

Specification Insert for: “True Clip and Girt” Sub Framing for Rainscreen Systems and Siding

As Provided by True Blue Products: email info@trueblueproducts.net ; phone (602)581-5299; Website www.trueblueproducts.net

2.1 CLADDING SUPPORT SYSTEMS

A. Quality Standard: True Clip and Girt Vertical: Continuous Insulation and Rainscreen Mounting System, thermally insulated and isolated between Clips and substrate, specified as basis of design. 1. Tel: (530) 581-5299, 2. Email: info@trueblueproducts.net 3. Web Site: www.trueblueproducts.net

B. Substitution Requests: As specified by Section xx xx xx.

.3 PERFORMANCE / DESIGN CRITERIA

A. Structural Design: Provide engineered design capable of supporting all components exterior of the weather barrier, including all insulation, withstanding combined effects of stresses from dead loads, wind loads, normal thermal movement, and other anticipated stresses without evidence of permanent defects or failure.

1. Wind Load: Uniform pressure (velocity pressure) as indicated on Structural Drawings, acting inward or outward.

2. Dead Loads: Design for loading to accommodate support of exterior insulation and cladding systems specified by related sections and shown on Drawings and as required by applicable building code.

B. Thermal Expansion and Contraction: Design for movement due to cyclic day and night temperatures to not exceed safety factors for fasteners, joints, seals, and components.

C. Insulation installation: Design for connection to the structural studs or substrate, without penetrations through the weather barrier other than clip fasteners and providing pressure to eliminate gaps between the insulation and the substrate.

D. Cladding Accommodation: Framing support assembly to be self planeing while maintaining dimensions to face of cladding materials indicated on Drawings. Design framing supports configuration, size, spacing, and adjusting as needed to accommodate support for each cladding type, including:

1. Unit Masonry Panels specified by Section 04 25 00

2. Stone Composite Panels specified by Section 04 42 00

3. Stone Composite Wall Panels specified by Section 07 42 43

Specification Insert for: "True Clip and Girt" Sub Framing for Rainscreen Systems and Siding

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4. Metal Wall Panels specified by Section 07 42 13
5. Composite Wall Panels specified by Section 07 42 43
6. Fiber Reinforced Concrete Wall Panels specified by Section 07 42 47

E. Rain Screen Design:

1. Design a system assembly to accommodate a drained/back ventilated system to accommodate movement of air movement into the rain screen cavity and move water vapor out.

2. Design a system assembly to accommodate a pressure equalized system to help prevent water intrusion into the rainscreen cavity while allowing air movement to move water vapor out.

F. Tolerances:

1. Accommodate deflection of structural members.
2. Maintain clearances at adjacent construction.
3. Prevent load transfer to non-structural elements.

G. Thermal Barriers:

1. Thermally isolate metal components in contact with support wall.
2. Shims may not be used for plumb and true.

H. Thermal Insulation: As specified by Section 07 21 13.

1. Design thickness and type of insulation into system assembly.
2. Perform comparative thermal analysis to determine both insulation and framing mounting system's effect on wall assembly.

I. Effect on Wall Assemblies Thermal Resistance: Insulation and Framing system must not degrade complete wall assembly's thermal resistance by more than 17 percent and conform to ASHRAE 90.1 prescriptive U-value of wall assembly for appropriate climate zone.

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1. Two- or three-dimensional computer simulated thermal analysis or guarded hot-box test results required.

2. Side by side comparative computer simulated thermal analysis to at least 7 other insulation and cladding support systems.

2.4 STEEL SUB-FRAMING:

A. Gauge, Configuration, Dimensions, and Spacing: Minimum gauge and as required to conform to design criteria for each assembly.

Material: Stainless steel 302 or 304 Alloy for Insulation Girt Wires and Clips.

Material: G90 Galvanized steel for W-Girt insulation and rainscreen cladding support.

B. Wall Clips and Framing:

1. Single Clips with thermal isolator (wall brackets) having pre-punched holes: For minimum two stainless steel wall anchors per Clip.

a. Pre-punched Holes and slots: For easy engagement and placement of stainless steel self-tapping hex-head screws for use in leveling, planeing and attaching adjustable the W-Girt.

2. W-Girts having pre-punched holes with 8 inch on center placement for easy engagement and placement of Insulation Girt Wires, and their associated fasteners.

3. Dimensions: Plane and level as needed to offset cladding from wall plane, allowing for installation of insulation to match the given offset (Not to exceed one inch).

a) Align offsets to differing wall planes as shown on Drawings.

4. Recommended Product: True Blue Products (TBP) “True Clip and Girt”

a. Clips: Minimum 16 ga stainless steel with thermal isolator.

b. W-Girt: Minimum 18 ga G90 galvanized steel

1. Profile: W-Girt to be used as vertical furring members.

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2. W-Girts are factory punched to accommodate Insulation Girt Wires and associated stainless steel fasteners.

2.5 THERMAL ISOLATOR

1. Material: Injection molded High Density Polypropylene.
2. Size: To accommodate Clip.
3. Recommended Product: True Blue Products (TBP) Isolator.

2.6 CONNECTORS AND ANCHORS

A. Connectors used with Cold-Formed Steel Framing Members: Conform to ICC ES AC261

B. Screw Fasteners: Stainless steel as instructed by manufacturer.

1. Minimum ¼” self-drill hex-head screw fastener to be used to attach W-Girts to Clips, and to attach Girts to other girts.
2. Minimum ¼” self-drill hex-head screw fastener to attach Clips to steel studs.
 - a. Self-drill hex-head TEK screw fasteners of sufficient length
 - b. Minimum ½” of threads OR 3 threads minimum must penetrate steel stud members. (Whichever is greater)

C. Concrete and Masonry Wall Anchors: Mechanical and Adhesive anchors, bolts, nuts, and washers suited to use and as required for transference of design loads.

1. Mechanical Anchors: Expansion type, conforming to ICC ES AC193.
2. Adhesive Anchors: Torque Controlled, conforming to ICC ES AC308

2.7 ACCESSORIES

A. Girt Wires: Girt wires are fastened to the W-Girt to assist in holding Insulation in place without penetrating the weather barrier.

Specification Insert for: “True Clip and Girt” Sub Framing for Rainscreen Systems and Siding

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B. Insulation Stiches: Stainless steel spring wires to help close gaps within joints of the insulation.

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

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

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify conditions ready to receive work of this Section before beginning.

B. Backup Wall: Verify level and plumb, free of defects, and conforming to tolerances suitable for installation of subsequent work.

C. Weather Resistive Barrier: Verify complete, cured, and conforming to manufacturer’s instructions. Verify fenestrations, transitions, discontinuities, and sills and ledgers flashed and sealed to move moisture to exterior of building as part of air barrier system.

3.2 PREPARATION

A. Review areas of potential interference and conflicts, and coordinate layout and support provisions for interfacing work.

B. Adjust and perform work as necessary for plumb and true alignments.

3.3 INSTALLATION

A. Conform to manufacturer's instructions and provisions of Contract Documents.

B. Erect cold-formed rain screen assembly to be level, plumb, and in alignment with building features including corners, off-sets, and fenestrations.

C. Clips and Vertical W-Girt:

1. Mount Clips per structural engineering at on-center locations horizontally at each stud location using self-drilling, self-tapping screws at metal stud framed walls and expansion or adhesive anchors at concrete and masonry walls.

Specification Insert for: “True Clip and Girt” Sub Framing for Rainscreen Systems and Siding

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- a. Lay Clips out at given vertical and horizontal increments.
 - b. Tighten snug tight as instructed by fastener manufacturer instructions.
 - c. Where using snug tight criteria, verify torque for each installer using hand tools at beginning of project.
 - d. All window, jambs, doors, and openings must be fully flashed by others prior to mounting of system.
2. Thermally isolate Clips utilizing thermal break material between the Clip and support wall substrate.
 3. Attach W-Girt to Clip by use of self-tapping screw fasteners through the pre-punched holes in the Clip.

D. Horizontal Rails:

1. Add Z or H shaped horizontal rails over vertical W-Girts if required.
 - a. Space vertically to make suitable bearing surfaces for each cladding system as instructed by cladding manufacturer and as shown on Architect accepted shop drawings.
 - b. Begin at bottom and mount to vertical W-Girts using ¼” self-drilling, self-tapping stainless-steel screws.
 - c. Tighten screws to snug tight, typically between 90-95 in/lbs of torque. Verify equivalent snug tight condition for installers using hand tools.
 - d. Install successive horizontal rails as required.

E. Semi-Rigid or Rigid Mineral Wool Insulation: Install to expand into and tightly fit between Clips to make continuous, unbroken insulated face of wall as specified by Section 072xxx.

F. Girt Wires: fasten Girt wires to W-Girt to assist in holding insulation without penetrating the weather barrier.

G. Insulation Stiches: Stainless steel spring wires to help close gaps within joints of the insulation.

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H. Touch-up shop-applied protective coatings damaged during handling and installation, as required.

I. Use shearing instruments (i.e., snips, nibbler, etc.) for cutting metal framing components to avoid. If saws are used surrounded metal coating MUST be protected from sparks.

J. Cut installed horizontal rails to minimally attach to at least two separate vertical W-Girts to prevent rotation of rail. (if required)

1. At unsupported span of installed horizontal rails that extend past closest vertical rails, do not exceed structural engineering requirements.

2. At opening jambs (i.e., windows, doors, and other fenestrations) do not extend the horizontal rails past vertical W-Girts by more than 3 inch in length.

3.4 ERECTION TOLERANCES

A. Maximum Framing Member Variation from Plane:

1. Individual Framing Members: Do not exceed 1/8 inch in 10 foot.

3.5 FIELD QUALITY CONTROL

A. Field Technical Service: Make intermittent and final inspection to verify installation in conformance to manufacturer instructions and suitable as framing assembly for subsequent metal panels, acrylic plastering, and other cladding installations.

1. Confirm snug tight and fastener sizing.

2. Confirm framing members installed in correct orientation.

3.6 ADJUSTING

A. Inspect and adjust after installation. Replace or repair defective work.

B. Adjust and reconfigure as necessary to accommodate cladding systems for installations over work of this Section. Do not reuse pre-drilled holes unless fastener size is increased.

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END OF SECTION 07 xx xx