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MG EXP

Section 07 42 13

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The drawings and provisions of the General Conditions, Supplementary Conditions and the sections included under Division 1 Specification Sections, apply to this section.

1.2 SUMMARY:

- A. This section includes expanded aluminum panels used as the exterior or interior cladding.

1.3 PERFORMANCE REQUIREMENTS:

- A. Structural performance: provide exterior/interior wall cladding assemblies capable of withstanding the effects of load and stresses from dead loads, wind loads, snow loads and normal thermal movement without evidence of permanent defects of assemblies or components.
 - a. Dead load: As required by applicable building code.
 - b. Live Load: As required by applicable building code.
 - c. Wind Load: Uniform pressure (velocity pressure) of (Insert Design Criteria) lb/sq ft. (Insert Design Criteria), acting inward or outward.
 - d. Thermal Movements: Provide assemblies that allow for thermal movements resulting from the following maximum changes (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components and other detrimental effects:
 - i. Temperature Change (range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- B. Sealed joints shall allow free and silent movement of panels during expansion and contraction while preventing uncontrolled penetration of moisture.
- C. Manufacturing, installation, and sealing shall prevent deformation of exposed surfaces.
- D. Design panel system to accommodate substructure tolerance of +0 to -1/8 inch.
- E. Panel support system shall allow for free-floating panel installation.
- F. Not Permitted: Vibration harmonics; wind whistles; noises caused by thermal movement; thermal movement transmitted to other building elements; loosening, weakening or fracturing of attachments or components of system.
- G. Preformed metal panel system to withstand code imposed design loads. Maximum allowable deflection of span: L/180.

1.4 SUBMITTALS:

- A. Product Data: Manufacturer's product literature for the panel specified.
- B. Shop Drawings: For exterior/interior wall panel assemblies and accessories. Include plans; elevations; sections and details.
- C. Structural Calculations: Submit a comprehensive analysis of design loads, including dead loads, live loads, wind loads and thermal movement.



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- D. Quality Assurance Submittals: Submit the following:
 - a. Certificates: Product certificates signed by manufacturer certifying materials comply with the specified performance characteristics and criteria, and physical requirements.
- E. Samples for initial selections: Manufacturer's color charts showing the full range of colors available for units with factory-applied color finishes.
- F. Samples for verification: Provide color samples of selected color. Samples shall involve normal color and texture variations, include sample sets showing the full range of variations expected.
- G. Affidavit certifying that the material meets the requirements specified.

1.5 QUALITY ASSURANCE:

- A. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the jurisdiction where the project is located and who is experienced in providing engineering services of kind indicated.
- B. Manufacturer Qualifications: Minimum of 5 years experience in manufacturing exterior wall panels similar to those specified.
- C. Installer Qualifications: Acceptable to manufacturer.

1.6 DELIVERY, STORAGE & HANDLING:

- A. General: Comply with Division 1 Product Requirements Sections.
- B. Ordering: Comply with manufacturer's ordering instructions, and lead-time requirements to avoid construction delays.
- C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
 - a. Store materials in accordance with manufacturer's recommendations.
 - b. Handle materials carefully to avoid damage to materials and finishes.

1.7 PROJECT CONDITIONS:

- A. Field Measurements: Verify actual supporting and adjoining construction by field measurements before fabrication, and indicate recorded measurements on final shop drawings. Coordinate construction to ensure that wall panel assemblies fit properly to supporting and adjoining construction and coordinate schedule with construction progress to avoid delaying the work.
 - a. Established dimensions: where field measurements cannot be made without delaying the work, guarantee dimensions and proceed with fabrication of wall panel assemblies corresponding to the established dimensions.



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1.8 WARRANTY:

- A. Project warranty refers to Conditions of the Contract for project warranty provisions. Manufacturer's warranty: submit, for Owner's acceptance, manufacturer's standard warranty documents executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights owner may have under Contract Documents.
- B. The Contractor shall warrant the materials to be free of faults and defects in accordance with the General Conditions, except that the warranty shall be extended by paint manufacturer's standard multi-year warranty. The warranty shall be in writing and shall be signed by the manufacturer.

SECTION 2 – PRODUCT

2.1 MANUFACTURER

- A. Manufacturers: Subject to compliance with requirements, provide products manufactured by MG McGrath Inc.
 - 1387 East Cope Ave; Maplewood, MN 55109; Tel: 651.704.0300; Fax: 651.704.9989;
Email: info@mgmgrath.com; Web: www.mgmgrath.com
 - a. MG-Expanded Aluminum Panel System utilizing Apex 03 mesh.
 - b. Alternate systems by other manufacturers/fabricators are to be submitted to the architect not less than 10 working days prior bid.

2.2 MATERIALS:

- A. Expanded Aluminum Material: ASTM B209, alloy 5005- H34 anodized quality.
 - a. Thickness: 0.125 inch [0.187 inch].
 - b. All expanded aluminum material shall be anodized to match architects sample.
 - c. SWD - manufacturing tolerance of $-0" + 1/16"$ per foot of width.
 - d. LWD - shear tolerance $\pm 1/8"$ on overall sheet length (LWD)
 - e. Levelness - shall be free from waves, corner lifts or buckles that are in excess of 1-1/2" from a plane surface.
 - f. Squareness - shall be no more than 1/4" out of square.
 - g. Camber – The greatest deviation of a side – edge from a straight line shall not exceed 3/32" per foot of dimension.
 - h. Taper – Edges shall not deviate from parallel by more than 1/16" per foot of dimension, or 1/4", whichever is greater.

2.3 FABRICATION, GENERAL:

- A. Tolerances
 - a. Extrude edges at right angles to the wall plane
- B. Panel surfaces shall be free of scratches or marks caused during fabrication.
- C. If a metallic color is selected ensure that panel grain is maintained. Under no circumstances are panel blank sizes to be rotated even if material waste is increased.



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- D. Cut extruded horizontal profile to exact required length located to coordinate with horizontal panel joint location.
- E. Shop fabricates all panel components. Field cutting for penetrations is the only modification allowed. Do not perform cutting without prior approval from manufacturer.
- F. Condensation: Fabricate panels for control of condensation, including vapor inclusion of seals and provisions for breathing, venting, weeping and draining.

2.4 ACCESSORIES:

- A. All exposed rivets/fasteners shall be stainless steel.
- B. All hidden fasteners shall Climaseal coated or stainless steel.
- C. Flashing: Aluminum, same finish as for aluminum panel where exposed; secured with concealed fastening method.
- D. Panel System Sub grits: Provide G90 galvanized steel of gauge and spacing required for panel system structural requirements, as recommended by panel manufacture and in accordance with approved shop drawings. To avoid galvanic reaction, separate dissimilar metals.
- E. All proprietary extrusions supplied by fabricator.
- F. No exposed sealant to be used at panel-to-panel connections.

2.5 FINISHES, GENERAL:

- A. Comply with NAAMM's Metal Finishes Manual for architectural metal products recommendations for applying and designating finishes.

2.6 ALUMINUM FINISHES:

- A. Panel Finishes:
- B. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 607.1.
 - a. Color: As selected by Architect from the full range of industry colors and color densities.
 - b. Color: Match Architect's sample.

PART 3 – EXECUTION

3.1 PREPARATION:

- A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation. Panel substructure shall be level and plumb. Panel substructure shall be structurally sound as determined by that subcontractor's engineer. Panel substructure shall be free of defects detrimental to work and erected in accordance with established building tolerances. Coordinate delivery of such items to project site.



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3.2 INSTALLATION:

- A. Erect panel's level and plumb, in proper alignment in relation to substructure framing and established lines.
- B. Panels shall be erected in accordance with approved shop drawings.
- C. Panel anchorage shall be structurally sound and per engineering recommendations.
- D. Where aluminum materials come in contact with dissimilar materials, an isolation shim or tape shall be installed at fastening locations.
- E. Locate and place wall panels' level, plumb, and at indicated alignment with adjacent work.

3.2 CLEANING AND PROTECTING:

- A. Clean exposed surfaces of wall panels that are not protected by temporary covering to remove fingerprints and soil during construction period.
- B. Clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.
- C. Protect wall panel assemblies from damage during construction. Use temporary protective coverings where needed as approved by the wall panel manufacturer.
- D. Clean and touch up minor abrasions in finished with air-dried coating that matches color and gloss, and is compatible with, factory-applied finish coating.