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SECTION 07 42 13
METAL WALL PANELS

Morin Metal Panels
Concealed Fastener Metal Wall Panels

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. [Concealed fastener single-skin metal wall panels installed using the back ventilated rainscreen design principle.]
- B. [Concealed fastener, field assembled, metal wall panels with insulated liner panels.]
- C. [Concealed fastener soffit panels.]
- D. Accessories including fasteners, perimeter trim and penetration treatments.

1.2 REFERENCES

A. ASTM International

- 1. ASTM A240; Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
- 2. ASTM A641; Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
- 3. ASTM A666; Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- 4. ASTM A792 – Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- 5. ASTM B209; Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- 6. ASTM B370; Standard Specification for Copper Sheet and Strip for Building Construction.
- 7. ASTM C612; Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
- 8. ASTM C645 – Standard Test Method for Nonstructural Steel Framing Members.
- 9. ASTM C920 – Standard Specification for Elastomeric Joint Sealants.
- 10. ASTM C1311; Standard Specification for Solvent Release Sealants.
- 11. ASTM D2244; Standard practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

12. ASTM D4214; Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
13. ASTM E283; Standard Test Method for determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors under Specified Pressure Differences across the Specimen.
14. ASTM E330; Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
15. ASTM E331; Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

B. German Institute for Standardization (DIN)

1. DIN EN988; Specifications for zinc and zinc alloy rolled flat products for building.
2. DIN EN1179; Zinc and Zinc alloys – Primary Zinc.

1.3 SUBMITTALS

- A. Refer to Section [01 33 00 Submittal Procedures] [Insert section number and title].
- B. Product Data: Submit manufacturer current technical literature for each type of product.
- C. Delegated Design: Design metal wall panel assembly, submit comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- D. Shop Drawings - Submit detailed drawings showing:
 1. Profile
 2. Gauge of panel
 3. Location, layout and dimensions of panels
 4. Location and type of fasteners
 5. Shape and method of attachment of all trim
 6. Locations and type of sealants
 7. Installation sequence.
 8. Other details as may be required for a weathertight installation
- E. Samples: Provide nominal 3 x 5 inch of each color indicated. [Provide panel width by 10 inches long minimum] [Insert size].

F. LEED Submittals:

1. Material and Resources (MR)

- a. Product Certificates for Credit **[MR 4] [MR 4.1 [and Credit MR 4.2]]**: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.

G. Quality Assurance Submittals

1. Design Data, Test Reports: Provide manufacturer test reports indicating product compliance with requirements.
2. Manufacturer Erection Instructions: Provide manufacturer's written installation instructions including proper material storage, material handling, installation sequence, panel location(s), and attachment methods, details and required trim and accessories.

H. Closeout Submittals

1. Refer to Section **[01 78 00 Closeout Submittals] [Insert section number and title]**.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Pre-installation meeting: Conduct a pre-installation meeting at the job site attended by Owner, Architect, Manufacturer's Technical Representative, Panel Installer, and Contractors of related trades. Coordinate structural support requirements in relation to wall panel system, installation of any separate air/water barriers, treatment of fenestration, and other requirements specific to the project.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall have a minimum of ten (10) years experience in the production of metal wall panels. Manufacturer shall demonstrate past experience with examples of projects of similar type and exposure.
- B. Installer Qualifications: Installer shall be authorized by the manufacturer and the work shall be supervised by a person having successfully completed a manufacturer training seminar regarding proper installation of the specified product.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Refer to Section [01 60 00 Product Requirements] [Insert section number and title].
- B. Deliver panel materials and components in manufacturer's original, unopened, undamaged packaging with identification labels intact.
- C. Store wall panel materials on dry, level, firm, and clean surface. Elevate one end of bundle to allow moisture run-off, cover and ventilate to allow air to circulate and moisture to escape.

1.7 WARRANTY

- A. Refer to Section [01 78 36 Warranties] [Insert section number and title].
- B. Material Warranty: Standard form in which manufacturer agrees to repair or replace items that fail in materials or workmanship within specified warranty period. The items covered by the warranty include structural performance and finish performance.
 - 1. Warranty Period: Two (2) years from date of Substantial Completion.
- C. Finish Warranty: Standard form in which manufacturer agrees to repair or replace metal panels that evidence deterioration of fluoropolymer finish, including flaking or peeling from approved primed metal substrate, chalk in excess of 8 when tested in accordance with ASTM D4214, Method A, and /or color fading in excess of 5 ΔE Hunter units on panels when tested in accordance with ASTM D2244.
 - 1. Warranty Period: Twenty (20) years from date Substantial Completion, or 20 years and 3 months from the date of shipment from manufacturer's plant, whichever occurs first.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Morin; a Kingspan Group Company; 685 Middle Street, Bristol, Connecticut 06010; 1-800-640-9501 (Toll Free); (www.morincorp.com).
- B. Basis of Design: "Concealed Fastener Wall Panels".
- C. Substitution Limitations:

1. Submit written request for approval of substitutions to the Architect [a minimum of [14] days prior to the date for receipt of bids] [Insert time period]. Include the following information:
 - a. Name of the materials and description of the proposed substitute.
 - b. Drawings, cut sheets, performance and test data.
 - c. List of projects similar scope and photographs of existing installations.
 - d. Other information necessary for evaluation.
2. After evaluation by Architect, approval will be issued via addendum. No verbal approval will be given.
3. Substitutions following award of contract are not allowed except as stipulated in Division 01 – General Requirements.

2.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide metal wall panel systems designed to resist the following. Testing shall be done based on ASTM E330:
 1. Wind Loads: Determine loads based on the following minimum design wind pressures:
 - a. Uniform pressure [Insert design wind pressure] [as indicated on Drawings].
 2. Deflection Limits: Metal wall panel assemblies shall withstand horizontal deflections no greater than [L/180] [L/240] [Insert deflection] of the span.
- B. Water Penetration under Static Pressure: Provide metal wall panel systems designed to resist penetration of water under static pressure. Testing shall be based on ASTM E331. Wall panels when tested shall have no water leakage at 6 pounds per square foot.
- C. Air Infiltration: Provide metal wall panel assemblies designed to resist air infiltration. Testing shall be done based on ASTM E283. Wall panels when tested shall have a maximum air leakage of 0.01 cfm per square feet of fixed wall area at a minimum static air-pressure differential of 1.57 foot pounds per square foot.

2.3 WALL PANEL MATERIALS

- A. Steel:
 1. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792, Class AZ50 coating designation, Grade 40.
 2. Gauge: [24] [22] [20] [18]

B. Aluminum:

1. Coil Stock meeting ASTM B209; Alloy and temper as required for forming operations.
2. Gauge: [0.032] [0.040] [0.050] inch.]

C. Stainless Steel Sheet:

1. ASTM A240 or ASTM A666, Type 304, dead soft, fully annealed.
2. Gauge: [24] [22]

D. Copper:

1. Sheet stock meeting ASTM B370, cold-rolled, H00 or H01 temper.
2. Thickness: [16] [20] ounce per square foot.

E. Rheinzink Sheets:

1. Sheet stock meeting DIN EN1179, consisting of Zinc with copper and titanium additives in accordance with DIN EN988.
2. Thickness: [0.7] [0.8] [1.0] [1.2] mm

2.4 CONCEALED FASTENER WALL PANELS

A. Wall Panel Description:

1. Panel Width: 12 inches.
2. Profile: panel series [A-12] [F-12] [F-12-S] [N-12] [as indicated on drawings]
3. Profile: [AA-12] [T-12] [U-12] [W-12] [as indicated on drawings]
4. Panel Width: 16 inches.
5. Profile: [F-16] [as indicated on drawings]
6. Panel Width: 18 inches.
7. Profile: [F-18] [as indicated on drawings]
8. Panel Width: 22 inches.
9. Profile: [F-22] [as indicated on drawings]
10. Panel Width: 24 inches.
11. Profile: [F-24] [as indicated on drawings]
12. Panel thickness: 1 ½ thick.
13. Panel joint: Tongue and groove interlock joint.
14. Texture: [Smooth] [Non-directional embossed].

B. Liner Panel Description:

1. Panel Width: 12 inches; liner panel series [L-12] [L-12-SF] [L2-12-2F] [L-12W-1] [as indicated on drawings]
2. Panel Width: 24 inches; liner panel series [L-24-5F] [L-24W-2] [L2-24W-0] [L3-24W-0] [L3-24W-3F] [L2-24-5F] [F-24] [as indicated on drawings]

2.5 INSULATION

- A. Refer to Section [07 21 00 - Thermal Insulation] [Insert section number and title].
- B. Glass-Fiber Board Insulation: ASTM C612, Type IA, unfaced semi rigid insulation. Nominal density of 3 pounds per cubic foot. Size as required for liner panels.

2.6 ACCESSORIES

- A. Wall panel accessories: Provide accessories as required for a complete installation. Accessories shall be as indicated on approved shop drawings and per manufacturer's approved standard details.
 - 1. Metal Profile Closure Strips: Shall be fabricated from same gauge, material and finish as metal panel.
 - 2. Swedged ends: Factory crimped end laps.
- B. Trim:
 - 1. Fabricate trim from same material and material thickness as wall panels. Finish to match metal wall panels.
 - 2. Locations include, but are not limited to the following: Drips, sills, jambs, corners, framed openings, parapet caps, reveals and fillers.
 - 3. [Trim shall be provided under Section 07 62 00 - Sheet Metal Flashing and Trim".]
- C. Metal Framing:
 - 1. General: ASTM C645, cold-formed metallic-coated steel sheet, [ASTM A653, G40 hot-dip galvanized] [ASTM A653, G60 hot-dip galvanized].
 - 2. Hat-Shaped, Rigid Furring Channels:
 - a. Nominal Thickness: [As indicated on Drawings] [0.025 inch] [0.040 inch] [Insert thickness].
 - b. Depth: [As indicated on Drawings] [7/8 inch] [1-1/2 inches] [Insert depth].
 - 3. Cold-Rolled Furring Channels: Minimum 1/2-inch wide flange.
 - a. Nominal Thickness: [As indicated on Drawings] [0.064 inch] [Insert thickness].
 - b. Depth: [As indicated on Drawings] [3/4 inch] [Insert depth].
 - c. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with 0.040-inch nominal thickness.
 - d. Tie Wire: ASTM A641, Class 1 zinc coating, soft temper, 0.062-inch diameter wire, or double strand of 0.048-inch diameter wire.

D. Panel Sealant:

1. Joint Sealant: ASTM C920 as recommended in writing by metal wall panel manufacturer.
2. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.7 FABRICATION

- A. Metal wall panels shall be formed to lap and interconnect with edges of adjacent panels which are then mechanically attached through panel to supports using concealed fasteners.
- B. Fabricate metal wall panels to eliminate condensation on interior side of panel and with joints between panels designed to form weathertight seals.
- C. [Metal wall panels shall have factory-installed sealant at panel joints to provide a tight seal and minimize noise from movements within panel assembly.]
- D. Panels shall be factory formed. Field formed panels are not acceptable.
- A. [Trim Accessories: Fabricate steel trim accessories to comply with recommendations outlined in SMACNA's "Architectural Sheet Metal Manual".]
- B. [Trim Accessories: Provide manufacturer's standard extruded aluminum trim.]
- C. [Provide mitered inside and outside corners. Corners shall be fabricated only by panel manufacturer.]
- D. Soffit panels shall be [perforated] [non-perforated].

2.8 FINISHES

- A. [Steel] [Aluminum]:
 1. Finish and Color:
 - a. Color: [Selected from current Morin Metal Wall Panel color chart] [Custom color as selected by Architect] [Color indicated].
 - b. [Exposed Aluminum-Zinc Alloy-Coating; ASTM A792, Class AZ50 coating. "Galvalume" or "Zincalume" protective coating.]
 - c. Finish System:
 - 1) [1.0 mil. Fluoropolymer (PVDF) Two Coat system: 0.2 mil primer with 0.8 mil Kynar 500 (70%) SOLID color coat.]
 - 2) [1.0 mil. Fluoropolymer (PVDF) Two Coat system: 0.2 mil primer with 0.8 mil Kynar 500 (70%) MICA color coat.]

- 3) [1.5 mil. Fluoropolymer (PVDF) Three Coat system: 0.2 mil primer with 0.8 mil Kynar 500 (70%) METALLIC color coat and .5 mil clear coat.]
- 4) [2.4 mil. Fluoropolymer (PVDF) Three Coat system: 0.8 mil primer with 0.8 mil Kynar 500 (70%) SOLID color coat and 0.8 mil clear coat.]

d. Exterior Aggregate Finish:

- 1) Baked epoxy primer with factory applied [12 mil dry film thickness] [36 mil dry film thickness] finish coat of acrylic bonder and silica aggregate.
 - a) Silica Aggregate Color: [Selected from current Morin Metal Wall Panel GRANITSTONE color chart] [Custom color as selected by Architect] [Color indicated].
 - b) Quartz Aggregate Color: [Selected from current Morin Metal Wall Panel GRANITSTONE QUARTZ color chart] [Color indicated].

B. Stainless Steel: [2D (dull, cold rolled)] [2B (bright, cold rolled)] [4 (polished directional satin)]

C. Copper: Natural

D. Rheinzink: [Pre-weathered "Graphite-Grey"] [Pre-weathered "Blue-Grey"]

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Provide field measurements to manufacturer as required to achieve proper fit of the metal wall panels to building envelope. Measurements shall be provided in a timely manner so that there is no impact to construction or manufacturing schedule.
- B. Supporting Steel: All structural supports required for installation of panels shall be by others. Support members shall be installed within the following tolerances:
 1. Plus or minus 1/8 inch in 5 feet in any direction along plane of framing.
 2. Plus or minus 1/4 inch cumulative in 20 feet in any direction along plane of framing.
 3. Plus or minus 1/2 inch from framing plane on any elevation.
 4. Plumb or level within 1/8 inch at all changes of transverse for performed corner panel applications.

5. Verify that bearing support has been provided behind vertical joints of horizontal panel systems and vertical joints of horizontal panel systems. Width of support shall be as recommended by manufacturer.
- C. Examine individual panels upon removing from the bundle; notify manufacturer of panel defects. Do not install defective panels.

3.2 PANEL INSTALLATION

- A. [Apply sealant to [horizontal] [vertical] joints at concealed fasteners, per manufacturer's recommendations and approved shop drawings.]
- B. Installation shall be in accordance with manufacturer's installation guidelines and recommendations.
- C. Install panels plumb, level, and true-to-line to dimensions and layout indicated on approved shop drawings.
- D. Cutting and fitting of panels shall be neat, square and true. Torch cutting is prohibited.

3.3 TRIM INSTALLATION

- A. Place trim and trim fasteners only as indicated per details on the approved shop drawings.
- B. Apply sealant tape at trim, per manufacturer's details and approved shop drawings, for weathertight installation.

3.4 SEALANT INSTALLATION FOR EXPOSED JOINTS

- A. Clean and prime surfaces to receive exterior exposed sealants in accordance with sealant manufacturer's recommendations.
- B. Follow sealant manufacturer's recommendations for joint width-to-depth ratio, application temperature range, size and type of backer rod, and compatibility of materials for adhesion.

3.5 CLEANING AND PROTECTION

- A. Remove protective film immediately after installation.
- B. Touch-up, repair or replace metal panels and trim that have been damaged.

- C. After metal wall panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

END OF SECTION

DISCLAIMER:

Morin Metal Panels Guide Specifications have been written as an aid to the professionally qualified Specifier and Design Professional. The use of this Guideline Specification requires the sole professional judgment and expertise of the qualified Specifier and Design Professional to adapt the information to the specific needs for the Building Owner and the Project, to coordinate with their Construction Document Process, and to meet all the applicable building codes, regulations and laws. MORIN METAL PANELS EXPRESSLY DISCLAIMS ANY WARRANTY, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE OF THIS PRODUCT FOR THE PROJECT.