



the power of possibilities™

INSTALLATION GUIDE
NICHIPRODUCTS

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GENERAL INSTRUCTIONS FOR ALL NICHIPRODUCTS

CONSTRUCTION REQUIREMENTS

These instructions are only intended for site construction applications. For applications on modular, panelized, or manufactured housing, please contact Nichiha directly.

NichiProducts must be installed on flat, vertical wall applications only. **Do not install on sloped or tilted walls, or Mansard type roofs.**

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. Correct any misaligned framing as irregularities in the framing or exterior sheathing may mirror through the finished application.

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 sheathing, care must be taken not to overdrive the fastener and compress the sheathing which may result in distortion or waviness. The fastener length must be increased in accordance with the thickness of the non-structural sheathing.

Shake and lap siding products must be installed horizontally. Do not install in an angled, sloped, or other non-horizontal (chevron, sunburst, diamond) fashion.

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 2015 IRC. The weather resistive barrier must be installed in accordance with the manufacturer's specifications and local codes if applicable. Nichiha is not liable for water infiltration.

Please consult with your local dealer or Nichiha directly when using NichiProducts™ on large projects, such as buildings greater than three (3) stories or taller than 45 feet.

Refer also to Intertek CCRR-0258 for fastening adjustments required for higher-wind locations.

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 Representative toll-free at 1-866-424-4421 immediately 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. Material on-site must be covered with a tarp before installation. Moisture saturation before installation may result in shrinkage or 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

Comply with local codes for minimum siding clearances.

Maintain a minimum 1" - 2" clearance* between NichiProducts™ and decking, walks, steps, stoops, porches, and hard surface driveways. (Fig. 4.1)

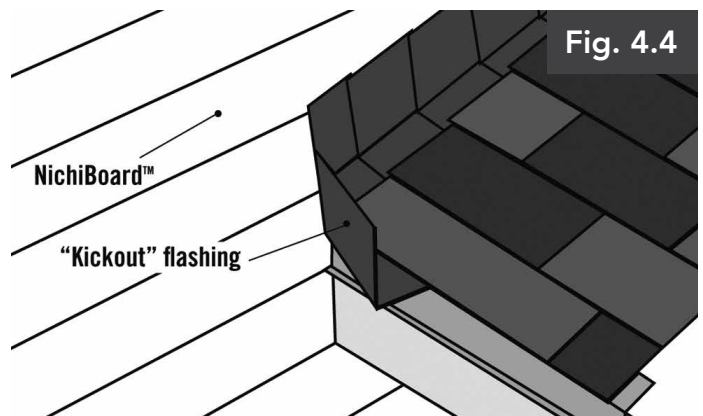
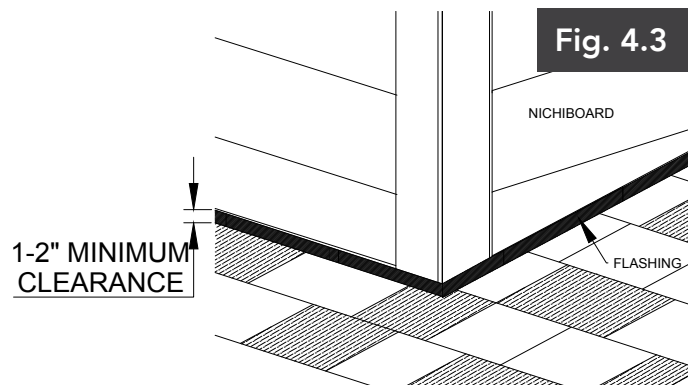
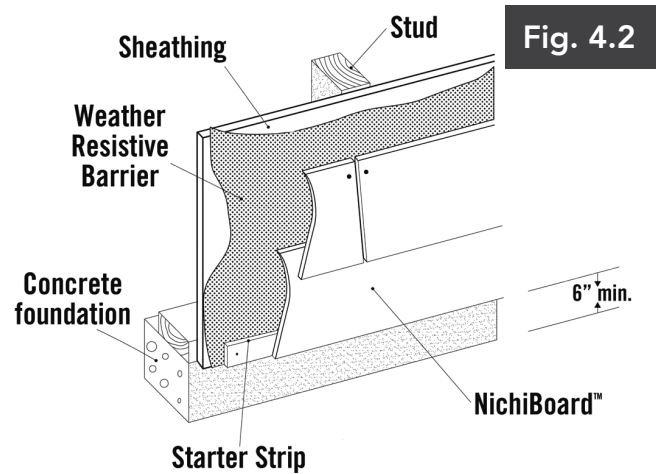
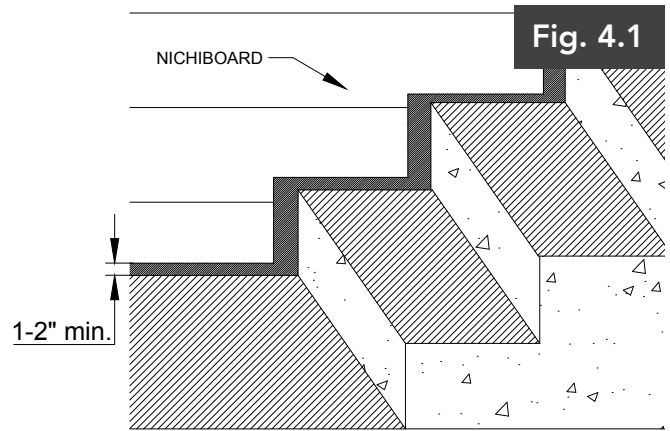
Maintain a minimum clearance of 6" above finished grade, or in accordance with local codes if greater than 6" clearance is required. (Fig 4.2)

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 1-2" clearance* from roofing. (Fig 4.3)

A kickout flashing must be present at roof to wall intersects in order to direct roof water away from the siding and trim. (Fig 4.4)

All horizontal trim is required to be flashed with a 1/4" clearance between the siding and flashing.

*Min. 2" clearances for projects in Kentucky, Maryland, and Virginia.



BLOCKED PENETRATIONS

All penetrations of 1 ½" or larger in diameter must incorporate a blocked and flashed penetration to deter water entry behind the siding.

CUTTING

For your protection and that of others, refer to the Nichiha Safety Guidelines and OSHA guidelines for important safety practices.

Work outdoors where feasible, otherwise use mechanical ventilation. Position cutting station 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.

Use a dust-reducing or dust-collecting circular saw with a vacuum attachment in combination with a diamond-tipped blade designed for cutting fiber cement products.

The dust collector must be connected to a HEPA vacuum.

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™.

A jig saw fitted with a carbide tipped blade may be used for cutting service opening holes, irregular shapes, radii, and scrollwork.

When using a circular saw, shears, or jigsaw, cut NichiProducts™ face down. Also ensure the board is fully supported along its length. Additionally, on factory prefinished products, take steps to protect the board finish from damage.

FASTENING

Proper fasteners and fastening play a critical role in the long term performance of NichiProducts. Care should be taken to avoid product damage resulting from incorrect installation methods such as over-driven fasteners, improper air compressor settings, the use of framing nailers, finish nails, etc. Such actions may cause visible cracking, particularly at product edges that could affect key performance aspects of the siding. Where necessary, the products may be pre-drilled and hand fastened as an alternative to pneumatic fastening.

When using pneumatic tools, ensure the gun has an adjustable depth of drive or flush mount attachment to control nail seating depth. The fastener head must be flush to the board surface. Do not over drive or under drive fasteners. Caulk or seal any fasteners that are countersunk more than 1/16" and add an additional, properly seated fastener.

DO NOT use framing nailers as board damage may result.

Pressure from compressors can vary depending on tank volume and the 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 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, finish nails, clipped head or T-head nails, or fasteners not rated or designed for intended use. (continued)

Corrosion resistant, full round head siding nails or appropriate screws may be used to install NichiProducts™ to wood and steel framing members. Fasteners must penetrate into wood a minimum of 1", or ½" into a minimum 20-gauge steel stud.

FINISHING & MAINTENANCE

Use an exterior grade high-quality sealant that complies with either ASTM C834 (for primed products) or ASTM C920 (for prefinished 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, field cut door and window cut outs, field cut butt joints, bottom ends of corner and window trim), must be sealed with a primer, paint, or caulk.

Dents, chips, scratches, etc. on the products should 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. High quality, exterior grade, 100% acrylic latex paints are recommended. Do not apply paint when siding is wet. Follow the manufacturer's instructions for use.

DO NOT use stains, or oil or alkyd based paints on NichiProducts.

Nichiha does not warrant or accept liability for the appearance or performance of third party or field applied caulks, sealants, or finishes.

Periodic maintenance of the exterior of any structure is considered normal. As a guide, it is recommended that normal maintenance shall include:

- Washing down the exterior surfaces periodically with a low pressure spray or garden hose to remove dirt and debris. DO NOT use high pressure power washers as they may damage the siding
- Reapplication of exterior finishes
- Please refer to your paint manufacturer for recoating requirements and schedules
- Maintaining caulks and sealants
- Ensure that gutters are clear and unclogged to prevent overflows
- Ensure that the minimum ground clearance is maintained by preventing build up of decorative mulch, stone, etc.
- Maintain a clearance between the siding and any vegetation, shrubs, etc.

SAFETY INSTRUCTIONS

Whenever drilling, cutting, sawing, sanding or abrading the product, users must observe the following safety practices:

1. Use best work practices to reduce airborne dust concentrations.
2. Use a dust reducing circular saw with collector or vacuum attachment for cutting. The dust collector must be connected to a HEPA vacuum.
3. Position cut station where wind will carry dust away from user and others in the area.
4. Do not use compressed air for cleaning dust. Use wet suppression or a HEPA-filtered vacuum.
5. Work outdoors when feasible; otherwise use mechanical ventilation or cut 5/16" thick product with shears.
6. Anyone handling NichiProducts™ or in the vicinity of others using NichiProducts™ must wear safety glasses and properly fitted respirators, prior to handling (other than simply moving or carrying) NichiProducts™. We require that users wear a NIOSH/OSHA approved respirator with a rating of N100, O100 or P100 in accordance with applicable government regulations and manufacturer's instructions.
7. All users must comply with the OSHA PEL.
8. Notify others in the immediate area.

Nichiha SDS's for all products are available at nichiha.com, at your local NICHIIHA dealer, or through NICHIIHA directly, toll-free at 1.866.424.4421.

Silica Dust Warning: NICHIIHA 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 SDS, your employer, or visit www.osha.gov/silica and www.cdc.gov/niosh/topics/silica. FAILURE TO ADHERE TO OUR WARNINGS, SDS, AND OTHER INSTRUCTION MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

NICHIBOARD

PREPARATION

Follow all instructions in the General section 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 solid wood or steel backing. Correct any misaligned framing as irregularities in the framing or exterior sheathing may mirror through the finished application. (Fig. 8.1)

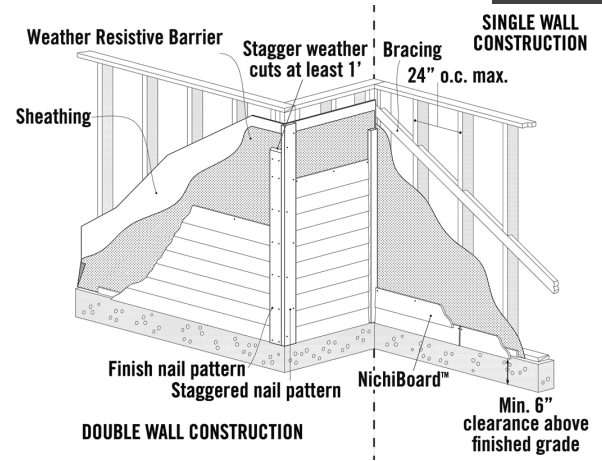
NichiBoard may be installed on flat, vertical wall applications only. Do not install on sloped or tilted walls, or Mansard type roofs.

NichiBoard must be installed horizontally. Do not install in an angled, sloped, or other non-horizontal (chevron, sunburst, diamond) fashion.

Ensure all weather resistive barriers are in place in accordance with local code.

When installing NichiBoard, 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 sheathing, care must be taken not to overdrive the fastener and compress the sheathing which may result in distortion or waviness. The fastener length must be increased in accordance with the thickness of the non-structural sheathing.

Fig. 8.1



FASTENING

Follow all fastening instructions in the General section of this guide. Refer also to Intertek CCRR-0258 for fastening adjustments required for higher-wind locations.

Corrosion resistant fasteners such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. When applying NichiBoard over wood framing, suitable fasteners include a full round head (min .221" HD) siding nail of sufficient length to penetrate into wood a minimum of 1". A corrosion resistant, #8, ribbed, bugle head (.375" HD) screw of sufficient length to penetrate into steel framing a minimum of 1/2" may also 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, finish nails, or fasteners that are not rated or designed for intended use.

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

INSTALLATION

STARTER STRIP & FIRST COURSE

(Fig. 9.1)

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, 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.

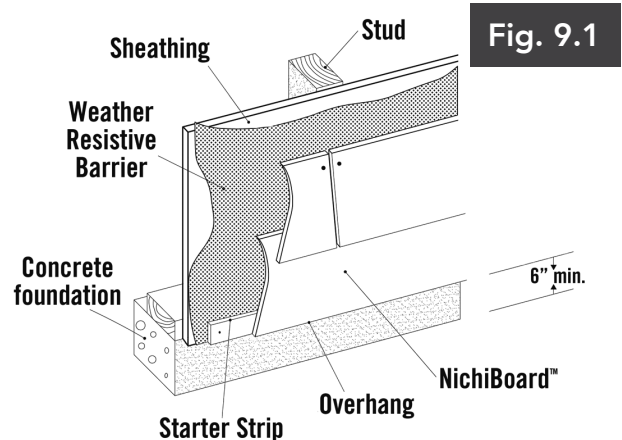
Ensure the first course of boards is level as it will be the guide for the entire installation. Use a level and chalk line to establish a level and straight reference point for the first course. Continue to check for level lines throughout installation.

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.



OVERLAP

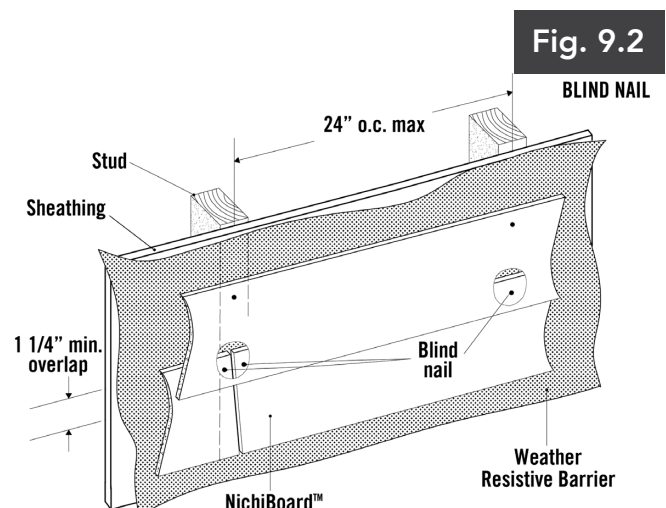
A minimum overlap of 1 1/4" is required.

BLIND NAILING (Fig. 9.2)

For a more aesthetically pleasing installation, NichiBoard 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 3/8" from the board ends.

Fasten from one end of the board to the other.



FACE NAILING (Fig. 10.1)

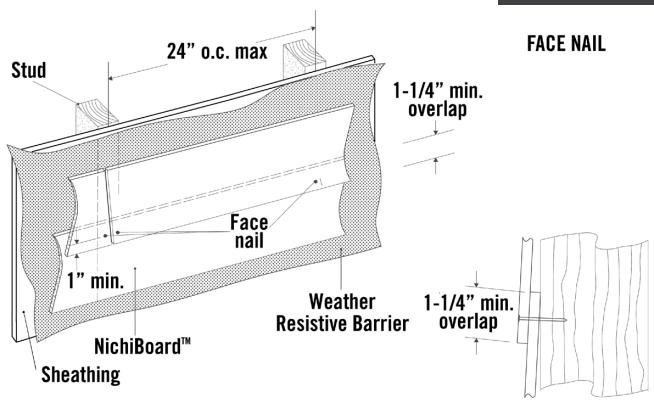
It is permissible to install NichiBoard in a face nail type installation to meet certain installation requirements or when specified by local code.

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.

DO NOT install NichiBoard in a combined Blind and Face nailing manner.

Fig. 10.1



VERTICAL JOINT PLACEMENT, FASTENING, AND SEALING

All NichiBoard vertical (butt) joints MUST land or break over studs or solid framing (wood and/or steel).

Pin-backs may be done for aesthetic purposes only. Pin backs shall be done with corrosion resistant finish nails only and are not a substitute for blind or face nailing.

When possible, use factory sealed or finished ends at butt joints.

ALL cut ends must be sealed with a primer or paint. NEVER leave exposed cut edges uncoated.

For best appearance, offset butt joints 32" (two studs) or more to avoid creating a step or ladder pattern.

JOINT TREATMENT

OPTION 1: Joint Installation Using flashing (recommended) (Fig. 10.2)

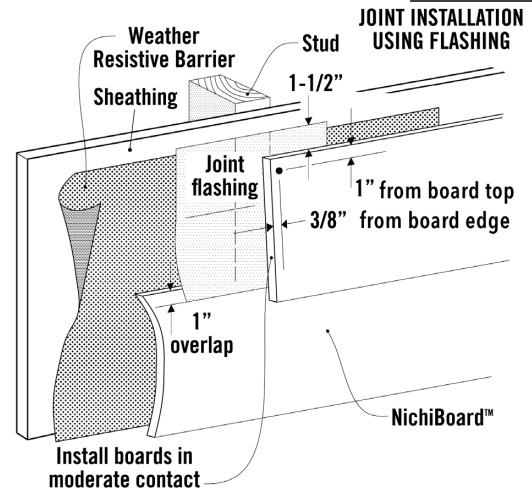
When using this option, the use of a joint flashing behind the butt joints is required.

Install NichiBoard over joint flashing in moderate contact at butt joints.

Suitable materials for joint flashing include anodized or PVC coated coil stock and code approved weather resistive barriers.

The joint flashing should be at least 3" in width and long enough to extend above the board height a minimum of 2".

Fig. 10.2



OPTION 2: Joint Installation Using Caulk
(Fig. 11.1)

Leave appropriate gap (minimum 1/8") between board ends and fill with a quality, paintable, exterior grade caulk. Ensure caulk meets ASTM 834 or ASTM C920 requirements and is approved for use at butt joints.

SIDING TO TRIM JOINTS (FIG. 11.2 – 11.3)

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 previously.

Corner Trim and other trim attachments must be of sufficient thickness. **The overlapped NichiBoard siding must not extend beyond the face of the trim.** A continuous, solid shim or build out behind the trim may be necessary dependant on type and thickness of trim used.

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 painted, galvanized, anodized or PVC coated.

FINISHING

Follow all finishing instructions in the General section of this guide.

Fig. 11.1

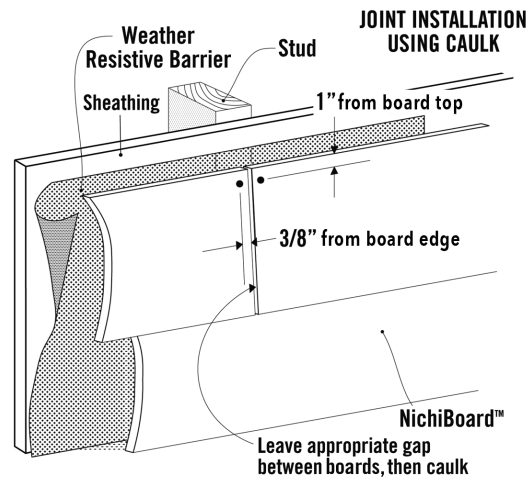


Fig. 11.2

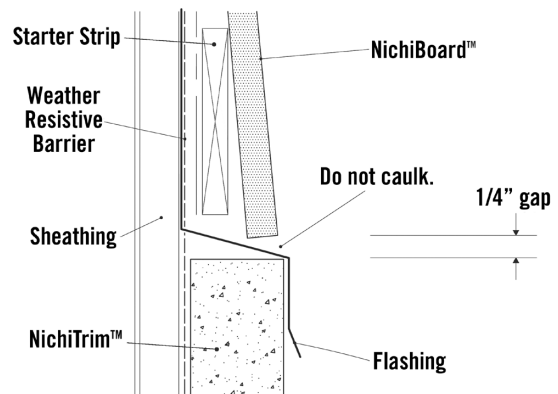
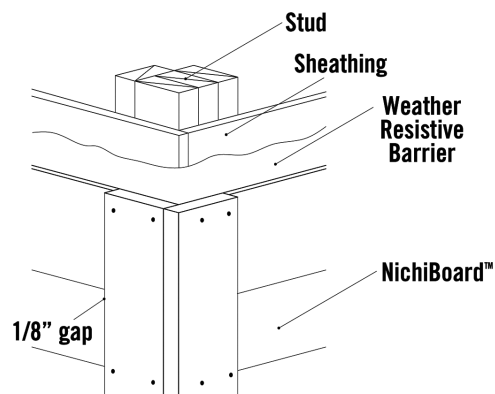


Fig. 11.3



NICHISHAKE™ INDIVIDUAL SHAKES

PREPARATION

Follow all instructions in the *General* section of this guide.

NichiShake individual shakes must be installed directly on minimum thickness 7/16" thick APA rated OSB or plywood sheathing.

Correct any misaligned framing as irregularities in the framing or exterior sheathing may mirror through the finished application.

NichiShake may be installed on flat, vertical wall applications only. **Do not install on sloped or tilted walls, or Mansard type roofs.**

Ensure all weather resistive barriers are in place in accordance with local code.

Due to overlapping of shakes, no sealant or caulk is required at shake to shake joints.

FASTENING

Follow all fastening instructions in the *General* section 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, finish nails, or fasteners that are not rated or designed for intended use.

When applying NichiShake over solid wood sheathing, suitable fasteners include a full round head (min .221" HD) siding nail of minimum 1 ½" length, or a corrosion resistant, #8, ribbed, bugle head .375" HD, 1 ¼" length screw may also be used.

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

NichiShake must be fastened through the previous shake course.

INSTALLATION

STARTER STRIP & STARTER COURSE (Fig. 13.1)

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, PVC, or pressure treated lumber. Do not use untreated lumber, plywood, OSB, or other engineered wood products as a starter strip.

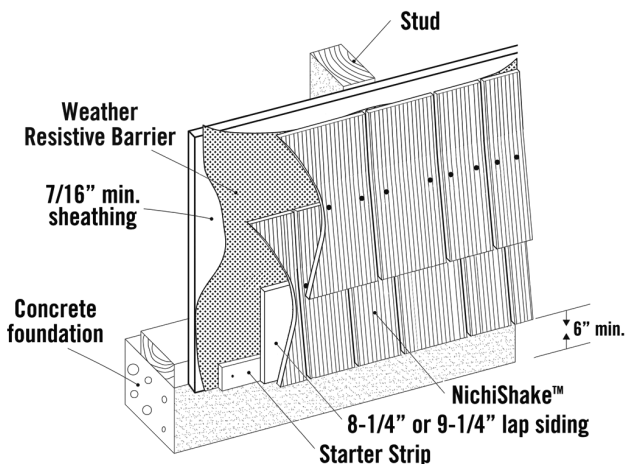
Install the starter strip level with the bottom of the wall sheathing or mudsill.

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. (continued)

Fig. 13.1



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. 13.2 - 13.3)

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.

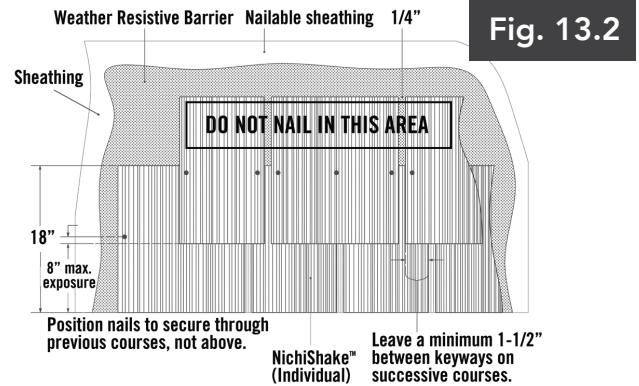


Fig. 13.2

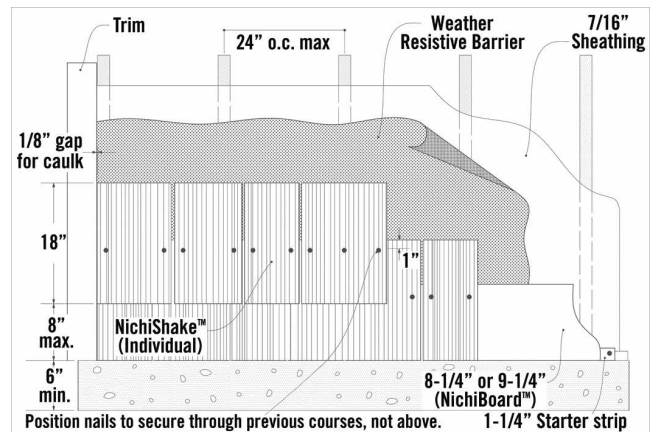


Fig. 13.3

Space shingles $\frac{1}{4}$ " to $\frac{5}{16}$ " apart. A common practice is to use a $\frac{1}{4}$ " 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 $8\frac{1}{4}$ " and 9" up from the bottom edge of the shake where the fastener will penetrate through both courses.

Position fasteners $\frac{1}{2}$ " to 1" in from the vertical side edges of the shake.

When installing, mix the $6\frac{1}{4}$ ", $8\frac{1}{4}$ ", 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 $1\frac{1}{2}$ ".

SHAKE TO TRIM JOINTS (FIG. 14.1 – 14.2)

Where shake ends and edges meet trim at inside and outside corners, door, window, and other trim attachments, leave a **minimum $\frac{1}{8}$ " gap** and caulk with a quality sealant as described in the General – Finishing section of this guide.

Corner Trim and other trim attachments must be of sufficient thickness. The overlapped NichiShake siding must not extend beyond the face of the trim. A continuous, solid shim or build out behind the trim may be necessary dependant on type and thickness of trim used.

All horizontal trim must be flashed. Leave a $\frac{1}{4}$ " gap between the siding and flashing. Do not caulk this gap. Do not use raw aluminum flashings. Flashings must be painted, galvanized, anodized or PVC coated.

FINISHING

Follow all finishing instructions in the General section of this guide.

Fig. 14.1

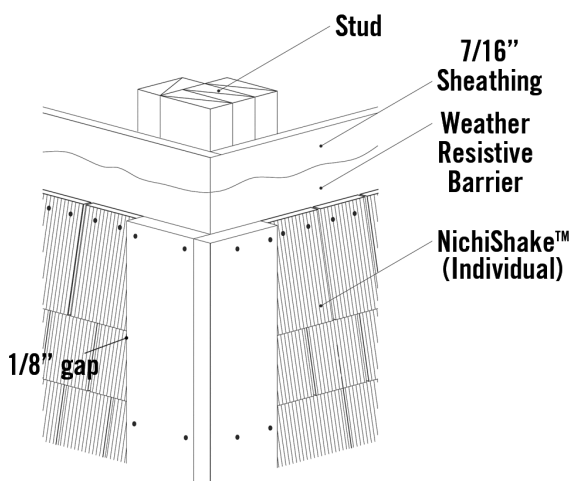
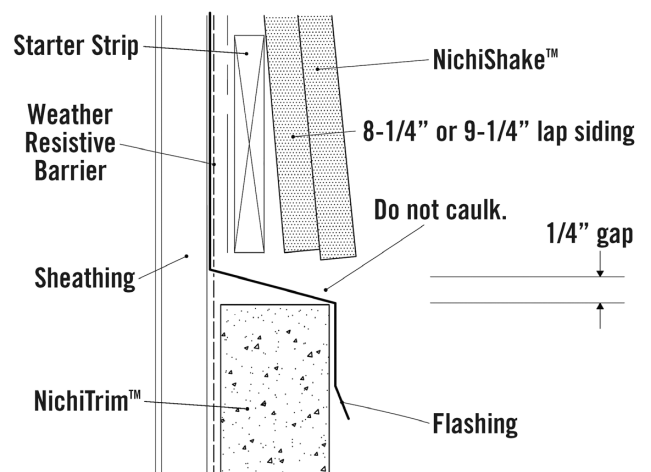


Fig. 14.2



NICHISTAGGERED & NICHISTRAIGHT SHAKE PANELS

PREPARATION

Follow all instructions in the *General* section 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 solid wood or steel backing. Correct any misaligned framing as irregularities in the framing or exterior sheathing may mirror through the finished application.

NichiStaggered and NichiStraight shake panels may be installed on flat, vertical wall applications only. **Do not install on sloped or tilted walls, or Mansard or Gambrel type roofs.**

NichiStaggered and NichiStraight shake panels must be installed horizontally. Do not install in an angled, sloped, or other non-horizontal (chevron, sunburst, diamond) fashion.

Ensure all weather resistive barriers are in place in accordance with local code.

When installing NichiStaggered and NichiStraight shake panels, it is strongly recommended that an APA rated 7/16" OSB or plywood sheathing be used. Shake 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 sheathing, care must be taken not to overdrive the fastener and compress the sheathing which may result in distortion or waviness. The fastener length must be increased in accordance with the thickness of the non-structural sheathing.

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 1/2" into a minimum 20 gauge steel stud.

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

STARTER STRIP & STARTER COURSE

(Fig. 16.1)

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, 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.

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.

The shingles should not extend below the corner trim.

INSTALLING SHAKE COURSES – NICHISTAGGERED

(Fig. 16.2)

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.

Fig. 16.1

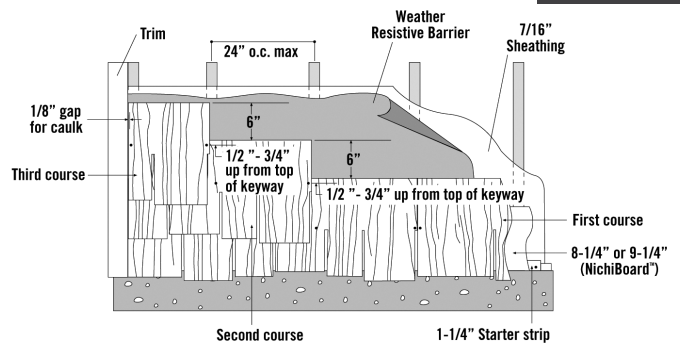
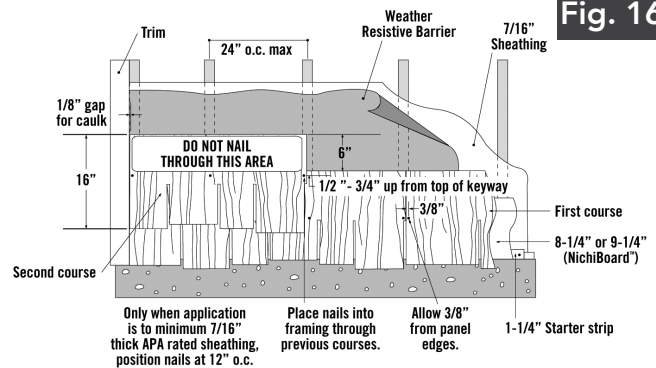


Fig. 16.2



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.

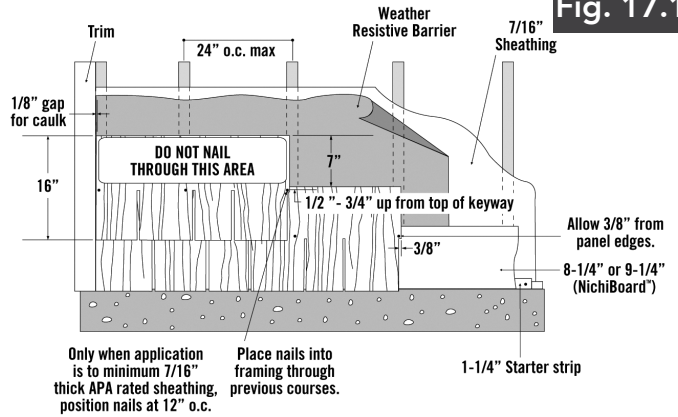
For best appearance, the bottom edge of the panels should align with the corner trim.

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.

Fig. 17.1



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. 16.2)

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 but be offset a minimum of 1 1/2".

INSTALLING SHAKE COURSES – NICHISTRAIGHT (Fig. 17.1 – 18.1)

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.

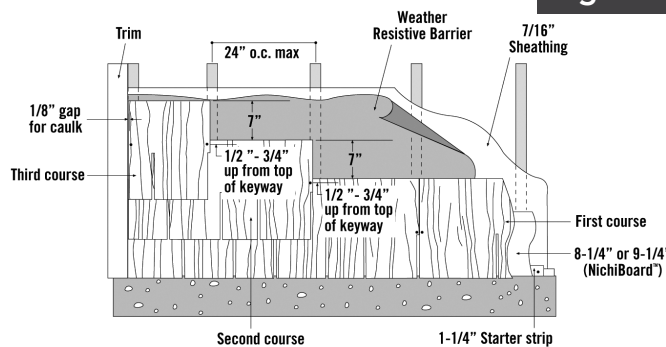
When installing NichiStraight panels, place the first course of panels flush with the bottom edge of the starter course and secure with the appropriate fastener. As an alternative, strike a chalk line 16" above the bottom edge of the starter course and position the top edge of the shingles even with 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. (continued)

Fig. 18.1



NICHISTAGGERED / NICHISTRAIGHT PANEL TO TRIM JOINTS

(Fig. 18.2 – 18.3)

Where shake 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 sealant as described in the General – Finishing section of this guide.

Corner Trim and other trim attachments must be of sufficient thickness. The overlapped panel must not extend beyond the face of the trim. A continuous, solid shim or build out behind the trim may be necessary dependant on type and thickness of trim used.

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 painted, galvanized, anodized or PVC coated.

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. (17.1)

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 but be offset a minimum of 1 1/2".

Fig. 18.2

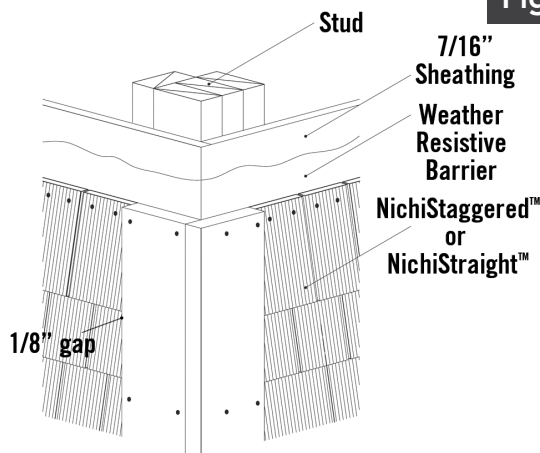
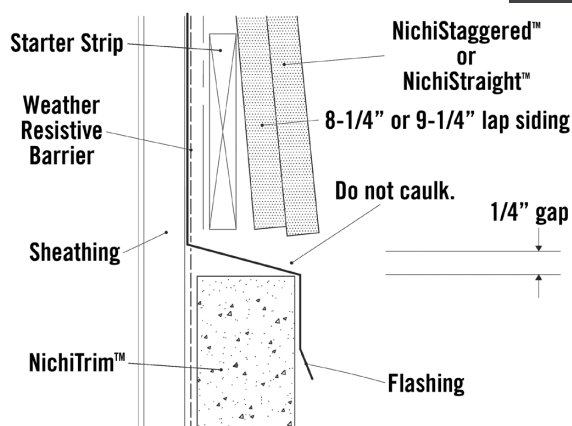


Fig. 18.3



**NICHISTAGGERED / NICHISTRAIGHT
ALTERNATIVE CORNER TREATMENTS**
(Fig. 19.1)

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.

**NICHISTAGGERED / NICHISTRAIGHT
INSTALLATION AT GABLES**
(Fig. 19.2 – 19.4)

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 previously.

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.

Fig. 19.1

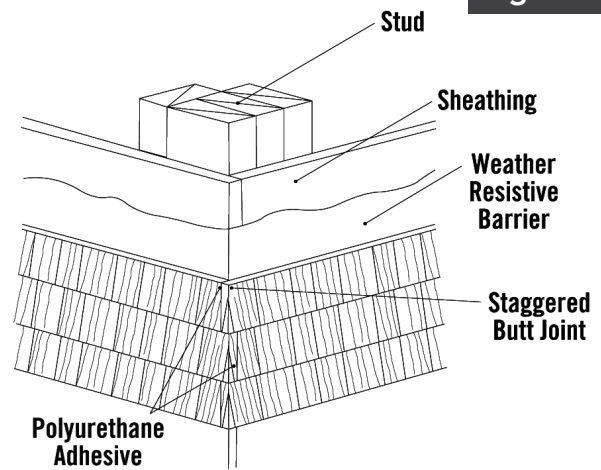


Fig. 19.2

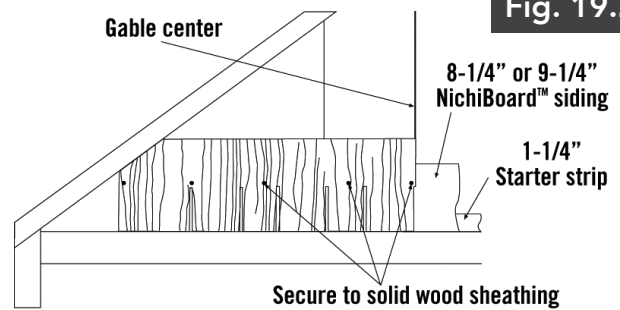


Fig. 19.3

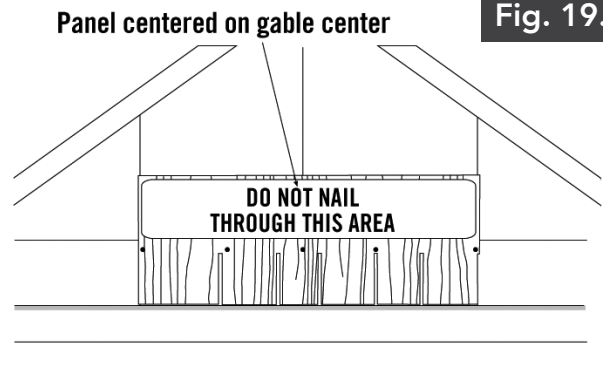
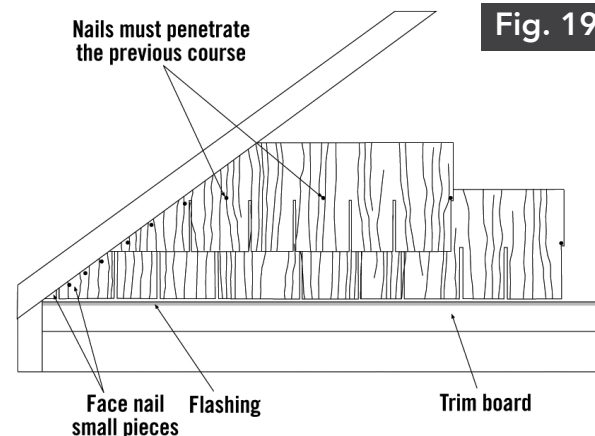


Fig. 19.4



NICHIPANEL

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.

FINISHING

Follow all finishing instructions in the General section of this guide.

PREPARATION

Follow all instructions in the *General* section 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 solid wood or steel backing. Correct any misaligned framing as irregularities in the framing or exterior sheathing may mirror through the finished application. (*Fig. 21.1*)

NichiPanel may be installed on flat, vertical wall applications only. **Do not install on sloped or tilted walls, or Mansard type roofs.**

Ensure all weather resistive barriers are in place in accordance with local code.

When installing NichiPanel, it is recommended that an APA rated 7/16" OSB or plywood sheathing be used. 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 sheathing, care must be taken not to overdrive the fastener and compress the sheathing which may result in distortion or waviness. The fastener length must be increased in accordance with the thickness of the non-structural sheathing.

FASTENING (FIG. 21.2)

On multi-story structures, avoid spanning over 1st-2nd , or 2nd – 3rd , (etc.) story floor systems as distortion of the panels from settling of the structure can occur. The panel horizontal joint should always occur at the wall framing top plate or floor system rim joint.

NichiPanels must be installed with the long dimension of the panel vertical and parallel to wall framing.

All panel edges must be supported by framing.

Follow all fastening instructions in the *General* section of this guide. *Refer also to Intertek CCRR-0258 for fastening adjustments required for higher-wind locations.*

Corrosion resistant fasteners such as hot-dipped galvanized nails and screws that are appropriate to local building codes and practices must be used. When applying NichiPanel, suitable fasteners include a full round head (min .221" HD) siding nail of sufficient length to penetrate into wood a minimum of 1" or into steel a minimum of 1/2". A corrosion resistant, #8, ribbed, bugle head (.375" HD) screw of sufficient length to penetrate into steel framing a minimum of 1/2" may also 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, finish nails, or fasteners that are not rated or designed for intended use.

Fig. 21.1

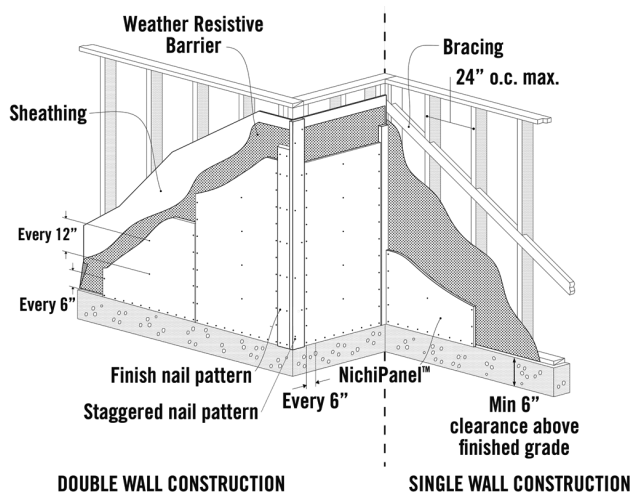
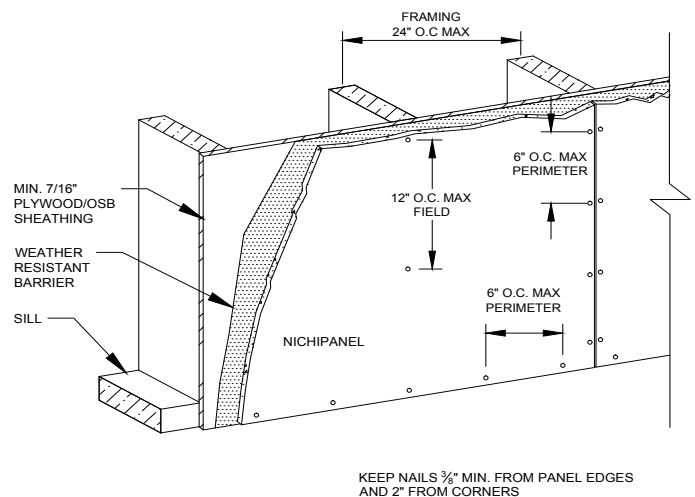


Fig. 21.2



Fasten panels a maximum 6" on-center on all panel horizontal and vertical edges. Position fasteners at intermediate framing no greater than 12" on-center. Fasten at all stud locations.

Fasteners must be placed no closer than 3/8" from panel edges and 2" from panel corners.

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

INSTALLATION

Follow all instructions in the *General* section 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

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. Nichiha offers **NichiTrim Battens** (2-1/2" wide). (*Fig. 23.1, 23.2*). Caulk the vertical edge between the batten strip and NichiPanel.
- Leave appropriate gap and caulk according to caulk manufacturer's recommendations. (*Fig. 23.3*)
- Use metal or PVC H-channel connector in accordance with manufacturer's instructions. (*Fig. 23.4*)
- Join the panels in moderate contact. DO NOT install tight or force panels in place.

HORIZONTAL JOINTS

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." (Fig. 23.2, 23.5)

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. 23.5)

NichiTrim: Battens - weather cut (min. 22.5°) at panel horizontal joints or terminate 1/4" above horizontal band trim and flashing. (Fig. 23.2)

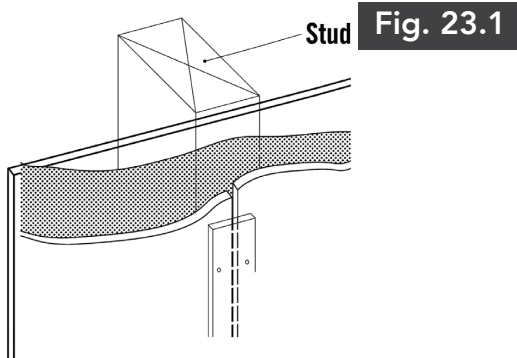


Fig. 23.1

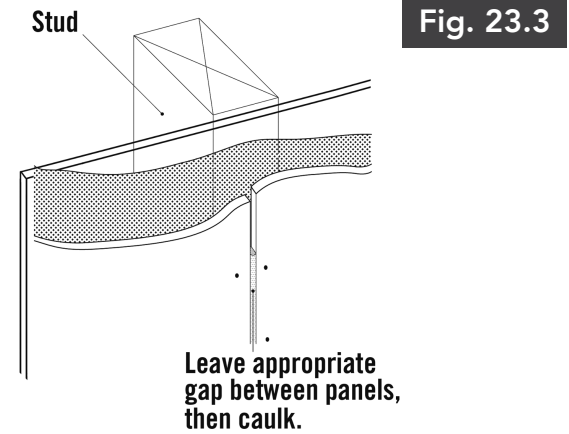


Fig. 23.3

Leave appropriate gap between panels, then caulk.

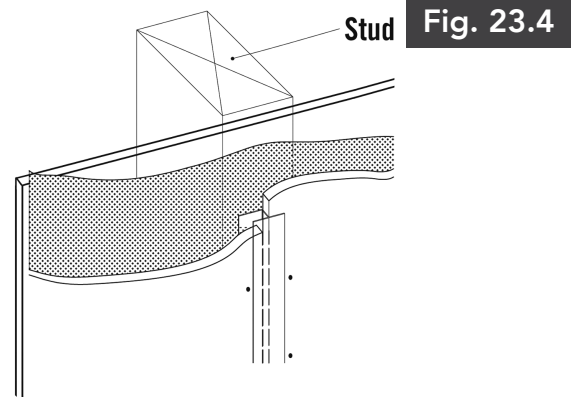


Fig. 23.4

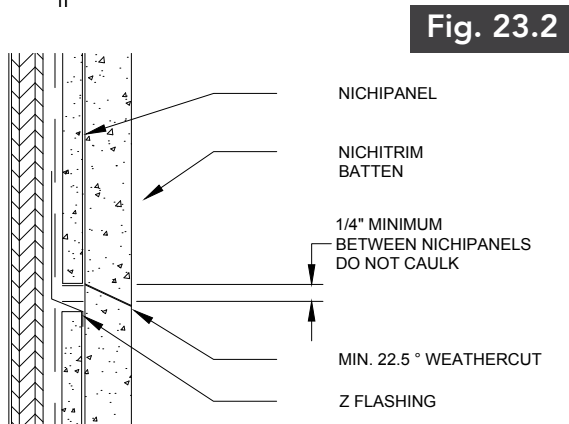


Fig. 23.2

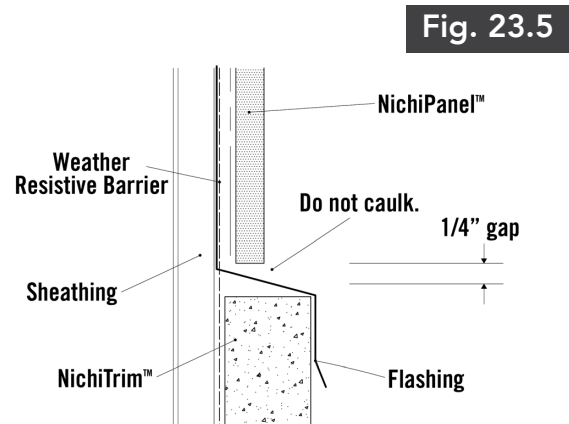


Fig. 23.5

TRIMMING OPENINGS AND SIDING TO TRIM JOINTS

(Fig. 23.5 – 24.3)

When trim is applied around doors, windows, and other openings prior to NichiPanel installation, ensure that flashings are in place over all horizontal trim.

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 sealant as described in the General – finishing section.

Corner Trim and other trim attachments must be of sufficient thickness. The NichiPanel siding 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 painted, galvanized, anodized or PVC coated.

When trim attachments are to be applied on top of NichiPanel, special steps must be taken prior to the panel application *above openings*:

- After installation of the door or window, install a 5/16" thick shim above the opening the same length and width dimensions as the horizontal trim piece that will cover it.
- Install flashing on top of the shim, taking into consideration the thickness of the trim. The flashing must extend slightly past the edge of the trim.
- Next, install the NichiPanel above the shim and allowing a 1/4" gap between the siding and flashing.
- Install the horizontal trim to cover the shim, under the flashing. (Fig. 24.3)

Fig. 24.1

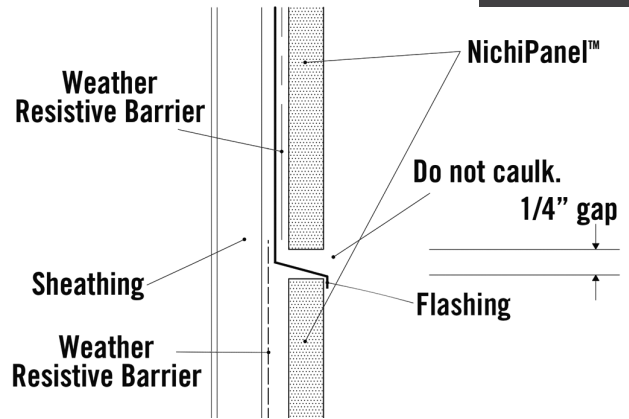


Fig. 24.2

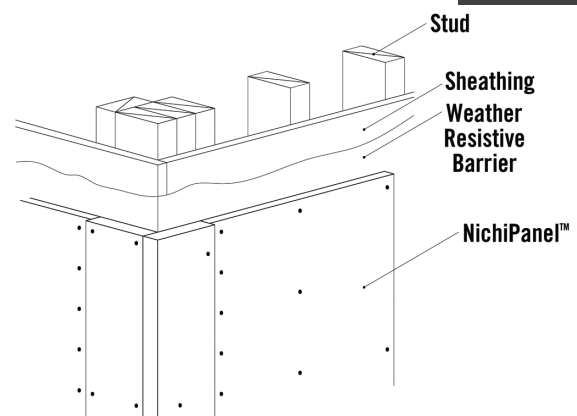
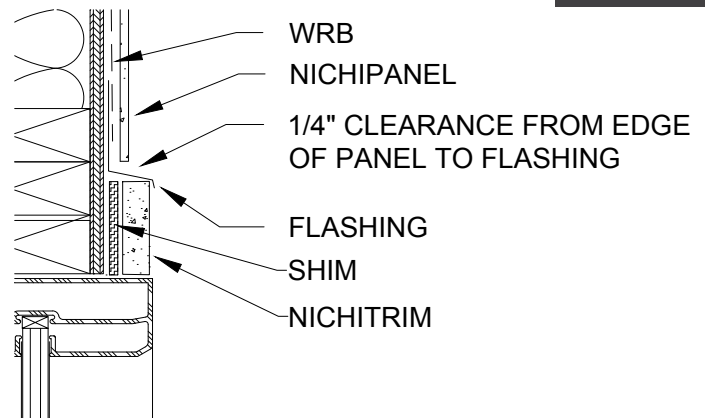


Fig. 24.3



- NichiTrim may then be added directly on top of installed NichiPanel at jambs and sill.

FINISHING

Follow all finishing instructions in the General section of this guide.

NICHITRIM

PREPARATION

Follow all instructions in the *General* section 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. Correct any misaligned framing as irregularities in the framing or exterior sheathing may mirror through the finished application. (Fig. 25.1)

NichiTrim may be installed on flat, vertical wall applications only. Do not install on sloped or tilted walls, or Mansard type roofs.

NichiTrim is not intended for usage as a siding product.

Ensure all weather resistive barriers are in place in accordance with local code.

When installing NichiTrim, it is recommended that an APA rated 7/16" OSB or plywood sheathing be used. NichiTrim 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 sheathing, care must be taken not to overdrive the fastener and compress the sheathing which may result in distortion or waviness. The fastener length must be increased in accordance with the thickness of the non-structural sheathing.

When lifting and carrying NichiTrim, turn the board on its edge with arms adequately spaced.

FASTENING

Follow all fastening instructions in the *General* section of this guide.

Finish nails (minimum 15 gauge), smooth shank siding nails, or appropriate screws may be used to secure NichiTrim to wood and steel framing members. Fasteners must penetrate into wood a minimum of 1" or 1/2" into steel framing to ensure trim is securely fastened.

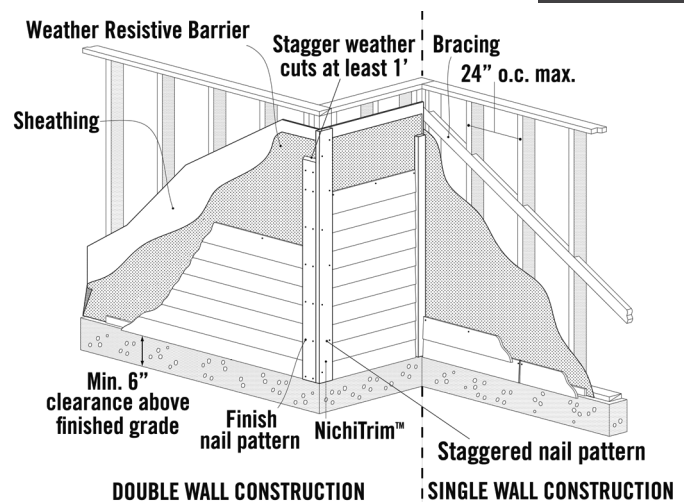
Pneumatic fastening is recommended.

When using pneumatic tools, ensure the gun has an adjustable depth of drive or flush mount attachment to control nail seating depth. The fastener head must be flush to the board surface. Do not over drive or under drive fasteners.

DO NOT use framing nailers as board damage may result.

Pressure from compressors can vary depending on tank volume and the number of lines connected to the unit. For best performance, always test and adjust pressure before beginning installation.

Fig. 25.1



Corrosion resistant fasteners, such as hot-dipped galvanized nails and screws 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.

For best aesthetics, on door and window trim use a minimum 15 gauge corrosion resistant finish nail.

Do not use aluminum fasteners, staples, clipped head or T-head nails, or fasteners not rated or designed for intended use.

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 12" trim (11 1/4"), apply 3 to 4 finish nails at 16" intervals. (Fig. 26.1)

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 12" (11 1/4") trim, additional fasteners may be applied if needed.

If hand nailing NichiTrim, pre-drilling may be necessary in some applications.

Fig. 26.1

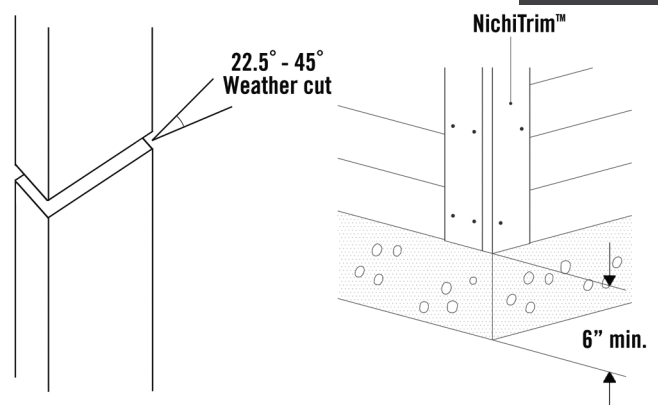
NichiTrim™ Fastening Specifications		
	Finish Nail	Siding Nail
Distance from edge	1/2"	1"
Distance from ends	1"	3"
Spacing	16"	16"
Spacing pattern	Stacked	Staggered

TRIMMING INSIDE AND OUTSIDE CORNERS

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. 26.2)

Fig. 26.2



TRIMMING WINDOWS, DOORS, AND OPENINGS (Fig. 27.1)

When using NichiBoard™, NichiShake™, NichiStraight™, NichiStaggered™, Savannah Smooth and Sierra Premium™ Shake 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 painted, 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. 27.1)

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.

FASCIA, FRIEZE BOARDS, RAKE TRIM, & BAND BOARDS

(Fig. 27.2-27.4)

NichiTrim products used in fascia and rake board applications must be fastened over a continuous wood or steel subfascia (Fig. 27.2).

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 (Fig. 27.3). Also, adequate flashing must be present between NichiTrim and any brick or masonry ledge.

Incorporate a drip edge flashing at fascia and roofing intersections (Fig. 27.4).

Fig. 27.2

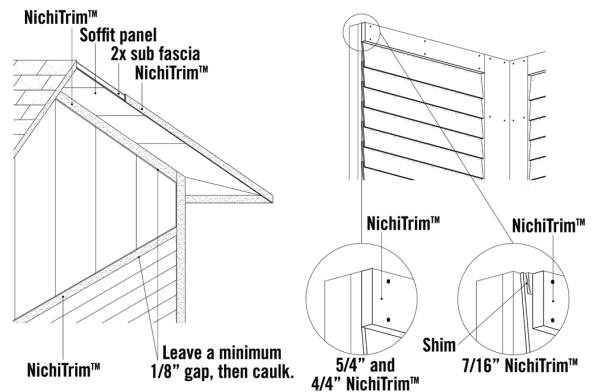


Fig. 27.3

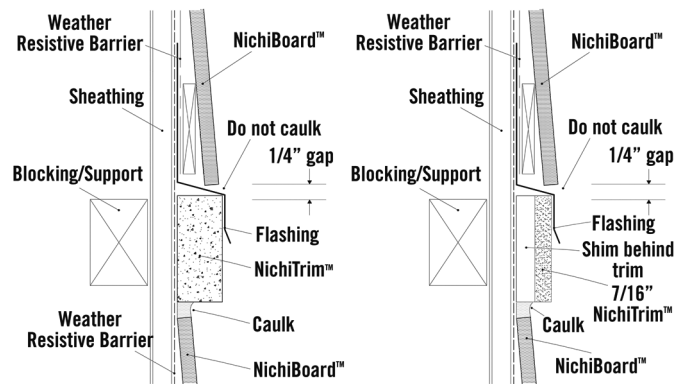


Fig. 27.4

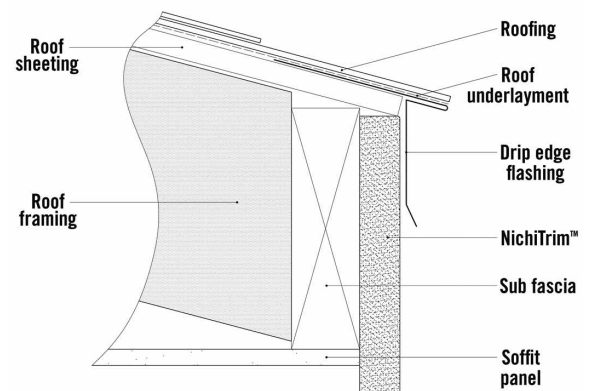
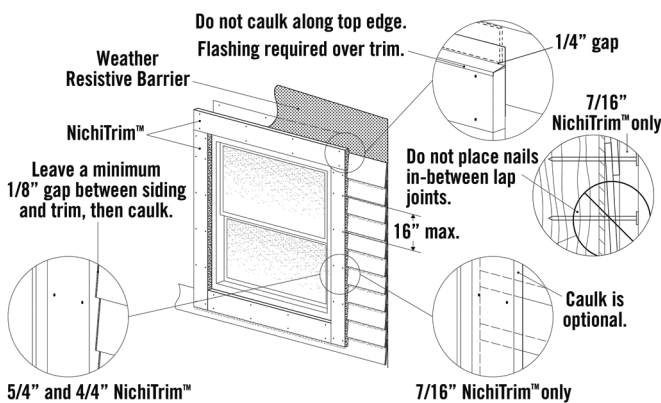


Fig. 27.1



NICHISOFFIT

PREPARATION

Follow all instructions in the *General* section of this guide.

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 fastening instructions in the *General* section 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. When applying NichiSoffit, suitable fasteners include a full round head (min .221" HD) siding nail of sufficient length to penetrate into wood a minimum of 1" or into steel a minimum of ½". A corrosion resistant, #8, ribbed, bugle head (.375" HD) screw of sufficient length to penetrate into steel framing a minimum of ½" may also 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, finish nails, or fasteners that are not rated or designed for intended use.

Place fasteners a maximum of every 8" o.c. at panel edges and intermediate framing members.

Fasteners must be placed no closer than 3/8" from panel edges and 2" from panel corners.

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

Use a corrosion resistant, min. 1 ½" length, full round head siding nail or appropriate screw to install the soffit to the framing. Fasteners must penetrate wood framing a minimum of 1" and at least 1/2" into metal framing.

INSTALLATION (FIG. 29.1)

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

Position vented soffit panels with the vent holes toward the outside (toward fascia) for optimum airflow. Soffit vents may be installed into un-vented 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.

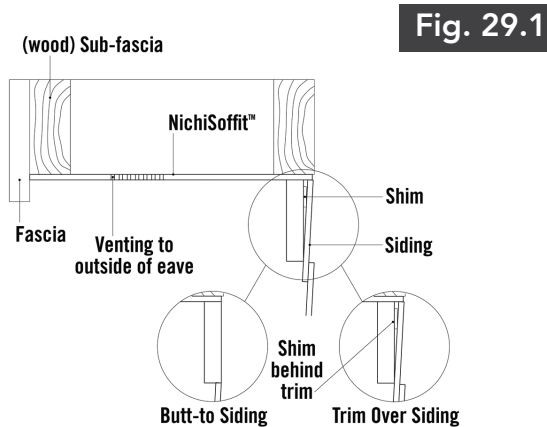


Fig. 29.1

JOINT METHODS (FIG. 29.2)

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.

FINISHING

Follow all finishing instructions in the General section of this guide.

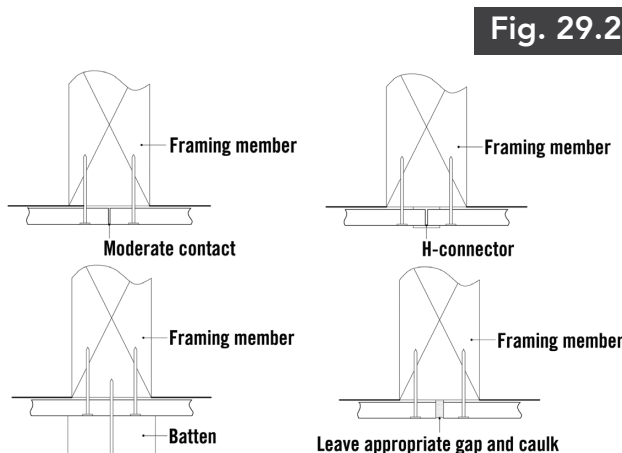


Fig. 29.2

ADDITIONAL DETAILS

BLOCKED PENETRATIONS (FIG. 30.1)

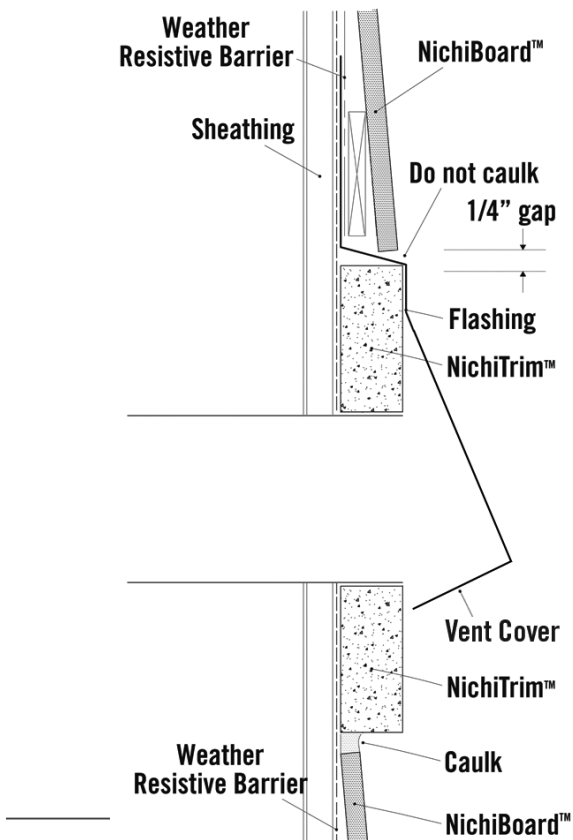
Wall penetrations larger than 1 ½" in diameter must incorporate a blocked and flashed penetration detail to deter water entry behind the siding.

NichiTrim 4/4 or 5/4 in thickness may be used dependant on the desired look and siding product used. The siding must not extend beyond the thickness of the trim block.

On some larger or existing penetrations it may be necessary to "split" the blocked penetration horizontally for ease of installation. Use a minimum 22.5 degree weather cut.

Flash the top of the blocked penetration with appropriate flashing using a ¼" gap between the flashing and siding. Do not caulk the ¼" gap.

Fig. 30.1



INTEGRAL J CHANNEL FLASHING (FIG. 31.1)

Windows must be installed per manufacturers' instructions with all required flashings.

Prior to siding installation, install a flashing (as in butt joint type flashing) at the bottom of the J channel which will direct water over the siding course and deter water entry behind the siding. This may require sealing with a quality seam tape. The flashing must be 3" - 4" in width and of sufficient height to extend behind the J channel and overlap the siding course below.

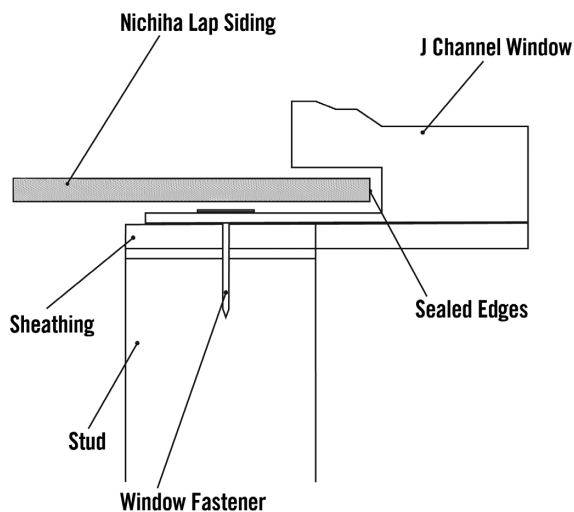
At the bottom of the window, lap the flashing over the board a minimum of 1" similar to the installation of a joint flashing.

Seal all field cut ends with a quality exterior grade primer, paint, or sealer.

Do not install siding tight against inside of J channel.

Nichiha does not recommend filling the J channel with caulk.

Fig. 31.1



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