



# SHORT VERSION

## INSTALLATION INSTRUCTIONS FOR DECK and T-RAIL RAILING

More complete installation instructions are available on [www.certainteed.com](http://www.certainteed.com).

### BEFORE YOU BEGIN

Make sure you have all the pieces you need to complete the job. Separate your flat and stair pieces to avoid using the wrong ones.

#### TOOLS REQUIRED FOR INSTALLATION

- 2" hole saw
- Carbide tipped multi-purpose blade
- Carpenter's pencil
- Chop (mitre) saw
- Circular saw
- Drill bits
  - 1/2" (wood post support)
  - 1/2" masonry (concrete post support)
  - 3/16" (rail plate)
  - 1/8" (post cap)
  - 1/4" (end cover fastener)
  - 3/4" spade (fascia plug)
- Drop cloth
- Level
- Power Drill
- Safety glasses
- Screwdrivers
  - Phillips and slotted
- Square
- Tape rule
- Wood clamps
- Wrenches (sockets)
  - 3/4" (post support)
  - 7/16" (E-Z Set bracket)
  - 3/8" (rail plate)

#### OPTIONAL TOOLS

- Bevel guide
- Chalk line
- File
- Jigsaw/Hacksaw
- Post Router Template Kit\*
- Rotary hammer drill
- Utility knife

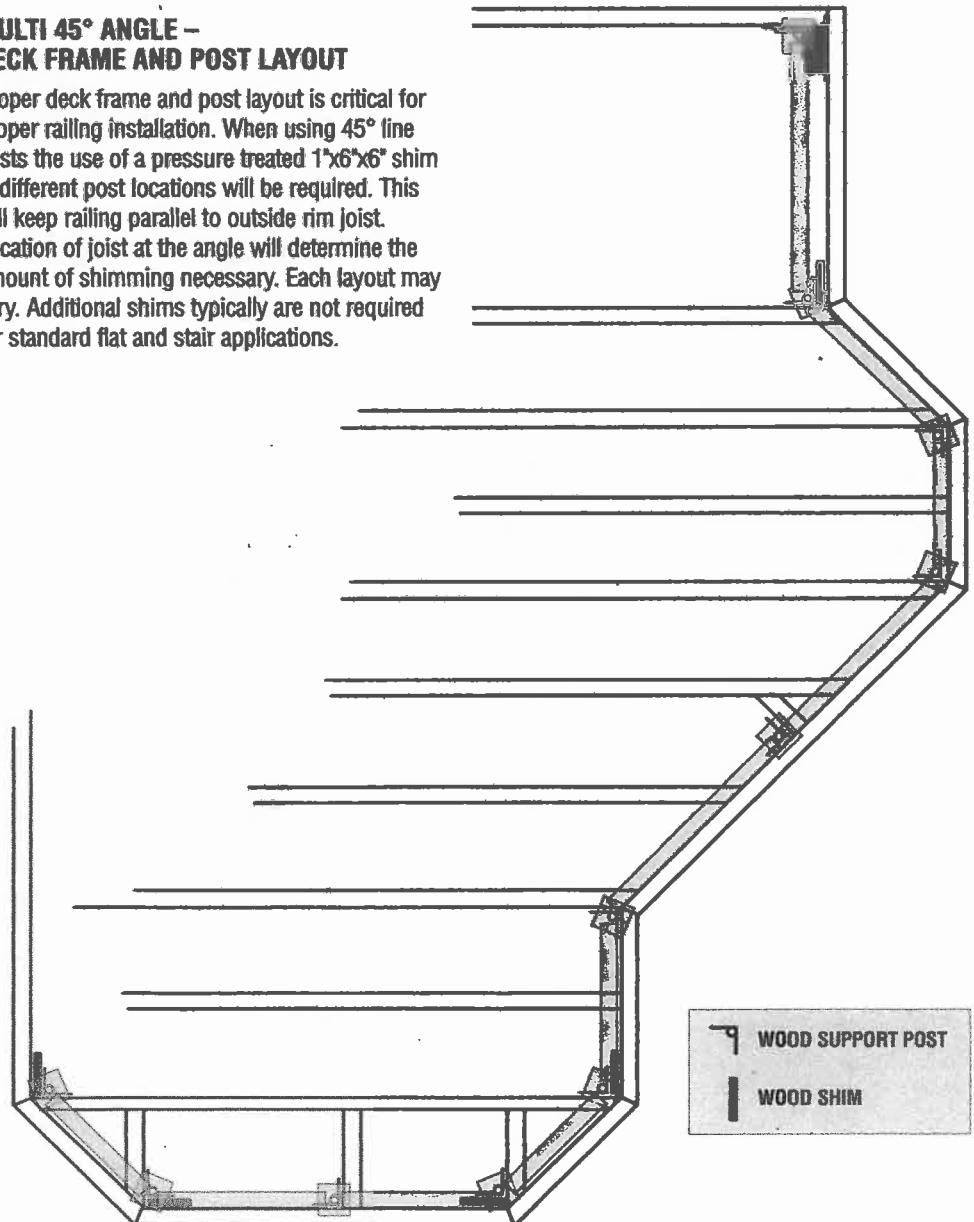
\*Available from CertainTeed

#### PRODUCT INFORMATION

	Baluster Size	Flat Baluster Spacing	Section Width (Nominal)	Rail Dimensions	Color
T-Rail	1-1/4" x 1-1/4"	3-3/8"	72", 96" & 120"	3" x 3-1/2" x 71-1/2", 95-1/2" or 119-1/2" "T" Shaped Top Rail	White & Tan
T-Rail w/Glass	4-1/8" x 3/8"		72"	3" x 3-1/2" x 71-1/2"	White & Tan

#### MULTI 45° ANGLE – DECK FRAME AND POST LAYOUT

Proper deck frame and post layout is critical for proper railing installation. When using 45° line posts the use of a pressure treated 1"x6"x6" shim at different post locations will be required. This will keep railing parallel to outside rim joist. Location of joist at the angle will determine the amount of shimming necessary. Each layout may vary. Additional shims typically are not required for standard flat and stair applications.



#### IMPORTANT:

**Always wear safety glasses when cutting or drilling components.**

If your installation requires solutions different from those in this guide, please contact our installation support at 1-800-380-5323.

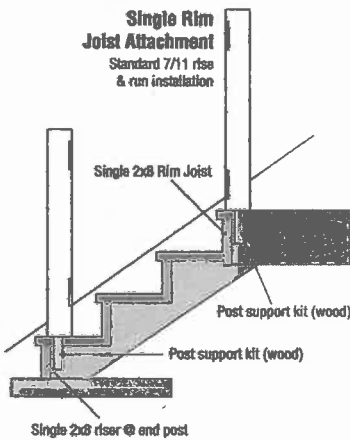
# 1. LOCATE AND INSTALL POST SUPPORTS

## STEP 1: LOCATE THE POST SUPPORTS

Locate and mark the post centers. For flat sections, posts should be installed no more than 72", 96" or 120" on center.

For stair sections, determine if the rail will reach the bottom of the steps (or the landing). Place a rail on the stringer (make sure the rail extends beyond the top post support). If the rail does not reach the end of the stairs, you will need to use an intermediate post (see chart below). Center the top stair post within 3-1/4" of the edge of the deck.

Railings can also be mounted to walls or structural columns with wall mount brackets.



### Post Center Spacing On Diagonal

- 6' Section Covers 68" at 32°
- 8' Section Covers 90" at 32°
- 10' Section Covers 117" at 32°
- 6' Section Covers 71" at 42°
- 8' Section Covers 96" at 42°

## STEP 2: CHECK THE SUBSTRUCTURE

Once you have laid out the location of the posts, check the substructure to make sure there are two surfaces available to mount the post support. For example, if you run along the length of a 12' deck and put a post in the middle, attach a bridge board in the middle of that run from the rim joist to the inner. Attach one side of the post support "L"-shaped bracket to the outside face; attach the other to the bridge.

## STEP 3: DETERMINE POST HEIGHT

Posts are supplied in two standard heights, 38" (3' railing) and 44" (3-1/2' railing). Stair post supports are purposely supplied longer than needed to accommodate various post positions.

## STEP 4: INSTALL POST SUPPORTS

### WOOD STRUCTURE

For all post supports, the top of the L-shaped plate must be LEVEL WITH THE TOP OF THE JOISTS. If you mount them at the bottom, the pipe may not extend far enough to attach the rail lock plate later in the installation.



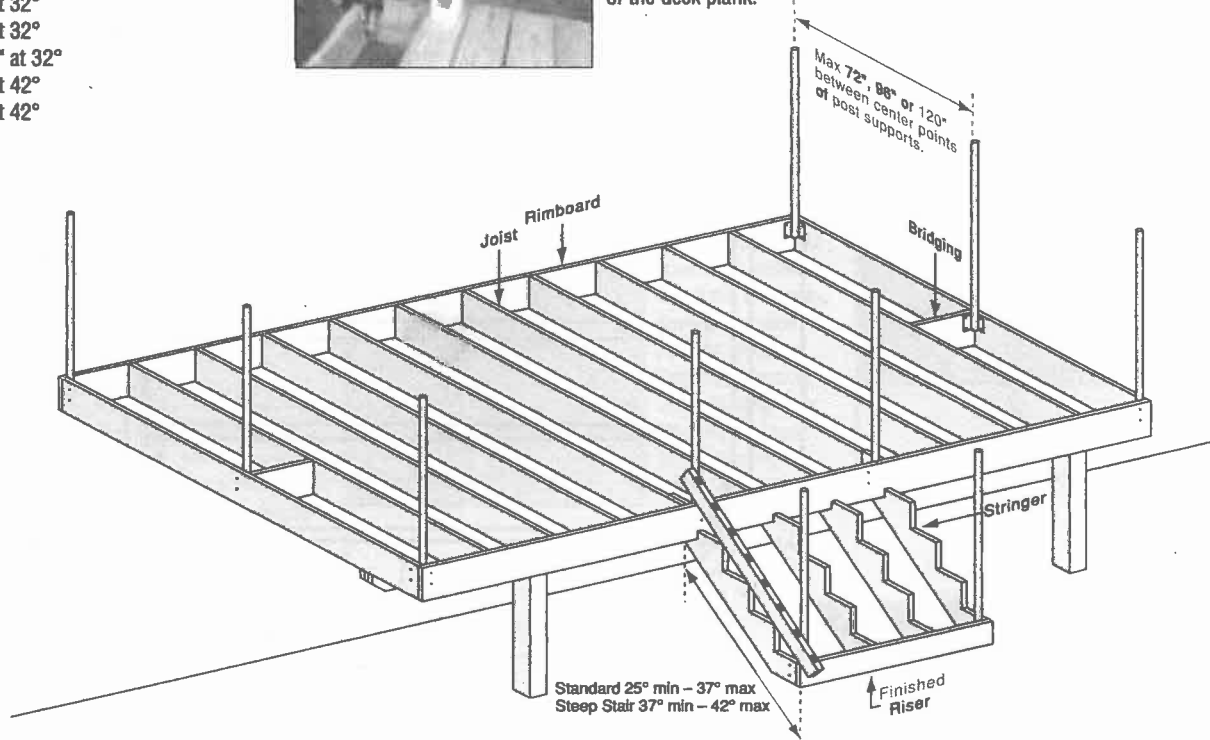
Clamp the post support in place. Make sure it's level. Check its height relative to the vinyl post. It must rise approximately 3/4" above the routed opening of the top rail. Remember to allow for the thickness of the deck plank.



Use the post support as a guide and drill four 1/2" holes through the joists. Insert all four fasteners. Tighten.



Recheck level; if the joists are not plumb, use a washer as a shim to level the post support. Install deck boards.

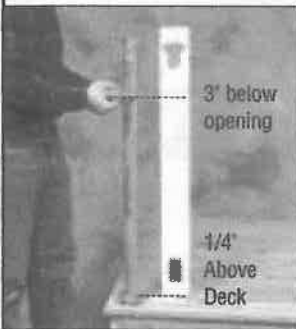


## 2. INSTALL RAILING SECTIONS

### APPLICATION TECHNIQUES

Begin the railing project by first installing the flat sections. Complete one section at a time, working your way away from the building. The post centers may vary slightly, so cut the rails **ONLY** for the section you are working on. Do not fasten the rail connector plates until the entire job (flat and stair sections) is installed.

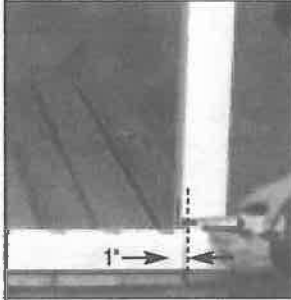
#### INSTALL E-Z SET BRACKETS



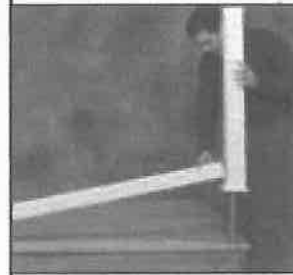
Assemble the E-Z Set brackets with the nuts and bolts provided. Stand the vinyl post up against the post support. Using the vinyl post as a guide, position one E-Z Set bracket 1/4" above the deck and the second 3" below the upper routed opening of

the vinyl post. Hand tighten the brackets on the post support.

#### INSTALL RAILING SECTIONS



Measure the rail by laying the bottom rail between the posts with both end holes clear of the posts and equally spaced. Mark the rail 1" longer than the points where the rail and post meet.



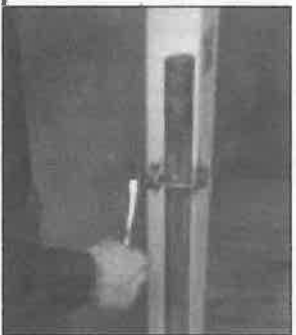
Lift the next post and insert the rail into opening. Push the post and rail down to the deck.



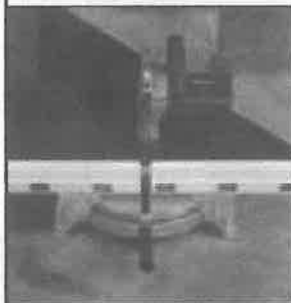
Push up on the first few balusters and insert them into the top rail holes. Push down on the top rail and position it next to the opening in the post. The rail may not easily push into the post opening until you have inserted several balusters.

### TIP:

*When measuring rails, mark one end of both top and bottom rails to keep them organized.*

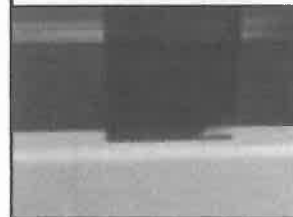


Pressing the post against the side of the brackets will help make sure they are square relative to the deck. Tighten the brackets with a wrench.



Cut the bottom rail, keeping the aluminum approximately 1/4" shorter than the vinyl. Use the bottom rail as a guide to cut the top rail.

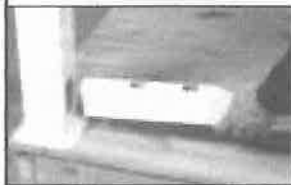
To prevent interference when installing T-rail top rails on a corner post, cut off 3/4" at a 45° angle on the inside corner of each rail. Cut only the vinyl "T" portion of the rail.



Use care when installing glass balusters. Install glass balusters the same way.



Slide the vinyl post over the brackets. If you intend to use the post trim pieces at the bottom of the post, install them now. Snap them together and slide the assembled trim down the post to the deck.



Insert the bottom rail into the post.



Once all balusters are inserted, lift the partially assembled section and insert the top rail into the post opening. Push the completed section down to the deck.

Repeat this step for all flat rail sections.

### TIP:

*If not a stair transition post, wait to position second E-Z Set bracket on top of the rail lock plate and top rail after the entire railing section has been assembled.*

# 3. INSTALL STAIR RAILING

## STEP 1 INSTALL BOTTOM POST SUPPORT AND POST



Begin the stair section by installing the stair post support and E-Z Set brackets. Do not cut the support posts yet.

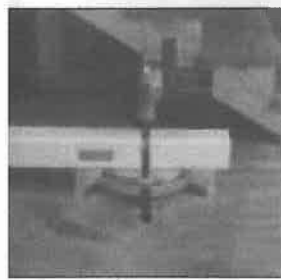
## STEP 2 CUT BOTTOM STAIR POST AND POST SUPPORT



Insert the bottom rail into upper post. Clamp the rail to the lower post at the desired height and angle. Measure the distance from the point where the rail and post meet to the stair tread.



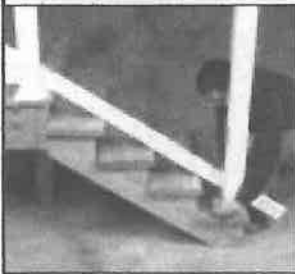
Remove the lower post and transfer your previous measurement as shown.



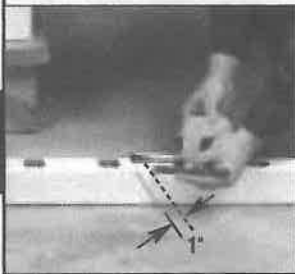
Cut the post along your mark.

Use the previously cut stair post as a guide to determine the post support height. Place the stair post on the step next to the steel post support. Mark the support at 3/4" above the top rail opening. Cut off the post support at your mark. Cover any exposed vinyl components that could be damaged by falling cut-offs.

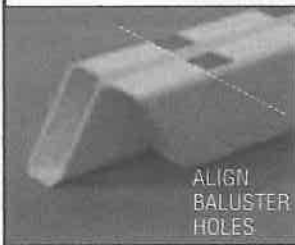
## STEP 3 CUT THE RAIL-TO-STAIR ANGLE AND LENGTH



Lay the bottom rail between the posts, with the end holes clear of the posts and equally spaced. Align the rail with the top of the rail on each post. Measure the rail.



Mark vertical lines on both ends of the rail where it meets the posts. Measure over 1" along the angle on both ends of the rail to allow for the extra length inserted into the post. Remark the rail for the cut line.



Cut the stair rail to the exact angle that you traced. Make sure the aluminum rail insert is 1/4" shorter than the end of the vinyl rail. Use bottom rail as a

guide and line up baluster holes to top rail. Mark degree of stair angle to top rail, in the opposite direction of the bottom rail, and cut.

## STEP 4 ASSEMBLE STAIR RAIL SECTION



To assemble the rail sections, slide the post over the post support. Insert the bottom rail into the lower post. You may find it easier to lift the lower post, insert the bottom rail, and then lower the post.



Lift the upper post 3-4" until you can insert the bottom rail. Then slide the post and rail back down.



Insert the balusters into the bottom rail. Insert the balusters into the top rail; then insert the top rail into the lower post. You may find it easier to work from the bottom stair up to top.



Use care when installing glass balusters. Insert glass balusters the same way. To fit properly, the angle cut on the glass baluster needs to be installed in the same direction as the stair angle.



Lift the partially assembled section and insert the top rail into the opening. Push the section down to the deck.

# 4. BRACKET AND RAILING INSTALLATION

## INSTALLING THE BRACKETED RAILING SYSTEM

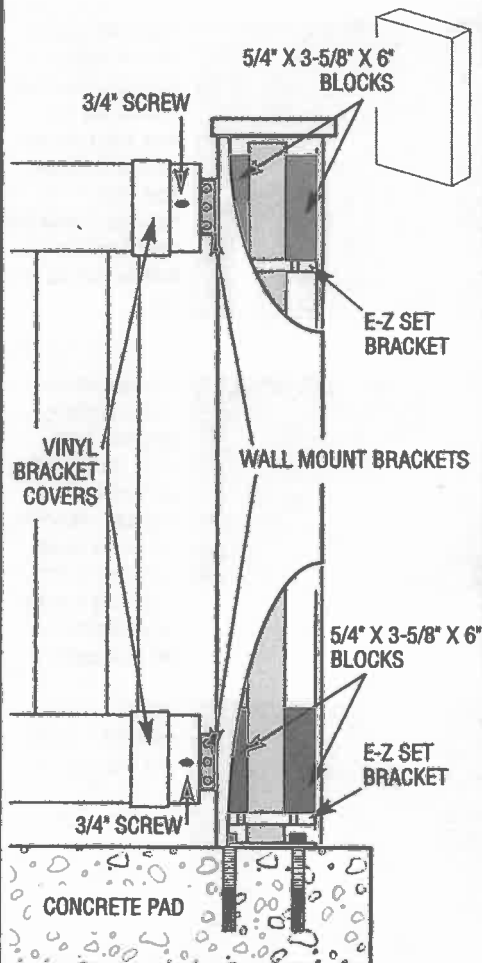
Brackets can be used on existing posts, columns, etc. directly or with a vinyl post sleeve over a 4x4 wood post. Brackets should never be connected to hollow vinyl sleeve without internal shim in post. To ensure a safe installation, rail mount brackets must be anchored securely. Before mounting the railing, determine that structure is solid and that the fasteners appropriate for the structure are used.

When using vinyl sleeve-over installation, the 4x4 wood posts must meet local building code requirements. CertainTeed is not responsible for the structural integrity of these posts.

**Important:** To ensure meeting code requirements, be sure that the space between the last baluster and the wall or post is not more than 4". Be sure top of top rail is positioned 36" (for 3') or 42" (for 3-1/2') from surface. Also, the measurement between the bottom rail and surface should not exceed 4".

### CONCRETE POST APPLICATION

Vinyl posts alone do not provide adequate fastener retention. When using a steel post support kit, you must provide a wood block inside posts at bracket locations for proper fastener retention.



### BRACKET INSTALLATION

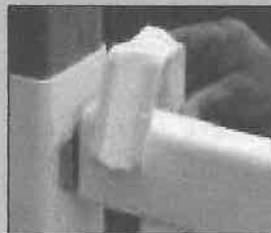


Measure rails for proper length and mark. Measure 1/4" back from both end marks and cut rails. Place cover over rail ends, insert brackets and slide rail into place between posts.



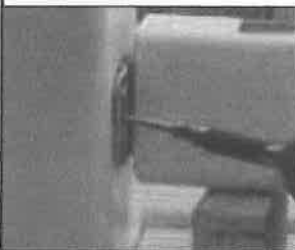
Pre-drill 9/64" hole for rail attachment screw.

Attach rail to bracket with 3/4" screw.



### TIP:

*If baluster interferes with bracket cover, slit the underside of the cover. Spread open and slide over railing and attach.*



Drill pilot hole with a 9/64" drill bit for bracket attachment screw.

Attach bracket to post with screw provided. Use 4 screws per bracket.



Slide cover in place, pre-drill 9/64" hole to expedite cover attachment.

Attach cover to rail with 3/4" screw provided.

### TIP:

*Vinyl adhesive or clear silicone adhesive can be used to attach cover to rail.*

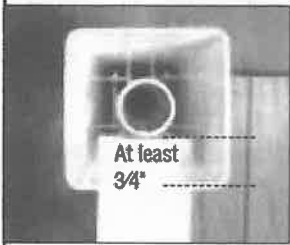


# 5. FINISH UP

# INSTALL VINYL DECKING

APPROVED  
CODE COMPLIANCE  
NER-605

## STEP 1 INSTALL RAIL CONNECTORS



Make sure the vinyl rail and aluminum insert project  $\frac{3}{4}$ " inside the post.

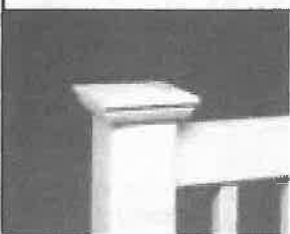
At least  
 $\frac{3}{4}$ "



Insert the rail connector plate over the steel post support as shown. Drill a  $\frac{3}{16}$ " hole through the rail and the aluminum insert.

Attach the plate to the rails using the hex head screws provided in the post support kit.

## STEP 2 INSTALL POST CAPS



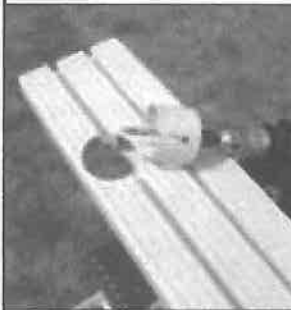
The internal flat cap simply snaps into the post. To install the external caps use vinyl adhesive.

### IMPORTANT! FIRE INFORMATION

Rigid vinyl deck and railing are made from organic materials that will not burn on their own but melt or burn when exposed to a significant source of flame or heat. Consequently, owners and installers should take a few simple steps to protect vinyl building materials from fire. Building owners, occupants, and outside maintenance personnel should always take normal precaution to keep sources of fire, such as barbecues, and combustible materials, like dry leaves, mulch and trash, away from vinyl deck and railing.

## STEP 1 FASTENING TO THE SUBSTRUCTURE

For all but diagonal layouts and stairs, install vinyl deck planks on substructures built on 16" centers. The unsupported span of vinyl deck planks must not be more than 4" overhang from the edge.

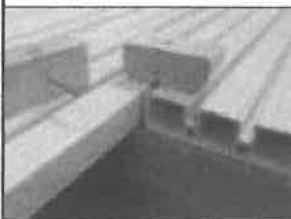


Align the first plank on the substructure. Overhang the substructure 1-1/2" on each end. Mark the board for the post supports. With a 2" hole saw, drill the deck board to accept the 1-5/8" post supports.

Lay the board over the post supports. Square the board on the deck, and attach the first plank to the substructure.



Boards must be fastened every 16". The deck boards are fastened directly to the substructure with #8 x 2" deck screws. Seat the screws in the channels of the plank and do not over-tighten the screws.



After the first run has been installed, line up the next board. Gap it 1/8". Recheck the alignment and screw the board to the deck.

## STEP 2 INSTALL FILL PIECES



After all the boards have been installed, insert the fill pieces, several at a time, into the channels. Begin by pressing in the leading edge; then slide a block of wood along the length of the fill strips until they are pressed in place.

Fill pieces should fill the entire channel but not overhang the vinyl deck.

The ends of the fill pieces do not have to coincide with the plank ends. They can be spliced into the deck channel.

## STEP 3 TRIM THE DECK



Measure the edge of the deck. Leave 1-1/2" of overhang for the end cover. Snap a chalk line on the deck to mark your cut. Cut along the line with a circular saw. Make sure the edge of the deck is straight.

## STEP 4 INSTALL "C" CHANNEL

To finish the deck, install vinyl "C" Channel over the open plank ends.



Using a chop saw equipped with a fine tooth carbide blade, cut the length of "C" channel you need.

Fit the channel onto the edge of the planks, ensuring that it is square.



Drill 1/4" holes through the top of the "C" channel. Drill at 1' increments (in the center of every other plank). Press the end-cover fasteners through the holes into the deck.



For concealed edges (along the house), or to cover ends of fascia, cut "C" channel into "L" channel with a utility knife and snap off. Install as described above.

# CertainTeed

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Visit [www.certainteed.com](http://www.certainteed.com)  
for more complete installation instructions  
and care & maintenance information.