SECTION 07.42.14
INSULATED METAL WALL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Factory-assembled metal panel system for walls, with trim, related flashings and accessory components.

1.02 RELATED REQUIREMENTS
A. Section 04.20.00 - Unit m Masonry: Interface and sealing between metal panel system and adjacent brick masonry work.
B. Section 05.12.00 - Structural Steel Framing: Structural steel building frame.
C. Section 05.40.00 - Cold-Formed Metal Framing: Stud wall framing system.
D. Section 07.25.00 - WEATHER BARRIERS: Separate air barrier and vapor retarder materials.
E. Section 07.92.00 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.
F. Section 08.43.13 - Aluminum-Framed Storefronts: Interface and sealing between metal panel system and adjacent aluminum storefront members.
G. Section 08.44.13 - Glazed Aluminum Curtain Walls: Interface and sealing between metal panel system and adjacent aluminum curtain wall members.

1.03 REFERENCE STANDARDS
A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
D. ASTM E413 - Classification for Rating Sound Insulation; 2010.

1.04 PRE-INSTALLATION MEETING
A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS
A. See Section 01.30.00 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide manufacturer documentation on tested structural, thermal, and fire resistance capabilities of assembled panel.
C. Shop Drawings: Indicate dimensions.
D. Samples: Submit two samples of panel, 12 by 12 inch in size illustrating finish color, sheen, and texture.
E. Design and Performance Data: Indicate panel profile and dimensions.
F. Manufacturer's Installation Instructions: Indicate special handling criteria.

1.06 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum three years documented experience.
B. Installer Qualifications: Company specializing in performing the work of this Section with minimum three years experience.

1.07 MOCK-UP
A. Construct mock-up, 8 feet long by 6 feet wide, including panels, sub-girts, associated vapor retarder and air seal materials, sealants and seals, and window system.
B. Demonstrate component assembly including panel and glazing materials, weep drainage system, attachments, anchors, and perimeter sealant.
C. Locate where directed.
D. Mock-up may not remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING
A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
B. Store pre-finished material off ground with weather protection to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
C. Prevent contact with materials that could cause discoloration or staining.

1.09 WARRANTY
A. Correct defective Work within a five year period after Date of Substantial Completion, including:
   1. Degradation of panel finish including color fading caused by exposure to weather.
   2. Failure of water tightness, loss of integrity of seals.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Manufacturers:

2.02 PANEL SYSTEM
A. Metal Panel System: Factory-assembled metal panel system, with trim, related flashings and accessory components.
   1. Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
   2. Accommodate tolerances of building structural framing.
   3. Provide continuity of thermal barrier at building enclosure elements in conjunction with thermal insulating materials in Section 07.21.00.
   4. Provide continuity of vapor retarder at building enclosure elements in conjunction with vapor retarders specified in Section 07.25.00.
   5. Provide continuity of air barrier seal at building enclosure elements in conjunction with air seal materials specified in Section 07.25.00.
B. Performance Requirements:
   1. Thermal Performance: Provide thermal resistance through entire system; R-value of 13 deg F hr sq ft/Btu, minimum.
   2. Structural Performance: Design and size to withstand all dead loads and wind loads caused by positive and negative wind pressure acting normal to plane of panel.
      a. Verify structural performance in accordance with ASTM E330/E330M, using test pressure 1.5 times design wind pressure, with 10 seconds duration of maximum load.
b. Design Wind Loads: Calculated in accordance with Internation Building Code code.


3. Acoustical Performance: Provide sound attenuation through system (exterior to interior) of STC 38, calculated in accordance with ASTM E413, tested in accordance with ASTM E90.

4. Movement: Accommodate the movement caused by the following without damage to system, components, or deterioration of seals:

a. Normal movement between system components.

b. Seasonal temperature cycling.

c. Dynamic loading and release of loads.

d. Deflection of structural support framing.

2.03 PANELS AND TRIM

A. Wall Panels: Exterior and interior metal sheet skin, factory-assembled, with foamed in place insulation; exterior and interior sheet interlocking at edges, fitted with continuous gaskets.

1. Panel Width: 24 inch.

2. Profile: FormWall; horizontal panels.


4. Exterior Sheet: Pre-finished galvanized steel, 22 gage, 0.0299 inch minimum base metal thickness; Smooth finish.

5. Interior Sheet: Galvanized steel, pre-finished, 22 gage, 0.0299 inch minimum base metal thickness.

6. Exterior Finish: Duranar coating; color as selected from manufacturer's standard range.


B. Soffit Panels: Same as wall panels.

C. Internal and External Corners: Same material, thickness, and finish as exterior sheets; factory-fabricated mitered to required angles in one continuous piece with minimum 18 inch returns.

D. Trim, Closure Pieces, Expansion Joints, Caps, Flashings, Fascias, and Infills: Same material, thickness and finish as exterior sheets; factory-fabricated to required profiles; fabricated in longest practicable lengths.

1. Exposed Fasteners: Not permitted.

2. Profiles: To suit system.

2.04 PANEL MATERIALS

A. Precoated Galvanized Steel Sheet: ASTM A653/A653M, Commercial Steel (CS) or Forming Steel (FS), with G90/Z275 coating; continuous-coil-coated with acrylic primer coat, Duranar top coat, and white washcoat for panel back.


B. Foamed-in-Place Insulation: Urethane type.

C. Gaskets: Manufacturer's standard type suitable for use with panel system, permanently resilient; ultraviolet and ozone resistant; black in color.

D. Panel Sealants: Manufacturer's standard type suitable for use with installation of panel system; non-staining, skinning, non-shrinking, non-sagging, ultra-violet and ozone resistant; color as selected.

2.05 ACCESSORIES

A. Subgirts: As required for system design.

B. Anchors: Galvanized steel.

C. Fasteners: Manufacturer's standard type to suit application; hot-dip galvanized steel with soft neoprene washers. Fastener cap same color as exterior panel.

D. Field Touch-up Paint: As recommended by panel manufacturer.
E. Bituminous Paint: Asphalt base.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that structural framing is ready to receive panel system.

3.02 INSTALLATION

A. Install panel system on walls and soffits in accordance with manufacturer's instructions.
B. Protect panel surfaces in contact with cementitious materials with bituminous paint. Allow to dry prior to installation.
C. Permanently fasten panel system to structural supports; aligned, level, and plumb, within specified tolerances.
D. Locate panel joints over supports.
E. Provide expansion joints where indicated.
F. Use concealed fasteners unless otherwise approved by Architect.
G. Seal and place gaskets to prevent weather penetration. Maintain neat appearance.

3.03 TOLERANCES

A. Maximum Offset From True Alignment Between Adjacent Members Butting or In Line: 1/16 inch.
B. Maximum Variation from Plane or Location Indicated on Drawings: 1/4 inch.

3.04 CLEANING

A. Remove site cuttings from finish surfaces.
B. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

END OF SECTION