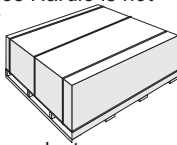


IMPORTANT: FAILURE TO INSTALL AND FINISH THIS PRODUCT IN ACCORDANCE WITH APPLICABLE BUILDING CODES AND JAMES HARDIE'S WRITTEN APPLICATION INSTRUCTIONS MAY LEAD TO PERSONAL INJURY, AFFECT SYSTEM PERFORMANCE, VIOLATE LOCAL BUILDING CODES, AND VOID THE PRODUCT ONLY WARRANTY.

STORAGE & HANDLING:

Store flat and keep dry and covered prior to installation. Installing siding wet or saturated may result in shrinkage at butt joints. Carry panels on edge. Protect edges and corners from breakage. James Hardie is not responsible for damage caused by improper storage and handling of the product.



CUTTING INSTRUCTIONS

OUTDOORS

- Position cutting station so that wind will blow dust away from user and others in working area.
- Use one of the following methods:
 - Best:
 - Score and snap
 - Shears (Pneumatic or Handheld)
 - Better:
 - Dust reducing circular saw equipped with a Hardiblade® saw blade and HEPA vacuum extraction
 - Good:
 - Dust reducing circular saw with a Hardiblade saw blade (only use for low to moderate cutting)

INDOORS

- Cut only using score and snap, or shears (manual, electric or pneumatic).
- Position cutting station in well-ventilated area

- NEVER use a power saw indoors
- NEVER use a circular saw blade that does not carry the Hardiblade saw blade trademark
- NEVER dry sweep - Use wet suppression or HEPA Vacuum

Important Note: For maximum protection (lowest respirable dust production), James Hardie recommends always using "Best"-level cutting methods where feasible.

NIOSH-approved respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.com to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

SD083105

GENERAL REQUIREMENTS:

- Hardishingle® Panels can be installed over braced wood or steel studs spaced a maximum of 24" o.c. or directly to minimum 7/16" thick OSB sheathing. Hardishingle® Individual Shingles must be installed directly to minimum 7/16" thick OSB sheathing. Irregularities in framing and sheathing can mirror through the finished application.
- A Weather-resistive barrier is required in accordance with local building code requirements. The weather resistive barrier must be appropriately installed with penetration and junction flashings in accordance with local building code requirements. James Hardie will assume no responsibility for water infiltration.
- Install James Hardie products with a minimum 6" clearance to the finished grade on the exterior of the building or in accordance with local building codes if greater than 6" is required (fig. 1).
- Maintain a minimum 2" clearance between James Hardie products and roofs, decks, paths, steps and driveways (fig. 2 & 3).
- Maintain a 1/4" clearance between the bottom of James Hardie products and horizontal flashing (fig. 4).
- Install kickout flashing at roof-wall junctions. (fig. 5.) Ensure gutters have end caps and do not terminate against siding and trim.
- Adjacent finished grade must slope away from the building in accordance with local building codes - typically a minimum of 6" in the first 10'.
- Do not install James Hardie products, such that they may remain in contact with standing water.

CLEARANCES

Install siding and trim products in compliance with local building code requirements for clearance between the bottom edge of the siding and the adjacent finished grade.

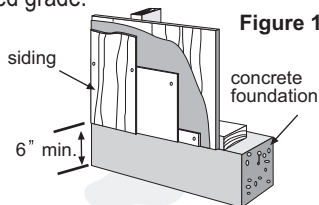


Figure 1

Maintain a minimum 2" clearance between James Hardie products and decks, paths, steps and driveways.

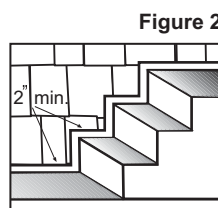


Figure 2

At the juncture of the roof and wall, flashing and counterflashing shall be provided per the roofing manufacturer's Instructions. Provide a 2" clearance between the roofing and the bottom edge of the siding and trim.

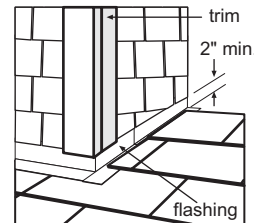


Figure 3

Maintain a 1/4" clearance between the bottom of James Hardie products and horizontal flashing. Do not caulk gap.

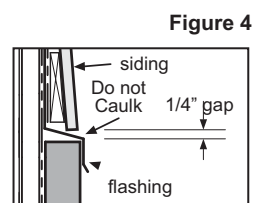


Figure 4

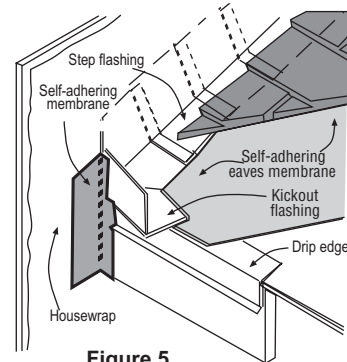


Figure 5

KICKOUT FLASHING

Because of the volume of water that can pour down a sloped roof, one of the most critical flashing details occurs where a roof intersects a sidewall. The roof must be flashed with step flashing. Where the roof terminates, install a kickout to deflect water away from the siding (figure 5).

It is best to install a full rubberized asphalt flashing on the wall before the subfascia and trim boards are nailed in place, and then come back to install the kickout.

Figure 5, Kickout Flashing* - To prevent water from dumping behind the siding and the end of the roof intersection, bend a small "kickout" from metal flashing to divert water running down the roof away from the siding.

* The illustration (figure 5) was reprinted with permission of THE JOURNAL OF LIGHT CONSTRUCTION. For subscription information, call (800) 375-5981 or visit www.jlconline.com.

WARNING: AVOID BREATHING SILICA DUST

James Hardie® products contain respirable crystalline silica, which is known to the State of California to cause cancer and is considered by IARC and NIOSH to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) use fiber cement shears for cutting or, where not feasible, use a Hardiblade® saw blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area; (4) wear a properly-fitted, NIOSH-approved dust mask or respirator (e.g. N-95) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods - never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheet available at www.jameshardie.com or by calling 1-800-9HARDIE (1-800-942-7343). FAILURE TO ADHERE TO OUR WARNINGS, MSDS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

SD050905

STAGGERED EDGE NOTCHED PANELS

INSTALLATION

Fastener Requirements

0.083" x 0.187" HD x 1 1/2" long ringshank nails are used for fixing Hardishingle® Staggered Edge Notched Panels to both framing and to 7/16" thick APA rated OSB.

Hardishingle Staggered Edge Notched Panel Installation

Install Hardishingle notched panels with joints butted in moderate contact. Due to overlapping of the joints, caulk is not required except where panels abut trim boards. (Figures 6 & 8). Ensure keyways do not line up on subsequent courses.

- 1) Install a 1-1/4" starter strip, and a 8 1/4" or 9 1/4" wide Hardiplank® siding starter course.
- 2) Trim the first panel from the end abutting trim (the left side in figures 6 & 8) to hit the furthest stud. When installing over a band board, trim the bottom of the panel to create a straight edge, leave 1/4" gap between bottom of siding and flashing (Figure 7).
- 3) Secure panel, leaving 1/8" gap for caulk at trim and continue the course along the wall.
- 4) Start the second course, by removing the equivalent of one full stud cavity, again from the end abutting the trim. This is to prevent pattern repetition. Repeat step 3.
- 5) Start the third course, by removing the equivalent of two full stud cavities and repeat step 3.
- 6) Continue up the wall repeating steps 2 through 6 until desired height is reached.

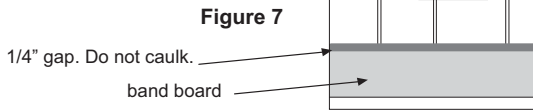


Figure 7

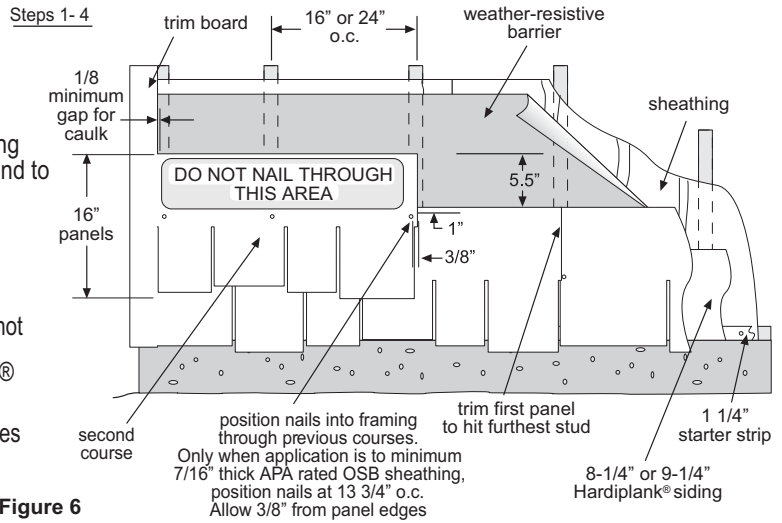


Figure 6

Steps 5 & 6

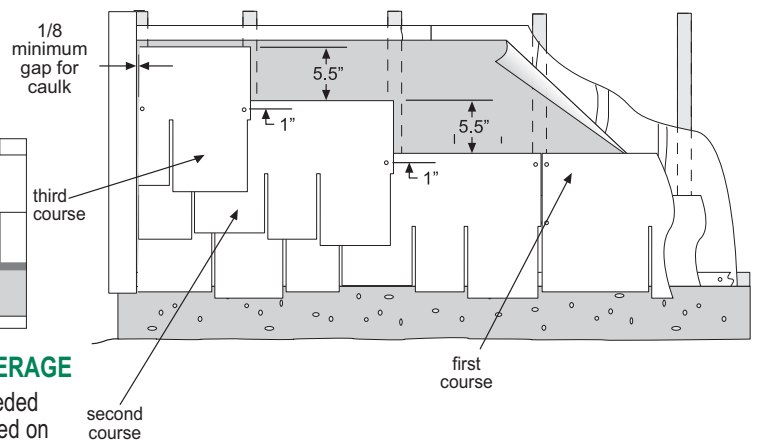


Figure 8

HARDISHINGLE® STAGGERED EDGE NOTCHED PANEL COVERAGE

Panels for sidewall applications are available in 48" lengths. Pieces needed for one square (100sq.ft.) of product coverage = approximately 55, based on maximum 7" exposure.

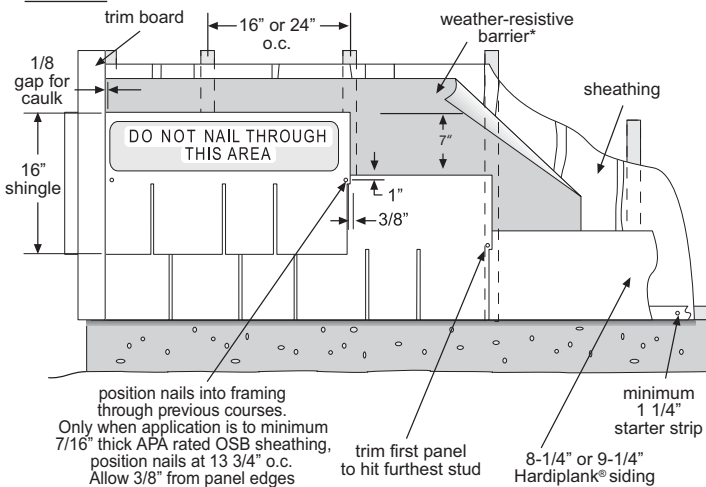
STRAIGHT EDGE NOTCHED PANELS

INSTALLATION

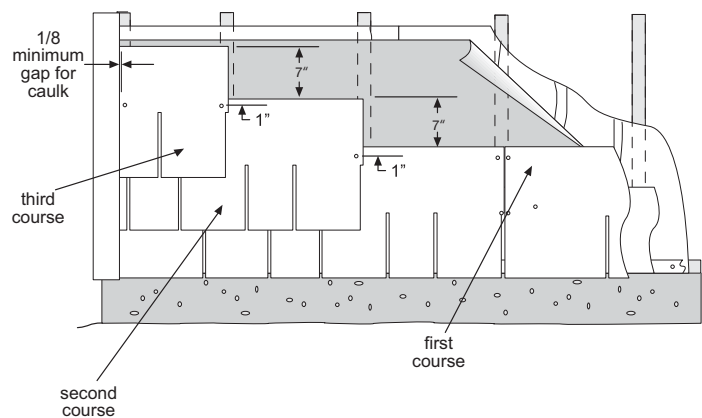
Maximum Exposure of 7"

REFER TO STAGGERED EDGE INSTRUCTIONS ABOVE

Steps 1 - 4



Steps 5 & 6



HARDISHINGLE® STRAIGHT EDGE NOTCHED PANEL COVERAGE

Panels for sidewall applications are available in 48" lengths. Pieces needed for one square (100sq.ft.) of product coverage = approximately 45, based on maximum 7" exposure.

HALF-ROUND NOTCHED PANELS

INSTALLATION

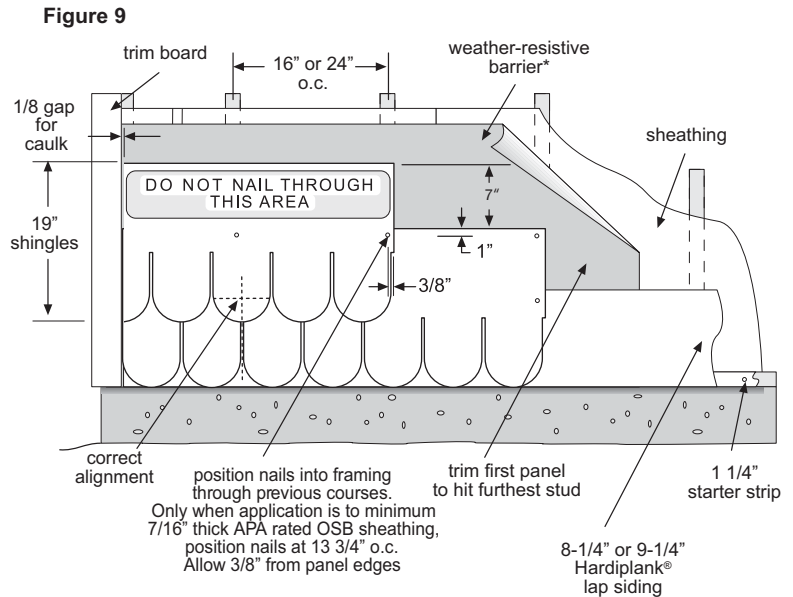
Fastener Requirements

0.083" x 0.187" HD x 1 1/2" long ringshank nails are used for fixing Hardishingle® Half-Round Notched Panels to both framing and to 7/16" thick APA rated OSB.

Hardishingle Half-Round Notched Panel Installation

Install Hardishingle notched panels with joints butted in moderate contact. Due to overlapping of the joints, caulk is not required except where panels abut trim boards (figure 9).

- 1) Install a 1 1/4" starter strip, and a minimum a 8-1/4" or 9 1/4" wide Hardiplank® siding starter course.
- 2) Trim the first panel from the end abutting trim (the left side in figure 9) to hit the furthest stud.
- 3) Secure panel, leaving 1/8" gap for caulk at trim and continue the course along the wall.
- 4) Start the second course, by removing the equivalent of one full stud cavity, again from the end abutting the trim. Ensure the seam is located over the midpoint of the lower course for correct alignment (figure 9).
- 5) Continue up the wall repeating steps 2 through 5 until desired height is reached.



HARDISHINGLE® HALF-ROUND NOTCHED PANEL COVERAGE

Panels for sidewall applications are available in 48" lengths. Pieces needed for one square (100 sq. ft.) of product coverage=43 pieces with 7" exposure.

INDIVIDUAL SHINGLE

INSTALLATION

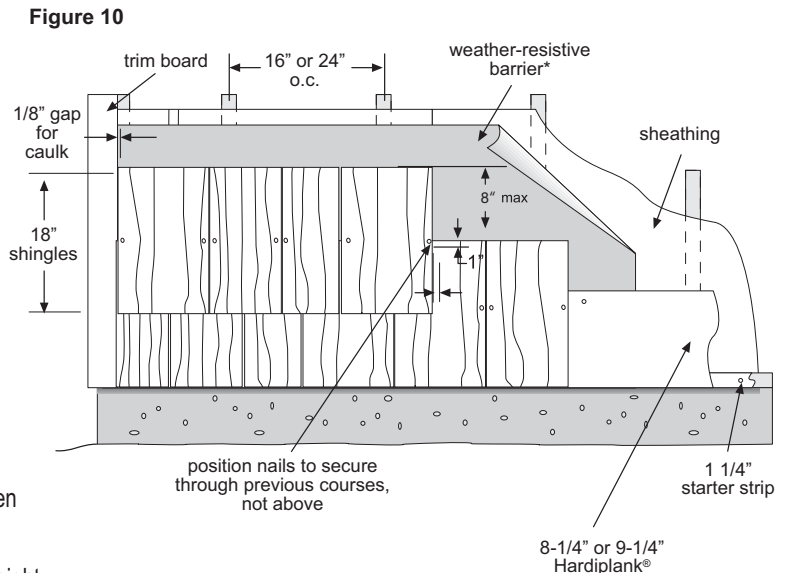
Fastener Requirements

0.091" x 0.221" HD x 1 1/2" or 0.121" x 0.371" HD x 1 1/4" long corrosion resistant siding nails are used for fixing Hardishingle siding to 7/16" thick APA rated OSB.

Hardishingle Individual Shingle Installation

Due to overlapping of the joints, caulk is not required except where panels abut trim boards. Space shingles a maximum 1/4" apart and leave a minimum lap of 1 1/2" between successive courses (figure 11).

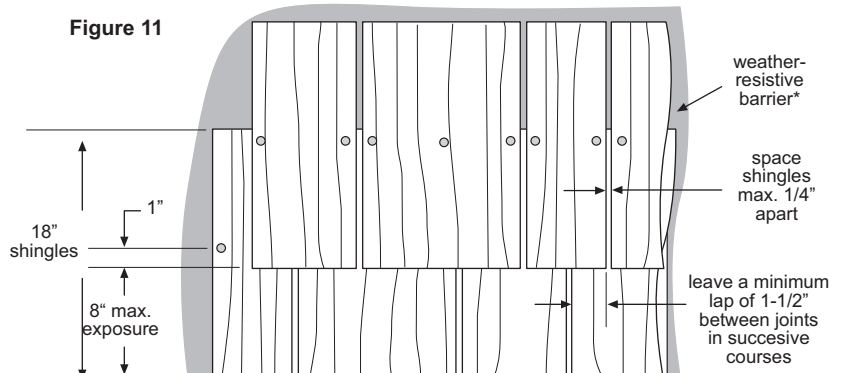
- 1) Install 1 1/4" starter strip and a 8 1/4" or 9 1/4" wide Hardiplank® siding starter course.
- 2) Install first shingle from the end abutting trim (figure 10).
- 3) Secure shingle, leaving a 1/8" gap for caulk at trim and continue the course along the wall.
- 4) Start the second course, leaving a minimum lap of 1 1/2" between successive courses, again from the end abutting the trim. Repeat step 3.
- 5) Continue up the wall repeating steps 2 through 5 until desired height is reached.



HARDISHINGLE® INDIVIDUAL SHINGLE COVERAGE

Shingles for sidewall applications are available in 6", 8", and 12" widths. Bundles needed for one square (100 sq. ft.) of product coverage:

Shingle Width	Number of Bundles	Pieces per Bundle
6"	6	11
8"	6	11
12"	6	11

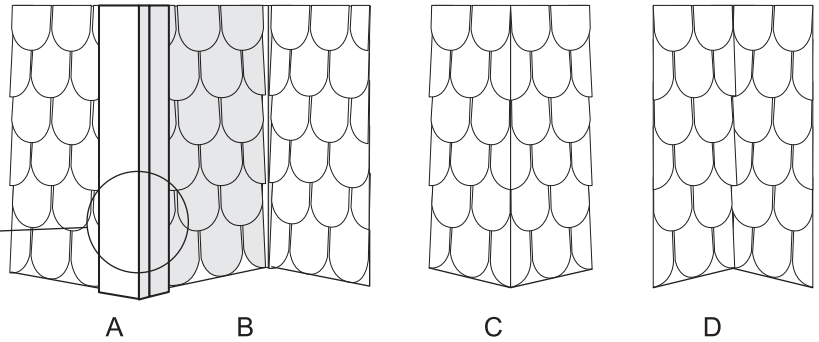


CORNER DETAILS

- A. Panels butted against corner boards.
- B. Panels butted against square wood strip on inside corner, flashing behind.
- C. Laced outside corner.
- D. Laced inside corner.

minimum 1" thick trim

Figure 12



WINDOWS AND DOORS

Building wall components such as windows, doors and other exterior wall penetrations shall be installed in accordance with the component manufacturer's written installation instructions and local building codes. Where windows or doors are installed, continue the application of siding as if the wall is complete. Trimming for the opening and using the resulting piece may throw off the spacing above the break.

GABLE INSTALLATION:

Installation over sheathing is recommended for gables.

- 1) Install a 1 1/4" starter strip and a 8-1/4" or 9-1/4" wide Hardiplank® siding starter course.
- 2) Begin Half-Round Notched Panel installation by first marking a plumb line down the center of the gable. Center either a keyway or a half-round along this line to ensure a symmetric finished appearance (figures 13 & 14).
- 3) Start second course, by removing the equivalent of one full stud cavity and ensuring the seam is located over the midpoint of the lower course.
- 4) Cut the edge of the panels to correspond with the rake angle of the gable leaving a 1/8" gap for caulk at the trim.
- 5) If the rake angle cuts through a keyway of a complete panel or significantly weakens the end of the panel, use face nails to secure the end pieces as shown (figure 15)
- 6) Continue installation aligning courses as indicated. At the top of the gable, face nails will be required for the final pieces (figure 16)

Figure 13

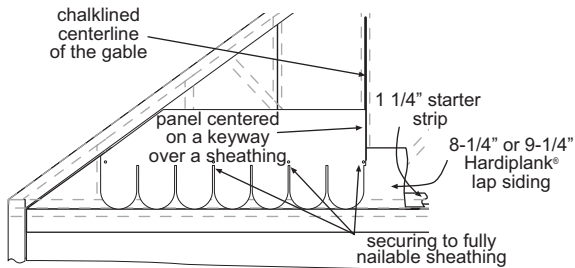


Figure 14

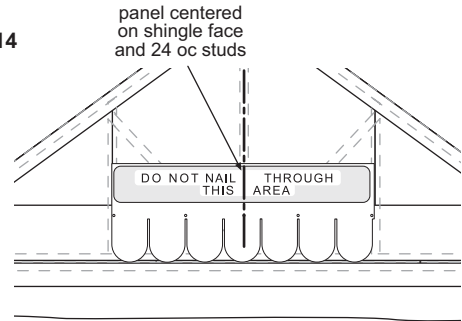


Figure 15

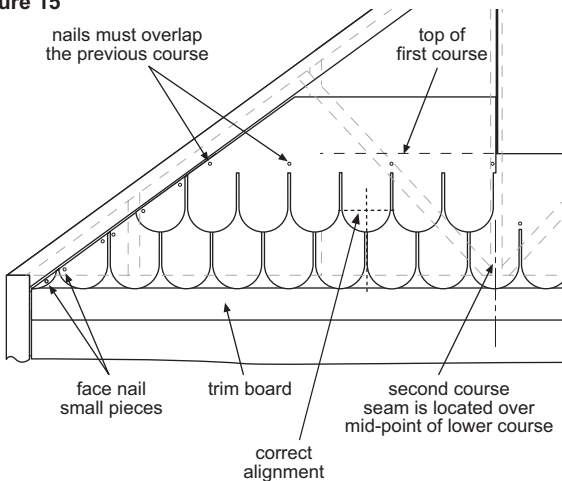
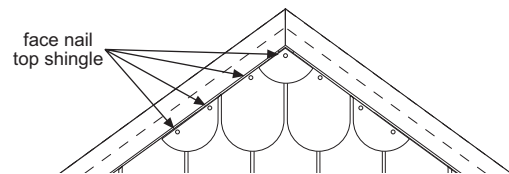


Figure 16



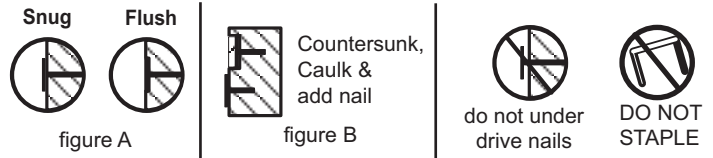
GENERAL FASTENING REQUIREMENTS

Fasteners must be corrosion resistant, galvanized, or stainless steel. Electro-galvanized are acceptable but may exhibit premature corrosion. James Hardie recommends the use of quality, hot-dipped galvanized nails. James Hardie is not responsible for the corrosion resistance of fasteners. Stainless steel fasteners are recommended when installing James Hardie® products near the ocean, large bodies of water, or in very humid climates.

PNEUMATIC FASTENING

James Hardie products can be hand nailed or fastened with a pneumatic tool. Pneumatic fastening is highly recommended. Set air pressure so that the fastener is driven snug with the surface of the siding. A flush mount attachment on the pneumatic tool is recommended. This will help control the depth the nail is driven. If setting the nail depth proves difficult, choose a setting that under drives the nail. Drive the under driven nails snug with a smooth faced hammer.

- Consult applicable code compliance report for correct fasteners type and placement to achieve specified design wind loads and shear values.
- NOTE: Published shear values and wind loads may not be applicable to all areas where Local Building Codes have specific jurisdiction. Consult James Hardie Technical Services if you are unsure of applicable compliance documentation.
- Drive fasteners perpendicular to siding and framing.
- Fastener heads should fit snug against siding (no air space). (Fig. A)
- Do not over-drive nail heads or drive nails at an angle.
- If nail is countersunk, caulk nail hole and add a nail. (Fig. B)
- Under driven nails should be hit flush to the plank with a hammer.
- **Do not use aluminum fasteners, staples, or clipped head nails.**



CUT EDGE TREATMENT

Caulk, paint or prime all field cut edges.

CAULKING

For best results use a latex sealant that complies with either ASTM C834 or ASTM C920 (Grade NS, Class 25). Caulking must be applied in accordance with the caulking manufacturer's written instructions.

PRIMING & PAINTING

James Hardie products must be painted*. In addition non ColorPlus® product versions of Hardishingle® Siding require a field applied prime coat. 100% acrylic primers and topcoats are recommended. Do not paint when wet. For application rates refer to paint manufacturer's specifications. Back rolling is recommended when paint is spray applied. *within 180 days for primed product and 90 days for unprimed.

COLORPLUS® TECHNOLOGY CAULKING, TOUCH-UP & LAMINATE

- Touch up nicks, Scrapes and nail heads using the ColorPlus technology touch up pen. Touch-up paint should be used sparingly. If large areas require touch-up, replace the damaged area with new Hardiplank® lap siding with ColorPlus technology.
- Laminate sheet must be removed immediately after installation of each course.
- Terminate non-factory cut edges into trim where possible, and caulk. Color matched caulks are available from your ColorPlus™ product dealer.
- Treat all other non-factory cut edges using the ColorPlus technology edge coat, available from your ColorPlus product dealer.

RECOGNITION: In accordance with ICC-ES Legacy Report NER-405, Hardishingle Staggered Edge Notched Panels are recognized as a suitable alternate to that specified in: the BOCA National Building Code/1999, the 1997 Standard Building Code, the 1997 Uniform Building Code, the 1998 International One- and Two-Family Dwelling Code, the 2003 International Building Code, and the 2003 International Residential Code for One-and Two-Family Dwellings. Hardishingle Staggered Edge Notched Panels are also recognized for application in the following: City of Los Angeles Research Report No. 24862, State of Florida listing FL#889, .02, U.S. Dept. of HUD Materials Release 1263c, Texas Department of Insurance Product Evaluation EC-23, City of New York MEA 223-93-M, and California DSA PA-019. These documents should also be consulted for additional information concerning the suitability of this product for specific applications.

