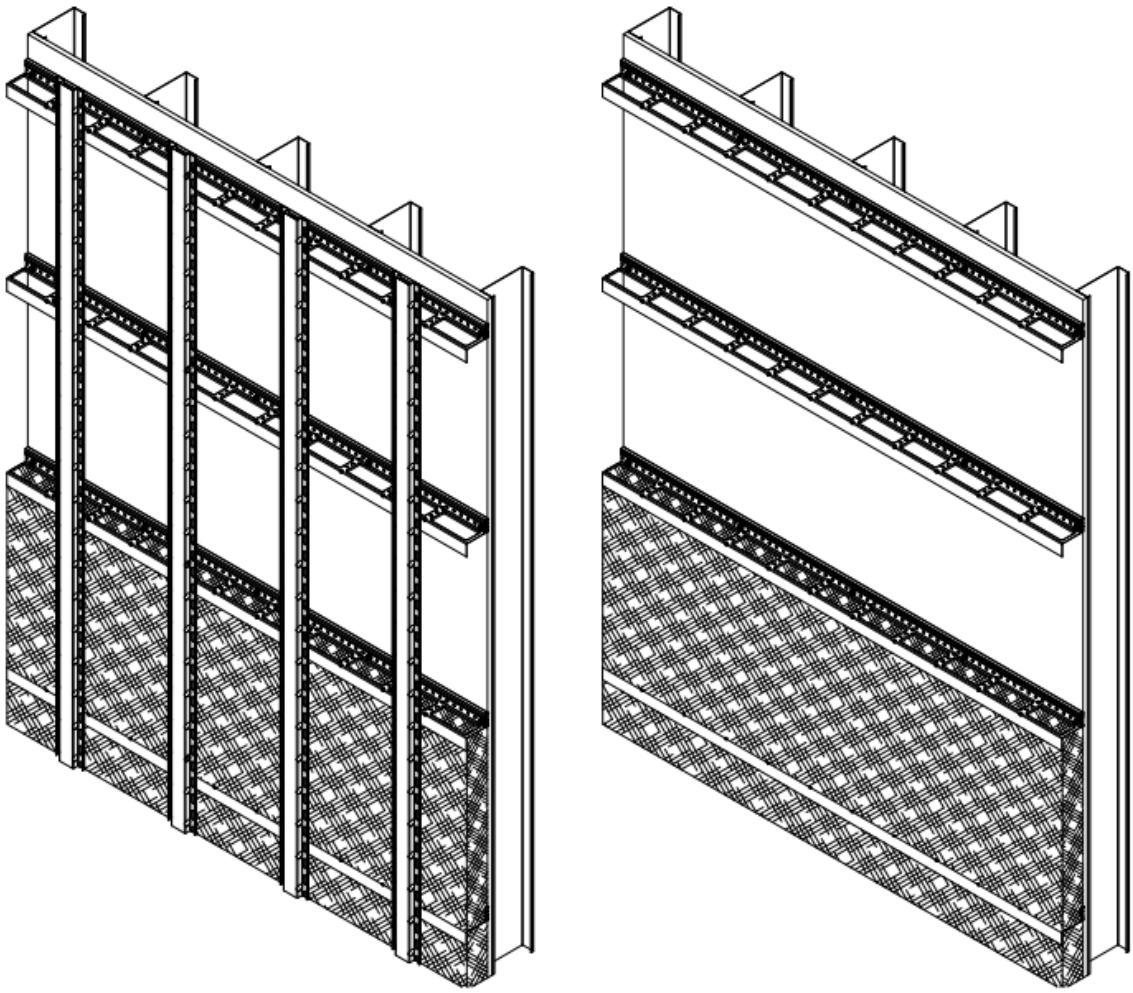
07 05 43
THERMAZEE™ SYSTEM GUIDE SPECIFICATION

SPEC NOTE: **THESE DRAWINGS ARE TO BE TREATED AS A SPEC NOTE AND ONLY INTENDED TO ASSIST WITH IDENTIFICATION OF COMPONENTS. THEY ARE NOT INTENDED FOR INCORPORATION INTO THE FINAL SPECIFICATION.**

HORIZONTAL ThermaZee



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SPEC NOTE: THERMAZEE® SYSTEM

This guide specification is intended for use when specifying a thermally improved wall assembly consisting of a fully engineered, thermally isolated, highly corrosion resistant cladding support system.

This cladding support system is versatile and suitable for common rainscreen panel assemblies, such as (but not limited to) metal panels, fiber cement, and aluminum composite material (ACM). Cladding type must meet IBC requirements and weigh not more than 15 PSF.

Please contact the manufacturer for further information or questions.

Knight Wall Systems, Inc.
Toll Free: 1.855.KWS.WALL (597.9255)
Web: www.knightwallsystems.com
E-mail: info@knightwallsystems.com
General sales: sales@knightwallsystems.com

HIDDEN TEXT: To access specifier notes that may assist in product selection and editing, ensure that hidden text is turned on in Display Options settings.

DISCLAIMER: The manufacturer has reviewed the product information contained in this guide specification. The information is organized and presented to assist the specification writer working on a construction project to select the appropriate products and to save time in writing the project specification Section. The specification writer is responsible for product selection as well as the use and application of this information, and should contact the manufacturer to ensure that all options are available and that the associated specification information is valid and correct.

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SECTION 07 05 43

CLADDING SUPPORT SYSTEMS (THERMAZEE®)

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes thermally isolated cladding support system.

B. Related Requirements:

1. Division 05 Section for “Cold-Formed Metal Framing”.
2. Division 06 Section for “Rough Carpentry”.
3. Division 06 Section for “Sheathing”.
4. Division 07 Section for “Air Barriers”.
5. Division 07 Section for “<Insert Cladding Section Title>”.
6. Division 07 Section for “Thermal Insulation”.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate component layout and support provisions.
2. Coordinate construction sequencing to ensure assemblies fit properly to supporting and adjoining construction
3. Coordinate schedule with construction in progress to avoid delays.

B. Preinstallation Meetings:

1. Discuss sequence and scheduling of work and interface with other trades.
2. Review support conditions and anchorage for potential interference and conflicts.
3. Review installation methods and procedures, including manufacturer’s written guidelines.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer’s product literature. Include data for cladding support system, fasteners, anchors, and accessories.

B. Shop Drawings:

1. Show component dimensions, assemblies and spacing of all members and fasteners.
2. Provide connection details between cladding support system and substrate and interface details with adjacent construction.
3. Include seal of Professional Engineer.

C. Samples: Submit two (2) 12-inch-long samples of each profile and accessory.

D. Delegated Design Submittals:

1. Submit comprehensive structural design analysis and calculations for cladding support system components and fasteners sealed by a Professional Engineer.

E. Test Reports:

1. Submit documentation confirming each assembly meets the acceptance criteria of NFPA 285.

2. Comprehensive three-dimensional thermal modeling report demonstrating compliance with specified thermal performance requirements for each assembly.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in the manufacturing of cladding support systems with at least 5 years of documented experience.

B. Installer Qualifications: Company specializing in performing the work specified in this section with at least 3 years of experience and approved by manufacturer.

C. Professional Engineer Qualifications: Qualified professional engineer experienced in the design of cladding support systems and licensed in the jurisdiction where Project is located.

D. Mock-Ups: Construct mock-up for evaluation of workmanship.

1. Include cladding support system, water-resistive barrier, anchorage, flashings, and accessories[as shown in Drawings] <Insert Size>.

2. Approved mock-up may remain as part of the completed Work.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials and components in manufacturer’s original, unopened and undamaged containers with labels intact. Exercise care to avoid damage during transportation and unloading.

B. Store, protect and handle materials and components in accordance with manufacturer recommendations to prevent damage, contamination and deterioration. Keep materials clean, dry, and free of dirt and other foreign matter, and protect from damage due to weather or construction activities.

1.6 WARRANTY

A. Manufacturer Warranty: Provide 10-year Limited Warranty of cladding support system, including structural failure of components when supplied and installed per manufacturer’s requirements, commencing on date of Substantial Completion.

1. Include labor and material for removal and replacement of defective material.

2. Include labor and material to remove and reinstall cladding, finish closures, and accessories necessary to access defective material.

B. Installer Warranty: Provide 2-year warranty covering repair of materials found to be defective as a result of installation errors, commencing on date of Substantial Completion.

C. Limitation of Warranties: Excludes repairs, replacement, and corrective work to the substrate, primary structure, cladding, and property, unless otherwise noted above. Warranties exclude mechanical damage due to abuse, neglect, primary structure failure, or forces of nature greater than normal weather conditions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Knight Wall Systems; ThermaZee® System: www.knightwallsystems.com.

1. Substitutions: Not permitted.

B. Source Limitations: Furnish cladding support system components from a single manufacturer.

2.2 SYSTEM DESCRIPTION

A. Rainscreen assembly includes the following components from the substrate out:

1. Substrate: [Wall framing and sheathing] [Concrete masonry unit wall] [Concrete wall].
2. Water-Resistive Barrier/Air Barrier.
3. Continuous insulation.
4. Cladding support system.
5. Exterior cladding.

B. Performance Requirements:

1. Thermal Performance:

a. Continuous, solid, non-perforated framing profiles (including C- or Z-shaped sections or furring) penetrating insulation are not allowed.

b. Wall Assembly U-Factor: < (U-0.XXX)>.

1) Perform U-Factor calculation or modeling in accordance with ASHRAE guidelines.

2. Fire Propagation Requirements of Exterior Wall Assemblies: Complying with the acceptance criteria of NFPA 285.

C. Design Requirements: Provide manufacturer's professional engineering services to design cladding support system, including anchorage, to meet specified requirements.

1. Structural Design:

a. Design Loads: Capable of withstanding effects of load and stresses from dead loads, wind loads,[snow and ice loads,] and other loads indicated on [Structural Drawings] without evidence of permanent defects of assemblies or components.

b. Fasteners: Tension shall be taken as the sum of direct tension plus tension due to prying for eccentrically loaded connections. Prying may be reduced or eliminated if proven via engineering analysis or testing.

c. Thermal Movements: Provide assemblies that allow for thermal movements resulting from the following maximum ambient temperatures by preventing overstressing of components and other detrimental effects:

1) Temperature Change (Range): 120 degrees Fahrenheit.

2.3 INSULATION

A. Refer to Section [07 21 00 – Thermal Insulation].

2.4 CLADDING SUPPORT SYSTEM

A. Member Spacing: Comply with manufacturer's calculations and approved shop drawings.

B. Primary [Horizontal] [Vertical] Girts: Minimum [0.046 inch thick (18 gauge)] [0.054-inch thick (16 gauge)] cold-formed steel with thermally improved web perforations and pre-punched attachment holes.

1. Profile Depth: [1.5 inches] [2 inches] [2.5 inches] [3 inches] [3.5 inches] [4 inches] [4.5 inches] [As indicated in Drawings].
2. Web Perforations: Minimum 50 percent open area.
3. Finish: [Mill finish] [Black PVDF finish complying with AAMA 2605].
4. Basis of Design: Knight Wall Systems ThermaZee™.

C. Secondary [Horizontal] [Vertical] Rails: Nominal [0.046 inch thick (18 gauge)] [0.054-inch thick (16 gauge)] cold-formed steel.

1. Profile: Hat channel with stiffening lips.
2. Profile Depth: 3/4-inch [1-inch] [1-1/4 inches] [1-1/2 inches] [1-3/4 inches].
3. Fastening Face Width: 2 inches [3 inches] [4 inches] [5 inches].
4. Weeps: 3/4-inch diameter holes spaced at 4 inches on center along flanges to allow for free air flow.
5. Attachment Holes: Spaced at 2 inches on center for attachment to primary rail and sized to allow for thermal movements.
6. Finish: [Mill finish] [Black PVDF finish complying with AAMA 2605].
7. Basis of Design: Knight Wall Systems PanelRail™.

D. Secondary Vertical Reveal Rail: Nominal [0.046-inch thick (18 gauge)] [0.054-inch thick (16 gauge)] cold-formed steel.

1. Profile: Square hat channel with stiffening lips.
2. Profile Depth: 3/4-inch [1-inch] [1-1/4 inches] [1-1/2 inches] [1-3/4 inches].
3. Finish: [Mill finish] [Black PVDF finish complying with AAMA 2605].
4. Basis of Design: Knight Wall Systems RevealRail™.

E. Steel Classification: Structural Steel (SS), Grade 50, 50 ksi Yield.

1. Coating Material: ASTM A1046, Zinc-Aluminum-Magnesium, minimum thickness ZM40.
2. ASTM A653 Galvanized steel is not acceptable.

F. Fasteners:

1. General: Provide manufacturer's recommended non-corrosive type of sufficient strength to provide solid attachment through rigid insulation to structural substrate.
   a. Minimum 1,000-hour salt-spray coating (ASTM B117).
2. Thermal Isolating Washers: Manufacturer's recommended copolymer washers to act as a thermal break between substrate and back flange of girts.

a. Basis of Design: Knight Wall Systems ThermaStop™ Isolator.

2.5 [SIDING] [CLADDING]

A. Refer to Section <Insert Cladding Section Number>.

2.6 ACCESSORIES

A. Bracing, Furring, Bridging, Plates, Gussets, and Clips: Formed sheet steel, thickness as necessary to meet structural requirements for special conditions encountered.

B. Galvanic Protection Materials: Tapes and bituminous coatings intended to prevent contact between dissimilar metals.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions for compliance with manufacturer requirements for installation conditions affecting performance of the Work.

1. Ensure water-resistive barrier (WRB) and rigid insulation are completely and correctly installed prior to installing cladding support system.

2. Ensure fenestration, transitions, discontinuities, sills, and ledgers are flashed and sealed to move moisture to the exterior of the building.

B. Examine architectural details and penetration locations relative to support locations prior to installation.

C. Do not proceed with installation until unsatisfactory conditions have been corrected.

D. Commencement of installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

3.2 PREPARATION

A. Metal Protection: Where dissimilar metals will contact each other, protect against galvanic action by painting contact surfaces with bituminous coating or by other means of permanent separation.

3.3 CLADDING SUPPORT SYSTEM INSTALLATION

A. Primary Girts: Install in accordance with manufacturer’s installation instructions and approved shop drawings.

1. Securely fasten each girt according to manufacturer’s engineering requirements.

2. Thermally isolate girts by sandwiching thermal break material between flanges of girts and support wall substrate.

3. Check plumb of girts both parallel and perpendicular to the structure.

4. Tighten fasteners that attach girt through insulation to substructure to a snug tight condition and not stripped. Do not over-torque beyond manufacturer’s recommendation. If installed using hand tools, verify for each installer at beginning of project using snug-tight criteria. Do not use stripped holes.

5. Friction fit thermal insulation tight to girts.

B. Secondary Rails: Install in accordance with manufacturer's installation instructions and approved shop drawings.

1. Attach both flanges of rails to primary girts, plumb, straight and square.
2. Tighten screws to a snug tight conditions and not stripped. Do not use stripped holes or screws.
3. Shims can be used between horizontal rail and vertical girt or cladding panel and horizontal rail as approved by cladding manufacturer.

C. Touch-up shop-applied protective coatings damaged during handling and installation.

D. Provide 3/8-inch to 1/2-inch gaps between girts for expansion when multiple lengths of girts are installed.

3.4 [SIDING] [CLADDING] INSTALLATION – REFER TO SECTION [INSERT SECTION NUMBER].

A. Ensure that cavity remains clear of air flow and drainage obstructions.

END OF SECTION