SECTION 070543

CLADDING SUPPORT SYSTEMS

CLADIATOR CL 300

(Rebranded – formerly CL-TALON 300)

Published: APR21-2021 Supersedes Spec Published: APR7-2021

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 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. No framing component may penetrate the layer of continuous exterior insulation other than the polyamide clip (THERMAClip) and T-Track.
   2. Frequency and spacing of base track, T-track, flush mount (optional) and polyamide clip (THERMAClip) components as shown on the approved project specific shop drawings and in accordance with applicable codes and these specifications.
   3. Finishing Accessories (optional) to be used as shown on approved project specific shop drawings and in accordance with applicable codes and these specifications.

F. System, in consideration with other system components, to meet U-Value and R-Values of the project. Cladding support products to meet thermal target requirements as required for Project. See Section [_____] for these requirements.

G. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within cladding support system.

H. Ventilation: Vent openings at bottom and top of cladding and support system.

I. Insect Screens: [_____].

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 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 CL 300; www.cladiator.com

Address: 3233 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:

1. Material: extruded 6063-T5 aluminum profile with dimension marks.

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

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

B. Clip thermally isolated (THERMAclip):

1. Engineered support system designed to integrate with exterior insulation and minimize thermal bridging.

2. Tested in accordance with NFPA 285.

3. Height: **[standard 4-inch] or [custom size 6-inch].**

4. Depth: 3-1/4 inch standard. Accommodates 2 inches to 4 inches of insulation when Connected with t-track.

5. Material: Polyamide (PA 6.6).

6. Color: **[Purple] (standard) OR [Black] (custom)**.

C. T-track:

1. Material: extruded 6063-T5 aluminum profile with dimension marks.

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

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

D. Flush-Mount (optional):

1. Material: **[extruded 6063-T5 aluminum profile (standard to fit with t-track 16 Inches o.c.)] OR [Aluminum (custom mounting components available to fit > or < 16 inches on center at 0.090 inches in thickness].**

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

E. Flush-Mount EXT (optional):

1. Material: **Extruded 6063-T5 aluminum profile [cut on site or pre-cut to fit dimensions up to 32" o.c.]**

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

2.03 ACCESSORIES

A. Finishing Accessories - Door/Window/Termination:

1. Extruded 6063-T5 Aluminum profile.

2. Standard Length: 10 ft., custom sizes available.

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

4. Length: [Standard 10 foot] OR [Custom Size].

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

B. Corner Support:

1. Extruded 6063-T5 Aluminum Profiles:

a. Corner Base Track.

b. Corner T-Stem.

c. Corner Half-T (2 per corner).

2. Length: [Standard 10 foot] OR [Custom Size].

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

C. Screws for Steel Stud Wall Type:

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

2. #10x3/4" or 1" HWH SS screws to connect adjustable T-track or with THERMAClip and flush mounts.

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

D. Screws for Concrete Wall:

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

2. #10x3/4" or 1" HWH SS screws to connect adjustable T-track with THERMAClip and flush mounts.

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 Finishing Accessories:

1. Termination track for windows/doors/termination points used same as screws for T-Track.

2. Screws for corner base track used same as screws for Base Track.

3. Screws for corner T-Stem and corner Half-T used same as screws for T-Track.

4. 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) Fasten to substrate.
   (b) Install plumb and level to a uniform plane from left to right.
   (c) No shimming is necessary as the vertical plumb 90 degrees from the interior to the exterior direction is done with the T-track to complete process.
   (d) Fasten base track to the substrate at intervals indicated in the Details for each specific project.
2. Horizontal Installation:
   (e) Orient base track with the larger of the two narrow channels, found on either side of the base track, on the top and the smaller channel on the bottom in order to stabilize the polyamide clip (THERMAClip) during installation.
   (f) Fasten to substrate.
   (g) Level.

(h) No shimming is necessary as the vertical plumb 90 degrees from the interior to the exterior direction is done with the T-track to complete process.
(i) Fasten Base Track to the substrate at intervals indicated in the Details for each specific project.

C. Polyamide Clip (THERMAClip):
1. Insert into base track in accordance with the manufacturer's instructions.
2. Insert larger flange of the clip into the larger of the two narrow channels found on either side of the base track.
3. Secure each clip through the base track with fasteners in accordance with manufacturer's instructions.

D. Insulation:
1. Install into the exterior cavity between the base track and polyamide clip (THERMAClip) and between the base track and T-track as indicated and in accordance with insulation manufacturer's instructions.

E. Recommended Insulation materials:
1. Mineral Wool/Mineral Fiber Insulation.
2. Foil Faced Extruded Polystyrene (XPS).
3. Foil Faced Polyisocyanurate (ISO).

F. T-Track:
1. Insert into the narrow slot provided in the polyamide clip (THERMAClip) and slide to adjust to the insulation depth and ventilation requirement as shown on Drawings and fasten in accordance with manufacturer's instructions.
2. Complete final finite adjustments to plumb and level with the T-track.
3. Ensure assembly is plumb, level and free of warp or twist; maintain dimensional tolerances and alignment with adjacent work.

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

H. Flush-Mount:
1. Install support onto the T-Track 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.

I. Finishing Accessories, Termination Track, Window/Door/Termination:
1. Insert into the narrow slot provided in the polyamide clip (THERMAClip) and slide to adjust to the insulation depth and ventilation requirement as shown on Drawings and fasten in accordance with manufacturer's instructions.
2. Complete final finite adjustments to plumb and level with the Termination track.
3. Ensure assembly is plumb, level and free of warp or twist; maintain dimensional tolerances and alignment with adjacent work.

J. Corners, Corner T-Stem, Corner Base Track, Half-T:
1. Install Corner Base Track by fastening to the substrate at the corner termination point.
2. Insert Corner T-Stem into the narrow slot provided in the polyamide clip (THERMAClip) and slide to adjust to the insulation depth and ventilation requirement as indicated and fasten in accordance with manufacturer's instructions.
3. Place and complete final adjustments of each Half-T on either side of the Corner T-Stem and angle to align in accordance with the project design and engineering requirements.
4. Corner Accessories may be used to support acute or obtuse angles or provide additional support at 90-degree corners.
5. Ensure assembly is plumb, level and free of warp or twist; maintain dimensional tolerances and alignment with adjacent work.

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

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

M. Spacing for Thermal Expansion/Contraction (at 10 ft. Length):
    1. Base Track and Corner Base Track: 3/8 inch.
    2. T-Track & Corner Half-T: 3/8 inch.
    3. Termination Track: 3/8 inch.
    4. Corner T-Stem: 3/8 inch.

N. 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