SECTION 4 – Preparation for Horizontal Siding

Preparing Wall Surfaces

New Construction

Make sure all studs are straight and true. Correct any bowed studs.

NOTE: ***Vinyl siding must be applied over a rigid sheathing that provides a smooth, flat surface or an underlayment (such as wood, wood composition, rigid foam or fiber sheathing) that is no more than 1" thick. Vinyl siding cannot be applied directly to studs.***

Make sure sheathing is fastened securely to studs.

If you're planning to use a conventional house wrap or building felt, apply according to the manufacturer's recommendations. In all cases, however, install the products so they are secured firmly to the substrate so that they provide a smooth, even surface for the final siding installation.

Before applying siding, make certain substrate is **watertight**. In order to be properly protected from precipitation, the substrate may need to be properly flashed around areas such as windows, doors, other openings and corners so as to shed water to the exterior. **The siding alone is not meant to be a watertight barrier.**

Drop-In Foam Backer Boards

Some drop-in foam backers can restrict the movement of vinyl siding. Therefore, CertainTeed vinyl siding may not be applied over any drop-in foam backer other than a contoured drop-in foam backer designed specifically for each profile.

IMPORTANT: CertainTeed will not accept any responsibility or liability in the event the drop-in foam backer restricts the movement of the vinyl. The use, fit, and performance of the siding backer board is the responsibility of the installer and the backer board manufacturer.

NOTE: ***Contoured drop-in foam backer boards are not a substitute for rigid foam sheathing.***

Home Improvement Projects

You can prepare your current siding surface to receive vinyl siding in one of three ways:

Strip off old siding and level the wall. If felt paper covers the wall, you have two alternatives: either strip it off completely or staple or nail it to create a smooth surface. If there is no solid sheathing under the old siding, you must apply it as described in the instructions for New Construction, above.

Apply rigid sheathing to existing siding to provide a smooth surface. Nail securely to old siding. Nail evenly to bridge low spots.

NOTE: ***Failure to establish a smooth, solid surface constitutes misapplication under the terms of the warranty.***

Apply vertical furring to old siding to straighten noticeable surface unevenness. (See “Tips for applying wood furring”.) Then apply rigid sheathing, following the instructions presented under New Construction.

NOTE: ***For information on installing siding over asbestos and for historic applications, see page 150.***

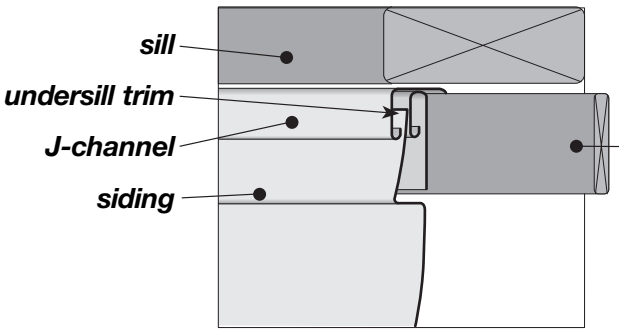
Tips for applying wood furring

If you are working on an older home with noticeably uneven walls, you must correct this condition before proceeding. If not corrected during preparation, this uneven surface will produce a wavy appearance in siding applied over it.

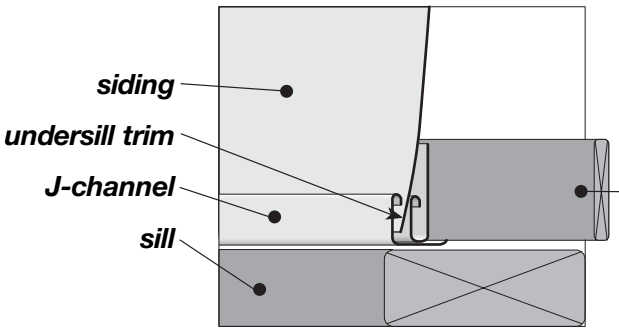
For best results, space strips 12" on center. Do not exceed 16". To correct an uneven wall, use furring strips (and wood shims if necessary) to eliminate low spots.

NOTE: ***You must apply rigid sheathing over furring.***

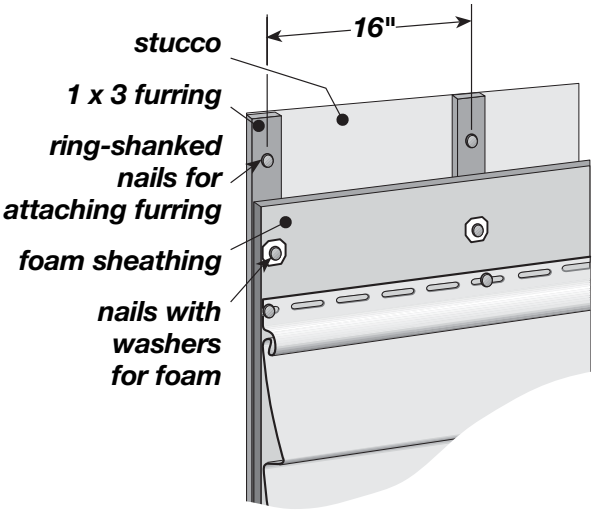
When covering over masonry or bricks, it’s better to use 1"x 3" furring. For best thermal performance, install a minimum of 1/4" foam over furring strips.



Furring and/or foam is also used below eaves and windowsills to maintain correct slope angles when siding panels must be cut to a narrower dimension to fit.



Similarly, when panels are cut to fit over doors or windows, furring and/or foam is used to establish the correct slope angle.



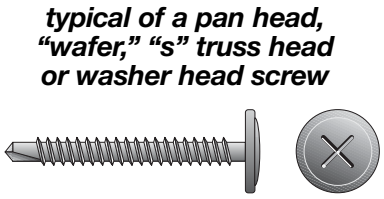
Applying over stucco

When applying vinyl siding over stucco, you first have to be sure you're working on an even surface. To create that surface, you may have to knock down high spots where furring strips will be applied. Use caution when chipping off these spots – you don't want to crack or damage the remaining stucco.

Apply 1" x 3" furring to the stucco, using ring-shanked nails or screws. Stucco will not hold fasteners tightly, so be sure nails or screws are anchored securely to studs. Furring strips should be spaced 16" on center.

Applying rigid foam sheathing to furring

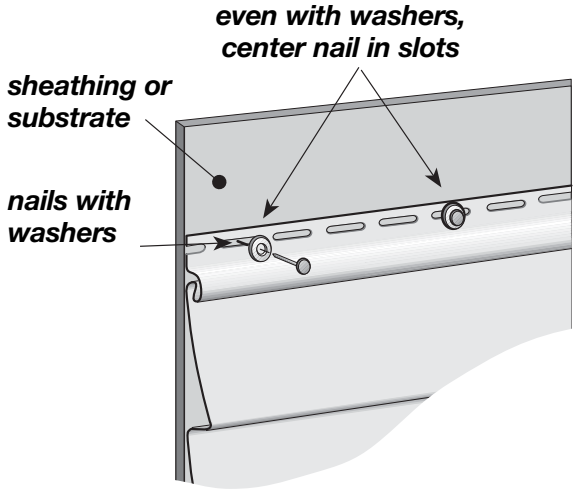
Install sheathing according to manufacturer's instructions. Do not apply siding directly to furring strips. For best thermal performance, install a minimum of 1/4" foam over furring strips.



Applying over steel studs

Pre-planning is the key when installing vinyl siding and accessories over steel studs. Pre-planning includes the selection of siding style and the types of accessories. Pre-planning proper stud placement will eliminate many of the problems that could surface once the job has been started, such as at corners, windows, and transitional areas.

Follow the same guidelines as in a wood surface – except for the type of fasteners used. Wall sheathing must be installed over the studs. This will provide a straighter, smoother and more rigid wall surface and help prevent studs from twisting. Siding must be secured into metal studs if the substrate is not a nailable surface such as exterior dry wall, gypsum board, etc.



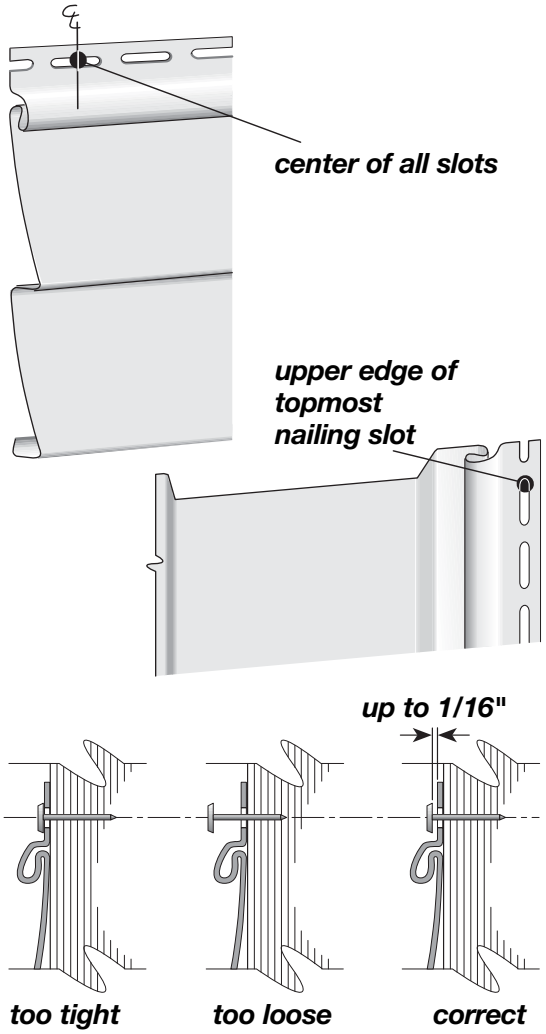
The application of vinyl siding, soffits and accessories over steel stud framing rather than typical wood framing is straightforward. The main difference is the use of screws to hang components that make up a completed siding job.

Use noncorrosive, self-tapping screws with at least 3/8" (9.5 mm) diameter head, 1/8" (3 mm) diameter shaft, and at least 1-1/8" (29 mm) long.

Although the fastening method for steel studs differs from wood construction, all other procedures still apply, including fastening in the center of the nail slot and not overtightening the fasteners.

Application for high wind areas

Using a 5/8" nylon washer with a 1/4" hole between the nail and siding increases the wind load capabilities of the installation. (Washer tested was 0.071" thick.)



Nailing, Stapling and Other Fastening Methods

If you want to ensure a quality vinyl siding installation, focus your attention on nailing techniques. Unfortunately, a lot of installers don't. They feel nailing is a routine task, something everyone knows how to do. But that's not the case. At CertainTeed, we analyzed reported installation problems, and we found that more than half of them can be traced back to improper nailing. So if you want to save yourself lost time and frustration, carefully observe the following guidelines when installing accessories, siding panels, soffit, or porch ceilings.

Lock the panel and begin nailing at the center of the panel, working toward the ends. This helps maintain a level line.

With horizontal accessories and panels, position the nails in the center of the elongated nailing slots to allow for expansion and contraction. Never nail through the panel surface.

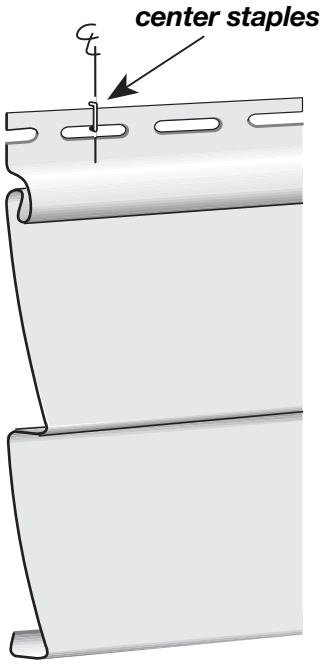
With vertical accessories and panels, position the **first nail** at the **upper edge of the topmost nailing slot**. This allows a panel to hang from the nail. Position the remaining nails in the center of the nailing slots. Allow for 1/3 of the total expansion at the top and 2/3 of the total expansion at the bottom.

NOTE: ***Do not nail too tightly. To permit expansion and contraction, panels should hang freely from nails. This allows the panels to move as the temperature changes. Drive the nails until there is between 1/8" to 1/16" of space between the nail head and the nailing flange.***

Drive the nails straight in. Do not angle nails.

Per the ASTM specification for vinyl siding installation (D4756), proper nail penetration is at least 3/4". In most cases, that requires anchoring to studs.

Nails must be spaced a maximum of 16" apart. (In new construction, nail to studs on 16" centers. Do not skip studs.) Elongate factory nail slots if necessary to hit a stud. Monogram siding may be used in 24" o.c. construction with nails spaced a maximum of 24" apart in areas without special windload requirements. **Check with your local building code official for special requirements.**



Other fastening techniques:

Manual nailing is the most common way of fastening vinyl siding to a wall. That's because it offers greater control, making it easier to learn how to fasten panels securely, but not tightly. You also can use power screwdrivers or pneumatic staplers/nailers to attach vinyl siding to a wall, but you must take the time to develop the proper skills. If you choose to use one of these alternate techniques, follow all the recommendations above for nail positioning and spacing and the recommendations for substrate preparation on page 57 for horizontal applications and page 65 for vertical, including Board & Batten. In addition, be sure to observe the following guidelines:

Power screwdrivers

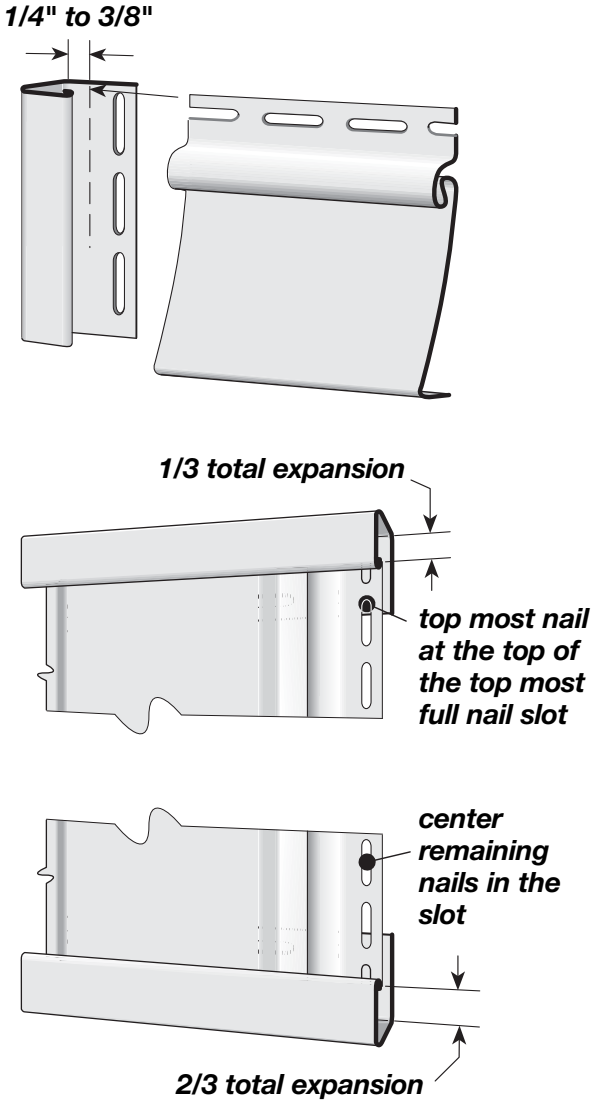
Use noncorrosive, self-tapping truss head screws. Screws must have at least 5/16" diameter head and 1/8" diameter shaft. Screws must be at least 1-1/8" long. If underlayment is less than 3/4" thick and is not considered a nailable surface (for example, foam or exterior grade gypsum), be sure screws are long enough to penetrate at least 3/4" into wood studs or substrate, 1/8" through a steel stud. Be sure screws are centered in the nail slot. Leave 1/16"-1/8" space between the screw head and the panel nailing flange.

Pneumatic staplers/nailers

Use corrosion-resistant fasteners only. Fasteners must be centered in the nail slot, no more than 16" on center.

NOTE: ***Some power staplers/nailers use an attachment that helps position the fastener in the nail slot. If your unit does not have that feature, you must carefully position the fastener by sight.***

Fasteners must penetrate a nailable surface at least 3/4". Be sure to leave up to 1/16" between the fastener and the panel nailing flange. If you're using a power stapler, drive the staple perpendicular to the nailing slot with one leg of the staple centered in the slot and the other leg above the panel.



Expansion and Contraction

It's normal for vinyl building products to expand and contract with temperature changes. To ensure a successful siding installation, you must allow for this movement during application.

Use the following guidelines to determine the space required for expansion and contraction between siding and trim:

1/4" at both ends of the panel when the temperature is above 40° F at the time of application.

3/8" at both ends of the panel when the temperature is 40° F or below at the time of application.

In a horizontal siding installation, a vinyl panel tends to expand equally in both directions.

In a vertical siding installation, on the other hand, most of the expansion is downward. So instead of allowing equal space for expansion at both ends of a vertical panel, leave more space at the lower end: 1/3 of the total expansion is allowed at the top of a panel, and 2/3 of the total expansion is allowed at the bottom.

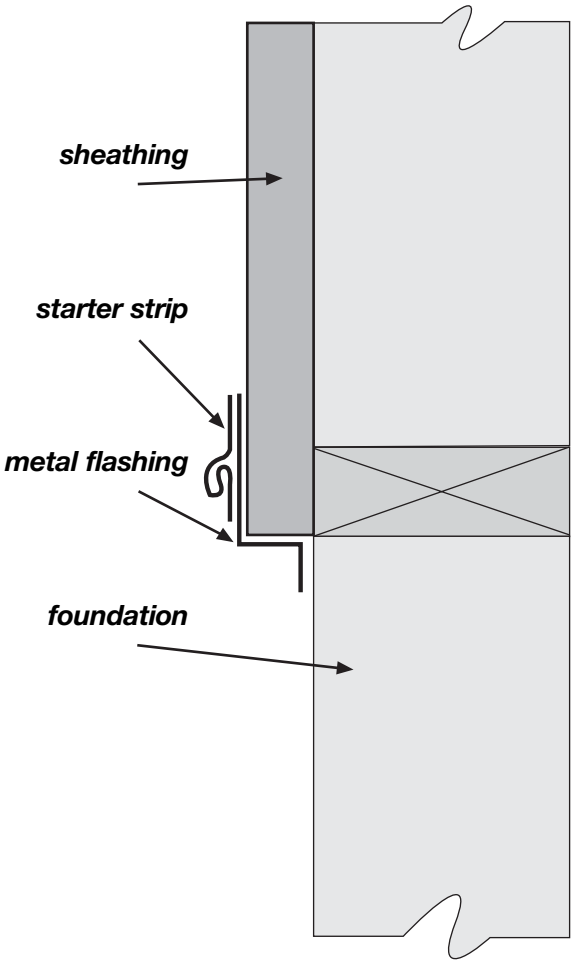
For example, if the temperature is below 40° F, total expansion equals 3/4" (3/8" + 3/8"), so you allow 1/4" at top and 1/2" at the bottom of a vertical panel.

Installing Accessories

Snapping a chalk line

To ensure proper installation, you must establish a straight reference line to guide the positioning of the starter strip and the first course of siding.

If the house is reasonably level, find the lowest point of the old siding (or sheathing if working on new construction). Partially drive a nail at one corner, starter height minus 1/4" above the lowest corner. Attach chalk line. Go to other corner and pull the chalk line taut. Stretch the chalk line from this nail to the opposite corner of the house. Make sure the line is level, using a line level or 4' (minimum) level. Snap chalk line and repeat the procedure around the entire house.

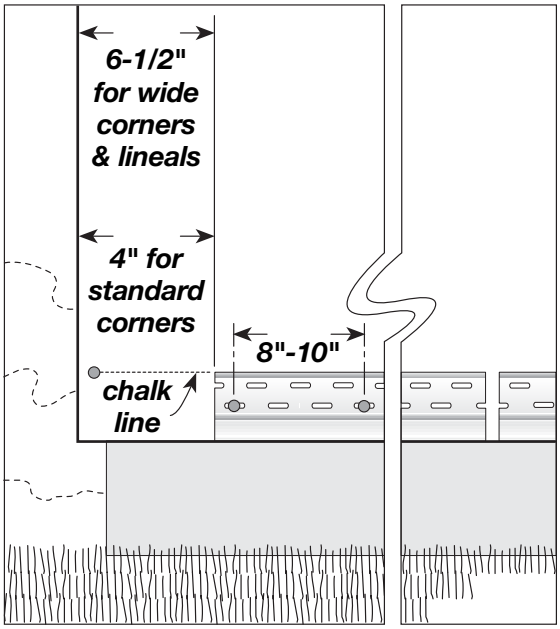


A water level, a long clear plastic tube 90% filled with water, is useful in marking level points around the house and on opposite sides of openings such as doors. Water will always seek a level state, ensuring the markings will always be at the same level.

NOTE: ***If after establishing a chalk line you find that your starter strip will be positioned below an easily nailed surface, you may have to apply a nailable base.***

If you have added sheathing, you may want to bend trim coil to act as flashing and help prevent entry of insects. Bend the coil in a "Z" shape so the top edge of the coil is on the chalk line and the bottom edge extends down over the foundation. (See illustration.)

NOTE: ***The general guidelines for cutting and nailing vinyl panels and for allowing for expansion and contraction also apply to vinyl accessory items.***

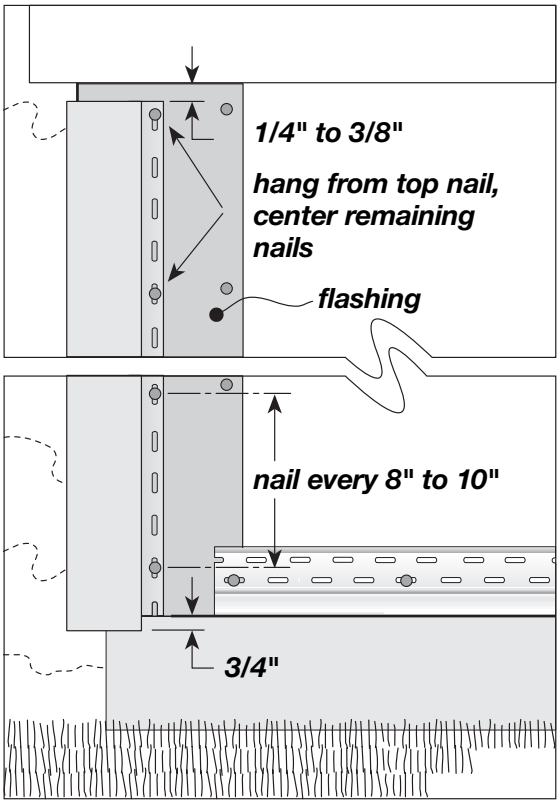


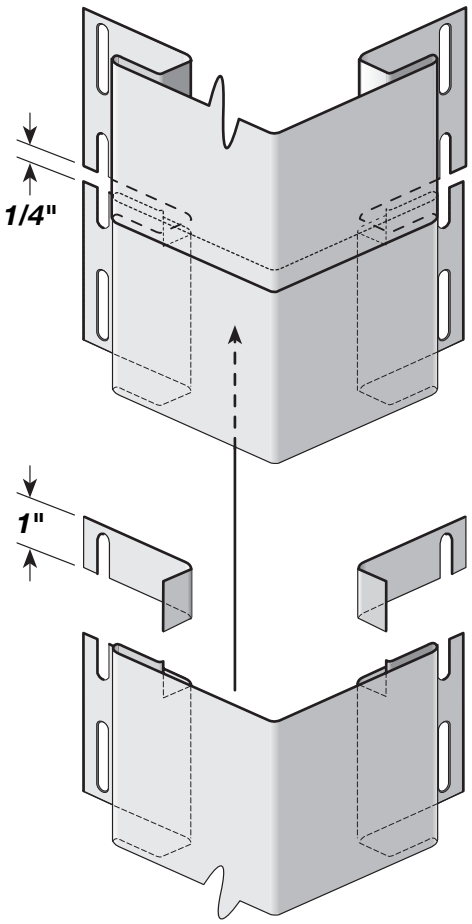
Installing the starter strip

Position the starter strip with the top edge on the chalk line and the ends 6-1/2" away from the outside and inside corners (when using lineal systems or wide corners), 4" if using standard one-piece corners. Nail to wall following previously mentioned nailing instructions. When hollows occur in the wall surface, shim out the starter strip to avoid a wavy appearance in the finished siding job. Nail every 8" to 10".

As you add starter strip sections, be sure to leave 1/4" space between them for expansion.

Sometimes – especially at sills above garage doors, porches or brick surfaces where the siding has been cut lengthwise – you may find it easier to use a combination of utility trim and J-channel as a starter strip to secure a panel (see illustration on page 22).





Installing Outside Cornerposts

Flash the corners of the home by bending a 10" wide piece of aluminum trim coil 90° so you have two 5" legs. Cover the entire length of the corner, lapping the upper pieces over the lower pieces. (Self-adhering flashing may be substituted for trim coil. Follow manufacturer's installation instructions and observe local building code requirements.)

NOTE: ***Traditional, fluted and beaded SuperCorners or four piece corner systems require 14" strips of coil for flashing.***

Position outside cornerpost with the top of the post 1/4" from the underside of the eave and the bottom of the cornerpost 3/4" below the starter strip. Remove the bottom 3/4" of the nailing flange so it will not show below the siding when installed.

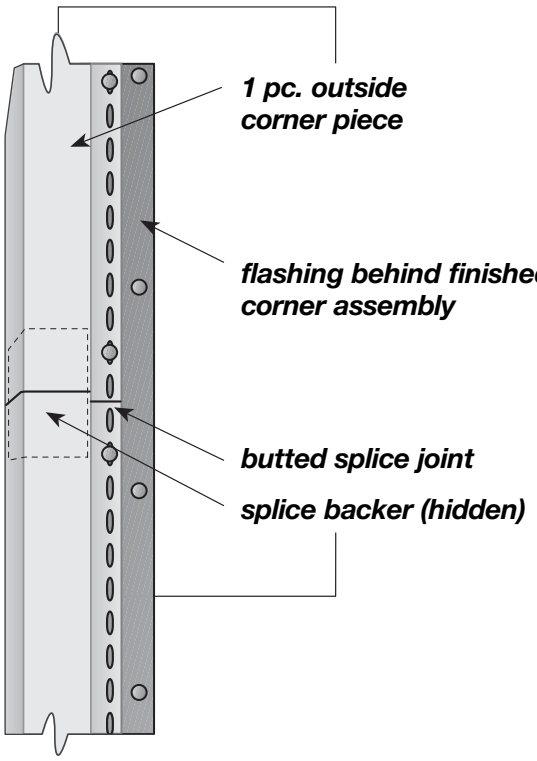
Make sure posts are straight and true before nailing.

Hang cornerposts by first positioning a nail at the top of the topmost nail slot. Position all remaining nails in the center of nail slots a maximum of every 8" to 10". Leave 1/8" to 1/16" between the nail head and the cornerpost to allow the cornerpost to move during normal expansion and contraction. **(DO NOT NAIL TIGHT.)** This nailing pattern is to be followed on both nail flanges of each post.

NOTE: ***CedarBoards corners install similar to standard outside cornerposts.***

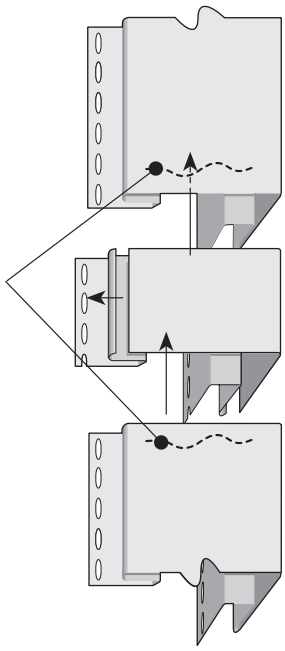
If posts must be spliced for high walls, you have two options:

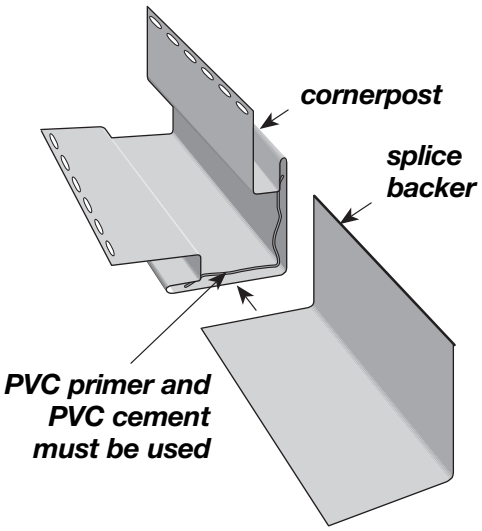
Option 1: Cut 1" off the nailing flanges and back from the bottom portion of the upper post. Then lap 3/4" of the upper post over the lower post, allowing 1/4" gap for expansion. This method will provide an obvious joint between the two posts, but will allow water to flow over the joint, reducing the chance of water infiltration.

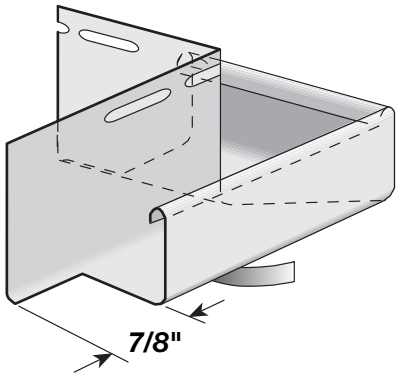


Option 2: Cut a 6" length of cornerpost and trim the nail flange, receiving channel, and sides until you have just a 90° bend of vinyl. Using PVC primer and PVC cement, glue the bent piece to the inside of the upper post and lower post. Butt the two posts together. Nail the entire assembly as one post with all nails in the lower post centered in the nail slots.

Also see additional instructions covering installation of four-piece cornerposts (page 30).



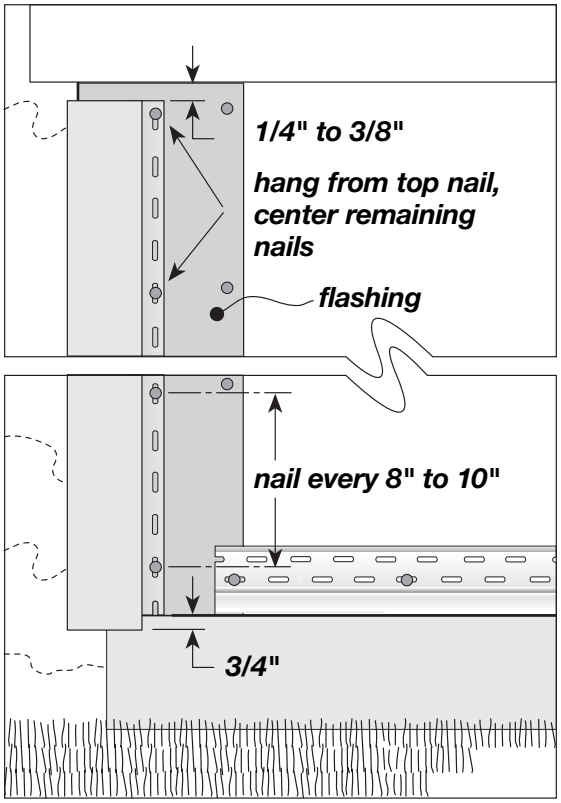




Capping an outside cornerpost

One method of capping an outside cornerpost is to cut a piece of J-channel twice as long as the width of the cornerpost face. Mark a 90° angle from the center and cut out this area. Then cut 7/8" away from each end, except for the nailing flange. Bend the J-channel in the center and nail it to the outside of the corner of the house. Then insert the cornerpost into the J-channel.

Another alternative is to trim the nail flange, receiving channel, and sides from the bottom 1" of the cornerpost. Notch 1" at the 90° bend, fold the bottom 1" of the cornerpost face, and fasten these “flaps” with a pop rivet.



Installing Traditional, Beaded, and Fluted SuperCorners™

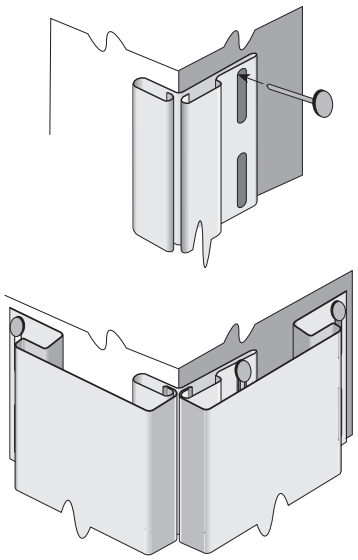
Flash the corners of the home by bending a 14" wide piece of aluminum trim coil 90° so you have two 7" legs. Cover the entire length of the corner, lapping the upper pieces over the lower pieces. (Self-adhering flashing may be substituted for trim coil. Follow manufacturer's installation instructions and observe local building code requirements.)

Position outside cornerpost with the top of the post 1/4" from the underside of the eave and the bottom of the cornerpost 3/4" below the starter strip. Remove the bottom 3/4" of the nailing flange so it will not show below the siding when installed.

Make sure posts are straight and true before nailing.

Hang cornerposts by first positioning a nail at the top of the topmost nail slot. Position all remaining nails in the center of nail slots a maximum of every 8" to 10". Leave 1/8" to 1/16" between the nail head and the cornerpost to allow the cornerpost to move during normal expansion and contraction. **(DO NOT NAIL TIGHT.)** This nailing pattern and depth are to be followed on both nail flanges of each post.

Extra Wide Corner Posts (Four-Piece Corner System)



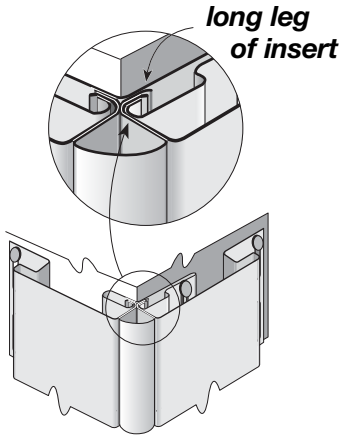
Extra-wide cornerposts give you a distinctive, easy-to-install method of finishing outside corners. Each cornerpost consists of four parts: Corner starter, two lineals and a 1/4 round snap-in molding.

Lineals are available in two board styles: 5" smooth and 3-1/2" smooth.

The installation procedure is identical for all lineals and inserts. To install this four-part accessory, follow these steps:

NOTE: ***Make sure the corners are properly flashed.***

Cut cornerpost pieces. Measure the vertical span, and allow 1/4" clearance from the underside of the eave and 3/4" below the starter strip. Cut all four pieces using a power circular saw.

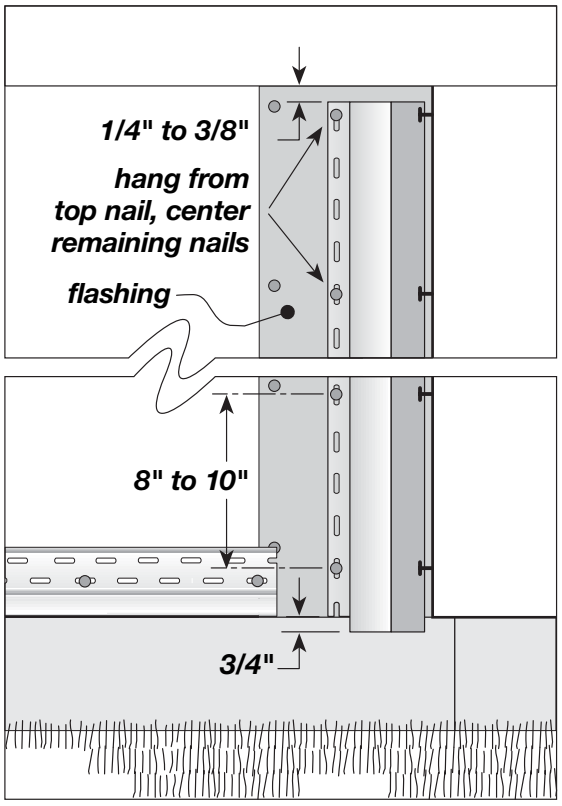


Hang a starter strip. Position the starter strip, leaving 1/4" allowance for expansion at top and 3/8" at bottom. Position the first nail at the uppermost edge of top nail slot (shown). Nail loosely. Working from top down, position remaining nails every 8"-10", with nails centered in slots.

Attach side lineals. Lock the first lineal into the starter strip. Nail to the sheathing following the procedure described above. Repeat the process for the other lineal.

Snap in the quarter-round corner insert. Working from the bottom up, begin by inserting the longer leg of the insert into the nail flange side of the starter strip first, then snap in the shorter leg. Lightly press along the length of the molding as you snap it into place.

NOTE: ***For a more secure installation, use a pop rivet to attach the molding insert to a side lineal. The rivet should be positioned at the top of the cornerpost.***

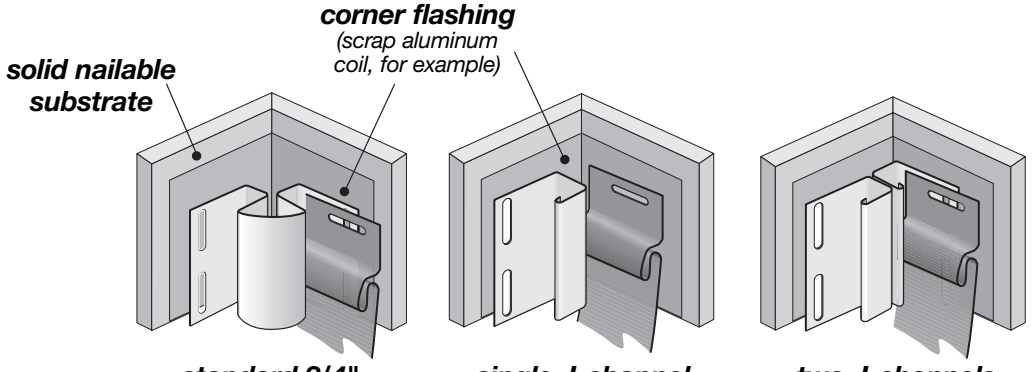


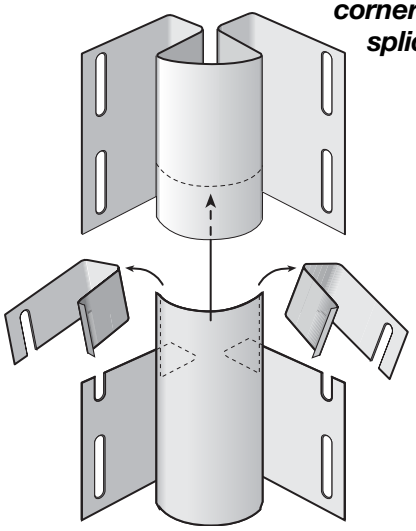
Inside Cornerposts

There are three options for trimming inside corners: Standard 3/4" inside cornerpost, single J-channel, and two J-channels.

To flash the inside corner, bend a 12"-wide piece of aluminum coil stock 90° so you have two 6" legs. Insert the flashing into the corner. If you use more than one piece of flashing, overlap the upper pieces of the flashing over the lower pieces.

To install inside cornerpost, hang the post from the top of the eave. The bottom should extend 3/4" below the starter strip. Remove the bottom 3/4" of the nailing flange so it does not show below the siding. Set the post straight and true. Position the top nail in the top of the nailing slot. All other nails should be in the center of the nail slots.



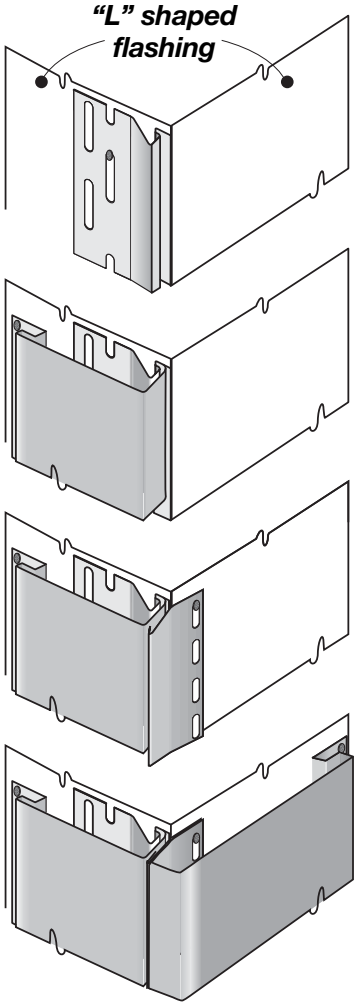


If you have to splice the inside cornerpost, cut 1" off all but the outer face of the lower post. Lap 3/4" of the upper post over the lower post, leaving 1/4" for expansion.

If you are using two pieces of J-channel instead of inside cornerpost, flash the corner with a 6" x 6" “L” corner fabricated from aluminum coil stock. Hang the J-channel from the top of the eave. The bottom should extend 3/4" below the starter strip. Remove the bottom 3/4" of the nailing flange so that it will not show below the siding. Use the same positioning and nailing guidelines as inside cornerpost.

To create a narrower corner, you can also use a single length of J-channel and flashing. First, install the siding on one wall, then place the J-channel lightly against the siding and nail it to the substrate on the adjacent wall. Follow the same positioning and nailing guidelines as inside cornerposts.

NOTE: ***When using a single J-channel, the corner must have corner flashing***



Federal Corners

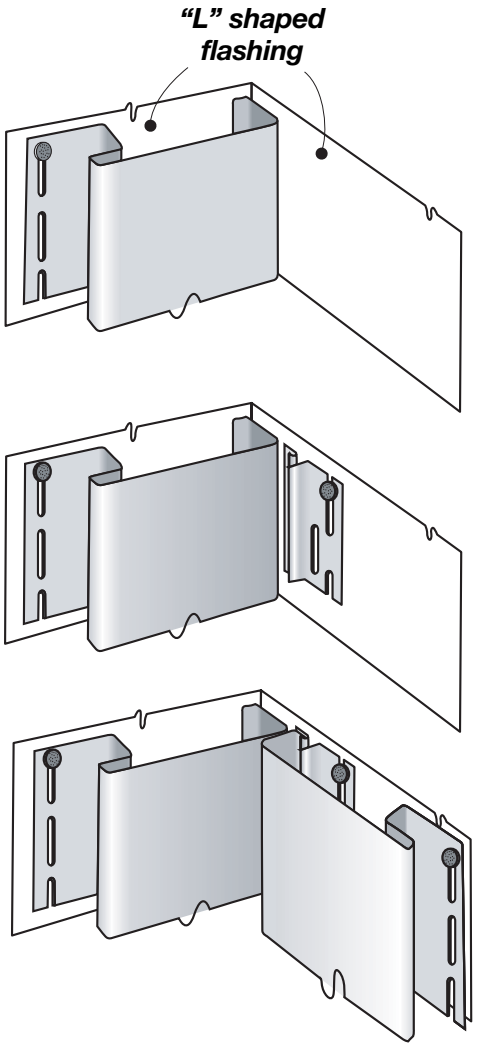
To create a federal-style corner, flash the corner with aluminum trim coil or other flashing materials. Hang a new construction starter strip. Position the top nail in the top of the nailing slot. All other nails should be centered in the slots spaced 8" to 10" apart.

Position and secure the 3-1/2" lineal.

Position and secure an aluminum starter strip.

Position and secure the 5" lineal.

NOTE: ***Aluminum starter can be used for both lineals. If the aluminum starter used for the 5" lineal is not long enough, fashion a starter using a metal brake and coil stock to a length that allows for proper nailing into the substrate.***



Inside Federal Corners

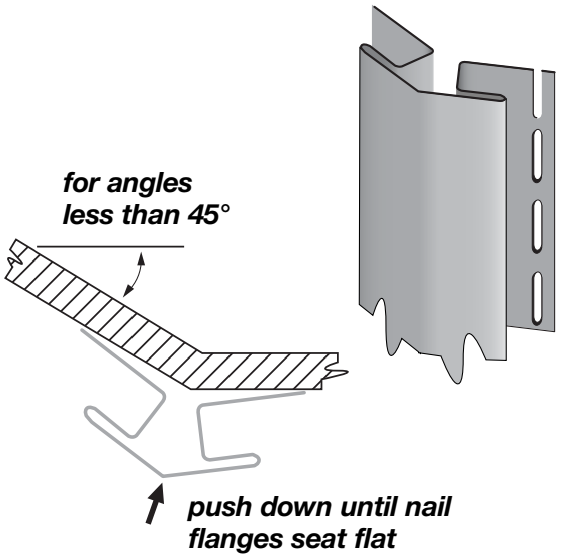
Flash the corner with aluminum trim coil or other flashing materials.

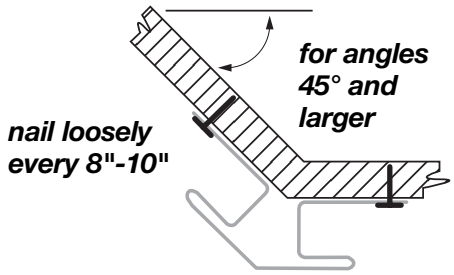
Position and secure the 5" lineals (or a 3-1/2" lineal) by butting the lineal up to the inside corner. Using a 5" lineal will create a symmetric 3-1/2" exposure in the corner. If two 3-1/2" lineals are used, one exposure will be approximately 2-1/4" and one will be 3-1/2".

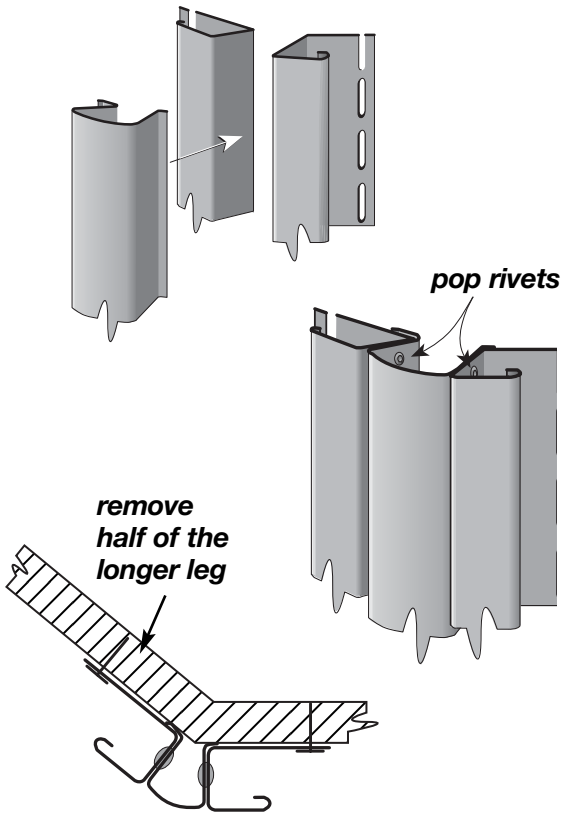
NOTE: ***Attaching the second lineal will keep the first lineal in place. You will not need a starter strip. Always position the top nail in the top of the nailing slot. All other nails should be centered in the slots spaced 8" to 10" apart.***

Position and secure the starter strip.

Position and secure the remaining lineal.







Trimming Bay Window Corners

There are several ways to trim the odd angles of bay windows. Here are two of them:

1. Install bay window cornerpost.
2. Install J-channel with a quarter-round insert.

Before you begin, make sure the corner is properly flashed.

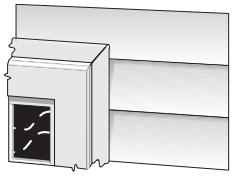
Install Bay Window Cornerpost

- Cut bay window cornerpost to the proper length.
- For angles less than 45°, push down on the face of the corner until the nail flanges seat flat against the wall surfaces.
- Hang the cornerpost by nailing loosely into the topmost nail slot.
- Make sure the cornerpost is straight and true.
- Position all remaining nails in the center of nail slots a maximum of every 8" to 10". Leave 1/8" to 1/16" between the nail head and the cornerpost to allow the cornerpost to move during normal expansion and contraction.
- Fit the siding into the cornerpost. Leave 1/4" for expansion.

Install J-Channel with Quarter-Round Insert

- Cut two pieces of J-channel and one piece of quarter-round insert to length.
- Pop rivet the J-channels to each side of the quarter-round insert in at least three places.
- Nail the assembly to the corner, remembering to hang the assembly from the topmost full nail slot.
- Position all remaining nails in the center of nail slots a maximum of every 8" to 10". Leave 1/8" to 1/16" between the nail head and the J-channel for normal expansion and contraction.
- Fit the siding into the J-channels. Leave 1/4" for expansion.

Decorative Trim Options around Windows and Doors



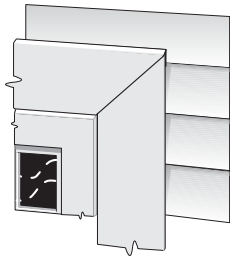
J-channel

System requires standard J-channel.

- 1/2" J-channel
- 3/4" J-channel
- 1" J-channel
- 1-1/4" J-channel

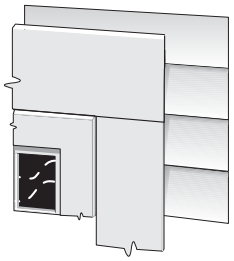
3-1/2" Snap-On Lineal

System requires 1" face J-channel



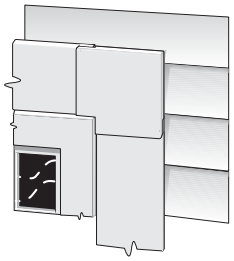
3-1/2" Lineal System

System requires 3-1/2" lineals and starter strips.



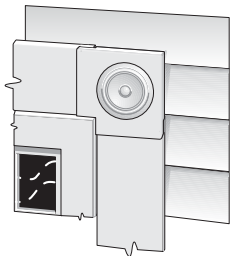
5" x 3-1/2" Lineal System

System requires 5" lineals, 3-1/2" lineals, and starter strips.



3-1/2" Lineal System with Corner Block

System requires 3-1/2" lineals, starter strips, and lineal corner block.

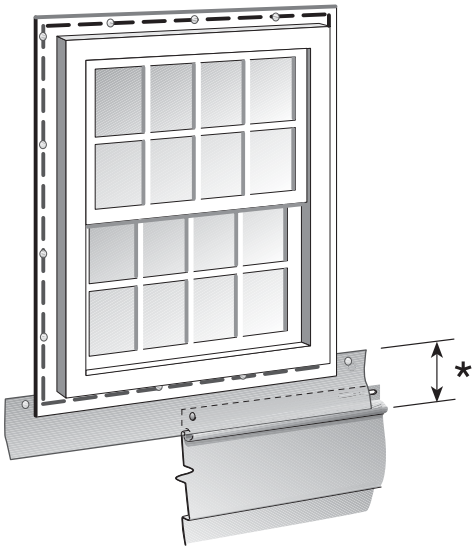


3-1/2" Lineal System with Corner Block and Rosette

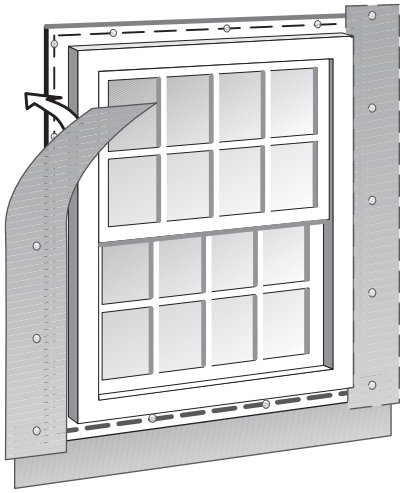
System requires 3-1/2" lineals, starter strips, lineal corner block, and rosette.

Window Flashing

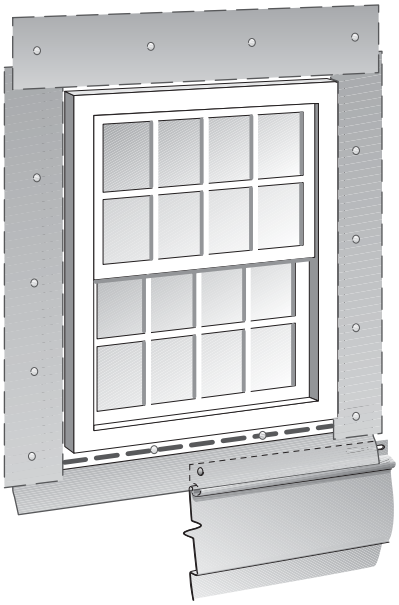
The width of all flashings is determined by the type of accessory surrounding the window and where the final complete course of siding stops below the window (in the case of the flashing under the window). The flashing should extend past the nail flanges of the accessory. The width of the flashing under the window must allow for the diversion of water.



*see NOTE below



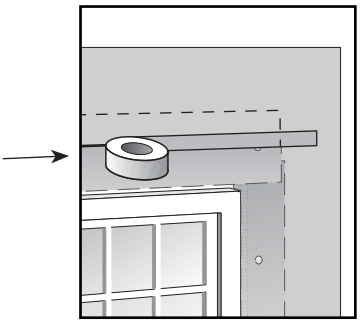
Apply the vertical flashings by overlapping the previously secured bottom flashing. As noted above, the length and width of the flashings will be determined by the type of accessories used.

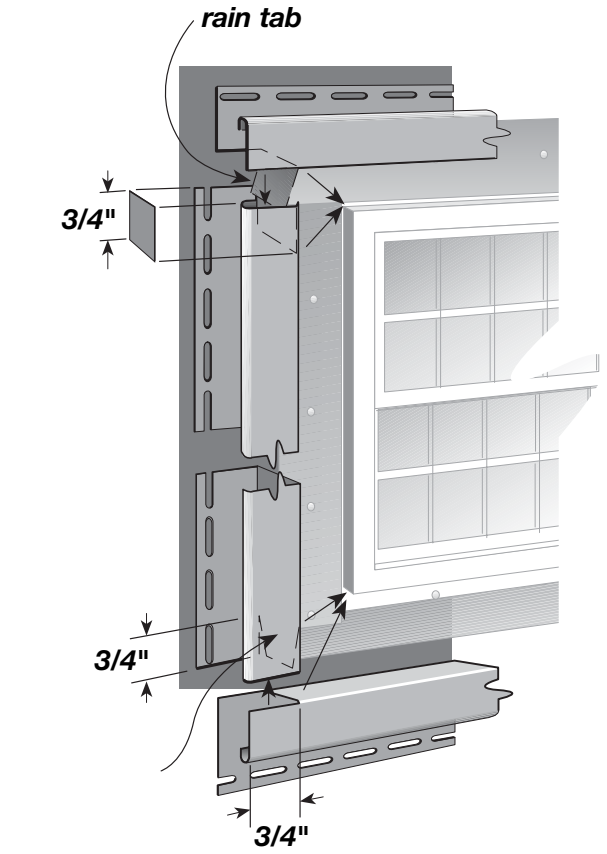


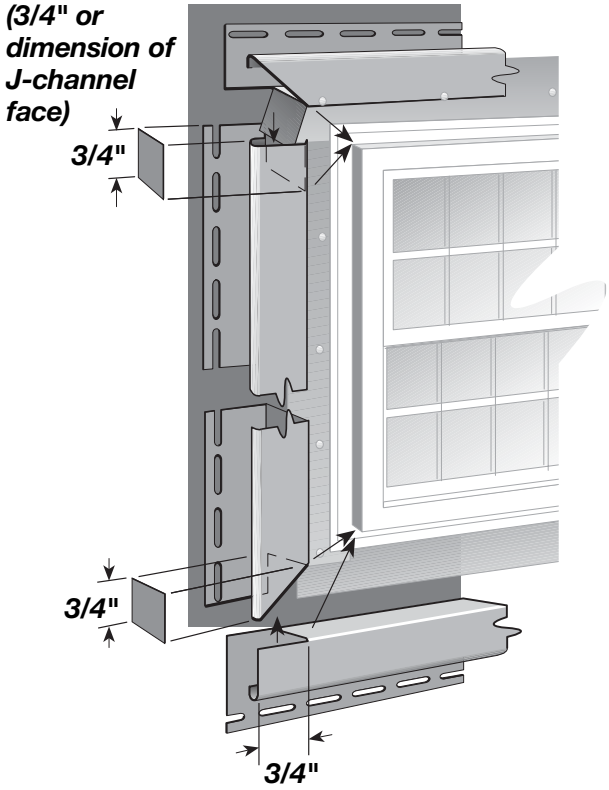
Secure top flashing.

NOTE: ***The flashing is long enough to direct water over the nail flange of the last course of complete siding panels.***

For even greater protection, make a slit in the building wrap and insert the top flashing behind it. Tape the seam as shown.







Installing Window and Door Trim

Install J-channel along the top and sides of door casings and around windows.

NOTE: ***When installing J-channel around replacement windows that do not have nail flanges, add flashing for greater protection against water infiltration. For an example of completed flashing, see the previous page.***

There are two methods of joining J-channels at corners. The easiest method is to square cut the corners. For a more finished appearance, you can miter the corners. To prevent gaps, do not butt ends. Instead, lap them as shown.

To Square Cut Corners

Install J-channels at sides of windows. Notch as shown.

NOTE: ***For best results, use aviation snips when cutting J-channel.***

Cut top and bottom J-channels so the ends extend beyond the casing to the width of side J-channels.

Place top J-channel along the casing shoulder and nail it to the wall.

Make two cuts in the bottom of the upper channel and bend it down to overlap side J-channel. Repeat for the other side. This forms a water drain and allows J-channel to receive siding panel.

Nail the bottom J-channel in place. Cut the channel as previously described. Fold rain tabs into receiving pockets for a tighter miter joint.

To Miter Cut Corners

For best results, make sure you cut all J-channels to the proper length, leaving the proper allowance for the width of the face of the J-channel.

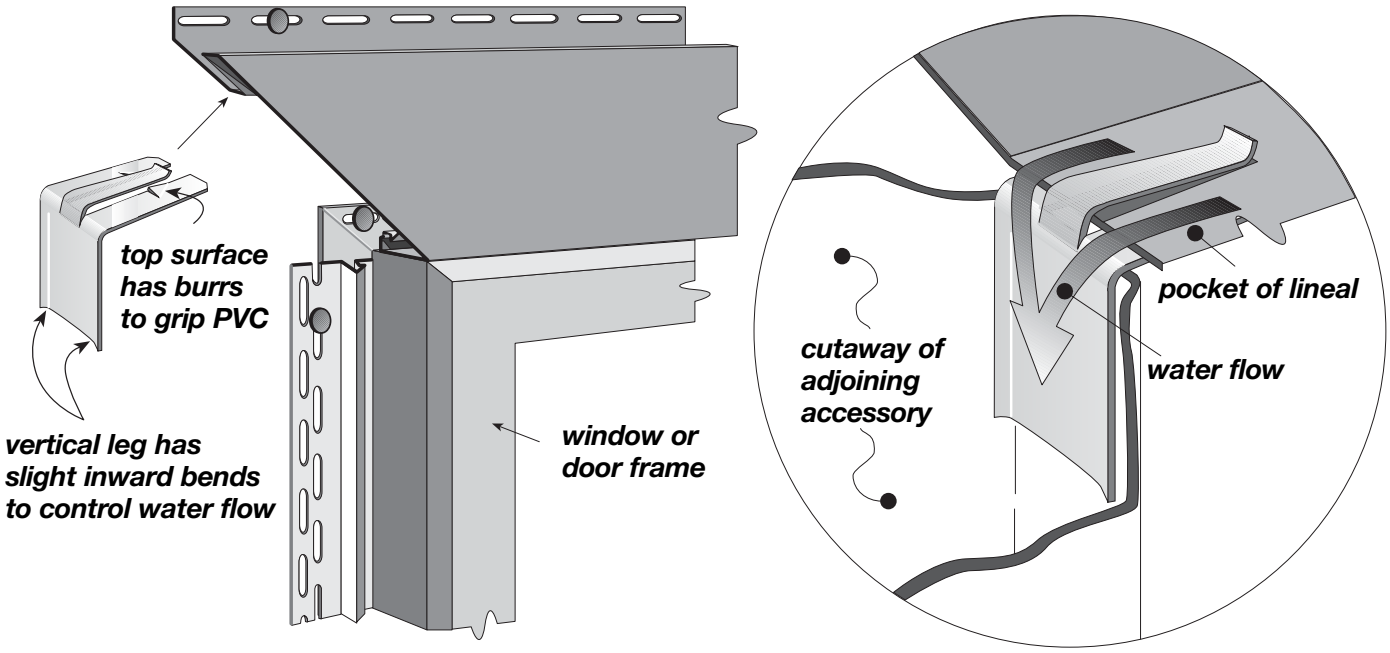
Square cut the bottom J-channel so that its ends extend beyond the window casing to the width of the face of the side J-channels. Notch the ends for clearance. Position and nail the J-channel.

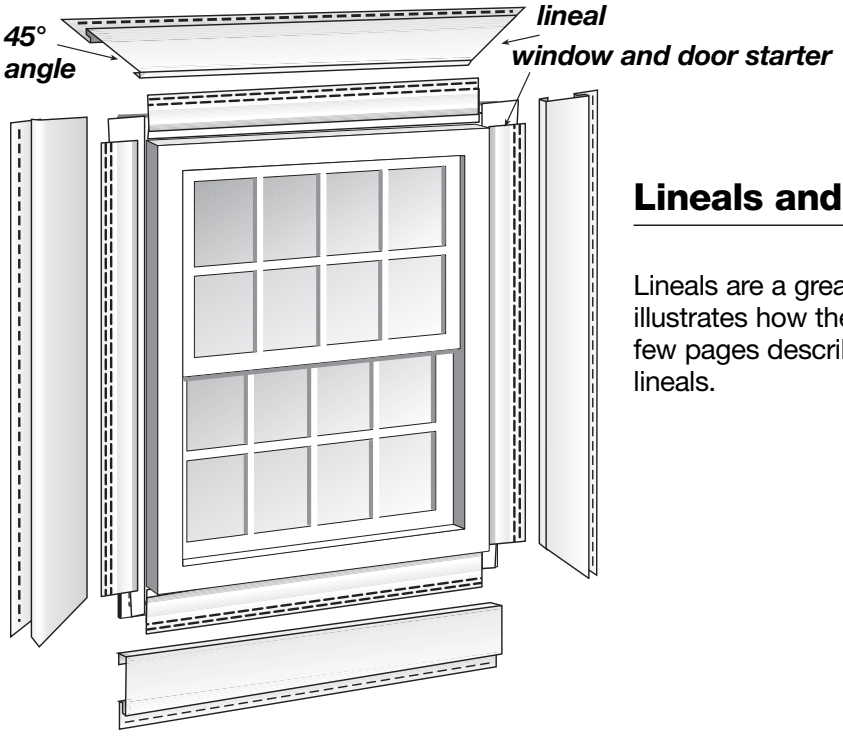
Measure side J-channels, adding the width of both the top and bottom J-channels. Miter cut (45° angle) the lower ends of both side J-channels. Notch the channel, position and nail.

Mark the top J-channel so its ends extend beyond the casing to the width of the side J-channels. Miter cut (45° angle) the ends. Cut and bend water tabs. Position and nail.

Drip Clip

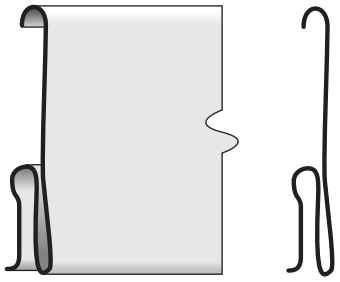
The Drip-Clip is an easy and effective way to create rain tabs for lineals. To install Drip-Clips, miter lineals with a power miter box/chop saw, etc. Apply Drip-Clip to the top cut lineal. Slide the vertical lineal behind the vertical edge of the clip to complete the application.





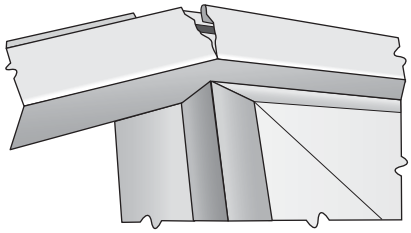
Lineals and Decorative Trim

Lineals are a great way to accessorize a window. This page illustrates how the lineal pieces fit around a window. The next few pages describe the step-by-step process for installing the lineals.

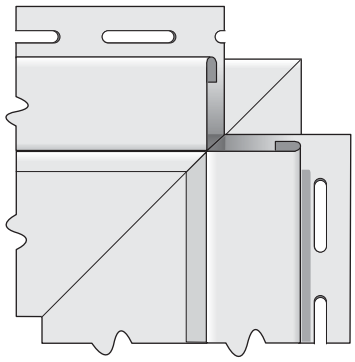


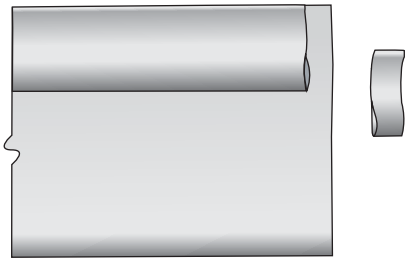
3-1/2" Snap-on Lineal Application around Windows and Doors

This application works only on 1"-faced J-channel .

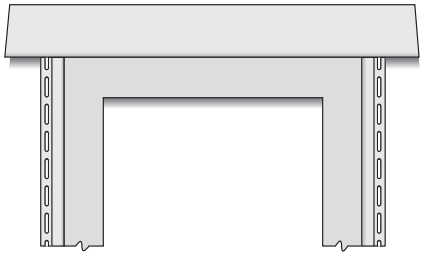


The installation of J-channel for snap-on lineals is the same procedure as installing lineal starter strip. Measure the openings and cut the J-channel 1/2" less than your measurement. Install the J-channel around the opening, centering the J-channel so that each end of the J-channel is 1/4" from the opening. Nail the J-channel every 8" to 10".



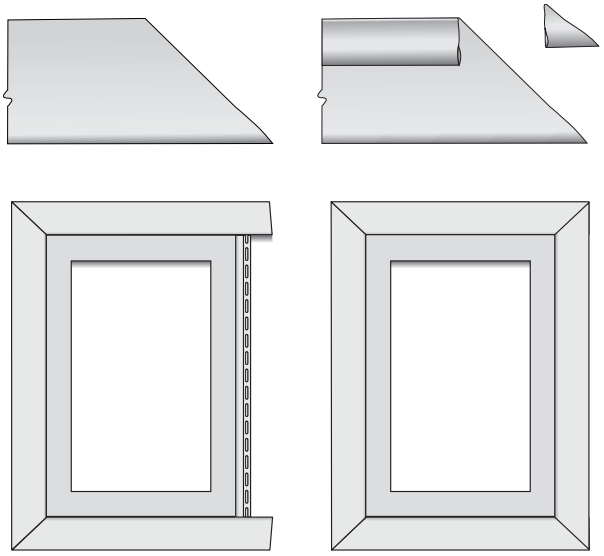


Lineal application around windows
Measure the top of the casing and add 7" (3-1/2" extra for each side). After the piece is cut to length, flip it over and cut 3/8" off the locking leg as shown.



Snap over the J-channel as shown.

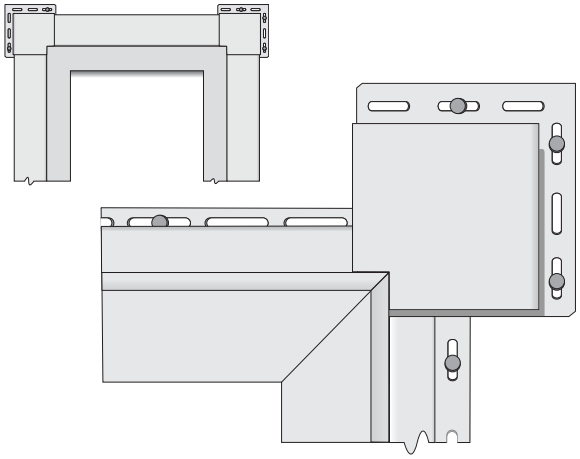
Repeat for the bottom of the casing.



Measure the side casing and add 7". Use a triangle to create a 45˚ angle or measure 3-1/2" in from the edge of the part. Use snips or a miter saw to remove this portion.

Flip the part over and remove the locking leg as shown. This should be done to both ends.

Snap the lineal over the J-channel as shown. Use the same measurements for both sides.



Corner blocks

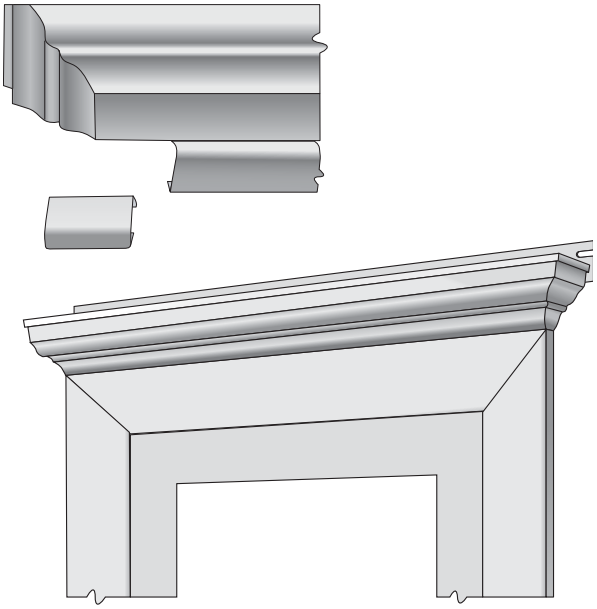
Install J-channel around the perimeter of the window opening. J-channel should be the same length as the casing.

Install corner blocks on all 4 corners as shown. Leave blocks loose until the lineals are installed.

Cut the lineals the same length as the window casing.

Start with one end and angle a lineal into the corner block and snap it over the J-channel.

Continue installing lineals around the window.



Crown molding

Crown molding will fit over the top of the lineal system.

Install J-channel and lineals around window casing.

Measure the top lineal and add 2-1/2". This will be the crown molding length.

Insert crown molding cap into the crown molding and trace the shape. Trim off the marked line.

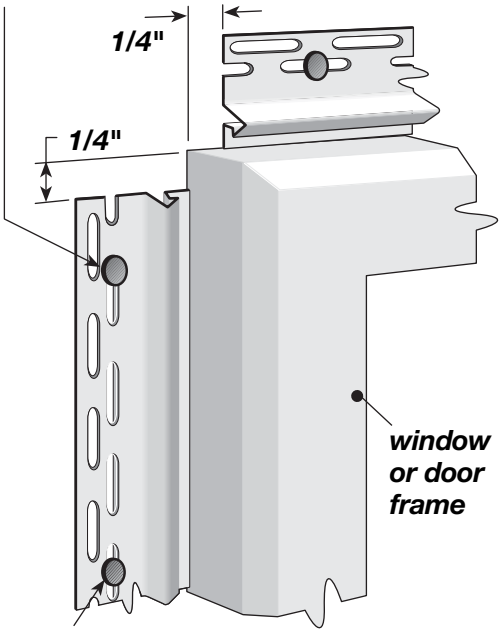
The crown molding requires a tab 2" long – cut from the pocket receiver as shown.

Cut the crown molding cap in half and apply the halves with a bead of caulk.

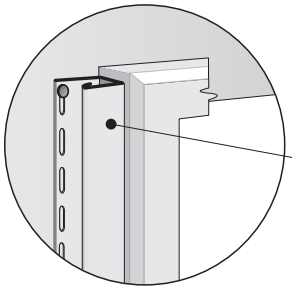
Insert the crown molding into the top of the lineal as shown.

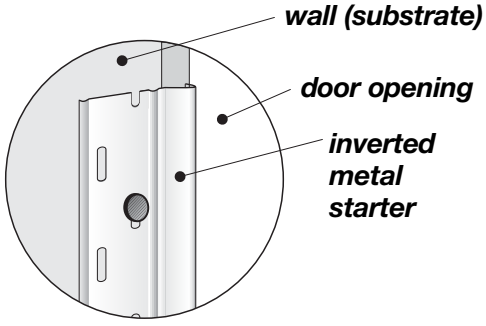
measure window and subtract 1/2" (leaving 1/4" per side as shown)

vertical pieces: place the uppermost nail in top of nail slot (still loose nailed)



remaining vertical nails and all horizontal nails: place in center of slots





Lineal Starter Application for Windows and Door Surrounds

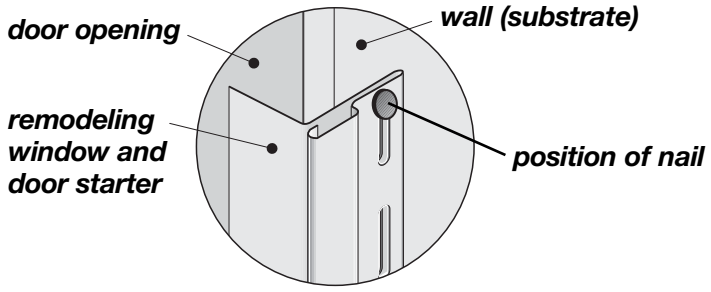
When securing window and corner starter strips, outside corner pieces (OSCP), inside corner pieces (ISCP), one piece corners, lineals – basically, any vertically mounted siding product – always place the top nail (or staple) first, and in a manner that allows the part to hang from it without dropping. This promotes movement downward only, a must for a good corner joint. **This is the only time you should not center a nail (or staple)**. It is also preferred to use the nail slots closest to the locking area (when using product with double nail slots).

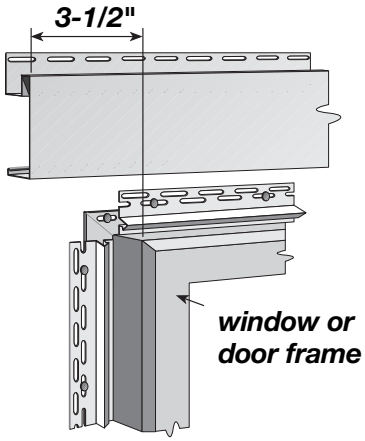
Remember to place the nails for the horizontal pieces in the center of the nailing slots as shown. Space nails 8"-10" apart.

Using a 1/2" J-channel as a starter for lineals.

NOTE: ***The lineals must be slid on from either end of the J-channel (the lineal will not snap over the J-channel as with a New Construction Starter Strip), or by pulling the J-channel away from the window slightly and zipping the lineal into place.***

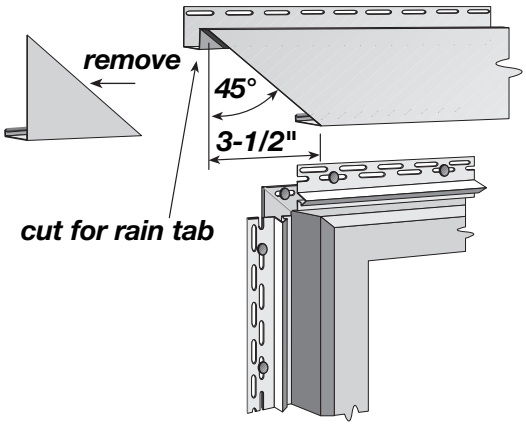
If the opening has no framework, such as a brick molding, use the metal starter (illustrated below left), or the Remodeling Window and Door Starter (illustrated below) in place of the New Construction Window and Door Starter Strip shown above. The lineal's locking leg will fit behind the aluminum starter and into the receiving pocket of the Remodeling Window and Door Starter.





Lineal Application around Windows

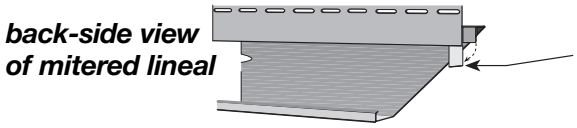
Measure the top of the opening and add 7" (3-1/2" extra for each side) if the side lineals are also 3-1/2". Add 10" total if using 5" lineals.



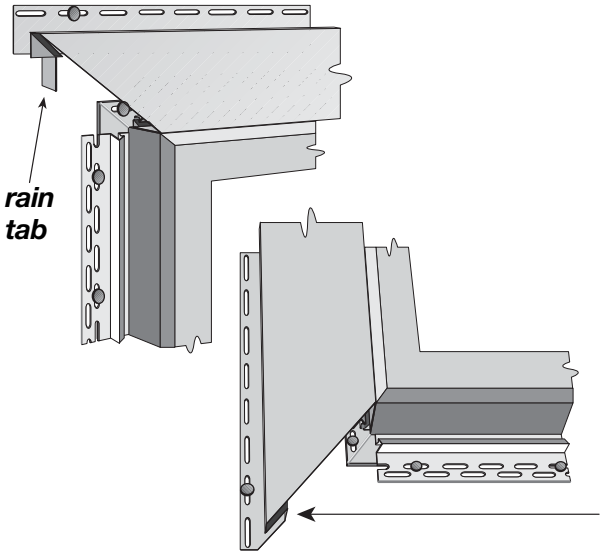
Use a triangle to create a 45° angle or measure 3-1/2" in from the locking leg.

NOTE: ***The nail flange is always the longest part of a surrounding miter.***

Use snips to remove the part as shown.

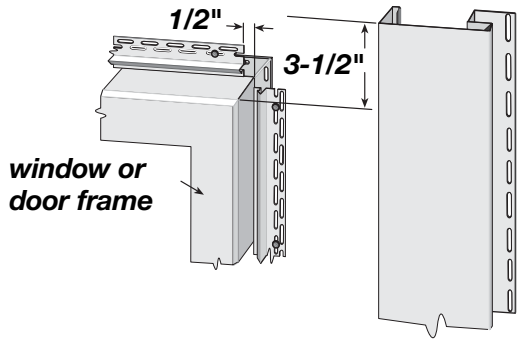


Cut a 3/4" rain tab (as shown)



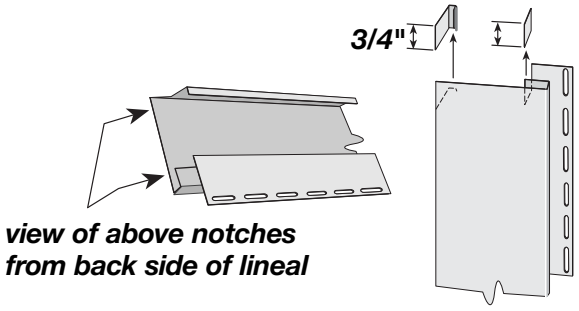
Completed top lineal snapped into the previously attached starter strip.

NOTE: ***The bottom miter of side lineals has the same cut as both ends of a top lineal; however, a rain tab is not required.***

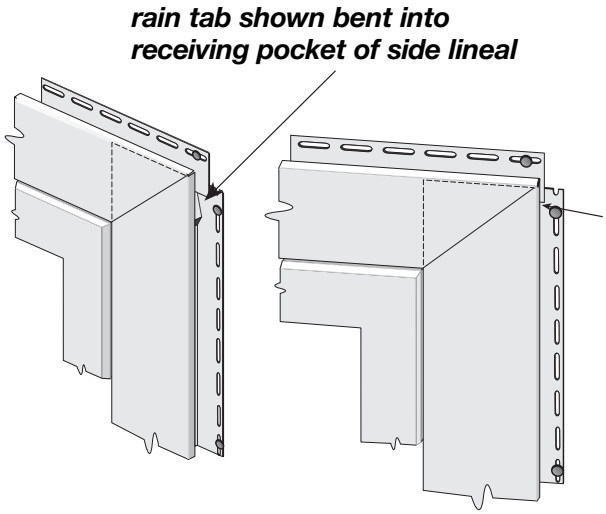


Measure the height of the window or door. Add 7" (for the 3-1/2" header and bottom lineal) and cut.

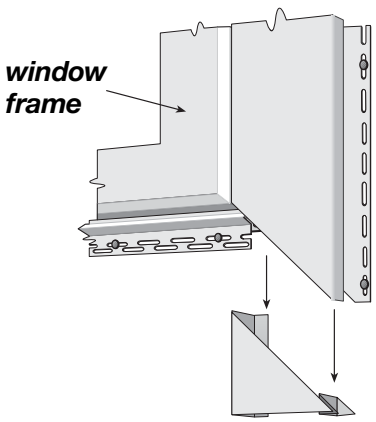
NOTE: ***Add additional material if using 5" lineals.***



Trim a minimum of 3/4" from the top end of the side lineals.

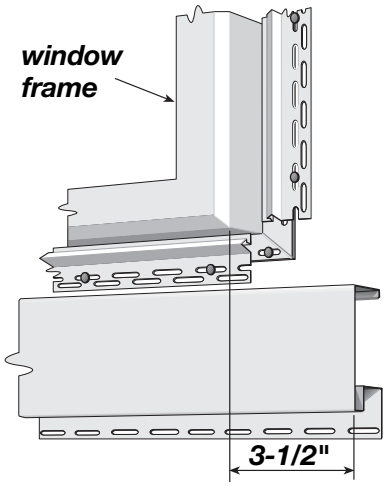


Snap the side lineals into place, making sure the rain tabs of the top lineal are bent down into the receiving pocket of the side lineals.

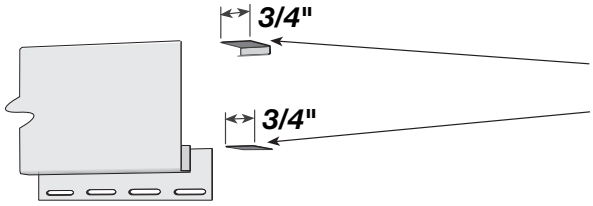


If the lineal surrounds a window frame, the bottom corner requires a 45° miter as done previously for the top lineal.

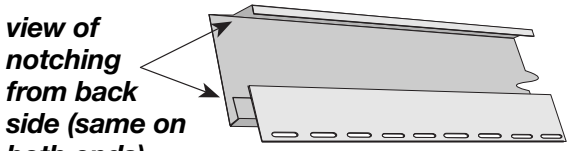
NOTE: ***Rain tabs are not required here.***



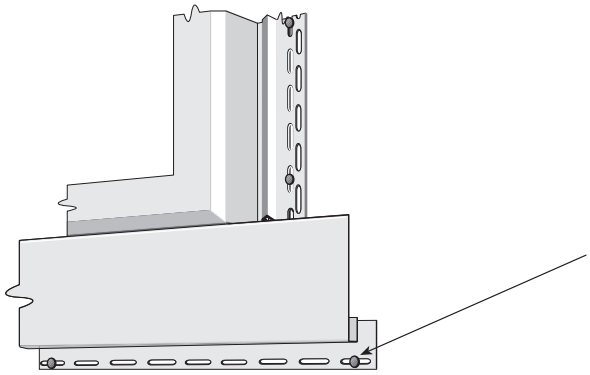
Measure the bottom of the opening and add 7" (3-1/2" extra for each side) if the side lineals are also 3-1/2". Add 10" total if using 5" lineals.



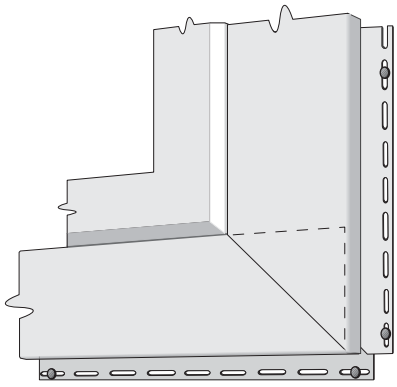
Trim 3/4" tabs from the lineal as shown.



view of notching from back side (same on both ends)



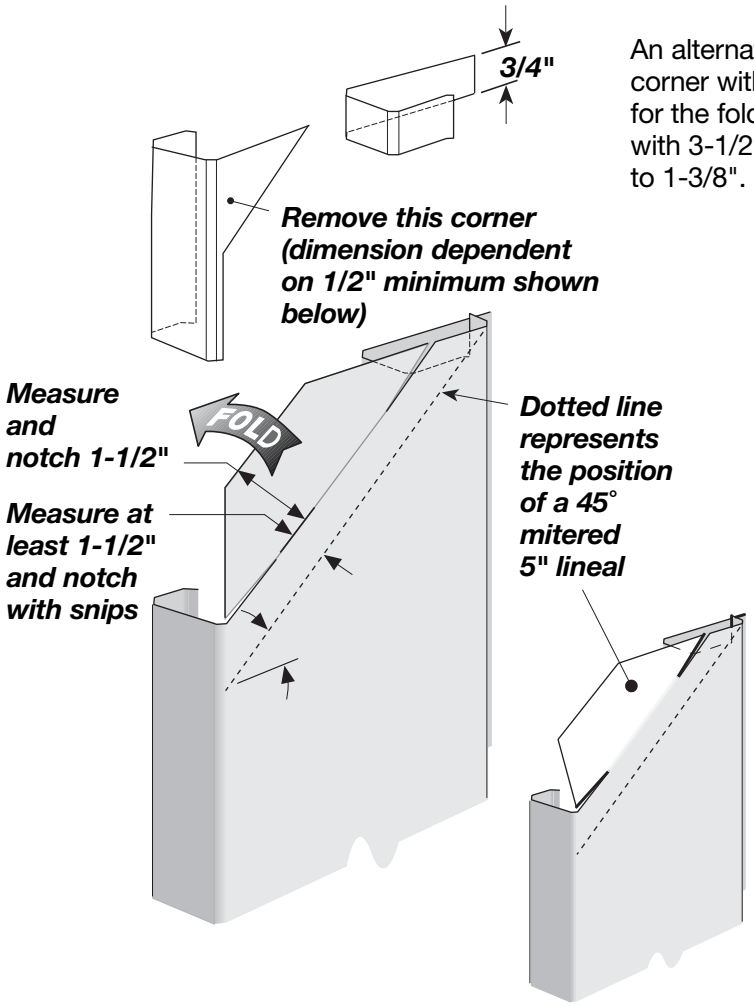
Snap the lineal in place and secure by nailing (or stapling) it through center of the nail slots.

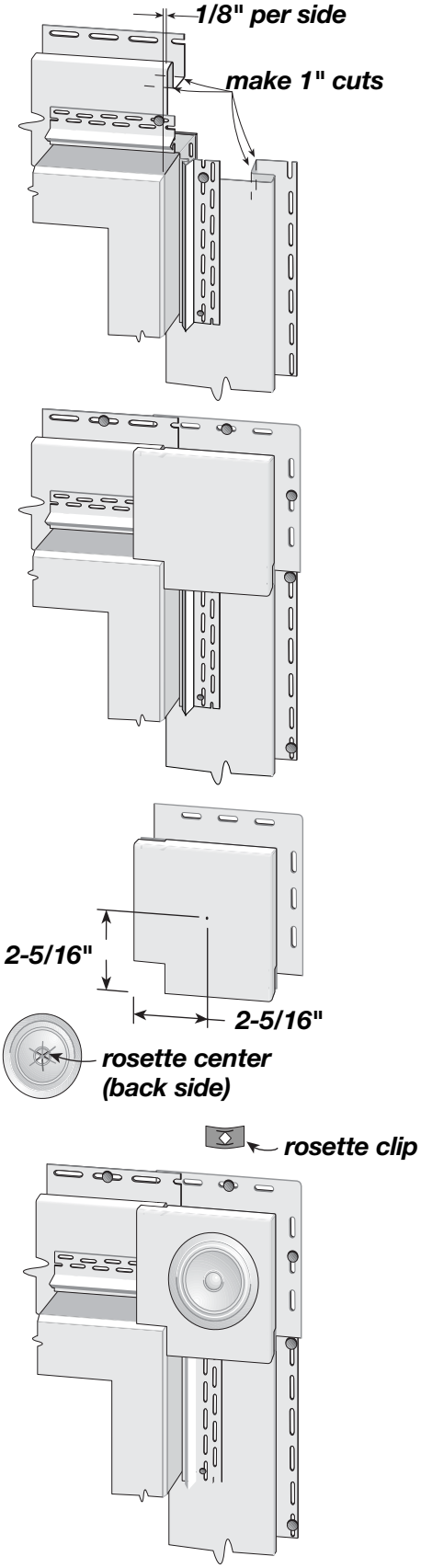


finished assembly with side lineal

Blind Miter

An alternative to a standard blind miter offers support to the corner without adding material. The measurements shown for the fold are for a 5" lineal. The same method can be used with 3-1/2" lineals, but the fold would be changed from 1-1/2" to 1-3/8".





Corner Blocks

Corner Block

Install starter as previously described. Measure and cut the side lineals to the exact size of the window or door opening. Cut the top and bottom lineals 1/4" longer than the window.

Using vinyl snips, make two 1" long cuts in the pocket areas on both sides of each lineal. These cuts allow the lineals to connect with the corner block and help provide proper drainage.

NOTE: ***It may be helpful to hold off securing the lineals until the corner block is in place.***

Position the corner block by inserting the top lineal into the corner block's receiving area – making sure the lineal's pocket is inside that of the corner block.

Position the vertical (side) lineal into the corner block by inserting the pocket of the corner cover into the pocket of the lineal. This will ensure proper drainage.

Corner Block with Rosette

Locate the small dimple on the back side of the block's face or measure 2-5/16" as shown and mark.

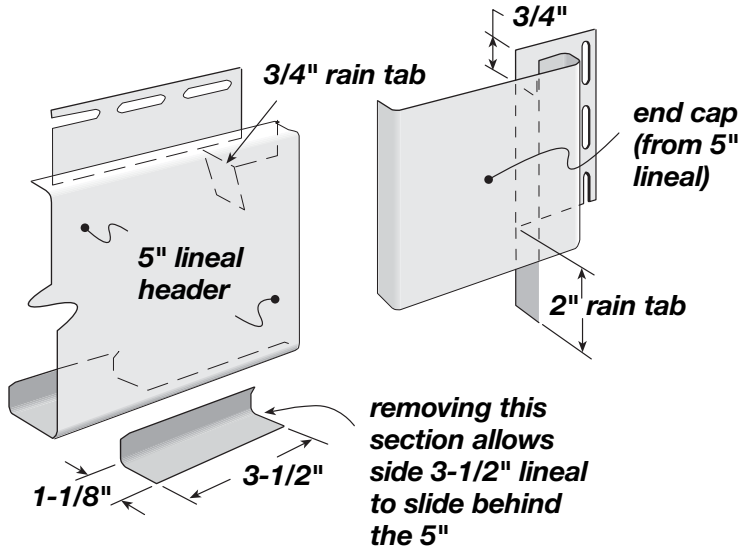
Drill or punch a 3/32" - 1/8" diameter hole through the face of the block – the hole must not be larger than 1/8".

NOTE: ***Check the back side of the block for this location – marked by "+."***

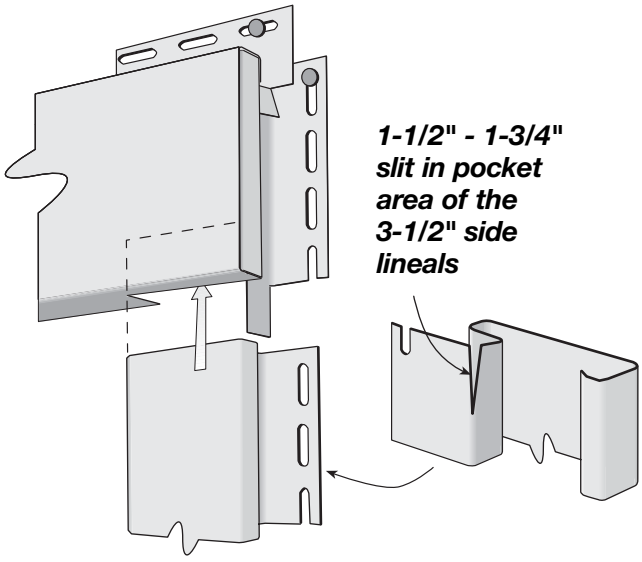
Apply the rosette clip from the backside. If desired, a small amount of caulk can be applied over the hole prior to applying the rosette.

5" Square Header with Endcaps over 3-1/2" Lineals Sides and Bottoms

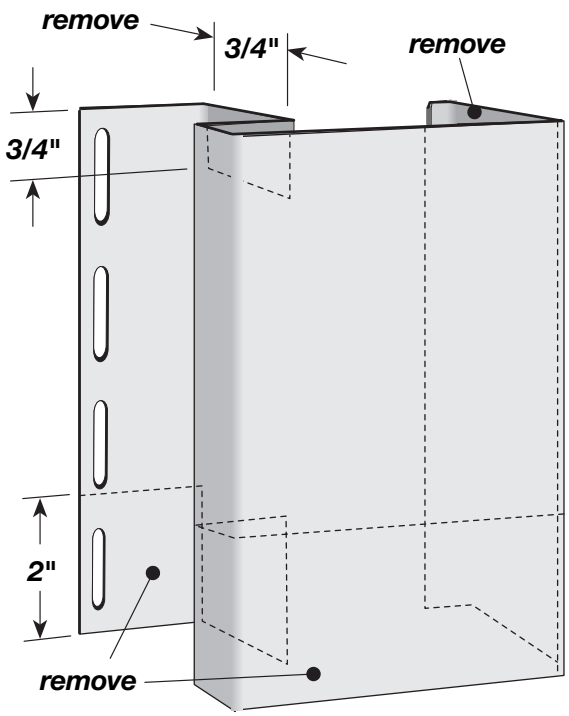
Assemble 5" header and cap. The side 3-1/2" lineals should extend approximately 1" inside the header assembly.



Finish the corner by sliding the 3-1/2" side lineals behind the header, making sure the 2" rain tab on the end cap extends into the receiving area of the side lineals.



NOTE: *If using crown molding, see page 50.*

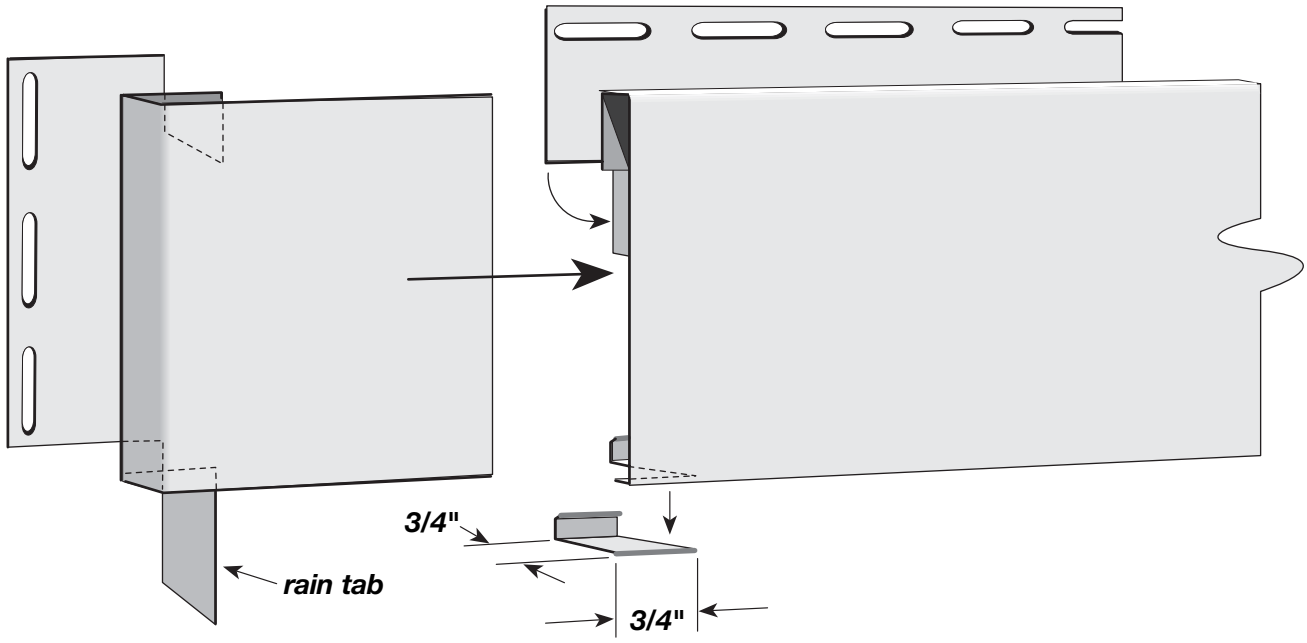


Creating End Caps for 5" Lineals

To create the header, first cut a 7" piece of 5" lineal. Measure and trim as shown.

The resulting piece fits into the end of the 5" lineal.

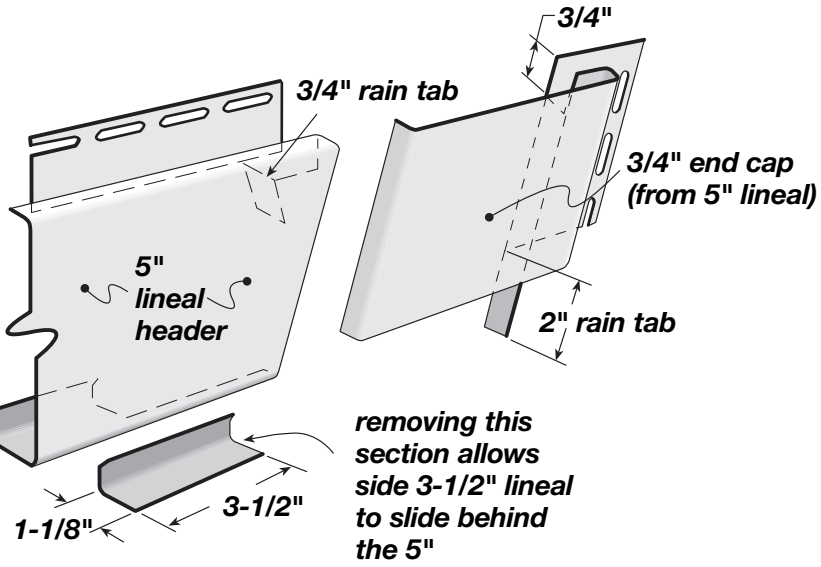
The ends of the 5" lineal also need trimming to receive the end caps. Create a 3/4" rain tab in the pocket area and trim off a 3/4" tab from the bottom.

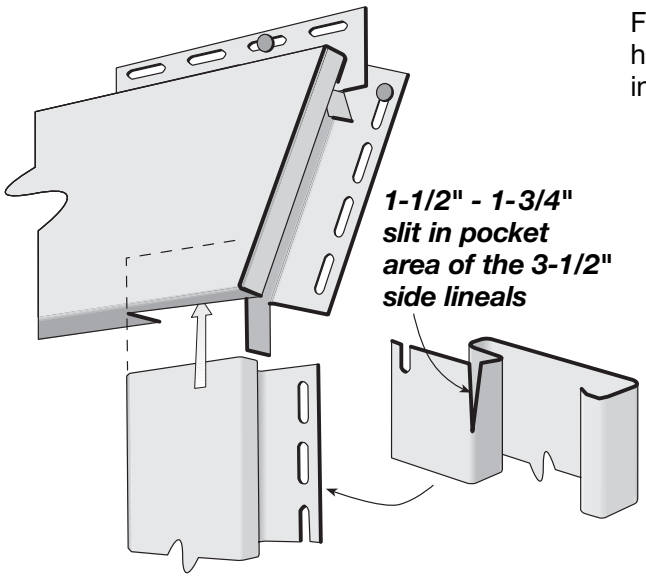


NOTE: ***To make end caps for 3-1/2" lineals, simply start with a 5-1/2" piece and remove the 3/4" and 2" areas as shown for the 5" end caps.***

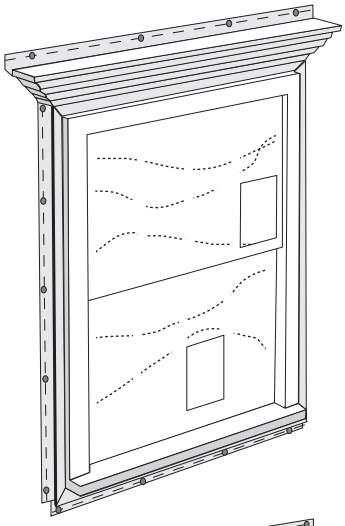
5" Angled Header with End Caps over 3-1/2" Lineals Sides and Bottoms

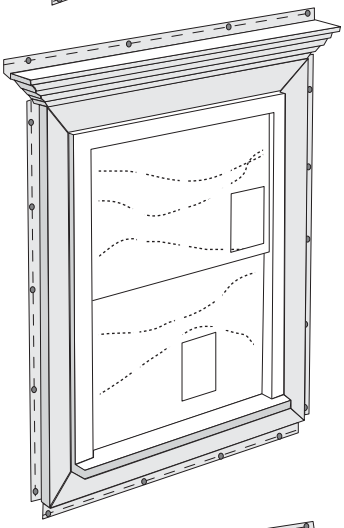
Assemble the 5" header and cap. The side 3-1/2" lineals should extend approximately 1" inside the header assembly.

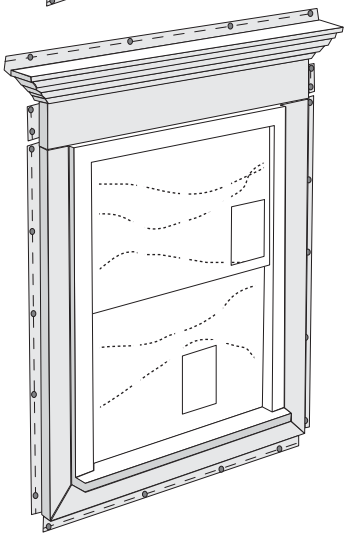




Finish the corner by sliding the 3-1/2" side lineals behind the header, making sure the 2" rain tab on the end cap extends into the receiving area of the side lineals.







Crown Molding Treatment Options

Option 1 (page 51)

- Crown molding
- (2) crown molding end caps
- 3/4" pocket J-channel header and surround

Other options are possible with the crown molding: For example, use 3-1/2" lineals vertically and at the window base along with a J-channel and crown molding header. The only requirement for using the crown molding is having receiving channels 3/4" wide.

Option 2 (page 51)

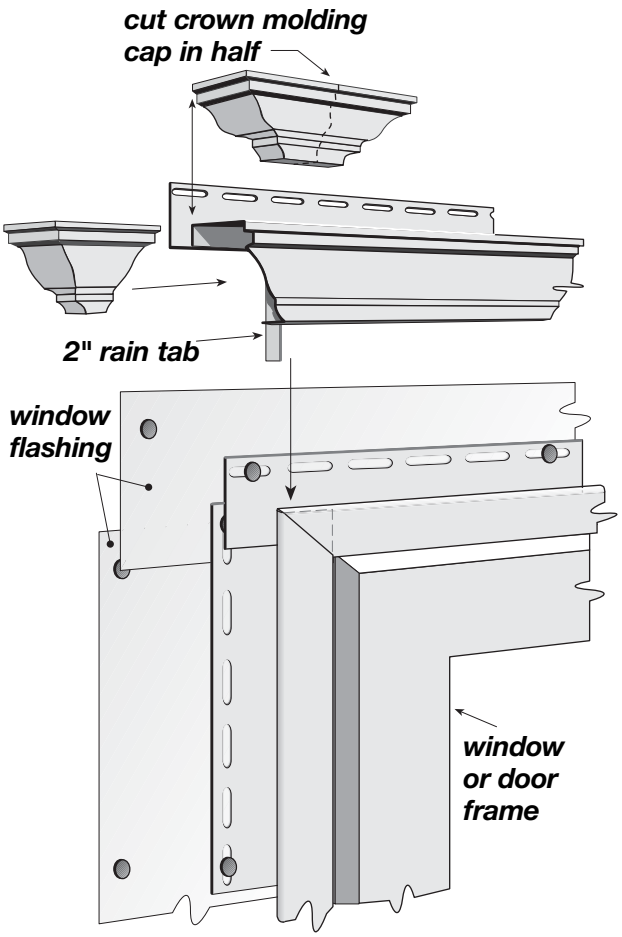
- Crown molding
- (2) crown molding end caps
- 3-1/2" lineal header
- 3-1/2" lineal surrounds

NOTE: ***Corner blocks/rosettes can be used to join lineals at the corner.***

Option 3 (page 52)

- Crown molding
- (2) crown molding end caps
- 5" lineal header
- (2) 5" header end caps
- 3-1/2" lineal surrounds

Instructions for each option are on pages 51-53.



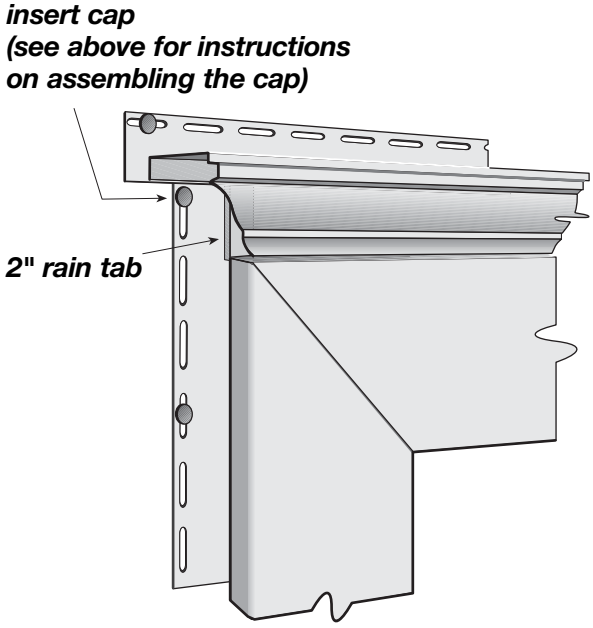
Crown Molding and Cap for 3/4" Pocket J-Channel

To use crown molding with 3/4" pocket J-channels, measure the length of the completed J-channel surround and add 2-1/2" (the crown molding overlaps the J-channels by 1-1/4" per side).

Insert crown molding cap into the crown molding and trace the tip shape. Trim as shown.

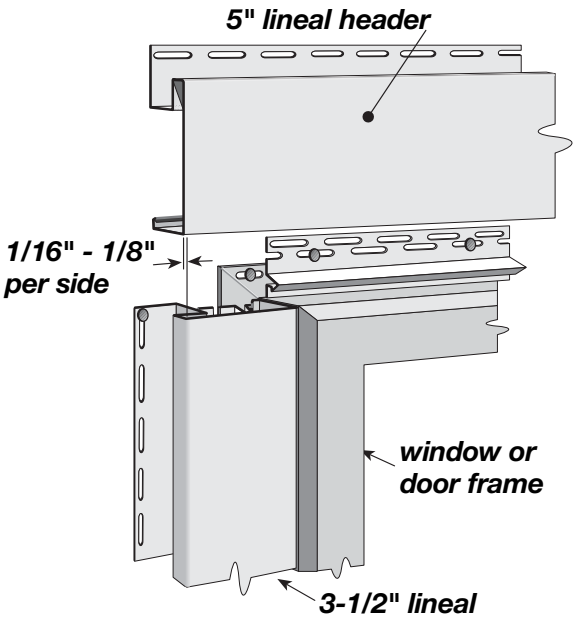
Insert 1/2 of the crown molding cap into each end of the crown molding lineal. Secure the crown molding with a bead of caulk.

Miter or square cut the J-channel (mitered corner shown). Insert the 3/4" wide rain tab into the receiving channel of the side J-channel.



Crown Molding with 3-1/2" Lineal Surround

In addition to J-channel, crown moldings can also be used with lineals. The next two pages demonstrate how crown molding can be used with various lineal configurations. Above all, remember that before applying accessories and siding, make certain the substrate is watertight. In order to be properly protected from precipitation, the substrate may need to be properly flashed to shed water to the exterior. The siding alone is not meant to be a watertight barrier.



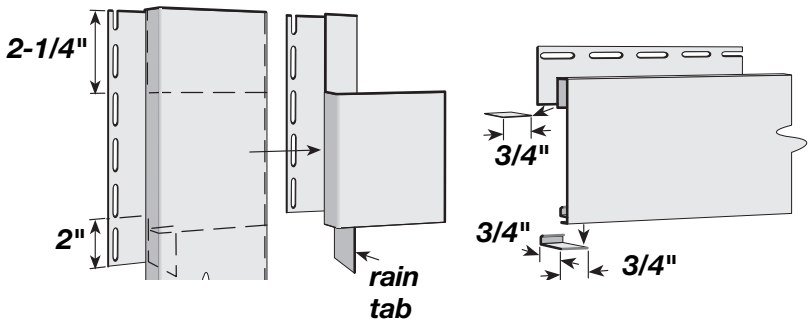
Crown Molding with Cap for 5" Header Lineal

Crown molding with 5" header and 3-1/2" surrounds.

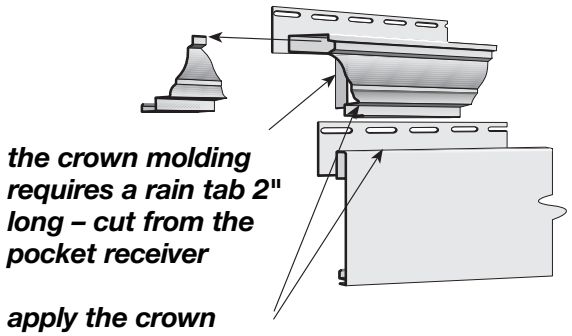
Determine the header length by measuring from the outside of both side lineals and adding 1/16"-1/8" per side for overlap.

To cut the crown molding, add 2-1/2" to the previously determined header length (1-1/4" added per side).

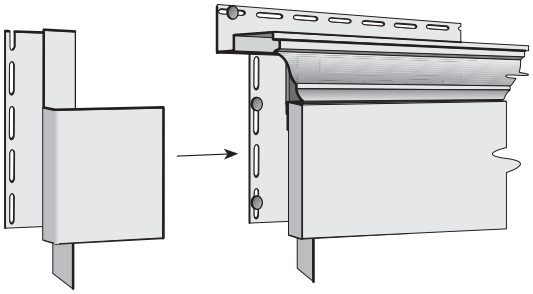
To create the header end cap, cut a 9-1/4" piece of 5" lineal and trim as shown.



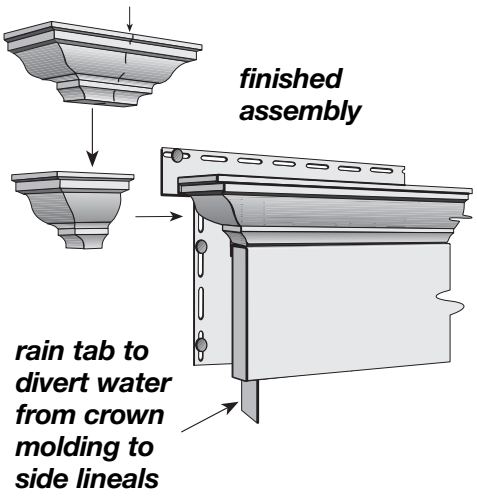
Notch both ends of the header as shown.



Insert a crown molding cap into the crown molding and trace the shape. Trim as shown.

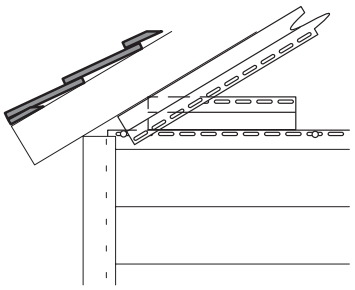


Insert the header cap.



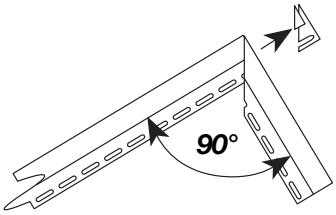
Cut the crown molding cap in half. Apply each half to the end of the crown molding and secure it with a bead of caulk.

Installing J-Channel as Gable End Trim

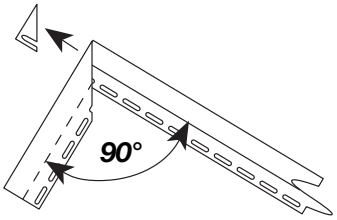


Install J-channel to receive siding at gable ends, as shown in illustration. To create a clean, professional look, follow these steps:

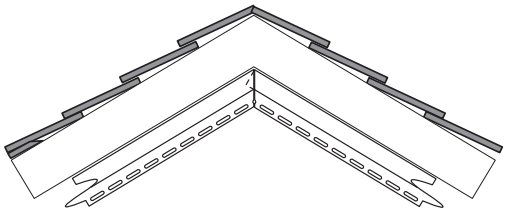
To create an angle template, hold a piece of J-channel against the slope while transferring the angle to another J-channel with a pencil.



Next, transfer angle of template to the end of a length of J-channel. Be sure to extend line onto nail flange. Cut away channel face and nail flange.

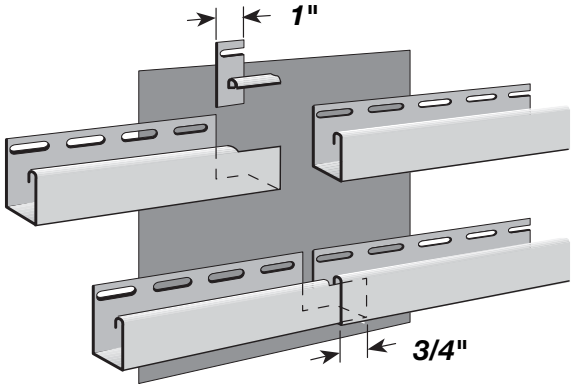


Turn pattern over and transfer opposite angle to second J-channel, being sure to extend line onto nail flange. Cut away nail flange and return lip, but do not cut J-channel face.



Insert the full-faced J-channel into the mitered J-channel. If the nail flange or return lips butt and prevent a tight fit, trim off additional material from the second J-channel.

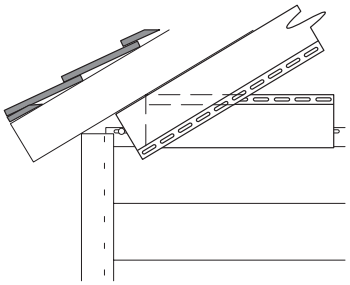
NOTE: ***For a more decorative appearance, you also can use 3-1/2" or 5" lineals to trim gable ends (see next page for details).***



To splice the J-channel, follow these steps:
Cut out a 1" section of the nailing flange and face return as shown.

Install inverted J-channel along the top of the wall, under the eave. Here again, leave a 1/4" gap between J-channel and cornerposts. Overlap J-channels 3/4" to allow for expansion. When positioning the upper J-channel, be sure to allow for expansion of the siding panel. In most cases, position the J-channel at a point equal to the length of the panel plus 5/8" (1/4" for upper expansion and 3/8" for lower expansion).

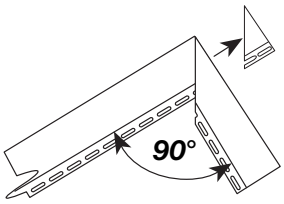
Using Lineals as Gable Trim



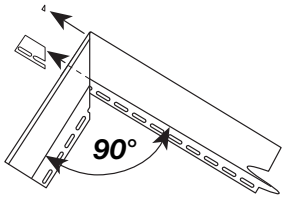
You can give gable end trim a more dramatic appearance by using 3-1/2" or 5" lineals instead of J-channel.

To install the lineals:

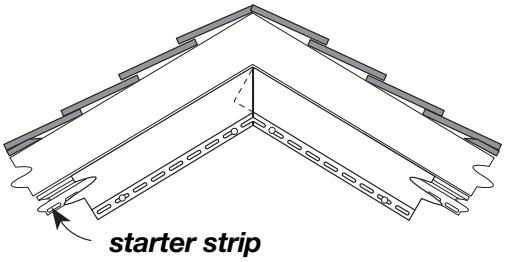
Make a pattern duplicating the gable slope. To create an angle template, lock a piece of lineal into the previous course of siding or other gable starter. Hold a second piece of lineal or starter against the slope and transfer the angle with a pencil.



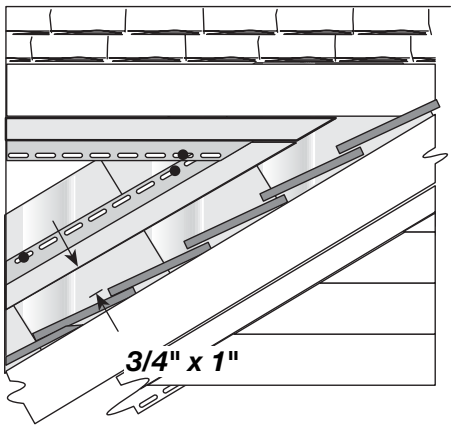
Transfer the angle of the template to the end of a length of lineal. Cut away lineal face and nail flange.



Turn pattern over and transfer opposite angle to second lineal. Trim nail flange and receiving channel from opposite lineal to this line. Do not cut lineal face.



Insert the full-faced lineal into the mitered lineal. If the nail flange or return lips butt and prevent a tight fit, trim off additional material from the second lineal.

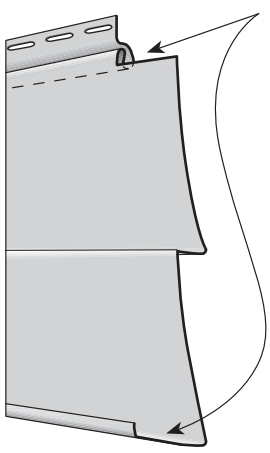


Installing trim at roof line

To prevent water infiltration along the intersection of roof and wall, install flashing before installing J-channel. At points where vinyl siding and accessories will meet at a roof line – such as areas where a gable dormer or a second story side wall intersect with the roof – it's best to position the J-channel so it's 3/4" to 1" away from the roof line. Placing the J-channel directly on the roof line would subject it to a build-up of heat, which could result in excessive expansion.

NOTE: ***If you use more than one length of J-channel to span a wall surface, be sure to overlap J-channels 3/4".***

SECTION 5 – Installing Horizontal Siding



Cutting Panels

To cut panels to size, follow these procedures:

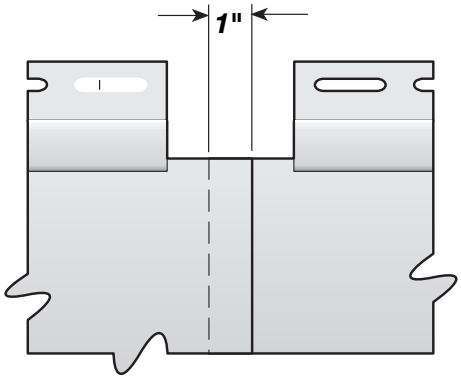
Cross cuts

For a precise cut, use a power circular saw equipped with a sharp, fine-tooth plywood blade. For best results, reverse blade direction.

Cut one or two panels at a time, carefully advancing the saw through the vinyl. A rule of thumb: The lower the temperature, the slower the feed rate.

Panels can also be cut with snips. Use a square to mark cut line. Start cut at top lock and continue to bottom of panel.

NOTE: ***Whenever you cross cut a panel to be used in an overlap area, you also have to duplicate the factory notch at the cut end.***



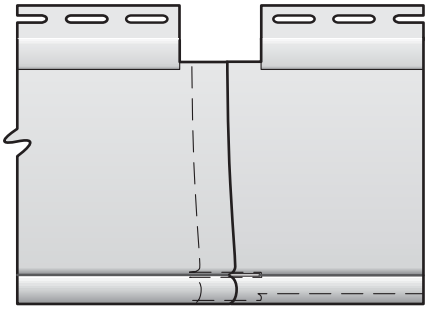
Rip cuts

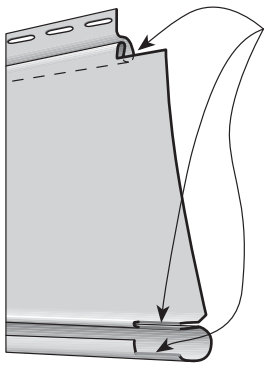
Use a utility knife to score panel along cut line. Bend panel back and forth along score line until it snaps apart cleanly.

Use a combination of tin snips and utility knife to cut panels to fit around windows and doors.

Overlapping Panels

When lapping horizontal panels, overlap the ends 1".



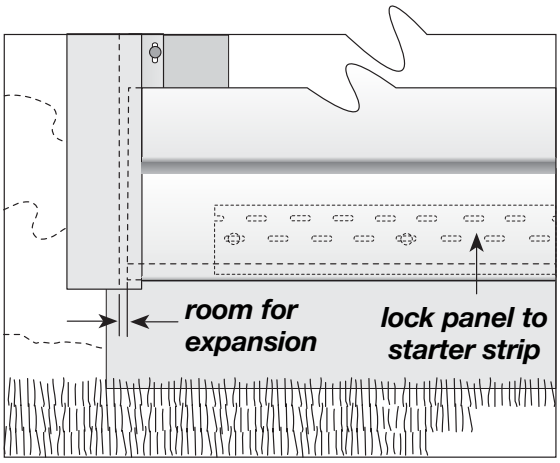


NOTE: ***The Carolina Beaded panel is factory-notched in three places. For best results, overlap panels using factory notched ends only. If a panel must be cut on site, insert cut ends into receiving channels in cornerposts or J-channel. If this isn't possible, create an exact duplicate of notches using aviation or tin snips.***

Preparing Wall Surfaces

The key to successful vinyl siding application is proper preparation of the nailing surface. It is essential that you work over a smooth nailing surface. The more level and even the wall surface, the better the finished installation will look.

The steps involved in preparation differ for new homes and old, so choose the instructions (page 21) that pertain to your project.



Installing the First Course

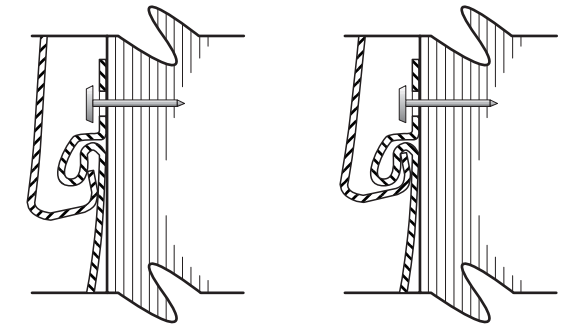
It's important to work with care and planning as you install siding panels. This is especially true when you're installing the first course of siding. (See pages 24-25 for fastening methods.)

For best results, follow these guidelines:

The key to creating a visually attractive installation is to **lap away** from areas where people normally walk or gather. For example, on the front wall, work from the corners to the entrance door (so overlaps face away from door). On side walls, work from the rear corners toward the front. This approach minimizes the effect of lapping and produces the best appearance. Keep lap appearance in mind throughout installation.

NOTE: ***Lap appearance is also improved when you avoid using panels less than 3' long.***

Slide the first panel into the cornerpost recess. Leave room for expansion (see page 26).



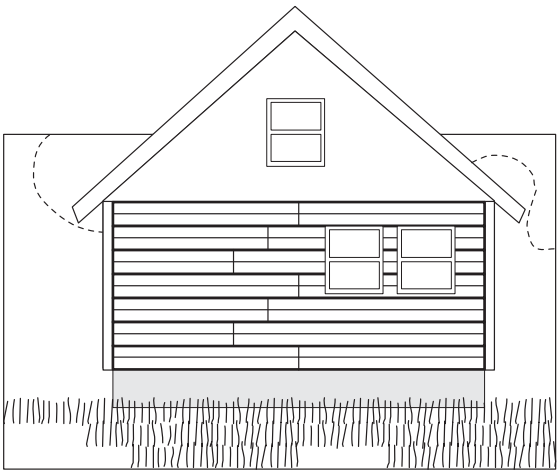
lock not fully engaged ***lock fully engaged***

Hook the bottom lock of the panel into the interlock bead of the starter strip by applying upward pressure.

Before nailing, double check to make certain you've locked the panel along its entire length. A slight upward pressure may be required to snap the interlock securely. Don't force the lock too tightly, however. You may distort your laps. Also, make certain the panel can slide freely. Nail properly. Start at the center of the panel and work out.

Install the remaining starter course panels, overlapping panel ends 1". The last nail should be at least 4" from the end of the panel to allow for a neat lap.

Remember to leave room for expansion when fitting panels into remaining inside and outside cornerposts.



Installing remaining courses

To ensure best appearance, position the laps to avoid unsightly joint patterns. The illustration at left shows a well-planned staggering of panel joints. Follow these guidelines:

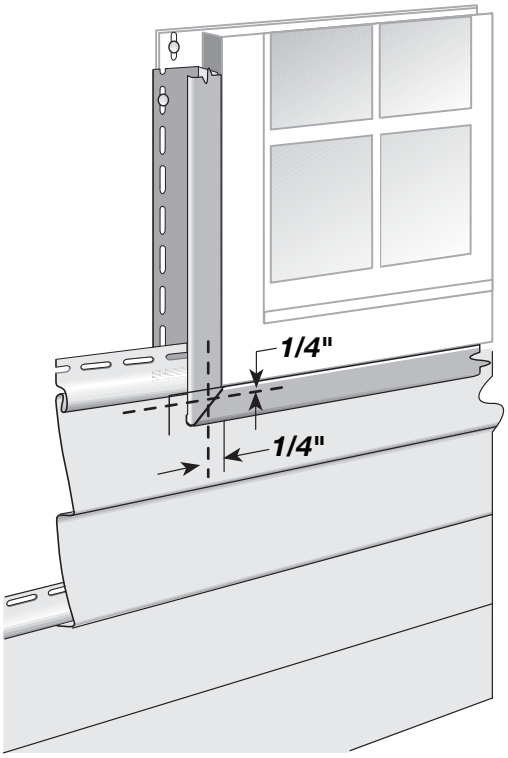
Separate joints by at least two courses.

Avoid joints above and below windows.

Leave at least 3' separating joints on successive courses.

Use short cutoff lengths for fitting at narrow openings between windows.

Follow the planned pattern when applying the next courses of siding.



Fitting under windows

You'll probably have to cut panels to fit under windows. To make this task easier, plan panel positioning as shown at left so a single panel extends beyond both sides of window opening. Follow these steps to measure and cut panels:

Hold panel in place and mark the width of window opening. Add 1/4"-3/8" to both ends to allow for expansion. The resulting marks show location of vertical cuts. Extend marks onto panel using a square.

Create a template for horizontal cut using small piece of scrap siding. Lock this piece into the lower panel and mark 1/4" below sill height. This provides clearance for undersill trim. Repeat procedure on opposite side of window. (You can't assume windows will be perfectly level.)

Transfer marks from template to panel. Connect marks using straightedge.

Cut panel, using tin snips to make vertical cuts and a utility knife to make horizontal cut.

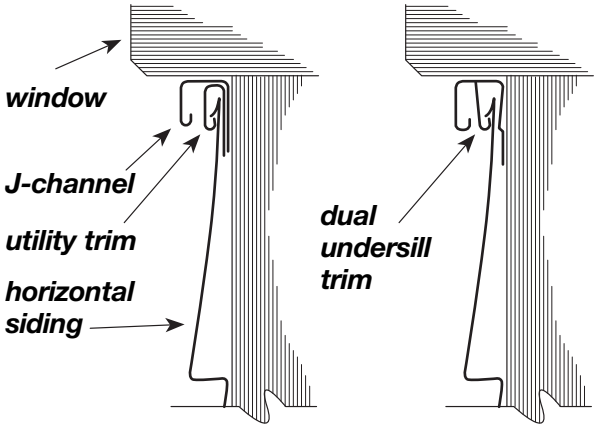
Install panel

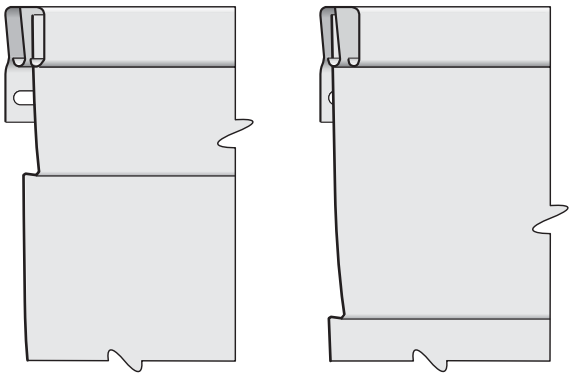
If necessary to maintain slope angle, install furring under sill as described on page 22.

NOTE: ***You can eliminate this step by using dual undersill trim. This trim has two receiving channels. Use the inner channel if you've cut the siding panel near the locking edge. Use the outer channel if the cut has been made near the butt edge.***

Use a snap lock punch to raise tab faces on the outside of the panel. Punch out tab every 6".

Push horizontal edge of cut into utility trim. Slide vertical edges of cut into J-channels at window sides. Make certain the installed panel locks into the panel below.





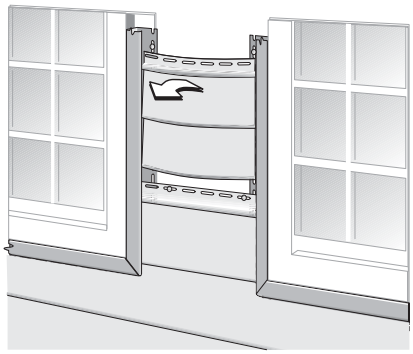
installing trimmed panels with dual undersill trim

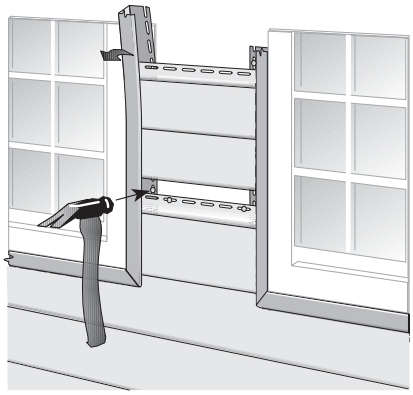
Fitting over windows and doors

The procedure for cutting panels for installation over windows and doors is similar to that explained earlier.

If necessary to maintain slope angle, install furring above window or door as explained on page 22.

Drop panel into position, making certain it fits into undersill trim and J-channel at top and J-channels at sides. Interlock with the siding panels below.

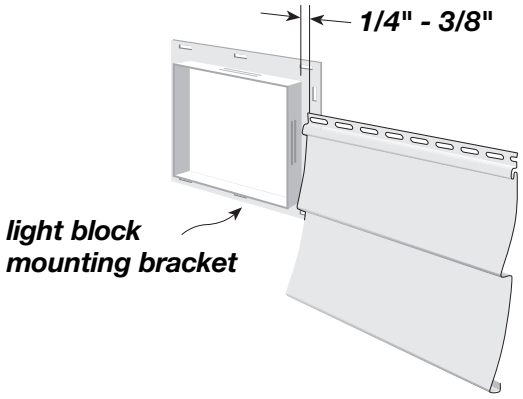




Fitting at narrow openings between windows

To simplify installation in areas such as that shown in the illustration, install J-channels on both sides of opening. Bow the panel toward you and slip into channel.

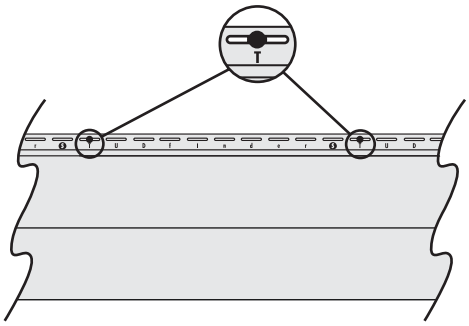
If the area is very narrow, leave one J-channel unnailed except at lowest point (as shown). Bend this channel out slightly to insert panel. When panel is in place and nailed, nail J-channel immediately above panel and repeat procedure. Be sure to leave adequate tolerances for expansion and contraction.



Fitting at light blocks

When cutting panels to fit at a light block, be sure to allow for expansion.

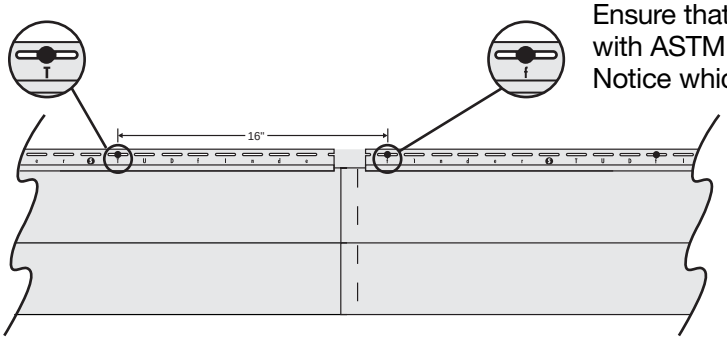
STUDfinder Installation System



The STUDfinder™ Installation System combines precisely engineered nail slot locations with graphics to create a siding panel that is designed to help ensure quick, accurate and secure installation.

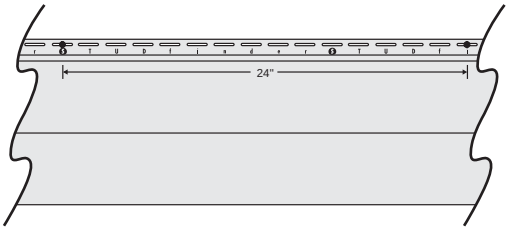
The nail slots are positioned 16" and 24" on center to allow for alignment with studs, with STUDfinder graphics centered directly under each nail slot.

Locate the first stud and fasten in the center of the nail slot. Ensure that nail/staple penetration is at least 3/4" to comply with ASTM D4756 (specification for vinyl siding installation). Notice which STUDfinder letter appears below the slot.



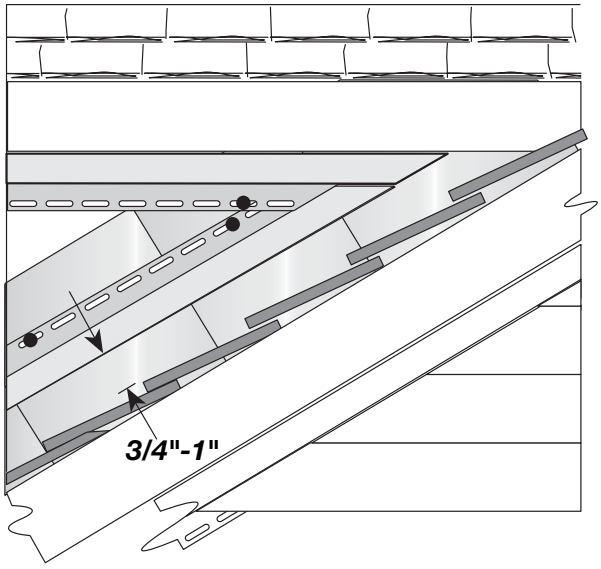
Go to the next repeat of the letter to find the next stud. For example, if your first stud is at “T,” so will the succeeding studs in 16" o.c. applications (every 10th slot).

When you apply the next panel, adjust the overlap, as necessary, to line up with studs and repeat the steps above.



24" o.c. applications will use a similar pattern of letters, with 2 letters that repeat every-other stud (every 15th slot). For example, if the first stud is located at “S,” then the next will be at “I,” then “S,” then “I,” etc.

NOTE: ***The overlap must be a minimum of 1" - 1-1/2". The overlapping panels may not use the same letter as your initial panel.***



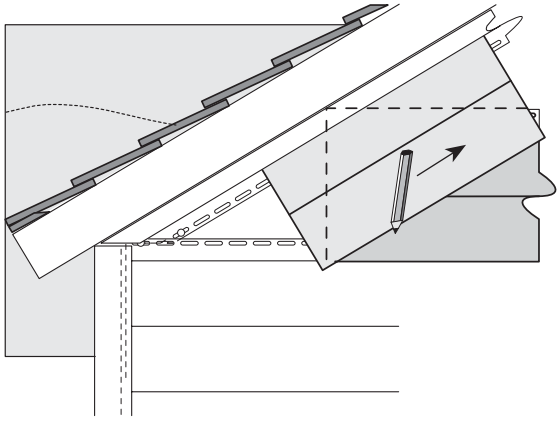
Installing trim at roof line

To prevent water infiltration along the intersection of roof and wall, install flashing before installing J-channel. At points where vinyl siding and accessories will meet at a roof line – such as areas where a gable dormer or a second-story side wall intersect with the roof – it's best to position the J-channel so it's 3/4" to 1" away from the roof line. Placing the J-channel directly on the roof line would subject it to a buildup of heat, which could result in excessive expansion.

NOTE: ***If you use more than one length of J-channel to span a wall surface, be sure to overlap J-channels 3/4".***

Do not butt J-channel pieces end-to-end.

Fitting at gable ends



Make a pattern duplicating gable slope. Use this pattern to guide cutting of panels to fit gable ends.

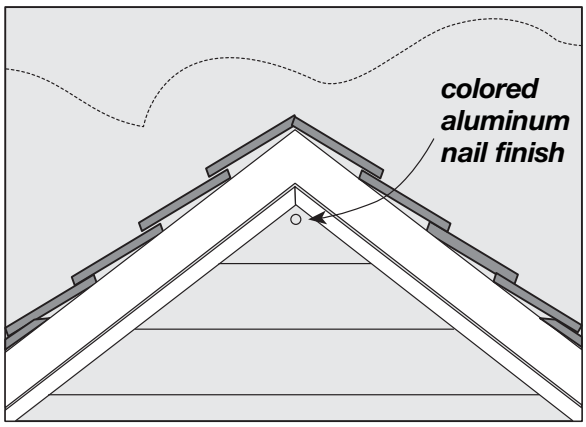
To make pattern:

Lock short piece of siding into panel gable starter course as shown in illustration.

Hold second piece of siding against J-channel at slope. Run pencil along edge of this piece, transferring slope angle to first piece of siding.

Cut along line using power saw or tin snips. Use resulting pattern to mark siding panels before cutting.

NOTE: ***Double-check angle on pattern at every course. If necessary, cut new pattern.***



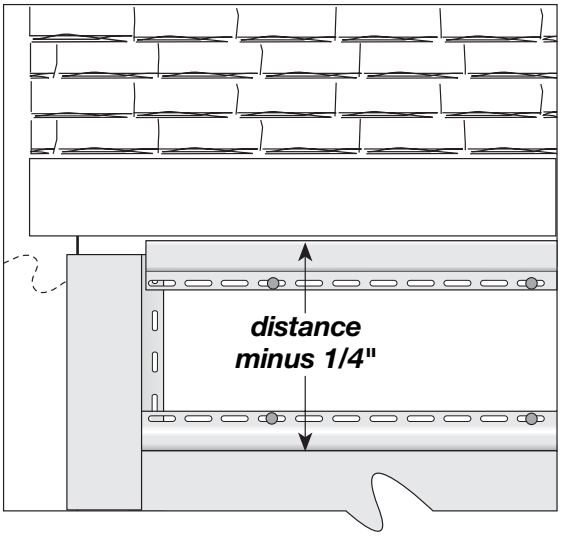
To install cut panels:

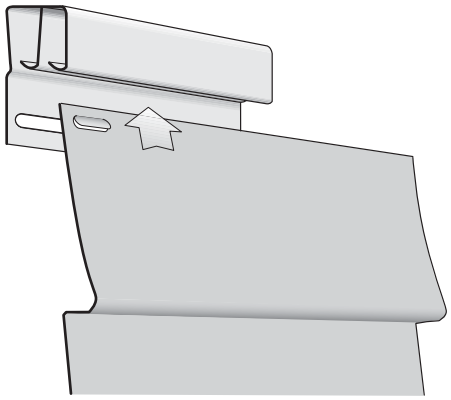
Slip angled end of panel into J-channel along gable edge. Leave space for expansion.

Interlock with siding panel below.

If necessary to securely fasten the last panel at gable peak, face nail as shown in illustration. This is the only place you will face nail. Use 1-1/4" to 1-1/2" aluminum nail with painted head.

NOTE: ***Do not cover louvers in gables.***





Fitting under soffit

When you reach the last course of siding, you will probably have to rip cut panels lengthwise to fit under soffit.

NOTE: ***If necessary to ensure proper panel slope angle, make certain to furr out this area.***

To cut and install this last course:

Install J-channel and undersill trim or dual undersill.

Measure from soffit to base of upper lock on previous course of panels. Subtract 1/4". Mark this dimension on the panel to be cut, taking measurement from bottom edge of panel. For a more precise cut, repeat this procedure at several other points along the span to be covered by the panel.

Using a square or straightedge, draw a pencil line connecting these points. Then score along line with utility knife. Bend panel back and forth until it snaps.

Use snap lock punch to create tabs on outside face of panel, 1/4" below cut edge. Space tabs every 6".

To install, lock bottom of cut panel into panel below. Push top edge into J-channel or undersill trim. Tabs will catch in trim and hold panel firmly in place.

NOTE: ***Since you will not nail this last course, it is important that the tabs fit properly in the trim to provide support while allowing movement for expansion.***

Completion

Attaching objects to siding

All external products (downspouts, shutters, and lights, for example) are attached to walls after you've applied the vinyl siding.

NOTE: ***All external fixtures must be attached to a solid backing (such as 3/4" exterior grade plywood) to provide a secure mounting surface. Never attach a fixture directly to vinyl siding.***

When installing external products, you must allow for expansion and contraction of siding.

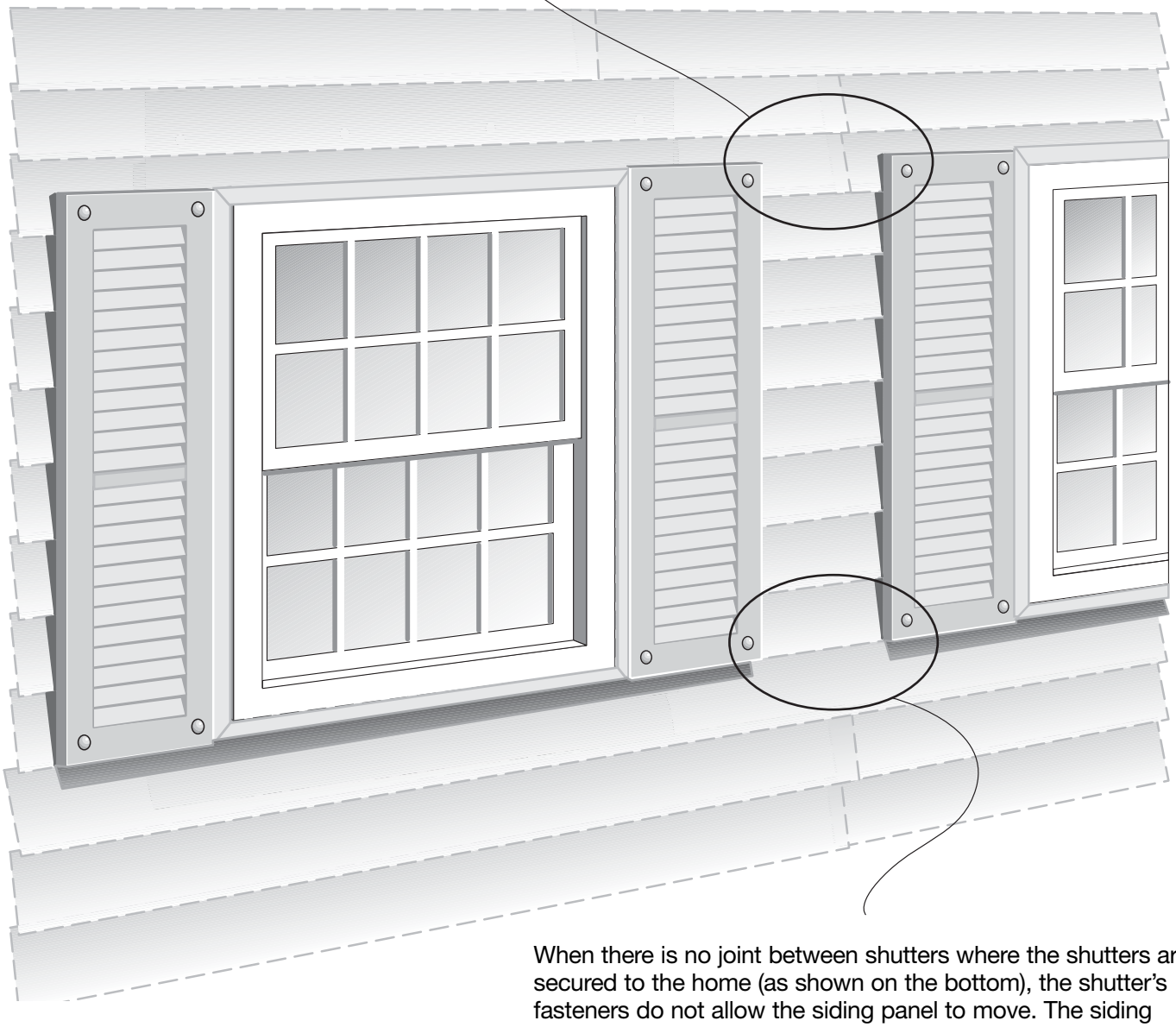
You can allow for this movement in two ways:

The most convenient way to attach light fixtures is with light blocks. Because they contain receiving channels to hold siding panels, light blocks provide a simple way to allow for expansion.

When attaching other fixtures, drill holes in the siding three times the diameter of screws, bolts, or nails being used to fasten objects. This provides adequate clearance so siding **can move freely underneath attached objects.** When attaching objects, do not fasten tightly. It is also recommended that you apply caulk around the screws.

Shutter Installation

The ideal application (shown at the top) has a joint between the two shutters where the shutters are secured to the home. In this way, the siding panel is not “hard nailed” between the two shutters and the siding is allowed free movement.



When there is no joint between shutters where the shutters are secured to the home (as shown on the bottom), the shutter’s fasteners do not allow the siding panel to move. The siding panel then fails to perform because it cannot expand or contract with the temperature changes.

Enlarge the hole in the siding for securing the shutter – the hole clearance should be approximately 1/8". If possible, stagger the screws securing the shutter so that they do not line up on the same panel. It is also a good idea to apply caulk around the screws.