SECTION 07 48 00

RAINSCREEN ATTACHMENT SYSTEM

This section includes editing notes to assist the user in editing the section to suit project requirements. These notes are included as hidden text, and can be revealed or hidden by the following method in Microsoft Word:

Display the FILE tab on the ribbon, click OPTIONS, then DISPLAY. Select of deselect HIDDEN TEXT.

PART 1 GENERAL

1.1 SYSTEM DESCRIPTION

A. Provide a thermally broken, rainscreen attachment system to sufficiently support cladding installed over exterior insulation while maintaining visual design concepts.

B. Design Requirements:

1. Employ qualified professional engineer licensed in State of [____] to perform structural design.
2. Design furring system to withstand live and dead loads in accordance with [Building Code.] [Structural General Notes on Structural Drawings.] [_____.]
3. Minimum stud gauge of back-up wall assembly to be 43 [54] mil thickness.
4. Continuous, solid, non-perforated framing profiles (including C- or Z-shaped sections or furring) penetrating insulation are not allowed.
5. Attachment system must have proven thermal isolation with a reduction in thermal bridging as indicated by calculations or finite element analysis in accordance with ASHRAE guidelines.
6. 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.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Pre-Installation Conference:
1. Attendance: [Architect,] [Owner,] [Construction Manager,] [Design/Builder,] Contractor, installer, and related trades.
2. Review: Project conditions, back-up wall framing, manufacturer requirements, delivery and storage, staging and sequencing, and protection of completed work.

1.3 SUBMITTALS

A. Action Submittals:
1. Drawings: Illustrate products, installation, spacing and connection to adjacent construction.
2. Product Data: Manufacturer’s descriptive data and product attributes.
3. Samples: [Selection samples.] [Verification samples.]

B. Informational Submittals:
1. Structural calculations: Manufacturer's comprehensive structural design analysis signed and sealed by a registered professional engineer.
2. Three-dimensional thermal modeling indicating framing system’s impact on exterior insulation rated R-value.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Firm specializing in work of this Section, with minimum [3] [__] years’ documented experience.

B. Mock-Ups: Coordinate mock-up materials and requirements with mock-up specified in Division 01 [and exterior cladding specification].

C. Single source responsibility: Furnish engineered rainscreen attachment system components under direct responsibility of single manufacturer.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in manufacturers' original, unopened and undamaged containers or crates. Keep materials clean, dry and free of dirt and other debris and protect from weather or construction activities. Follow manufacturers' recommendations.

1.6 WARRANTY

A. Manufacturer's 10-year limited warranty against structural failure of system; includes the labor and material cost for removal and replacement of defective material; includes the labor cost for removal and reinstallation of overlying façade finish panels as required to access defective materials. All materials and components to be supplied and installed per manufacturer's requirements. Excludes repairs, replacement, and corrective work to the substrate, primary structure, finish panels, and/or property – unless otherwise noted above.

B. Installer's 2-year warranty against defects in installation of system.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Contract Documents are based on products by Knight Wall Systems. www.knightwallsystems.com

B. Substitutions: [Refer to Division 01.] [Not permitted.]

2.2 MATERIALS

A. Steel Sheet:
1. Steel classification: Structural steel, 50 ksi yield strength.
2. Corrosion protection coating: ASTM A1046, zinc-aluminum-magnesium, minimum thickness ZM40.

2.3 COMPONENTS

A. Comply with ANSI/ASHRAE 90.1.

B. Primary [Horizontal] [Vertical] Girts:
1. Profile: ThermaZee; z-channel, front and back flanges of equal length, with attachment holes.
2. Thickness: Minimum [18] [16] gage.
3. Web perforations: Minimum 50 percent open area.
4. Depth: [[1.5] [2] [2.5] [3] [3.5] [4] [4.5] inches.] [As indicated.]
5. Thermal isolation:
   a. Located between back flange and substrate; continuous along length of channel
   b. Minimum 0.25 inch thickness.
   c. Thermal conductivity: Less than 0.18 Watts per Meter Kelvin.
   d. Designed to prevent accumulation of liquid water on upper edge.
6. Finish: [Mill.] [Black PVDF coated.]

C. Secondary [Vertical] [Horizontal] Rails:
1. Profile: PanelRail; square hat channel with stiffening lips, weep drains and attachment holes.
2. Thickness: Minimum [18] [16] gage.
3. Web perforations: 3/4 inch diameter holes at maximum 4 inches on center.
4. Fastening face width: [[2] [3] [4] [5] inches.] [As determined by structural analysis.]
5. Depth: 3/4 inch.
6. Finish: [Mill.] [Black PVDF coated.]

D. Secondary Vertical Joint Rail:
   1. Profile: RevealRail; square hat channel with stiffening lips.
   2. Thickness: Minimum [18] [16] gage.
   3. Dimensions: 2.0 inches at web, 1.625 inches at each flange, with 0.25 stiffening lips.
   4. Depth: 3/4 inch.
   5. Finish: [Mill.] [Black PVDF coated.]

2.4 ACCESSORIES

A. Thermal Insulation: Refer to Section [__ __ __ - _____].

B. [Siding] [Cladding] Panels: Refer to Section [__ __ __ - _____].

C. Wall Anchors: Corrosion resistant coated steel; thermally isolated with minimum 1/8 inch thick polymer washer; type, spacing and embedment as system engineer requires.

D. Bracing, Furring, Bridging, Plates, Gussets, and Clips: Formed sheet steel, thickness to meet structural requirements.

E. Galvanic Protection: Utilize tapes and other methods to separate and prevent contact between dissimilar metals.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions and approved engineering calculations.

B. Place girts no greater than maximum spacings indicated.

   1. Girt layout may need to be coordinated with cladding layout and fastening requirements.
   2. Components must not be cut while installed on the building unless a shearing instrument is used.

C. Friction fit thermal insulation tight to girts.

D. Install [siding] [cladding] as specified in Section [__ __ __ - _____].

3.2 ADJUSTING

A. Clean and touch up damaged coatings.

END OF SECTION