VINYL SIDING

Approved Methods

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Introduction to the Vinyl Siding Section

This Section Includes

- Safety Guidelines Task List
- Tool and Equipment List Material List

Schedule

Vinyl Siding Workdays
On most Habitat projects the vinyl siding installation can be completed during three scheduled workdays: One Siding Preparation day, and two Siding Installation days. However, weather, the height of the house off the ground, and the complexity of the house plan may add an additional day to the schedule.

Crew Assignments

Crew Assignments for Prep: On the Siding Preparation workday the crew consists of two experienced siding crew leaders each with two additional volunteers. If the work is to be done during the week, a crew may consist of one of the Habitat Construction Staff members and two or three weekday volunteers. An experienced crew can normally prepare a house for siding during one workday. If more crews are available on the preparation day, they may also begin the regular siding installation. A prep day is most successful when the crews are small and there is not a rush to stay ahead of the faster paced siding panel installation crews.

Crew Assignments for Siding: It is suggested that eight volunteers, plus the task leader and four experienced crew leaders, be recruited for Siding. Divide into 3 person crews by distributing the experience level among the crew leaders. Each crew should be assigned to work on a particular side of the house until that section of the house is completely finished, including the siding, soffit and fascia. An experienced crew member should tackle the slower but more difficult projects that may hold up the crew if not completed in time. It is tempting to put large numbers of volunteers on siding, but without one experienced crew leader for each two inexperienced crew members, the work will proceed too quickly and not allow time for quality control. If siding is not installed properly, entire walls of siding may have to be removed and reinstalled. (Siding is the number one service issue for Habitat.) Having experienced crew leaders on every crew, and keeping the crews small, will result in satisfied volunteers and quality work.
Vinyl Siding Safety Guidelines

Review these guidelines with each crew member at the start of the day or as they arrive on site.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Speak up if something looks unsafe. An observer can spot danger quicker than a worker.

Know where water & a first aid kit are located. Tell the site supervisor immediately in the event of an injury.

Habitat requires safety glasses not just when using power saws, but at all times. Habitat requires hard hats during siding.

Utility knives - keep your hand out of the blade’s path. Retract blade when not in immediate use. A sharp blade is safer than a dull one. Safely dispose of used blades. Use a nail slot punch for elongating nails slots. Utility knives are prohibited for cutting vinyl.

Vinyl is slippery underfoot, especially in layers. Keep scrap away from saw table, walkboards, and pathways. Discarded material must be placed in the designated area.

Power Saws:

- Habitat requires that ear & eye protection be used when using power saws to cut vinyl. Don’t bind the blade of any saw – listen for it. Back off and re-support material.
- Keep electric cords out of the way of the saw and out from underfoot.
- Don’t cross hands over to stabilize material on the miter saw. Find another way or get help.
- Guards on saws must be in place & operating. Do not disable the guard, even on a siding saw table.

Use a ladder that will reach the work. An extension ladder should reach 3 feet above the step off point. Move the ladder with your work. For every 4 feet of height, move the bottom of the ladder one foot away from the wall. Place ladders on solid footing. Block extension ladders at the top to prevent sideways movement.

Scaffolding - See the site supervisor for the numerous safety requirements for scaffolding (i.e. using triple widths of walk boards, placing scaffolding on solid footing, and guardrail requirements).

Keep the entire work area, inside and out, free of trip and fall hazards.

Don’t leave loose objects on scaffolding, roof deck, or ladders. Keep tools not in use in your tool belt at all times. Select the correct tool for your work. Carry only those you need.

No loose clothing or hair that can get caught in power tools.

Wear appropriate clothing for the task including work boots that protect from falling objects, have a nonskid sole & resist nail penetrations. No open toed shoes allowed.

Tools must be in a safe condition (meet OSHA standards, i.e. no nicks in cords or missing ground prongs.)

Think & concentrate on your task.

If you are uncertain about how to do a task, or how to operate a power tool, ask your crew leader.
Siding Task List

Staffing

House Leader
Siding Task Leader
4 Crew Leaders
8 Additional Volunteers

Siding Prep Tasks to Be Completed

1 crew _______ Flashing
1 crew _______ Lay off and install starter strip
2 people _______ Install vinyl corner posts
2 people _______ Install J-channel around porch beams
2 people _______ Install J-channel on porch beam and up gable
1 crew _______ Install J-channel around windows/doors/misc. locations

Siding Installation Tasks to Be Completed

All crews _______ Set up Scaffolding
All crews _______ Install vinyl siding and gable vent
All crews _______ Install soffit
All crews _______ Install fascia
2 people _______ Install J-and F-Channel and porch ceilings
1 person _______ Caulk Joints
All Crews _______ Clean site, restack materials

Quality Checkpoints

___ Starter strip level and straight
___ Corner posts straight and plumb
___ Corners of J-channel at windows and doors neatly cut and fitted
___ Scaffolding securely braced and walk boards in place
___ Siding panels level
___ Nailed so panels can still move
___ Lap joints in siding away from main traffic pattern
___ Siding trim at top of walls properly installed
___ Last piece of siding at top of wall securely fastened
___ ¼" gap where siding is cut around windows, corners, and doors
___ Soffit properly installed
___ Corners of fascia lapped correctly
___ All materials restacked, site cleaned up, tools accounted for and put away
Vinyl Siding Tool, Equipment & Material List

Tools Each Siding Crew Member Will Need

Hammer (16 oz. Min.)
Nail Apron
Retractable Utility Knife with Extra Blades
Measuring Tape (16' Min.)
Square (Speed or Combination)
2 Pencils
Siding Snips
Safety Glasses
Work Gloves
Hard Hat
Water

Tools Each Siding Crew Will Need

30' Measuring Tape
4' Level Framing Square
Hack Saw
Chalk Line
Nail Slot Punch (makes slots)
Zipper Tool (unlocks panels)

Tools & Equipment Needed at Each Site

Ear Protection/Glasses/Hard Hats
Twelve-Gauge Grounded Drop Cords (100')
Three or four-Way Electrical Box
Circular Saw (7¼”)
Plywood Saw Blade (7¼" Backwards)
Snap Lock Punch (makes tabs)
Hand Held metal break (Bender)
Heavy duty aluminum shears
Caulk Gun
Extension Ladder (16' Minimum)
Step Ladders (8’)
Step Ladders (6’)
Siding Saw Table (jig)
Metal Scaffolding with Walk Boards
Saw Horses

Props Useful for Demonstrations

J-Channel cuts for windows and doors
Window Trim cuts for windows and doors
2 Panel samples to show proper engagement
Panel sample to show nailing flange cut away
Boxing return wrap
J-Channel butt joint cuts
Panel sample to demonstrate Nail Slot Punch

**Material List**

- **Siding**
  - Siding Panels
  - Starter Strip
  - Outside Corners
  - Inside Corners
  - J-Channel
  - F-Channel
  - Undersill Trim
  - Vented Soffit
  - Unvented Soffit Gable vents

- **Nails**
  - Siding Nails
  - Hot Dipped Nails for Starter Strip
  - White Fascia Nails
  - 16d Common Nails

- **Miscellaneous**
  - Gable Vents
  - Chalk
  - Scrap Blue Board
  - Boxing Returns (if not installed)
  - White stainless steel nails, 1"
  - Caulk – exterior
  - Roll of Black plastic flashing
  - Roll of Silver Window flashing tape
  - Roll of Galvanized porch flashing
  - Cardboard baffles (if not already in place)
  - OSB (if not installed between trusses)

**Additional Items Needed for Historic Package**

- Window Trim
- Under sill Trim
- Starter strip - windows and doors
- Vinyl shakes
- Gray Board to cover beams

**Fascia**

- 6"x1" fascia for boxing returns
- 4"x1" fascia for gutter and rake boards
Siding Material Description

Outside and Inside Corners: Vinyl material formed to resemble a wooden corner post, with a nailing flange and a channel to receive the ends of the siding panels along both sides. Each post is 10' long.

J-Channel: White vinyl material pre-formed in a “J” shape, with a single nailing flange and a channel to receive the ends of the siding panels around the perimeter of any openings in the wall. (Doors etc.) Each piece is 10' long.

F-Channel: White vinyl material pre-formed in an “F” shape, with a single nailing flange and two channels

Undersill Trim: White vinyl material preformed in a flattened “J” shape, with a single nailing flange and a locking channel. It is installed under double windowsills and other horizontal projections and grasps the top crimped edge of the siding panel below it. Each piece is 10' long.

Vinyl Siding Panels: Vinyl material in a variety of colors and styles which has been pre-formed to resemble wood lap siding. Each piece is 12' - 6” long and 9” - 10” wide, with a nailing flange along the top edge and a locking channel along the bottom.

Vinyl Soffit Panels: White vinyl material, similar to siding panels, but with holes or slots to provide attic ventilation. Panels are 12' long and 12” wide and are cut to fit under the eaves and gable overhangs. Solid panels are used for porch ceilings and rake overhangs.

Fascia: White pre-finished aluminum strips which have been pre-formed to cover the gutter board. Each piece is 12' long and cut to allow the ends to overlap.

Aluminum Fascia: White pre-finished aluminum strips which have been formed into an “L” shape ¾” at the bottom and 4” high. Each piece is 12’ long and cut to allow the ends to overlap.

Aluminum Fascia for Boxing Returns (6”): Pre-finished aluminum strips which have been formed to cover the boxing returns. (The boxing return wraps will be formed on site.)

Siding Nails: 1½” to 2” galvanized nails. Similar to roofing nails.

Fascia Nails: White stainless steel nails approximately 1” long.

Boxing Return Framing Kits: Pre-cut and partially assembled 2x4 and 2x6 framing members used to finish off the lower ends of the gable overhangs or “ladder” framing.

Drip Cap for Corner Post at Gable end: Made on site out of a piece of white aluminum, this piece covers the top of the corner post and prevents water from entering the post.

Vinyl Drip Cap: Pre-bent vinyl used to flash over frieze board and corner posts.

Gray Board: To install on porch beams
General Instructions for Vinyl Siding

Habitat Charlotte uses the historic siding package.

- Porch Beams are wrapped with painted 1x material (gray board)
- Wider vinyl window and door trim is used on the front door and the front windows. (unless the house is on a corner lot, then all windows are wrapped)
- Vinyl cedar shakes are on the front gable(s), or vertical Board and Batten
- Starter strip is used around windows and doors
- On Gables Gray board is installed flush with the button edge, then drip-cap material on top of that, then J-channel.
- On intermediate gables starter strip is used to secure the vinyl frieze board.
- Fascia width is 5 ½” (vs. 3 ½”)

Hal Cole is our Wizard of Siding. This chapter is dedicated to Hal.
Construction Details - Siding Prep

Flash Front Porch Wall

On houses built on a subfloor: With galvanized roll flashing, flash up the front porch wall to protect band floor framing. Nail along the top (above water source). This step is not needed for houses built on a slab.

Front Porch Wall Flashing

Side Wall Flashing at Roof Line

When a house has adjoining parallel gables additional flashing is required. Step flash was installed under the shingles but extra flashing is needed where the smaller, lower gable joins the wall of the larger gable. It is necessary to channel the water from the J-Channel to the outside of the siding that is coming up the wall, otherwise the J-Channel directs water behind the siding.

Step One: Bend a piece of step flashing to create a diverter and install at lowest shingle.

Step Two: Install J-channel along Gable roof line stopping at Diverter piece.

Step Three: Cut siding around the diverter so that water from the roof is able to flow off the roof without being directed behind the siding.
Flash Windows with Black Plastic

Windows require two layers of flashing. The first is black plastic installed after framing for the window. When the window is installed, a bead of caulk is run between the black plastic and the window’s nailing flange. This is done by the framing crew and is to prevent water infiltration.

To prevent air infiltration, run another heavy bead of caulk, this time between the black plastic and the wall sheathing. Apply it near the edge of the plastic so it will help hold the plastic in place.
This should have been completed by the framing crew.
Flash Windows with Second Layer

A second layer of flashing is installed after the window is installed. In the same order as with the first layer (sides, then top sheds water) apply strips of silver flashing tape, or black plastic, covering the nailing flange and extending on to the side flashing. Place it over the nailing flange and against the window but not lapped onto the sides of the window frame or it will show after siding is installed. At a minimum (because of the expense), and if allowed by the building inspector, just at the top a piece of silver flashing is applied over the black plastic.

To channel water away from sheathing, pull the lower piece of black plastic out over the nailing flange of the siding panel during siding installation. Cut it off at a length that covers the locking strip but is not visible when siding is complete.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Utility knives - keep your hand out of the blade’s path. Retract blade when not in immediate use. A sharp blade is safer than a dull one. Safely dispose of used blades. Use a nail slot punch for elongating nails slots.

Utility knives are prohibited for cutting vinyl.
Starter Strip Lay Off

To ensure that the siding is level and even around the house, lay off for the starter strip by measuring down from the bottom of the truss overhang to a point where, when it is installed, the bottom edge of the strip will be 1" below the top of the masonry foundation wall. Measure against trusses that sit firmly on the cap plate. It is easier to install starter strip if the line is chalked for the top of the starter strip. Connect the points by striking a tight and straight chalk line.

It is absolutely necessary that the starter strip is installed in a straight line or the first panel of siding will not engage properly. This is achieved in part by putting a tremendous amount of tension on the chalk line before snapping. On long walls it helps to pull the line tight and have a third volunteer hold the center against the wall and then alternately snapping each side.

Establish additional points, of equal distance down from the trusses at all house corners, on both sides of any door openings, and in the middle of any long walls.

An alternative method is to use the top of the foundation as the reference point. Again, the bottom of the starter strip is placed 1" below the top of the foundation. Do not trust the bottom of the wall sheathing for measuring. Measuring 1 ½" (for 2 ½" wide starter strip) above the top of the foundation, brickwork, or concrete, mark and chalk for the top of the starter strip. See the site supervisor if there is a discrepancy in the two methods due to site circumstances.

To establish a line on the gable ends of a house, where there are no truss overhangs, simply extend the chalk line at the sides of the house around the house corner. Note: Do not set the corners until starter strip lines are extended around the corners.

In order to keep the siding panels straight and level, chalk additional reference lines around the house just below and just above the window openings. Determine the initial points for these lines by measuring up from the bottom of the starter strip or down from the trusses. This is necessary primarily to find panels that are not locked into position but also because of the vertical creep in siding that occurs due to the varying tension different crew members put on the panels.

An alternative to chalked reference lines, an experienced siding crew can periodically measure down from the trusses to the siding at several places along the wall to check for identical measurements. This is especially useful when working up and around windows and doors. Hint: A ½" difference typically means a lower panel is not fully engaged. See the site superintendent should this occur.
Starter Strip Installation

Beginning approximately 7" from any house corner and 2" from each side of a door opening, attach the starter strip to the house with 1 1/2" to 2" galvanized siding nails roughly 8" apart. Continue until the strip extends around the entire perimeter of the house, leaving approximately 1/4" space between the pieces of starter strip. Nail starter strip tight.

Side Porch Steps – It is easiest to install siding at the side porch door if the 2x12 deck piece is in place under the threshold. The 2x12 is, or will be, installed from outside to outside of the door’s brick mold. The J-Channel that sits against the side of the brick mold will extend to the bottom of the 2x12. Stop the starter strip 2" short of where the J-Channel will go.
Starter Strip on Front Porches

Starter strip can be used when it starts the panels at a height that keeps them in alignment with those around the porch corners, otherwise use J-Channel as a starter.

Chalk a level line by measuring down from the trusses, not up from the un-level porch floor. Install the starter strip as previously instructed. Hold the starter strip back 2" from doors. Hold back 4"-5" from corners.

J-Channel Starter on Front Porch

Keep the siding panels even around the porch corners.

It will be best to use J-Channel when starter strip does not allow the panels to line up level around the porch corner. The first piece of porch siding will be ripped along its bottom edge and will sit in the J-Channel. Set J-Channel at a height that aligns the top of the panels to those around the corner.
Chalk a level line by measuring down from the trusses, not up from the un-level porch floor. Drill \( \frac{1}{4} \)"weep holes every foot in the bottom of long pieces of J-Channel. For wide J-Channel, a strip of scrap siding, set in the J-Channel, will keep the siding pushed to the front for a neater look.

An alternative approach allows the J-channel to lay on the floor of the porch and cut the siding to maintain level along the top, as follows.

At a front corner post, make a mark on the corner post level with the top of the nailing flange on the first course of siding along the adjacent side of the house. (A scrap piece of siding may be temporarily installed for this purpose.) Carefully transfer the mark from the side of the corner post to the front and thence to the blue board on the front of the porch.

Repeat the same procedure on the other front corner post.

Using a level, carefully extend the lines along the blue board from each corner to the trim around the front door.

At 3 ft. intervals, measure the height from inside the J-channel to the line on the blue board and, using these dimensions, construct a line along a new piece of siding, measuring from the top of the siding down. Cut along this line carefully.

For wide J-Channel, a strip of scrap siding, set in the J-Channel, will keep the siding pushed to the front for a neater appearance.
Corner Posts Installation

Since corner posts are somewhat flexible, it is necessary to strike a chalk line from top to bottom of both sides of the house corner in order to keep the vinyl corner plumb and straight. Use a scrap piece of inside and outside corner material to determine the distance from the house corner to the outside of the nail flange on the siding corner post. Mark this dimension at the top and bottom at both sides of the house corner, then chalk a line between these points. Do not push the corner piece out of square. Holding a tri-square against the scrap is helpful.

Note: When measuring from the corner of the sheathing, make adjustments if the OSB does not come to the true corner.

Fasten the corner posts to each inside and outside corner of the house with 1½" or 2" galvanized siding nails, every 12", nailing in the pre-punched holes of the nailing flange. Maintain the height and location of the corner post by nailing, tight, at the top of the top two slots. The remaining nails must be installed in the center of the slots, with the head 1/16" proud of the nailing flange in order to enable the expansion and contraction of the vinyl post.

Use a tri-square to keep the post square when nailing or place vertical chalk lines to locate edges of corner posts.

Cut the post to within ½" of a mark that is level with the bottom of the gutter board. Use a level to transfer a line from the bottom of the gutter board to the wall.)

Corner posts extend 1" below the starter strip, with the nailing flange cut off even with the bottom of the starter strip. Cutting off about 1" of nailing flange should work. Though the flange should not be visible once siding is installed, extending it below the wood framing is important for water proofing.

When J-Channel is used in lieu of starter strip, install the corner posts off the concrete floor by ¼".

Leave room for the soffit. The top mark is level with the bottom of the gutter board.
Measure from OSB Corners Accurately

If installed as directed, OSB on the corners of the house does not extend past the corner stud. When this is the case, placing a tape measure on the edge of an OSB corner is an accurate way to measure. With most vinyl corners the mark will be placed 2 \( \frac{3}{4} \)“ from the OSBs’ edge.

Sometimes, however, OSB is mistakenly installed to form a lap joint. In this case, measure only off the corner in one direction—from the true corner back. With most vinyl corners the mark will be placed at 3 \( \frac{1}{4} \)“ from the corner. To square the other side of the vinyl corner post, use a tri-square to hold the vinyl square or eyeball for square.

"NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY"

Use a ladder that will reach the work. An extension ladder should reach 3 feet above the step off point. Move the ladder with your work. For every 4 feet of height, move the bottom of the ladder one foot away from the wall. Place ladders on solid footing. Block extension ladders at the top to prevent side-ways movement.

Scaffolding - See the site supervisor for the numerous safety requirements for scaffolding (i.e. using triple widths of walk boards, placing scaffolding on solid footing, and guardrail requirements).

Keep the entire work area, inside and out, free of trip and fall hazards.

Vinyl is slippery underfoot, especially in layers. Keep scrap away from saw table, walk boards, and pathways. Dispose of scrap in the designated area.
Corner Posts Notched at Porch Beams

On porch corners, the corner posts must be notched around the beam.

Where front porch corner posts extend to the ceiling, leave a space for J-Channel and soffit (measure J-Channel on site - it will be either 3/4" or 7/8").

Corner Post at Soffit

Where a corner post extends to the soffit area, mark a level line from the fascia board onto the sheathing. Lower the mark by the thickness of the J-Channel material. Take a corner to this height, which will be the bottom of the soffit.

Leave room for the soffit. The top mark is level with the bottom of the gutter.
J-Channel Prep

J-Channel is used to cover raw edges of siding and to weatherproof these joints. Fasten J-Channel with 1½" to 2" galvanized siding nails at 8" o.c., nailed tight through holes in the pre-punched nailing channel.
**J-Channel on Porch Beams and up Gable**

Install J-channel along the exterior of the porch beams. With the nailing flange up, set the bottom of the J-channel approximately 6 ½” above the bottom of the beam. A splice in the J-Channel at the center of the porch will allow for drainage and will make it easier to turn the J up the inside corners of the gable. Cut the J-channel long enough to bend up at the boxing return and again up the rake. Make these bends by cutting a “V” groove in the nailing flange.

When placing the J-channel up the rake, hold it off the ladder ½” to leave room for the soffit to sit on top of it.

**Siding at Porch Beam Alternatives**

Several options are available for the placement of siding on the front gable. See the site supervisor to see if an alternate method is to be used.
Examples of where J-Channel is needed.

1. Under the eaves in combination with F-channel to support the soffit at the wall and the top piece of siding.
2. Under the gable overhang (under the gable ladder on the gable end of the house). Use a \( \frac{1}{2} \)" spacer to leave room for the soffit.

**J-Channel and F-Channel Misc. Locations**

This option covers the beam and takes siding to the corner.

This option brings the siding down to the bottom of the boxing return and leaves the beam exposed.

Same as above.

Siding is brought down several inches over the beam. This is the method described on previous pages.
3. Where a sidewall of the gable meets the roof line (i.e. a porch gable joins the larger gable). Proper flashing along with notching the siding into the J-channel will keep the water from getting behind the siding on the wall. Install a scrap of aluminum, bent at a 90, around the corner of the fascia board and wall. J-Channel should not be in direct contact with shingles because the heat from the roof will warp it and it will be harder to replace roofing. Use temporary shims to keep the J-Channel 1/4” off roofing.

4. Around the boxing return.

5. On long porch ceilings install two pieces of J-Channel back to back.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY” Think & concentrate on your task. Speak up if something looks unsafe. An observer can spot danger quicker than a worker.

Construction Details - Siding

Siding Saw Table

When cutting soffit with the siding saw, keep the nailing flange on the near side of the saw. The locking channel is pushed against the backside of the jig’s frame because it is sturdier than the nailing flange. Placing the soffit against the back of the jig will keep it square as the saw is pushed through the material.

Saw guards must be in position and operating, even on siding saw tables. By building the saw jig with a long enough saw skid (platform that the saw rests on) will make it easier to operate the guard as intended by the manufacturer.

Eye and ear protection are required when using power saws to cut vinyl.
“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Power Saws:

Habitat requires that **ear and eye protection** be used when using power saws.
Keep electric cords out of the way of the saw and not underfoot.
**Don’t cross hands** over to stabilize material on the miter saw. Find another way or get help.
**Guards** on saws must be in place & operating.
Siding Panels & Gable Vent
Temperature Effects on Vinyl
In cold weather siding is brittle. Do not hit it with a hammer. Cut carefully.

Weather affects length of panels. On days over 40 ° F, a ¼” gap where siding abuts corners, windows, or doors, is sufficient because the vinyl will not expand a great deal more. When the temperature is below 40°, increasing the gap to 3/8” will prevent the panel from buckling when the temperature rises and the vinyl expands.

Panel Lay-out
Do not place joints directly under or over windows. On the gable end of the house, a joint can be placed a minimum of three courses above a window.

Plan the panel layout so that all the cut ends will be covered by a “factory” edge or will be hidden by a corner post or J-Channel. Always overlap joints with the factory edge exposed and away from the point of greatest traffic (so that panels joints are less visible). Overlap the two factory ends so that there is a 1¼” space between the top locks of the adjoining pieces of vinyl siding. This spacing allows the overlapping tail end to lock into the top lock of the adjoining piece of vinyl siding. On cut ends notch the nailing flange to resemble a factory edge.

Overlapping Panel engages tab at the top and have a gap between nailing flanges. (Dashed line represents the hidden edge of the panel that slips underneath.)

Stagger joints at least 3’ so that joints are not directly above each other, unless separated vertically by at least 3 courses of siding. Do not use pieces less than 3’ long. Avoid a uniform stair step effect when installing panels as this makes the seams more visible. Random seams are best.

Allow ¼” clearance between the end of the siding panels and any abutting corner posts or J-Channel. On cut pieces remove a portion of the flange to allow the panel to “float” laterally. Do not allow the nailing flanges of two adjacent panels to touch.
Mock up showing gap between J-Channel and Panel

Illustration of joint pattern. Joints are emphasized.

Leave a 1/4" gap between panels and dead ends
Cutting Panels - General Instructions

Vinyl siding can be cut with siding snips, a siding saw (circular saw with fine tooth plywood blade installed backwards) or by scoring with a utility knife and bending the siding back and forth until it snaps. A siding saw table is recommended.

Nailing Panels - General Instructions

Attach panels to the house with a 1½" to 2" galvanized siding nails. Make sure the panel is completely and firmly engaged along the length of the panel and lightly pushed upward before nailing. Do not put excess upward pressure on the panel and take notice that different crew members might use different tension. Drive nails only in the CENTER third of the nail slots to allow for expansion and contraction of the panels. A panel that cannot expand and contract with changes in the weather will warp and will have to be replaced. CHECK TO SEE IF PANEL IS FULLY ENGAGED BEFORE NAILING. Drive nails straight and level.

Ideally, the panels should be nailed only into the studs. However, since the framing studs are, basically, 24" o.c. this is not always practical. Nevertheless, when possible, nail in the center of a stud but remember the nail must be in, or close to the center of the slot. Generally, the panels should be nailed roughly every 11 inches.

When necessary, the slots must be elongated with snips or a Nail Slot Punch tool. The use of utility knives is prohibited due to safety reasons. DO NOT NAIL THROUGH THE VINYL OR AT THE EDGE OF ANY SLOT.

Drive nails straight and level as crooked nails also cause distortion and buckling of the siding panels. Leave 1/16" between the nail head and the siding nail flange. REPEAT – leave EVERY nail in the panel 1/16" PROUD OF THE NAILING FLANGE! After nailing, CHECK EACH PIECE OF SIDING TO MAKE SURE IT WILL SLIDE BACK AND FORTH THE LENGTH OF THE NAIL SLOT. Replace any nails that prevent the panel from expanding and contracting. You can test this by pushing the panel back and forth. Remove any nails that are not in the center of a slot - a common cause for buckling.

CREW LEADERS – LET THE ABOVE PARAGRAPHS BE YOUR PRIORITY.
Siding Panels on Side Walls

Starting at a corner post at the back of the house, away from the highest traffic area, attach the first siding panel to the starter strip, making sure that it is properly locked-in. Slide the panel into the corner leaving a ¼" space for expansion, then nail in place as indicated above. Moving toward the front of the house, attach the next panel, overlapping the first panel so that there is a ¼" space between the top locks of the two overlapping pieces of vinyl siding.

No panel should be shorter than 3 ft. in length. Consequently, it may be necessary to reduce the length of the next-to-last panel, to ensure that the final panel is greater than 3 ft. in length.

When you reach the end of the wall or an opening, cut the last panel to fit, making sure to leave at least ¼" for expansion. Continue installing siding toward the top of the wall, beginning at the same end of the house as before. As you move up the wall, check every other row of siding for horizontal alignment. Do this by measuring from the top of the siding panel to the bottom of the roof trusses (or chalk lines put on by the Siding Preparation crew) approximately every 8' along the side of the house.

As you go up the wall, check for alignment with adjoining walls. Check every few rows against the reference points to keep vertical play at a minimum so that panels will go up the wall uniformly. Hint: If you get to the top of a door or window, and the panels did not come up evenly, the next full piece will not engage. It takes a straight run to engage a panel.

Securing Soffit and Siding at Top of Side Walls

A combination of F-channel, J-channel, and Undersill trim must be installed to accept both the soffit and the last row of siding on the side walls. Mark a line that is level with the bottom of the Gutter Board at several points along the entire wall. Snap a chalk line along these points. The F-Channel must be installed (nailing flange on the bottom) along this line.

Insert Undersill trim into J-channel and then nail the assembled channels covering the nailing flange of the F-channel to accept the top of the wall siding.
The top of the final pieces of siding must be cut on a line measured at several points (~ every 2 feet) along the panel that ensures that the top of the siding panel is fully inserted into the Undersill trim.

Use a Snap Lock Punch to create raised lugs on the vinyl siding every 12 to 14 inches along the cut edge with the raised lug on the outside face. Install the siding panel, making sure the raised lugs (from snap lock punch) lock into the under-sill trim.

**Panels at Window and Doors**

Notch siding panels to fit around the bottom of each window opening. Avoid having joints near openings. To lay off the notch you will need the width and depth of the cut. It is easiest to do this without a tape measure.

Width and placement: Hold the panel in place under (or over) the window and mark the left and right cut locations, leaving \( \frac{1}{4} \)" gap for expansion. Remove the panel.

Depth of notch: Since it is difficult to obtain accurate measurements for the depth of the notch, a small scrap piece of siding can be used to lay off the cut. Lock the scrap piece into the nail flange of the piece of siding below the window and slide it against the edge of the window. Mark a line on the scrap where it meets the bottom of the window’s J-Channel, leaving \( \frac{1}{4} \)" clearance. Transfer this dimension to the actual piece of siding. Measurements may not be the same on both sides of the window.

**Habitat Begs You!**

Task leaders, crew leaders, everyone - you cannot watch too closely for the following quality control items. Leaders, explain to the crew that you will be diligently checking the following:

**Panels are fully engaged** - if a single panel is not fully engaged along its entire length, all panels above will most likely have to be removed. **“Habitat’s #1 service issue of all time.”**

**Panels can move**
- All nails in center of slot
- All nails \( \frac{1}{16} \)’ proud and straight
• Ends are 1/4" shy of dead ends Nail flanges do not abut (1/4" gap)

Panels are coming up uniformly. Check against reference points every few rows.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Utility knives - keep your hand out of the blade’s path. Retract blade when not in immediate use. A sharp blade is safer than a dull one. Safely dispose of used blades. Use a nail slot punch for elongating nails slots.

Utility knives are prohibited for cutting vinyl.

Keep the entire work area free of trip and fall hazards.

Vinyl is slippery underfoot, especially in layers. Keep scrap away from saw table, walk boards, and pathways.

Neatly drill for Electrical and Phone Service wires. Outlets come standard with J-Channel.
Gable Vents

The gable vent is flush mounted in the center of the gable and low enough so that it is a minimum of 10" below the ladder overhang. Because gable sizes are different, choose an aesthetically pleasing location. Large gables take an 18x24 vent and smaller ones a 12x18. No additional blocking is necessary. The gable vents come with a pre-built J-Mold wrap that is removed during siding and replaced after the siding panels are in place. The gable vent is for aesthetic purposes only so there is no need to cut out the OSB behind it. The attic is ventilated by the perforated soffit and the ridge vent.

Panels on Gable Walls

Follow instructions for installing vinyl siding on side walls until you reach the gable.

Before installing a siding panel that will extend into the gable area, it is necessary to install a piece of J-Channel under the gable overhang to receive the ends of the siding panels and to provide a slot for the installation of soffit. This may have been completed during prep. The J-Channel is installed along the face of the gable wall with the nailing flange facing down and away from the roof. Leave a ½" space between the top of the J-Channel and the bottom of the gable overhang to receive the soffit. See “J-Channel across Porch Beam and Up Gable”.

Siding panels are laid-off and cut the same way as side walls, except you must cut the ends that fit against the gable overhang on the same angle as the roof pitch, leaving 1/4" for expansion.

The siding saw tables which are provided on site are constructed to enable cuts of 5-in-12 and at right angles. This will enable safe and accurate cuts of the siding panels and should be used whenever cuts are required.

Should siding tables not be available, the angles may be determined as follows.

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“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Use a ladder that will reach the work. An extension ladder should reach 3 feet above the step off point. Move the ladder with your work. For every 4 feet of height, move the bottom of the ladder one foot away from the wall. Place ladders on solid footing. Block extension ladders at the top to prevent sideways movement.

Scaffolding - See the site supervisor for the numerous safety requirements for scaffolding (i.e. using triple widths of walkboards, placing scaffolding on solid footing, and guardrail requirements). Keep the entire work area, inside and out, free of trip and fall hazards.
There are two popular methods to use.

**Framing Square Method:** These cuts can be laid-off using a framing square in the “seat-cut” position with the long leg of the square set on 12” and the short leg on 5” (or 24” and 10”) for a 5-in-12 pitch. Mark along the long leg of the square to lay-off for the cut.

**Template Method:** Use scrap pieces of siding to make templates. Lock a scrap of siding on top of the previous piece of siding and slide it toward the gable overhang until the top edge of the siding touches the inside of J-Channel. Hold a second piece of scrap, against the J-Channel, and mark along the edge where it crosses the one locked into place. This is simply transferring and scribing the angle onto the sample piece. Cut the angle on the marked piece of siding and use it as a pattern for marking the other pieces.

When the panel reaches the roof line, it is necessary to cut a vertical slit so the end of the J-Channel can exit the panel. This diverts the J-Channel water out from behind the siding. (See “J-Channel Misc. Locations” for previous steps.)

The last piece of siding, at the top of the gable wall, will be cut at the same roof angle on both ends, forming a small triangle without a nailing flange. This piece of siding is attached to the wall by nailing through the face of the siding panel into the OSB sheathing, using two white, stainless steel, fascia nails. This is the only time it is acceptable to nail through the siding. Caulk the exposed nail head.
In this case, the J-Channel (and later, the water) exits easily without the additional slit. Make sure the sidewall was flashed properly during prep.

Mock up of vertical slit.

A vertical slit is needed, in this example, because of where the J-channel exits the panel.

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”
Think & concentrate on your task. Speak up if something looks unsafe. An observer can spot danger quicker than a worker.

Cuts used to join J-Channel. The tab should be a minimum of ¾ inch because it will channel water over the joint. Position accordingly. The arrow is in direction of water flow, downslope.
J-Channel for Front Porch Ceiling

To support a soffit ceiling, install J-channel around the inside perimeter of the porch on the gray board covering the porch beams. Install the J-channel along the top of the gray board by nailing or, using a screw gun and drywall screws, through the base of the J-channel into the top of the gray board. The nailing flange will be hidden by the soffit.
F-channel should be installed along the top of the porch wall, level with the trusses, to accept the soffit.

Insert Undersill trim into J-channel and then nail the assembled channels through the nailing flange of the F-channel to accept the top of the wall siding.

The top of the final pieces of siding must be cut on a line measured at several points (~ every 2 feet) along the panel that ensures that the top of the siding panel is fully inserted into the Undersill trim.

Use a Snap Lock Punch to create raised lugs on the vinyl siding every 12 to 14 inches along the cut edge with the raised lug on the outside face. Install the siding panel, making sure the raised lugs (from snap lock punch) lock into the under-sill trim.

**Soffit Installation**

**Soffit at Eaves**

Next, measure the distance from inside the F-Channel to the outer edge of the gutter board. Make several measurements along the length of the house to ensure that the size remains constant, and then cut the soffit to this dimension, less 1/4". Any soffit that extends past the gutter board will buckle the aluminum fascia.

NOTE: All of the soffit for one side of the house can be cut quickly and accurately on the siding saw table by setting up a stop or marking the correct dimension on the saw table fence. Note that if the dimension between F-Channel and gutter board are not consistent multiple setups will be required. If, however, the saw table is not available, the soffit can also be cut with siding snips.

To install the soffit, start at one end of the house, not at both ends. Slide a piece of soffit into the corner of the boxing so that the nail flange edge is visible and the other sides are covered by the boxing return aluminum fascia trim. Attach the outside corner of the soffit to the bottom of the gutter board by nailing through a nailing slot in the nail flange, using a 7/8" roofing nail nailed tight. The first piece will have to be notched around the corner of the house because of the extra depth of the boxing return. Lock the next piece of soffit...
on to the first in the same way that siding panels are locked together. Before nailing, evenly and gently pull the piece of soffit so it is tight and square and then nail in place. Continue sliding each succeeding piece into the F-Channel, locking it onto the preceding piece, and nailing at the outside corner until you reach the opposite end of the house. Cut the last piece to proper size using snips and slide into place.

Soffit at Gable Overhangs

Vinyl soffit is installed in the gable overhang in the same way as in the eaves, except that the soffit sits on top of the J-Channel instead of inside it and does not have to be perforated. Start at the lowest point on one side of the gable and continue up and over the highest point, finishing at the opposite side of the gable. The last piece of soffit is cut to the proper size with snips. The piece at the point of the gable is simply bent to the proper angle and continued down the other side.

On a hip roof miter the corners of the soffit and install J Channel back to back to accept the cut edge of the soffit material. Blocking will be necessary for the back to back J-Channel.
Soffit at Side Porches

Install J-Channel back to back on side porches to accept the eave soffit on one side and the side porch soffit on the other side. Run the ceiling parallel with the framing for the cleanest look and perpendicular for the easiest installation. Both ways are acceptable.

Running side porch ceilings the same direction as soffit requires additional blocking.

It is easier to install ceilings perpendicular to the framing.
Boxing Return Wrap

See framing section if the return has not been installed. The boxing return is wrapped with aluminum after the soffit is installed but before the siding panels and fascia are installed. Cover the return with wrap that is formed on site from 6" wide aluminum fascia material. Tabs are cut 1" to wrap around corners. The top corner is cut at an angle to match the roof pitch and slips under the drip edge. Nail the wrap near the top where the nails will be hidden by the rake piece. Careful measuring of the boxing return, adding extra length for tabs, is necessary. A hand held break will be very useful. Secure with white 2d pre-finished stainless nails, stopped shy of denting the aluminum (do not set nails) Note: While constructing this master piece it is easy to mix up a left from a right hand return!

Fascia Installation

Aluminum Fascia at Eaves
The narrower metal fascia is for covering the gutter board on the eaves and up the rake. The wider material is for covering the boxing return. Install the metal fascia after the boxing returns are wrapped.

The pre-formed aluminum fascia is installed so that the 1" section fits snugly against the soffit and the fascia section slides under the drip edge. Do not force the metal to conform to the variations of the framing as this will cause the metal to buckle. The fascia is attached by nailing through the center of the fascia board every 2' using a 2d, white, pre-finished stainless steel nail.

Work from the rear of the house to the front of the house to hide the joints from the street. Overlap adjoining pieces 1". Continue until the entire gutter board is covered, finishing with a piece that ends flush with the edge of the boxing return.

NOTE: Aluminum fascia can be cut with siding snips; however, a better cut can be made across the fascia section by scoring the material with a sharp utility knife and bending it back and forth until it breaks. It is necessary to cut through the 1" section with snips before bending.
**Aluminum Fascia at Gable Overhangs**

Install the fascia up the gable much the same way as under the eaves. Beginning at the lowest point, cut a plumb cut along the face of the fascia at the boxing return. Install the fascia so that the cut edge of the plumb cut is flush with the eave fascia. Install a second piece of fascia in the same way as was done on the eaves. Starting at the lower end will allow water to flow over the joint.

At the top of the gable, using a speed square, mark and cut the upper end of the fascia on about a 7-in-12 pitch (anything greater than a 5-in-12) so that the short point of the angle is in line with the center of the roof. Cut the fascia for the opposite side on a 5-in-12 pitch and overlap the first piece to give the appearance of “plumb-cut” at the apex of the gable. The overlapping fascia now has a piece behind it, which helps hide the joint. (This assumes a 5-in-12 roof pitch.)

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This is an example of how to cut fascia at the boxing return.

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**Fascia and boxing return.**
**Porch Ceiling**

Front porch ceilings are made of solid soffit material, which is installed like all other soffit. The addition of deadwood may be necessary. Run the soffit perpendicular to the roof trusses. The side or rear porches receive vented soffit material to match the soffit under the eaves.

Leave panels \( \frac{1}{4} \)" short at each end for expansion and nail every 12" to 16". Leave \( \frac{1}{16} \)" between the nail head and nailing flange and nail in the center of the slot. Before the final piece is installed, lightly mark the truss locations on the J-Channel. Use white stainless steel nails to secure the last piece. To keep the last piece from pulling up too tight, make a pilot hole with a siding nail.

Porches that are longer than the soffit length will need to have a joint installed. Install two pieces of J-Channel back to back in the center of the porch or another aesthetically pleasing location. See “Misc. J-Channel” in the prep section.

![Back to back J-Channel](image)

**Caulk Application**

After the siding is completed, neatly caulk the following areas with exterior latex caulk.

- Where the eave fascia meets the rake fascia
- Where the J-channel bends up and back near the boxing return
- At the dryer vents
- At phone/cable, electrical, and plumbing penetrations
- Drip caps on vinyl corner posts at porch corners.
- Where J-Channel meets any wood.
- At the slit cut in the siding where a small gable meets the wall of a large gable.
- Front porch post and beam if top of post was flashed.
Clean Site, Re-stack Materials

Sweep out house, put trash and debris in a pile near the street, re-stack all unused materials and protect from theft and the weather. Make sure all tools and equipment are accounted for and properly stored or returned.

Leave enough extra material for the homeowner to make future repairs.
Construction Details - Siding Prep

Short Porch Beam Cross Section

Microlam (Long Beam) Cross Section
**Microlam (Long Beam) Cross Section**

- Bottom Chord of Truss
- 3/4" J-Channel
- 1/2" 50/8 ft.
- Porch
- 9 1/4"
- 9 1/2" 10"
- 1/2"
- 1x10
- 1x10
- 1x8
- Column Cap
- Alum Cap Flashing
- Note: Caulk around 1x6 at Column Cap
- 1x8 Material
- Is Clear
- Arkansas Pine (3/4")
- Or "GP Prime Trim (5/8")"
Box Beam Cross Section

NOTE: CAULK AROUND 1X6 AT COLUMN CAP

VINYL SHAKES

CABLE TRUSS

2X6 DEAD LOAD

10" SOFFIT

BLOCKS
6 1/4"
16" OC

3/4"

J-CHANNEL

3/8"

1X6

COLUMN CAP

ALUM. CAP FLASHING
Window Trim Layout

- Cut at 45 degrees
- Window width
- Cut away at 45 degrees
- 5-1/2" corner surround
- Notch 'J' as dimensioned (both ends), do not cut nail flange
- 1-1/4" J-channel
- Starter strip
- 3-3/4" verify
- 5-1/2" corner surround
- See J-channel and under sil trim under windows' detail
- Use a gauge for setting starter strip
Double Window Center Trim Detail

This trim will be gray board, cut to fit, nailed in with trim nailer. See site supervisor.

Window Starter Strip Detail

“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”

Use a ladder that will reach the work. Move the ladder with your work. Place ladders on solid footing.
Double windows.

Wood center trim in place.

NOTE USE A TAPE TO SPACE WINDOWS DURING INSTALLATION

Detail for vinyl center trim (above and below)
Photos of 1x center trim (right)
Spacing Starter Strip at Windows

Starter strip cannot extend beyond the corner of the window frame. Holding starter strip back 2” from edge of window frame is adequate.

Two methods are used for setting the starter strip relative to the window frame. The first is to use a 6d or 8d nail held perpendicular to the house and against the window trim. The second method, which is more reliable, is to make a spacer out of scrap J-Channel. Hold the spacer against the window trim with its nail flange against the house and mark for the starter strip.

Holding an 8d nail works as a spacer for setting starter strip.

A scrap of J-Channel makes a more reliable spacer.
J-Channel and Undersill Trim

Notched J-Channel is installed under the window.

It slips into the window’s side trim.

J-Channel in place.

Under sill trim is added inside the J-Channel.
Mitering Window Trim

This mock up shows the cuts needed for mitering the top window trim. (front side)

Back side of top piece.

Front of side piece.

Back of side piece.

This shows how the tab will divert water out over the joint.

The mock-up put together forming a neat mitered joint.
Frieze Detail

A frieze board is used when the porch is narrower than the house. The frieze visually connects the fascia on the house with the fascia on the porch.

Frieze Board and Flashing

VINYL SHAKE
3/4" J CHANNEL
VINYL DRIP CAP
STARTER STRIP
5-1/2" CORNER SURROUND
NOTE: MAKE SURE BREAK IN VINYL DRIP CAP, J CHANNEL & CORNER SURROUND DO NOT LINE UP.
TOP CAP
THIS SHOULD LINE UP WITH BOTTOM OF SOFFIT
UNDERSILL TRIM
VINYL SIDING
Flash Frieze Board at Gable

Flash at the joint between the frieze board and the porch fascia. Place a scrap of aluminum, turned at a 90, in the corner behind flashing.

The first piece of flashing is in place.

Mock up of a vertical slit.

The slit allows water from the J-Channel to be channeled out over the siding.

(H) Black plastic flashing behind the frieze board. Note how it will channel the water over the nailing flange and out from behind the siding.

Bring the plastic out over the nailing flange and then cut off the excess.
Soffit & Frieze Board Detail
Door Trim Detail

- 3" Gap
- 7/16" OSB or 1/2" Blue Board
- Siding
- Nail Openings
- 5 1/2" Reveal
- 2" Starters
- 6" Width
- 1/4" Gap
- Door

Stud Stud Stud

Brick Mold

Starter Strip
Vinyl Siding Appendix

Alternative Methods and Details

Undersill Trim for Twin Windows

Before installing the siding panel under a double or twin window, cut and nail in place a piece of undersill trim to cover the horizontal cut edge of the notch. (Single windows do not need undersill trim.) Next, use a Snap Lock Punch to crimp the siding along the notch so it will “lock-in” to the undersill trim and hold the panel in place.

Metal flashing should be installed over all exposed twin windows (those not covered by a porch.) that are not flashed at the factory. Check with the site supervisor to see if flashing is necessary. Cut flashing out of fascia material and bend on the brake for neat edges. It should extend 1” beyond each side of the window edge.
Rules for Installing Siding

1. Before installing the first course of siding, verify that the starter strip is
   a. Installed such that the bottom of adjacent pieces are level with each other, and
   b. Starter strips are nailed tight every 8”.

2. Do not nail the siding tight, leave the head about 1/16\textsuperscript{th} of an inch free.

3. Pull the siding up tight while nailing.

4. Nail the siding in the center of the slot.

5. No piece should be shorter than 3 feet in length.

6. Overlap lines should not appear under each other (like brickwork).

7. Only factory edges should be exposed when overlapping pieces.

8. Start installing the sides from the rear of the house. Siding can be started from both corners, working towards the door, on the front of the house. This minimizes the appearance of siding edges being visible from the front door.

9. Do not allow overlap edges to be in line with window or door sides.

10. Allow $\frac{1}{4}$ inch between nailing flanges when overlapping panels.

11. Allow $\frac{1}{4}$ to 3/8 inch at corner posts for expansion. Allow $\frac{1}{4}$ inch at windows, doors, and at the cut-outs for the electrical outlets.

12. Check frequently at the corners to ensure adjacent sides match as siding is installed.

13. Siding can be very sharp. Use extreme care when cutting by hand.

14. Please ensure that the correct nails are used to install siding. Siding nails are generally 1 3/4 inch in length. Nail approximately every 11 inches.