The Cascadia Clip® cladding support system for exterior insulated walls improves energy efficiency and lowers construction cost. It separates steel girts from the back-up wall and allows the insulation value to be fully realized. This eliminates degradation of insulation value that occurs with traditional steel girts and clips.

"The Cascadia Clip® wall is about cost-neutral to a single continuous Z-girt wall, but with twice the performance."

Ron Blankert, President, BJ Plastering

"This is what I really think is the definition of good green design. It is unobtrusive, it solves a serious problem, it is easy to use and does its job really well."

Lloyd Alter, Managing Editor, Toronto
THERMAL MODELING & FIELD COMPARISON

Cascadia Clips® limit heat flow through wall.

*R With 4” of mineral wool
*Whole-wall effective insulation value
*At 16” O.C horizontally + 36” vertically

A THERMAL WASHER

Because Cascadia Clips® are used to separate traditional Z-girts or hat tracks from the backup wall structure, they are universal to any type of cladding.

They will support any cladding that would normally be attached with these methods, or any other type of rail system.
CONSTRUCT COST-EFFECTIVE HIGH R-VALUE WALLS

Since the effective R-value is extremely efficient compared to any other cladding support assembly, a much thinner wall will accomplish the same or better results.

The cost savings available from using Cascadia Clips® can be as much as $5 per square foot compared to other, more conventional cladding support systems that attempt to meet similar performance targets.

WHEN SPACING OF THE CLIPS IS OPTIMIZED, THE CASCADIA CLIP IS THE CHEAPEST $/R-VALUE OF ANY OTHER CLIP SYSTEM ON THE MARKET.
VERTICAL GIRT APPLICATION

**STEP 1**
Attach clips to steel girt

**STEP 2**
Fasten girts and clips to the wall with screws; long screws connect girts directly to the structure, passing through the clips

**STEP 3**
Install insulation and fasten next girt

HORIZONTAL TRACK APPLICATION

The Cascadia Clip® can be used with a horizontal hat-track; slotted tracks allow flexibility for aligning clips to studs

A simple and effective way to support vertically oriented cladding; fasteners will hold assembly together for installation convenience

ADJUSTABILITY

The Cascadia Clip now has accessories to handle uneven wall substrates. Please visit cascadiaclip.com or contact us for more info on the adjustable Cascadia Clip.
THE CASCADIA CLIP® IS FULLY CODE-COMPLIANT FOR FIRE PERFORMANCE IN BOTH CANADA AND THE USA FOR EVERY TYPE OF WALL ASSEMBLY.

1. The Clips are intermittent, both vertically and horizontally, and almost completely covered by non-combustible mineral wool. Because of this, they do not alter the wall’s fire protection in any way – for better or for worse.

2. Fire does not damage the Clips' ability to hold the cladding in place, because cladding is attached to steel Z-girts which are attached directly to the backup wall with screws passing completely through the clip.

The fiberglass clips are not a structural connection for the cladding: the structural connection of cladding to backup wall is done via steel girts and screws.

CANADA

While fiberglass is combustible, the clip functions within non-combustible wall assemblies as a minor combustible component, in accordance with Article 3.1.5.2 of the Model National Building Code.

The clip is enclosed within the non-combustible insulation and the fasteners attach the cladding directly to the structure. Fire protection and building code professionals support the clip as a minor combustible component, in compliance with the building code.

The Building and Safety Standards Branch of the BC Ministry of Energy and Mines confirmed that the Cascadia Clip® is a minor combustible component, acceptable for use in non-combustible construction.

USA

The Cascadia Clip® has been approved through IAPMO for a Uniform Evaluation Service report, evaluating the Clip for use in projects across the USA, in all types of construction, including non-combustible wall assemblies. The IAPMO UES report evaluates the Clip for the 2012 and 2015 international Building Code, ensuring that the clips have met the most rigorous standards and are in full compliance. Using comprehensive fire-testing data, including a successful NFPA 285 report with combustible cladding, the evaluation approves the clip for use in non-combustible wall assemblies.

It also includes analysis and approval of durability, structural capacity, and more. Cascadia Clips® are the only thermally improved cladding support system with a code evaluation. Please contact us or visit our website for more information or a copy of this report!
## THERMAL PERFORMANCE

<table>
<thead>
<tr>
<th>Clip / insulation depth (in.)</th>
<th>STEEL FRAMED</th>
<th>CONCRETE</th>
<th>WOOD FRAMED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>10.9</td>
<td>16.7</td>
<td>9.7</td>
</tr>
<tr>
<td>2.5</td>
<td>12.1</td>
<td>18.4</td>
<td>11.5</td>
</tr>
<tr>
<td>3</td>
<td>13.7</td>
<td>20</td>
<td>13.1</td>
</tr>
<tr>
<td>3.5</td>
<td>15.3</td>
<td>21.7</td>
<td>14.8</td>
</tr>
<tr>
<td>4</td>
<td>16.8</td>
<td>23.4</td>
<td>16.5</td>
</tr>
<tr>
<td>5</td>
<td>19.8</td>
<td>26.6</td>
<td>19.8</td>
</tr>
<tr>
<td>6</td>
<td>22.7</td>
<td>29.7</td>
<td>23</td>
</tr>
<tr>
<td>8</td>
<td>28.5</td>
<td>36</td>
<td>29.5</td>
</tr>
</tbody>
</table>

### Effective R-values (\(\text{FT}^2 \cdot \text{°F} \cdot \text{HR/Btu}\))

- **Steel Framed**: 10.9, 12.1, 13.7, 15.3, 16.8, 19.8, 22.7, 28.5
- **Concrete**: 16.7, 18.4, 20, 21.7, 23.4, 26.6, 29.7, 36

- All results using exterior mineral fibre insulation (R4.2/inch).
- Steel studs are 18ga material.
- Steel and wood studs assuming clip spacing of 16" horizontally and 48" vertically.
- Concrete assuming clip spacing of 24" horizontally and 36" vertically.
- More effective R-value results based on different spacings and combinations of wall assemblies can be found on our website using our Cascadia Clip® Calculator.
- If allowed by the cladding, Cascadia Clips can be spaced out even further in many cases.
The online Cascadia Clip® Calculator helps you calculate the spacing required for your specific project.

You input the variables specific to your project, and use the outputs to find the smallest clip at the largest spacing that meets the project requirements for thermal performance and allowable wind loading. This helps you save money by using the right number of clips - not more, not less.

This tool is fully engineered, and when paired with the engineering reports that corroborate the results, can be used as the submittal documents.

There are over 75,000 combinations of walls, with thermal and structural results for each.

---

### INPUTS

<table>
<thead>
<tr>
<th>Backup Wall</th>
<th>2x4 Steel studs Options of 16, 18, 20 gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2x4 Wood studs</td>
</tr>
<tr>
<td></td>
<td>2x6 Wood studs</td>
</tr>
<tr>
<td></td>
<td>6&quot; Concrete</td>
</tr>
<tr>
<td>Batts in Cavity</td>
<td>Yes Yes for wood, no for concrete, split insulation allowed for steel studs</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Exterior Insulation</td>
<td>R4.2/inch – mineral wool</td>
</tr>
<tr>
<td></td>
<td>R6.2/inch – spray foam</td>
</tr>
<tr>
<td>Fastener Type</td>
<td>Galvanized Steel Standard offering</td>
</tr>
<tr>
<td></td>
<td>Stainless Steel Better thermal performance</td>
</tr>
<tr>
<td>Horizontal Spacing</td>
<td>16 Standard studs</td>
</tr>
<tr>
<td></td>
<td>24 Suggested for concrete</td>
</tr>
<tr>
<td></td>
<td>32 With light cladding, can go every other stud</td>
</tr>
<tr>
<td>Cladding Dead Load</td>
<td>1-20 psf Have done projects up to 27psf</td>
</tr>
</tbody>
</table>
Choose the smallest clip at the largest spacing that meets both the thermal and structural requirements of the project.
PREMISE OF STRUCTURAL DESIGN

The clips are intermittent and are sandwiched between continuous Z-girts to the outside and the sheathing of the back-up wall to the inside. The fasteners (two per clip) attach the Z-girts to the back-up wall studs, passing through holes in the clips. The clips and fasteners are required to resist vertical loads imposed by cladding weight, and horizontal loads imposed by wind pressures and inertial forces from earthquakes. Wind loads are assumed to govern lateral load scenarios.

Due to the intermittent nature of the clips, the dead load of the exterior cladding causes rotational force in the clip. This creates tension in the upper screw; the pull-out of this screw is the governing factor of the Cascadia Clip® design.

The pull-out force on the upper screw has two contributing factors

- Dead load of the cladding
- Negative wind pressure on the cladding

Assumptions

- All clips share vertical load equally
- Clips act independently to resist overturning
TECHNICAL DETAILS

The design information provided in this brochure has been prepared based on a review of industry available screw pull-out and shear load test data, with resultant factors of safety in the connection design ranging from 3 to 4. The specific design curves included in the brochure are based on a FS of 3.0 utilizing the fasteners identified in the above chart as ‘Recommended Fasteners’ for each substrate type. It is important to note that in the design curves for applications in 20 ga and 18 ga steel framing, Leland’s ¼” Master Driller screw with no.2 mini drill point is used, and provides greater capacity than common no.3 drill points. The use of mini drill point screws provides for reasonable ease of installation, while maintaining significantly higher pull-out resistances than no.3 drill points in light gauge steel framing.

The design of screw fastened connections is a task normally completed or reviewed by a structural engineer. The online Cascadia Clip® Calculator is a fully engineered design tool, complete with stamped engineering reports, to illustrate acceptable design application of the Cascadia Clips® under numerous building and environmental conditions. This calculator can be used for engineered submittal documents of the wall assembly, as long as the wall configurations are upheld.

The Cascadia Clip® is a suitable substrate for a number of cladding systems, including stucco. Stucco is inherently prone to cracking, and Cascadia assumes no responsibility whatsoever for any cracking of a stucco application.

### SCREW FASTENER DESIGN PARAMETERS

<table>
<thead>
<tr>
<th></th>
<th>Sheathing thickness</th>
<th>Vertical girt depth</th>
<th>Cladding thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.7 mm 0.5 in</td>
<td>25.4 mm 1 in</td>
<td>19.05 mm 0.75 in</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cascadia Clip® size</th>
<th>Depth</th>
<th>Variance</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.7 mm 0.5 in</td>
<td>101.6 mm 4 in</td>
<td>76.2 mm 3 in</td>
</tr>
</tbody>
</table>

### ALLOWABLE FASTENER LOADS (FACTOR OF SAFETY: 3.0)

#### STEEL STUD SUBSTRATE – RECOMMENDED FASTENER: LELAND INDUSTRIES – ¼ X 14 MASTER DRILLER NO.2 MINI DRILL POINT, DT 2000 COATED

<table>
<thead>
<tr>
<th>For 20 gauge studs</th>
<th>T_{ALLOW} 725 N 163 lb</th>
<th>Leland Industries – Manufacturer’s Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>V_{ALLOW} 703 N 158 lb</td>
<td>Deitrich</td>
<td></td>
</tr>
<tr>
<td>For 18 gauge studs</td>
<td>T_{ALLOW} 1023 N 230 lb</td>
<td>Leland Industries – Manufacturer’s Testing</td>
</tr>
<tr>
<td>V_{ALLOW} 1041 N 234 lb</td>
<td>Deitrich</td>
<td></td>
</tr>
</tbody>
</table>

#### WOOD STUD SUBSTRATE – RECOMMENDED FASTENER: LELAND INDUSTRIES – ¼ X 10 MASTER GRIPPER, DT 2000 COATED

<table>
<thead>
<tr>
<th>Wood studs + plywood sheathing</th>
<th>T_{ALLOW} 979 N 220 lb</th>
<th>Values from Leland Master Gripper 14 x 10 with 1” effective penetration into Douglas Fir</th>
</tr>
</thead>
<tbody>
<tr>
<td>V_{ALLOW} 654 N 147 lb</td>
<td>Saves from Leland Master Gripper 14 x 10 with 1” effective penetration into Douglas Fir</td>
<td></td>
</tr>
</tbody>
</table>

#### CONCRETE/CMU SUBSTRATE – RECOMMENDED FASTENER: LELAND INDUSTRIES – #14 X 15 CONCRETE SCREW, DT 2000 COATED

<table>
<thead>
<tr>
<th>4000 psi Concrete – 1.5” embedment</th>
<th>T_{ALLOW} 1370 N 308 lb</th>
<th>Intertek Testing of Leland Industries 14-15 concrete screws; predrilled holes at $\frac{3}{16}$” diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hollow Concrete Masonry Units – 1.0” embedment</td>
<td>T_{ALLOW} 672 N 151 lb</td>
<td>Intertek Testing of Leland Industries 14-15 concrete screws; predrilled holes at $\frac{3}{16}$” diameter</td>
</tr>
</tbody>
</table>
HOW TO SPECIFY

Cascadia Clips® – Fiberglass Thermal Spacers
2", 3.5", 4", 5", or 6" depth

Steel Z-girts
18 gauge; sizing and coating by engineer/specifier. Most common configuration: 18 gauge with Galvalume AZM 150 coating (or AZ-50 – USA) 1.5" x 1" x 1.25" size.

Screws
Steel studs: ¼ x 14 x 4" Master Driller no.2 point DT2000 by Leland Industries (or 5", 6", 7", 8")
Wood studs: ¼ x 10 x 4" Master Gripper DT2000 by Leland Industries (or 5", 6", 7", 8")
Concrete/CMU: #14 x 15 x 3.5" Concrete Screw DT2000 by Leland Industries (or 5", 5.5", 6.5", 7.5")

All fasteners listed above are available through Cascadia Windows Ltd.

Insulation
CavityRock® DD by Roxul, RainBarrier45® by Thermafibre, or approved alternative [specifier to input total insulation thickness; match the depth of the Cascadia Clip]

Spray Foam Insulation
Various types may be used

DECLARE LABEL

Cascadia Clip®
Cascadia Windows Ltd.
Final Assembly: Langley, BC, Canada
Life Expectancy: 200+ Years
End of Life Options: Salvageable/Reusable in its Entirety, Landfill

Ingredients:
Cascadia Clip Fiberglass Pultrusion: Glass Fiber (La Crosse, WI), Polyester Resin: Base Resin - Polyester (LaCrosse, WI), Calcium Carbonate Filler (LaCrosse, WI), Polystyrene, Release Agent*, Pigment*

*LBC Temp Exception I10-E4 Proprietary Ingredients <1%
Living Building Challenge Criteria:
CAW-0003 04/03/2016
VOC Content: N/A
Declaraiton Status: LBC Red List Free
LBC Compliant
Declared

VRCA AWARD

Cascadia Clips® received an award from the Vancouver Regional Construction Association (VRCA) in 2011 in the category of Sustainability and Innovation.

ACCLAIMED BY

LIVING BUILDING CHALLENGE CERTIFIED

VRCA AWARD

BC’s Leading Innovators
BCBusiness
NEW TECHNOLOGY AWARD FINALIST
WTN WORLD TECHNOLOGY AWARD FINALIST
GLOBE AWARDS INNOVATION AWARD WINNER

HOW TO SPECIFY

Cascadia Clips® – Fiberglass Thermal Spacers
2", 3.5", 4", 5", or 6" depth

Steel Z-girts
18 gauge; sizing and coating by engineer/specifier. Most common configuration: 18 gauge with Galvalume AZM 150 coating (or AZ-50 – USA) 1.5" x 1" x 1.25" size.

Screws
Steel studs: ¼ x 14 x 4" Master Driller no.2 point DT2000 by Leland Industries (or 5", 6", 7", 8")
Wood studs: ¼ x 10 x 4" Master Gripper DT2000 by Leland Industries (or 5", 6", 7", 8")
Concrete/CMU: #14 x 15 x 3.5" Concrete Screw DT2000 by Leland Industries (or 5", 5.5", 6.5", 7.5")

All fasteners listed above are available through Cascadia Windows Ltd.

Insulation
CavityRock® DD by Roxul, RainBarrier45® by Thermafibre, or approved alternative [specifier to input total insulation thickness; match the depth of the Cascadia Clip]

Spray Foam Insulation
Various types may be used

DECLARE LABEL

Cascadia Clip®
Cascadia Windows Ltd.
Final Assembly: Langley, BC, Canada
Life Expectancy: 200+ Years
End of Life Options: Salvageable/Reusable in its Entirety, Landfill

Ingredients:
Cascadia Clip Fiberglass Pultrusion: Glass Fiber (La Crosse, WI), Polyester Resin: Base Resin - Polyester (LaCrosse, WI), Calcium Carbonate Filler (LaCrosse, WI), Polystyrene, Release Agent*, Pigment*

*LBC Temp Exception I10-E4 Proprietary Ingredients <1%
Living Building Challenge Criteria:
CAW-0003 04/03/2016
VOC Content: N/A
Declaraiton Status: LBC Red List Free
LBC Compliant
Declared

VRCA AWARD

Cascadia Clips® received an award from the Vancouver Regional Construction Association (VRCA) in 2011 in the category of Sustainability and Innovation.

ACCLAIMED BY

LIVING BUILDING CHALLENGE CERTIFIED

VRCA AWARD

BC’s Leading Innovators
BCBusiness
NEW TECHNOLOGY AWARD FINALIST
WTN WORLD TECHNOLOGY AWARD FINALIST
GLOBE AWARDS INNOVATION AWARD WINNER
The Cascadia Clip® is a registered industrial design and patented product. Additional patents pending.
For more technical drawings and information, visit www.cascadiaclip.com
*Depending on spacing
FOR FURTHER INFORMATION
ON THE CASCADIA CLIP®

CALL 604 857 4600
EMAIL INFO@CASCADIACLIP.COM

CONTACT A TECHNICAL SALES REP IN
YOUR AREA BY VISITING CASCADIACLIP.COM
SEE THE ‘CONTACT US’ PAGE.