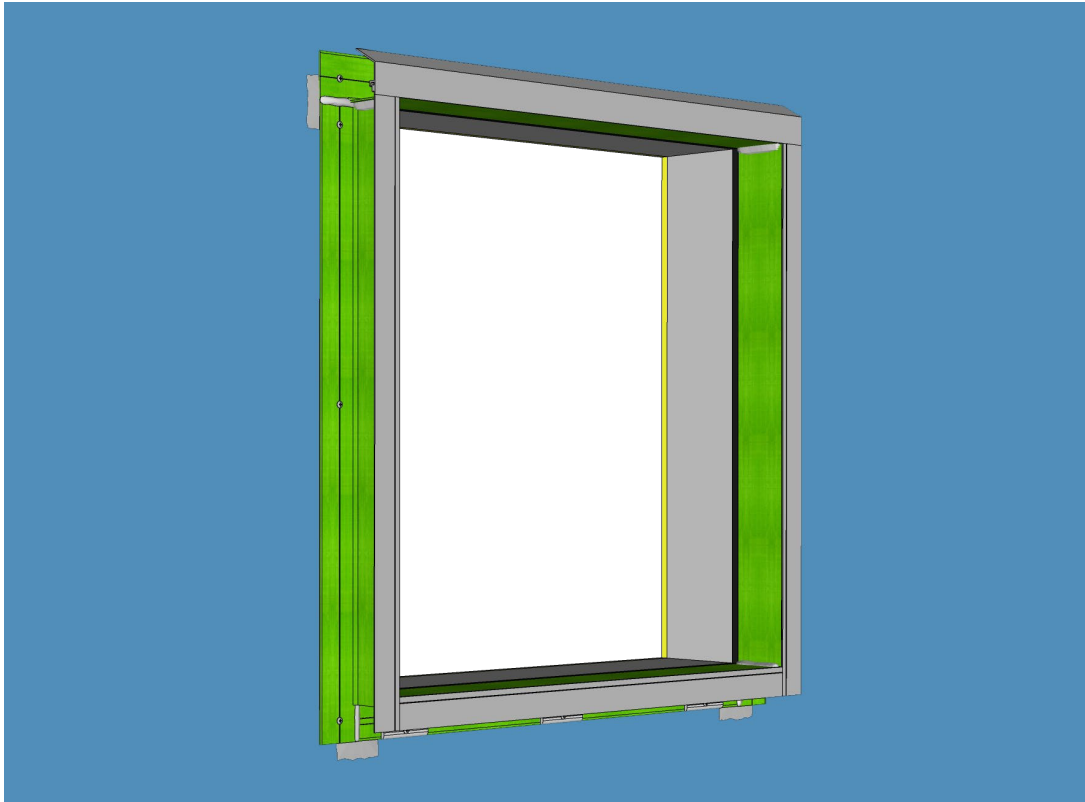


# GreenGirt CMH XO<sup>TM</sup>

## Preparation & Installation Guide

*for Punched Window Openings*

# GreenGirt CMH XO™



## Disclaimer:

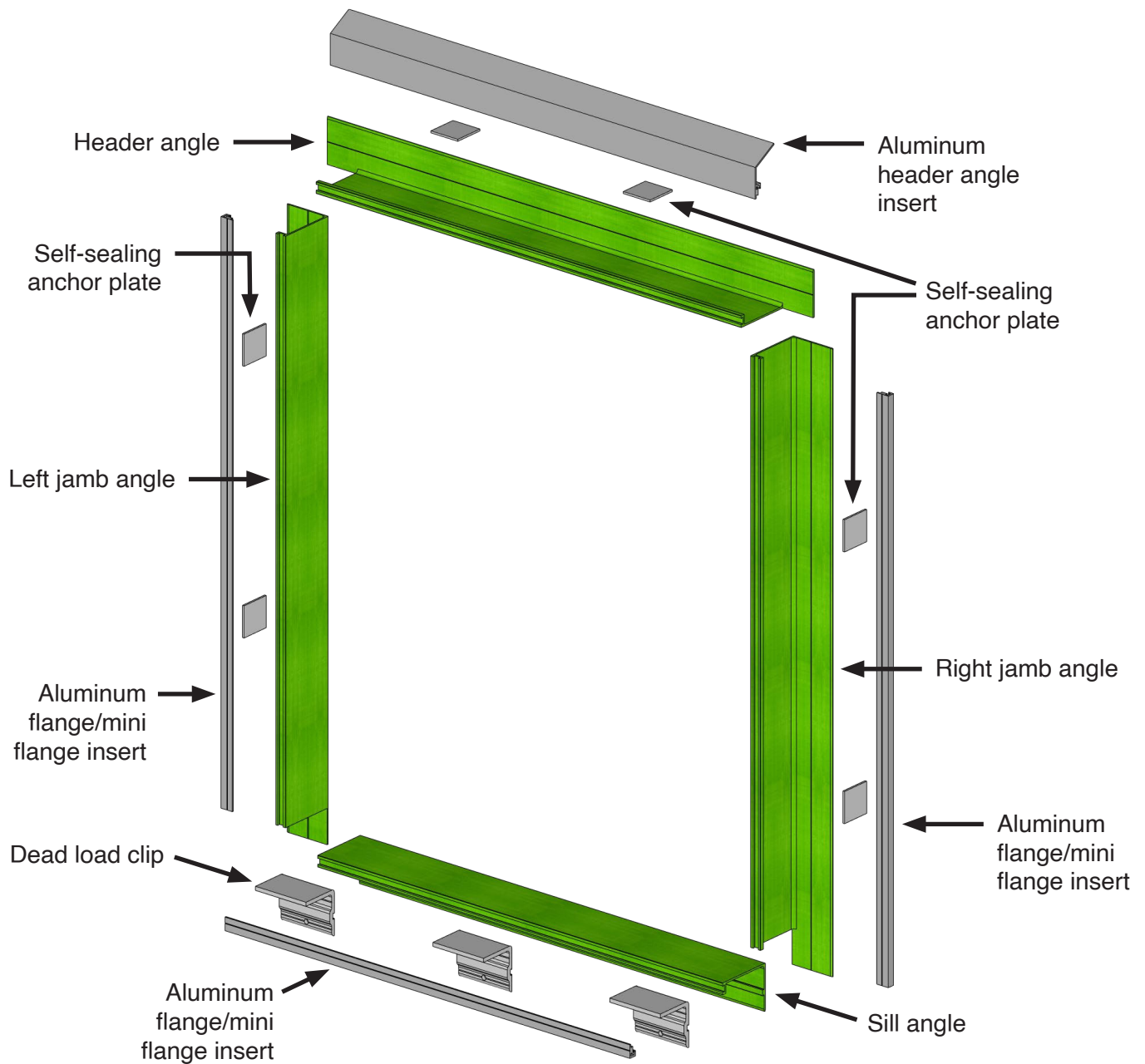
This installation guide is only to be used in combination with GreenGirt CMH XO™ installation drawings and Advanced Architectural Products' (henceforth also "A2P") suggested details. Details shown in project shop drawings take priority over any similar information in this manual. Shop drawings may be created either by A2P or by the system installation contractor. A2P's Technical Service Department is available to aid the system installation contractor in the review of shop drawings. This guide is meant to furnish the system installation contractor with recommended methods, procedures and guidelines for the installation of GreenGirt CMH XO for commercial/industrial applications.

Information presented is accurate but may not cover all circumstances, building conditions, and/or details of the specific project. Consult an A2P technical representative where this guide does not cover every unique construction condition. It is the sole responsibility of the project engineer and system installation contractor to ensure specified air and weather tightness of a building by good design and workmanship in accordance with approved drawings, using only approved sealants and flashing. Advanced Architectural Products is not responsible for weatherproofing. It is the sole responsibility of the owner's representative and system installation contractor to uphold quality workmanship and adhere to best practices in accordance with approved shop drawings to ensure the best operation of the system. A2P recommends installers read this document completely before receiving materials at the job site. Guide is subject to change without notice. Installation information is available through A2P at (269) 355-1818. Follow the architect's approved shop drawings and engineering computations for project-specific fastening designs. The engineer of record is liable for verifying applicable design loads and system fastening requirements. All safety methods are the duty of the installer, general contractor, or construction manager.

**This installation guide is provided for information only and to outline general/typical requirements for the installation of GreenGirt CMH XO. Project-specific engineering is available to address structural attachment. Contact A2P for further details. All implied warranties, including merchantability and fitness for a particular purpose, are expressly excluded.**

*GreenGirt CMH XO, Structural Head Angle, Jamb Angle, Sill Angle, Integrated Aluminum Flange, Integrated Aluminum Flange Spacer, Dead Load Clip, and Self-Sealing Anchor Plate are trademarks of Advanced Architectural Products.*

## Primary Components



## Additional Materials That May be Required (by Others)

- 1/4" #14 fasteners
- Weather-resistive barrier
- Caulk
- Sealant
- Tape
- Wet/dry vacuum

## Preparation & Configuration

### Substrate:

- The substrate must be square, and support members to which panels are attached must be in the same plane and free of obstructions such as weld marks, bolts or screw heads.
- Installer should verify the back-up wall construction matches the project specific engineering (stud gauge, stud spacing, etc.). Notify A2P or the engineer immediately should any discrepancies become apparent.

### Fastening:

- Follow the architect's approved shop drawings and engineering computations for project-specific fastening designs. The engineer of record is liable for verifying applicable design loads and system fastening requirements.
- Steel fastening: Can be performed with self-drilling fasteners of sufficient diameter and loading capacity for the application.
- Concrete fastening: Can be accomplished by using threaded concrete fasteners of sufficient design to accommodate the design. Refer to specific project documents for fastener types and sizes.
- GreenGirt CMH XO attachment: It is essential that the starting GreenGirt CMH XO piece is level and true. The height and width of the GreenGirt CMH XO system is generally determined by project-specific factors, such as type of insulation and window used, size and scale of exterior cladding material, and/or substrate-specific conditions.
- Generally, work should begin by installing the sill first. See construction details for more information.

## Surface Preparation

- Before installing, ensure that the substrate is dry, clean, sound, and free of any debris, residue, and any other surface contaminants.
- Remove high spots and fill in low spots prior to attaching to concrete or masonry substrate. Remove any extra materials protruding on surface of walls, such as chunks of mortar or concrete, and even wall surface to within ¼" per 8 feet. All high and low spots should be leveled to provide an even wall surface.
- Verify the substrate is flat, without steps or voids greater than ¼".
- A2P recommends that GreenGirt CMH XO is only installed under the direct supervision of an experienced craftsman, trained in the proper application of its diverse offering of products and services. Please call (269) 355-1818.

## Structural Alignment

- Review shop drawings prior to installation to verify that structural members are in the correct location.
- Support members shall be installed within the following tolerances of plus or minus 1/8" (3.17 mm) in 10 feet (3048 mm) in any direction along plane of framing, with non-accumulative spaces. Any variance from tolerances can affect both performance and aesthetics and must be reported to the architect and general contractor, and corrected by the responsible party before installation begins.
- GreenGirt CMH XO is installed around openings, starting with the sill component. Refer to general and/or project specific construction details to determine how to begin the installation.

## Configuration Options

- **Material composition:** composite metal hybrid
- **Length:** The standard lengths are 96" or 120"
- **Depths:** 2", 3", 4", 5", 6" (1/2" spacers can be used to accommodate all depths)
- **Attachment:** The edge distance of any fastener-hole shall be a minimum of 1/2" from the edge of the profile to the closest side of the fastener-hole.

## Cutting

- GreenGirt CMH must NOT be cut with a plywood or toothed blade, CMH is composed of metal, resin, and glass fibers. Use only abrasive chop saw or hand saw blades. Do not use actuated fasteners, impact hammers, impact drills, or reciprocating saws.
- When routing the left or right jamb angles, extend the length by 3" beyond the punched opening dimension. When routing the header angle, extend the length by 6" beyond the punched opening dimension (3" on each side).

## Delivery, Inspection Upon Delivery

- The GreenGirt CMH XO system is professionally packaged, wrapped and carefully shipped on flat bed trailers to the construction site. When a shipment is received, check all items against the shipping document for quantities, dimensions, colors, transit damage, etc. Document any shortage of girts and accessories or any damage on the bill of lading and have it signed by the driver. It is the receiver's responsibility to make any damage claims immediately.
- Please note that although every effort is made to prevent shipping damage, A2P is not responsible for damage which may occur during transportation, delivery, storage, or on-site handling.

## System Handling

- Inspect travel route to assure a reasonably level and compacted surface free of ruts and excavations.
- The recommended loading/unloading method for bundles less than or equal to 8 feet is to use a single forklift with appropriately spaced forks placed under the center of the bundle, transporting only one at a time.
- The recommended crane lifting method is to use nylon straps positioned at a minimum of two points along the length of the bundle. Suitable wood spreaders should be used and located at the top and bottom of the bundles at the strap positions to protect the edges. Extreme care should be taken to avoid bumping and snatching of the bundles when lifting.

## Storage, System Storage On Site

- Site must have adequate storage space to receive and store GreenGirt CMH XO components. This space must be level, firm, clean and free from standing water. Components, especially insulation panels, should be stored in a dry condition, off the ground, and covered continuously when not in use. Avoid outdoor storing for longer than 45 days.
- If GreenGirt CMH XO is to be used immediately, bundles should be placed at pre-planned strategic locations around the building perimeter, as close as possible to the specific work areas. Review installation shop drawings to determine the best locations.
- When handling GreenGirt CMH XO components, ropes, steel cables or chains must not be used.

## Routing Corners

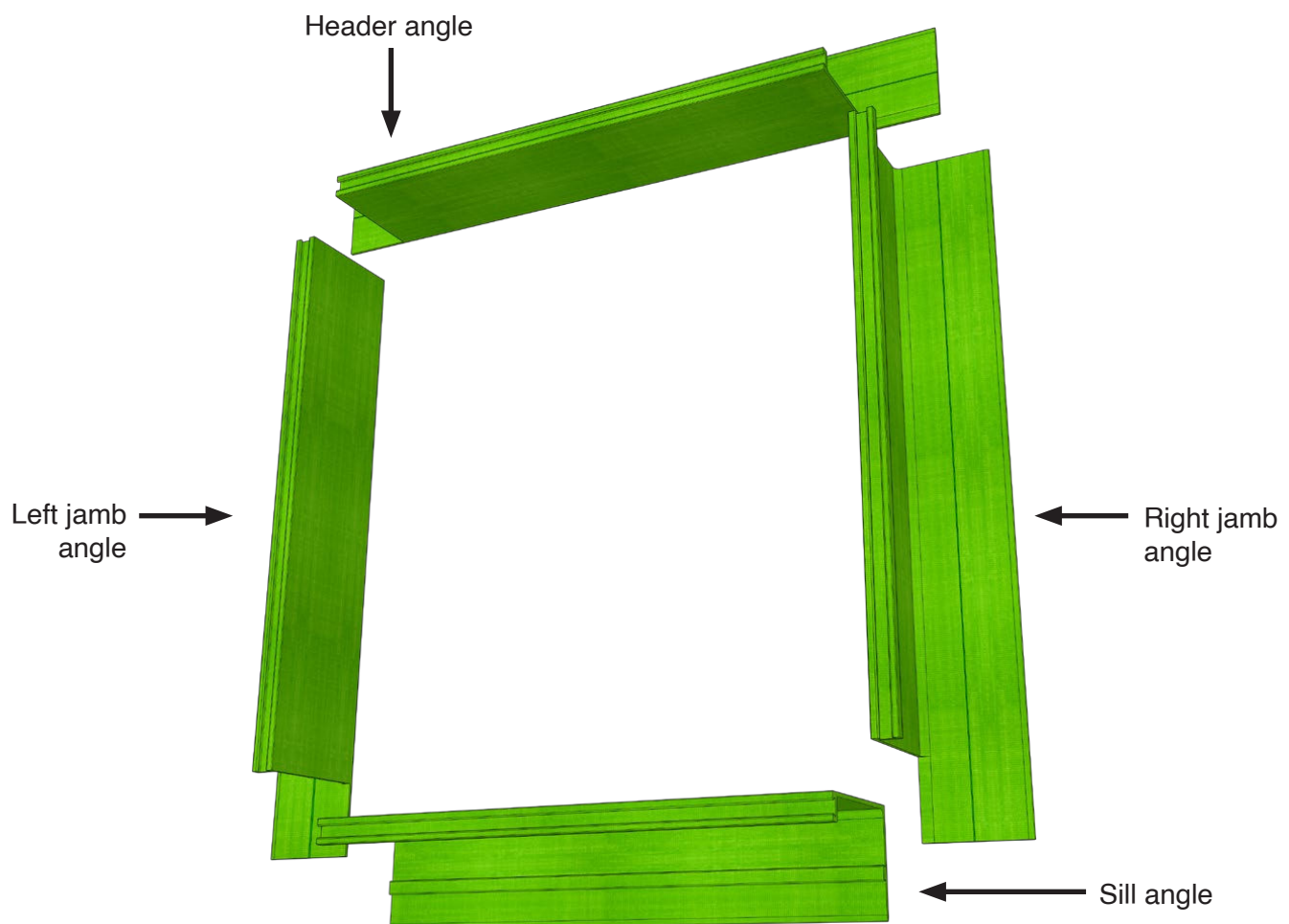
- Identify each component and their respective routing requirements:

**Header angle:** Routed on both left and right ends

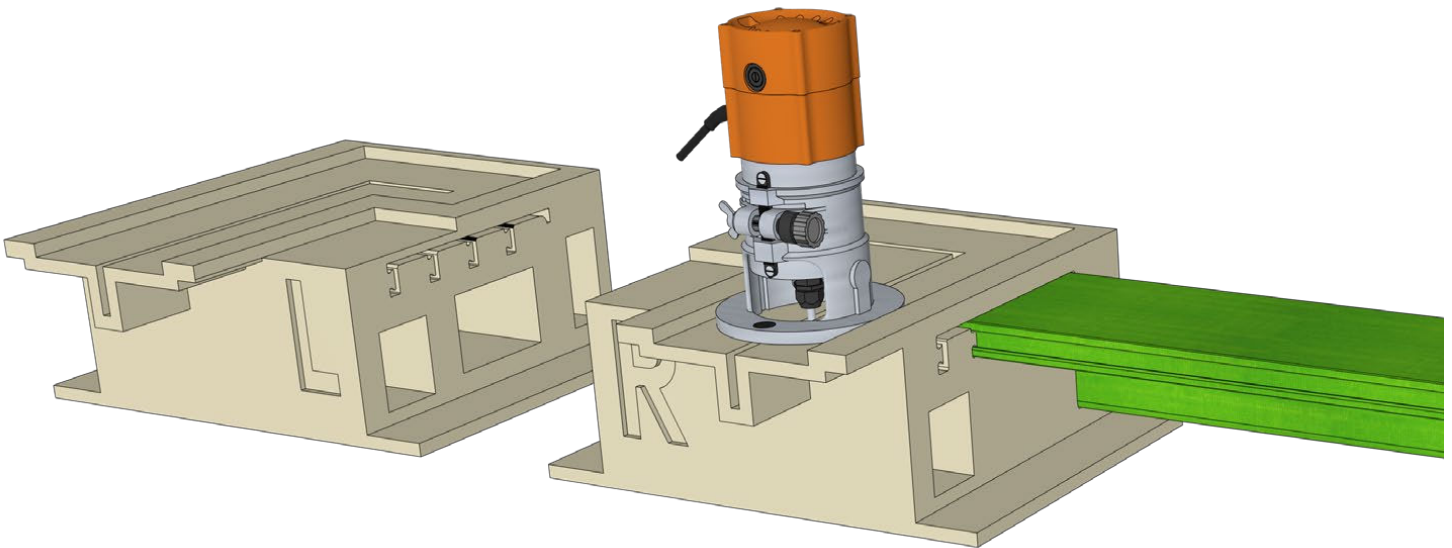
**Left jamb angle:** Routed on one end only

**Right jamb angle:** Routed on opposite end of left jamb only

**Sill angle:** No routing required



1. **Identify the router kits:** Locate the left and right router kits provided by A2P. Each kit is clearly marked with an identifiable “L” (left) or “R” (right) designation.
2. **Secure the router kits:** Firmly attach each router kit to a stationary table to ensure stability during the routing process.
3. **Connect dust collection:** Attach a vacuum to the designated fastener point on each router kit. This will effectively collect dust and debris generated while cutting.
4. **Insert the GreenGirt CMH XO angle:** Place the GreenGirt CMH XO angle into the corresponding size slot located on the side of the router kit. Ensure you are using the correct left or right router kit required for the piece you are cutting.
5. **Perform the routing:** Using the router tool, follow the guide path along the top of the router kit to accurately cut each corner. Ensure that you meet the specified corner requirements as detailed in the list above.



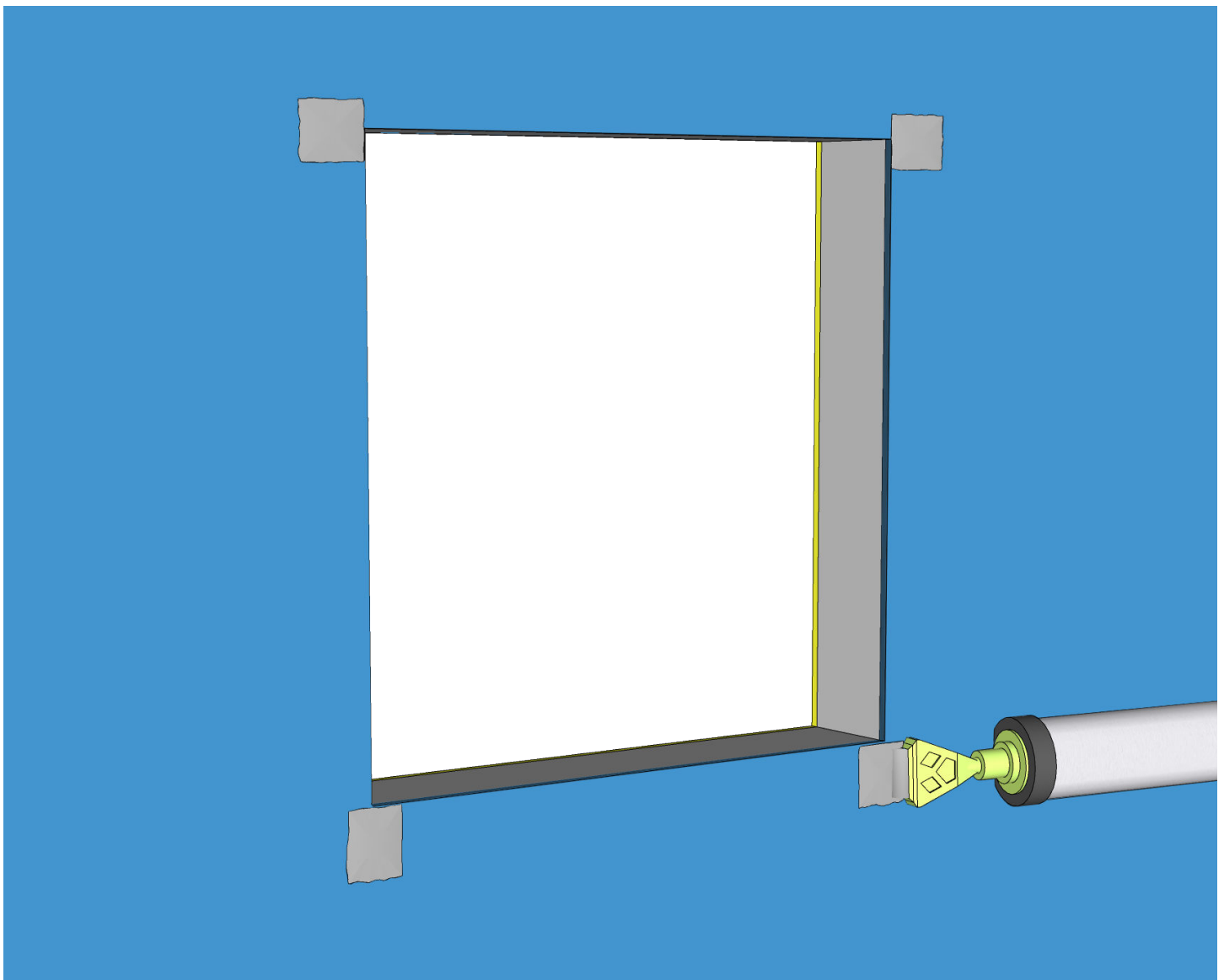


## Installation

### Notes:

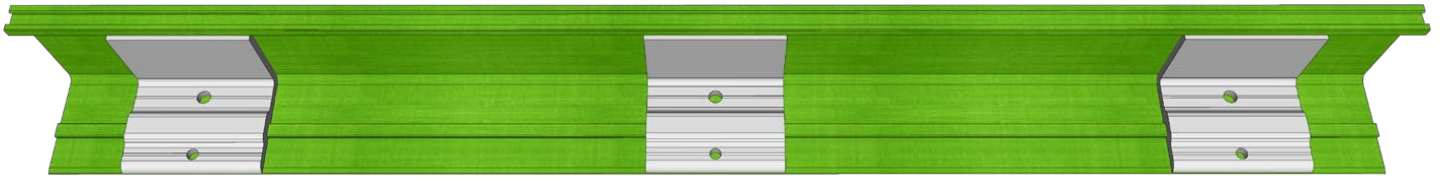
- Refer to project-specific conditions, architectural and engineering documents to determine proper starting and spacing.
- For wider openings, aluminum inserts can be offset and slid into adjoining GreenGirt CMH XO angles in order to tie the system together. Ensure space is left for thermal expansion.
- Direct any engineering questions to A2P at (269) 355-1818.

1. To begin, apply a minimum of 2.5-inch by 3-inch strips of sealant to all four corners of the rough opening. For top corners, apply a horizontal bead of sealant. For bottom corners, apply the bead vertically. Ensure that the bead is centered on the appropriate seam of each corner.



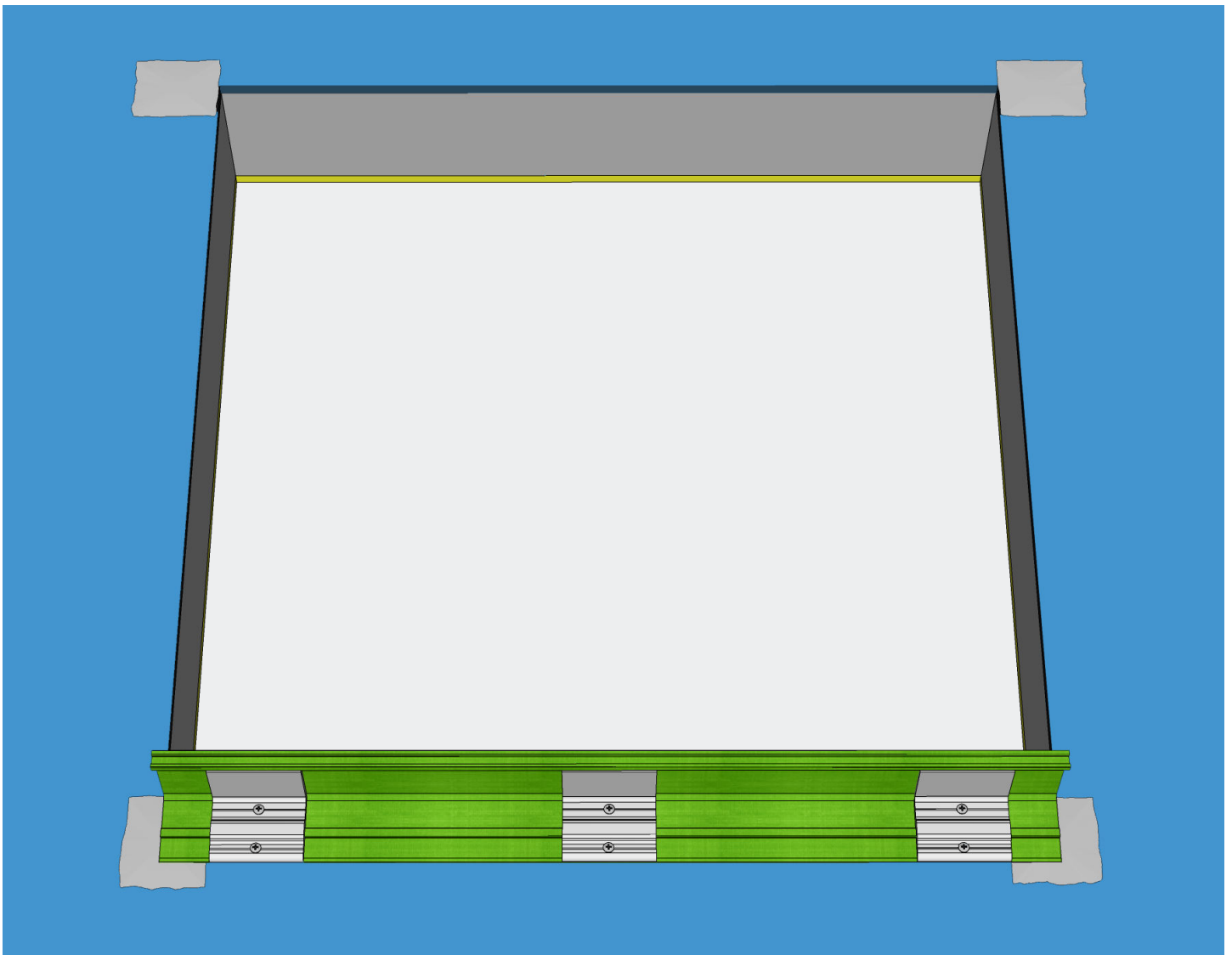


2. Slide the dead load clips along the sill track. Dead load clip spacing is based on project-specific requirements.

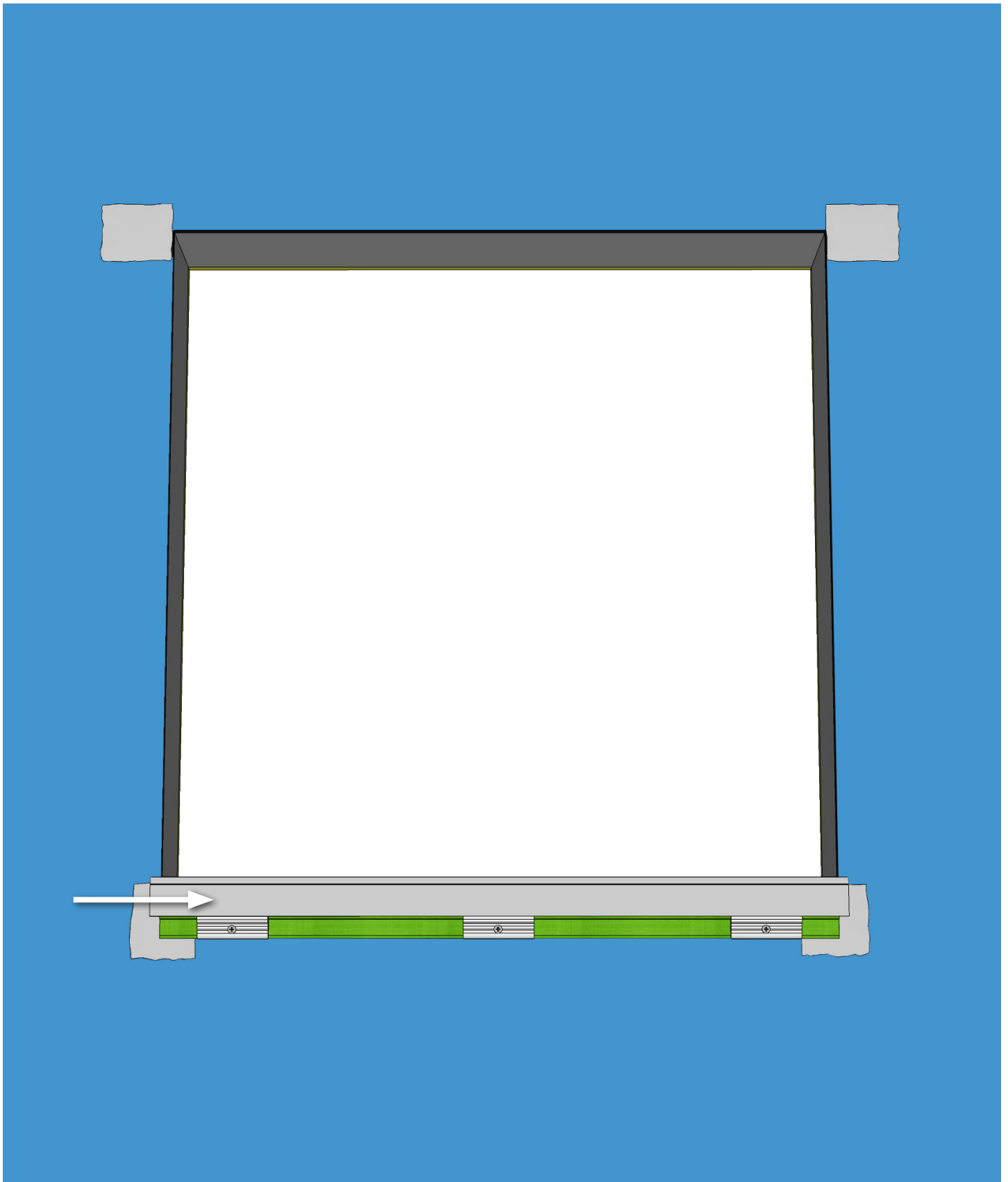


3. Align the sill angle flush, center, and level with the bottom of the rough opening. Apply low-profile fasteners through the pre-drilled fastener holes on the installed dead load clips. Ensure that fasteners are appropriate for the substrate.

*Note:* Engineering determines the quantity of fasteners required for each dead load clip.

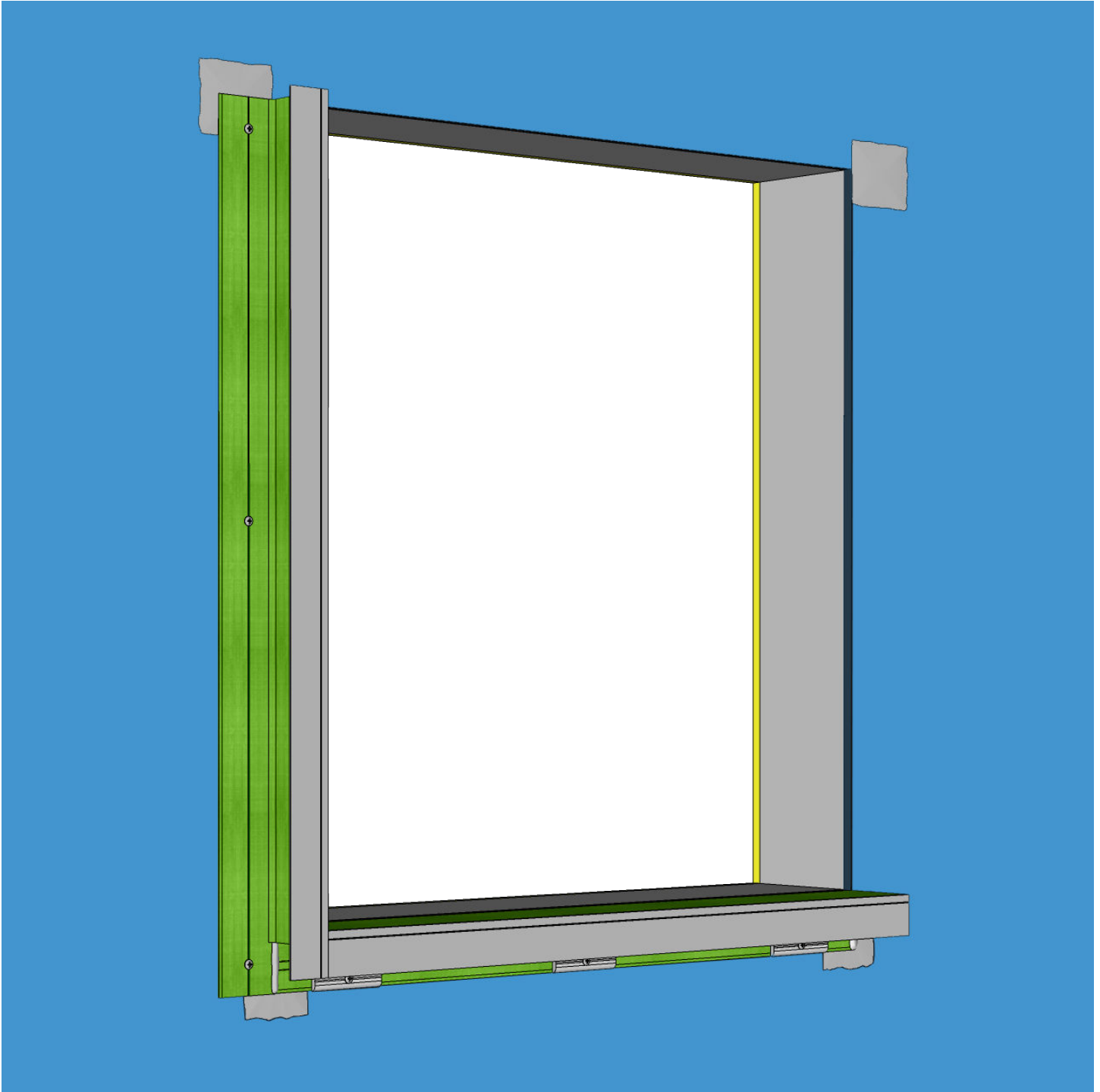


4. Slide the integrated aluminum sill flange into the sill channel.

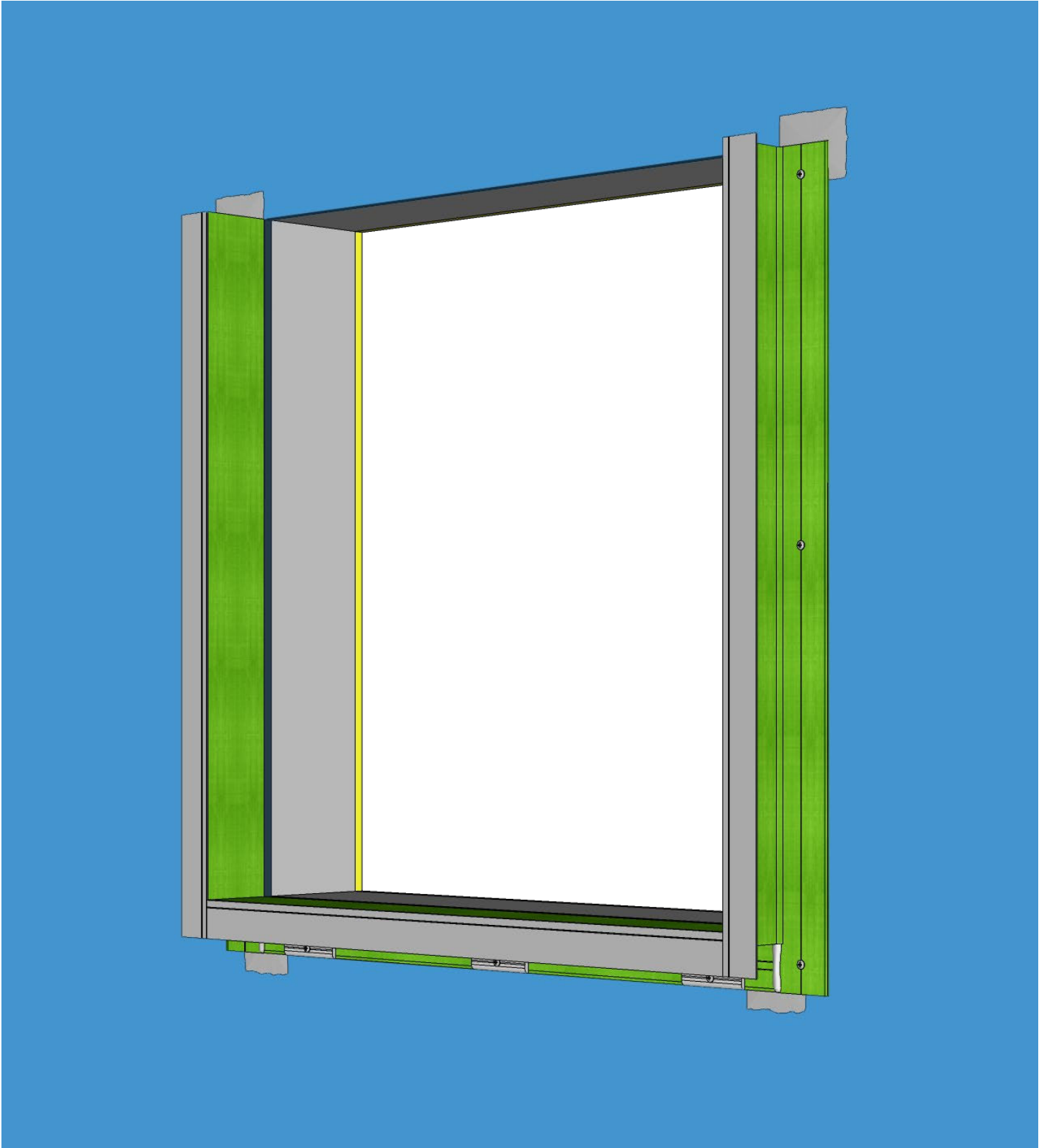


5. *Note:* Jamb and header angles can be ordered with pre-routed or unrouted corners. If your corners arrive unrouted (for you to route onsite), please follow the steps on pages 15–16 to route the jamb and header angles using the provided router kit before installing at the opening.

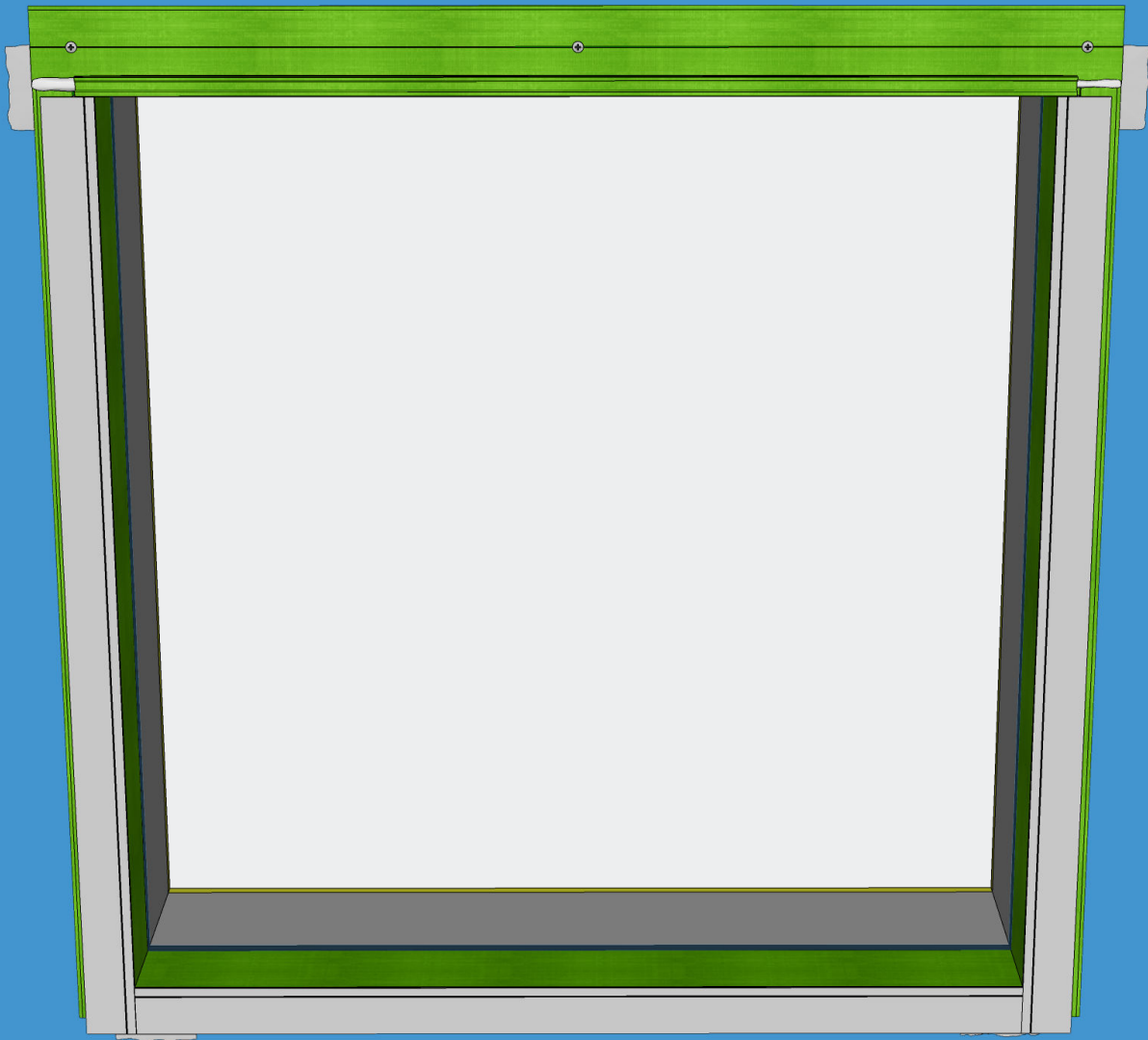
Install the left jamb angle flush and level with the rough window opening, ensuring that the bottom edge of the jamb aligns with the bottommost edge of the sill. Install fasteners at least one inch from the bottom of the left jamb edge along the indented center fastener guide. **Ensure that sealant is extruding from the joints between components.** Install the remaining fasteners along the left jamb. Slide the integrated aluminum left jamb flange into the left jamb channel.



6. Install the right jamb flush and level with the rough opening, ensuring that the bottom edge of the jamb aligns with the bottommost edge of the sill. Install fasteners at least 1" from the bottom of the right jamb edge along the indented center fastener guide. **Ensure that sealant is extruding from joints between components.** Install the aluminum right jamb flange into the right jamb channel.

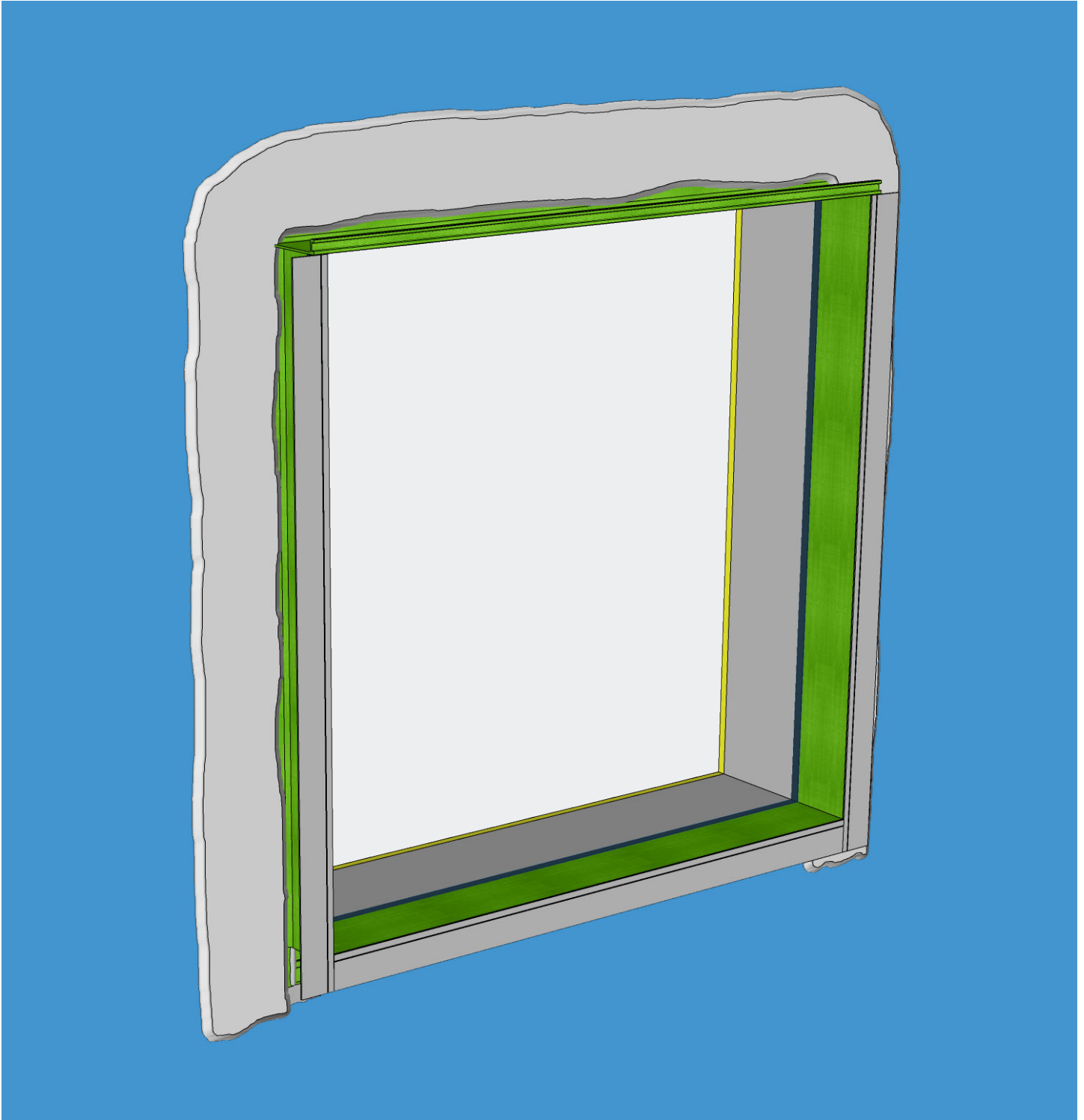


7. Install the header flush and level with the rough opening. Align the outer edges of the header and jamb angles on each end. **Ensure that sealant is extruding from the joints between the components.**

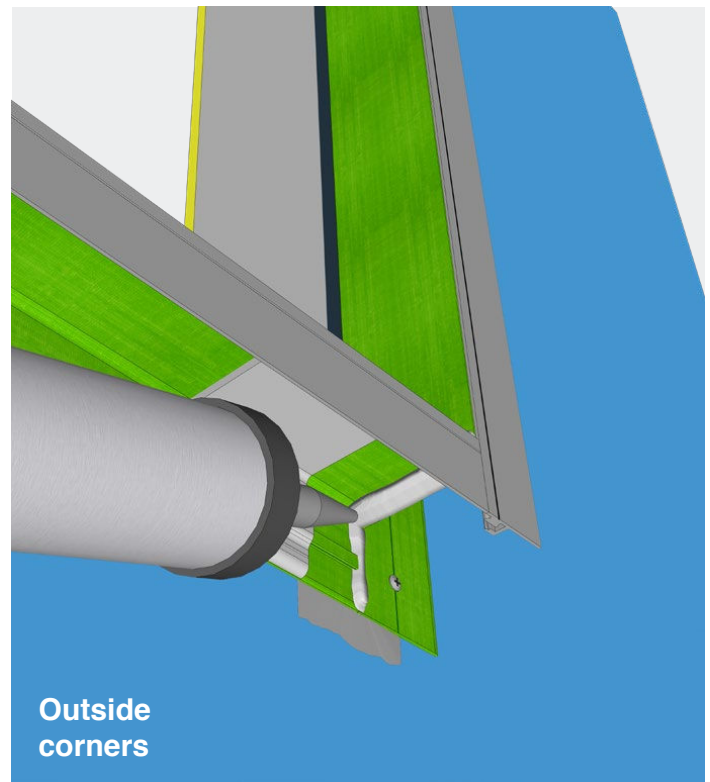
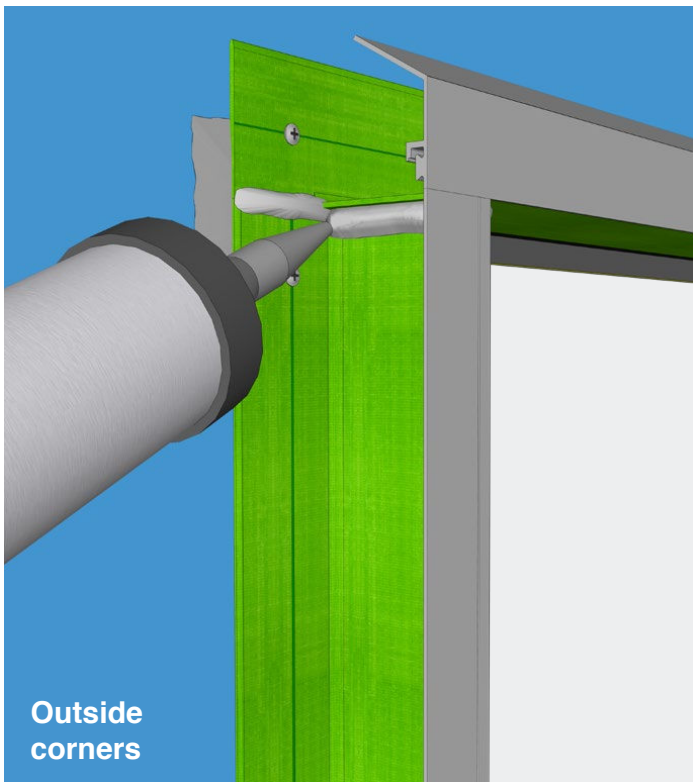
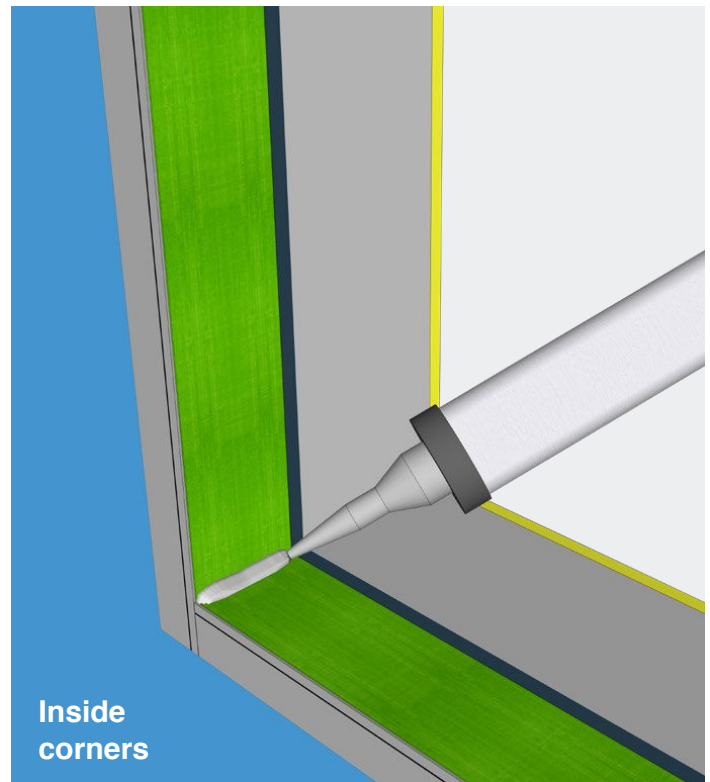
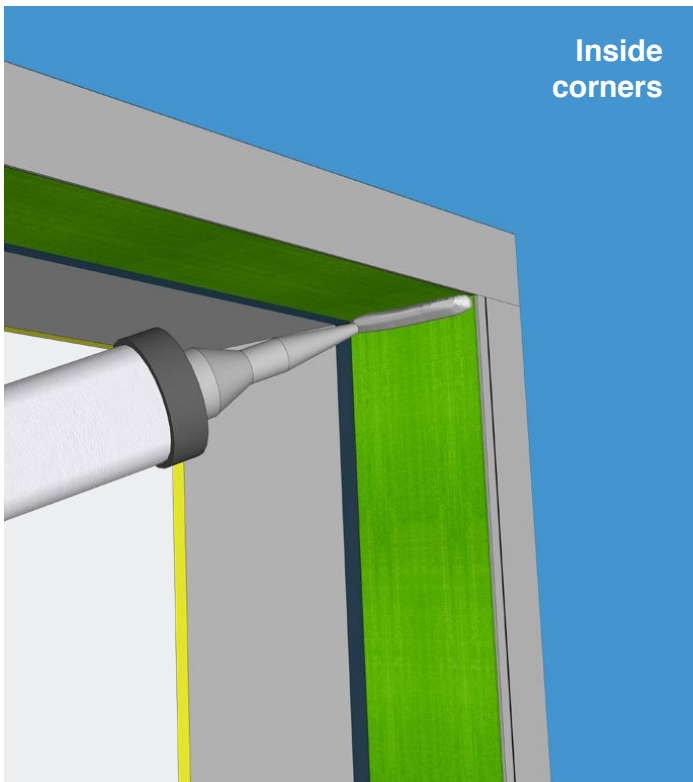


## Flashing/Sealant Application

8. Apply a minimum of a 2-inch wide bead of sealant around the perimeter of the GreenGirt CMH XO, ensuring half of the bead is on the GreenGirt CMH XO material and the other half is on the substrate. Use a flexible plastic sealant spreader to evenly spread sealant around the left, right, and top perimeters of the opening, filling all gaps. **Ensure all fastener heads are fully covered with sealant.**

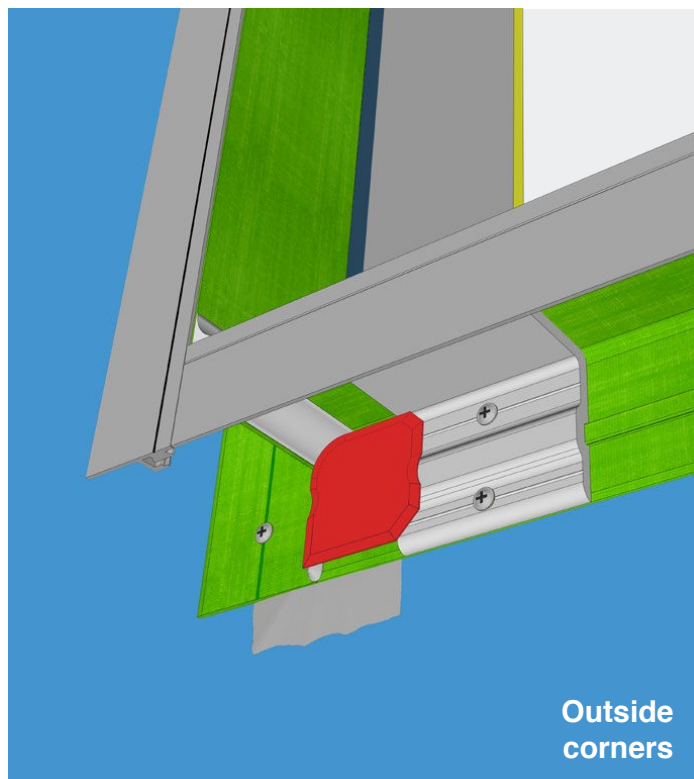
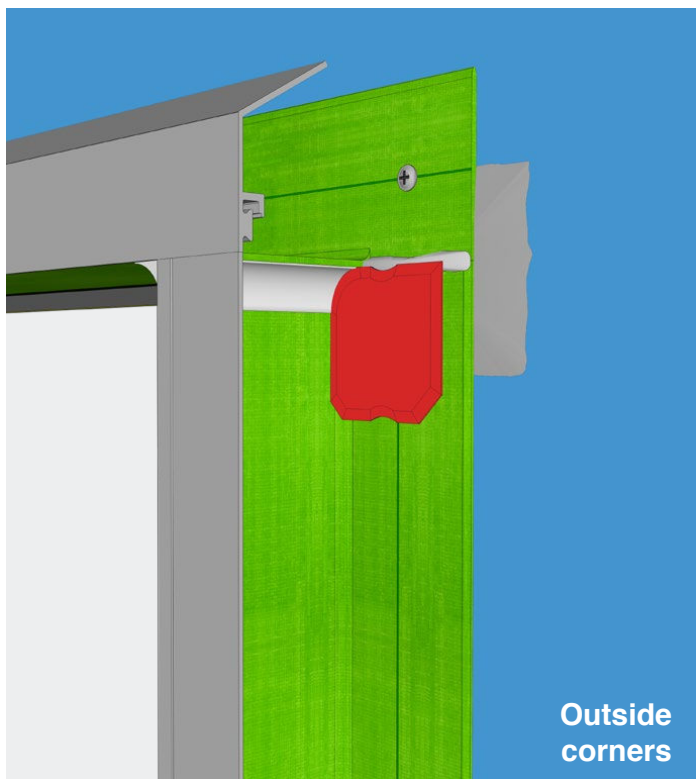
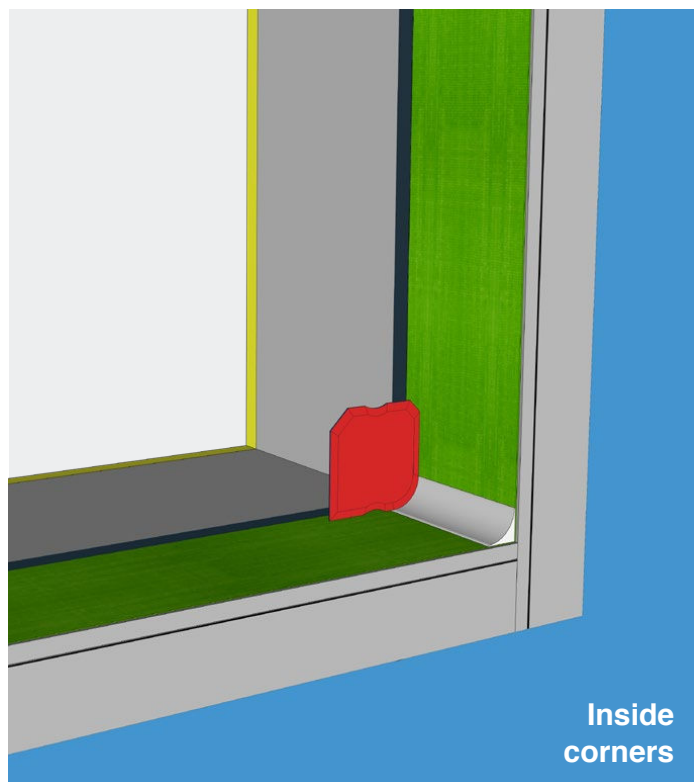
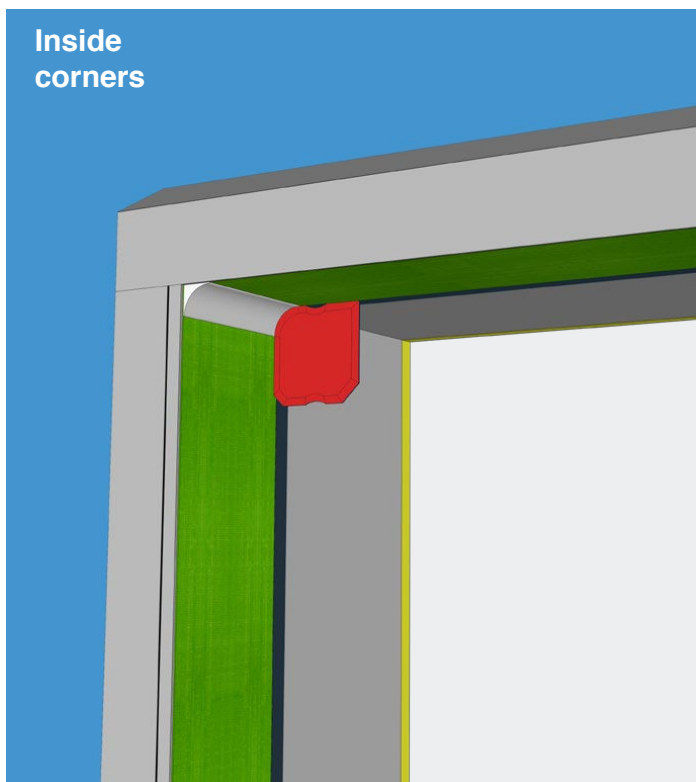


9. Apply 1/2-inch bead of sealant to interior and exterior corners of the opening. Spread the opening joints slightly apart while applying sealant so that sealant squeezes through to the other side.

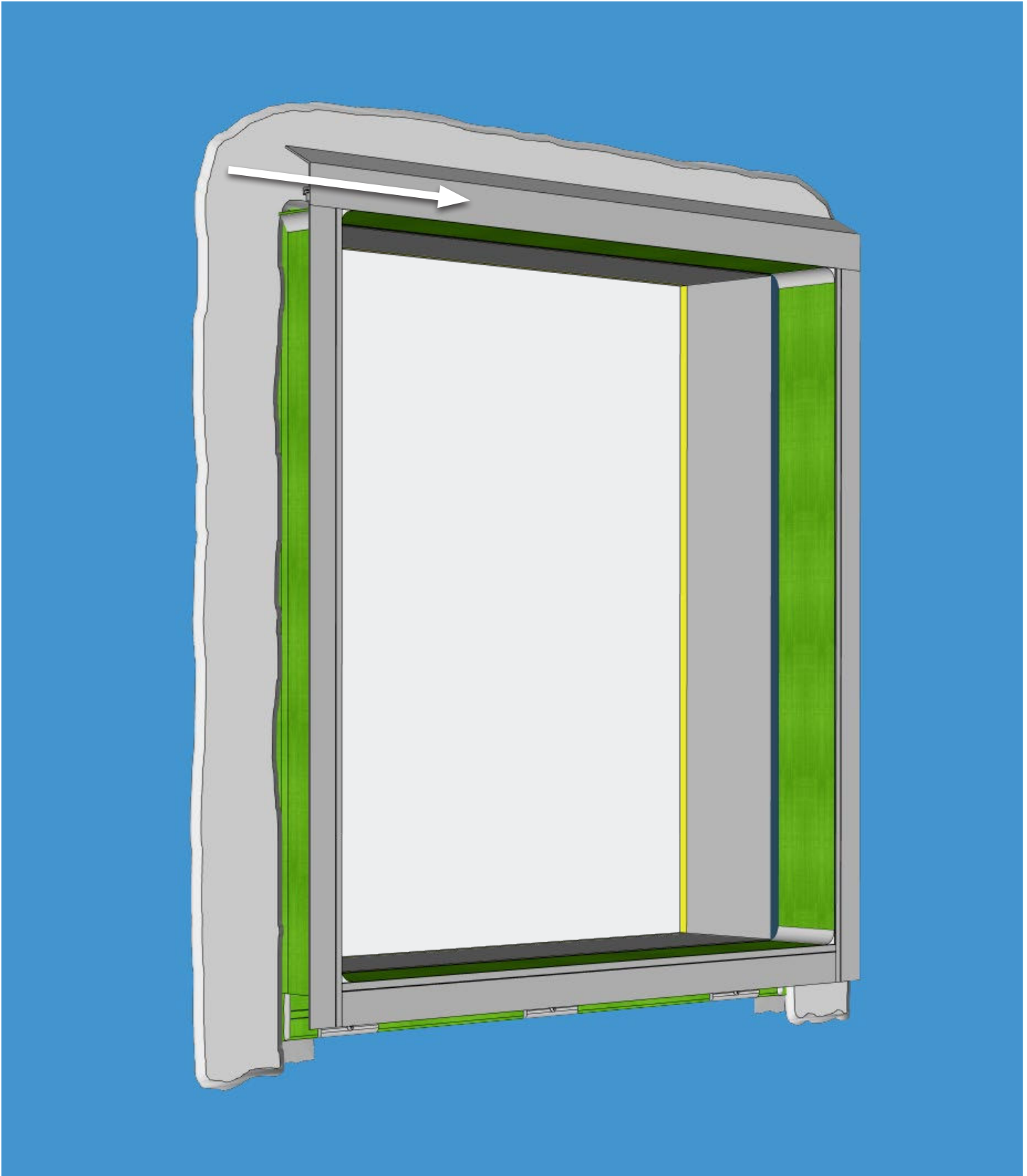




10. Use a sealant finishing tool to create a wide radius of sealant in each inside and outside corner.

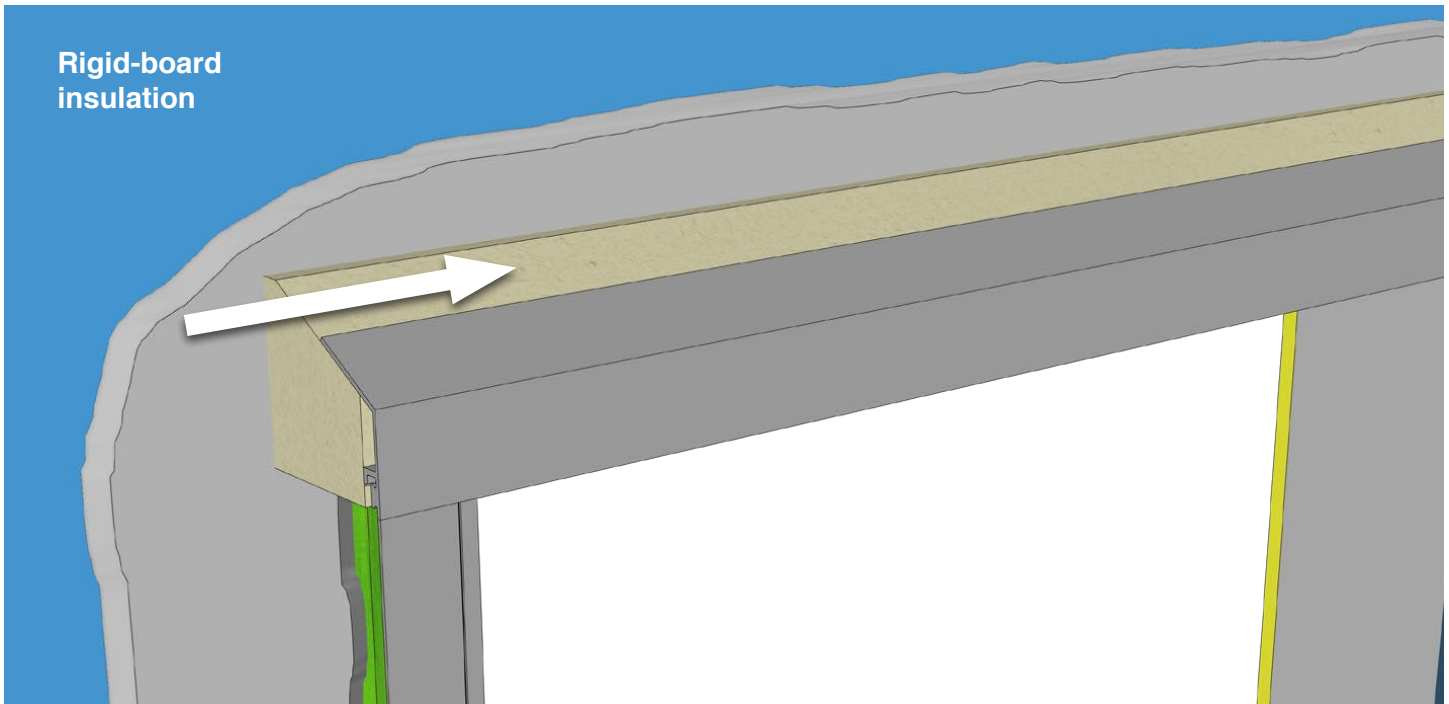


11. Complete the framing installation by sliding the aluminum header insert into place. Follow these same installation steps when using the mini flange insert or any of the other integrated aluminum flange inserts.

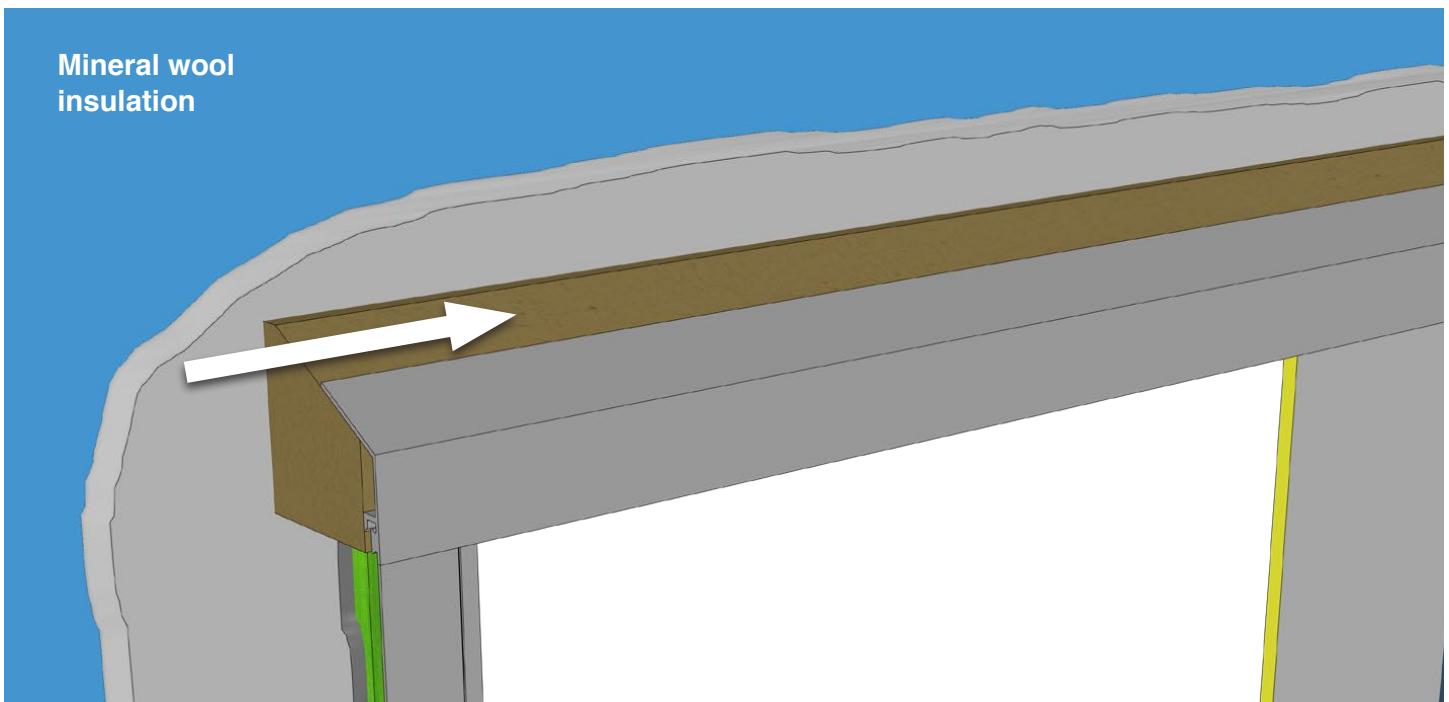


## Header Insulation Piece

12. If using rigid-board insulation provided by Advanced Architectural Products, slide the angled header insulation piece on top of the GreenGirt CMH XO header angle and behind the aluminum angle insert.

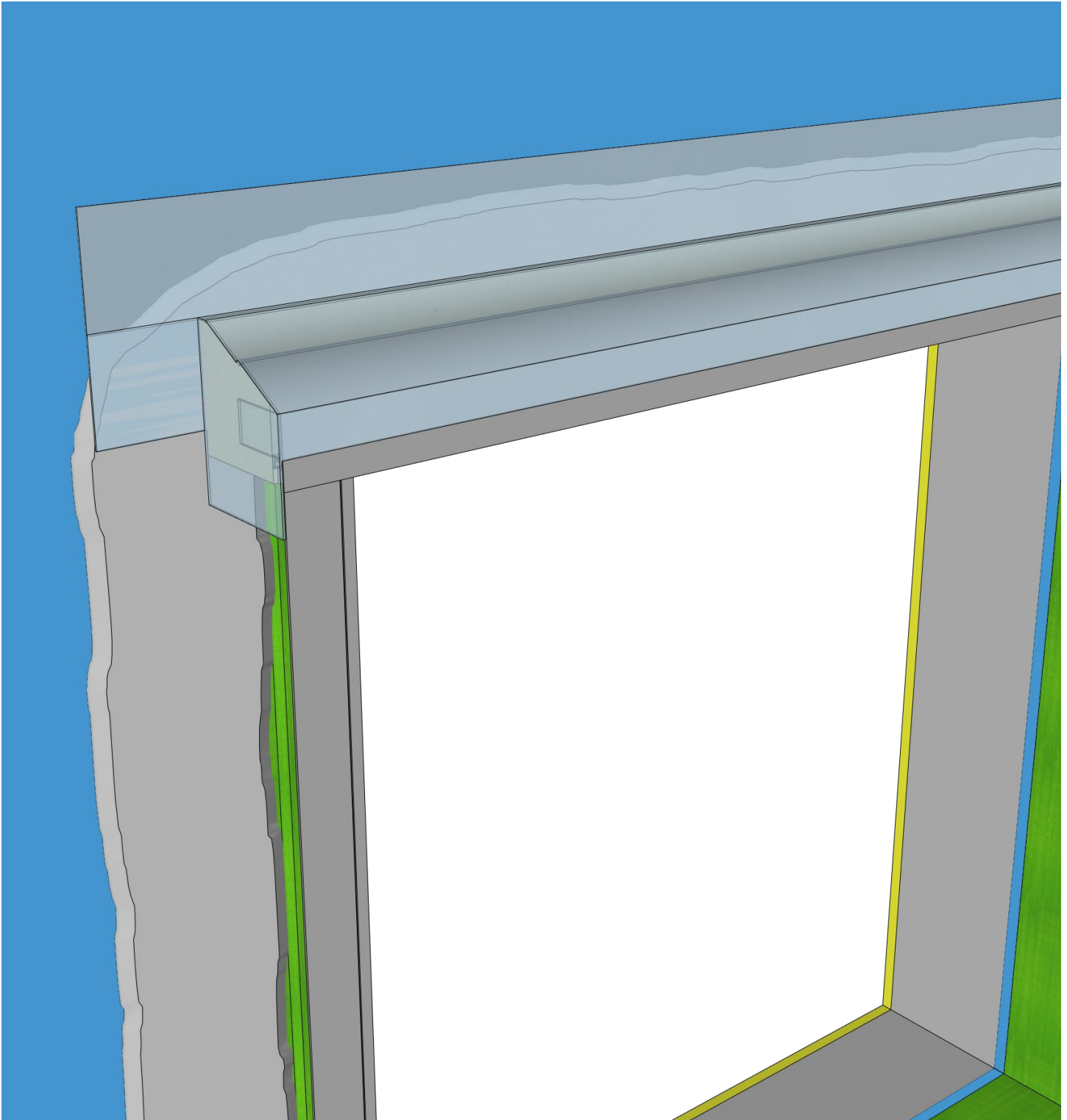


13. If using mineral wool insulation, cut the insulation header piece to fit on top of the header angle and behind the aluminum angle insert, then slide into place.



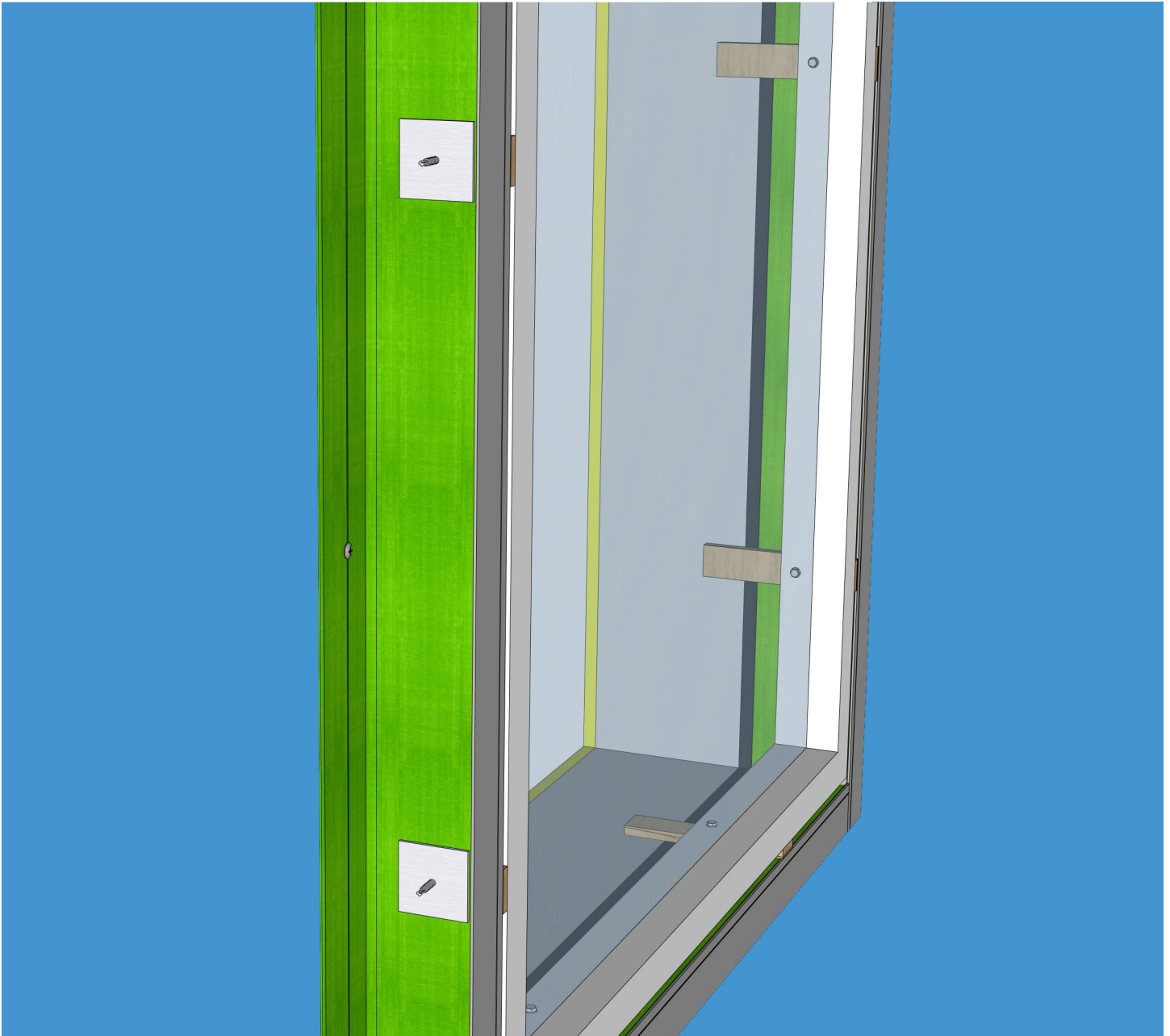
## Flashing Member Application

14. Apply a flashing member, by others, to cover all header pieces of the GreenGirt CMH XO window framing assembly. Install adhesive flashing in a shiplap pattern to ensure air and water tightness.



## Self-Sealing Anchor Plates and Window Installation

- For direct attach windows, 2" x 2" self-sealing anchor plates must be installed at each fastener location when attaching a window into GreenGirt CMH XO. Adhere a self-sealing anchor plate at every point of attachment along both jambs and the header to ensure proper sealing and structural integrity. Along the sill, direct attach fasteners must penetrate through each Dead Load Clip.
- *Note:* For windows wider than the length of one GreenGirt CMH XO piece, offset joints on the integrated aluminum flange to avoid lengthy cantilevers. Consult A2P engineering for more information.
- *Note:* Shims around the window should be used if and when necessary depending on project-specific requirements.



## Warranty

- Please note, failure to follow the precise procedures outlined in this installation guide, all applicable laws, ordinances and codes, and/or accepted industry safety procedures will render any and all warranties null and void. A2P will not be responsible in any way for merchandise, installed or not, that is damaged or defective as a result of negligible practices and/or a failure to follow these guidelines, deficiencies in workmanship or construction, or dangerous site conditions.
- Warranties and other product information are available from A2P. For information regarding general and product-specific warranties, please contact A2P at (269) 355-1818.

## Availability & Support

All Advanced Architectural Products' systems are purchased directly, with customer service and order assistance available through an extensive network of local sales representatives. Advanced Architectural Products can provide technical and engineering support for each GreenGirt CMH XO purchase/installation. Material lead time is dependent upon quantities and material requirements. Contact A2P at (269) 355-1818 for Finite Element Analysis (FEA), engineering review, support, Q+A, lead times, etc.

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