

# KNIGHT CI-SYSTEM™ RAIN SCREEN ATTACHMENT

## DATA SHEET



PRODUCT NAMES	MANUFACTURER	AVAILABILITY	TECHNICAL SUPPORT
CI-System™	Knight Wall Systems, Inc.	The CI-System is purchased directly through Knight Wall Systems. Customer service and ordering assistance is available through an extensive network of sales representatives.	Knight Wall Systems can provide technical information and support when developing details with our system and help with determining proper configuration. For assistance, please call 1.855.KWS.WALL
CI-Girt™	28308 North Cedar Rd		
PanelRail™	Deer Park, WA 99006		
RS-Rail™	1.855.KWS.WALL		
ThermaStop™	info@knightwallsystems.com		
	www.knightwallsystems.com		

PRODUCT DESCRIPTION	PRODUCT USE
<p>The CI-System™ offers many advantages in design, construction and long-lasting thermal performance of the building. In addition to maximizing energy efficiency, occupant comfort and utility savings - a wide range of claddings can be used in conjunction with the attachment system. Transitions from one material to another are seamless, allowing for a simple design saving time and money during installation as well as design.</p> <p>The CI-System provides a complete engineered, tested and warranted rain screen attachment solution, maximizing energy efficiency and offering excellent moisture management. This system of unique girts and rails eliminates any furring penetrating the thermal barrier (as with traditional Z-girt assemblies) and disrupting the drainage plane in an effort to significantly minimize thermal loss through the insulation (commonly known as thermal bridging). The CI-System delivers real continuous insulation across all structural members with nothing penetrating the insulation but fasteners. Thermal shorts through the fasteners are also reduced with thermal isolation washers.</p> <p>This unique drop-in design meets or exceeds ASHRAE 90.1 requirements and local energy codes - saving time and money by reducing labor in addition to overall assembly costs.</p> <p>The CI-System consists of vertical CI-Girts, vented horizontal rails (as necessary-cladding dependent) and stainless steel fasteners and wall anchors.</p>	<p>The CI-System™ continuous insulation rain screen attachment is designed to be used in conjunction with a variety of cladding and panel types for maximum versatility. The CI-System can easily meet requirements of design live load wind pressures exceeding 90 PSF as well as over-pressure (blast) requirements.</p> <p>Virtually any cladding or panel can be used in conjunction with the CI-System rain screen attachment. Typically if the cladding product has the ability or approval to be attached over Z-girts and/or hat channels, it can be installed over Knight's CI-System.</p> <p>The vertical CI-Girts can be spaced up to 32" O.C. (every other stud) for light weight and low wind pressure scenarios - or it can be configured to support claddings that weigh over 15 PSF. The maximum allowable spacing of the components and dead load are functions of the total load imposed on the wall anchors at a given spacing, calculated by Knight Wall Systems on a project specific basis.</p> <p>The system can be installed over steel studs (with or without gypsum sheathing), wood studs (with sheathing), CMU and concrete substrates when the appropriate fasteners are used. Wall anchors specified &amp; supplied by Knight are for steel or wood studs only. Knight will specify the exact anchor type, embedment depth and spacing for anchors into CMU, concrete and masonry but must be supplied by others. KWS will supply the ThermaStop thermal isolation washer assembly for use with CMU and concrete anchors. Wedge anchors or expansion anchors should not be used since specified torque to set anchor cannot be met during install.</p>

INSTALLATION	WARRANTY
<p>The CI-System arrives on site in an all-inclusive crate with rails &amp; wall anchors with preassembled thermal isolating washers (when supplied by Knight). Installation is quick and easy with common building tools due to the pre-punched regularly spaced holes. Vertical joints between CI-Girts should be spaced with a minimum 3/8" gap for expansion and installed over 25 psi compression strength rigid insulation up to 4" thick. The CI-Girt™ must be oriented vertically and the fastener must fasten through the insulation, tying snug tight into a steel stud of 18 gauge minimum thickness (or a minimum 1" embedment into concrete or CMU, verified per project).</p> <p>Installation of the CI-Girt™ can begin as soon as a portion of the exterior insulation is correctly installed and flashed. Depending on individual contractor productivity rates, installation of the Knight CI-System™ is recommended to only lag minimally behind installation of the rigid exterior insulation. Installation of the facade can begin once vertical girts and horizontal rails are in place.</p>	<p>Knight Wall Systems enable owners and designers to easily and efficiently fulfill design demands while meeting the requirements of structural and thermal performance. The single-source solutions for pre-engineered, tested, rain screen attachment systems with limited warranties help assure long-lasting performance in the building envelope. Please contact Knight Wall Systems or your local product representative for complete sample warranties.</p> <p><i>Subject to the terms and conditions of the limited warranty, Knight Wall Systems, Inc. warrants to the owner of the Rain Screen Mounting System exterior framework for a period of 10 years from the Completion Date of Installation, the Mounting System will remain intact and be free from manufactures defects. This Warranty does not cover any defects or failures of the Cladding Products or insulation. Upon completion of the project, during project closeout procedures, Knight Wall Systems must submit a copy of the full warranty for the owner to have on file.</i></p>

# KNIGHT CI-SYSTEM™ RAIN SCREEN ATTACHMENT DATA SHEET



## CI-GIRT

Material	Cold Formed Steel, 50 ksi (ASTM A568)	Minimum Wall Anchor Spacing	8 inches O.C. (spacing is service load dependent)
Gauge	18 (0.048 +/-0.008 inches)	Wall Anchor Whole Inside Diameter	- 0.28 inches with isolating washer - 0.40 inches w/o isolating washer
Coating	55 percent AL-ZN (ASTM A792 - AZ55 "Galvalume")	Number of Wall Anchors per Girt	- 15 at 8 inches O.C. - 8 at 16 inches O.C.
Weight per Girt	7.7 Pounds	Metal Washer	- At each fastener - Stainless Steel
Weight per SF	- 16 inches O.C. - 0.65 PSF - 24 inches O.C. - 0.43 PSF	Fastener Thermal Isolation Material	Polyoxymethylene
Maximum Spacing	32 inches O.C. (every other stud - service load dependent)	Fastener Thermal Isolator Thickness	0.125 inches
Part Dimensions	0.75 inches deep x 2.0 inches wide x 120 inches long	Thermal Isolator Softening Point	- 213°F (ISO 75-1/-2 - 1.8 MPa) - 321°F (ISO 306 - B50)

## TESTING STANDARDS

ASTM E330	Structural Performance by Uniform Static Air Pressure	ASTM C1354	Strength of Individual Stone Anchorage in Dimension Stone
ASTM E1886/1996	Missile Impact and Exposure to Cyclic Pressure Differentials	AAMA TIR-A8-04 (section 7.2)	Flexural Test (by Architectural Testing Inc.)
ASTM E1233	Structural Performance by Cyclic Air Pressure Differential	Dead load vs Deflection	Custom Evaluation Performed by Architectural Testing Inc.
ASTM E331	Water Penetration by Uniform Static Air Pressure Difference	3D Thermal Analysis	Performed By Morrison-Hershfield
ASTM E283	Rate of Airflow Under Specified Pressure Differences		

## THERMAL INFORMATION

### CI-Systems Effect on Insulation (Clear Wall Effective R-Value with Steel Studs)

Nominal Exterior Insulation R-Value (ft <sup>2</sup> ·°F·hr/BTU)	Nominal Entire Assembly R-Value (ft <sup>2</sup> ·°F·hr/BTU)	Continuous Vertical Girts Penetrating Insulation - 16" OC			Continuous Horizontal Girts Penetrating Insulation - 24" OC			Knight Wall CI-System		
		Eff. R-Value	U-Factor	% Eff.	Eff. R-Value	U-Factor	% Eff.	Eff. R-Value	U-Factor	% Eff.
10.1	12.8	8.4	(0.118)	66%	9.5	(0.105)	74%	12.5	(0.080)	98%
13.0	15.7							15.2	(0.066)	97%
15.8	18.5							17.8	(0.056)	96%
19.0	21.7							20.7	(0.048)	95%

Contact KWS for full thermal reports.



Knight Wall CI-Girt Rainscreen System



**MADE IN THE USA**

NOTICE: No freedom from any patent owned by Knight Wall Systems or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. Knight Wall Systems assumes no obligation or liability for the information in this document. NO EXPRESS WARRANTIES ARE GIVEN EXCEPT FOR ANY APPLICABLE WRITTEN WARRANTIES SPECIFICALLY PROVIDED BY KNIGHT WALL SYSTEMS. ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Knight Wall Systems can give assurance that mold will not develop in any specific system.

CI-SYSTEM, CI-Girt, PanelTek, SidingRail, MFI-System, PanelRail, ThermoBracket and ThermoStop are trademarks of Knight Wall Systems, inc. Patent US 8,429,866 B2 and others pending.

092513