

SECTION 07 4# ##

CLADDING SUPPORT SYSTEM

** NOTE TO SPECIFIER ** CL-Talon® 300; Cladding support system.

This section is based on a product of CL-Talon®, which is located at:

3223 Dell Avenue

North Bergen, NJ 07047

Tel: 1-833-258-2566 or 1-833-CLTALON

Email: sales@cl-talon.com

Web: www.cl-talon.com

PART 1 GENERAL

1.1. SECTION INCLUDES

** NOTE TO SPECIFIER ** Delete items below not required for project.

- A. Cladding support system for attachment of interior and exterior cladding.
- B. Related Sections:

** NOTE TO SPECIFIER ** Delete any sections below not relevant to this project; add others as required.

1. [Refer to Division 04 Section “Unit Masonry Panels”].
2. [Refer to Division 04 Section “Stone Composite Panels”].
3. [Refer to Division 05 Section “Steel Stud Framing”.]
4. [Refer to Division 06 Section “Rough Carpentry” for wood framing.]
5. [Refer to Division 06 Section “Sheathing”.]
6. [Refer to Division 07 Section “Stone Composite Wall Panels”.]
7. [Refer to Division 07 Section “Mineral Board Insulation”.]
8. [Refer to Division 07 Section “Blanket Insulation”.]
9. [Refer to Division 07 Section “Fluid-Applied Membrane Air Barriers”.]
10. Refer to Division 07 Section [“Weather Barrier”].
11. [Refer to Division 07 Section “Metal Composite Material Wall Panels”.]
12. [Refer to Division 07 Section “Metal Wall Panels”.]
13. [Refer to Division 07 Section “Composite Wall Panels”.]
14. [Refer to Division 07 Section “Fiber Reinforced Concrete Wall Panels”.]
15. Refer to Division 07 Section [“Thermal Insulation”] for interior and/or exterior continuous insulation.

1.2. SYSTEM DESCRIPTION

- A. System assembly shall include the following components.
 1. Wall assembly [Substrate or structure of approved mounting surface for cladding support system].
 2. Weather Resistant/Air Barrier [over wall assembly OR over continuous insulation].
 3. Continuous insulation.

4. Cladding support system of 6063-T5 aluminum and polyamide.
 5. Interior and/or exterior cladding.
- B. Design Requirements:
1. Structural Design:
 - a. Manufacturer is responsible for designing cladding support system and necessary modifications to meet specified requirements and maintain visual design concepts. Cladding support system is limited to elements listed in Section 2.2.
 - b. Employ registered design professional, licensed to practice in jurisdiction where Project is located, to design anchorage of cladding attachment system to the structure. [or refer to Engineering Report ### for approved anchorage design based on ASTM E330-02 testing.]
 - c. The adequacy of the structural wall assembly to support the cladding system shall be verified by the engineer of record for the project.
 - d. Cladding wall assembly capable of supporting:
 - i. Dead loads, wind loads, ice loads (if applicable) as indicated in General Notes on Structural Drawings of construction documents.
 - ii. Normal thermal movement from local ambient temperature fluctuations without showing evidence of permanent deformations of assemblies or components and prevent overstressing of the support structure.
 2. Interior and Exterior Wall Assembly/Attachment System:
 - a. No framing component may penetrate the layer of continuous exterior insulation other than CL-Talon Base Track, CL-Talon Polyamide Clips and CL-Talon Wall Mount T-Track.
 - b. Frequency and spacing of wall mount tracks, supports and clips as indicated in the project specific submittal package provided by the manufacturer.
- C. Cladding Support System Performance Requirements:
1. Testing Performance:

**** NOTE TO SPECIFIER **** Delete items below not required for project.

- a. **NFPA 285** required to be **passed**.
- b. ASTM E283
 - i. Air leakage, infiltration per ASTM E283 at 75 Pa (1.57 psf) 0.5 L/s/m² (0.09 cfm/ft²)
 - ii. Air leakage, exfiltration per ASTM E283 at 300 Pa (6.27 psf) 1.2 L/s/m² (0.23 cfm/ft²)
- c. ASTM E331
 - i. Water penetration, per **ASTM E331** at **720 Pa (15.04 psf)** passed
- d. ASTM E330
 - i. Uniform load deflection, per ASTM E330 deflections taken vertically on the panel between horizontal rails +4320 Pa (+90.23 psf) 7.4 mm (0.29")
 - ii. Uniform load deflection, per ASTM E330 deflections taken vertically on the panel between horizontal rails -4320 Pa (-90.23 psf) 4.1 mm (0.16")

- iii. Uniform load deflection, per ASTM E330 deflections taken at the center of the panel +4320 Pa (+90.23 psf) 17.8 mm (0.70")
- iv. Uniform load deflection, per ASTM E330 deflections taken at the center of the panel -4320 Pa (-90.23 psf) 23.6 mm (0.93")
- v. Uniform load structural, per **ASTM E330** permanent set taken vertically on the panel between horizontal rails +7200 Pa (**+150.38 psf**) **<0.3 mm (<0.01")**
- vi. Uniform load structural, per **ASTM E330** permanent set taken vertically on the panel between horizontal rails -6480 Pa (**+135.34 psf**) **0.5 mm (0.02")**
- vii. Uniform load structural, per **ASTM E330** permanent set taken at the center of the panel +7200 Pa (**+150.38 psf**) **5.8 mm (0.23")**
- viii. Uniform load structural, per **ASTM E330** permanent set taken at the center of the panel -6480 Pa (**-135.34 psf**) **6.4 mm (0.25")**
- e. Gravity Load Test according to Florida Building Code, Chapter 16, Structural Design:
 - i. Gravity Load Testing at 1163 Pa (24.3 psf), Deflection 1.0 mm (0.04")
 - ii. Gravity Load Testing at 1163 Pa (24.3 psf), Permanent Set 0.3 mm (0.01")
 - iii. Gravity Load Testing at 2940 Pa (**61.4 psf**), Deflection **3.0 mm (0.12")**
 - iv. Gravity Load Testing as 2940 Pa (**61.4 psf**), Permanent Set **0.5 mm (0.02")**
- 2. Temperature Resistance:
 - a. PA6.6: 100°C - 150°C (212°F - 302°F).
 - b. 6063-T5 Aluminum: 600°C - 660°C (1112°F - 1220°F).
 - c. Stainless steel: 926°C - 1093°C (1700°F - 2000°F).
- 3. Thermal Conductivity:
 - a. At 25°C (77°F): PA6.6, 0.25 W/(m K); 6063 T5 Aluminum, 205 W/(m K); Stainless steel, 16 W/(m K).
 - b. At 125°C (257°F): 6063-T5 Aluminum, 215 W/(m K); Stainless steel, 17 W/(m K).
 - c. At 225°C (437°F): 6063-T5 Aluminum, 250 W/(m K); Stainless steel, 19 W/(m K).
- 4. Modulus of Elasticity:
 - a. 6063-T5 Aluminum: 10,000 ksi (68.9 GPa)
 - b. Polyamide Clip: 290 ksi (2.0 GPa)
- 5. Tensile Yield Strength:
 - a. 6063-T5 Aluminum: 21.0 ksi (145 MPa)
 - b. Polyamide Clip: 7.3 ksi (50 MPa)
- D. Continuous Insulation Performance Requirements:
 - 1. Testing Performance:

**** NOTE TO SPECIFIER **** Delete items below not required for project.

- a. NFPA 285
- b. ASTM C209.
- c. ASTM C1126.
- d. ASTM D2126.
- e. ASTM E84/UL 723.

- f. ASTM E96.
- g. ASTM E2178.
- 2. Thermal Resistance @ 75°F:
 - a. 25 mm thick: 6.3 ft²*h*°F/BTU
 - b. 75 mm thick: 23.8 ft²*h*°F/BTU
- 3. Water Vapor Permeance: 0.51 grains/h*ft²*in Hg

1.3. SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Manufacturer Qualifications.
- C. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Product literature and testing performance.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation instructions and recommendations.
- D. Shop Drawings: Show layout and elevations, dimensions, connections, details and location of joints, method of anchorage, number of anchors, supports, and accessories.
 - 1. Indicate wall assembly and adjacent work with which the wall system must be coordinated.
 - 2. Include large-scale details of anchorages and connecting elements.
 - 3. Include large-scale details or schematic, exploded, or isometric diagrams to fully explain flashing at a scale of not less than 1-1/2" per 12".
 - 4. Provide Installation drawings and details.
- E. Structural Calculations: Submit structural design analysis of cladding attachment system anchorage to the structure signed and sealed by the design engineer. [or refer to Engineering Report ### for approved anchorage design based on ASTM E330-02 testing.]
- F. Maintenance Data: Care of finishes and warranty requirements.
- G. Executed Warranty: Submit warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.4. QUALITY ASSURANCE

- A. Manufacturer Qualifications: Not less than three years of documented experience manufacturing similar products.
- B. Design Engineer's Qualifications: A registered design professional with experience in the design of cladding support systems.
- C. Installer Qualifications: Not less than three years of documented experience with installation of similar products.

**** NOTE TO SPECIFIER **** Include a pre-installation meeting and mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

- D. Pre-Installation Meeting:
 - 1. Discuss sequence and scheduling of work and interface with other trades.

2. Review wall framing assemblies for potential conflicts and coordinate layout and support provisions for interfacing work.
 3. Review and manufacturer's installation guidelines and safety procedures for wall assembly.
- E. Mock-Ups: Coordinate mock-up materials and requirements with mock-up specified in Division 01 [and interior or exterior cladding specification].

1.5. 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°F.
 5. Avoid contact with any other materials that might cause staining, denting, or other surface damage.

1.6. PROJECT 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 manufacturer's recommended limits.

1.7. SEQUENCING

- A. Ordering: 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 delaying work.

1.8. WARRANTY

- A. Warranty: Manufacturer warrants that its products are manufactured in accordance with its applicable material specifications and are free from defects in materials and workmanship.
1. Only products that are installed and used in accordance with applicable manufacturer's instructions and specifications are warranted.
 2. The warranty is applicable only to claims made in writing and received by the manufacturer within thirty days after the defect was discovered and within twenty years after the date of the shipment of the product by the manufacturer.

PART 2 PRODUCTS

2.1. MANUFACTURERS

- A. Cladding Support System Manufacturer: CL-Talon®; www.cl-talon.com; 1-833-258-2566 or 1-833-CLTALON.
- B. Insulation Manufacturer: Kingspan; www.kingspan.com; 1-800-241-4402, Rock Wool; www.rockwool.com; 1-855-876-3755 or equal.

** NOTE TO SPECIFIER ** Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

- C. Substitutions: Not permitted.
- D. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2. CLADDING SUPPORT SYSTEM

- A. CL-Talon 300
 - 1. CL-Talon wall base track (extruded 6063-T5 aluminum profile with dimension marks).
 - 2. CL-Talon polyamide clip (thermal barrier).
 - 3. CL-Talon wall mount T-track (extruded 6063-T5 aluminum profile with dimension marks).
 - 4. CL-Talon wall mount support (extruded 6063-T5 aluminum profile with dimension marks).
 - 5. CL-Talon leveling device.
 - 6. High strength stainless steel screws:
 - a. #8x1" or 1-1/2" HWH SD #3.
 - b. #8x1" or 1-1/2" SMS SD #3.
 - c. #8x3/4" or 1" HWH SD #3.
 - 7. Moisture barrier is required. By others, or can be supplied by CL-Talon®.
 - 8. Anchorage to wall assembly by others.
 - a. Anchorage materials and design shall be compliant with applicable building codes such as *the International Building Code (IBC)*, *International Residential Code (IRC)*, *American Concrete Institute (ACI)*, *American Institute of Steel Construction (AISC)*, *American Iron and Steel Institute (AISI)*, *National Design Specification (NDS) for Wood Construction*, or other relevant standards.
 - 9. Wall assembly by others.
 - 10. System Depth: 3-5/8" – 5-5/8".

2.3. WALL INSULATION

- A. Kingspan, Rockwool or equivalent by others.

PART 3 EXECUTION

3.1. EXAMINATION

- A. Verify dimensions, tolerances, and interfaces with other work.

- B. Verify wall assembly on-site to determine that conditions are acceptable for product installation in accordance with manufacturers written instructions.
- C. If wall assembly preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Notify Architect in writing of conditions detrimental to proper and timely completion of work.

3.2. PREPARATION

- A. Clear installation area of all debris and obstructions.
- B. Clean surfaces thoroughly prior to installation.
- C. Apply moisture barrier by CL-Talon® or an equivalent.

3.3. INSTALLATION

- A. Do not install products that are defective, including warped, bowed, dented, and broken members.

**** NOTE TO SPECIFIER **** Select one following two sections.

- B. Install in accordance with manufacturer's instructions and approved submittals, and in proper relationship with adjacent construction.

**** NOTE TO SPECIFIER **** Delete if not required.

- 1. Stud Back-Up: Mark reference points identifying the center line of studs in exterior wall locations at the roof and base of walls prior to installation of sheathing or exterior insulation to allow for proper location of the brackets.
- C. Install in accordance with approved submittals and in proper relationship with adjacent construction:
 - 1. Phase 1:
 - a. Clear the installation area of all debris and obstructions.
 - b. Check that the substrate is of an approved mounting surface for the CL-Talon Cladding Support System.
 - c. Apply a moisture barrier by CL-Talon or an equivalent.
 - d. Align the base track (CLT-BT-300) to the substrate. Base track should be spaced every 16" on the center typically or per project specification. Base track can be installed vertically or horizontally.
 - e. Important Note: If it is chosen to do the installation horizontally, the base track (CLT-BT-300) should be oriented as the bigger lip should be on the top and the smaller lip should be on the bottom in order to stabilize the Polyamide Clip CLT-PC6-300 or CLT-PC4-300 during installation.
 - 2. Phase 2:
 - a. Use the CL-Talon leveling device (CLT-LD-1) to level the base track before securing to the substrate.
 - i. The leveling device is to be placed at the top and bottom of the wall mount track to ensure that it is plumb.

- b. Install approved fasteners at the top and bottom of the base track to hold in place.
 - c. Install additional approved fasteners as needed or per project specification.
3. Phase 3:
- a. Install the 4" or 6" polyamide clips (CLT-PC4-300 or CLT-PC6-300) on base track on every 24" on the center vertically or per project specifications according to structural requirements. Custom size polyamide clips can be produced as specified per project specifications.
 - b. Locate the polyamide clips vertically and horizontally following the dimension marks shown on the base track.
 - c. Install approved fasteners per polyamide clips specifications.
 - d. Minimum of 2 approved fasteners per polyamide clip.
 - e. Phase 3 Polyamide Clip Adjustments:
 - i. The polyamide clip is inserted into the base track by aligning longer side approximately 15° degrees into the receiver.
 - ii. The polyamide clips can be adjusted laterally before securing to the base track (CLT-BT-300).
 - iii. The polyamide clips can be located vertically using the dimension lines as guides.
 - iv. The polyamide clips can be secured through the center opening using the approved fasteners to make final adjustments before locking it in place.
 - v. The polyamide clips can be adjusted both horizontally and vertically using the adjustment slots per project requirements.
 - vi. The polyamide clip is to be secured using a minimum of 2 approved fasteners.
4. Phase 4:
- a. Exterior insulation can be installed in between base tracks and polyamide clips.
 - b. Attach insulation per manufacturers' specifications.
5. Phase 5:
- a. The wall mount t-track (CLT-WMTT-300) is to be inserted into the polyamide clips.
 - b. Using the leveling device (CLT-LD-1), adjust level of the wall mount t-track.
 - i. The leveling device is to be placed at the upper and lower sections of the wall mount t-track to ensure that it is level before applying wall mount support (CLT-WMS6"-300 or CLT-WMS3"-300).
 - c. Once the wall mount t-track is plumb, it can be secured to polyamide clips using the approved fasteners.
6. Phase 6:
- a. Insert the wall mount support at the upper and lower sections of the wall mount track. Use either 6" or 3" wall mount support (CLT-WMS6"-300 or CLT-WMS3"-300). Custom size wall mount support can be produced as specified per project specifications.
 - b. The wall mount support is to be installed every 16" on the center or per project specifications. A minimum of 4 screws per wall mount support is required.

- i. Adjust wall mount support using the dimension marks as guides.
- ii. Wall mount support is secured to the wall mount track by installing the approved fasteners through the pre-drilled openings located on wall mount support.
- iii. The locking fasteners are embedded into the CL-Talon wall mount track creating a flush surface.

3.4. PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION