SECTION 07 05 43

CLADDING SUPPORT SYSTEMS & COMPONENTS

PART 1 GENERAL

* 1. GENERAL REQUIREMENTS
     1. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.
  2. SECTION INCLUDES
     1. Engineered, exposed fastened aluminum rainscreen and/or cladding support system framing assembly.
     2. Accessories including anchors and attachments.

*Specifier Note\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Indicate appropriate related section below and remove none related sections, as necessary.*

* 1. Related Specification Sections:
     + 1. Section 044200 - Masonry
       2. Section 050000 - Cold-Formed Metal Framing
       3. Section 061000 - Rough Carpentry – for in wall blocking as needed.
       4. Section 074200 - Thermal and Moisture Protection
       5. Section 079200 – Joint Sealants
  2. SYSTEM DESCRIPTION
     1. Extruded Aluminum Channels used as the support structure for a Thermally Isolated Wall Bracket and L-Rail for exposed fastened cladding attachment systems of various types. Cladding attachment assembly: for aluminum substructure and attachment system components with all accessories necessary for a complete sub-framing wall system. Furnish fastenings and flashings as required to complete the cladding attachment system.
  3. PERFORMANCE CRITERIA
     1. Performance Requirements: Provide components that have been manufactured, fabricated and installed to maintain performance criteria stated by Manufacturer, without defects, damage or failure.
     2. Structural Design: Design calculations certified by a registered professional engineer licensed in the State of \_\_\_\_\_\_\_ shall be submitted to verify load carrying capability of cladding system using performance requirements and design criteria as indicated. Cladding attachment system shall be capable of resisting a minimum positive and negative wind load per ASCE-7 or building code, whichever is greater.
     3. Design and Structural Properties: Conform to provisions of the most current IBC (International Building Code and/or the building code requirements of any other AHJ where the project is being built)
     4. Deflection Limits: Cladding support structure system components shall be designed in accordance with the Manufacturer’s recommended maximum deflection when tested under positive and negative design wind gust loads and shall withstand wind gust loads with horizontal deflections no greater than the Manufacturer’s allowable span, based on current wind load tables.
     5. Design and install aluminum support structure to accommodate expected construction tolerances and misalignment, deflection of building structural components, and openings in the building enclosure as designed.
  4. SUBIMTTALS
     1. Product Data: For each component indicated. Include Manufacturer’s written installation instructions, including recommendations for evaluating, preparing, and treating substrate, technical data, material descriptions, and finishes.
     2. Shop Drawings: Show fabrication and installation layouts of cladding panel, details of aluminum support structure attachment and wall structure conditions, anchorages for aluminum support structure, attachment system for cladding, allowances for thermal expansion, trim, closures, flashings, corner conditions, and accessories as required or specified by the architect, and all special job specific details.
     3. Samples: Submit selection and verification samples for finishes, colors, and textures of cladding attachment component material. Submit color matched exterior stainless-steel fasteners for each color specified. If special fastening is selected by architect provide color matched fastener for each panel color specified.
     4. Manufacturer’s Instructions: Manufacturer’s installation instructions.
     5. Closeout Submittals: Submit the following:
        1. Warranty: Warranty documents specified herein.
  5. QUALITY ASSURANCE
     1. Installer Qualifications: Installer shall be approved by the architect and have a minimum of five (5) years of experience in performing work of similar type and scope.
     2. Fabricator Qualifications: A shop that employs skilled workers who custom fabricate cladding attachment systems to those specified herein and is approved by the architect. If shop drawings are required for the project the shop drawings are to be drawn and coordinated by the approved fabrication company.
     3. Source Limitations: Obtain cladding attachment system and all auxiliary materials from a single source Manufacturer who has a minimum of 10 years of experience in the manufacturing of exterior grade metals supplier. All metals to be supplied and or manufactured by a single manufacturer.

*Specifier Note\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Indicate appropriate related & remove none related sub-sections, as necessary.*

* 1. MOCK-UP
     1. Before construction of the exterior envelope, construct a mock-up to verify selections made under approved submittals and to demonstrate typical joints, finish, texture, tolerances, attachments to building structure, methods of installation, connections to adjacent building enclosure materials, and standard and quality of workmanship. Build mock-up to comply with the following requirements using materials indicated for completion of the Work:
     2. Mock-up shall be a minimum of \_\_\_\_square feet and shall demonstrate substrate surface preparation, air barrier membrane joint and crack treatment, cladding attachment, penetration sealing, connection to window and other adjacent building envelope materials, attachment method to wall substrate, and standard of workmanship.
     3. Demonstrate continuity, air, and water tightness of air and water barrier and installation and attachment of continuous exterior insulation.
     4. (Optional) Provide in-situ mockup testing according to the Project requirements as specified herein by an independent testing agency approved and certified to perform such testing.
     5. If Architect determines that the field constructed mock-up does not meet Project requirements, reinstall mock-up until approved.
     6. Retain and maintain the approved field mockup during construction in an undisturbed condition as a standard for judging the completed exterior panel system. At the architect’s discretion, the mock-up may be part of the completed Work.
  2. DELIVERY, STORAGE AND HANDLING
     1. Delivery: Deliver materials in Manufacturer's original, unopened, undamaged containers with identification labels intact.
     2. Storage and Protection: Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by Manufacturer. Comply with Manufacturer’s written handling and storage guidelines.
  3. PROJECT CONDITIONS
     1. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.
  4. WARRANTY
     1. Submit Installer’s standard warranty covering defects in material or manufacturing quality, including corrosion warranty.
     2. Warranty is only available when cladding attachment systems are installed and fabricated by an installation contractor that has been approved by the Manufacturer and has followed the recommended guidelines of the Manufacturer and has been signed and dated by the appropriate parties listed on the warranty registration form.

1. PRODUCTS
   1. MANUFACTURERS

Basis of Design: Provide Thermally Isolated Wall Bracket and L-Rail for products requiring Exposed Fastening as manufactured by Monarch Metal Fabrication, 1700 Ocean Avenue, Suite 2, Ronkonkoma, NY 11779 . Please contact Sales at (631) 750-3000 or email:[info@monarchmetal.com](mailto:info@monarchmetal.com). A list of local fabricators or installers that comply with this specification section may be requested from the above contact.

* + 1. Substitution Requests: As specified by Division 01.
  1. SUPPORT STRUCTURE
     + 1. Gauge, Configuration, Dimensions, and Spacing: Minimum gauge and as required to conform to design criteria for each assembly.
       2. All Wall Bracket and “L” Rail material: Alloy – 6061-T6 aluminum appropriate for cladding support system and its construction.
       3. Auxiliary component material: Alloy aluminum, Stainless Steel, Cold Rolled Steel, Galvanized Steel appropriate for cladding support system components and its construction.

*Specifier Note\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Choose appropriate to your project the applicable Extruded Aluminum Sub-Framing and remove the appropriate sub-sections, as necessary. Please note the attention to each sub-section choice and remove non-used portions for clarity.*

* + 1. EXTRUDED ALUMINUM SUB-FRAMING
       1. Exposed Fastening: Type using thermally isolated wall bracket as indicated on the architectural drawings.
       2. Extruded Sub-Framing: 6061-T6 [or Custom Alloy] aluminum alloy [Choose 1] which may be [mill] finish [black} or powder coated [custom color] for the type of use indicated on the project Drawings. [Choose mill, black or custom color]
          1. Adjustable Vertical [V] or Horizontal [H] Wall Bracket and Rail: Projection off of wall [VWB]or [HWB] -02, -03, -04 or -05] [Choose 1] 2” Wall Bracket and Rail applications have a 1” variable range. Wall Bracket and Rail applications greater than 2” have a maximum of 1 1/2” variable range. {Example: VWB-04 or HWB-02}
          2. Hat Channel: [Galvanized Steel][Aluminum][Stainless Steel] [Choose 1], Vented [V] or Non-Vented[NV] 110-001 or FMAX-HAT-144-BK [Choose 1] at a depth of [1/2”, 3/4”, 1”][Choose 1 or Custom Size] {Example: Stainless Steel Hat Channel - 2” depth}
          3. “J” Channel: [Galvanized Steel][Aluminum][Stainless Steel] [Choose 1], Vented [V] or Non-Vented[NV] 110-001 J or FMAX-J-144-BK [Choose 1] at a depth of [1/2”, 3/4”, 1”][Choose 1 or Custom Size] {Custom Example: Galvanized J Channel 1 1/2” depth}
          4. Z-girts: [Galvanized Steel][Aluminum][Stainless Steel] [Choose 1], Vented [V] or Non-Vented[NV] [Choose 1] at a height of [Choose Height] [1/2” to 6” in 1/2" increments] with [1”][1 1/2"] legs [Choose 1] {Example: Stainless Steel, V, 4 1/2" w/ 1 1/2" legs}
       3. Fasteners: as indicated on the engineering Shop Drawings.
    2. CLADDING ACCOMODATION
       1. Provide an engineered designed framing support assembly to maintain dimensions to face of cladding materials indicated on drawings to include the framing supports configuration, size, spacing, and adjust as needed to accommodate support for each cladding type, in accordance with the engineering and/or contract documents including but not limited to: [Choose or Add appropriate selection(s)]
          1. Stone Composite Panels specified by Section 04 42 00
          2. Metal Wall Panels specified by Section 07 42 13
          3. Composite Wall Panels specified by Section 07 42 43
          4. Fiber Reinforced Concrete Wall Panels specified by Section 07 42 47
    3. TOLERANCES
       1. Accommodate deflection of structural members as it applies to the Work.
       2. Maintain clearances at adjacent construction.
       3. Prevent load transfer to non-structural elements.
       4. Thermally isolate fasteners from metal using thermal isolation washers or other means.
    4. EFFECT ON WALL ASSEMBLIES
       1. Framing system must not degrade complete wall assembly’s thermal resistance by reasonable amount and conform to ASHRAE 90.1 prescriptive U-value of wall assembly for appropriate climate zone.

*Specifier Note\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Choose appropriate to your project the applicable Connectors and Anchors and remove the appropriate sub-sections, as necessary. Please note the attention to each sub-section choice and remove non-used portions for clarity.*

* 1. CONNECTORS AND ANCHORS
     1. Connectors used with Cold-Formed Steel Framing Members: Conform to with both the architects Drawings and the engineering Shop Drawings.[Choose B or C, or Add as appropriate for your project]
     2. Screw Fasteners: Stainless steel as instructed by Manufacturer. [Choose 1,2, or 3 or Add as appropriate]
        1. Thermoset Polyester coating that exhibits 1,000 hours of salt spray beyond stainless steel anti-corrosiveness.
        2. Minimum No. 14 self-drill hex-head screw fastener to be used to attach horizontal rail to vertical rail or in accordance with the engineering Shop Drawings.
        3. Steel Studs:
           1. Self-drill hex-head TEK screw fasteners of sufficient length
           2. Minimum three threads must penetrate steel stud members.
     3. Concrete and Masonry Wall Anchors: Mechanical and Adhesive anchors, bolts, nuts, and washers suited to use and as required for transference of design loads.
        1. Mechanical Anchors: Expansion type, conforming the engineering Shop Drawings.
        2. Adhesive Anchors: Torque Controlled, conforming to the engineering Shop Drawings.
  2. ACCESSORIES
     1. Bracing, Furring, Bridging, Plates, Gussets, and Clips: Formed sheet steel, thickness as necessary to meet structural requirements for special conditions encountered.
     2. Galvanic Protection: Utilize tapes and other isolation methods as necessary to separate and prevent contact between dissimilar metals.

1. EXECUTION
   1. MANUFACTURERS INSTRUCTIONS
      1. Compliance: Comply with manufacturer’s product data, including product technical bulletins, product installation instructions and published technical guidelines.
   2. EXAMINATION
      1. Site Verification of Conditions: Verify that substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.
      2. Backup Wall: Verify level and plumb, free of defects, and conforming to tolerances suitable for installation of subsequent work.
      3. Verify that air and weather resistant barrier has been installed over structural sheathing in accordance with air barrier Manufacturer’s recommended installation instructions and terminated properly at openings to prevent air infiltration or water penetration.
      4. Review areas of potential interference and conflicts, and coordinate layout and support provisions for interfacing work.
      5. Adjust and perform work as necessary for plumb and true alignments.
      6. Proceed with installation only after unsatisfactory conditions have been corrected.
   3. INSTALLATION
      1. Conform to Manufacturer's instructions and provisions of Contract Documents.
      2. Erect Thermally Isolated Wall Bracket and L-Rail for Exposed Fastened cladding attachment or component assembly to be level, plumb, and in alignment with building features including corners, off-sets, and fenestrations and in accordance with approved submittals and Shop Drawings.
   4. ERECTION TOLERANCES
      1. Maximum Framing Member Variation from True Position: 1/8 inch.
      2. Maximum Framing Member Variation from Plane:
         1. Individual Framing Members: Do not exceed 1/8 inch in 10 foot.
   5. FIELD QUALITY CONTROL
      1. Manufacturer’s Field Technical Service: Make intermittent and final inspection to verify installation in conformance to Manufacturer instructions and suitable as framing assembly for subsequent cladding installations.
         1. Confirm framing members installed in correct orientation and as per the approved Shop Drawings.

END OF SECTION 07 05 43