SECTION 070543

CLADDING SUPPORT SYSTEMS

CLADIATOR FlatTRACK 110

INTERIOR & EXTERIOR APPLICATIONS

Published: MAY05-2021 Supersedes Spec Published: JUN30-2020

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cladding Support Systems for Exterior Cladding.

1.02 REFERENCE STANDARDS

A. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.

B. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014.

C. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2016).

D. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2007.

E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2006.

F. ASTM - Fastener Standards.

G. NFPA 285 – Standard Fire Test Method for Evaluation of Fire Propagation: Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components; 2012.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the alignment of metal framing with size, location and installation of metal cladding support.

B. Pre-installation Meeting: Conduct a pre-installation meeting prior to the start of the work of this section; require attendance by all affected installers.

1.04 DESIGN REQUIREMENTS

A. Components:
   1. Design and size components to withstand loads caused by positive and negative wind pressure acting normal to plane of wall as calculated in accordance with applicable code.
   2. Components to be designed and constructed to resist gravity loads in accordance with applicable codes.
   3. Components to be designed for seismic loads and in accordance with applicable Codes.
   4. Design for thermal and moisture movement of cladding in accordance with applicable codes. Design so that local ambient temperature fluctuations, as applicable for the application, do not result in evidence of permanent deformations of assemblies or components and prevent overstressing of the support structure.

B. Employ a registered Engineer licensed to practice in the jurisdiction where the Project is located. Engineer to design anchorage of cladding attachment system to the structure.

C. Engineer-of-Record to verify the adequacy of structural wall assembly to support the cladding system.

D. Cladding Wall Assembly Designed to be in Accordance with Applicable Codes and Adequate to Support the Following:
   1. Dead loads, wind loads, seismic loads, snow and ice loads (if applicable) **[as shown on the Structural Drawings for the Project] OR [as shown on _____**

for the project]. Components designed for loads in accordance with applicable codes.

E. Exterior Wall Assembly/Attachment System:
   1. Frequency and spacing of Base Track 110 and Flush-Mount EXT 110 components as shown on the approved project specific shop drawings and in accordance with applicable codes and these specifications.
   a. System, in consideration with other third-party components, to meet R-Values of the project for exterior applications as required. Cladding support products to meet thermal target requirements as required for Project. See Section [_____] for these requirements.
   b. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within cladding support system.
   c. Ventilation: Vent openings at bottom and top of cladding and support system.
   d. Insect Screens: [_____].

F. Interior Wall Assembly/Attachment System:
   a. Frequency and spacing of Base Track 110 and Flush-Mount EXT 110 components as shown on the approved project specific shop drawings and in accordance with applicable codes and these specifications.

1.05 SUBMITTALS

A. See Division 01, Administrative Requirements for additional submittal procedures.
   1. This Section includes items identified by the Architect or Engineer of Record as Delegated Design or Deferred Submittal.

B. Shop Drawings: Submit complete shop drawings for approval prior to fabrication, including elevations, and sections of each condition. Such drawings shall also include metal thickness, finish, methods of installation, anchorage and expansion joints, width, bow, camber and squareness tolerances necessary to accommodate thermal and moisture related movement.

C. Contractor Delegated Design: Calculations and drawings stamped and sealed by an Engineer registered in the State in which the project is located shall be submitted.

D. Structural Calculations including dead loads, wind loads, seismic loads, snow and ice loads (if applicable).

E. Product Data: Manufacturer's latest published literature describing each product selection.

F. Submit together with submittal for cladding systems.

G. Evaluation Service Reports: Show compliance with specified requirements.

H. Installer's Qualification Statement.

I. Manufacturer's Certificates: Provide manufacturer's certificate certifying that products of this section meet or exceed specified requirements.

J. Samples: Submit two [_____], ____by____ inch (____by____ mm) in size, illustrating [_____]

K. Maintenance Data: Submit care of finishes procedures and warranty requirements.

1.06 QUALITY ASSURANCE

A. Field Measurements: Prior to fabrication of exterior wall system, take field measurements of structure and substrates to receive cladding support and cladding system.

B. Coordinate work of this section with other sections of related work to the exterior cladding system.

C. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

D. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

E. Installer Qualifications: Company specializing in performing the work of this section with minimum three years of experience.

F. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.07 MOCK-UPS

A. Mock-up Wall:

1. Provide [____] Mock-up Wall(s), [____] feet ([____] m) long by [____] feet ([____] m) wide,
2. Vertical or Horizontal Layout of the Base Tracks of the Cladding Attachment System: [_____] vertical or horizontal layout, illustrating [_____].

B. Mock-up Corner:

1. Provide [____] Mock-up Corner(s) [_____] internal or external corner, at [____] degree angle.
2. Side 1: [____] feet ([____] m) long by [____] feet ([____] m) wide.
3. Side 2: [____] feet ([____] m) long by [____] feet ([____] m) wide.
4. Vertical or Horizontal Layout of the Cladding Attachment System:

[_____] vertical or horizontal layout, Illustrating: [_____].

C. Mock-up Window Termination:

1. Provide [____] Mock-up Window Opening(s), [____] feet ([____] m) long by [____] feet ([____] m) wide with window opening, [____] feet ([____] m) long by [____] feet ([____] m) wide,
2. Vertical or Horizontal Layout of the Cladding Attachment System: [_____] vertical or horizontal layout, Illustrating: [_____].

D. Mock-up Door Jamb Termination:

1. Provide [____] Mock-up Door Jamb(s), [____] feet ([____] m) long by [____] feet ([____] m) wide with door opening, [____] feet ([____] m) long by [____] feet ([____] m) wide.
2. Vertical or Horizontal Layout of the Cladding Attachment System: [_____] vertical or horizontal layout, Illustrating: [_____].

E. Mock-up End Panel Termination:

1. Provide [____] Mock-up End Panel Termination(s), [____] feet ([____] m) long by [____] feet ([____] m) wide, Illustrating: [_____], vertical or horizontal layout, of the cladding attachment system, Illustrating: [_____].

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact.
   1. Protect products against transportation damage.
   2. Provide markings to identify components consistently with Drawings.
   3. Exercise care in unloading, storing and installing panels to prevent bending, warping, twisting and surface damage.

B. Store products protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
   1. Store in well ventilated space out of direct sunlight.
   2. Protect from moisture and condensation with tarpaulins or other suitable weather-tight covering installed to provide ventilation.
   3. Store at a slope to ensure positive drainage of any accumulated water.
   4. Do not store in any enclosed space where ambient temperature can exceed 120 Degrees F.
   5. Avoid contact with any other materials that might cause staining, denting, or other surface damage.

1.09 FIELD CONDITIONS

A. Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside of manufacturer's recommended limits.

1.10 SEQUENCING

A. Comply with manufacturers' ordering instructions and lead time requirements to avoid construction delays.

B. Coordinate construction to ensure that assemblies fit properly to supporting and adjoining construction; coordinate schedule with construction progress to avoid delay of Work.

1.11 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Provide fifteen-year standard manufacturer warranty.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Basis-of-Design: **CLADIATOR FlatTRACK 110**; www.cladiator.com

Address: 3223 Dell Ave North Bergen, NJ 07047-2369

Phone: +1 833-258-2566

B. Substitutions: See Section 016000 - Product Requirements.

2.02 CLADDING SUPPORT SYSTEM

A. Base Track 110:

1. Material: extruded 6063-T6 aluminum profile.

2. Finish: [**Aluminum Mill] (standard) OR [Black Anodized] (custom).**

3. Length**: [standard 10 foot] OR [custom size].**

B. Flush-Mount EXT 110 (optional):

1. Material: **Extruded 6063-T6 aluminum profile [cut from 10' standard length on site] OR [pre-cut to fit Base Track spacing at [_____ o.c.]** (e.g. 32" o.c. would be cut in 30" pieces this spacing requirement)

2. Finish: [**Aluminum Mill] (standard) OR [Black Anodized] (custom).**

2.03 ACCESSORIES

*Note – Adjust screw specification as needed when adding insulation thickness and per Engineering requirements.

EXTERIOR APPLICATION WITHOUT EXTERIOR INSULATION

A. Screws for Steel Stud Wall Type:

1. #10x1" or 1-1/2" HWH SS for installing base track to 16-gauge steel studs over sheathing.

2. #10x3/4" or 1" HWH SS screws to connect Flush-Mount or Flush Mount EXT and base track.

3. Verify type of screws with engineer for project specific wind loads, gravity loads, seismic loads, code requirements and according to project wall type.

B. Screws for Concrete Wall:

1. #12x1" or 1-1/2" HWH SS for installing base track to concrete wall.

2. #10x3/4" or 1" HWH SS screws to connect Flush-Mount or Flush Mount EXT and base track.

3. Verify type of screws with engineer for project specific wind loads, gravity loads, seismic loads, code requirements and according to project wall type.

C. Screws for Wood:

1. #12 x 2-3/4" HWH w/washer SS for installing base track to 16-gauge steel studs over sheathing.

2. #10x3/4" or 1" HWH SS screws to connect Flush Mount EXT 110 and base track.

3. Verify type of screws with engineer for project specific wind loads, gravity loads, seismic loads, code requirements and according to project wall type.

INTEROR APPLICATION

D. Screws for Steel Stud Wall Type:

1. #10x1" or 1-1/2" HWH SS for installing base track to 16-gauge steel studs over sheathing.

2. #10x3/4" or 1" HWH SS screws to connect Flush-Mount or Flush Mount EXT and base track.

3. Verify type of screws with engineer for project specific wind loads, gravity loads, seismic loads, code requirements and according to project wall type.

E. Screws for Concrete Wall:

1. #12x1" or 1-1/2" HWH SS for installing base track to concrete wall.

2. #10x3/4" or 1" HWH SS screws to connect Flush-Mount or Flush Mount EXT and base track.

3. Verify type of screws with engineer for project specific wind loads, gravity loads, seismic loads, code requirements and according to project wall type.

F. Screws for Wood:

1. #12 x 2-3/4" HWH w/washer SS for installing base track to 16-gauge steel studs over sheathing.

2. #10x3/4" or 1" HWH SS screws to connect Flush Mount EXT 110 and base track.

3. Verify type of screws with engineer for project specific wind loads, gravity loads, seismic loads, code requirements and according to project wall type.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that building framing members are ready to receive metal cladding support.

3.02 INSTALLATION - CLADDING SUPPORT SYSTEM

A. Install per manufacturer's written instructions.

B. Base Track:
   1. Vertical Installation:
      a. Orient **Base Track 110** vertically and fasten to substrate.
      b. Install plumb and level to a uniform plane interior or exterior wall as applicable.
      c. Shimming as necessary to plumb and level 90 degrees in all directions vertically and horizontally.
      d. Fasten **Base Track 110** to the substrate at intervals indicated in the Details for each specific project.
   2. Horizontal Installation:
      a. Orient **Base Track 110** horiztonally and fasten to substrate.
      b. Install plumb and level to a uniform plane interior or exterior wall as applicable.
      c. Shimming as necessary to plumb and level 90 degrees in all directions vertically and horizontally.
      d. Fasten **Base Track 110** to the substrate at intervals indicated in the Details for each specific project.

C. Insulation:
   1. Install insulation into the exterior or interior cavity in accordance with insulation manufacturer's instructions.
   2. Compatible with all insulation materials.
   3. Exterior installation:
      a. Fasten Base Track over insulation using appropriate fasteners in accordance with Engineering requirmenets for the project design.

D. Flush-Mount EXT 110 (optional):
   1. Install Flush-Mount EXT 110 onto the Base Track 110 with fasteners as shown on Drawings and in accordance with manufacturer's instructions. Spacing as shown on Drawings and in accordance with the project design and engineering requirements.

E. Proprietary Panel Guidance, Secondary Structural Supports:
    1. Install girts, angles, and other secondary structural panel support members andanchorage according to the Light Gage Structural Institute's "Guide Specifications," and Division 07 Roof and Wall Panels Sections.

F. Install sufficient anchorage devices to securely and rigidly fasten system to building in accordance with Drawings and approved Shop Drawings. Fasteners to be concealed.

G. Provide anchors to be installed in other work, and setting details, in time for proper installation by trades concerned; verify correct placement.

H. Spacing for Thermal Expansion/Contraction (at 10 ft. Length):
    1. Base Track 110: 3/8 inch.

I. Built-In Work:
    1. As work progresses, build in anchor bolts, flashing and other items supplied by other trades.
    2. Install items plumb and true in accordance with manufacturer's instructions.
    3. Do not build in organic materials subject to rot or deterioration.

3.03 ERECTION 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.

C. Tolerance: Accurately align and locate components to column lines and floor levels; adjust work to conform with following tolerances.
    1. Plumb: 1/8-inch in 10' -0"; 1/4-inch in 40' -0"; non-cumulative.
    2. Level: 1/8-inch in 20' -0"; 1/4-inch in 40' -0"; non-cumulative.
    3. Alignment: limit offset to 1/6-inch where surfaces are flush or less than 1/2-inch out of flush, and separated by less than 2-inch (by reveal or protruding work); otherwise limit offsets to 1/8-inch.
    4. Location: 3/8-inch maximum deviation from measured theoretical location (any member, and location).

END OF SECTION