

ALIGN™

COMPOSITE CLADDING

INSTALLATION GUIDE



IMPORTANT: FAILURE TO FOLLOW GENTEK BUILDING PRODUCTS' WRITTEN INSTALLATION INSTRUCTIONS AND COMPLY WITH APPLICABLE BUILDING CODES MAY VIOLATE LOCAL LAWS AND AFFECT CLADDING PERFORMANCE AND WARRANTY COVERAGE.

GENERAL INFORMATION

- Check local building codes before installation.
 - Cladding should be installed over a sheathing that provides a smooth, flat surface.
 - Make sure the substrate meets requirements for a weather-resistive barrier system, including a weather-resistant barrier and proper flashing around windows, doors, other openings and corners.
- Do not install directly over studs.
- Do not hard nail.
- Leave 1/4" clearance between cladding and all receiving channels when the ambient temperature at install is greater than 40°F (4.44°C).
- Leave 3/8" clearance between cladding and all receiving channels when the ambient temperature at install is equal to or less than 40°F (4.44°C).
- ALIGN is for horizontal applications only.
- All cladding accessories must have a minimum pocket depth of 3/4" and accommodate 3/4" projection.
- All overlaps must have a field cut prior to installation. The cladding edge being overlapped must be cut flush to foam before overlapping with the next plank. See page 7 for overlap steps.
- Do not install ALIGN in temperatures below -5°F (-20°C).
- Inspect cladding for any breakage, foreign objects, surface defects, color consistency and correctness. Do not install questionable product.

SAFETY

- Safety goggles are always recommended for all nailing and cutting operations. As on any construction job, use proper safety equipment and follow safe construction practices.
- Cut cladding in an open, well-ventilated area.

ALIGN TRANSPORTING AND STORING

- Do not store pallets more than four high.
- Do not store cartons more than five high.
- Do not store cartons on end.
- ALIGN should be stored away from areas where falling objects or other construction activity may inadvertently cause damage.
- Ideally, ALIGN should be stored indoors and away from direct sources of heat and sunlight.
- If storing ALIGN outdoors at distribution, protective bonnet/shroud should be kept on the cartons at all times to prevent inadvertent surface damage.
- When transporting to a jobsite, keep the planks flat and supported along their entire length.
- When storing ALIGN at the jobsite, take the following precautions when storing planks:
 - Store ALIGN flat and covered prior to installation.
 - Do not store in any location where temperatures may exceed 120°F (48.89°C) (e.g., on blacktop pavement during hot weather or under dark tarps or plastic wraps without air circulation).

Gentek is not responsible for damage caused by improper storage and handling of the product.

HANDLING INSTRUCTIONS

- Planks can be pulled from the ends of cartons, however it is recommended to cut the entire length of a carton top edge and remove planks.
- Ensure the product is clean when installing on the wall.

WALL PREPARATION

- ALIGN must be installed over a level surface with either 16" or 24" on-center framing.
- ALIGN serves as a supplemental rain screen, not a water-resistant barrier. ALIGN must be installed over a water-resistive barrier system in accordance with local building code. Water-resistive barrier systems consist of cladding, water-resistant barrier, and flashed openings and penetrations. Install water-resistive barrier in accordance with the water-resistive barrier manufacturer's installation instructions.
- Building codes vary around the country; check with local code officials for building requirements in your area.

NEW CONSTRUCTION:

- Apply ALIGN over a rigid sheathing and water-resistive barrier system. ALIGN cannot be installed over open studs. Where local building code requires a capillary break, see below "Furring Applications."

REMODEL:

- Existing siding can be removed; prepare wall as described in the instructions for "New Construction," or apply fanfold, foam board or rigid sheathing over existing wood siding to provide a smooth surface.

FURRING APPLICATIONS:

- Apply wood furring to correct uneven walls, applying over masonry walls, or where local building code requires a capillary break between wall and siding.
- Vertical furring should be 1"x 3" furring strips, spaced 16" O.C., and fastened every 12".
- Create a level surface behind ALIGN. Except for applications requiring capillary break per building code, create a flat surface by:
 1. Installing foam board or rigid sheathing between furring, OR
 2. Apply fanfold, foam board or rigid sheathing over furring across the width of wall (including over furring).
- Measure and plan for overlaps to land over furring. If overlap lands between furring strips, a 1"x 3" furring strip at 1' length should be placed behind overlap for support and attachment of ALIGN.

FASTENER REQUIREMENTS

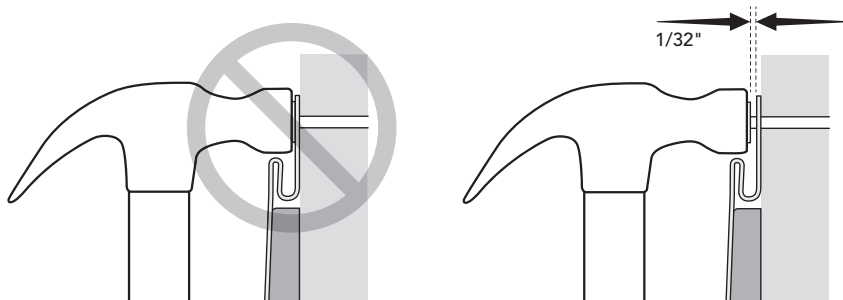
- Use aluminum, galvanized steel or other corrosion-resistant nails, staples or screws when installing ALIGN planks.
- Proper fastener penetration is minimum 1-1/4" into nailable solid material, such as wood sheathing and framing members. When fasteners penetrate non-nailable material, such as foam sheathing, the thickness of non-nailable material does not count toward the minimum 1-1/4" penetration. ALIGN may be used in furring applications with 3/4" fastener penetration. Check with Gentek technical support for specific windload resistance for 3/4" fastener penetration into 1"x 3" wood furring.

FASTENER SPECIFICATIONS

- Nails: 7/16" head x 1/8" shank diameter.
- Screws: Size #8, truss or pan head, self-tapping sheet metal type.
- Staples: Minimum 16 gauge, semi-flattened to elliptical cross section.

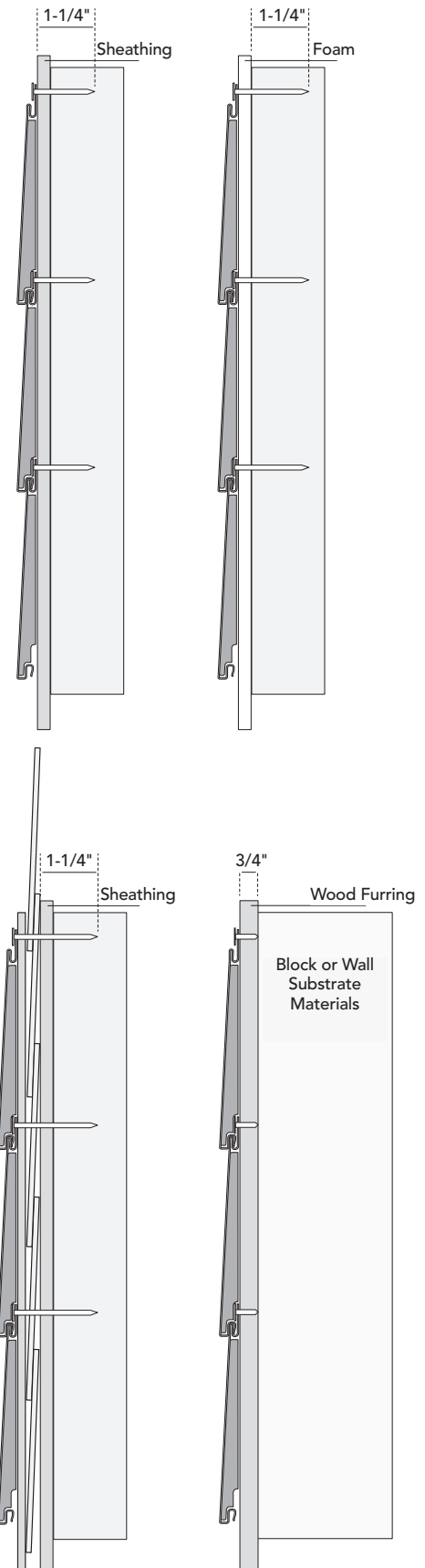
FASTENING PROCEDURE

ALIGN can expand and contract 3/8" length during normal, year-round changes in temperature.



Do not drive the head of fastener tightly against the cladding nail hem.

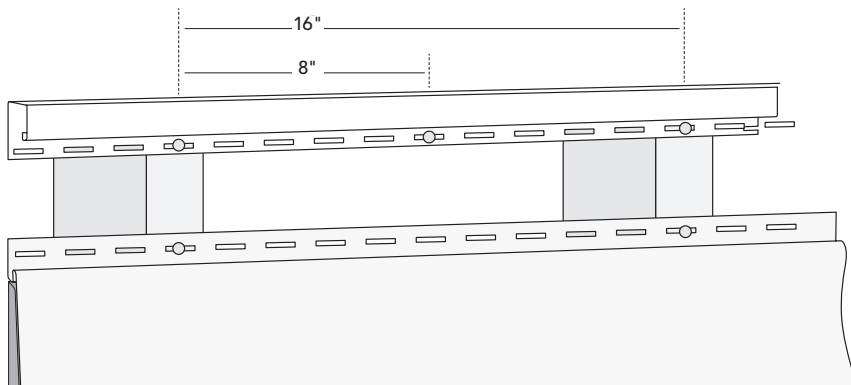
Allow 1/32" clearance between fastener head and nailing hem for expansion.



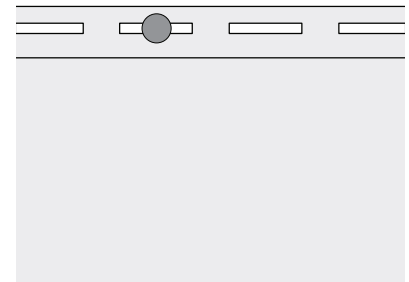
Due to varying thickness of substrate materials, appearance of materials and fastener length may not be to scale.

FASTENING PROCEDURE Continued

Space fasteners 16" apart for horizontal cladding planks, 8" to 12" apart for accessories.



Center fasteners in slots to allow expansion and contraction of the plank; drive fasteners straight and level into the slots.



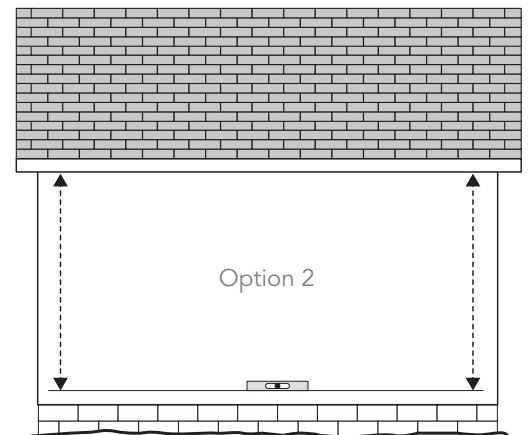
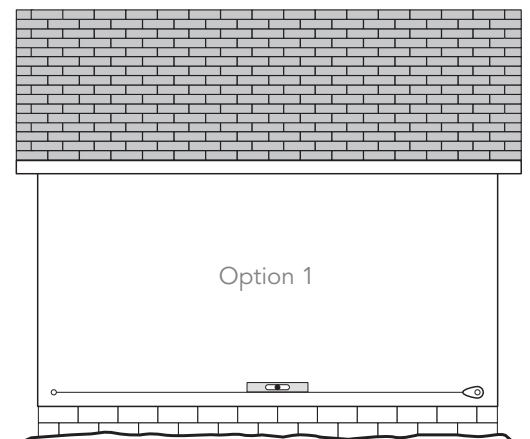
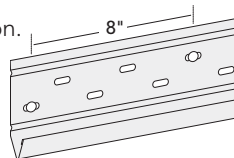
- If a nail slot does not allow centering/securing into nailable structural member, use a nail hole slot punch to extend the nail slot and allow centering of fastener.
- When using power nail guns and staplers, set and adjust air pressure ensuring 1/32" clearance between fastener and nailing hem.

For information on fastening ALIGN and wind speed resistance, refer to Intertek CCRR-0316 report.

**IMPROPER FASTENING
WILL VOID WARRANTY**

CLADDING AND ACCESSORIES INSTALLATION: ALIGN STARTER STRIP

- For cladding to be installed properly in level fashion, the starter strip at the bottom must be level. Failure to install starter strips level will negatively impact subsequent courses and overlap appearance.
- There are two methods to determine position of starter strip:
 - Option 1:** Determine lowest point of the wall, measure up 1/4" less than the width of starter strip and mark on the wall.
 - Using a chalk line from the mark, go to the next corner and pull the line taut. Make sure the line is level and snap a chalk line, repeating around the entire house.
 - Option 2:** Measure down from soffit to the top of foundation and subtract 1/4" less width of starter strip.
 - Make a mark on the wall and transfer measurement to the other corner of the wall.
 - Snap a chalk line between the corners at the marks, repeating around the entire house.
- Keep ends of starter strips 1/4" apart to allow for expansion.
- Fasten every 8", center of slots, 1-1/4" penetration into studs and leave 1/32" clearance between fastener head and starter, staggering fasteners in top and bottom row of slots.
- Maintain a minimum 1/2" clearance from grade and slab concrete for cladding and accessories.

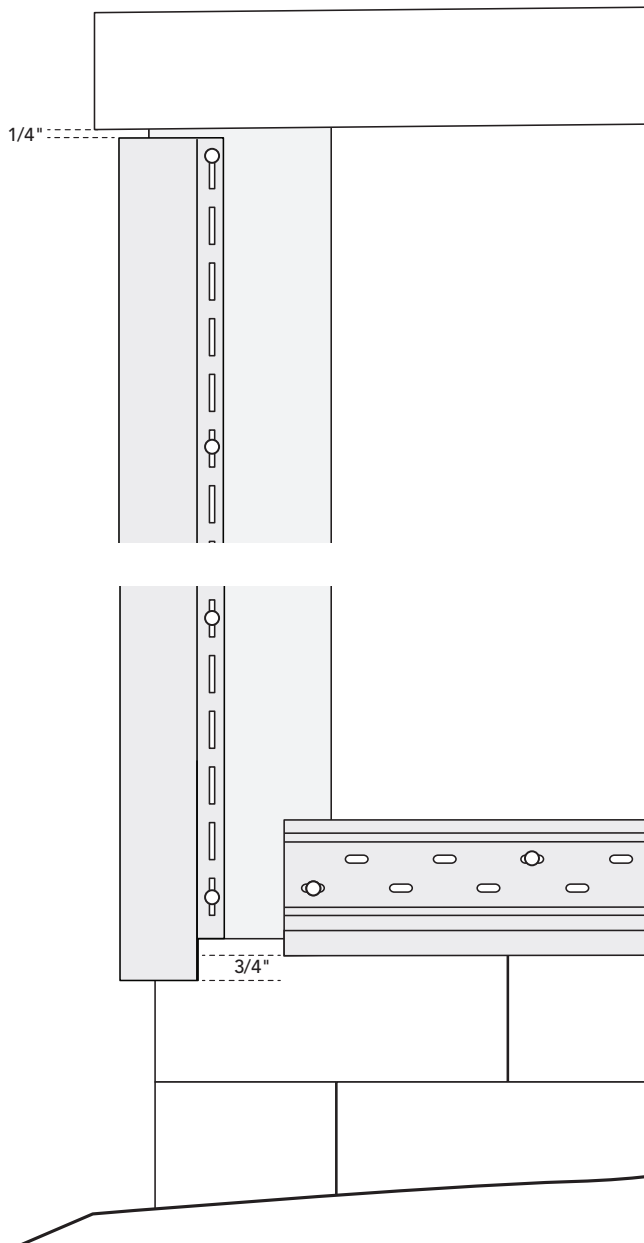


CLADDING AND ACCESSORIES INSTALLATION: OUTSIDE AND INSIDE CORNER POSTS

- Position the top of vinyl corner post 1/4" from eave or soffit.

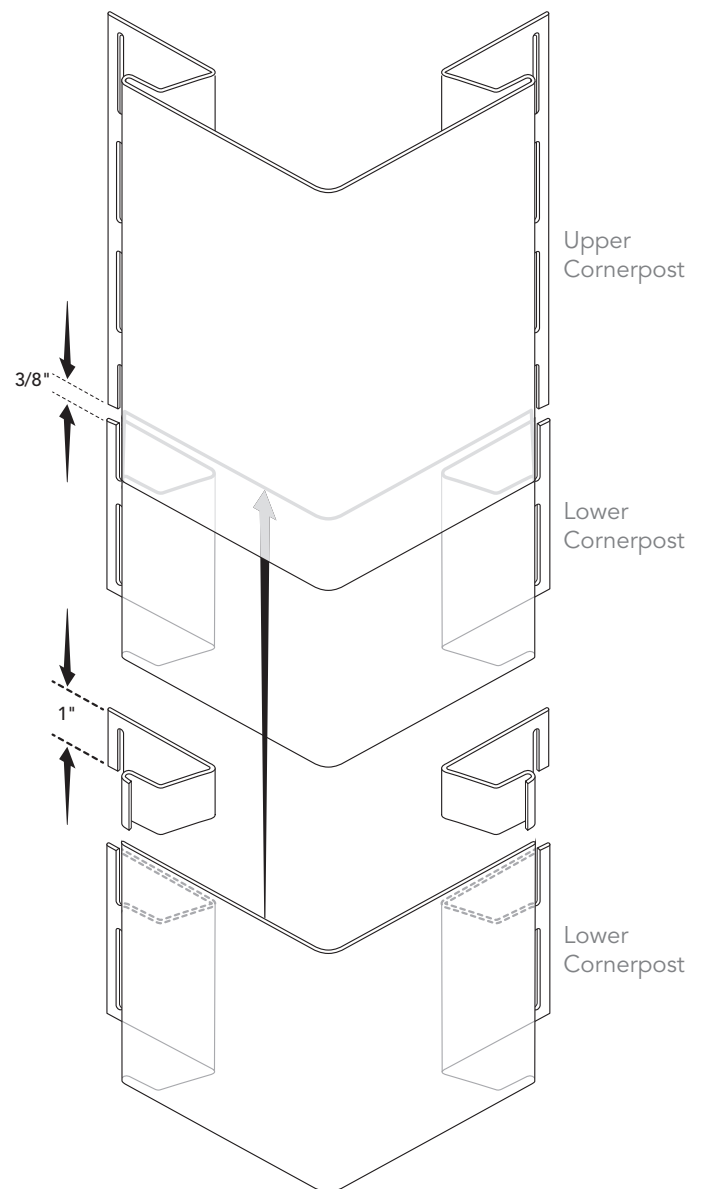
IMPORTANT: Hang corner post by placing first fasteners in the uppermost part of top slots at both sides of corner.

- Place all other fasteners in the center of nail slots, every 8" to 12".
- Do not fasten tightly; corner post should be able to move to allow for expansion. Allow 1/32" clearance between fastener head and nailing hem for expansion.**



CLADDING AND ACCESSORIES INSTALLATION: OVERLAPPING CORNER POSTS

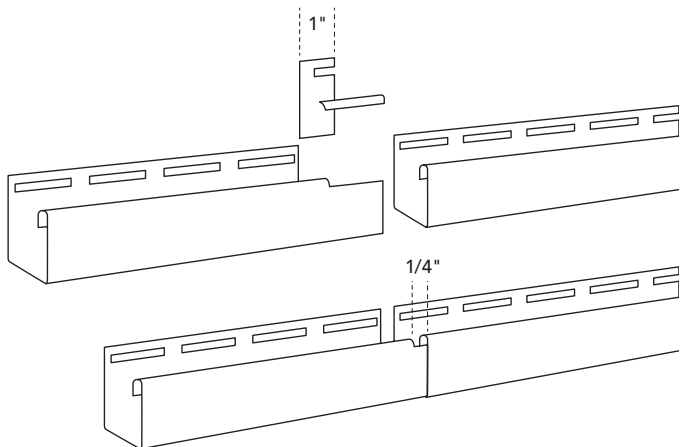
- At the top of lower cornerpost, cut 1" off the nailing flanges and channels so just the face of the outside cornerpost remains. Then lap 5/8" of the upper post over the lower post, allowing 3/8" for expansion.
- When the bottom edge of a cornerpost terminates into a porch, deck, brick, stone ledge or roof line, etc., allow 3/8" for every 10' of corner when the ambient temperature is above 40°F (4.44°C); 1/2" for every 10' of corner when the ambient temperature is 40°F (4.44°C) or below.



CLADDING AND ACCESSORIES INSTALLATION: J-CHANNELS

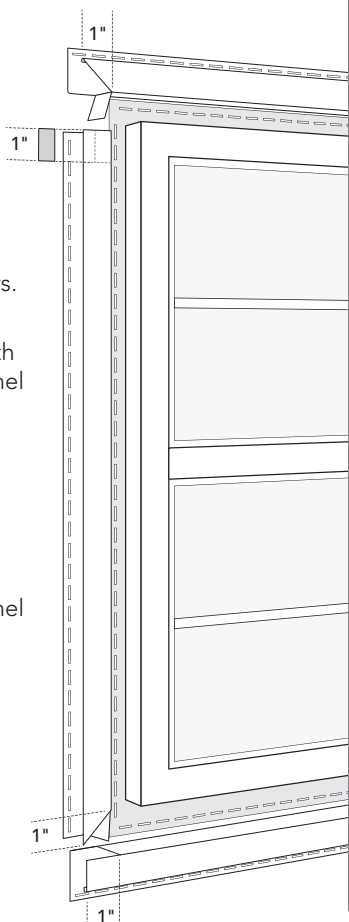
BOTTOM RECEIVER

- Make sure channels are level by snapping a chalk line.
- Drill minimum 3/16" diameter weep holes every 24".
- When joining two J-channels, cut one of the J-channel's nail flange and U shape hook leg at the face of the J-channel and insert into the adjoining J-channel 3/4" to create a clean overlap, leaving a 1/4" gap between hook legs.



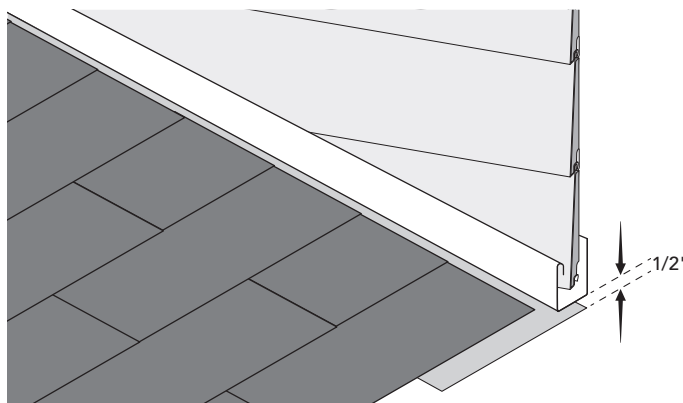
WINDOWS/DOORS/OBSTACLES

- Before installing J-channel, make sure the substrate meets requirements for a weather-resistant barrier system, including a weather-resistant barrier and proper flashing around windows, doors, other openings and corners.
- Begin cutting J-channel at the bottom of obstacle; measure width of the frame plus width of J-channel face to be installed at the jambs.
- Cut J-channels at the jambs; measure height of frame plus width of J-channel at the top and bottom of frame.
- Cut top J-channel; measure width of the frame plus width of J-channel face installed at the jambs.
- Create mitre cuts and tabs at the bottom of jamb pieces and both sides of top J-channel.
- Refer to fastener requirements, specs, and procedure above.



ROOFLINES AND GABLES

- Maintain a minimum of 1/2" from roofline shingles and step flashing.
- When joining two J-channels, cut one of the J-channel nail flange and U shape hook leg at the face of J-channel and insert into the adjoining J-channel 3/4" to create a clean overlap.

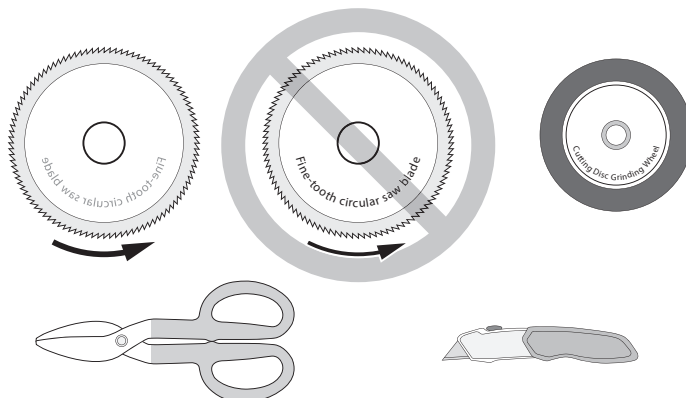


CUTTING CLADDING INSTRUCTIONS

- For vertical cuts to planks starting and finishing a course, transitioning into receiving channels and overlaps, use the following tools:
 - Circular saw with a fine tooth (plywood) blade installed backward.
 - Tin snips; avoid closing blade completely at end of each stroke for a cleaner cut.

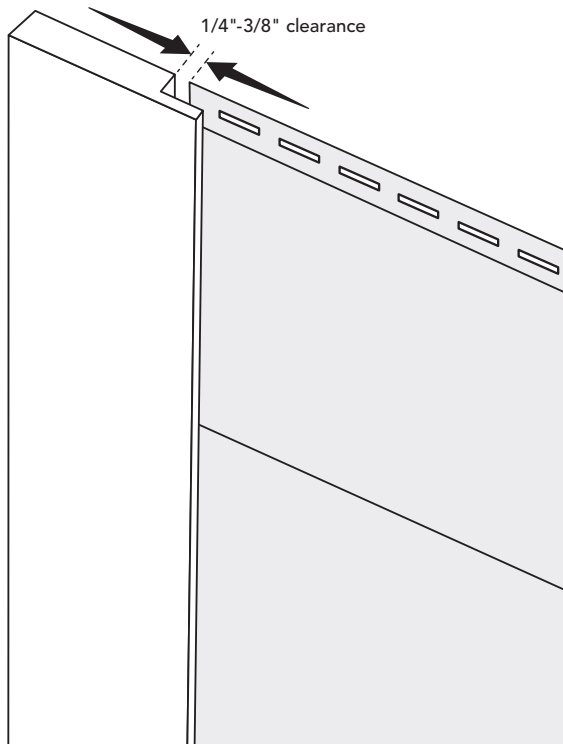
IMPORTANT: Vertical cuts must be straight; use a straight edge or carpenters square.

- For horizontal cuts above and below obstacles and finishing top course under overhangs, use the following tools:
 - Angle grinder with grinder blade.
 - Utility knife or scoring tool; score across and through the face of plank, into foam backing, and snap in half.
- For angle cuts in rakes and gables saws, snips and grinder blades are acceptable.



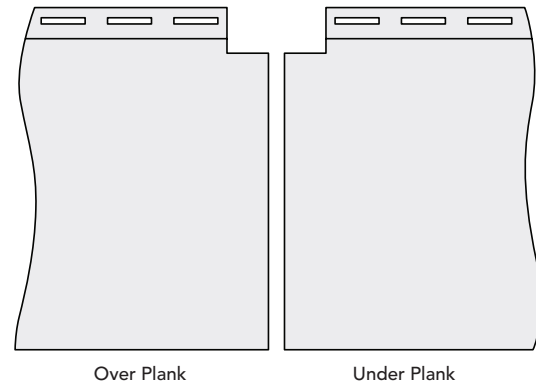
CLADDING AND ACCESSORIES INSTALLATION: CLADDING

- First course (row of planks) should be stack locked down into the starter strip. Planks should fully engage into the starter strip, but do not force down or create compression when fastening planks. **Plank should lay flat against wall.**
- **Allow for expansion and contraction by leaving 1/4" or 3/8" clearance between cladding and all corner posts and channels.**
- Remove plank factory notch before inserting into all receiving channels at corners, windows, doors and other obstacles.
- Avoid using planks shorter than 24" to start and finish a course.
- Check every 5th course for horizontal alignment on same and adjoining walls.
- When planning course layout, the first overlap should not occur in planks immediately above or below windows, doors and other obstacles. For subsequent overlaps occurring above or below windows, doors and other obstacles, and not using finish trim, shim behind overlaps for proper plank projection and secure fit in J-channel.
- Refer to fastener requirements, specs and procedure above.



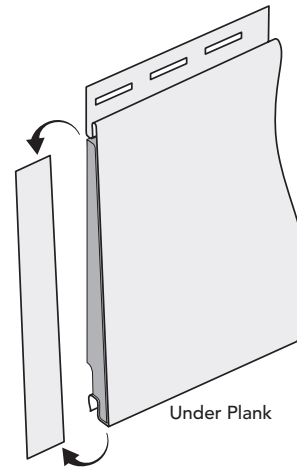
OVERLAPPING PLANKS

- Overlap away from areas with high traffic.
- Stagger cladding overlaps so that no two courses are aligned vertically unless separated by at least three courses.

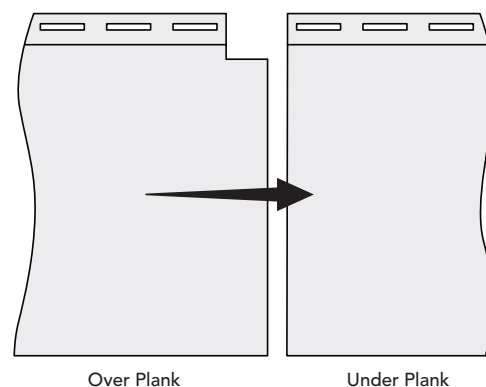


IMPORTANT FIELD CUT:

- End cut required on Under Plank for proper overlap.
- Remove end of Under Plank not adhered to foam.

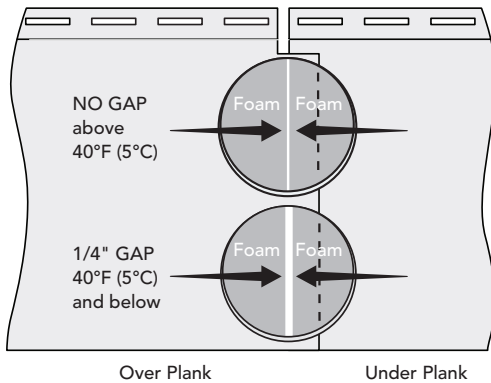


- Overlap Over Plank on top of Under Plank.



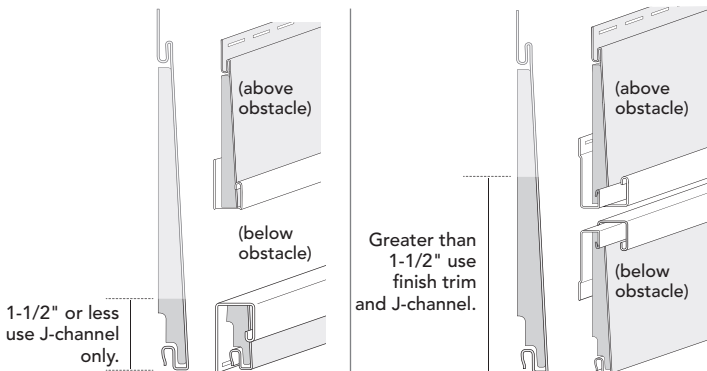
CLADDING AND ACCESSORIES INSTALLATION: CLADDING *Continued*

- Ensure foam-to-foam contact at overlap.

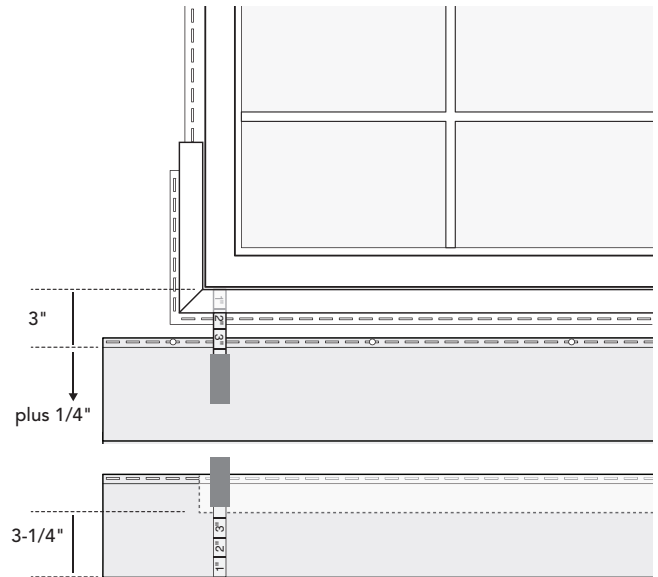


INSTALLATION AROUND OBSTACLES:

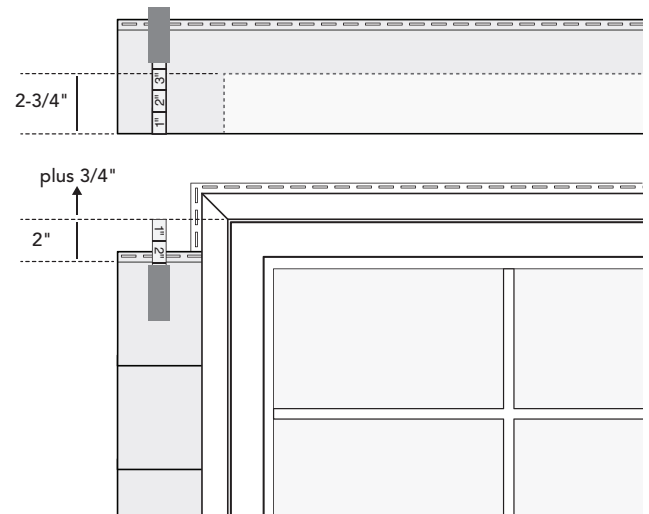
- Use mounting blocks with a receiving channel ring when installing cladding around fixtures such as faucets, vents, lights, pipes, lines, etc. Allow clearance (1/4" to 3/8") in receiving channels when installing cladding.
- Install ALIGN finish trim for maintaining plank projection and securing cladding on horizontal surfaces under and above windows, doors and other obstacles when the width is greater than 1 ft. Do not install vertically.
 - ALIGN finish trim is used anytime the top nail hem or bottom stack lock of plank has been removed (see exception below). ALIGN finish trim is inserted into the sill and header receiving channel. Receiving channel is installed prior to finish trim and measurements for plank cuts.



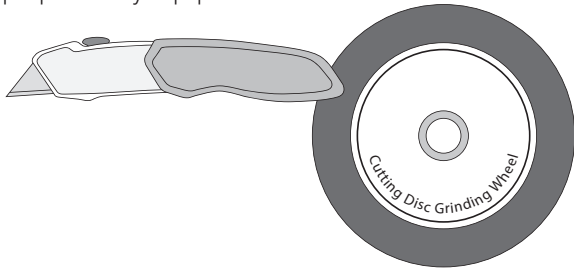
- When measuring the plank horizontal cut under obstacles, place tape measure into the backside of the receiving channel and measure to the top of the plank face of previously installed plank (past nail hem). Transfer measurement plus 1/4" to the cladding plank by pulling tape measure from the bottom of plank and mark measurement plus 1/4". Remove top of plank to the width of obstacle plus clearance (1/4" or 3/8") on both sides of obstacle.



- When measuring the plank horizontal cut above obstacles, hook tape measure onto the backside of the receiving channel and measure to the top of the plank face of previously installed plank (past nail hem). Transfer measurement plus 3/4" to the cladding plank by pulling tape measure from the bottom of plank and mark measurement plus 3/4". Remove bottom of plank to the width of obstacle plus clearance (1/4" or 3/8") on both sides of obstacle.



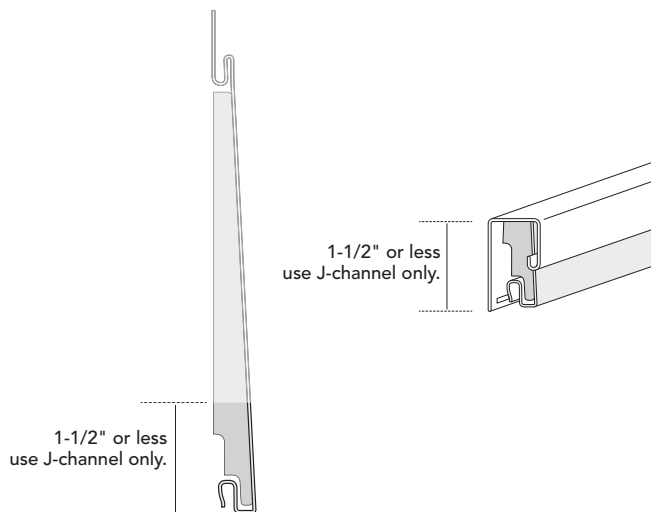
- Cut plank using a utility knife or grinder blade. Ensure proper safety equipment.



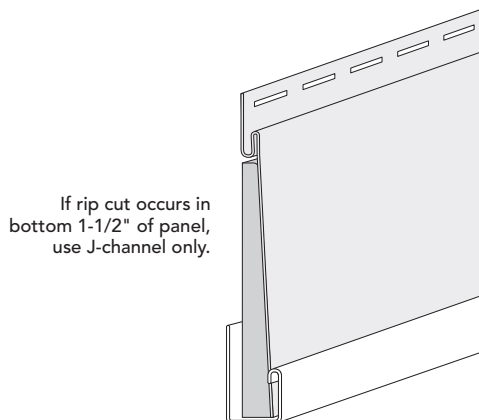
NOTE: Horizontal cuts occurring 1-1/2" or less from bottom butt of cladding do not require finish trim. Place up to 1-1/2" of cladding at the bottom butt into receiving J-channel only.

Finish Trim Usage Exception – Below Obstacle Rip Cut

- When horizontal cut occurs in the light shaded zone, finish trim is required.
- When horizontal cut occurs in the dark shaded zone, insert cut plank into receiving channel only, no finish trim required.



Finish Trim Usage Exception – Above Obstacle Rip Cut

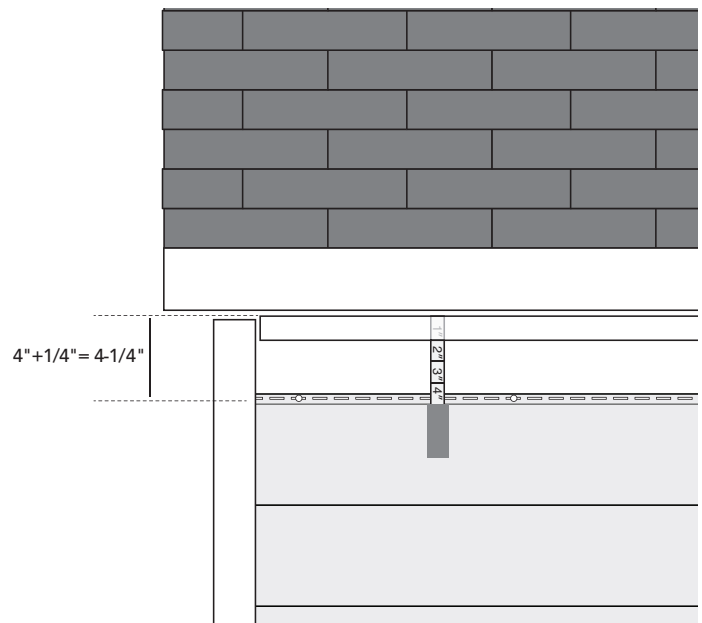


- Install finish trim into the receiving channel header and sill of windows, doors and other obstacles after taking measurements for plank horizontal cuts. **Finish trim should be installed flat against the wall.**
- ALIGN finish trim will allow plank to maintain projection while securing the horizontal cut section of the plank.

FINISHING TOP OF WALLS

LAST COURSE INSTALLED HORIZONTALLY IN RECEIVING CHANNEL AT THE EAVES

- Install J-channel under the soffit or eave to receive ALIGN finish trim.
- Place tape measure into the backside of the J-channel and measure to the top of previously installed plank (past nail hem). Transfer measurement plus 1/4" to the cladding plank by pulling the tape measure from the bottom of plank and mark the measurement plus 1/4", remove top of plank.



- Cut plank using a utility knife or grinder blade.

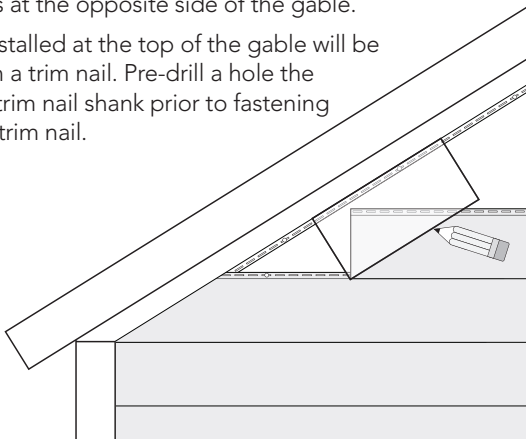
NOTE: Horizontal cuts removing top of cladding plank and leaving 1-1/2" or less of cladding plank at the bottom butt do not require finish trim. Place up to 1-1/2" of cladding at the bottom butt into receiving J-channel only.

- Install finish trim into the J-channel or other channeled accessory previously installed under the soffit. Finish trim should be installed flat against the wall.
- Push ALIGN plank completely into the finish trim before engaging the plank stack lock into previous course.
- ALIGN finish trim will allow plank to maintain projection while securing the horizontal cut section of the plank.

FINISHING TOP OF WALLS Continued

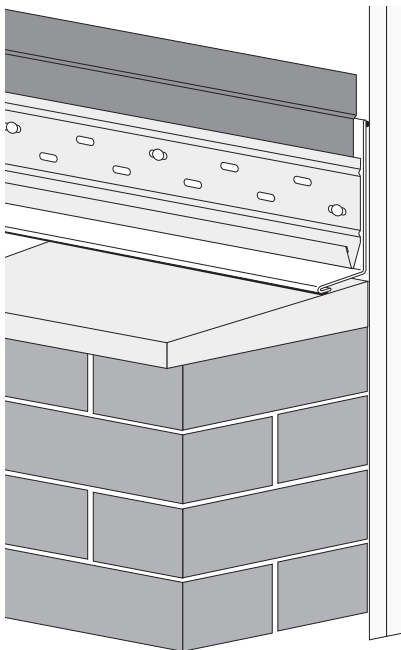
GABLE INSTALLATION

- Make a pattern that duplicates the angle or slope of the gable by stack-locking a small piece into the last course of cladding installed before the gable starts.
- Place a second piece into the gable J-channel and mark slope on the small piece of cladding.
- Remove small piece and cut along mark for a pattern to make gable cuts.
- Leave 1/4" clearance in receiving channel for plank expansion.
- Repeat steps at the opposite side of the gable.
- Last piece installed at the top of the gable will be installed with a trim nail. Pre-drill a hole the diameter of trim nail shank prior to fastening plank with a trim nail.



MASONRY TO ALIGN TRANSITION

- Caulk where substrate meets the top of flashing, and between the masonry and bottom of head flashing.
- Apply field-formed head flashing and tape.
- Install receiving channel or starter strip for horizontal ALIGN cladding.



CLADDING AND ACCESSORIES INSTALLATION: CELLULAR PVC TRIM GENERAL INFORMATION

- Install trim over a continuous substrate.
- Fasteners shall penetrate substrate minimum 1-1/2".
- Leave the recommended expansion space between pieces of trim based on temperature at the time of installation.
- Use PVC cement or adhesives to join pieces of cellular trim.
- Use 100% acrylic latex house paint if paint color is an LRV (Light Reflectance Value) greater than or equal to 55%.
- If LRV is less than 55%, use a coating that is formulated specifically for exterior vinyl products.
- Use sealant to fill gaps, nail and screw holes.

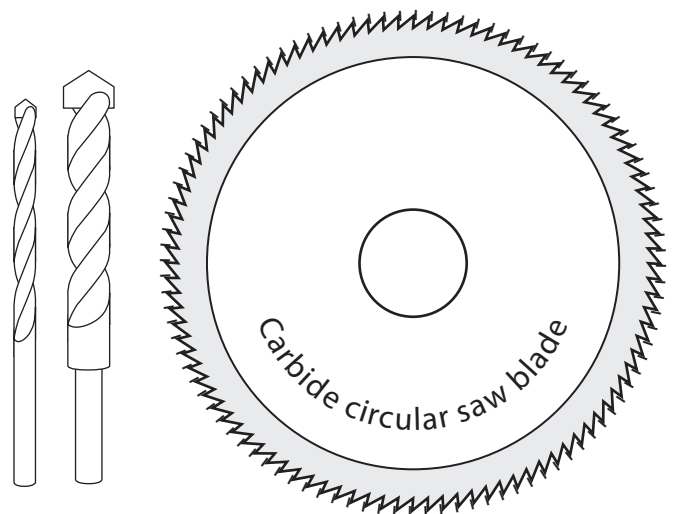
TRANSPORTING AND STORING

- Trim is shipped to the jobsite in a plastic wrap to protect from dirt and debris.
- Store on a flat level surface.
- Handle trim with care to avoid damage.

CUTTING

- Use conventional wood working saws.
- Use carbide tipped blades designed to cut wood.
- Do not use fine tooth metal cutting blades.
- Do not reverse blades.

Avoid rough edges from cutting caused by excessive friction, poor board support and worn saw blades.



DRILLING

- Do not use bits made for rigid PVC.
- Avoid frictional build-up and remove shavings from the drill hole as frequently as necessary.
- Drill with standard wood-working drill bits.

MILLING

- Mill using standard milling machines used to rout lumber.
- Relief angle 20 to 30 degrees.
- Do not score material.
- Cutting speed to be optimized with the number of knives and feed rate.

ROUTING

- Rout using standard bits and the same tools used to rout lumber.
- Carbide-tipped router bits recommended.

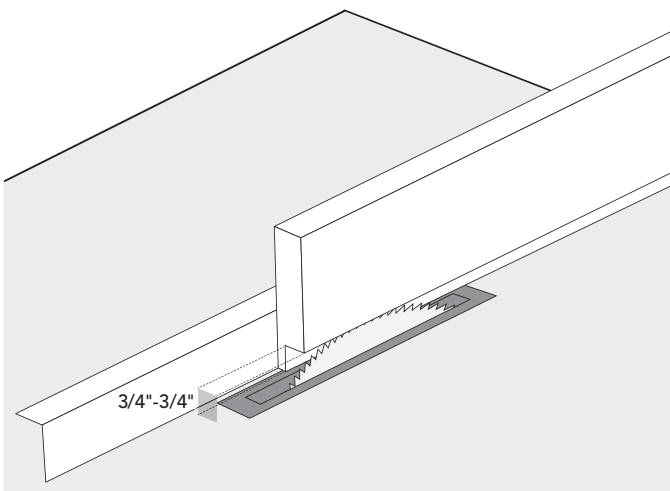
EDGE FINISHING

- Edges can be finished by sanding, grinding or filling with traditional woodworking tools.
- Sand with 150-220 grit sandpaper to create a smooth edge.

JOINTS

- Provide bevel or shiplapped joints for material subject to expansion and contraction. Do not use butt joints.
- Use butt joints for corner units or T-joints, only.

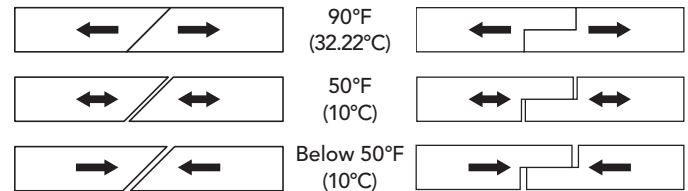
IMPORTANT: When field routing a solid board with a receiving channel, minimum 3/4" pocket depth and 3/4" projection routes are required.



EXPANSION/CONTRACTION

- Under normal conditions and when installed properly, PVC trim will expand/contract approximately 1/8" per 18'.

IMPORTANT: Failure to use proper type and quantity of fasteners may result in expansion/contraction greater than 1/8". Provide bevel or shiplapped joints for material subject to expansion and contraction. Do not use butt joints.

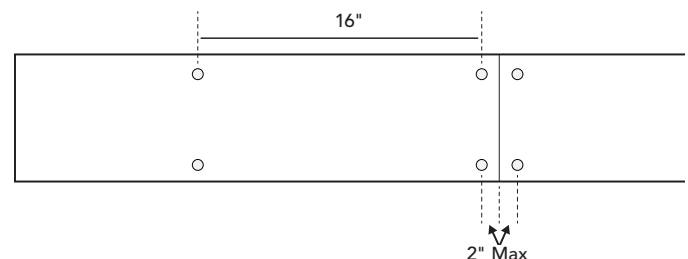


FASTENING

- Fasteners shall be hand nailed, power nailed or screwed.
- Power nailing: adjust nail gun to prevent excessive nailing pressure or overdriving the nail. Adjust for ambient and material temperatures.
- Pre-drill material when installing in low temperatures.
- Fasteners should be long enough to penetrate into a 1-1/2" solid wood substrate a minimum of 1-1/2".
- Staples, small brads and wire nails must not be used as fastening members.
- Fasten trim into a flat, solid wood substrate that is a minimum 1-1/2" thick. Do not fasten trim into hollow or uneven substrates.

FASTENER SCHEDULE

- Along length of board: fasten at 16" on center, maximum.
- Within width of board: 4" on center, maximum.
- Distance from end of each board: not more than 2".



BONDING

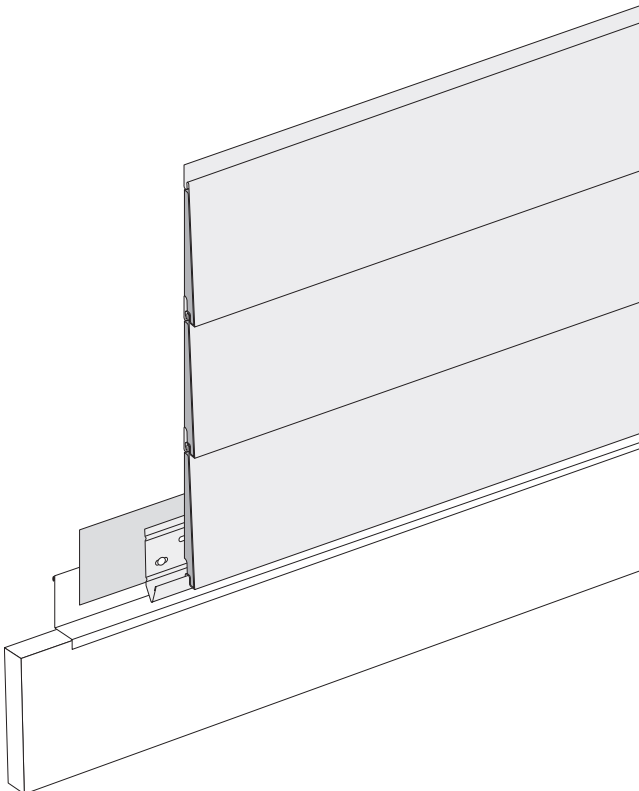
- Follow adhesive manufacturer's guidelines.
- Glue joints shall be secured on each side of the joint to allow adequate bonding time.
- Surfaces to be glued should be clean and dry and in complete contact with each other. Smooth surfaces shall be sanded and cleaned prior to bonding.
- Use PVC adhesive when installing short runs of trim.

FINISHING

- Correct dents and gouges before applying final coating.
- Nail holes should be filled using Structural Sealant, Cellular PVC Adhesive or Nail Stick.
- Clean material with a light detergent and warm water. Stubborn stains may be removed with rubbing alcohol.

SKIRTBOARD INSTALLATION AT GRADE

- Skirtboard can be installed for aesthetics, but is not required for installation of ALIGN cladding at grade.
- Skirtboard design with a kick out leg at the top is not compatible with ALIGN.
- To achieve aesthetics of skirtboard, use solid trim board with field-formed head flashing and ALIGN starter strip above the trim board.



MASONRY TO CLADDING TRANSITION

- Water Table design with a kick out leg at the top is not compatible with ALIGN. Remove kick out leg, install head flashing with tape and ALIGN starter strip or receiving channel.
- **Option:** To achieve aesthetics of Water Table, use solid trim board with field-formed head flashing with tape and ALIGN starter strip or receiving channel above the trim board.

BAND BOARD INSTALLATION

- Band board aesthetics will require a field-routed pocket 3/4" x 3/4" at the bottom of a solid trim board.
- Install ALIGN finish trim into the field routed pocket (see Finish Trim Usage Exception Section on page 9).
- Finish last course of cladding into ALIGN finish trim.
- Head flashing should be formed and installed above band board.
- Install starter strip or channel to receive first course of cladding above band board.

INSIDE CORNER INSTALLATION

- Install 3-1/2" trim board with channel to receive cladding.
- On the adjacent wall from 3-1/2" trim board, remove 1" wide strip from trim board and install the backside against the 3-1/2" trim board.

ONE-PIECE OUTSIDE CORNER INSTALLATION

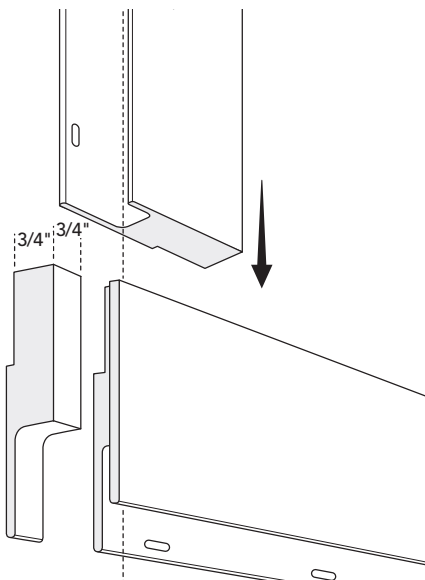
- 3-1/2" and 5-1/2" one-piece corner boards are recommended.
- Install two fasteners evenly spaced across each side, maximum 16" spacing across entire length of corner.

WINDOW SURROUND INSTALLATION

- Before installing trim, flash opening in accordance with AAMA method A1 or local building code requirements.
 - For new construction, trim boards with channel and nail fin cutout are recommended.
 - Cut sill, jambs and header to assemble picture frame of trim prior to installing on the wall.
 - When making mitre cuts at corners, additional field cuts are not required.
 - When making square cuts at corners and using the historic and solid sill, two field cuts are required to receive cladding:
 - Field route a 3/4" x 3/4" pocket at the bottom backside of sill. Cut ALIGN finish trim length 2" less than sill length and insert into the routed sill pocket.

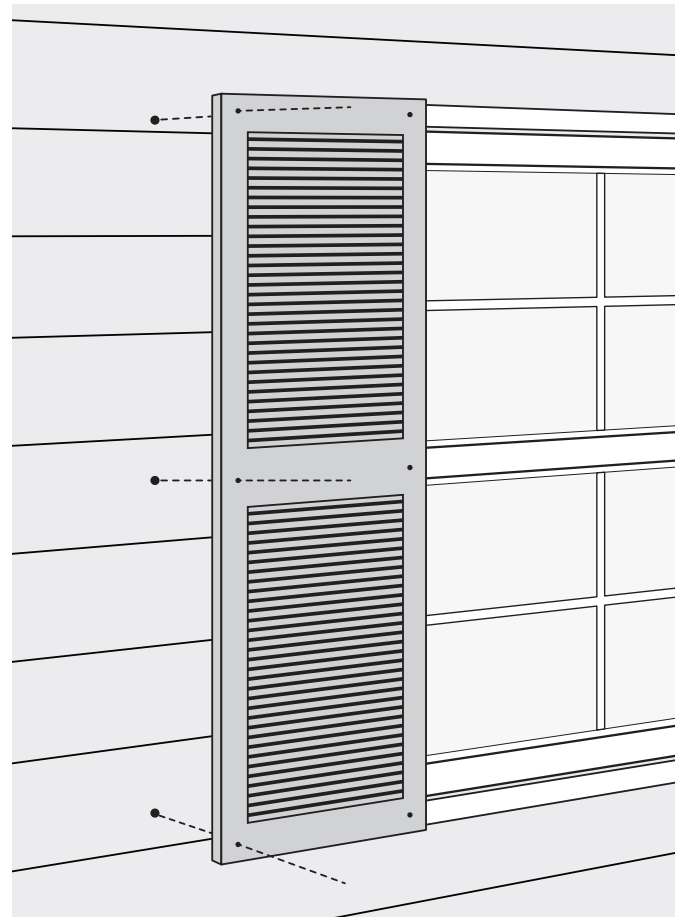
Exception: when using cellular trim with a channel, field route at backside is not required.

 - Field route 3/4" x 3/4" pocket across installed height of sill ends and top of both jamb pieces, to provide a continuous receiving channel at corners to receive plank.
- Install screws through bottom of sill into the jamb trim boards.
 - Glue and screw the header into the top of jambs.



SPECIALTY RECOMMENDATIONS: SHUTTER INSTALLATION

- Pre-drill holes through shutter and mark location of these holes on the cladding.
- Drill a hole 1/4" larger than the diameter of shutter screw shank in plank.
- Do not fasten tight.

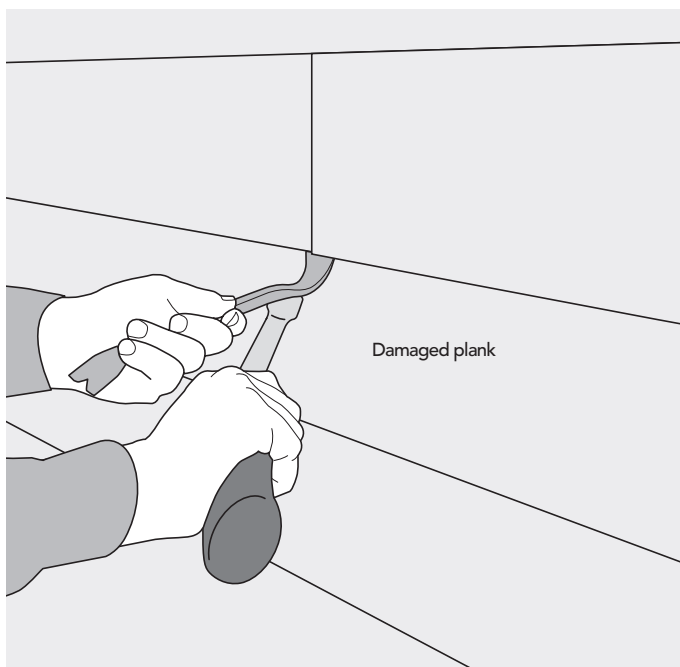


ATTACHMENT OF OTHER PRODUCTS

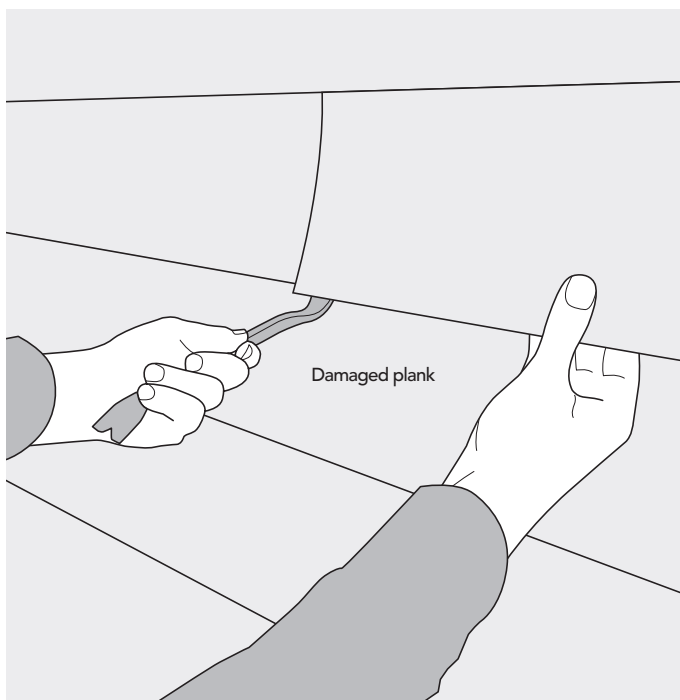
- Requires a hole to be 1/4" larger in diameter than fastener shank diameter used to attach product.

REPLACING A DAMAGED PLANK

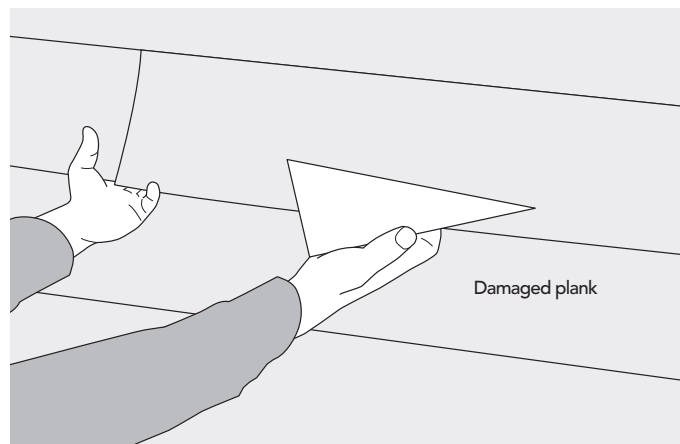
- 1 Locate an overlap of the cladding course above damaged plank.
- 2 Slide pry bar under the overlap of the cladding course above damaged plank.



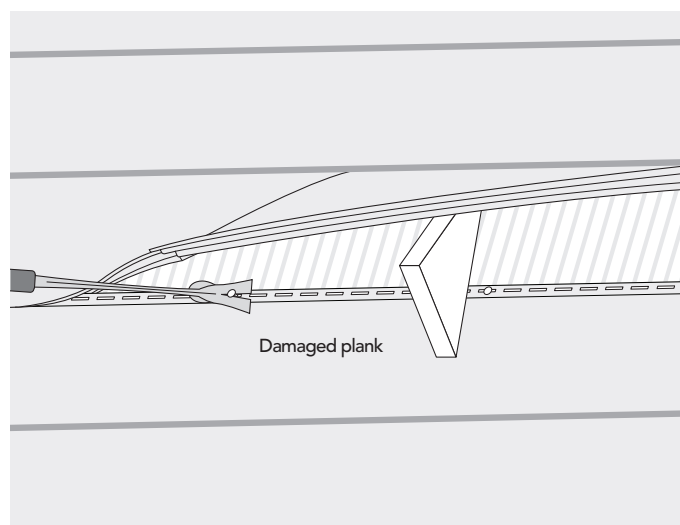
- 3 Using a hammer, tap up on the pry bar to unlock stack lock from the top lock of damaged plank. Repeat this step, working away from the overlap until stack lock is unlocked across the length of damaged plank.



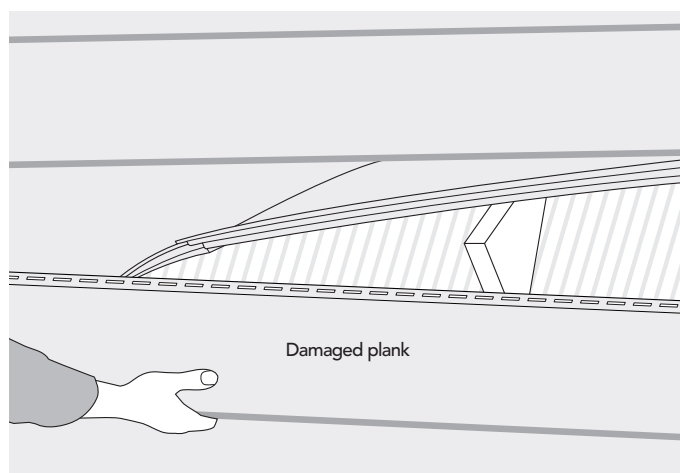
- 4 Place wood shims behind the cladding planks allowing more room to the nail hem of damaged plank.



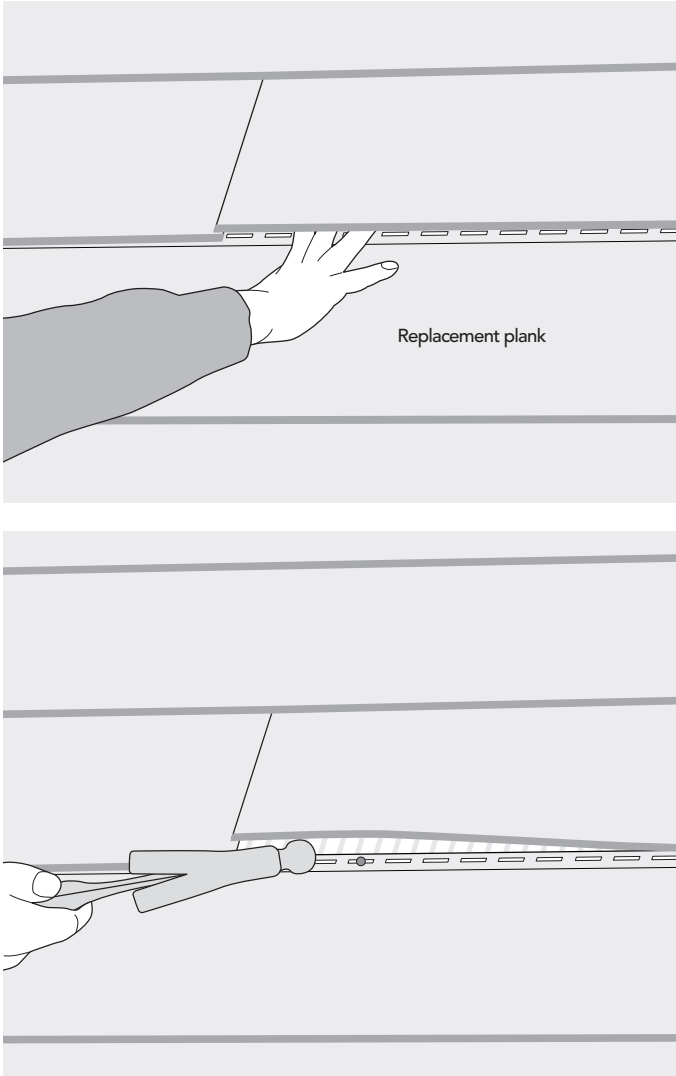
- 5 Remove fasteners from damaged plank.



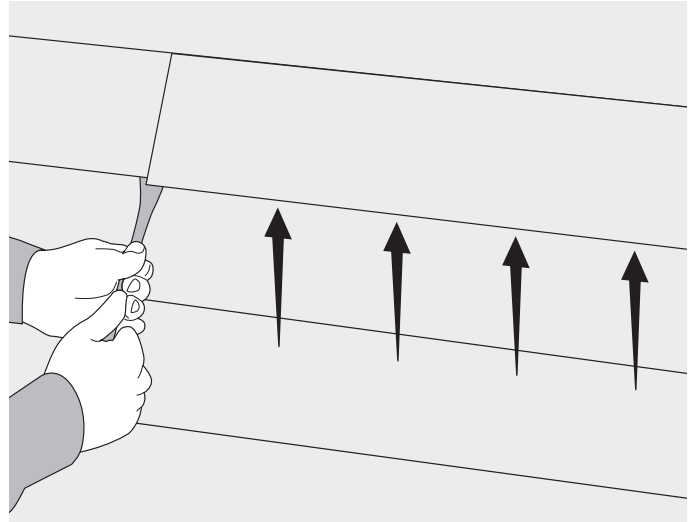
- 6 Unlock and remove damaged plank.



- 7 Install replacement plank and fasten.



- 8 Remove shims and starting at overlap, apply upward pressure to the bottom lock leg to engage stack lock into top lock of replacement plank.





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