SECTION 074213 – METAL WALL PANELS

This specification is applicable for LITSCO’s Flatwall SM concealed fastener metal wall panel system.

Delete the following instruction in RED Type.

**IF YOU DO NOT SEE INSTRUCTIONS IN BLUE TYPE ABOVE THIS NOTE, PLEASE ACTIVATE HIDDEN TEXT AS INDICATED:**

* **Word 2010: File 🡪 Options 🡪 Display … Select “Hidden Text” from the “Always show these formatting marks on the screen” group.**
* **Word 2007: MS Office Button (top left of menu bar)🡪Word Options (button in lower right of window)🡪Display … select “Hidden Text”.**
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1. GENERAL
   * + 1. RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

* + - * 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
      1. SUMMARY.

Modify as necessary

* + - * 1. Work described in this section includes concealed clip, interlocking pre-formed metal wall panel system complete with perimeter and penetration flashing and closures.
        2. Related work specified elsewhere:

Structural steel.

Steel girts and furring.

Wood sheathing.

Rough carpentry.

Flashing and sheet metal. (Not wall panel related).

Air barrier and vapor retarder.

Thermal insulation.

Sealants.

* + - 1. REFERENCES
         1. ASTM E 330-02, Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
      2. DESIGN AND PERFORMANCE CRITERIA.
         1. General Performance: Metal wall panel assemblies shall be furnished and installed without failure due to defective manufacture, fabrication, installation, or other defects in construction.

Wind Load: Uniform pressure (velocity pressure) of (Insert Design Criteria) lb/sq ft. (Insert Design Criteria), acting inward or outward.

Structural Performance / Uniform Load Deflection Test: Provide panel system which has been tested in accordance with ASTM E330 at a design pressure of at least 50 psf without deformation or failures of structural members. Maximum allowable deflection of span: L/180.

Design panel system to accommodate substructure tolerance of +0 to -1/8 inch.

* + - 1. SUBMITTALS.
         1. Shop drawings: Show wall panel system with flashings and accessories in elevation, sections, and details. Include metal thicknesses and finishes, panel lengths, joining details, anchorage details, flashings and special fabrication provisions for termination and penetrations. Indicate relationships with adjacent and interfacing work. Shop drawings to be prepared by metal wall panel manufacturer.

Modify the following paragraph to indicate the scope of this project.

Engineering Report to be provided & stamped by registered New York State Engineer

* + - * 1. Samples.

Submit three (2) scaled samples of fully formed panel, at least 6" x 6".

Manufacturer’s color charts showing the full range of colors available for units with factory-applied color finishes.

Submit sample of concealed panel clip, fasteners, field applied sealants and all other system components.

* + - 1. QUALITY CRITERIA/INSTALLER QUALIFICATIONS.
         1. Engage an experienced metal wall panel contractor (erector) to install wall panel system who has a minimum of three (3) years of experience specializing in the installation of metal wall systems.
         2. Successful contractor must obtain all components of wall system from a single manufacturer. Any secondary products that are required which cannot be supplied by the specified manufacturer must be recommended and approved in writing by primary manufacturer prior to bidding.
      2. DELIVERY, STORAGE, AND HANDLING.
         1. Inspect materials upon delivery.
         2. Handle materials to prevent damage.
         3. Store materials off ground providing for drainage; under cover providing for air circulation; and protected from any debris.
      3. PROJECT CONDITIONS
         1. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit metal wall panel work to be performed according to manufacturer's written instructions and warranty requirements.
         2. Field Measurements: Verify actual dimensions of construction contiguous with metal wall panels by field measurements before fabrication.
      4. COORDINATION

Modify the following paragraph to indicate the scope of this project.

* + - * 1. Coordinate metal wall panels with rain drainage work, flashing, trim, and construction of other adjoining work to provide a leak proof, secure, and noncorrosive installation.
      1. WARRANTIES
         1. Endorse and forward to owner the following warranties:

Manufacturer's standard warranty, if available.

Installer's 3 year warranty covering wall panel system installation.

* + - * 1. Warranties shall commence on date of substantial completion.

1. PRODUCTS
   * + 1. PANEL MATERIALS
          1. Cold Rolled Copper Sheet.

[16 oz] [20 oz] copper.

If Specifying Special Finish Copper Panels, use the following sections.

Lead-Coated Copper.

Zinc-Coated Freedom Gray® Copper by Revere.

Pre-Patina Copper with [Nordic Green®] [Living Green 1®] [Living Green 2®] finish by Aurubis.

Concealed Finish: standard backer based on finish selected.

* + - * 1. Panel Sealants:

Sealant Tape: Non-curing, 100 percent solids, butyl sealant tape.

Exposed Sealant: Pecora #895 Silicone caulking.

Concealed Sealant: Pecora #BC-158 Butyl caulking.

* + - 1. FIELD-INSTALLED THERMAL INSULATION

Delete this article if not required. If retaining, indicate thicknesses on Drawings.

Retain first paragraph below and delete remainder of article if building insulation is included in Division 07 Section "Thermal Insulation."

* + - * 1. Refer to Division 07 Section "Thermal Insulation."

Retain one of first five paragraphs below. Board insulation, which is typically installed over wall sheathing or fitted within cavity between liner and exterior panels, requires Z-shaped furring or channels to support metal wall panels.

* + - * 1. Composite, Polyisocyanurate Board Insulation: ASTM C 1289, Type V, closed cell polyisocyanurate foam core bonded to a premium performance coated glass facer on one side and 5/8" or ¾" fire treated plywood on the other side.
        2. Faced, Polyisocyanurate Board Insulation: ASTM C 1289, [Type I (foil facing), Class 1 or 2] [Type II (asphalt felt or glass-fiber mat facing), Class 2 or 3, Grade 3], with maximum flame-spread index of 75 and smoke-developed index of 450, based on tests performed on unfaced core.
        3. Expanded-Polystyrene Board Insulation: ASTM C 578, Type IX, 0.9 lb/cu. ft. (15 kg/cu. m)] with maximum flame-spread index of <20 and smoke-developed index of 150-300. 25 PSI
        4. Extruded-Polystyrene Board Insulation: ASTM C 578, Type X, 1.60-lb/cu. ft. (26-kg/cu. m), with maximum flame-spread index of 75 and smoke-developed index of 450. 25 PSI
      1. MISCELLANEOUS METAL FRAMING
         1. Miscellaneous Metal Framing, General: ASTM C 645, cold-formed metallic-coated steel sheet, ASTM A 653, G90 (Z275) hot-dip galvanized

Retain any of the paragraphs below as required. Revise to suit Project.

* + - * 1. Subgirts: Manufacturer's standard C- or Z-shaped sections, [18 gauge] [20 gauge] nominal thickness.

Retain first paragraph below for metal wall panels installed over unfaced board insulation. Z-shaped furring is available in 1-, 1-1/2-, 2-, 2-1/2-, and 3-inch (25-, 38-, 51-, 64-, and 76-mm) depths.

* + - * 1. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-5/8 inches (41 mm) minimum and depth as required to fit insulation thickness indicated.

Nominal Thickness: As required to meet performance requirements, but not less than 0.043 inch (18 gauge) (1.1 mm).

* + - * 1. Fasteners for Miscellaneous Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten miscellaneous metal framing members to substrates.
      1. SUBSTRATE BOARD
         1. Glass-Mat Gypsum Sheathing Board: ASTM C 1177/C 1177M.

Type and Thickness: [Regular, 1/2 inch (13 mm)] [Type X, 5/8 inch (16 mm)].

Retain the following paragraph is specifying a self-adhesive underlayment.

The top surface of the substrate board shall be pre-primed to provide for adhesion of the self-adhering underlayment material.

Product: Subject to compliance with requirements, provide Dens Glass Gold by Georgia-Pacific Corporation.

* + - * 1. Substrate-Board Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FMG 4470, designed for fastening substrate board to structure, not Gypsum.
      1. UNDERLAYMENT MATERIALS

Underlayment materials should be selected with due consideration to the overall functions of the complete wall assembly. In most climate zones, impermeable membranes should be used on the interior side of the thermal insulating materials. On the exterior side of the thermal insulation, permeable (water-vapor open) membranes are generally required for adequate performance of the overall wall assembly. Please consult with LITSCO for additional design recommendations.

* + - * 1. Self-Adhering with reinforcing scrim, Vapor Impermeable Sheet**:** [40-mils- (1.3-mm-)] thick minimum, consisting of slip-resisting top surface laminated to SBS-modified asphalt adhesive, with release-paper backing; self-adhered applied.

Approved Products:

CCW 705, by Carlisle CCW

Underlayment shall be approved for 60 days (minimum) of exposure to UV and weather penetrations.

* + - * 1. Fluid Applied, Vapor Permeable Membrane**:** 40-mils- (1.3-mm-) dry.

Approved Products:

Barritech VP/FR, by Carlisle CCW

Water Vapor Permeance, ASTM E 96 Method B: 14 perms, minimum.

Air Permeance, ASTM E 2178: 127, 0.001 L/s\*

Underlayment shall be approved for 180 days (minimum) of exposure to UV and weather penetrations.

* + - * 1. Fluid Applied, Non-Permeable Vapor Membrane**:** 40-mils- (1.3-mm-) dry.

Approved Products:

Barritech VP/FR, by Carlisle CCW

Water Vapor Permeance, ASTM E 96 Method B: 0.77 perms, minimum.

Air Permeance, ASTM E 2178: 127, 0.001 L/s\*

Underlayment shall be approved for 180 days (minimum) of exposure to UV and weather penetrations.

* + - 1. MISCELLANEOUS MATERIALS
         1. Concealed fasteners: Corrosion resistant steel screws, #10 minimum diameter x length appropriate for substrate, low profile pancake head. Use self-drilling, self-tapping for metal substrate or A-point for plywood substrate.
         2. Exposed fasteners: 3xx series stainless steel screws (cadmium or zinc coatings are not acceptable) with neoprene sealing washer, or 1/8-inch- (3-mm-) diameter stainless steel rivets.
      2. METAL WALL PANELS
         1. General: Provide factory-formed metal wall panels designed to be field assembled by interlocking seams and incorporating concealed anchor clips.
         2. Concealed clip, interlocking lapped seam wall panels.

Panel shall be LITSCO Flatwall SM wall panel system as manufactured by Long Island Tinsmith Supply Corp. (LITSCO), Glendale, NY 11385. 718-846-0400 | [www.litsco.com](http://www.litsco.com) | info@litsco.com

Alternate manufacturers are subject to full compliance with specification requirements, and shall be submitted for approval as follows.

Manufacturers not listed above must submit for approval, ten (10) days prior to bid date, the following: Manufacturer's literature; certification of testing in accordance with specification requirements and sections 1.3 and 1.4; sample warranties in accordance with specification section 1.10; installer qualifications in accordance with specification section 1.6, and a list of five (5) similar projects in size and scope of work.

No substitutions will be permitted after the bid date of this project.

Material: Copper sheet, [16 oz] [20 oz] material weight. See 2.1 for available finishes.

Characteristics.

Fabrication: Panels shall be factory formed from specified metal.

Panels shall be factory formed to provide for two flanged tab edges folded upward and two flanged tab edges folded downward.

Notching of patterns in flat sheet metal shall be factory performed using automated punching or laser cutting equipment; flame cutting, saw cutting, or hand snipping of pattern is not allowed.

Folding of edge tabs shall be factory performed by automated folding equipment.

Typically, panels must have a continuously aligned seam joint in one direction, either horizontal or vertical, and staggered seam joints in the opposite direction. The stagger pattern may be any specified size, so long as it provides optimal use of material to reduce waste. It is highly recommended that the specify depict the intended pattern in the project drawings.

Orientation of continuous panel seam joint: [Vertical] [Horizontal].

In the opposite orientation direction, panels shall be staggered by [one-half] [one-third] [one-quarter] the width of the adjacent course of panels. See pattern as shown on drawings for additional information.

The Flatwall SM panel may be specified in any width between 6” and 45”. The panel widths shown below represent the most economical size based on the available stock aluminum sheet materials.

Installed coverage width: [10-1/2 inches] [16-1/2 inches (533 mm)] [22-1/2 inches (1,143 mm)], nominal.

The Flatwall SM panel may be specified in any length between 11” and 135”. Generally, the length is specified as a multiple or fraction of the panel width, such as 2:1, 3:1, or 4:1. Enter the appropriate panel length in the selection below.

Installed coverage length: \_\_\_\_\_\_ inches, nominal.

Anchor clip shall be 20 oz copper, 2” wide, pre-punched for two (2) screw fasteners per clip.

* + - 1. ACCESSORIES
         1. Flashing and Trim: Formed from same material and gauge as wall panels, prepainted with coil coating. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, head, sill, corners, jambs, framed openings, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal wall panels.
      2. FABRICATION
         1. Fabricate and finish metal wall panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes and as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.
         2. Form flashing components from full single width sheet in minimum 10’-0” (3 m) sections. Provide mitered trim corners, joined using closed end pop rivets and butyl-based, solvent released one-part sealant.
         3. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.

Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

Sealed Joints: Form nonexpanding but movable joints in metal to accommodate butyl-based sealant to comply with SMACNA standards.

Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.

Fabricate cleats and attachment devices of size and metal thickness recommended by SMACNA's "Architectural Sheet Metal Manual" or by metal wall panel manufacturer for application, but not less than thickness of metal being secured.

* + - 1. FINISHES
         1. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
         2. Protect mechanical and special finishes on exposed surfaces from damage. When available, provide strippable film to be removed upon installation.
         3. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

1. PREPERATION & EXECUTION
   * + 1. EXAMINATION
          1. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation. Panel substructure shall be level and plumb. Coordinate delivery of such items to project site.
       2. THERMAL INSULATION INSTALLATION
          1. As recommended by manufacturer.
       3. UNDERLAYMENT INSTALLATION
          1. As recommended by manufacturer.
       4. METAL WALL PANEL INSTALLATION
          1. All details will be shown on in accordance with approved shop drawings and manufacturer's product data, within specified erection tolerances.

The specifier should customize this section to illustrate the intended scope of work for this project.

* + - * 1. Directly over the completed wall substrate, install wall panels with concealed anchoring clips. All clips will be fastened into the structural wall substrate at 16-inches (406-mm) on center, maximum, along both vertical and horizontal panel seam joints.
        2. Installation of Wall Panels: Panels are installed sequentially in courses from bottom-to-top of wall or laterally across the wall, depending on configuration of the continuous and staggered joint patterns depicted on the drawings. In all cases, interlocking panel tabbed flanges shall shed water in a shingle fashion from top of wall to bottom of wall.
        3. Isolate dissimilar metals and masonry or concrete from metals with bituminous coating. Use gasketed fasteners where required to prevent corrosive action between fastener, substrate, and panels.
        4. Limit exposed fasteners to extent indicated on contract drawings.
        5. Seal laps and joints in accordance with wall panel system manufacturer's product data.
        6. Coordinate flashing and sheet metal work to provide weathertight conditions at wall terminations. Fabricate and install in accordance with standards of SMACNA Manual.
        7. Installed system shall be true to line and plane and free of dents, and physical defects. In light gauge panels with wide flat surfaces, some oil canning may be present. Oil canning does not affect the finish or structural integrity of the panel and is therefore not cause for rejection.
        8. At joints in linear sheet metal items, set sheet metal items in two ¼-inch- (6-mm-) beads of butyl sealant. Extend sealant over all metal surfaces. Mate components for positive seal. Allow no sealant to migrate onto exposed surfaces.
        9. Remove damaged work and replace with new, undamaged components.
        10. Clean exposed surfaces of wall panels and accessories after completion of installation. Leave in clean condition at date of substantial completion. Touch up minor abrasions and scratches in finish. Only use approved cleaning products.

END OF SECTION 074113