36 IN.
 - e. Provide watertight gaskets/washers.
 - f. Finish: PVDF having minimum 70 PCT resin content.
 - g. Finish:
 - 1) Three-coat system having minimum 0.8 MIL primer coat on both sides of panel with a 0.8 MIL 70 PCT Kynar 500 or Hylar 5000 resin color coat and a 0.8 MIL 70 PCT Kynar 500 to Jylar 5000 clear top coat on the exterior.
 - 2) .
 - 3) Centria "DURAGARD PLUS."
 - 4) Color: As selected by Engineer from manufacturer's standard colors.
 - 2. Interior liner panels (Concealed fastener):
 - a. Gage: Minimum 24 GA.
 - b. Profile: Flush.
 - c. Width: Minimum 12 IN.
 - d. Finish: Manufacturer's standard factory-applied finished paint system
 - 1) finish.
 - 2) Color: White.
 - e. Maximum deflection: L/180.

2.4 SOURCE QUALITY CONTROL

- A. Factory Tests:
 - 1. The system shall be designed to safely resist the positive and negative loads specified below:

AREA	POSITIVE (DOWNWARD)
Interior and within 8 FT of corners	Refer to Structural Drawings
Corners	Refer to Structural Drawings

- 2. Air infiltration:
 - a. When tested per ASTM E283 at a positive pressure differential of 1.57 PSF, air infiltration shall not exceed 0.06 CFM per square foot of wall area.

- b. Does not apply to liner panels.
- 3. Water infiltration:
 - a. When tested per ASTM E331 at a pressure differential of 6.24 PSF or 20 PCT of the design wind pressure, whichever is greater, there shall be no uncontrolled leakage through the panel joints.
 - b. Does not apply to liner panels.
- 4. Fire tests:
 - a. Panels shall be qualified by laboratory scale and/or full scale fire tests for acceptance by the building code and insurance authorities for use when non-load-bearing non-combustible wall construction is permitted, based on fire performance.
 - b. Evidence of fire performance shall be submitted and include the following:
 - 1) UL classification for "Surface Burning Characteristics" per ASTM E84.

2.5 MAINTENANCE MATERIALS

- A. Extra Materials:
 - 1. Provide Owner with following extra materials:
 - a. Eight 8 OZ of touch-up paint for each color and each different finish specified.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine alignment of structural steel and/or panel support system prior to installation and do not proceed until all defects are corrected.

3.2 ERECTION AND INSTALLATION

- A. Provide all closures, trim, angles, plates, sealant, gaskets, fasteners, washers, etc., as required for complete water and air infiltration.
- B. Install products in accordance with manufacturer's instructions.
- C. Remove all strippable coating and provide a dry wipe-down cleaning of the panels as they are erected.
- D. Tape all joints in vapor retarder.
 - 1. See Specification Section 07 21 00.
- E. Provide prefinished fasteners to match finish of panels where fasteners must be exposed.
- F. Touch up all damaged surfaces with paint supplied by panel manufacturer.
- G. Seal all joints using sealant recommended by panel manufacturer for water- and air-tight installation.
- H. Wall panel manufacturers shall be responsible for designing and installing necessary expansion joints in wall panel system.

END OF SECTION