

## Introduction

This guide assumes the worker is familiar with basic duct board cutting, folding and fastening techniques

For detailed instructions on how to safely handle, cut and fasten duct board, refer to the FIBROUS GLASS RESIDENTIAL DUCT CONSTRUCTION STANDARD THIRD EDITION, 2002, published by NAIMA (North American Insulation Manufacturer's Association) at the URL below:

<https://insulationinstitute.org/wp-content/uploads/2015/11/AH119.pdf>

### Alert

Currently, all Rheia duct board manifolds are 1". Use 1" thick duct board.

### Tip

Confirm that you are using the correct size cutting tools for the board thickness.

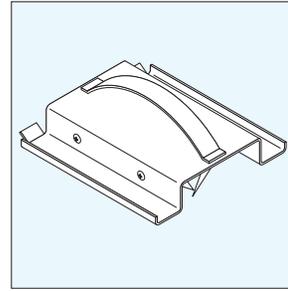
### Tip

Always consider the 1" thickness of the duct board. If a 10" tall **interior** dimension is required, the **outside** dimension will be 12" tall.

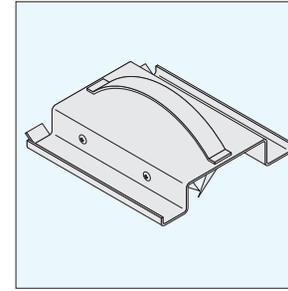
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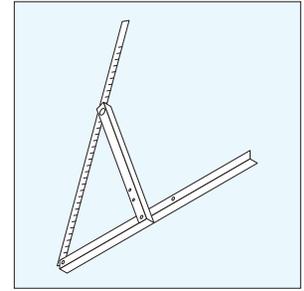
## Tools Required



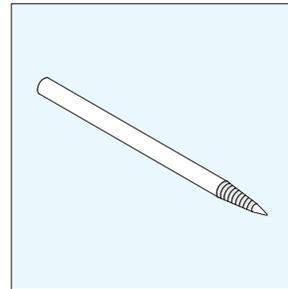
V-Groove 90°  
Red Duct Board Tool



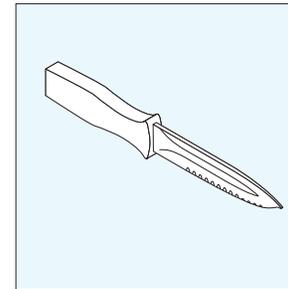
Gray Female  
Shiplap Tool (7/8")



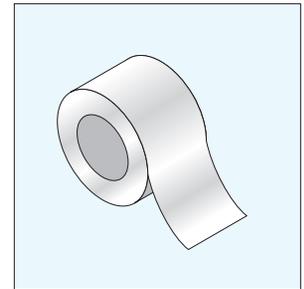
Layout Square  
(Straight or  
Collapsible)



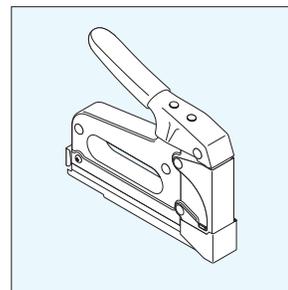
White Grease Pencil



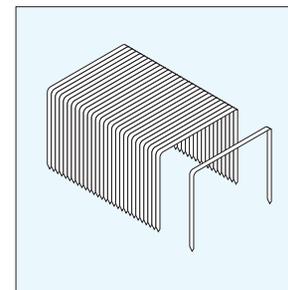
Duct Knife



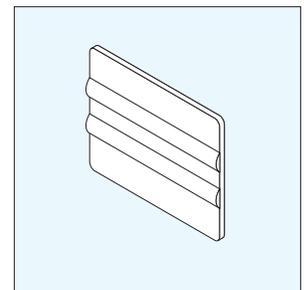
UL 181-Rated  
Foil Tape



Staple Gun

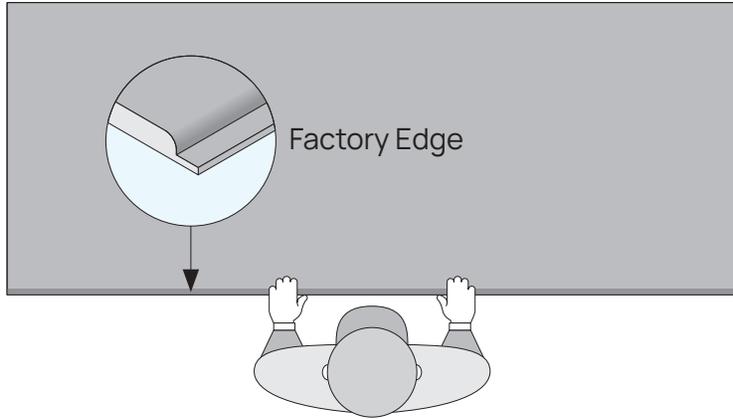


Outward Facing  
Staples (1/2" min.)

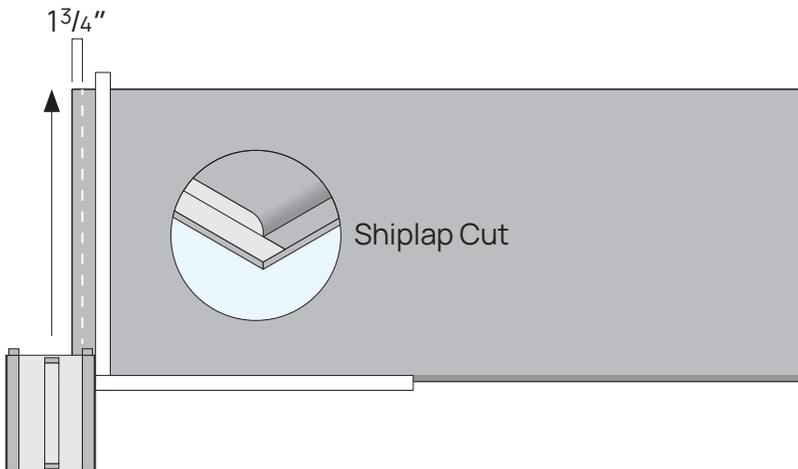


Hand Squeegee

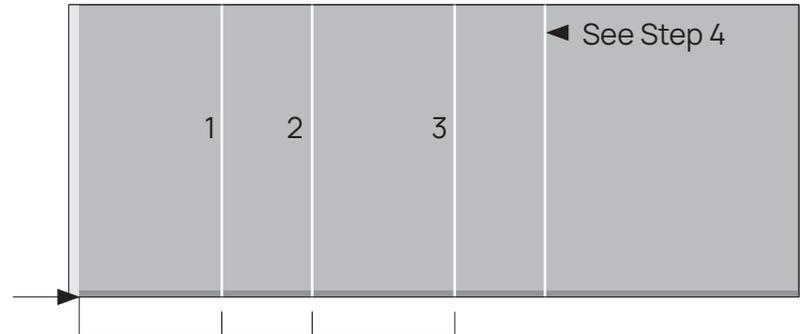
**Step 1.** Place the duct board foil side down with the factory edge toward you.



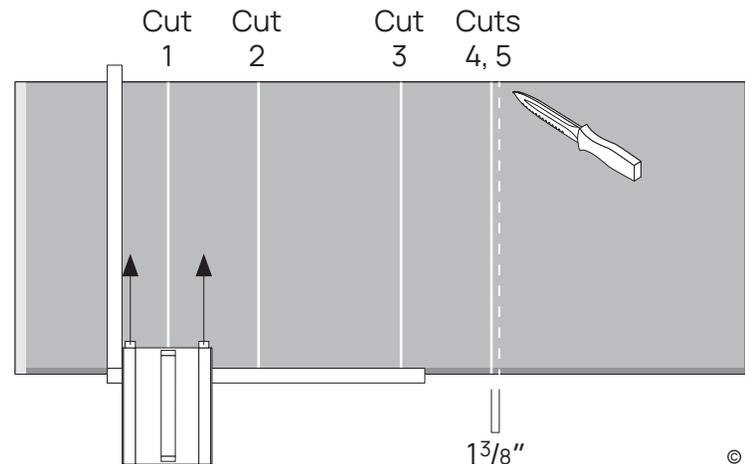
**Step 2.** Use a square and gray tool to create a shiplap cut to the left side of the duct board. Keep the tool very flat throughout the cut.



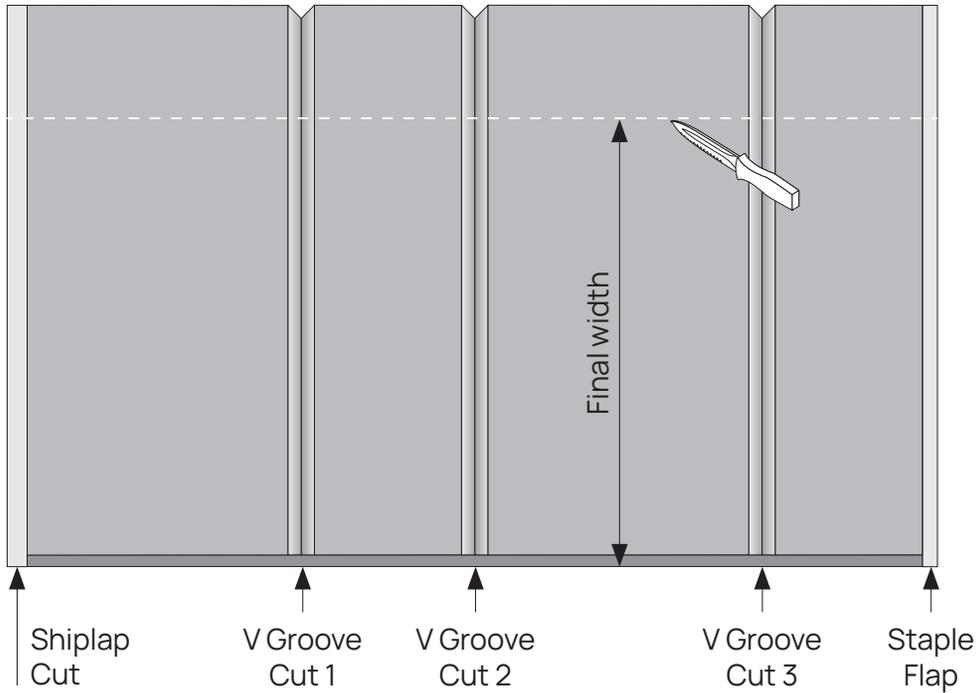
**Step 3.** Use a square and white grease pencil to mark the 3 center lines for the V groove cuts based on the HVAC designer's interior dimensions.



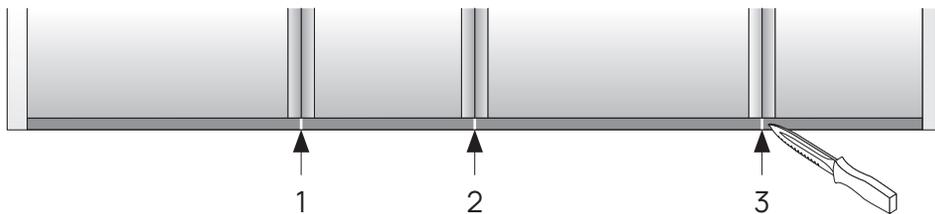
**Step 4.** Use the red duct board tool to make V groove cuts 1, 2, and 3. Use a duct knife and square to make straight cuts on 4 and 5. Do **NOT** cut through bottom foil on cut 4. **DO** cut through foil on cut 5. Cut 5 is 1 3/8" from cut 4. This will become the staple flap in a later step. Once cut 5 has been made, remove all excess duct board. **TIP:** Gently flexing the duct board from behind will enable easier removal of the insulation from the V groove cuts.



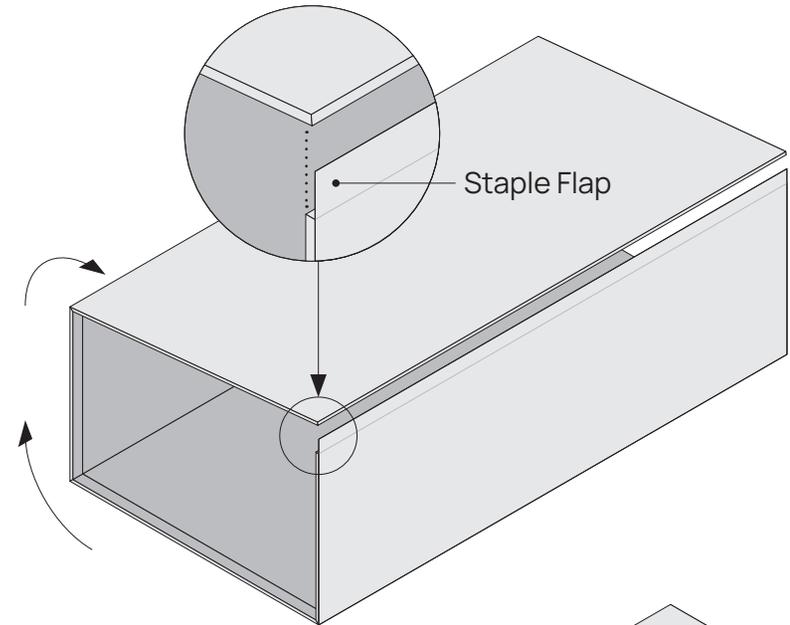
**Step 5.** After removing the insulation from the V groove cuts and the excess to the right of cut 5, your duct board should look like this. Next, use a duct knife and square to cut the final width according to the HVAC designer's exterior dimensions.



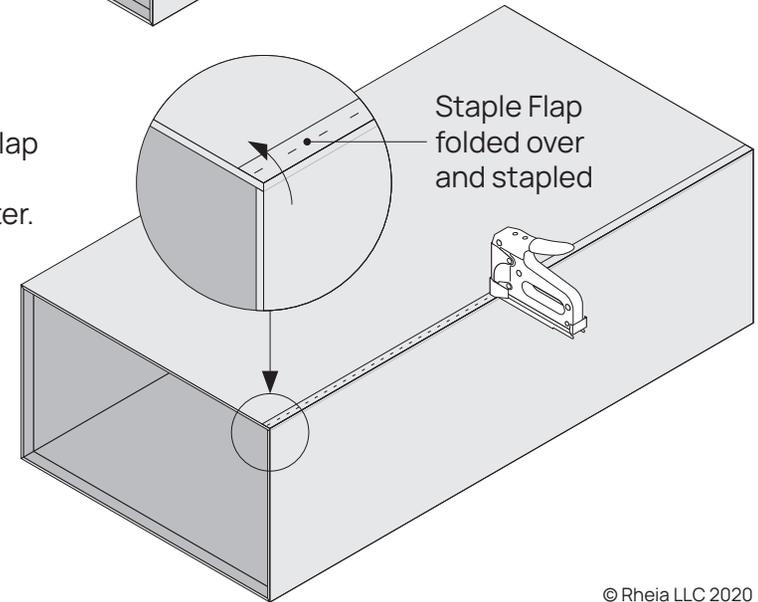
**Step 6.** Use a duct knife to make straight cuts on the factory edge at the center of each V groove cut to better enable folding.



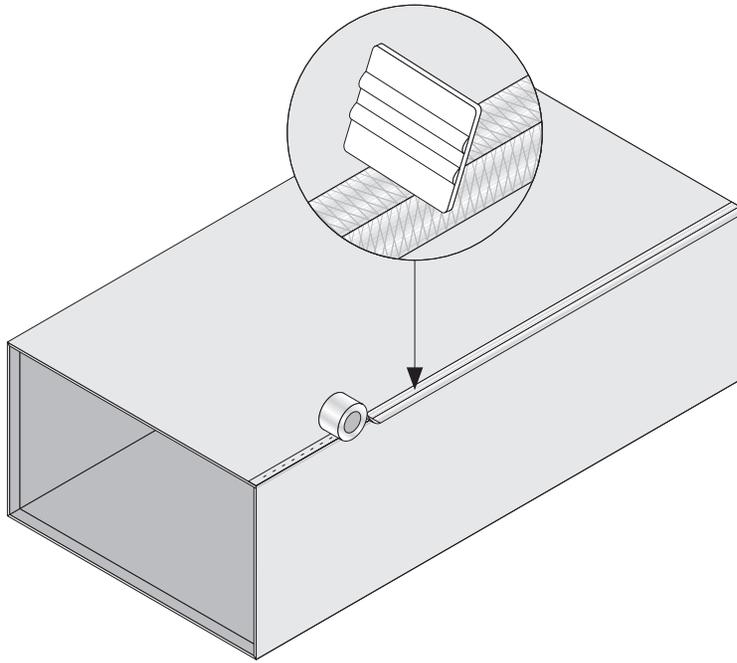
**Step 7.** Fold the duct board end over end so that the shiplap edge rests at the staple flap edge to form your box.



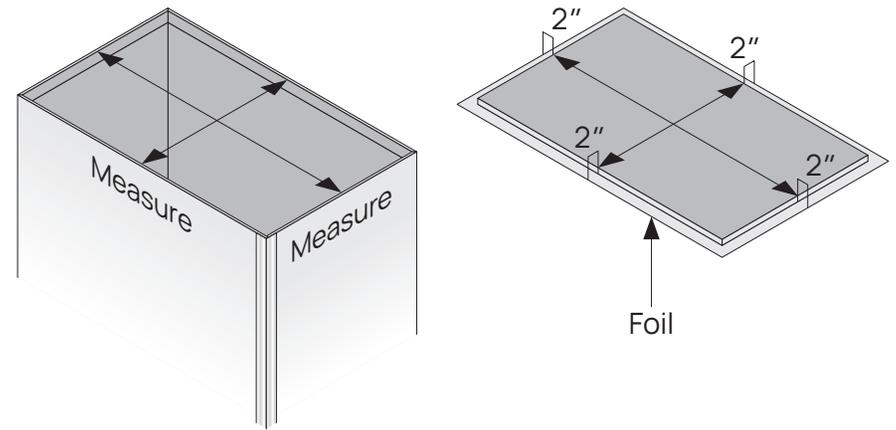
**Step 8.** Fold the staple flap over and staple every 2" on center.



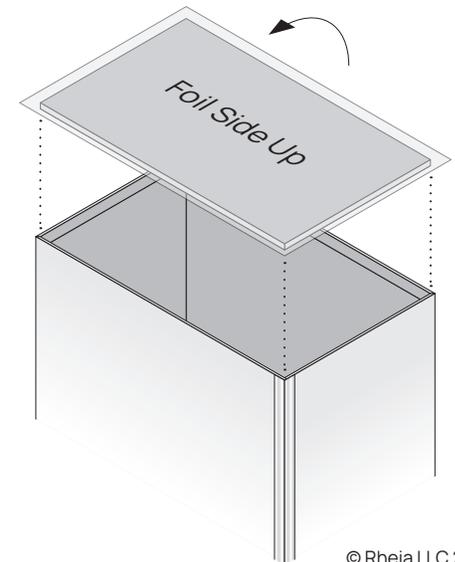
**Step 9.** Seal the staple flap using approved UL rated foil tape. Finish by applying moderate pressure with a squeegee until the duct board foil pattern clearly appears in the foil tape.



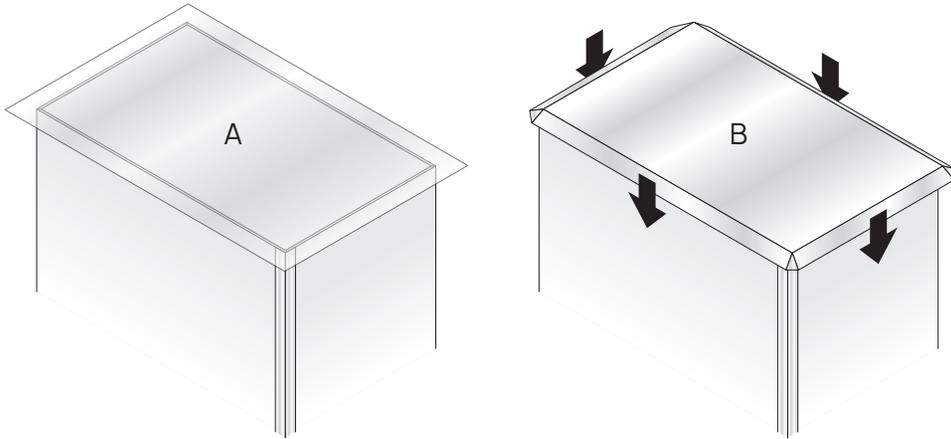
**Step 10. NOTE:** The following instructions for creating end caps apply to both ends of the manifold. Measure the **interior** depth and width of the opening. Next, place a piece of duct board foil side down and use a duct knife to cut the board to the interior dimensions, allowing an **additional 2"** foil perimeter around all sides.



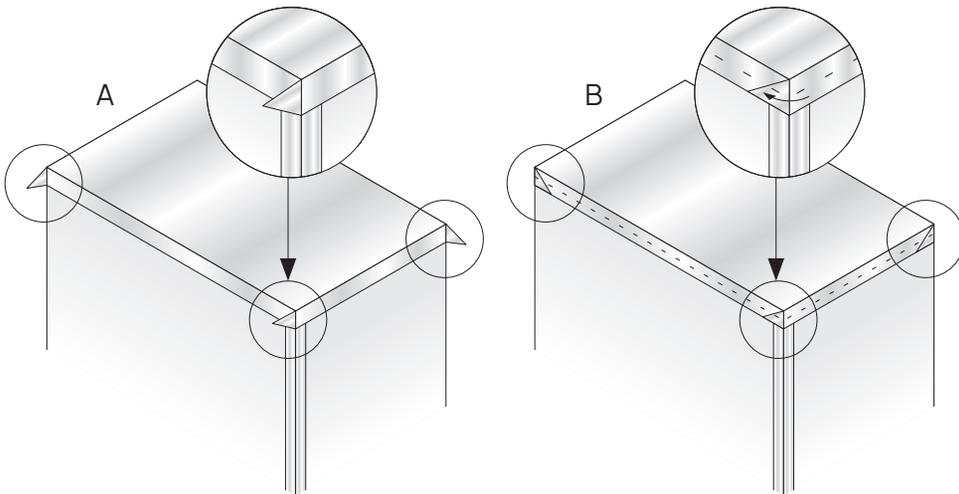
**Step 11.** Flip the end cap over and insert it into the manifold opening with the foil side up.



**Step 12.** (Diagram A) Top foil shown as transparent to view the foil that extends 2" beyond each side of the manifold after inserting the end cap. (Diagram B) Fold the 2" foil flap over all four sides.



**Step 13.** (Diagram A) When reaching the corners, squeeze the two meeting sides together to form a triangle. (Diagram B) Fold one corner triangle flat and staple. Continue around the entire perimeter of the end cap, treating each corner the same. Staple at every 2" on center.



**Step 14.** Secure the end cap with foil tape around all 4 sides. Squeegee all tape with moderate pressure. Complete the manifold construction by repeating the end cap installation process (steps 10-13) for the opposite end of the manifold.

