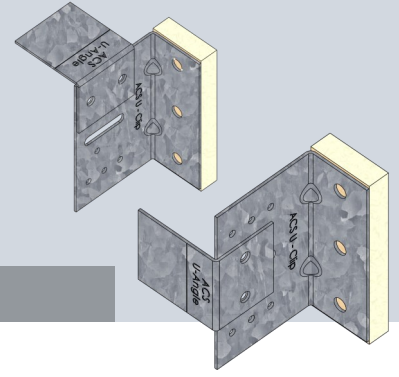


# ACS U-CLIP™

## TECHNICAL DATA SHEET



### DESCRIPTION

ACS Thermal Clips create a highly efficient attachment system that reduces the effect of thermal bridging. The ACS U-Clip™ is available for use in four different configurations: **Vertical Angle** (penetrating insulation); **Vertical Z-Bar** (outside insulation); **Horizontal Angle** (penetrating insulation); **Horizontal Z-Bar** (outside insulation).

Composed of galvanized steel and utilizing the ACS Thermal Pad, the ACS U-Clip™ provides a balance between performance, ease of use and cost.

### PHYSICAL SIZE

|                                |                                                    |
|--------------------------------|----------------------------------------------------|
| Available Size in Inches (mm)  | 2" (51)   3" (76)   4" (102)   5" (127)   6" (152) |
| Base Dimensions in Inches (mm) | 1 ½" x 4" (38 x 102)                               |

### MATERIAL COMPOSITION

|                        |                                                                                                                                                           |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| U-Clip™                | 16ga G90 galvanized steel (ASTM A653)                                                                                                                     |
| U-Angle™               | 14ga G90 galvanized steel (ASTM A653)                                                                                                                     |
| ACS Thermal Pad        | High-density poly-iso closed-cell core structure placed between polymer coated glass fibre facings                                                        |
| Angle/Z-Bar Screws     | #12-14 x ¾" Hex Washer Head #3 Drill Point Carbon Steel NZF 3000 Leland Master Driller®                                                                   |
| Wall Attachment Screws | Wood: #14-10 x 2 ½" Hex Washer Head Carbon Steel NZF 3000 Leland Master Gripper®<br>Concrete: ¼" x 2 ¼" Hex Head Simpson TITEN® TTN25214HSS 410 S/S Screw |



Vertical Angle



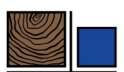
Vertical Z-Bar

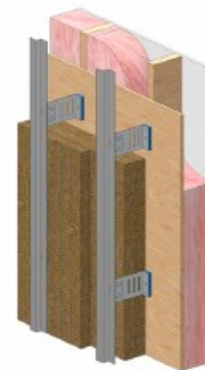


Horizontal Angle



Horizontal Z-Bar





## THERMAL TRANSMITTANCE—WOOD FRAME ASSEMBLY

Table 1. Thermal Transmittance for Split Insulated Wood-Framed Wall Assembly with Galvanized Steel ACS U-Clip™ with Vertical Z-Girt Outboard of Insulation<sup>1</sup>

| Thickness of<br>Exterior<br>Mineral Wool<br>Insulation | Exterior<br>Insulation<br>1D R-Value <sup>2</sup> | 16" x 24" Clip Spacing                              |                                                     | 16" x 36" Clip Spacing                              |                                                     | 16" x 48" Clip Spacing                              |                                                     |
|--------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|
|                                                        |                                                   | R-Value                                             | Transmittance                                       | R-Value                                             | Transmittance                                       | R-Value                                             | Transmittance                                       |
|                                                        |                                                   | ft <sup>2</sup> ·hr·°F/Btu<br>(m <sup>2</sup> ·K/W) | Btu/ft <sup>2</sup> ·hr·°F<br>(W/m <sup>2</sup> ·K) | ft <sup>2</sup> ·hr·°F/Btu<br>(m <sup>2</sup> ·K/W) | Btu/ft <sup>2</sup> ·hr·°F<br>(W/m <sup>2</sup> ·K) | ft <sup>2</sup> ·hr·°F/Btu<br>(m <sup>2</sup> ·K/W) | Btu/ft <sup>2</sup> ·hr·°F<br>(W/m <sup>2</sup> ·K) |
| 2" (51mm)                                              | 8.6 (1.52)                                        | 29.1 (5.12)                                         | 0.034 (0.195)                                       | 29.6 (5.21)                                         | 0.034 (0.192)                                       | 29.8 (5.24)                                         | 0.034 (0.191)                                       |
| 3" (76mm)                                              | 12.9 (2.27)                                       | 32.5 (5.72)                                         | 0.031 (0.175)                                       | 33.3 (5.86)                                         | 0.030 (0.171)                                       | 33.6 (5.92)                                         | 0.030 (0.169)                                       |
| 4" (102mm)                                             | 17.2 (3.03)                                       | 35.8 (6.3)                                          | 0.028 (0.159)                                       | 36.9 (6.49)                                         | 0.027 (0.154)                                       | 37.4 (6.58)                                         | 0.027 (0.152)                                       |
| 5" (127mm)                                             | 21.5 (3.79)                                       | 39.0 (6.86)                                         | 0.026 (0.146)                                       | 40.4 (7.11)                                         | 0.025 (0.141)                                       | 41.1 (7.24)                                         | 0.024 (0.138)                                       |
| 6" (152mm)                                             | 25.8 (4.55)                                       | 42.0 (7.41)                                         | 0.024 (0.135)                                       | 43.8 (7.72)                                         | 0.023 (0.129)                                       | 44.7 (7.88)                                         | 0.022 (0.127)                                       |

Table 2. Thermal Transmittance for Split Insulated Wood-Framed Wall Assembly with Galvanized Steel ACS U-Clip™ with Vertical L-Angle Penetrating Exterior Insulation<sup>1</sup>

| Thickness of<br>Exterior<br>Mineral Wool<br>Insulation | Exterior<br>Insulation<br>1D R-Value <sup>2</sup> | 16" x 24" Clip Spacing                              |                                                     | 16" x 36" Clip Spacing                              |                                                     | 16" x 48" Clip Spacing                              |                                                     |
|--------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|
|                                                        |                                                   | R-Value                                             | Transmittance                                       | R-Value                                             | Transmittance                                       | R-Value                                             | Transmittance                                       |
|                                                        |                                                   | ft <sup>2</sup> ·hr·°F/Btu<br>(m <sup>2</sup> ·K/W) | Btu/ft <sup>2</sup> ·hr·°F<br>(W/m <sup>2</sup> ·K) | ft <sup>2</sup> ·hr·°F/Btu<br>(m <sup>2</sup> ·K/W) | Btu/ft <sup>2</sup> ·hr·°F<br>(W/m <sup>2</sup> ·K) | ft <sup>2</sup> ·hr·°F/Btu<br>(m <sup>2</sup> ·K/W) | Btu/ft <sup>2</sup> ·hr·°F<br>(W/m <sup>2</sup> ·K) |
| 2" (51mm)                                              | 8.6 (1.52)                                        | 28.6 (5.03)                                         | 0.035 (0.199)                                       | 29.0 (5.10)                                         | 0.035 (0.196)                                       | 29.1 (5.13)                                         | 0.034 (0.195)                                       |
| 3" (76mm)                                              | 12.9 (2.27)                                       | 32.0 (5.64)                                         | 0.031 (0.177)                                       | 32.7 (5.76)                                         | 0.031 (0.173)                                       | 33.0 (5.82)                                         | 0.030 (0.172)                                       |
| 4" (102mm)                                             | 17.2 (3.03)                                       | 35.3 (6.21)                                         | 0.028 (0.161)                                       | 36.4 (6.40)                                         | 0.028 (0.156)                                       | 36.8 (6.48)                                         | 0.027 (0.154)                                       |
| 5" (127mm)                                             | 21.5 (3.79)                                       | 38.5 (6.77)                                         | 0.026 (0.148)                                       | 39.9 (7.03)                                         | 0.025 (0.142)                                       | 40.5 (7.14)                                         | 0.025 (0.140)                                       |
| 6" (152mm)                                             | 25.8 (4.55)                                       | 41.5 (7.31)                                         | 0.024 (0.137)                                       | 43.3 (7.63)                                         | 0.023 (0.131)                                       | 44.1 (7.77)                                         | 0.023 (0.129)                                       |

<sup>1</sup> Thermal modeling for the ACS U-Clip™ was completed by building envelope specialists, EVOKE Buildings Engineering Inc., using Siemens Simcenter 3D thermal simulation software. Contact ACS Composite Systems Inc. for a copy of the full report.

<sup>2</sup> Exterior Insulation 1D R-Value does not include the impact of the back-up wall which adds R-24.3 to the overall nominal R-Value.

