

NichiProducts™ Installation Guidelines



Construction Requirements

- NichiProducts™ can be installed directly on braced wood or steel stud (20GA or heavier) construction spaced at a maximum of 24" o.c. or over sheathing with solid wood or steel backing.
- A weather resistive barrier is required in accordance with local building codes when installing NichiProducts. Use the approved weather resistive barrier (WRB) as defined by the 2007 IRC. Nichiha is not liable for water infiltration.
- When installing NichiProducts, it is recommended that an APA rated 7/16" OSB or plywood sheathing be used. NichiProducts may be installed over non-structural sheathing such as foam, fiber builder board, and gypsum type panels. Non-structural sheathing thickness shall not exceed 1". Due to the compressive nature of some non-structural sheathings, care must be taken not to overdrive the fastener and compress the sheathing. The fastener length must be increased by the thickness of the non-structural sheathing.
- Please consult with your local dealer or Nichiha directly when using NichiProducts on large projects, such as 45' or higher buildings or three (3) stories or greater buildings. Some special reinforcements may be required.

Product Inspection

- Inspect all products thoroughly prior to installation. Do not install any product which may have been damaged in shipment or displays damage to the primer or finish coat.
- Contact your local dealer or Nichiha Customer Service toll-free at 1-866-424-4421 should you have any questions about NichiProducts.

Storage & Handling

- NichiProducts MUST be stored flat and off the ground prior to installation. Nichiha recommends storing on pallets.
- NichiProducts MUST be kept dry, and stored in a covered area or covered with a tarp before installation. Moisture saturation before installation may cause shrinkage and board damage. Do not install saturated boards.
- Carry the products on edge. Do not carry or lift NichiProducts flat. Improper handling may cause cracking or board damage.
- Nichiha is not responsible for damage caused by improper storage and handling of NichiProducts.

Minimum Clearances

- Maintain a minimum 1" - 2" clearance between NichiProducts and decking, walks, steps, and hard surface driveways. (Fig. 1.1)

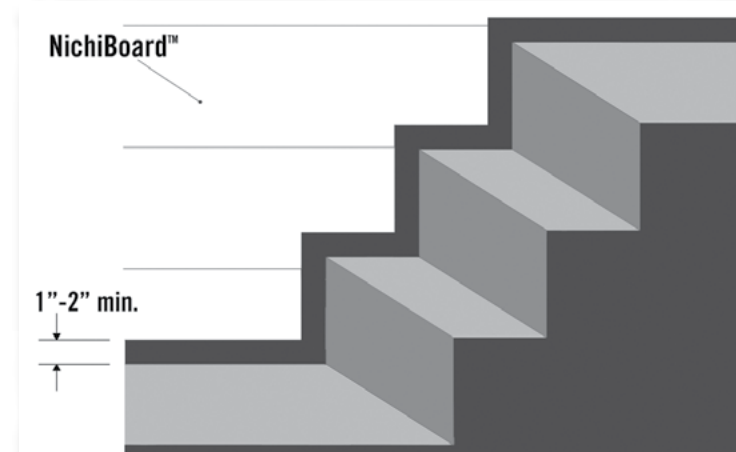


Fig. 1.1

- Maintain a minimum clearance of 6" above finished grade or in accordance with local codes if greater than 6" clearance is required. (Fig. 1.2)

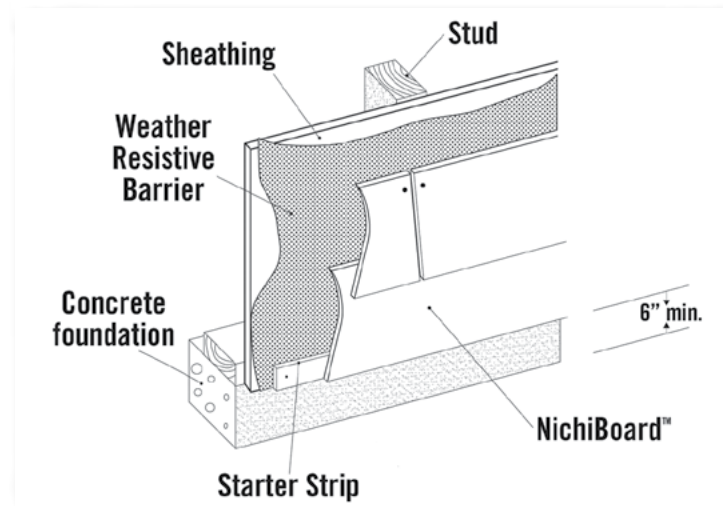


Fig. 1.2

- At roof and wall junctures and according to roofing manufacturer's instructions, flashing and counter-flashing are required. NichiProducts must be installed with a minimum 1" clearance from roofing. (Fig. 1.3)

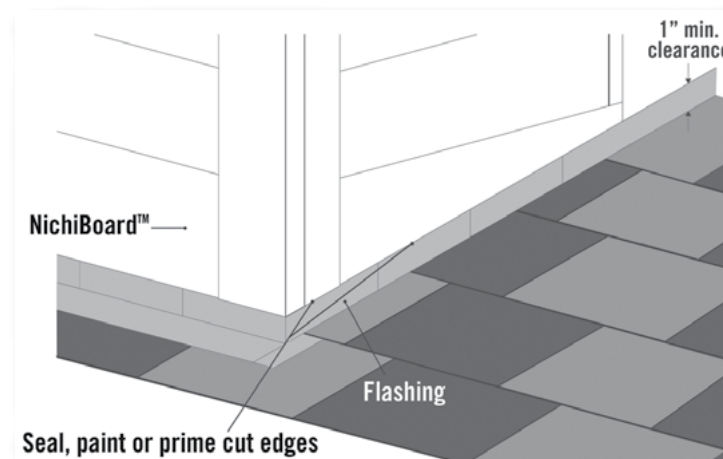


Fig. 1.3

- A "kickout" flashing must be present at roof - wall intersects to direct roof water away from the siding and trim. (Fig. 1.4)

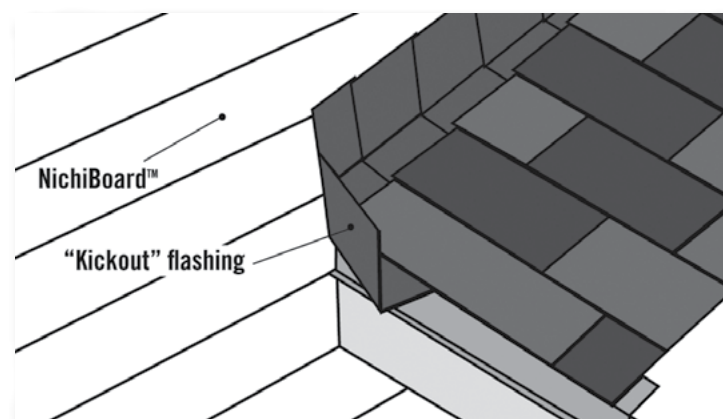


Fig. 1.4

Cutting

- For best results, cut NichiProducts™ face down. Also ensure the board is fully supported along its length.
- Recommended blade: Tenryu Board-Pro Plus PCD Blade (#BP-18505).
- Electric and pneumatic shears may be used for cutting 5/16" thick products. Models are available that can make straight or radius cuts. Shears cannot be used for cutting NichiTrim™ or Sierra Premium™ Shake or Smooth boards.
- A jigsaw fitted with a carbide-tipped blade may be used for cutting service opening holes, irregular shapes, radii, and scrollwork.

Fastening

- Nichiha products may be hand fastened or fastened with pneumatic tools. When using pneumatic tools, set the pressure of compressor so that the fastener is driven snug or under-driven to the surface of the board; then hand drive with a smooth faced hammer until the fastener head is flush to board surface.
- Pressure from compressors can vary depending on tank volume and number of lines connected to the unit. For best performance, always test and adjust pressure before beginning installation.
- Corrosion resistant fasteners, such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. Stainless steel fasteners are highly recommended in high-humidity and high-moisture regions. Nichiha is not liable for corrosion resistance of fasteners. DO NOT use aluminum fasteners, staples, clipped head or T-head nails, or fasteners that are not rated or designed for intended use.
- When using pneumatic tools, ensure the tool has an adjustable depth of drive or flush mount attachment to control nail seating depth. DO NOT use framing nailers.
- The fastener head must be flush to the board surface. DO NOT over drive or under drive fasteners.



Finishing and Maintenance

- Use an exterior grade high-quality sealant that complies with either ASTM C-834 (for primed products) or ASTM C-920 (for finished products) requirements for all gaps that require filling with sealant. FOLLOW THE MANUFACTURER'S INSTRUCTIONS FOR USE.
- All exposed field cut edges (i.e. outside edges, butt joints or bottom ends of corners and window trim), must be covered with primer, sealant, or paint.
- Dents, chips, scratches, etc. on the products shall be filled with exterior grade cementitious patching or putty. FOLLOW THE MANUFACTURER'S INSTRUCTIONS FOR USE.
- All unfinished (pre-primed) products must be painted within 12 months of installation. Exterior grade 100% acrylic latex paints are recommended. FOLLOW THE MANUFACTURER'S INSTRUCTIONS FOR USE.

Safety Instructions

REFER TO THE NICHHA SAFETY GUIDELINES AND OSHA GUIDELINES FOR IMPORTANT SAFETY PRACTICES FOR YOUR AND OTHERS' PROTECTION.

Whenever drilling, cutting, sawing, sanding or abrading the product, users should wear proper protective equipment such as safety glasses, work gloves, etc. as prescribed by OSHA and your employer.

Industrial dusts can irritate and abrade the eyes and lungs and can cause respiratory problems and diseases. Use best practices to reduce airborne dust concentrations such as:

- Position the cutting table where wind will carry dust away from the user and others in the area.
- Work outdoors when feasible; otherwise use mechanical ventilation.
- For dust control, use a dust-reducing circular saw with a vacuum attachment in combination with a diamond-tipped or carbide-tipped blade for general cutting.
- For best results the dust collector should be connected to a HEPA vacuum. Recommended circular saw: Makita 7-1/4" Circular Saw with Dust Collector (#5057KB).
- Wear properly fitted NIOSH/OSHA approved dust masks or respirators, in accordance with applicable government regulations. See 29 C.F.R. § 1910.134; 29 C.F.R. § 1910.1000; 42 C.F.R. § 84. For more information visit <http://www.cdc.gov/niosh/npg/npgd0553.html> for the various types of masks and respirators that NIOSH recommends.
- Comply with all applicable OSHA PELs.
- Notify others in the immediate area to take appropriate precautions.
- Consult with your employer about keeping the worksite clean and ways to reduce or eliminate any take-home exposures to dusts and chemicals.



Nichiha MSDS's for all products are available on nichiha.com, at your local NICHHA dealer, or through NICHHA directly. Call toll-free at 1.866.424.4421.

Silica Dust Warning: NICHHA products may contain some amounts of crystalline silica [a.k.a. sand, silicon dioxide], which is a naturally occurring mineral. The amount will vary from product to product. Inhalation of crystalline silica into the lungs and repeated exposure to silica can cause health disorders, such as silicosis, lung cancer, or death depending upon various factors. To be conservative, Nichiha recommends that whenever cutting, sawing, sanding, sniping or abrading the product, users observe the Safety Instructions above. For further information or questions, please consult the MSDS, your employer, or visit www.osha.gov/SLTC/silicacrystalline/index.html and www.cdc.gov/niosh/topics/silica. The MSDS for Nichiha products are available at www.nichiha.com, at your local Nichiha dealer or through Nichiha directly at 1.866.424.4421. FAILURE TO ADHERE TO OUR WARNINGS, MSDS, AND OTHER INSTRUCTION MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

Preparation

Follow all general instructions on page one of this guide.

- NichiBoard™ can be installed directly on braced wood or steel stud (20GA or heavier) construction spaced at a maximum of 24" o.c. or over sheathing with vertical solid wood or steel backing. (Fig. 3.1)

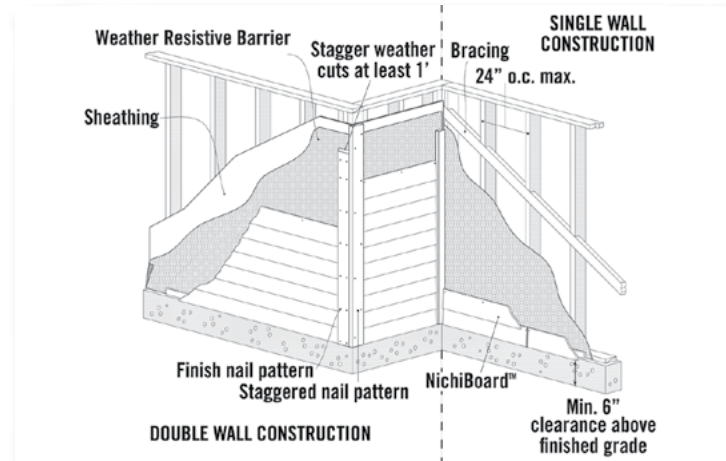


Fig. 3.1

- When installing NichiBoard, it is recommended that an APA rated minimum 7/16" OSB or plywood sheathing be used. NichiBoard may be installed over non-structural sheathing such as foam, fiber builder board, and gypsum type panels. Non-structural sheathing thickness shall not exceed 1". Due to the compressive nature of some non-structural sheathings, care must be taken not to overdrive the fastener and compress the sheathing. The fastener length must be increased by the thickness of the non-structural sheathing.
- Ensure all weather resistive barriers are in place in accordance with local code.
- Framing misalignment or irregularities in the sheathing application should be corrected prior to siding installation. These irregularities may mirror through the finished installation.

Fastening

- Corrosion resistant fasteners, such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. Stainless steel fasteners are highly recommended in high-humidity and high-moisture regions. NichiBoard is not liable for corrosion resistance of fasteners. Do not use aluminum fasteners, staples, clipped head or T-head nails, or fasteners that are not rated or designed for intended use.
- Corrosion resistant, full round head siding nails or appropriate screws may be used to install NichiBoard to wood and steel framing members. Fasteners must penetrate into wood a minimum of 1" or into a 20 gauge steel stud a minimum 1/2".
- The fastener head must be flush to the board surface. Do not over drive or under drive fasteners.

Installation

Follow all general instructions on page one of this guide.

Starter Strip & First Course (Fig. 3.2)

- A starter strip is required to set the first course on the proper angle and to create a drip edge at the bottom course of siding. The starter strip material may be a cut piece of NichiBoard, FS 1005 Nichiha Spacer, PVC, or pressure treated lumber. Do not use untreated lumber, plywood, OSB, or other engineered wood products as a starter strip.
- Install the starter strip level with the bottom of the wall sheathing or mudsill.

- Ensure the first course of boards is level as it will be the guide for entire installation. Use a level and chalk line to establish a level and straight reference point for the first course. Continue to check for level lines throughout installation.
- The first course of siding must hang below the starter strip a minimum of 1/4".

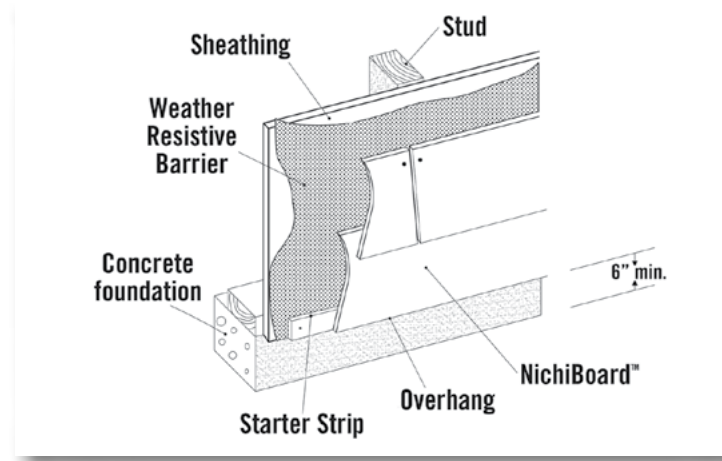


Fig. 3.2

- The siding should not extend below the corner trim.
- The bottom edge of the first course must have at least 6" clearance above finished grade.
- It is recommended the course heights remain aligned and transfer around corners.

Overlap (Fig. 3.3-4.1)

- A minimum overlap of 1-1/4" is required.

Blind Nailing (Fig. 3.3)

- For a more aesthetically pleasing installation, NichiBoard may be installed in a hidden, or blind nail application.
- Position the fastener between 3/4" and 1" down from the top edge of the board and no closer than 3/8" from the board ends.
- Fasten from one end of the board to the other.

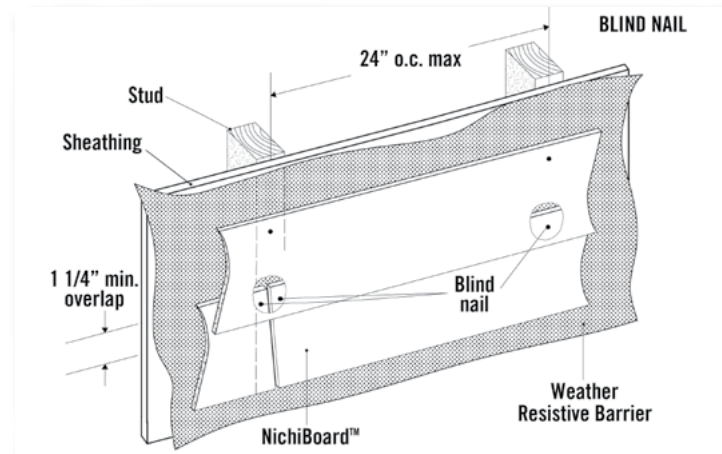


Fig. 3.3

Face Nailing (Fig. 4.1)

- It is permissible to install NichiBoard in a face nail type installation to meet certain installation requirements or when specified by local code.
- Position the fastener a minimum distance of 3/4" up from the bottom edge of the board and no more than 1". This ensures the fastener will penetrate through the overlap and through both courses. Place the fastener no closer than 3/8" from board ends.
- Fasten from one end of the board to the other.

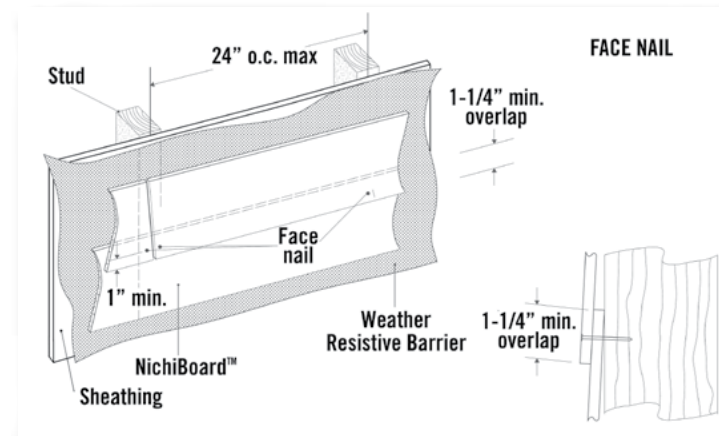


Fig. 4.1

Vertical Joint Placement

- All NichiBoard vertical joints must land or "break" over studs or framing in both conventional wood and metal construction.
- Metal off-stud joiners may be used to join boards not broken over framing.
- When possible, use factory sealed or finished ends at butt joints. Position cut ends where boards meet trim attachments.
- If cut ends are used at butt joints they must be sealed with primer, sealer, or paint. NEVER leave exposed cut edges uncoated.
- For better appearance, offset butt joints 32" (two studs) or more. Avoid creating a "step" or "ladder" pattern.

Joint Treatment

Joint Installation Using Flashing (recommended) (Fig. 4.2)

- The use of a joint flashing behind the butt joints is recommended.
- Suitable materials for joint flashing include anodized or PVC coated coilstock and code approved weather resistive barriers.
- The joint flashing should be at least 3" in width and long enough to extend above the board width a minimum of 1-1/2".
- Install NichiBoard™ boards over joint flashing with moderate contact.

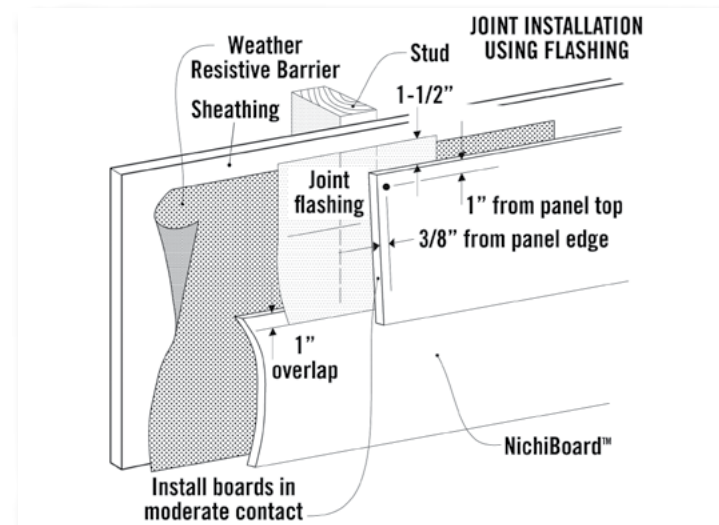


Fig. 4.2

Joint Installation Using Caulk (Fig. 4.3)

- Leave appropriate gap (minimum 1/8") between board ends and fill with a quality exterior grade caulk. Ensure caulk meets ASTM 834 or ASTM C-920 requirements and is approved for use at butt joints.

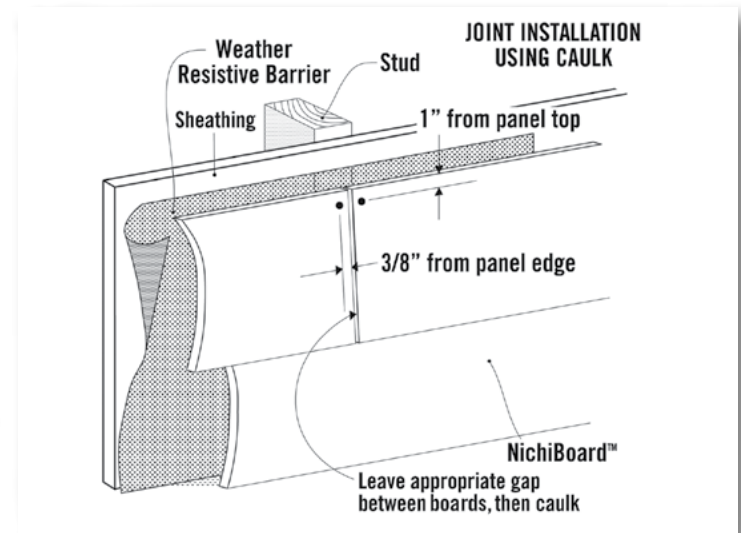


Fig. 4.3

Siding to Trim Joints (Fig. 4.4-4.5)

- Where board ends and edges meet trim at inside and outside corners, door, window and other trim attachments, leave a minimum 1/8" gap and caulk with a quality caulk as described above.
- Trim attachments must be of sufficient thickness. The overlapped boards must not extend beyond the face of the trim.
- A flashed 1/4" clearance must exist over horizontal trim.

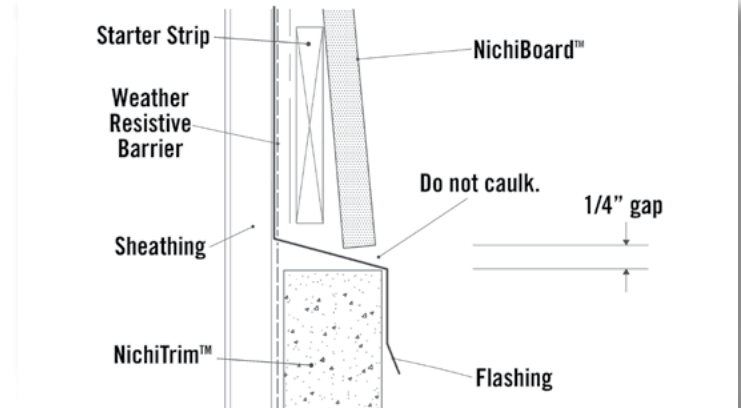


Fig. 4.4

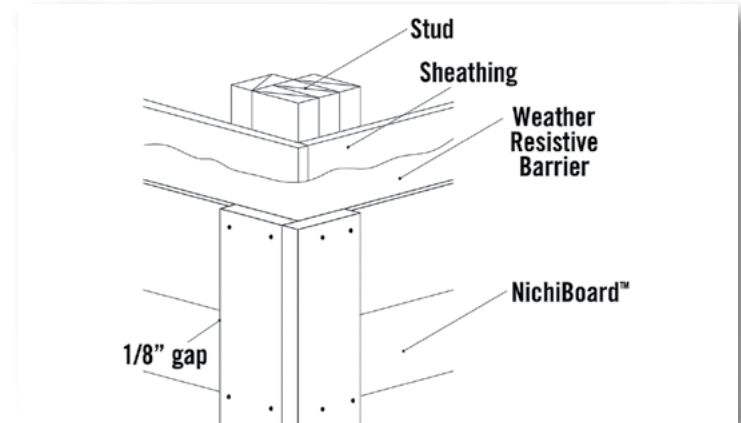


Fig. 4.5

Finishing

Follow all general finishing instructions on page one of this guide.

Preparation

- Follow all general instructions on page one of this guide.
- NichiShake™ individual shakes must be installed directly on minimum thickness 7/16" thick APA rated OSB or plywood sheathing.
- Ensure all weather resistive barriers are in place in accordance with local code.
- Framing misalignment or irregularities in the sheathing application should be corrected prior to siding installation. These irregularities may mirror through the finished installation.
- Due to overlapping of shakes, no sealant or caulk is required at shake to shake joints.

Fastening

- Follow all general fastening instructions on page one of this guide.
- Corrosion resistant fasteners, such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. Stainless steel fasteners are highly recommended in high-humidity and high-moisture regions. Nichiha is not liable for corrosion resistance of fasteners. Do not use aluminum fasteners, staples, clipped head or T-head nails, or fasteners that are not rated or designed for intended use.
- Use a corrosion resistant, min. 1-1/2" length, full round head siding nail or appropriate screw to install the shake to the sheathing.
- The fastener head must be flush to the shake surface. Do not over drive or under drive fasteners.
- NichiShake must be fastened through previous shake course.

Installation

Follow all general instructions on page one of this guide.

Starter Strip & Starter Course (Fig. 5.1)

- A starter strip is required to set the first course on the proper angle and to create a drip edge at the bottom course of siding. The starter strip material may be a cut piece of NichiBoard™, FS 1005 Nichiha Spacer, PVC, or pressure treated lumber. Do not use untreated lumber, plywood, OSB, or other engineered wood products as a starter strip.

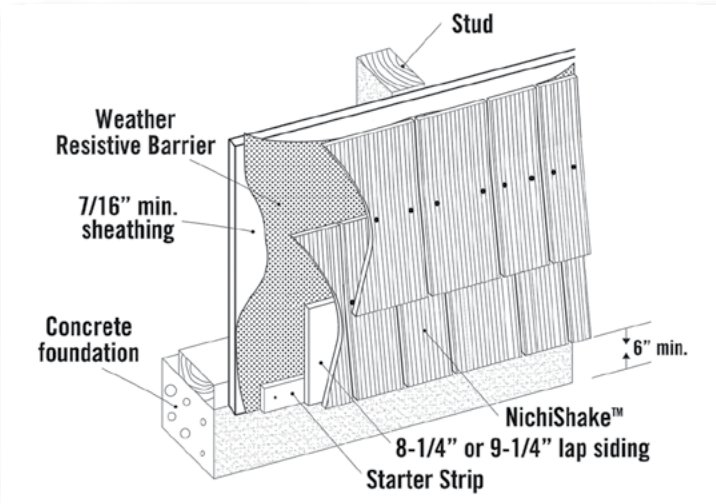


Fig. 5.1

- Install the starter strip level with the bottom of the wall sheathing or mudsill.
- In addition to the starter strip, a starter course is required to provide solid backing and keyway coverage for the first row of shakes. Use 8-1/4" or 9-1/4" NichiBoard for the starter course.

- Ensure the first course of shingles are level. Use a level and chalk line to establish a level and straight reference point for the first course. Continue to check for level lines throughout installation.
- The shingles should not extend below the corner trim.
- The bottom edge of the first course must have at least 6" clearance above finished grade.
- For best appearance, it is recommended the course heights remain aligned and transfer around corners.

Installing Shake Courses (Fig. 5.2-6.1)

- Begin the installation by placing the first course of shingles flush with the bottom edge of the starter course and securing with the appropriate fastener. Alternatively, strike a chalk line 18" above the bottom edge of the starter course and position the top edge of the shingles even with the chalk line.
- Space shingles 1/4" to 5/16" apart. A common practice is to use a 1/4" shim or small piece of shake as a spacer.
- To position the next course, measure 8" up from the bottom edge of the installed course of shake. Strike a chalk line. Position the bottom edge of the second course of shakes along the chalk line. Position fasteners between 8 1/4" and 9" up from the bottom edge of the shake where the fastener will penetrate through both courses.
- Position fasteners 1/2" to 1" in from the side edges of the shake.
- When installing, mix the 6-1/4", 8-1/4", and 12" shake widths in a random manner and avoid creating a repeating pattern. Layout of the course may be needed to help avoid stacked keyways.
- Shake keyways from one course to the next should not line up and be offset a minimum of 1-1/2".

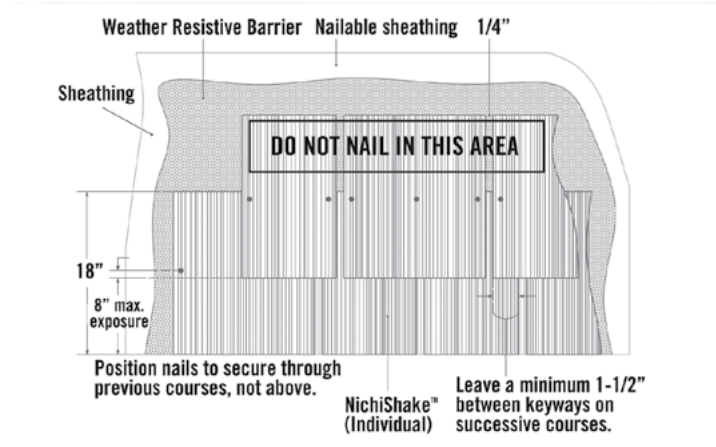


Fig. 5.2

Finishing

Follow all general finishing instructions on page one of this guide.

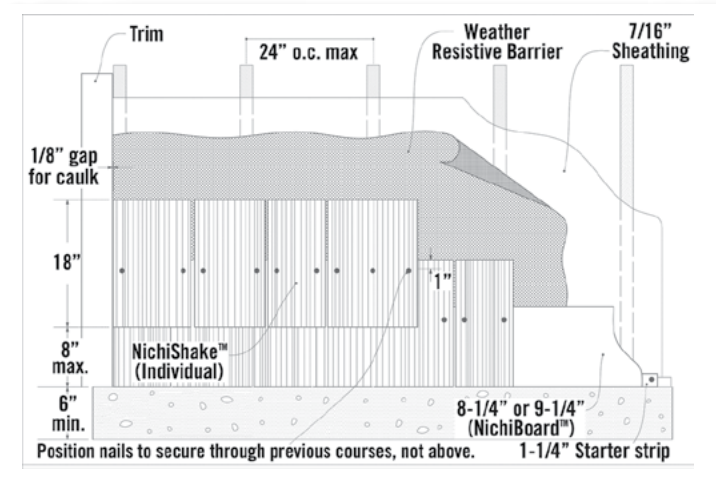


Fig. 6.1

Shake to Trim Joints (Fig. 6.2-6.3)

- Where shake ends and edges meet trim at inside and outside corners, door, window and other trim attachments, leave a minimum 1/8" gap and caulk with a quality caulk that meets ASTM 834 or ASTM C-920 requirements.
- Trim attachments must be of sufficient thickness. The overlapped shakes must not extend beyond the face of the trim.
- A flashed 1/4" clearance must exist over horizontal trim.

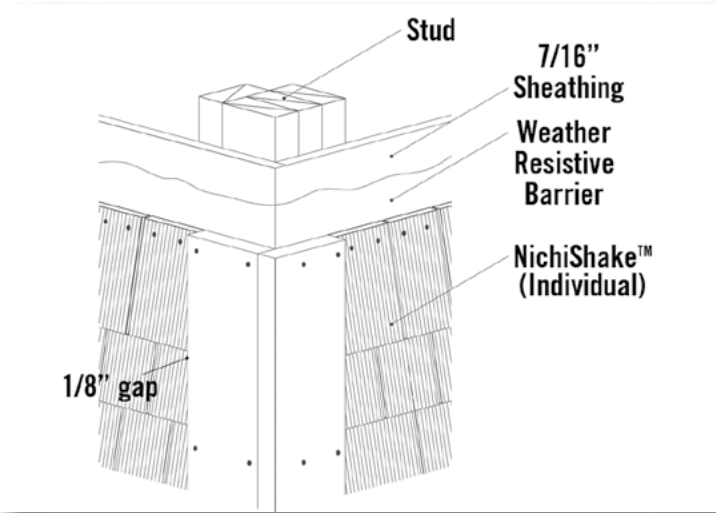


Fig. 6.2

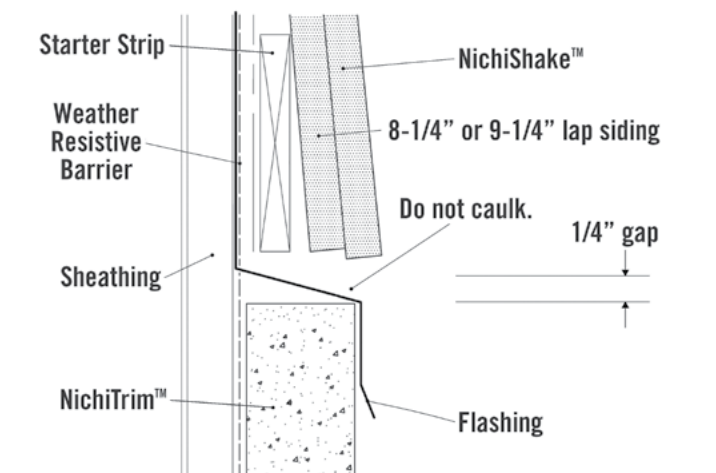


Fig. 6.3

Preparation

- Follow all general instructions on page one of this guide.
- NichiStaggered and NichiStraight shake panels can be installed directly on braced wood or steel stud (20GA or heavier) construction spaced at a maximum of 24" o.c. or over sheathing with vertical solid wood or steel backing.
- When installing shake panels, it is recommended that an APA rated 7/16" OSB or plywood sheathing be used. NichiStaggered and NichiStraight panels may be installed over non-structural sheathing such as foam, fiber builder board, and gypsum type panels. Non-structural sheathing thickness shall not exceed 1". Due to the compressive nature of some non-structural sheathings, care must be taken not to overdrive the fastener and compress the sheathing. The fastener length must be increased by the thickness of the non structural sheathing.
- Ensure all weather resistive barriers are in place in accordance with local code.
- Framing misalignment or irregularities in the sheathing application should be corrected prior to siding installation. These irregularities may mirror through the finished installation.
- NichiStaggered and NichiStraight panels may only be installed on vertical walls and is not intended for use on Mansford or Gambrel type roofs.

Fastening

- Corrosion resistant fasteners, such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. Stainless steel fasteners are highly recommended in high-humidity and high-moisture regions. Nichiha is not liable for corrosion resistance of fasteners.
- Do not use aluminum fasteners, staples, clipped head or T-head nails, or fasteners that are not rated or designed for intended use.
- Corrosion resistant, full round head siding nails or appropriate screws may be used to install shake panels to wood or steel framing members, or to minimum thickness 7/16" OSB or plywood sheathing. Nails may be smooth or ring shank. When nailing into vertical framing fasteners must penetrate into wood a minimum of 1" or into a minimum 20 gauge steel stud 1/2".
- When installing over minimum 7/16" OSB or plywood sheathing, space fasteners a maximum of 12" apart.
- The fastener head must be flush to the panel surface. Do not over drive or under drive fasteners.

Installation

Follow all general instructions on page one of this guide.

Starter Strip & Starter Course (Fig. 7.1)

- A starter strip is required to set the first course on the proper angle and to create a drip edge at the bottom course of siding. The starter strip material may be a cut piece of NichiBoard lap siding, FS 1005 Nichiha Spacer, PVC, or pressure treated lumber. Do not use untreated lumber, plywood, OSB, or other engineered wood products as a starter strip.

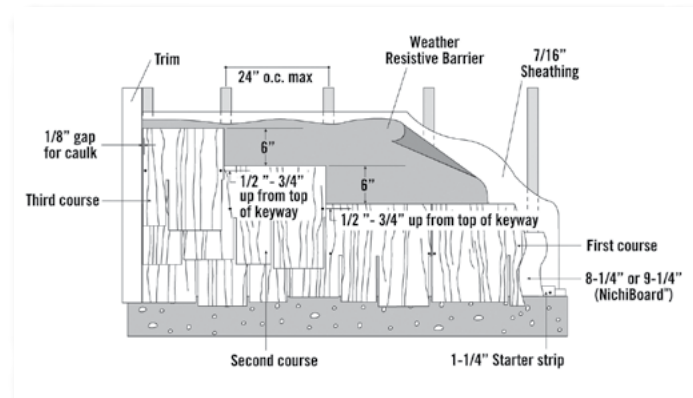


Fig. 7.1

- Install the starter strip level with the bottom of the wall sheathing or mudsill.
- In addition to the starter strip, a starter course is required to provide solid backing and keyway coverage for the first row of NichiStraight or NichiStaggered panels. Use 8 1/4" or 9 1/4" NichiBoard for the starter course.

Installing Shake Courses - NichiStaggered™ (Fig. 7.2)

- Ensure the first course of panels is level. Use a level and chalk line to establish a level and straight reference point for the first course. Continue to check for level lines throughout the installation.
- Install the panels starting at one end and working across the wall.
- Begin the installation by trimming the first panel to ensure the panel end falls or breaks over framing. Trim the panel end which is nearest the corner board.
- On applications where the panel will butt to door, window, or corner trim, cut the upper edge of the panel so it is even with the keyway.
- When installing NichiStaggered panels, if desired, the bottom of the first course may be trimmed to create a straight edge even with the starter course. Place the first course of panels flush with the bottom edge of the starter course and secure with the appropriate fastener.
- As an alternative, strike a chalk line 16" above the bottom edge of the starter course and position the top edge of the shingles even with the chalk line.
- For best appearance, the bottom edge of the panels should align with the corner trim.
- Leave a 1/8" gap between the panel edge and any trim attachment.
- Bring panel edges together in moderate contact.
- To begin the second course, measure and chalk a line 6" up from the top edge of the first course to use as a guide when installing the second course of panels.
- Measure and trim the first piece in the second course so it is one stud cavity less in length than the first piece on the previous course.
- If framing is spaced 16" on-center, begin the third course by again cutting the panel one stud cavity less than the first piece on the second course.
- For subsequent courses, position panels in a manner that avoids creating a pattern.
- Drive fasteners into framing where possible.
- Position the fastener approximately 1/2" to 3/4" above the top of the keyway and through the underlying courses. DO NOT place fastener in the upper portion of the panel. See Fig. (7.2)
- Position fasteners no closer than 3/8" from the panel edge.
- For best appearance, it is recommended the course heights remain aligned and transfer around corners.
- Shake keyways from one course to the next should not line up and be offset a minimum of 1 1/2".

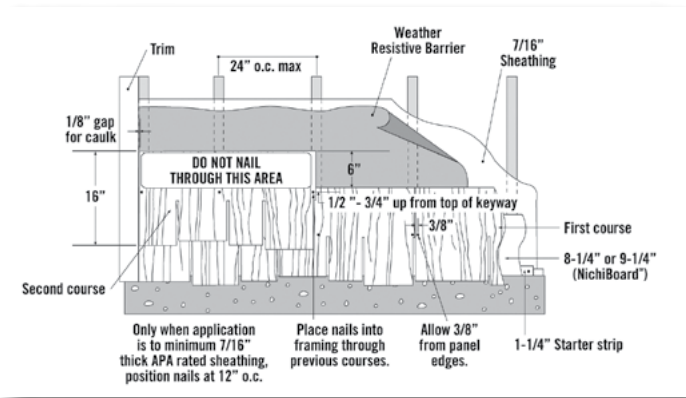


Fig. 7.2

Installing Shake Courses - NichiStraight™ (Fig. 8.1-8.2)

- Ensure the first course of panels are level. Use a level and chalk line to establish a level and straight reference point for the first course. Continue to check for level lines throughout the installation.
- Install the panels starting at one end and working across the wall.
- Begin the installation by trimming the first panel to ensure the panel end falls or breaks over framing. Trim the panel end which is nearest the corner board.
- On applications where the panel will butt to door, window, or corner trim, cut the upper edge of the panel so it is even with the keyway.
- When installing NichiStraight panels, place the first course of panels flush with the bottom edge of the starter course and secure with the appropriate fastener. As an alternative, strike a chalk line 16" above the bottom edge of the starter course and position the top edge of the shingles even with the chalk line.
- For best appearance, the bottom edge of the panels should align with the corner trim.
- Leave a 1/8" gap between the panel edge and any trim attachment.
- Bring panel edges together in moderate contact.
- To begin the second course, measure and chalk a line 7" up from the top edge of the first course to use as a guide when installing the second course of panels. Alternatively, a chalk line may be placed on the face of the previous course 7" up from the panel's bottom edge.
- Measure and trim the first piece in the second course so it is one stud cavity less in length than the first piece on the previous course.
- If framing is spaced 16" on-center, begin the third course by again cutting the panel one stud cavity less than the first piece on the second course.
- For subsequent courses, position panels in a manner that avoids creating a pattern.
- Drive fasteners into framing where possible.
- Position the fastener approximately 1/2" to 3/4" above the top of the keyway and through the underlying courses. DO NOT position fastener in the upper portion of the panel. See Fig. (8.1)
- Position fasteners no closer than 3/8" from the panel edge.
- For best appearance, it is recommended the course heights remain aligned and transfer around corners.
- Shake keyways from one course to the next should not line up and be offset a minimum of 1 1/2".

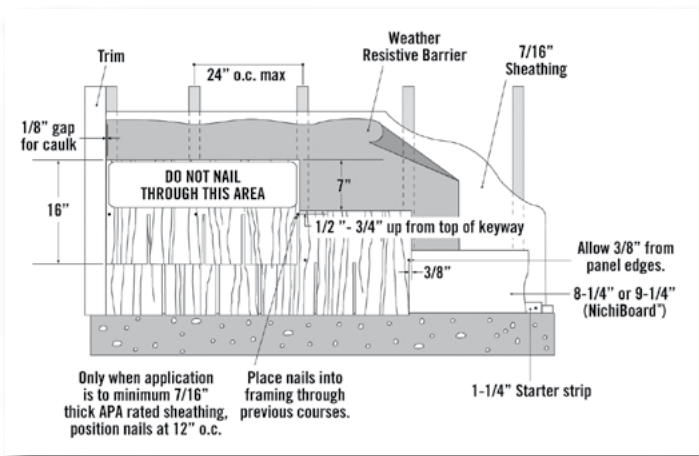


Fig. 8.1

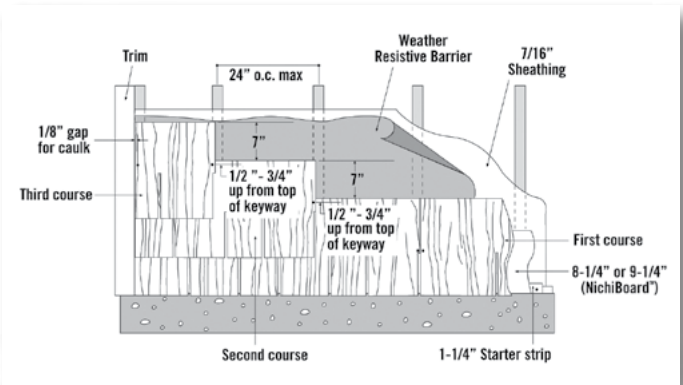


Fig. 8.2

NichiStaggered™ / NichiStraight™ Panel to Trim Joints (Fig. 8.3 - 8.4)

- Where panel ends and edges meet trim at inside and outside corners, door, window, and other trim attachments, leave a minimum 1/8" gap and caulk with a quality caulk that meets ASTM 834 or ASTM C-920 requirements.
- Trim attachments must be of sufficient thickness. The overlapped panel must not extend beyond the face of the trim.
- All horizontal trim must be flashed. Leave a 1/4" gap between the siding and flashing. Do not caulk this gap. Do not use raw aluminum flashings. Flashings must be galvanized, anodized, or PVC coated.

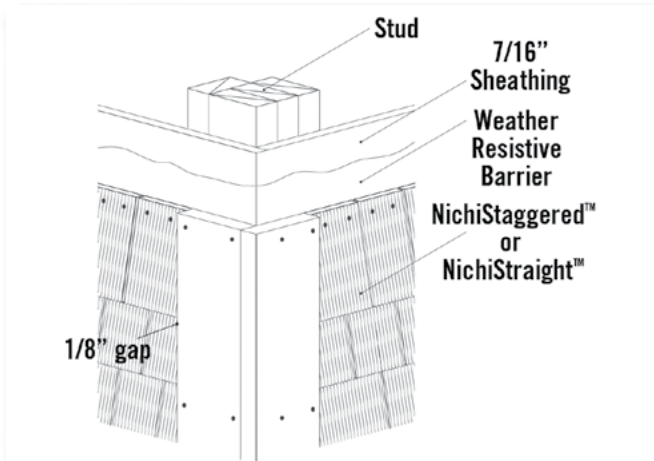


Fig. 8.3

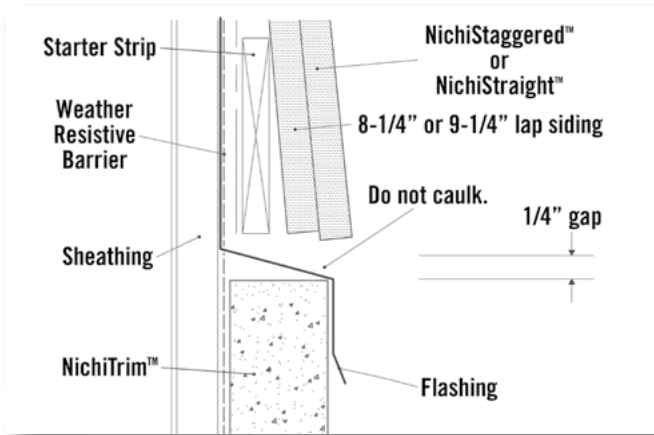


Fig. 8.4

NichiStaggered™ / NichiStraight™ Alternative Corner Treatments (Fig. 9.1)

- NichiStaggered and NichiStraight may be installed in a laced or staggered corner application.
- Nichiha requires installing a galvanized, coated aluminum or vinyl PVC flashing over the building corner prior to beginning a laced corner application.
- Use a polyurethane adhesive where laced panels join.
- Do not miter NichiStaggered or NichiStraight panel edges.

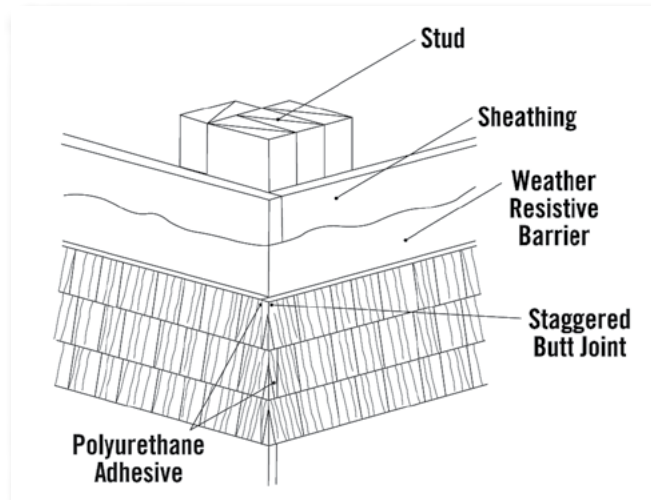


Fig. 9.1

NichiStaggered™ / NichiStraight™ Installation at Gables (Fig. 9.2-9.4)

- Due to various framing sizing and spacing encountered at gables, it is recommended that a minimum 7/16" APA rated plywood or OSB sheathing be used.
- Install the starter strip and starter course as described above.
- Locate the center of the gable and mark a vertical, plum, centerline from the gable peak to the gable bottom.
- Place the center of the panel in alignment with the vertical centerline to ensure an even symmetrical appearance. Alternatively, the panel edge may be aligned with the vertical centerline.
- For the second course, place the panel edge 16" back from the centerline. Subsequently, for the third course place the panel edge back 32" from the centerline.
- Using either a framing square or a pattern made from the rake angle, mark and cut the panels to evenly fit the rake or soffit leaving a 1/8" gap for caulking.
- On these angle cuts, due to the keyways in the shingle panel, the panel may be weakened and require special care in handling. Also, it may be necessary to secure the panel with face nails in these areas. If the cut completely separates a piece of the siding from the panel use face nails to secure. Face nails will also be required to secure the top pieces.

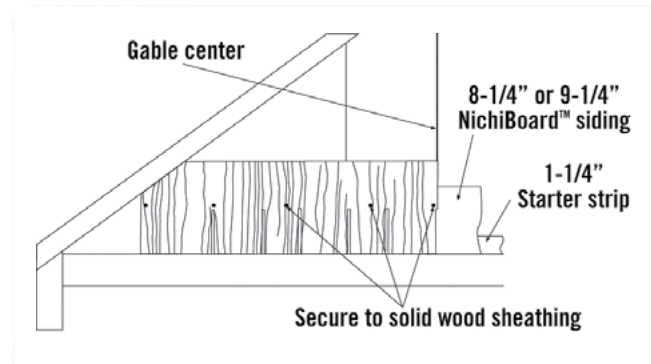


Fig. 9.2

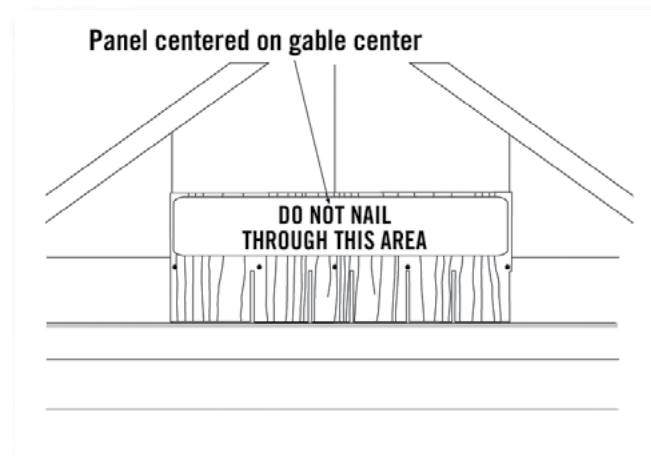


Fig. 9.3

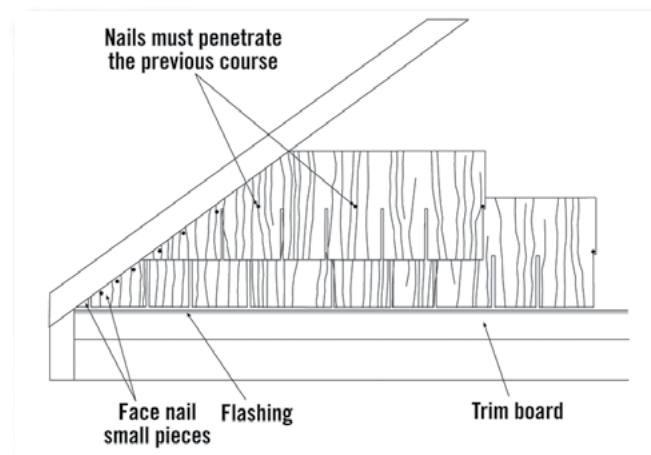


Fig. 9.4

Finishing

- Follow all general finishing instructions on page one of this guide.
- Nichiha primed products must be painted within 12 months of installation.
- Ensure all keyway edges and panel bottom edges are painted.
- Exterior grade, 100% acrylic latex paints are recommended. Do not use oil or alkyd based paints.
- Do not use stain on NichiProducts™.

Preparation

- Follow all general instructions on page one of this guide.
- NichiPanel™ can be installed directly on braced wood or steel stud (20GA or heavier) construction spaced at a maximum of 24" o. c. or over sheathing with vertical solid wood or steel backing. (Fig. 11.1)

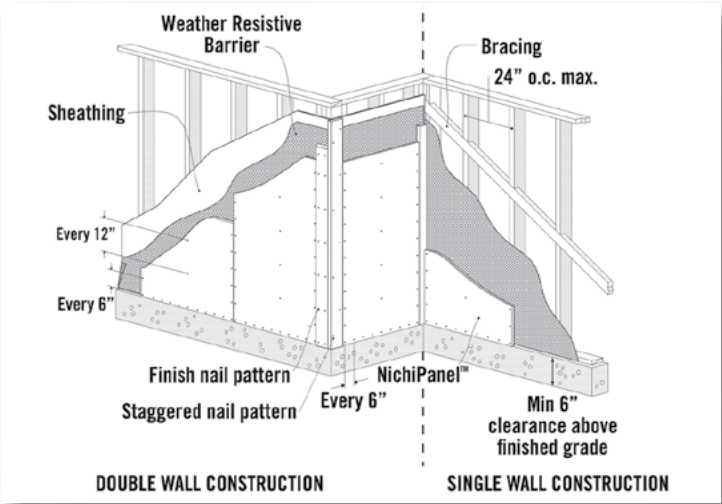


Fig. 11.1

- When installing NichiPanel, it is recommended that an APA rated 7/16" OSB or plywood sheathing be used. NichiPanel may be installed over non-structural sheathing such as foam, fiber builder board, and gypsum type panels. Non-structural sheathing thickness shall not exceed 1". Due to the compressive nature of some non structural sheathings, care must be taken not to overdrive the fastener and compress the sheathing. The fastener length must be increased by the thickness of the non-structural sheathing.
- Ensure all weather resistive barriers are in place in accordance with local code.
- Framing misalignment or irregularities in the sheathing application should be corrected prior to siding installation. These irregularities may mirror through the finished installation.
- On multi story structures, avoid spanning over 1st-2nd , or 2nd-3rd story floor systems as distortion of the panel from settling of the structure can occur. The panel horizontal joint should always occur at the wall framing top plate or floor system rim joist.
- NichiPanel must be installed with the long dimension of the panel vertical and parallel to wall framing.
- The bottom edge of the panel must have at least 6" clearance above finished grade and 1" to 2" clearance above decks, walks, and hard surface driveways.
- All panel edges must be supported by solid framing.

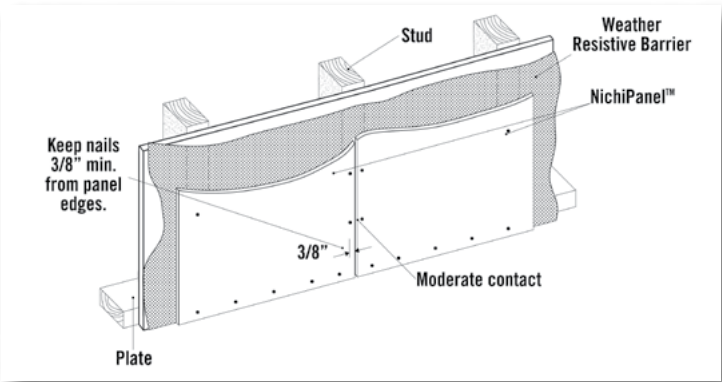


Fig. 11.2

Fastening (Fig. 11.2)

Follow all general fastening instructions on page one of this guide.

- Corrosion resistant fasteners, such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. Stainless steel fasteners are highly recommended in high-humidity and high-moisture regions. Nichiha is not liable for corrosion resistance of fasteners. Do not use aluminum fasteners, staples, clipped head or T-head nails, or fasteners that are not rated or designed for intended use.
- Corrosion resistant, full round head siding nails or appropriate screws may be used to install NichiPanel to wood and steel framing members. Fasteners must penetrate into wood a minimum of 1" or into a minimum 20 gauge steel stud 1/2".
- Fasten panels a maximum 6" o. c. on all panel horizontal and vertical edges. Position fasteners at intermediate framing no greater than 12" o. c. Fasten at all stud locations.
- The fastener head must be flush to the board surface. Do not over drive or under drive fasteners.
- Fasteners should be placed no closer than 3/8" from panel edges and 2" from corners.

Installation

Follow all general instructions on page one of this guide.

- Begin the installation by establishing a level and straight guideline for positioning the panels.
- If necessary, cut the long edge of the panel so that panel vertical edges fall or "break" over framing.
- Corner trim may be installed prior to panel installation, or alternatively, installed over NichiPanel. If butting to corner trim, leave 1/8" or appropriate gap and caulk.

NichiPanel Grooved 8" o. c.

- When installing NichiPanel Grooved 8" o. c. panels, layout of the application may be required to ensure a symmetrical or "even" appearance of the Grooved 8" o. c. accent grooves. Also, on multi-story structures or at gable ends, align accent grooves vertically for best appearance.
- When beginning the installation, trim the full thickness or "square" panel edge so the detailed grooved edge will land or break over solid framing.
- In some cases it may be necessary to add a stud or blocking to provide additional nailing area. Avoid nailing through panel edge accent groove.

Joint Methods

Vertical Joints (Fig. 12.1-12.3)

Join NichiPanel vertical joints by one of the following four methods:

- Cover the joint with a minimum 1-1/2" width batten strip. The batten strip may be fiber cement, wood, or PVC material. Caulk the vertical edge between the batten strip and NichiPanel. (Fig. 12.1)
- Leave appropriate gap and caulk according to caulk manufacturer's recommendations. (Fig. 12.2)
- Use metal or PVC H-channel connector in accordance with manufacturer's instructions. (Fig. 12.3)
- Join the panels in moderate contact. DO NOT install tight or force panels in place.

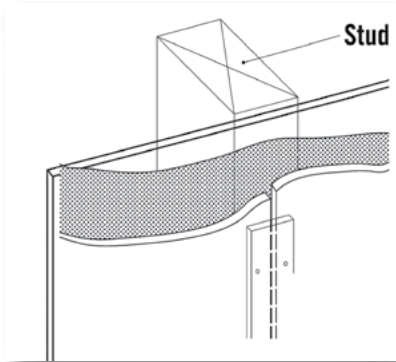


Fig. 12.1

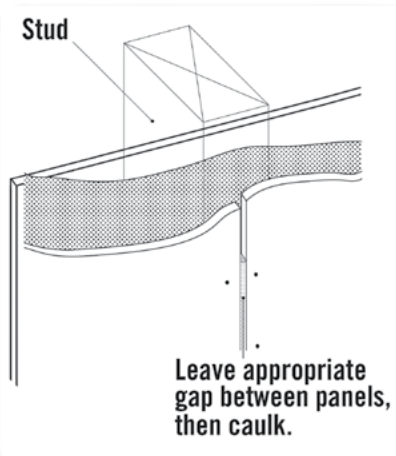


Fig. 12.2

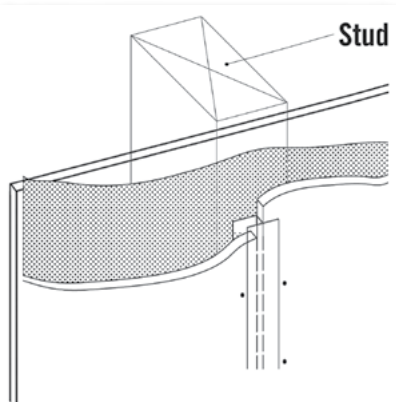


Fig. 12.3

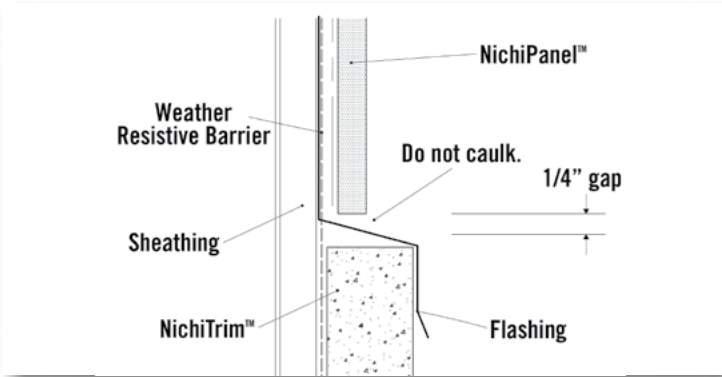


Fig. 12.4

Horizontal Joints (Fig. 12.4-13.1)

- Where panels are "stacked" on multi-story applications the horizontal joints must be properly flashed with a corrosion resistant galvanized, coated aluminum, or vinyl/PVC "Z" type flashing to minimize any water penetration.
- Position and secure "Z" flashing over top edge of panel with the vertical bend behind the weather resistive barrier.
- A gap of 1/4" must exist between the flashing and next course of panels. DO NOT caulk this gap.
- Ensure flashing is sloped away from the wall and not "flat".
- If a horizontal band board or trim attachment is used at horizontal joints, flashing must be in place that extends over the panel and trim attachment. (Fig. 12.4)

Trimming Openings (Fig. 12.4-13.2)

- When trim is applied around doors, windows, and other openings prior to NichiPanel installation, ensure that flashings are in place over all horizontal trim. Install panels with a 1/4" gap between the flashing and siding.
 - Leave a 1/8" or appropriate gap between the siding and trim and caulk in accordance to caulk manufacturer's recommendations. (Fig. 13.2)
- When trim attachments are to be applied over NichiPanel (most common application) special steps must be taken prior to the panel installation.
- Install a 5/16" thick shim over the door or window the same length and width dimensions as the horizontal trim.
 - Install the flashing on top of the shim.
 - Install panels with a 1/4" gap between the flashing and siding.
 - Install horizontal trim over shim and under flashing.

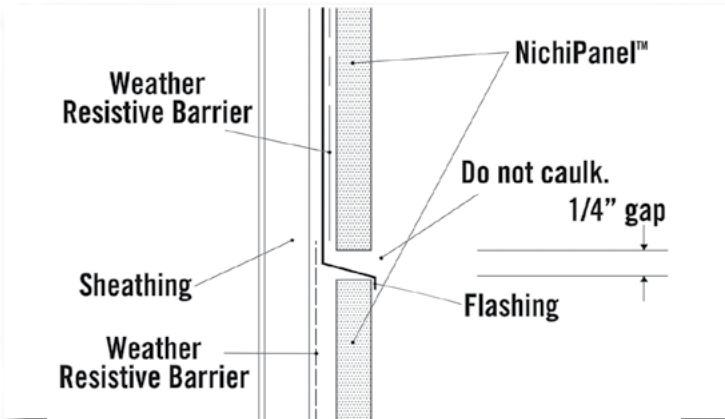


Fig. 13.1

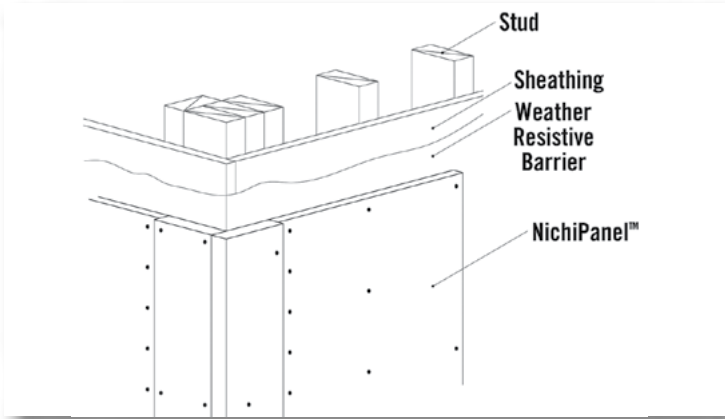


Fig. 13.2

Finishing

Follow all general finishing instructions on page one of this guide.

Preparation

Follow all general instructions on page one of this guide.

- NichiTrim™ can be installed directly on braced wood or steel stud (20GA or heavier) construction spaced at a maximum of 24" o.c. or over-sheathing with solid wood or steel backing.
- A weather resistive barrier is required in accordance with local building codes when installing NichiTrim. Use the approved weather resistive barrier (WRB) as defined by the 2007 IRC. Nichiha is not liable for water infiltration.
- Please consult with your local dealer or Nichiha directly when using NichiTrim on large projects, such as 45' or higher buildings or three (3) stories or greater buildings. Some special reinforcements may be required.

Product Inspection

- Inspect all products thoroughly prior to installation. Do not install any product which may have been damaged in shipment or displays damage to the primer.
- Contact your local dealer or Nichiha Customer Service toll-free at 1-866-424-4421 should you have any questions about NichiTrim.

Storage and Handling

- NichiTrim MUST be stored flat and off the ground prior to installation. Nichiha recommends storing the trim on pallets.
- NichiTrim MUST be kept dry, and stored in a covered area or covered with a tarp before installation. Moisture saturation before installation may cause shrinkage and board damage. Do not install saturated boards.
- Carry the products on edge. Do not carry or lift NichiTrim flat. Improper handling may cause cracking or board damage.
- Nichiha is not responsible for damage caused by improper storage and handling of NichiTrim.

Minimum Clearances

- Maintain a minimum 1" - 2" clearance between NichiTrim and decking, walks, steps, and hard surface driveways.
- At roof and wall junctures and according to roofing manufacturer's instructions, flashing and counter-flashing are required. NichiTrim must be installed with a minimum 1" clearance from roofing.
- A "kickout" flashing must be present to direct roof water away from the siding and trim.
- Maintain a minimum clearance of 6" above finished grade or in accordance with local codes if greater than 6" clearance is required.

Cutting

- Refer to the Nichiha Safety Guidelines and OSHA guidelines for important safety practices for your and others' protection.
- Work outdoors where feasible, otherwise use mechanical ventilation. Position cutting bench so that wind will carry the dust away from the user and others in the work area.
- Always wear safety glasses and NIOSH/OSHA approved respirator with a rating of N100, O100 or P100 whenever cutting, drilling, sawing, sanding or abrading the products. Refer to the Safety Instructions in this guide for more details.
- Use a dust-reducing circular saw with a vacuum attachment in combination with a diamond-tipped or carbide-tipped blade for general cutting.
- The dust collector must be connected to a HEPA vacuum. Recommended circular saw: Makita 7-1/4" Circular Saw with Dust Collector (#5057KB).
- Recommended blade: T nryu Board-Pro Plus PCD Blade (#BP-18505).

Fastening (Fig. 14.1)

Follow all general fastening instructions on page one of this guide.

- NichiTrim may be hand fastened or fastened with pneumatic tools. If hand nailing, pre-drilling may be necessary in some applications. When using pneumatic tools, set the pressure of compressor so that the fastener is driven snug or under-driven to the surface of the board; then hand-drive with a smooth faced hammer until the fastener head is flush to board surface.
- Pressure from compressors can vary depending on tank volume and number of lines connected to the unit. For best performance, always test and adjust pressure before beginning installation.
- Corrosion resistant fasteners, such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. Stainless steel fasteners are highly recommended in high humidity and high-moisture regions. Nichiha is not liable for corrosion resistance of fasteners. Do not use aluminum fasteners, staples, clipped head or T-head nails, roofing nails, or fasteners that are not rated or designed for intended use. For best aesthetics on door and window trim, use a minimum 15 gauge finish nail.
- Finish nails, smooth shank siding nails, or appropriate screws may be used to secure trim to wood and steel framing members. Fasteners must penetrate into wood a minimum of 1" and 1/2" into steel framing to ensure trim is securely fastened.
- When installing NichiTrim with finish nails, position nails no closer than 1/2" from board edges and 1" from board ends. Place a minimum of two nails every 16". On 11-1/4" trim, apply 3 to 4 finish nails at 16" intervals.
- When installing NichiTrim with siding nails or screws, position fasteners no closer than 1" from board edges and 3" from board ends. Stagger fasteners on alternating edges every 16". On 11-1/4" trim, additional fasteners may be applied.

NichiTrim™ Fastening Specifications		
	Finish Nail	Siding Nail
Distance from edge	1/2"	1"
Distance from ends	1"	3"
Spacing	16"	16"
Spacing pattern	Stacked	Staggered

- The fastener head must be flush to the board surface. Do not over drive or under drive fasteners.

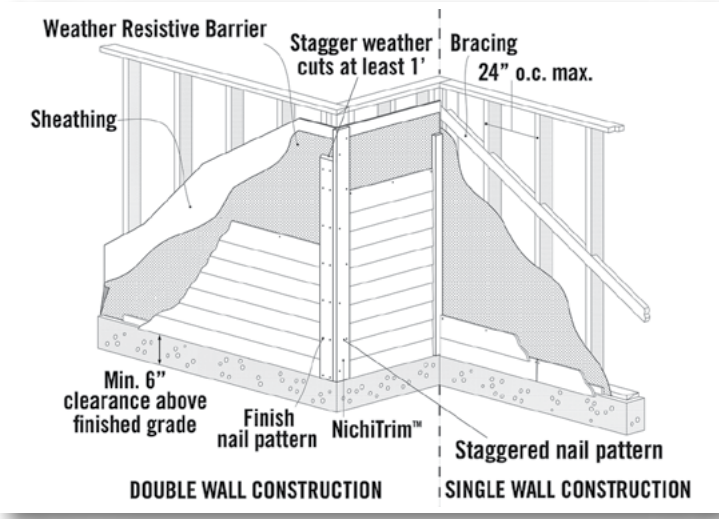


Fig. 14.1

Trimming Inside and Outside Corners (Fig. 15.1)

- NichiTrim may be used in a single or double corner trim method.
- When corner height exceeds 10', join stacked boards using a min. 22.5 degree weather cut angled away from wall. Keep weather cuts a minimum of 12" apart on adjacent boards.

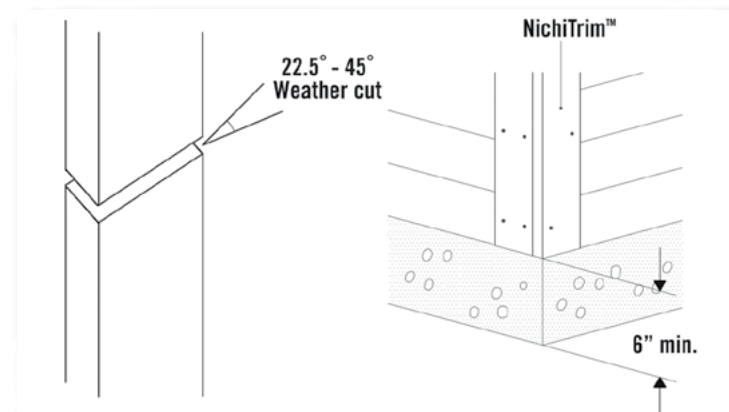


Fig. 15.1

Trimming Windows, Doors & Openings (Fig. 15.2)

- When picking up NichiTrim™ off the pallet, you must turn it on its edge.
- When using NichiBoard™, NichiShake™, and Sierra Premium™ products, trim all openings prior to siding installation, and follow window, door, vent manufacturer's installation instructions.
- Leave a minimum 1/8" gap between trim and siding and apply sealant in accordance with manufacturer's recommendations.
- All horizontal trim must be flashed. Leave a 1/4" gap between the siding and flashing. Do not caulk this gap. Do not use raw aluminum flashings. Flashings must be galvanized, anodized, or PVC coated.
- Install door and window trim in the "cap-over" method. Ensure the top trim board spans over the top of the vertical or side trim pieces. (Fig. 15.2)
- When applying trim around windows with a nailing flange, it may be necessary to install a thin shim beside the flange to provide a flat, even surface level with the flange. This will allow the trim to remain "flat" on the wall.

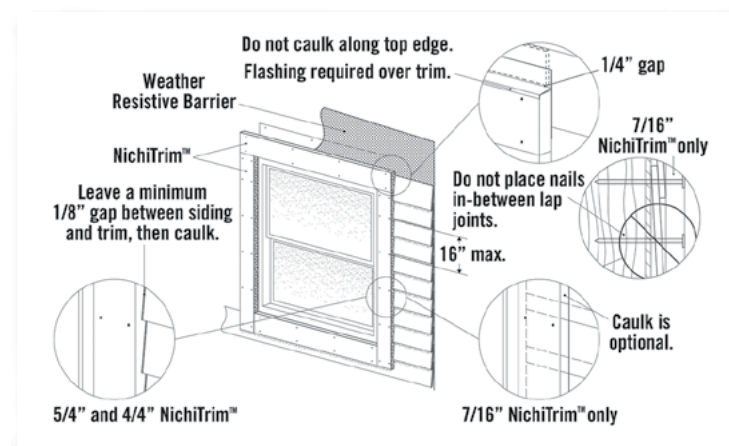


Fig. 15.2

Fascia, Frieze Boards, Rake Trim & Band Boards (Fig. 15.3-15.5)

- NichiTrim products used in fascia and rake board applications must be fastened over a continuous wood or steel subfascia.
- On runs exceeding 10' use a weather cut to join trim boards.
- Horizontal band boards must be flashed with a 1/4" gap between the siding and trim. Also, adequate flashing must be present between NichiTrim and any brick or masonry ledge.

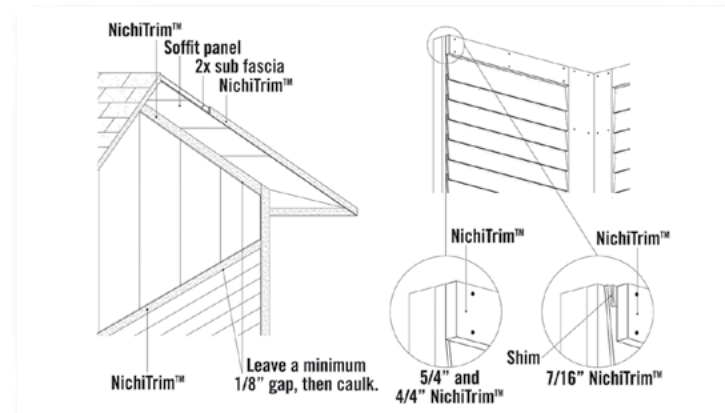


Fig. 15.3

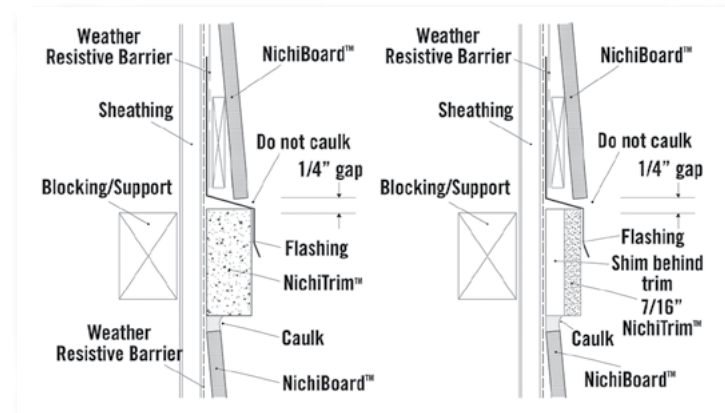


Fig. 15.4

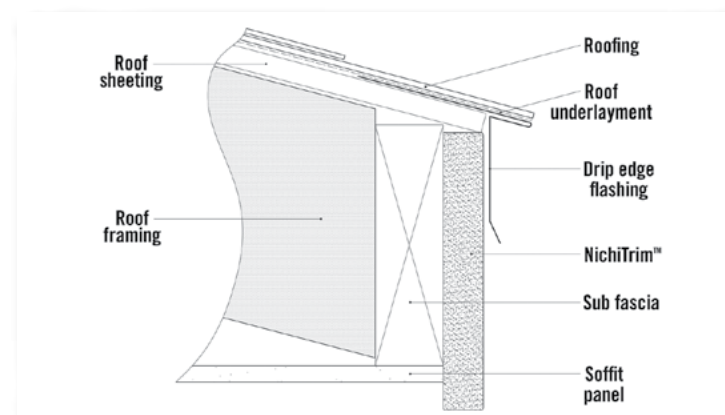


Fig. 15.5

Finishing

Follow all general finishing instructions on page one of this guide.

- Use exterior grade high-quality sealant that complies with either ASTM C-834 (for primed products) or ASTM C-920 (for finished products) requirements for all gaps that require filling with sealant. Follow the manufacturer's instructions for use.
- All exposed field cut edges (i.e. outside edges, butt joints or bottom ends of corners and window trim), must be covered with primer, sealant, or paint.
- Dents, chips, scratches, etc. on the products shall be filled with exterior grade cementitious patching or putty. Follow the manufacturer's instructions for use.
- All unfinished (pre-primed) products must be painted within 12 months of installation. Exterior grade 100% acrylic latex paints are recommended. Follow the manufacturer's instructions for use.

Blocked Penetration (Fig. 16.1)

- Penetrations larger than 1 1/2" in diameter must use a blocked penetration to avoid water infiltration.
- Installer can use 4/4" or 5/4" NichiTrim™ material for desired thickness.
- It may be necessary to cut blocked penetrations with a 22.5 degree weather cut to enable the use of a dryer vent or penetration that may be existing on home.
- Make sure to flash over top of Blocked Penetration using a 1/4" gap between flashing and siding material. **Do Not Caulk 1/4" Gap.**

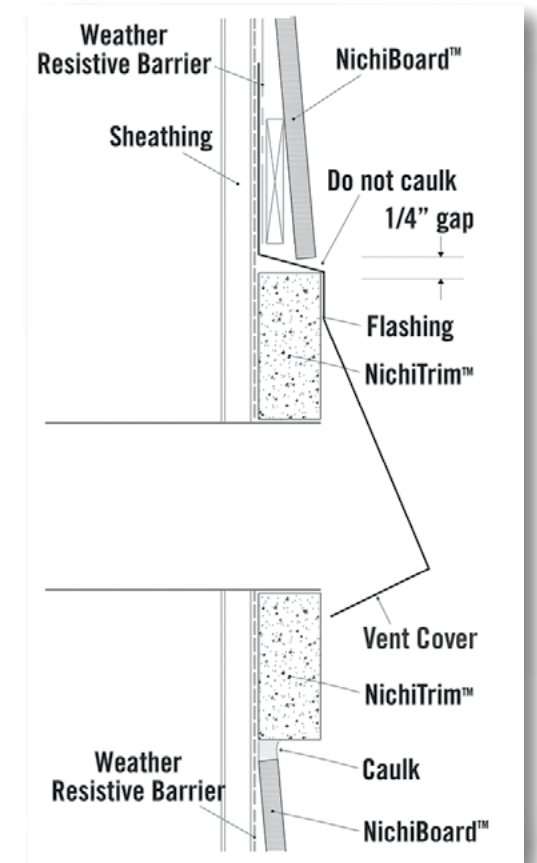


Fig. 16.1

Integral J Channel Flashing

Installation (Fig. 16.2)

- Please contact window manufacturer for required installation of window.
- Before first course of NichiBoard™ is applied under window, the installer must place a piece of Non-Corrosive Flashing material from the bottom nailing flange of the Integral J Window and over the course of NichiBoard™. This may require a secondary piece of window tape.
- Flashing must be 4" x Depth Of Course that will allow flashing to lap over siding course below by minimum of 1".
- All cut ends of NichiBoard™ must be sealed with a primer, paint, or caulk. However, it is not recommended to fill the entire J channel of the window with caulk.

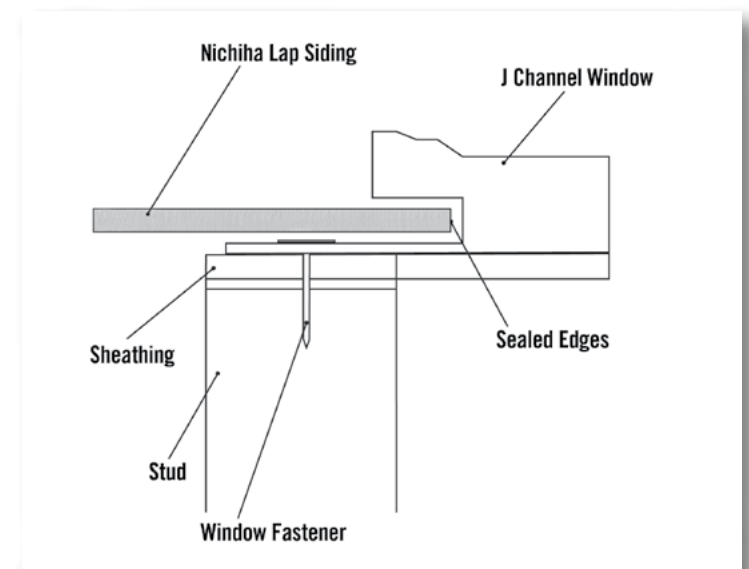


Fig. 16.2

Preparation

- Follow all general instructions on page one of this guide.
- Sierra Premium™ Shake Plus and Smooth boards can be installed directly on braced wood construction spaced at a maximum of 24" o.c. or over sheathing with vertical solid wood backing. Please contact Nichiha regarding installation over steel frame construction. (Fig. 17.1)

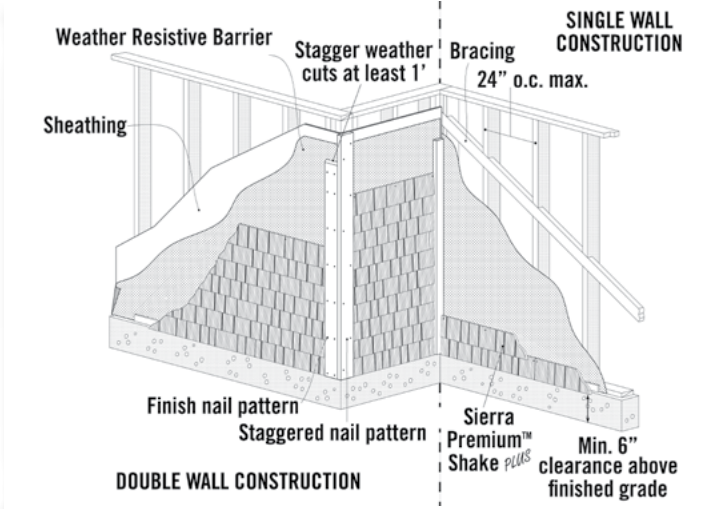


Fig. 17.1

- When installing Sierra Premium™ Shake Plus and Smooth boards, it is recommended that an APA rated 7/16" OSB or plywood sheathing be used. Boards may be installed over non-structural sheathing such as foam, fiber builder board, and gypsum type panels. Non-structural sheathing thickness shall not exceed 1". Due to the compressive nature of some non-structural sheathings, care must be taken not to overdrive the fastener and compress the sheathing. The fastener length must be increased by the thickness of the non structural sheathing.
- Ensure all weather resistive barriers are in place in accordance with local code.
- Framing misalignment or irregularities in the sheathing application should be corrected prior to siding installation. These irregularities may mirror through the finished installation.

Fastening

- Corrosion resistant fasteners, such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. Stainless steel fasteners are highly recommended in high-humidity and high-moisture regions. Nichiha is not liable for corrosion resistance of fasteners. Do not use aluminum fasteners, staples, clipped head or T-head nails, or fasteners that are not rated or designed for intended use.
- Corrosion resistant, full round head siding nails or appropriate screws may be used to install Sierra Premium™ Shake Plus and Smooth boards to wood framing members. Fasteners must penetrate into wood a minimum of 1".
- The fastener head must be flush to the board surface. Do not over drive or under drive fasteners.

Installation

Follow all general instructions on page one of this guide.

Starter Strip & First Course (Fig. 17.2)

- A starter strip is required to set the first course on the proper angle and to create a drip edge at the bottom course of siding. The starter strip material may be a cut piece of Sierra Premium™, FS 1010 1/2" Nichiha Spacer, PVC, or pressure treated lumber. Do not use untreated lumber, plywood, OSB, or other engineered wood products as a starter strip.
- Install the starter strip level with the bottom of the wall sheathing or mudsill.
- Ensure the first course of boards is level as it will be the guide for entire installation. Use a level and chalk line to establish a level and straight reference point for the first course. Continue to check for level lines throughout installation.
- The first course of siding must hang below the starter strip a minimum of 1/4".
- The siding should not extend below the corner trim.
- The bottom edge of the first course must have at least 6" clearance above finished grade.
- It is recommended the course heights remain aligned and transfer around corners.

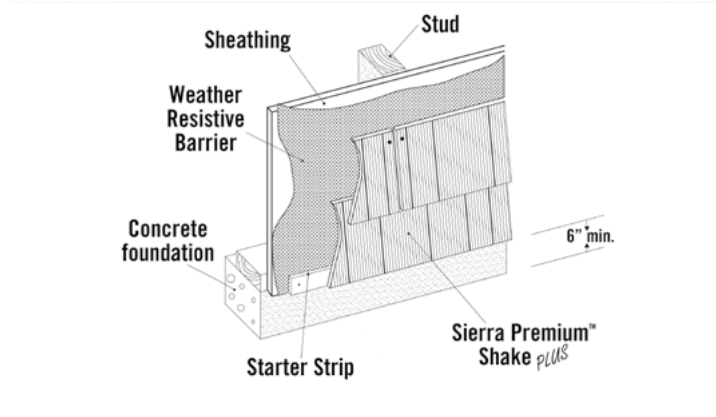


Fig. 17.2

Overlap (Fig. 18.1-18.2)

- A minimum overlap of 1-1/4" is required.

Blind Nailing (Fig. 18.1)

- For a more aesthetically pleasing installation, Sierra Premium™ Shake Plus and Smooth boards may be installed in a hidden, or blind nail application.
- Position the fastener 1" down from the top edge of the board and no closer than 3/4" from the board ends.
- Fasten from one end of the board to the other.

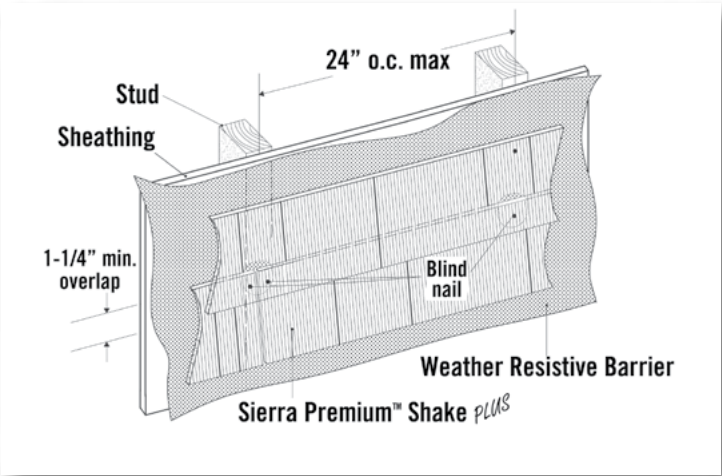


Fig. 18.1

Face Nailing (Fig. 18.2)

- It is permissible to install Sierra Premium™ Shake Plus and Smooth boards in a face nail type installation to meet certain installation requirements or when specified by local code.
- Position the fastener a minimum distance of 3/4" up from the bottom edge of the board and no more than 1". This ensures the fastener will penetrate through the overlap and through both courses. Place the fastener no closer than 3/4" from board ends.
- Fasten from one end of the board to the other.

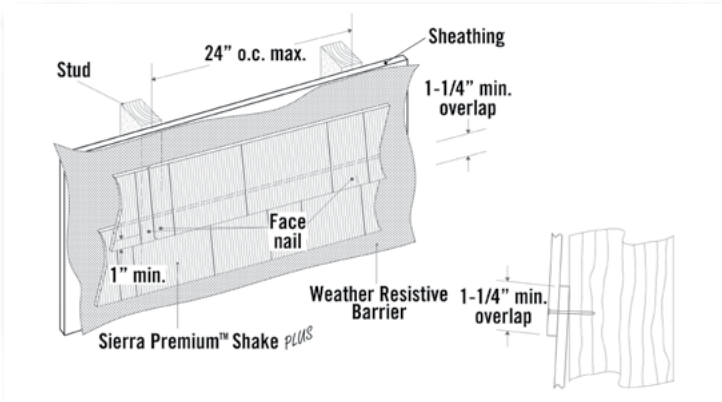


Fig. 18.2

Vertical Joint Placement (Fig. 19.1)

- All Sierra Premium™ Shake Plus and Smooth board vertical joints must land or "break" over studs or framing.
- If OSB or plywood sheathing is used, boards must be secured with a corrosion resistant, #8, ribbed, buglehead screw at each butt joint.
- When possible, use factory sealed or finished ends at butt joints. Position cut ends where boards meet trim attachments.
- If cut ends are used at butt joints they must be sealed with primer, sealer, or paint. NEVER leave exposed cut edges uncoated.
- Shake keyways from one course to the next should not line up vertically. Layout of the application may be necessary to avoid stacked keyways.

Staggering the Shake Boards (Fig. 18.3)

- All boards are identical. They have a right-hand and a left-hand side. (see sketch).
- The right-hand side has its first shake 4-5/16 wide, second one in is 7", third one in is 8-5/8", 4th one in is 5", 5th one in is 5-1/8" wide (see sketch).
- All boards must be installed in the same orientation (no flipping boards).
- All cuts must be made from the left side of the board.

Course	Stairstep Stagger
1	Measure from cornerboard to 7th stud and cut shake board.
2	Measure from cornerboard to 5th stud and cut shake board.
3	Measure from cornerboard to 3rd stud and cut shake board.
4	Measure from cornerboard to 6th stud and cut shake board.
5	Measure from cornerboard to 5th stud and cut shake board.
6	Pattern repeats (same as course 1)

Recommended Layout for Nichiha Sierra Premium™ Shake Plus

	Trim Board	Stud	Stud	Stud	Stud	Stud	Stud	Stud
Course								
1	6 course is the same layout as 1st Course							
5	5 Studs							
4	6 Studs							
3	3 Studs							
2	5 Studs							
1	7 Studs							
Left		16"	32"	48"	64"	80"	96"	112"
		16" O.C. Studs						
		Right						

Sketch of Sierra Premium™ Shake Plus Board																	
4-7/16"	7"	8-5/8"	5-3/8"	7-1/8"	5-1/8"	6-7/8"	6-7/16"	4-1/4"	5-5/8"	7-1/4"	5"	7-1/2"	5-1/8"	5"	8-5/8"	7"	4-5/16"
Left													Right				
1. Board Orientation (5-1/8" and 5") shakes <u>ALWAYS</u> to the right side.																	

Fig. 18.3

Joint Treatment

Joint Installation (Fig. 19.1)

- The use of a joint flashing behind the butt joints is required.
- Suitable materials for joint flashing include anodized or PVC coated coil stock and code approved water restive barriers.
- The joint flashing should be at least 3" in width and long enough to extend above the board width a minimum of 1-1/2".
- Install Sierra Premium™ Shake Plus and Smooth boards over joint flashing with a minimum 1/8" gap between board ends. This gap may be filled with a quality exterior grade caulk. Ensure caulk meets ASTM 834 or ASTM C-920 requirements and is approved for use at butt joints.

Siding to Trim Joints (Fig. 19.2-19.3)

- Where board ends and edges meet trim at inside and outside corners, door, window and other trim attachments, leave a minimum 1/8" gap and caulk with a quality caulk as described above.
- Trim attachments must be of sufficient thickness. The overlapped boards must not extend beyond the face of the trim. A continuous solid shim or "build out" behind the trim may be necessary.
- A flashed 1/4" clearance must exist over horizontal trim.

Alternative Corner Treatments (Fig. 19.4-19.5)

- Sierra Premium™ Shake Plus and Smooth boards may also be installed with mitered corners. For best results, use a compound miter saw to accurately cut the 45 degree miter cut and slope angle.
- Sierra Premium™ Shake Plus and Smooth boards may also be installed in a laced or staggered corner application.
- Nichiha requires installing a galvanized, coated aluminum, or vinyl PVC flashing over the building corner prior to beginning a mitered or laced corner application.
- Use a polyurethane adhesive where mitered or laced boards join.

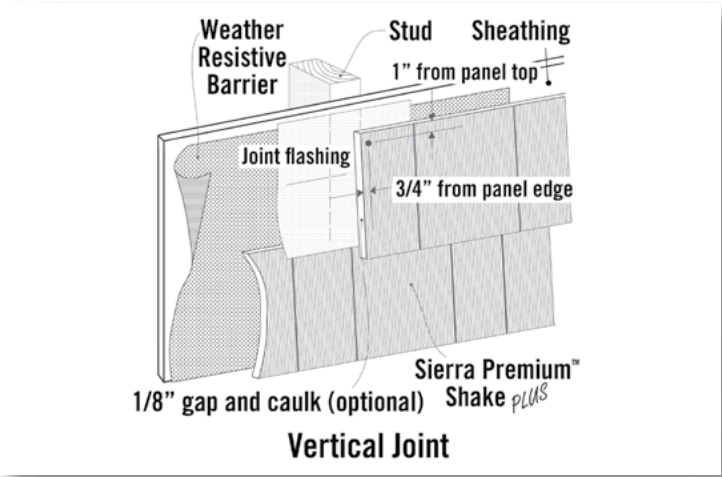


Fig. 19.1

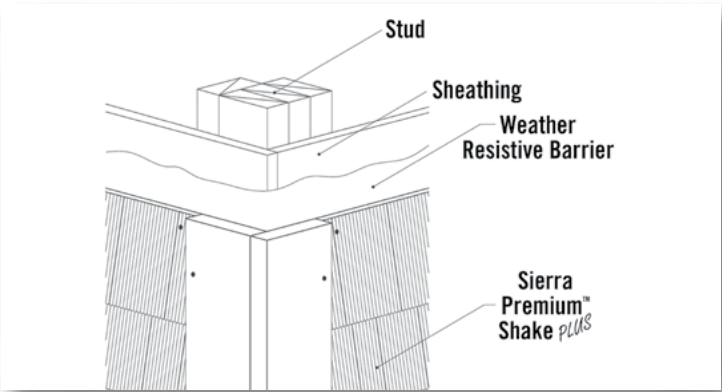


Fig. 19.2

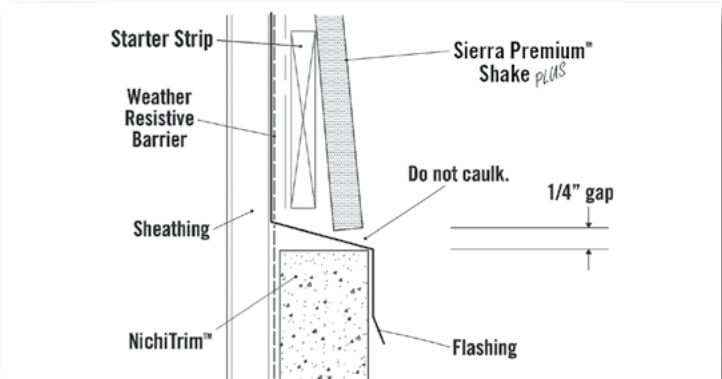


Fig. 19.3

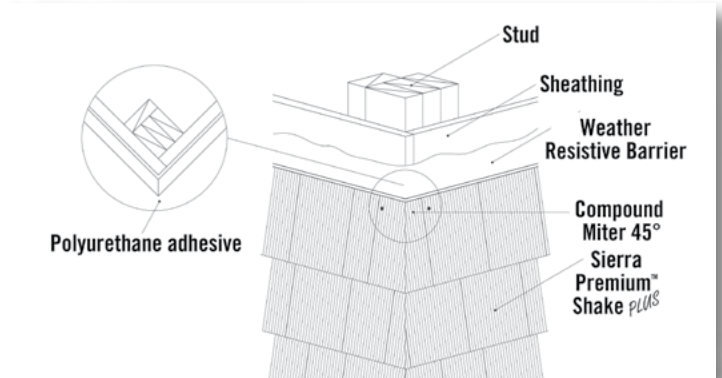


Fig. 19.4

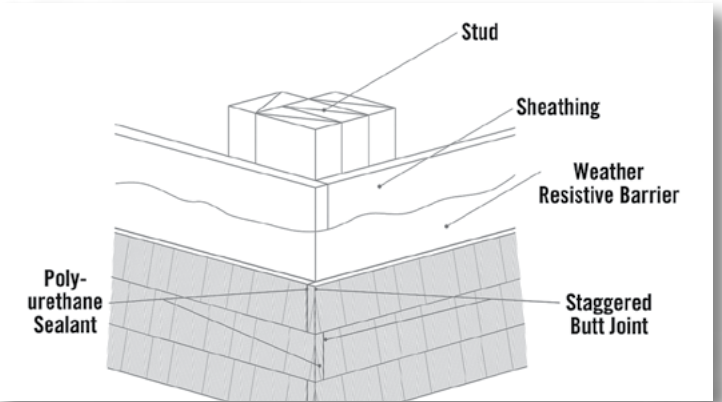


Fig. 19.5

Finishing

Follow all general finishing instructions on page one of this guide.

Preparation

Follow all general instructions on page one of this guide.

- NichiFrontier™ boards can be installed directly on APA rated sheathing, braced wood or steel stud (20GA or heavier) construction, spaced at a maximum of 24" o.c. or over sheathing with vertical solid wood backing. Fasteners must penetrate wood studs a min. of 1" and 1/2" in steel studs. (Fig. 20.1)
- When installing NichiFrontier™, it is recommended that an APA rated minimum 7/16" OSB or plywood sheathing be used. Boards may be installed over non-structural sheathing such as foam, fiber builder board, and gypsum type panels. Non-structural sheathing thickness shall not exceed 1". Due to the compressive nature of some non structural sheathings, care must be taken not to overdrive the fastener and compress the sheathing. The fastener length must be increased by the thickness of the non-structural sheathing.
- Ensure all weather resistive barriers are in place in accordance with local code.
- Framing misalignment or irregularities in the sheathing application should be corrected prior to siding installation. These irregularities may mirror through the finished installation.

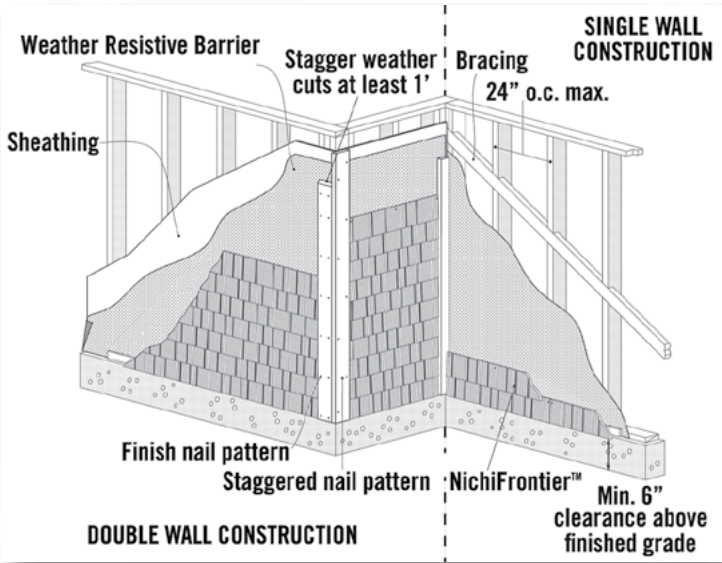


Fig. 20.1

Fastening

Follow all general instructions on page one of this guide.

- Corrosion resistant fasteners, such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. Stainless steel fasteners are highly recommended in high-humidity and high-moisture regions. Nichiha is not liable for corrosion resistance of fasteners. Do not use aluminum fasteners, staples, clipped head or T-head nails, or fasteners that are not rated or designed for intended use.
- Corrosion resistant, full round head siding nails or appropriate screws may be used to install NichiFrontier™ boards to wood framing members. Fasteners must penetrate into wood a minimum of 1" or 1/2" into metal.
- The fastener head must be flush to the board surface. Do not over drive or under drive fasteners.
- For special applications, such as areas with high wind loads, please contact the Nichiha Technical Department.

Installation

Starter Strip & First Course (Fig. 20.2)

- A starter strip is required to set the first course on the proper angle and to create the drip edge at the bottom course of siding. The starter strip material may be a cut piece of NichiBoard™, FS 1005 Nichiha Spacer, PVC or pressure treated lumber. Do not use untreated lumber, plywood, OSB or other engineered wood products as a starter strip.

- Install the starter strip level with the bottom of the wall sheathing or mudsill.
- Ensure the first course of boards is level as it will be the guide for the entire installation. Use a level and chalk line to establish a level and straight reference point for the first course. Continue to check for level lines throughout installation.
- The first course of siding must hang below the starter strip a minimum of 1/4".
- The siding should not extend below the corner trim.
- The bottom edge of the first course must have at least 6" clearance above finished grade.
- It is recommended the course heights remain aligned and transfer around corners.

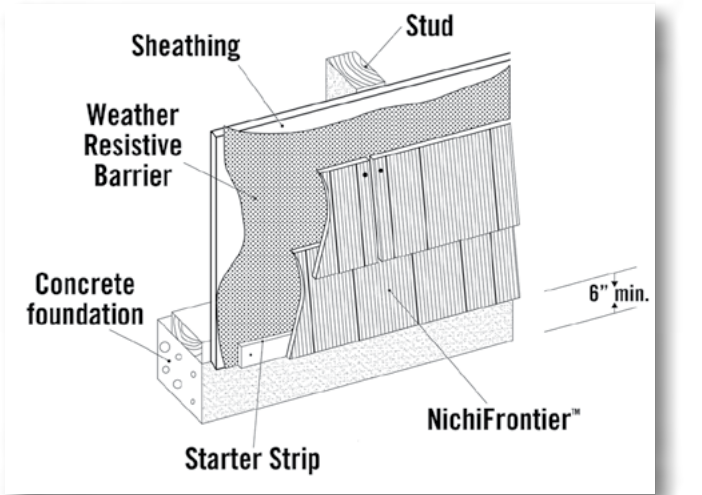


Fig. 20.2

Overlap

- A minimum overlap of 1-1/4" is required.

Blind Nailing (Fig. 20.3)

- For a more aesthetically pleasing installation, NichiFrontier™ boards may be installed in a hidden, or blind nail application.
- Position the fastener 1" down from the top edge of the board and no closer than 1/2" from the board ends. Fasten from one end of the board to the other.

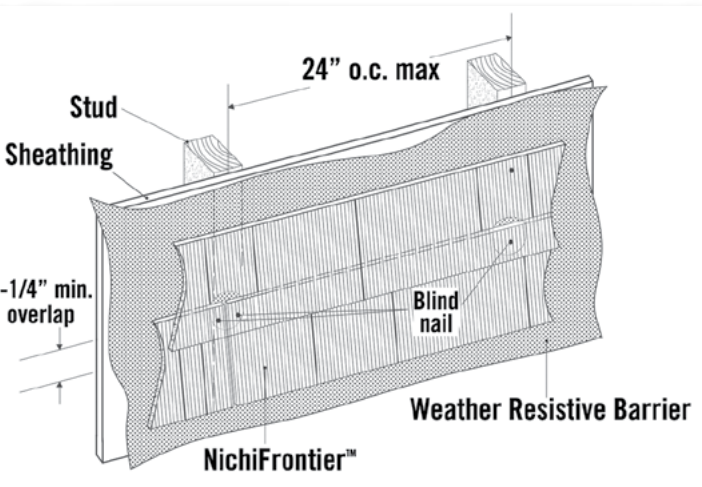


Fig. 20.3

Face Nailing (Fig. 21.1)

- It is permissible to install NichiFrontier boards in a face nail type installation to meet certain installation requirements or when specified by local code.
- Position the fastener a minimum distance of 3/4" up from the bottom edge of the board and no more than 1". This ensures the fastener will penetrate through the overlap and through both courses. Place the fastener no closer than 1/2" from board ends.
- Fasten from one end of the board to the other.

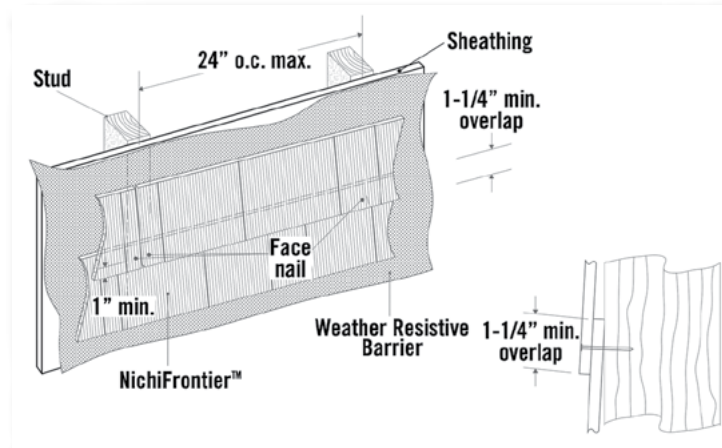


Fig. 21.1

Butt Joint Placement

- All NichiFrontier™ board vertical joints must land or “break” over studs or framing.
- If cut ends are used at butt joints they must be sealed with primer, sealer, or paint. NEVER leave exposed cut edges uncoated.

Staggering the Shake Boards

- There are 3 different boards that have different shake patterns. This allows for 6 different shake patterns when the boards are flipped.
- This is done for ease of installation.

Joint Treatment (Fig. 21.2)

- The use of a joint flashing behind the butt joints is required.
- Suitable materials for joint flashing include anodized or PVC coated coil stock and code approved water restive barriers.
- The joint flashing should be at least 3" in width and long enough to extend above the board width a minimum of 1-1/2".
- Install NichiFrontier™ boards over joint flashing with a 1/8" gap between board ends. As an option, this gap may be filled with a quality exterior grade color-matching sealant. Ensure sealant meets ASTM C-920 requirements and is approved for use at butt joints.

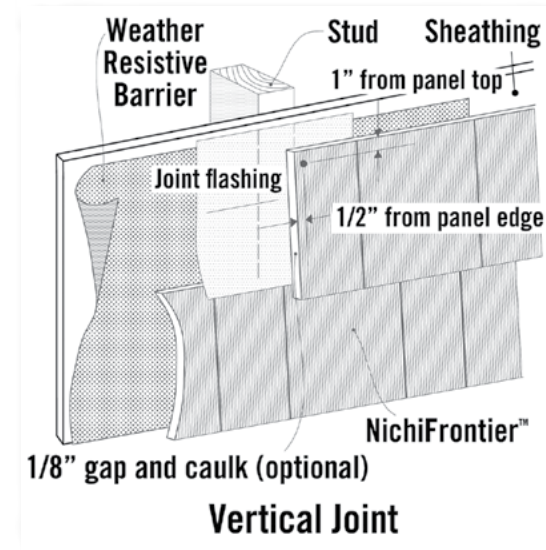


Fig. 21.2

Siding to Trim Joints (Fig. 21.3)

- Where board ends and edges meet trim at inside and outside corners, door, window and other trim attachments, leave a minimum 1/8" gap and caulk with a quality sealant as described above.
- Trim attachments must be of sufficient thickness. The overlapped boards must not extend beyond the face of the trim. A continuous solid shim or “build out” behind the trim may be necessary.
- All horizontal trim must be flashed. Leave a 1/4" gap between the siding and flashing. Do not caulk this gap. Do not use raw aluminum flashings. Flashings must be galvanized, anodized or PVC coated.

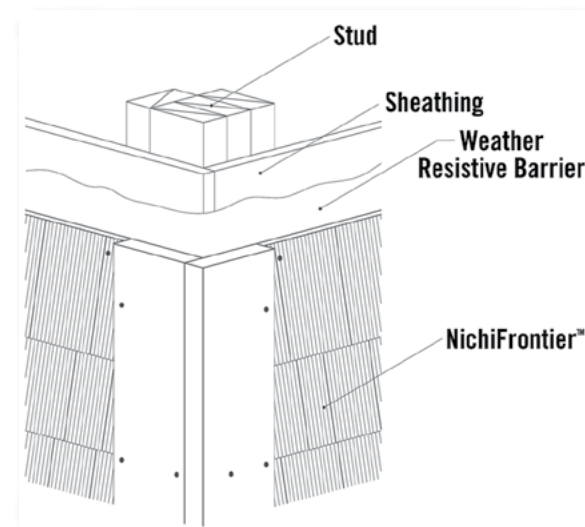


Fig. 21.3

Alternative Corner Treatments (Fig. 22.1-22.2)

- NichiFrontier™ boards may be installed in a laced or staggered corner application.
- Nichiha requires installing a galvanized, coated aluminum, or vinyl PVC flashing over the building corner prior to beginning a laced corner application.
- Use a polyurethane adhesive where mitered or laced boards join.

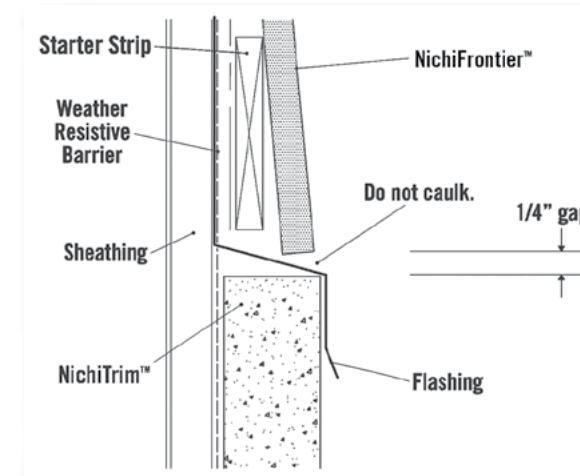


Fig. 22.1

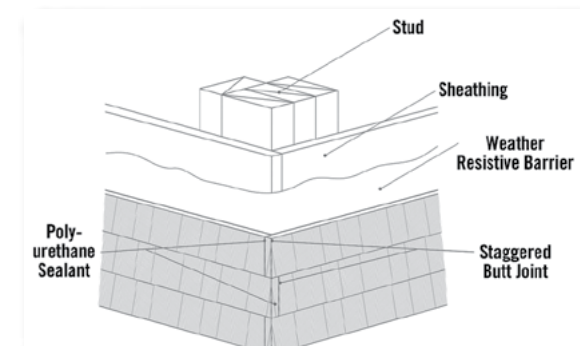


Fig. 22.2

Finishing

Follow all general finishing instructions on page one of this guide.

Preparation

Follow all general instructions on page one of this guide.

- These instructions are only intended for site construction applications. For applications on modular, panelized, or manufactured housing, please contact Nichiha directly.
- NichiSoffit™ panels can be installed directly on braced wood or steel stud (20GA or heavier) construction spaced at maximum 24" on center with the long dimension of the panel perpendicular to framing.
- All NichiSoffit panel edges must be supported by framing. Ensure that all necessary framing supports, nailers, ledgers, and sub-fascia are in place prior to installation.

Fastening

Follow all general fastening instructions on page one of this guide.

- Corrosion resistant fasteners, such as hot dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. Stainless steel fasteners are highly recommended in high-humidity and high-moisture regions. Nichiha is not liable for corrosion resistance of fasteners. Do not use aluminum fasteners, staples, clipped head or T-head nails, or fasteners that are not rated or designed for intended use.
- Use a corrosion resistant, min. 1-1/2" length, full round head siding nail or appropriate screw to install the soffit to the framing.
- The fastener head must be snug or flush to the panel surface. Do not over drive or under drive fasteners.
- Fasteners must penetrate wood framing a minimum of 1" and at least 1/2" into metal framing.
- NichiSoffit must be joined at a framing member.
- Position fasteners a minimum of 3/8" from soffit panel edges and ends, and 2" away from corners.
- Place fasteners a maximum of every 8" o. c. at panel edges and intermediate framing members.

Installation (Fig. 23.1)

- All NichiSoffit panel edges must be supported by framing. Ensure that all necessary framing supports, nailers, ledgers, blocking and/or sub-fascia are in place prior to installation.

- NichiSoffit must be installed to minimum nominal 2x4 framing or 20 gauge steel construction spaced at a maximum 24" o. c.
- The long dimension of soffit board must be perpendicular to framing.
- Position vented soffit panels with the vent holes toward the outside (toward fascia) for optimum airflow. Soffit vents can be installed into unvented NichiSoffit.
- If corners are mitered, install blocking from wall corner to inside of fascia corner.
- Ensure rafter tails and sub-fascia are of uniform length and width.
- The use of a string guide or chalkline is recommended to aid in positioning of the soffit panels.

Joint Methods (Fig. 23.2)

Join NichiSoffit panel ends by one of the following four methods:

- Join the panels in moderate contact.
- Leave appropriate gap and caulk according to caulk manufacturer's recommendations.
- Cover the joint with a batten strip.
- Use metal or PVC H-channel connector in accordance with manufacturer's instructions.

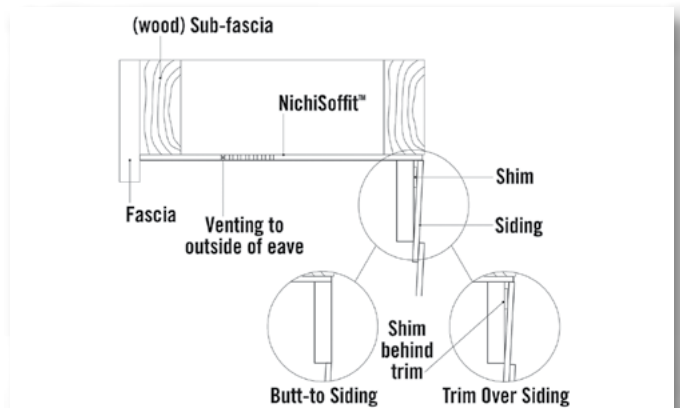


Fig. 23.1

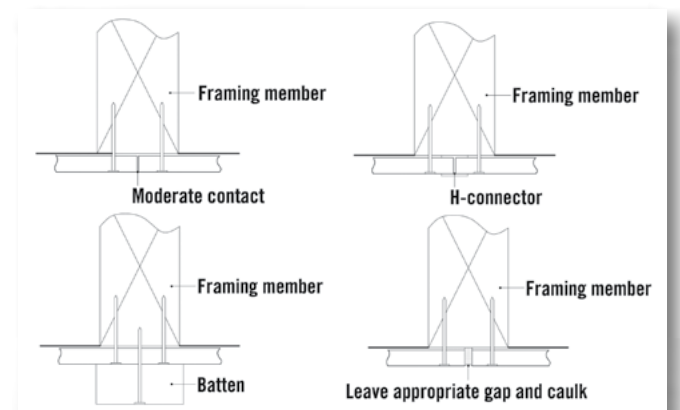


Fig. 23.2

Nichiha Warranties*

- NichiBoard™, NichiFrontier™, NichiPanel™, NichiShake™, NichiStaggered™, NichiStraight™, Sierra Premium™ Smooth and Sierra Premium™ Shake Plus - lifetime limited warranty*.
- NichiTrim™ and NichiSoffit™ - 25-year limited warranty*.

*See Nichiha warranties for detailed information on terms, conditions and limitations. Visit nichiha.com for easy downloadable warranties or call toll-free 1.866.424.4421 for a copy. Nichiha MSDS is available at nichiha.com, at your local NICHIIHA dealer or call NICHIIHA direct, toll-free 1.866.424.4421.



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