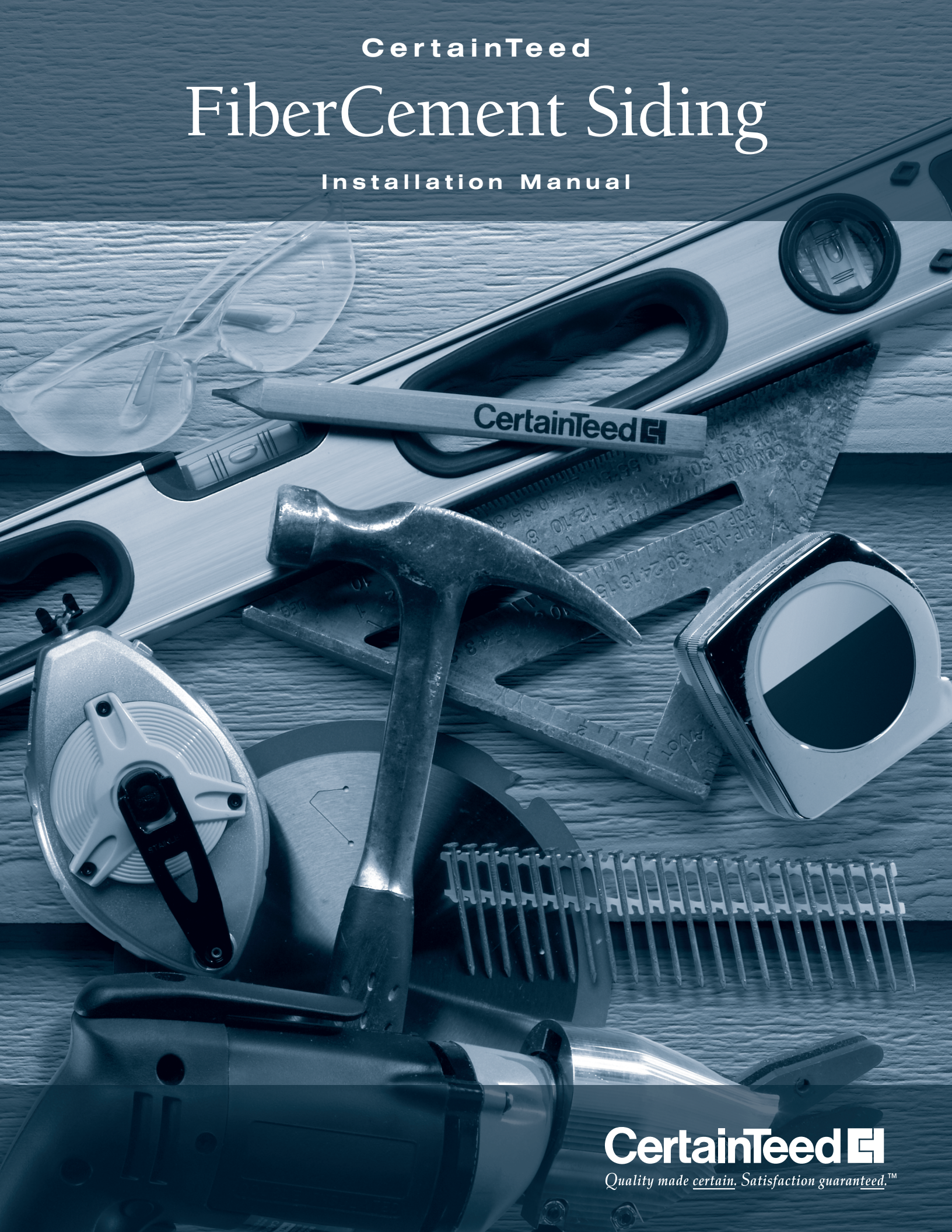


CertainTeed

FiberCement Siding

Installation Manual



CertainTeed 

Quality made certain. Satisfaction guaranteed.™



FiberCement Siding

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INSTALLATION TIPS AND TECHNIQUES

Before You Begin

These installation techniques describe and illustrate the steps involved in installing CertainTeed's FiberCement Siding and Trim. Before you begin, we suggest that you read these instructions "twice". First, read them from beginning to end to get a feel for the overall flow of the project. As you begin to work, re-read the section covering the specific task you are completing.

Failure to comply with CertainTeed installation instructions and/or applicable building codes may affect product performance and void product warranty. Please refer to ICC-ES ESR-1668 and other technical information available on the CertainTeed website.

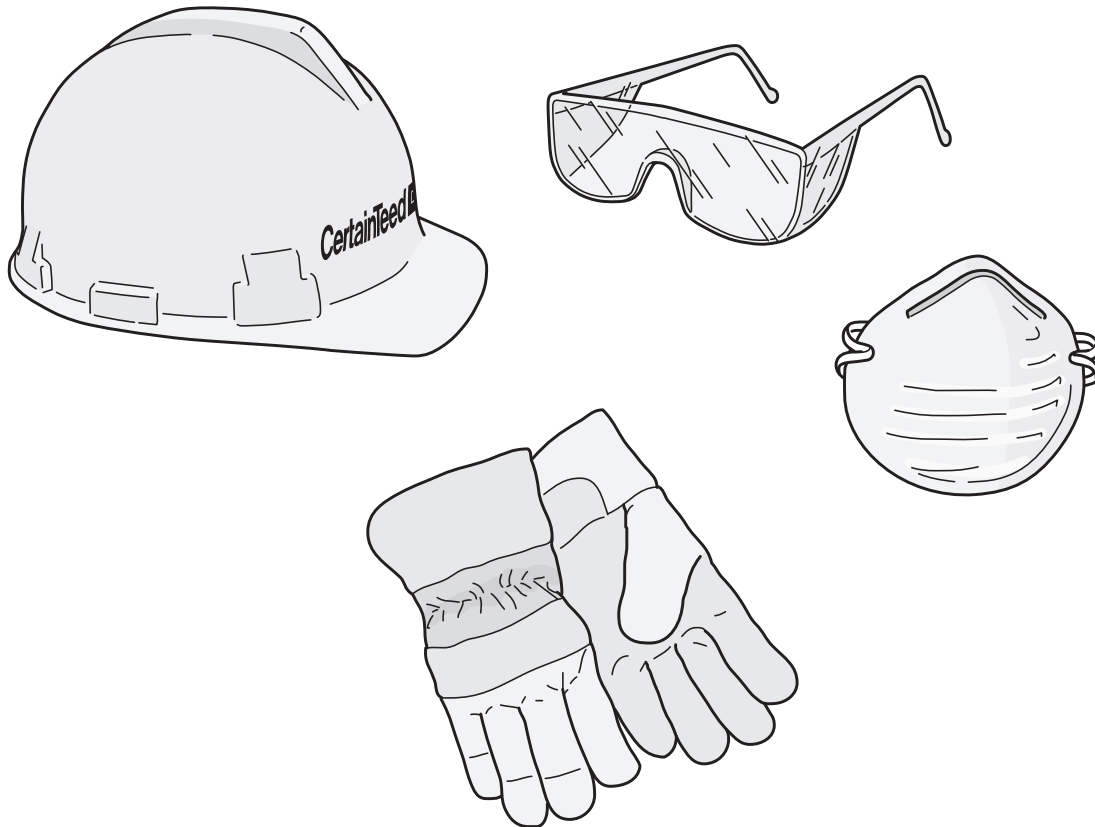
Before installing the material inspect the unit for breakage, foreign objects, surface defects, color consistency and correctness. **Do not install questionable product!** If you should find a siding defect, contact CertainTeed's Consumer Service Group immediately at **1-800-999-3654**. Should you elect to install questionable product and a manufacturing defect is not found to be the source of the problem, any claim may not be honored.

If you need more information, contact us at 800-233-8990. Additional information is available on our website, www.certainteed.com.

SAFETY

When fiber cement siding is cut, drilled, or sanded, dust will be generated. This dust may contain crystalline silica, which can pose a health risk. Ensure adequate ventilation by working outdoors or by using mechanical ventilation to reduce potential exposure below applicable exposure limits. If ventilation is not adequate to limit exposure, wear a NIOSH approved disposable respirator (N95) or air purifying cartridge respirator fitted with N (non-oil),

P, or R series filters depending on the level of exposure. Other suggested safety equipment such as ANSI Z87 approved eye protection, hard hats, and cut resistant gloves should be worn in accordance with jobsite safety requirements. Consult the WeatherBoards MSDS and a qualified industrial hygienist for further health and safety information related to this product.

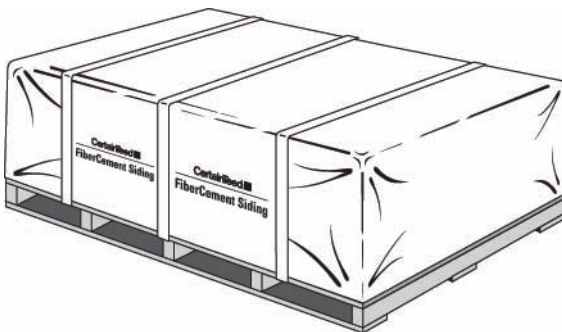


STORAGE AND HANDLING

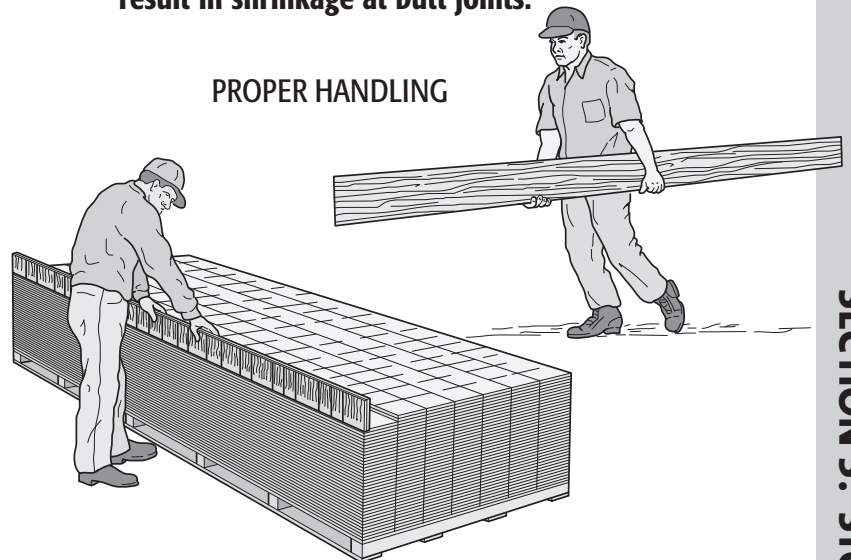
CertainTeed FiberCement must be kept covered and stored off the ground, on a clean flat surface. Protect it from direct exposure to the weather.

- Don't store fiber cement siding or trim directly on the ground.
- Use the plastic bonnet provided to keep the product dry and prevent moisture from settling on the siding.
- All CertainTeed FiberCement Siding and Trim is sealed with our proprietary FiberTect® Sealing System. Even with this sealer, the product can become saturated if not protected during storage. (If fiber cement becomes saturated, do not install it until it dries out.)
- Carry fiber cement siding and trim by its narrow edge, as shown, and support it when you cut large pieces. All cutting of fiber cement siding should be performed outdoors. If indoor cutting is necessary use shears only.
- If handled incorrectly, the surface of prefinished siding will scratch; hence pick up the boards from the center to avoid marring the surface of the board below.
- For CertainTeed WeatherBoards™ FiberCement lap siding with ColorMax™ Finish, refer to page 10 for proper handling.
- **Do not install siding or trim that is saturated. Installing siding that is wet or saturated may result in shrinkage at butt joints.**

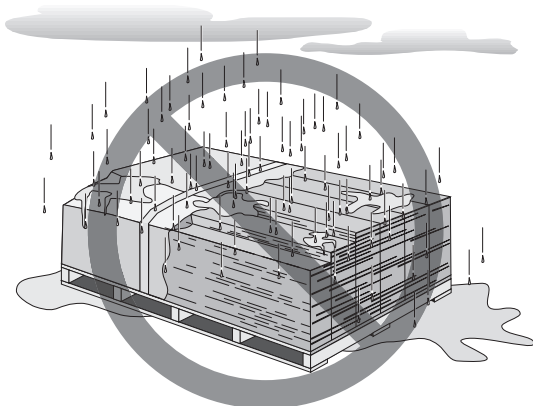
PROPER STORAGE
Store covered, on pallets



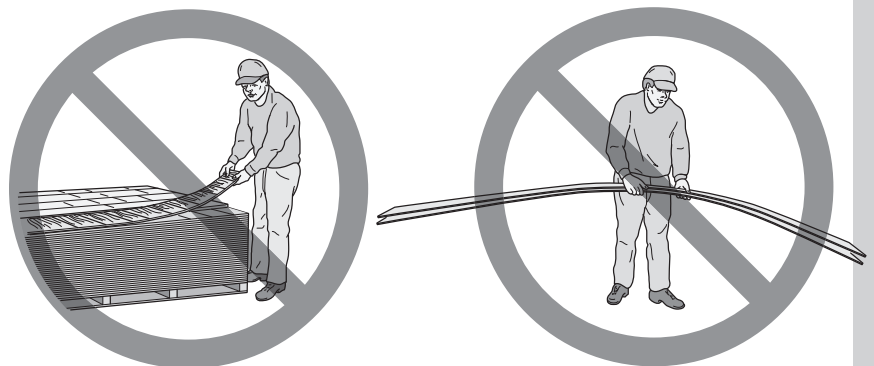
PROPER HANDLING



IMPROPER STORAGE



IMPROPER HANDLING



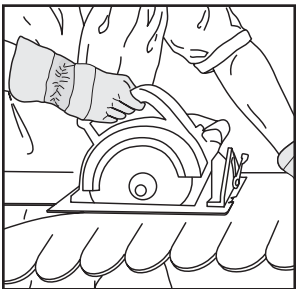
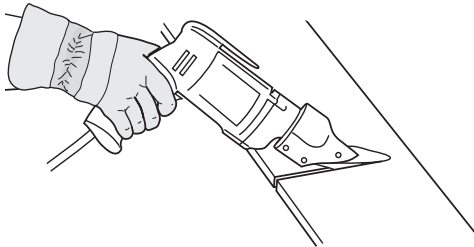
TOOLS AND ACCESSORY ITEMS

Cutting

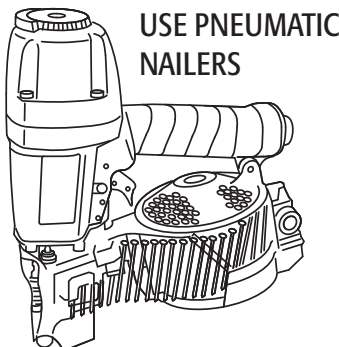
Care should be taken to reduce dust produced by cutting activities. Only cut this product with adequate ventilation to reduce dust exposure. We recommend cutting tools designated specifically for fiber cement. Use a diamond tipped fiber cement blade for circular, miter, and table saws ranging from 7 1/4" to 12". You can cut up to five pieces at one time with this type of blade installed on a radial arm or miter saw.

- For irregular or radius cuts use scroll cutting shears or jig saw equipped with a medium or course grit carbide or diamond tipped blade.
- Use a masonry hole saw for making penetrations for plumbing pipes or other similar cuts.

MECHANICAL SHEARS CAN ALSO BE USED



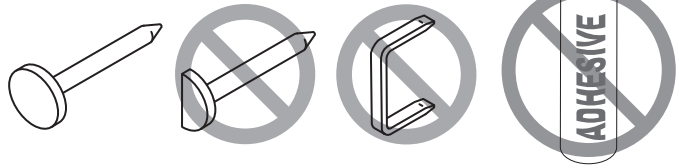
A DIAMOND TIP FIBER CEMENT BLADE IS RECOMMENDED



USE PNEUMATIC NAILERS

Fastening

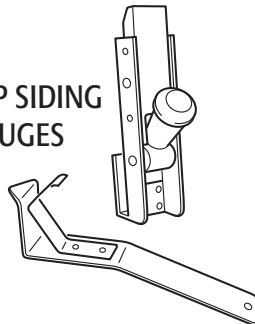
- Pneumatic nail guns with point of access regulators and adjustable depth of drive are recommended. They speed installation and help ensure consistent penetration.
- Hand nailing is acceptable.
- Collated and uncollated screw guns are available and can be used.
- **Do not use D-Head nails, staples or construction adhesive to install fiber cement siding.**



Available Accessory Items

- Nail placement adapter for pneumatic nail guns (Big Sky Adapter)
- Lap Siding Clips (butt joint covers)
- Fiber Cement Siding Installation Clips
- Lap Siding Gauges
- Scoring Knives
- Adjustable Siding Gauges
- Screw Guns
- Overlap Gauges
- Shears
- Off Stud Joiners
- Full Support Tables for Cutting
- H Moldings

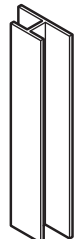
LAP SIDING GAUGES



OFF STUD JOINER



H MOLDING



WALL PREPARATION

Before you install the siding, review and ensure compliance with all local building codes and regulations regarding the selection and proper use of sheathings, weather-resistive barriers, house wraps, vapor barriers, flashing, etc.

Irregularities in framing can mirror through the finished application. To minimize the affect of uneven walls, shim the siding as necessary.

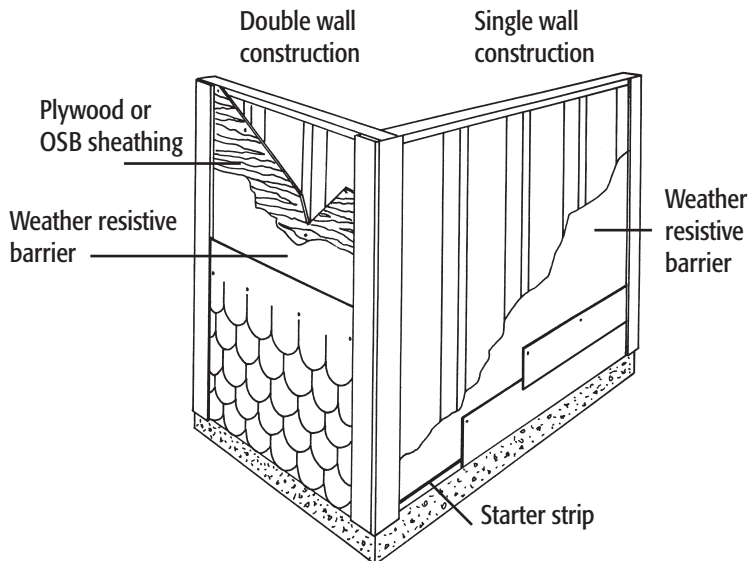
Sheathing and Wraps

For best installation, when fiber cement siding is installed it should be applied over plywood, OSB, or comparable sheathing. Installation over non-structural sheathing, builder board, foam-type sheathings and gypsum board are also acceptable. Siding must be installed to structural framing when using Non-structural sheathing. Non-structural sheathing thickness should not exceed 1".

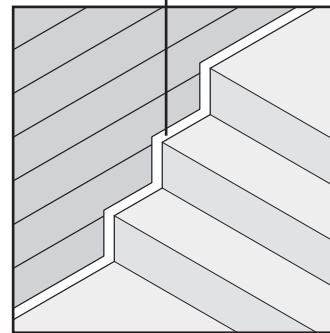
1. Take extra care when installing fiber cement over foam sheathings. Foam sheathings may crush, especially when they are hand-nailed.

2. If you install CertainTeed FiberCement Siding over a non-nailable substrate such as foam sheathing, pre-drill the holes at the corners to avoid accidental breakage. Panels must be nailed into structural framing (16" or 24" O.C.).
3. Siding and trim products should be installed to meet local building code clearance requirements between the bottom edge of the siding and adjacent finished grade. A 1" minimum clearance between CertainTeed FiberCement products and steps, decks and driveways and 6" above grade should be maintained.
4. Where roofs and vertical surfaces meet, flashing and counterflashing need to be provided per the roofing manufacturers' instructions. A 1" clearance should be provided between the roofing and the bottom edge of the siding and trim.

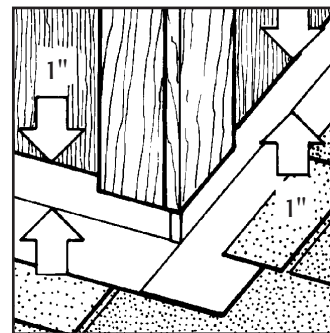
SHEATHING AND WRAPS



1" Minimum Clearance on Steps, Decks, Drives



1" Siding Clearance on Roof Line



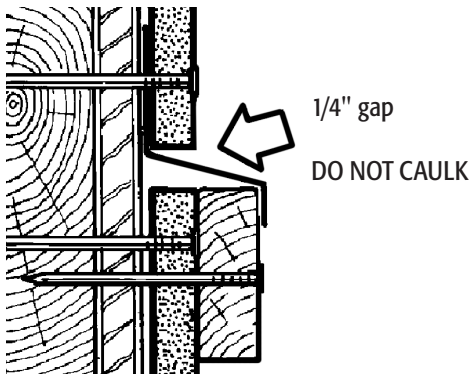
Paint bottom edge

Flashing

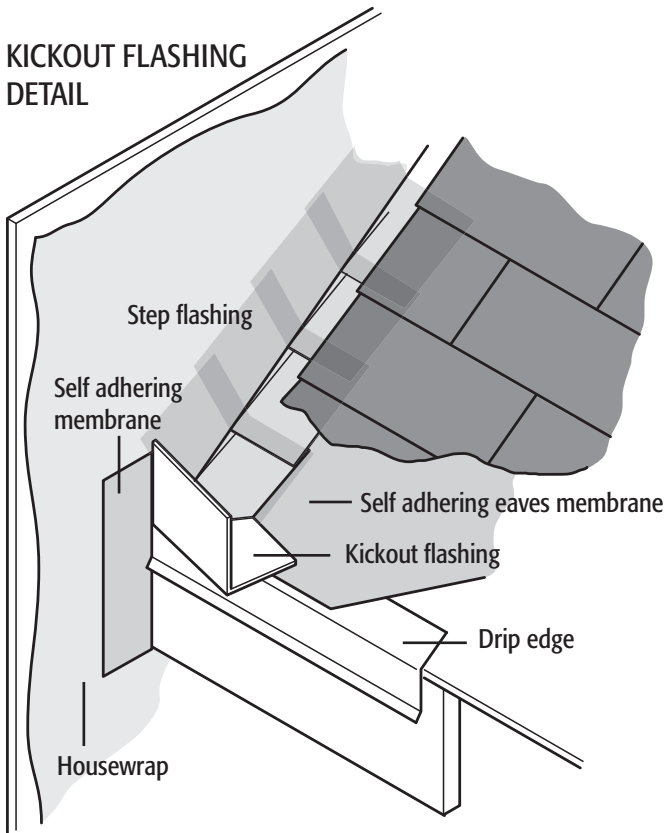
Using non-corrosive materials, install flashing around all doors, windows, rake boards, chimneys, and other areas where needed. Drip cap flashing above all openings will help ensure a weather resistant installation. (Non-coated aluminum products are not recommended.)

There must be a 1/4" clearance between the bottom of CertainTeed FiberCement products and horizontal flashing. Caulk should not be used at this location. See illustration below.

"Z" FLASHING OF HORIZONTAL JOINTS



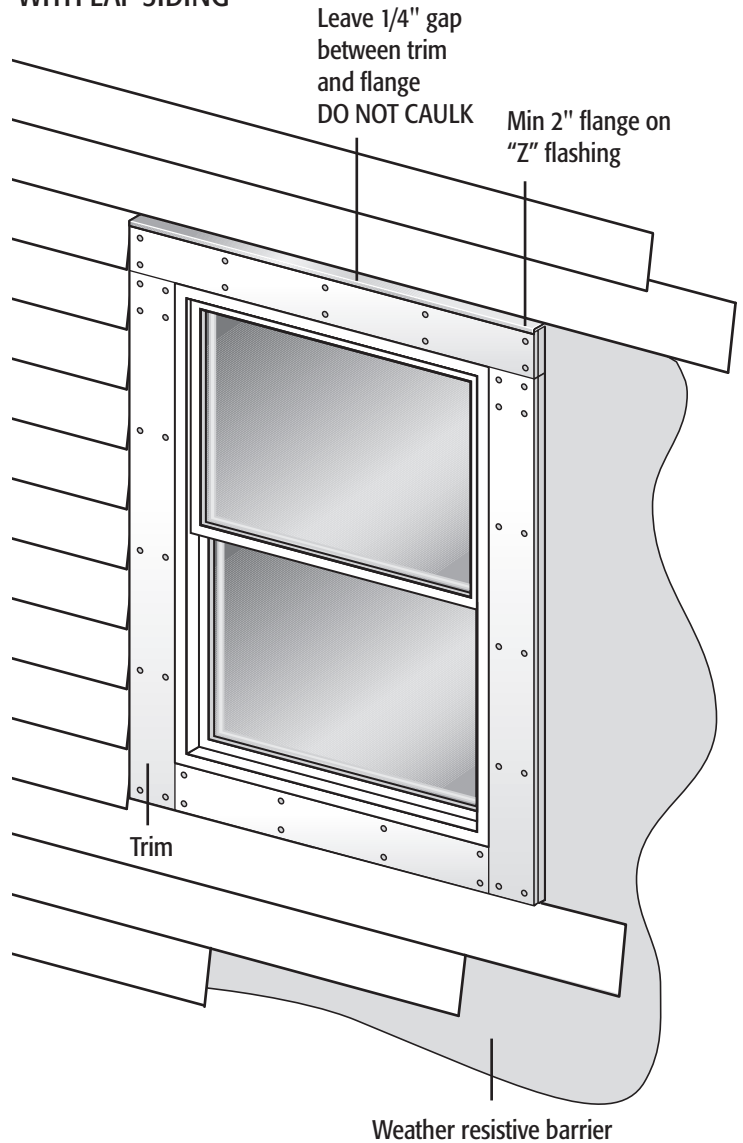
KICKOUT FLASHING DETAIL



The horizontal joints on a building sided with vertical siding must be weatherproofed with non-corrosive "Z" flashing.

DO NOT caulk the bottom of the horizontal joint that is above the flashing.

FLASHING WINDOW DETAIL WITH LAP SIDING



TRIM

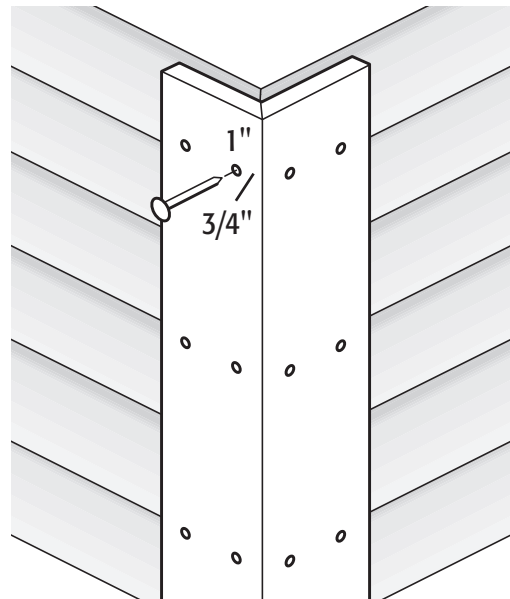
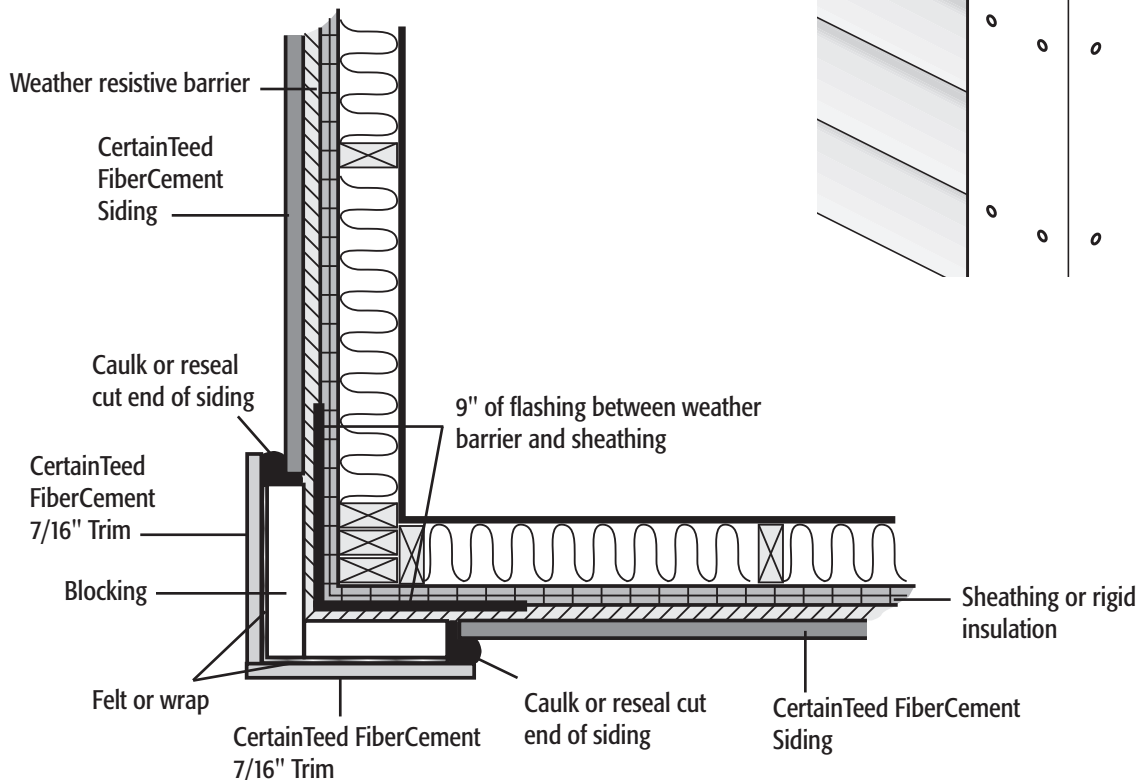
With CertainTeed FiberCement Siding, we recommend you install either CertainTeed FiberCement Trim or Restoration Millwork™ Cellular PVC Trim.

Other Trim Options

Other trims can be used in conjunction with CertainTeed FiberCement Siding. Refer to the trim manufacturer for compatibility and their installation instructions.

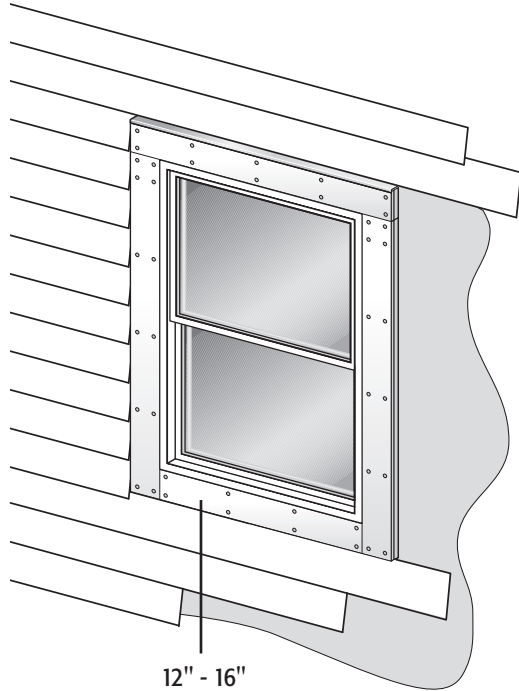
Fiber Cement Trim

Install CertainTeed FiberCement 7/16" Trim just as you would install wood trim. You can install the trim either to trim substrate or directly over the siding. (See illustrations below.) Keep the trim at least 6" above final grade and 1" above surfaces where water may collect. Nail no closer than 1" from the end of each board and 3/4" from the edge.



Applying 7/16" Fiber Cement Trim to Trim Substrate

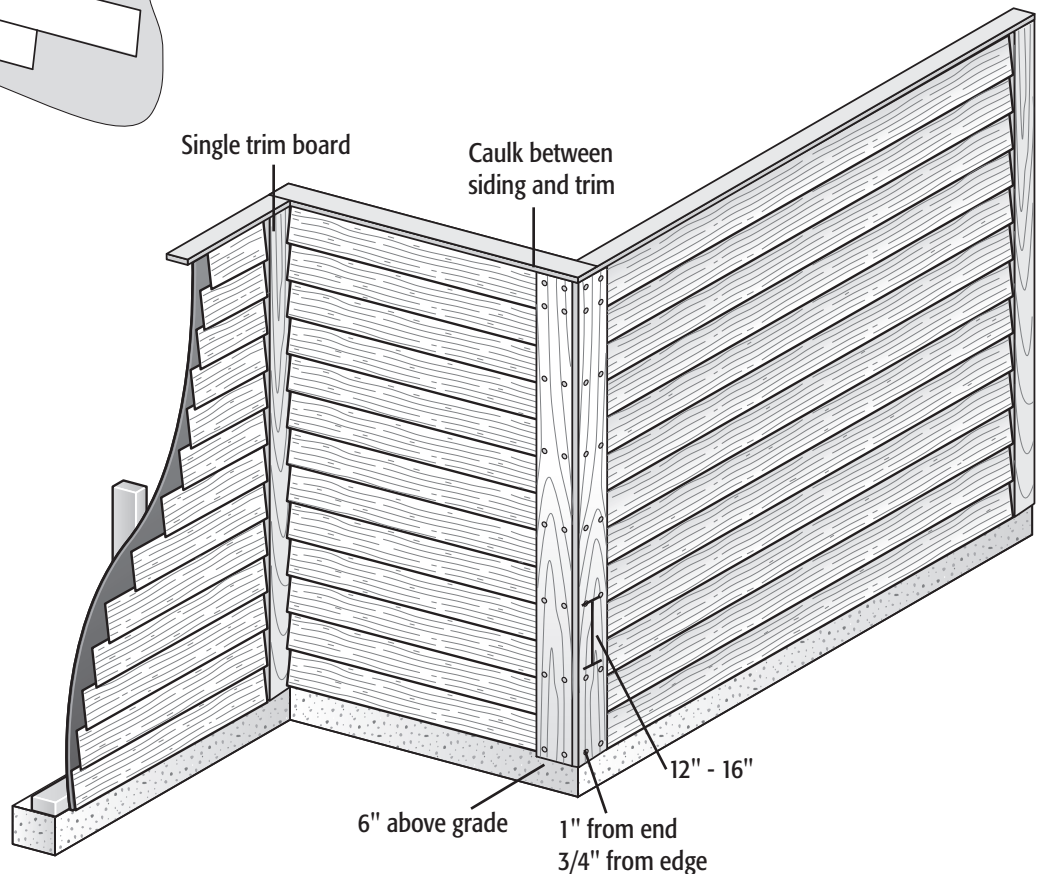
Use a trim substrate that provides a 1/2" (minimum) projection from the sided surface. Attach the trim substrate to the studs; then attach fiber cement 7/16" trim as described below (See illustrations below). Be certain to prime or paint the trim substrate to prevent rot.



Windows and Doors - Square or miter-cut the trim boards, and join them in contact with each other. Nail them flush to the window or door every 12" to 16".

Inside Corners - Position a single trim board on the wall, and fasten every 12" to 16".

Outside Corners - When assembling a traditional corner from two pieces, fasten the trim to the trim substrate every 12" to 16". When you install the siding, leave 1/8" between the siding and the trim; caulk between the siding and the trim.



Applying 7/16" Trim Over Siding

Make sure the siding is completely installed before you hang the trim.

Windows and Doors - Square or miter-cut the trim boards, and nail through the siding into the trim substrate every 12" to 16". Nail only on the lap area of the siding.

Outside Corners - Fasten the boards every 12" to 16". Nail through the siding into the trim substrate. Nail only on the lap area of the siding.

Band and Frieze Boards, Rakes, and Fascia

CertainTeed 7/16" FiberCement Trim can also be installed as band boards, frieze boards, rakes, and fascia. Nail no closer than 1" from the end of each board and 3/4" from the edge.

Band Boards - For band boards, install fiber cement trim over the wood furring with the appropriate flashing. Butt the trim and nail every 12" to 16".

Rakes and Frieze Boards - If installing over siding, you may have to shim the frieze board to create an even look. Butt the joints and nail through the trim substrate and siding into the framing or a wood substrate every 12" to 16". Nail only on the nailing area of the siding. Do not nail between the lap joints. If installing directly to trim or wood substrate, leave 1/8" between the siding and the trim when you install the siding. Caulk between the siding and the trim.

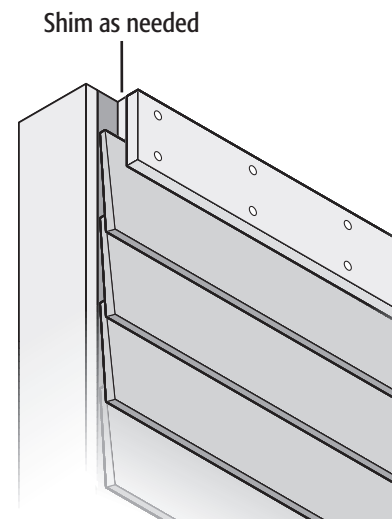
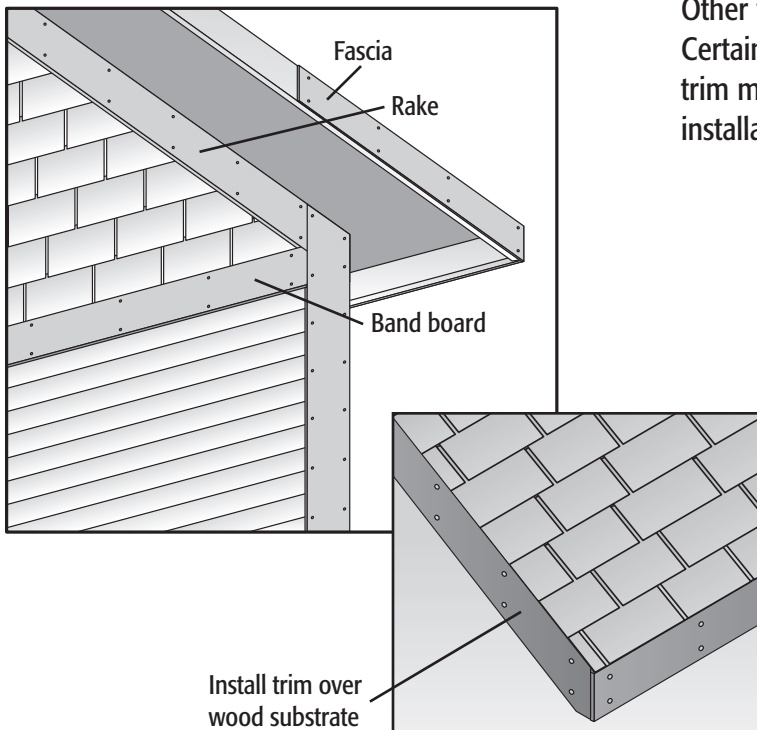
Fascia - Install 7/16" fiber cement trim over a wood sub-fascia. Butt the trim and nail every 12" to 16".

Restoration Millwork™

CertainTeed's Restoration Millwork Cellular PVC Trim can also be used successfully with CertainTeed FiberCement Siding. For CertainTeed's Restoration Millwork Trim installation instructions please go to CertainTeed.com and refer to the Restoration Millwork section.

Other Trim Options

Other trims can be used in conjunction with CertainTeed FiberCement Siding. Refer to the trim manufacturer for compatibility and their installation instructions.



SIDING INSTALLATION BEST PRACTICES

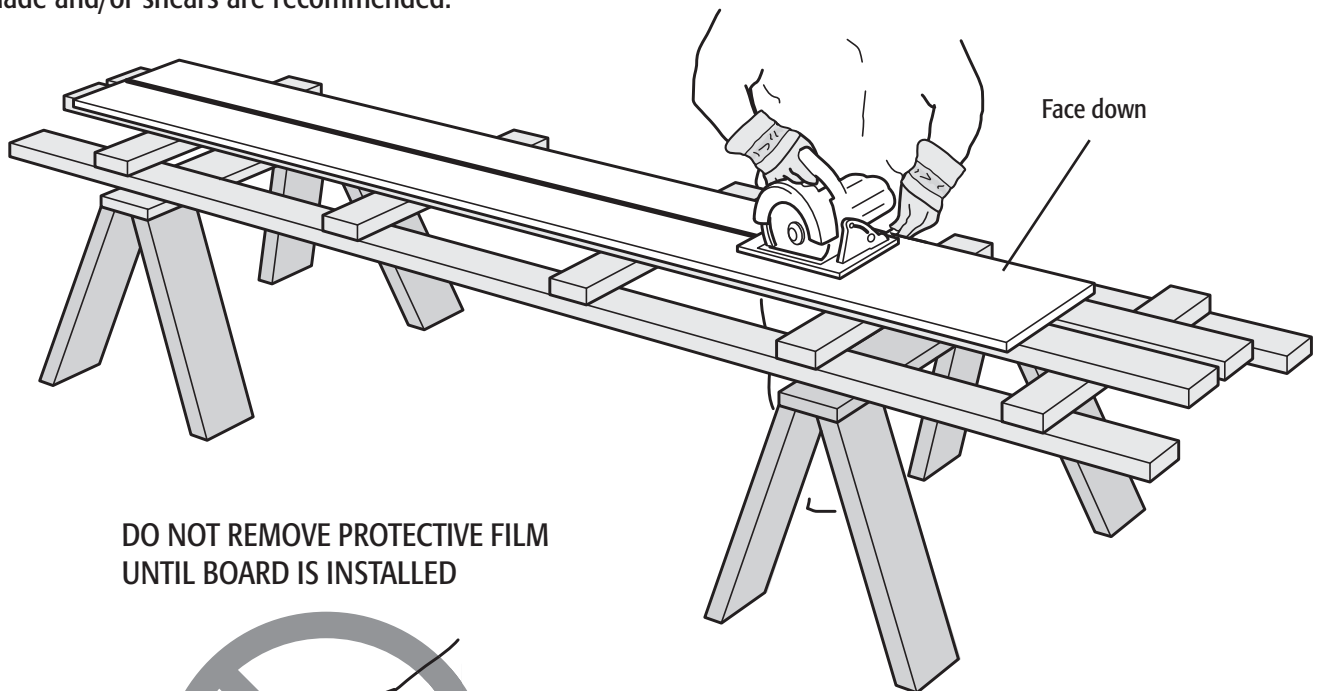
Below are recommended practices that will give you the best performance of your newly purchased CertainTeed FiberCement Siding.

Cutting

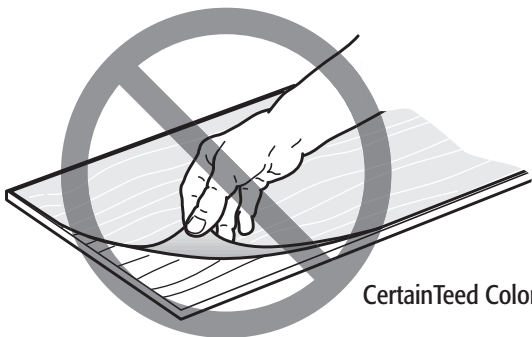
Prior to handling and cutting this product refer to page 2 of this manual for necessary safety precautions.

- All cutting of fiber cement siding should be performed outdoors. If indoor cutting is necessary use shears only.
- When cutting fiber cement siding support the product along its length and near the cut.
- Always cut fiber cement siding face down.
- Use of a circular power saw with a diamond tip blade and/or shears are recommended.

- For irregular cuts and holes use a jig saw or hole saw with masonry blade.
- To avoid breaking the fiber cement, use extra care when you cut near the edge.
- When cutting beaded siding profile, the cut should start against the bead.
- Narrow and notched pieces of fiber cement may break, hence handle them carefully.
- **When cutting CertainTeed WeatherBoards™ FiberCement Cedar Lap Siding with ColorMax™ Finish leave the protective film on the siding until it is nailed to substrate, then remove before applying the next sequence.**



DO NOT REMOVE PROTECTIVE FILM UNTIL BOARD IS INSTALLED



CertainTeed ColorMax Finished Cedar Lap Siding

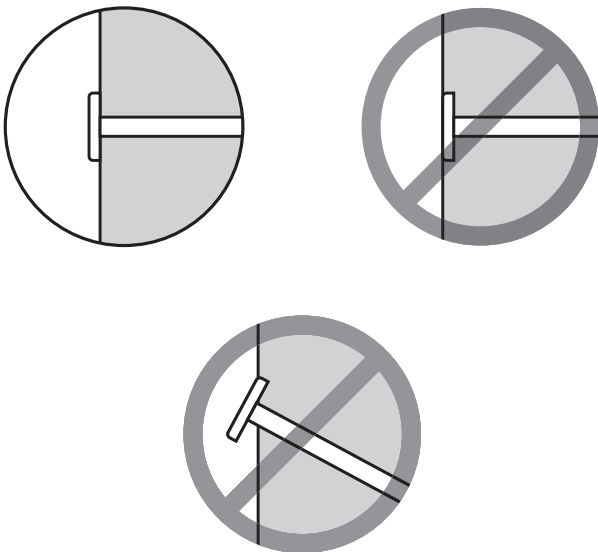
Fastening

It is recommended that siding be fastened into studs or framing. Refer to ICC-ES report ESR-1668 found on CertainTeed.com for specific fastening recommendations. Fastening into other structural materials may be acceptable if in accordance with local building codes and/or project conditions.

Types of Fasteners

Nails

- CertainTeed recommends non-corrosive double hot-dipped galvanized or stainless steel nails.
- Other non-corrosive nails may be acceptable, refer to local building codes.
- Color matched double hot-dipped galvanized nails for face nailing of CertainTeed WeatherBoards™ FiberCement Siding with ColorMax™ Finishing System are available from Maze Nails (see www.mazenails.com).
- The nail head must lay on the surface of the siding – **do not over-drive the nails or nail on angle.**

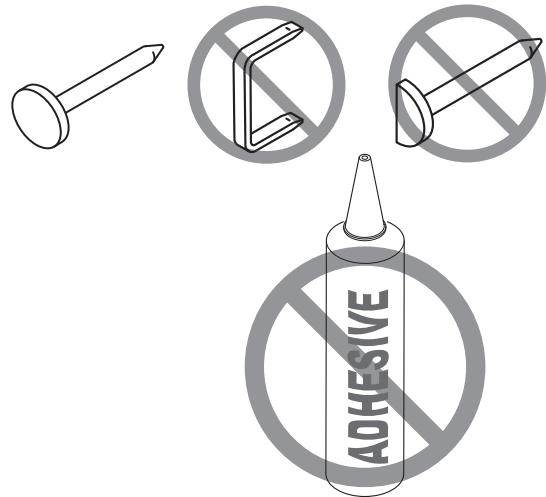


Screws

- Must be non-corrosive and designed for use with fiber cement siding.
- Screw type is determined by application and/or wall design.

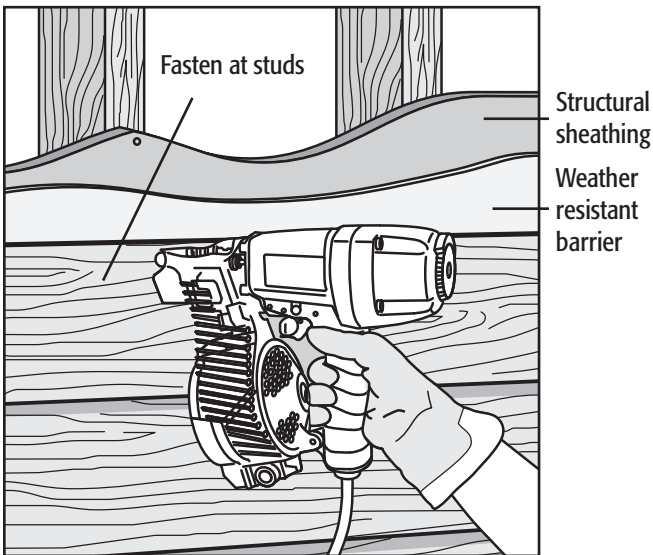
Other fasteners such as pneumatic pins are available for certain applications

- **Do not use D-head nails, staples and/or construction adhesives to install fiber cement siding.**



Fastening to Wood

- It is recommended that fiber cement siding be fastened to studs or solid framing.
- Use nails or screws for fastening to wood. In some applications attaching to a structural rated sheathing may be acceptable.
- Nails must penetrate a minimum of 1 1/4" into the structural framing. The minimum penetration may include structural sheathing thickness.
- If you use screws, a minimum of 3/4" must penetrate the structural framing.
- Pneumatic nailing: Pneumatic nailers are preferred. They speed installation and help ensure consistent penetration. Adjust air pressure to field conditions.
- Hand nailing: Hand nailing CertainTeed FiberCement Siding is acceptable. Fiber cement siding is harder than wood, so be sure the nails are well set before driving them. It may be necessary to pre-drill the holes to help prevent the corners from breaking.



Fastening to Metal Framing

- Fiber cement siding can be installed over metal framing.
- The use of self tapping, corrosive-resistant, ribbed bugle-head screws specifically designed for use with fiber cement siding are recommended.
- In this application the siding must be attached to the metal framing members. Screws must penetrate into the metal framing a minimum of 1/4" or three threads.
- You may also use corrosion-resistant pneumatic pins to fasten the siding to metal framing. Consult the pin manufacturer for application instructions.

Basic Fastening Schedule ^{1,2}				
Product	Fastener ³	Fastening Method ⁴	Wall Framing	
			Type	Spacing
Vertical Siding	6d Siding Nail (0.113 x 0.281 HD x 2" long)	6" Edges 12" Field	Wood Studs 2x4 min.	16"oc
<= 9-1/4" Lap Siding	6d Siding Nail (0.113 x 0.281 HD x 2" long)	Blind Nailed	Wood Studs 2x4 min.	16"oc
	6d Roofing Nail (0.12 x 0.375 HD x 2" long)	Blind Nailed	Wood Studs 2x4 min.	24"oc
	Ribbed Bugle-Head Screws (#8-18, 1-5/8" x 0.375" HD)	Blind Screwed	Metal Studs 3.625"x1.375" 16ga	16"oc
Shapes Siding	6d Ring Shank Siding Nail (12.5ga x 0.265 HD x 2" long)	Blind Nailed	Wood Studs 2x4 with 7/16" OSB	24"oc

1. Wind Design: 110mph, Exposure B, <=30ft Ht., Dp = -29.1psf (2006 IRC/IBC)
2. Refer to Building Code or ESR-1668 for requirements for other wind conditions.
3. Fasteners must be corrosion-resistant (Double Hot-Dipped Galvanized or Stainless Steel).
4. Fastener penetration into framing unless indicated otherwise in these instructions.

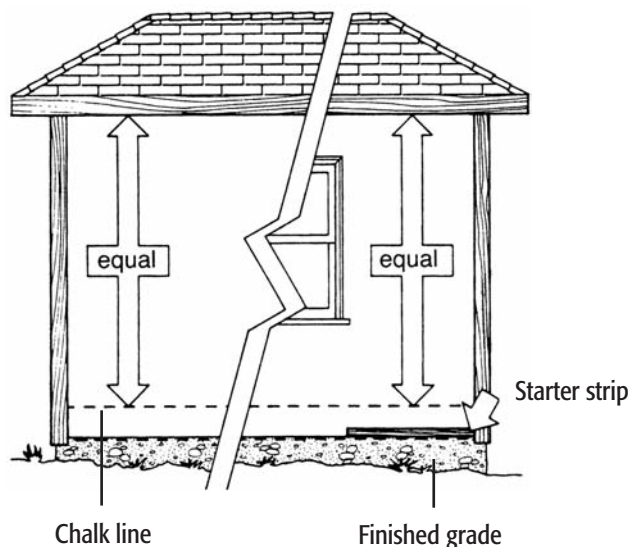
LAP SIDING

Before you install the siding, review and comply with all local building codes and regulations regarding the proper use of weather resistive barriers, house wraps, vapor barriers, etc.

Chalk Line

Establish a straight, level reference line to guide the positioning of the starter strip and the first course of siding.

1. Irregularities in framing can mirror through the finished application. To minimize the affect of uneven walls, shim the siding as necessary.
2. Find the lowest point of the sheathing and partially drive a nail at one corner 1" above the lowest corner. Make sure this point is high enough to ensure that the siding is installed at least 6" above the finished grade or 1" above surfaces where water may collect.

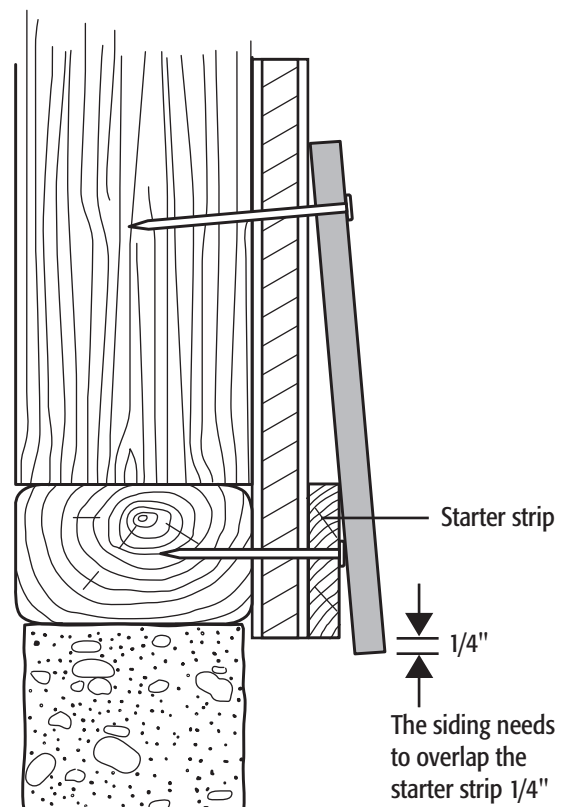


3. Attach a chalk line to the nail, and stretch the chalk line from this nail to the opposite corner of the house, using a line level or 4' (minimum) level to ensure that the lines are straight.
4. Snap the chalk line and repeat the procedure around the entire house.

Starter Strip

You can use fiber cement, pressure treated wood, or vinyl utility trim as a starter strip. It must be 2" wide and 1/4" to 5/16" thick.

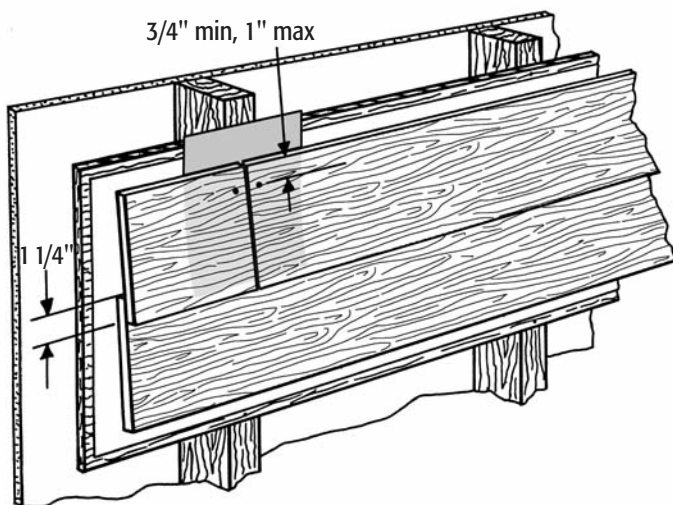
Aligning the top of the starter strip with the chalk line, attach the starter strip so that the bottom edge of the siding will project at least 1/4" below the bottom edge of the starter strip.



Siding Installation

1. Determine if the siding will be blind nailed or face nailed. Blind nailing or face nailing is dependent on wind load, exposure, wall construction or fastening type. Refer to ICC-EC report ESR-1668 or local building codes.
2. It is recommended that all lap siding should be fastened into wood or metal framing. Fastening to other structural materials may be acceptable if in accordance with local building codes and/or project conditions.
3. Using the starter strip as a guide, position the first course of lap siding no closer than 6" to finished grade and at least 1" above surfaces where water may collect.
4. Be sure to install all siding with the proper textured, sealed, or painted surface facing out.
5. Leave a minimum of 1/8" gap between the siding and the trim or other materials to allow for structural movement.
6. To minimize the affect of uneven walls, shim the siding as necessary.
7. Overlap all lap siding 1-1/4".
8. Stagger the joints on subsequent courses.

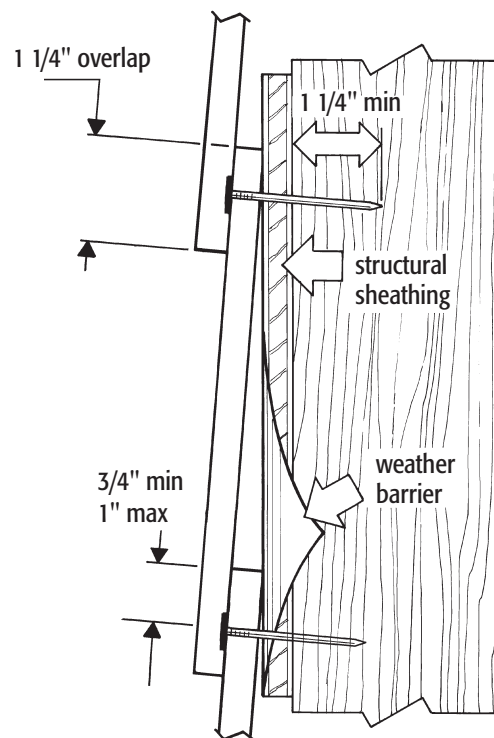
SIDING INSTALLATION



Blind Fastening

1. Make sure the panel overlaps 1-1/4" and is gapped a minimum of 1/8" from all trim before fastening.
2. Place the fastener a minimum of 3/4" to 1" (nominal) from the top of the plank and no closer than 3/8" from the butt edge. Nail placement is important and there are accessory items like the Big Sky Adapter that attach to siding nail guns to assist in the proper placement of the fastener.
3. Do not over-drive the fasteners. Seating them below the surface of the siding reduces their holding power.
4. If you are hand nailing, it may be necessary to pre-drill to help prevent the corners from breaking.
5. Fasten from one end of the plank to the other.

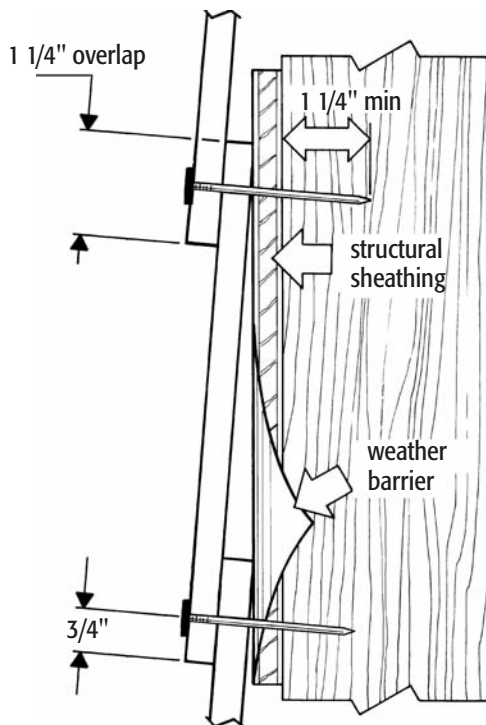
BLIND NAILING



Face Fastening

1. Make sure the panel overlaps 1-1/4" and is gapped a minimum of 1/8" from all trim before fastening.
2. Place the fastener a minimum of 3/4" to 1" from the bottom of the overlapping plank. This will help ensure that the fastener penetrates both courses of siding. Place the fasteners no closer than 3/8" from the butt edge.
3. Do not overdrive the fasteners. Seating fasteners below the surface of the siding reduces their holding power.
4. If you are hand nailing, it may be necessary to pre-drill to help prevent the corners from breaking.
5. Fasten from one end of the plank to the other.

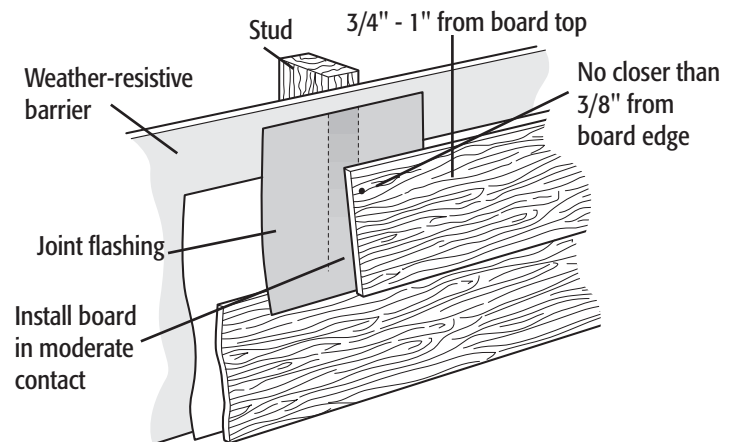
FACE FASTENING



Butt Joint Applications

1. Fiber cement siding with FiberTect-sealed or prefinished factory ends should be installed with joints butted together. Back flashing is recommended. See illustration below.
2. Cut ends used at butt joints must be re-sealed with 100% latex primer or paint prior to installation.

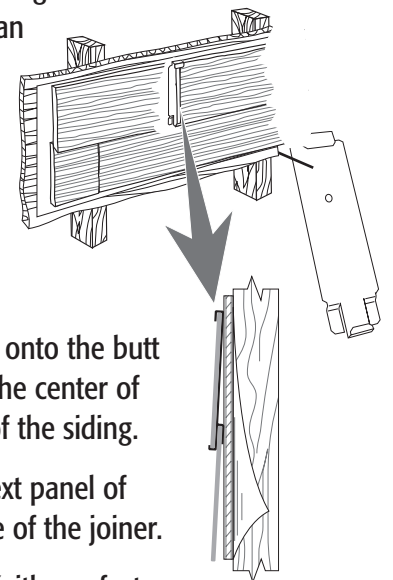
BUTT JOINT TREATMENT



Off-Stud Joiners

All lap siding butt joints must be fastened into solid framing or structural sheathing. If neither is present at the joint, use an off-stud joiner.

Off-stud joiners are available in different sizes. Choose the joiner that is the correct size for the siding you are installing.



1. Insert the off-stud Joiner onto the butt end of the siding. Align the center of the joiner with the end of the siding.
2. Insert the edge of the next panel of siding into the other side of the joiner.
3. If both ends are sealed (either a factory end or sealed cut end), butt the siding in contact with each other.
4. **Do not fasten the off-stud Joiner to the wall.**

SHAPES SIDING

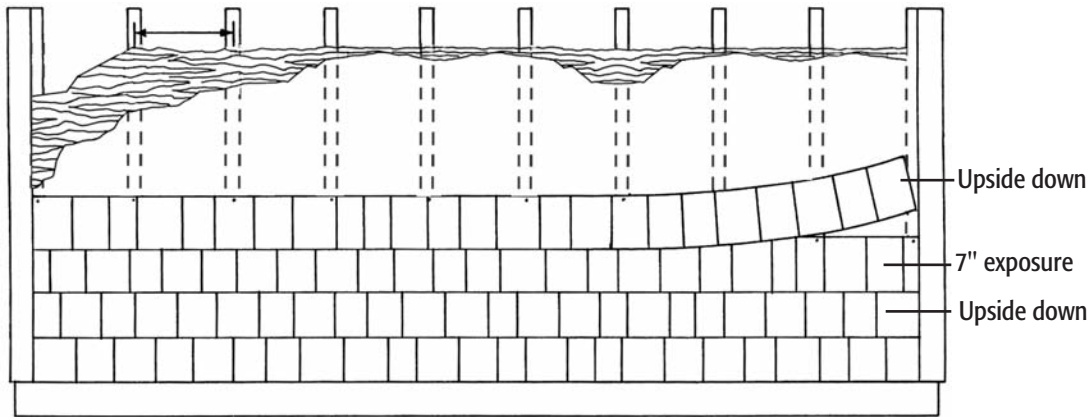
Perfection Shingles

Perfection Shingles are installed identically to Lap Siding with the exception of the following:

To achieve a random pattern, Perfection Shingles must be installed with every other course “upside down.” Install the 1st course as described for Lap Siding. When you install the 2nd course, turn the panel upside down and fasten. Install the 3rd course with the panel in the same direction as the first, and so on.

INSTALLATION SEQUENCE FOR PERFECTION SHINGLES

Even number courses are rotated 180° and installed upside down for best appearance

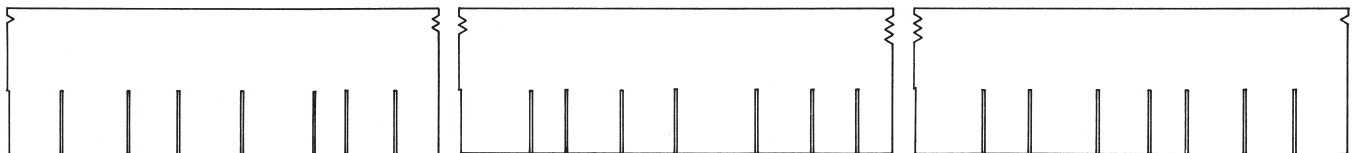


Random Square Straight Edge and Staggered Edge

Random Square Straight Edge and Staggered Edge panels are produced in three different panels. Each of these panels has a distinct pattern and is identified by the number of V-notches cut into the side of the panel. (See illustration below).

To ensure a random look, the panels should be installed in the order shown in the illustration at the bottom of page 17. The panels should be installed over wall construction with framing spacing 16" to 24" (max.) O.C. and a minimum of 7/16" OSB or 1/2" plywood sheathing. When a window or doorway breaks a course, continue the application as if the opening were not there to ensure the random look is maintained.

IDENTIFYING V-NOTCHES



Starter Strip/Starter Course

To ensure that the keyways are fully backed by fiber cement, install the first course of Random Square Straight Edge and Staggered Edge siding over a full piece, starter course of 8-1/4" lap siding. If you are transitioning from less than 8 1/4" lap siding to Shapes siding, use 8-1/4" lap siding as your starter course at that transition. If you are starting the wall with Random Square Straight Edge and Staggered Edge siding, place a starter strip under the 8-1/4" starter course.

Starter Strip

You can use fiber cement, pressure treated wood, or vinyl utility trim as a starter strip. It must be 2" wide and 1/4" to 5/16" thick.

When starting installation at ground level, establish a straight, level reference line (chalk line) to guide the positioning of the starter strip and the siding starter course (minimum 8 1/4" lap siding).

1. Find the lowest point of the sheathing and partially drive a nail at one corner 1" above the lowest corner. Make sure this point is high enough to ensure that the siding is installed at least 6" above the finished grade or 1" above surfaces where water may collect.

2. Attach a chalk line to the nail, and stretch the chalk line from this nail to the opposite corner of the house, using a line level or 4' (minimum) level to ensure that the lines are straight.
3. Snap the chalk line and repeat the procedure around the entire house.
4. Using the chalk line as a guide, attach a starter strip.

Starter Course

1. Using the starter strip as a guide, attach the starter course so that the bottom edge will project at least 1/4" below the bottom edge of the starter strip.
2. Fasten to wall per Lap Siding instructions.

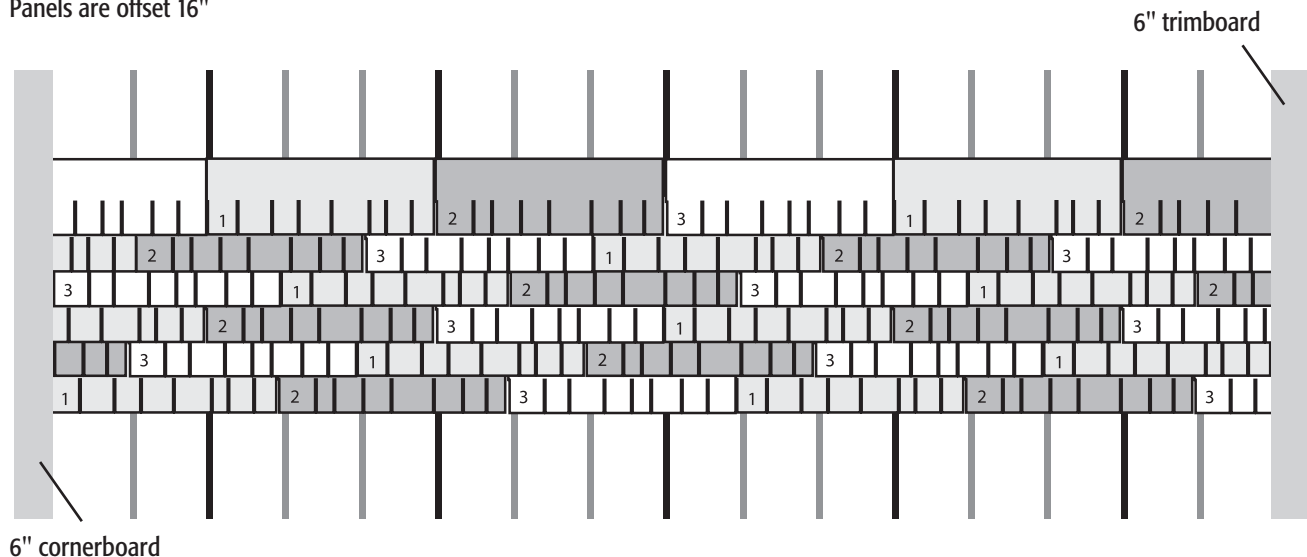
First Course

First Panel

1. Start with a #1 panel at the left side of the wall. Measuring from the inside of the trimboard, locate the center of the furthest framing member within 48" of the trimboard.
2. Take the measurement from step one, subtract 1/8". This is the dimension of the first #1 panel. Measuring from the right side of the first panel, cut the left side of the panel at this dimension.

INSTALLATION SEQUENCE FOR 6 COURSES OF RANDOM SQUARE SIDING

Panels are offset 16"



6" cornerboard

6" trimboard

3. Using this method of installation, the ends of all panels should fall on the center of a stud (if walls are properly constructed 16" or 24" O.C.)
4. Set the trimmed panel 1/8" from the trim board. Be sure to install the siding with the proper texture, sealer, or painted surface facing out.
5. Starting from the left side of the panel, place your first nail 1" above the top of the keyways and no closer than 3/8" from the edge of the panel. This will ensure the nails are concealed. Continue nailing 1" above every other keyway. Finish panel with a nail at the right edge. (See illustration below.)

Second, Third and Subsequent Panels

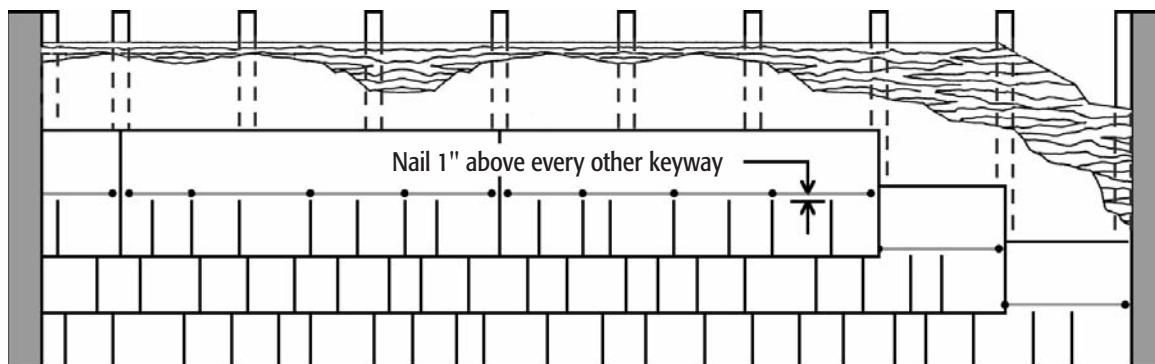
1. Match up the corresponding panel V notches (1 to 1, 2 to 2, 3 to 3). Attach the corresponding panels to the wall in the same manner as the first panel. (See illustration on page 17).
2. Continue this sequence to the end of the wall.

Remember to leave a 1/8" gap around windows, doors, trim, etc. for caulking. (Refer to Caulking section on page 26).

Second Course

1. To ensure a random pattern, start the second course using a #3 panel. Determine the starting point for a #3 panel by measuring 16" back from the right side of the #1 panel on the first course or 32" in from the left side of the #3 panel and make a mark.
2. Install the #3 panel from the mark to the right.
3. To achieve proper exposure measure down from the top of the panel or up from the bottom of the panel and make a mark. Align this mark with the top of the panels installed on the wall on the first course. Refer to the following guidelines for the specific product exposures:
 - a. Random Square Straight Edge 5" Exposure - measure down 7" or measure up 5".
 - b. Random Square Straight Edge 7" Exposure - measure down 9" or measure up 7".
 - c. Random Square Staggered Edge - measure up 7".
4. Install the panels by matching up the identifying V-notches (1 - 1, 2 - 2, 3 - 3) in the recommended sequence, continuing from left to right horizontally across the wall.
5. Backfill the space on the left side of the #3 panel to the cornerboard with a #2 panel (cut to fit).

NAILING GUIDE FOR RANDOM SQUARE SIDING



Third Course

1. To continue the random pattern start the third course with a #2 panel and follow the same procedures as the second course.

Subsequent Courses

1. Starting with the 4th course, repeat the same installation procedure as for courses 1, 2 and 3.
2. Please refer to the illustrations for course layout.
3. Keep in mind the sequence is: 1, 3, 2, 1, 3, 2, 1 - diagonally up the wall at 16" offset. (See illustration on page 17.)
4. Be sure to leave 1/8" clearance between the corner trim and the panel.
5. When a window or doorway breaks a course, continue the application as if the opening were not there.

NOTE: When installing Random Square Shapes in gable ends, proceed using the same methods as described above.

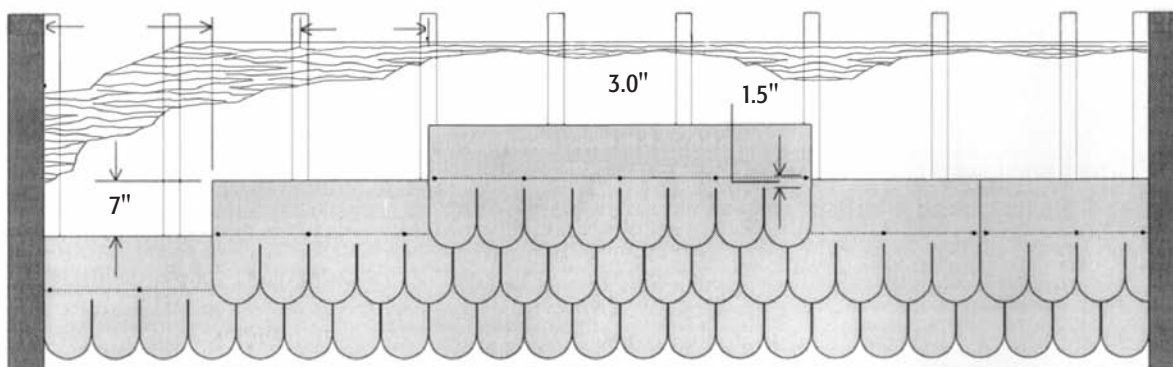
Octagons and Half-Rounds

Octagons and Half-Rounds panels are made in a single design. There are eight 6"-wide tabs per panel. When the panels are installed properly, every other course will have vertical seams that align with studs spaced on either 16" or 24" centers. The vertical edges of panels on intermediate courses will not lie on studs. The panels must be installed over wall construction with a minimum of 7/16" OSB or 1/2" plywood sheathing.

Starter Strip/Starter Course

To ensure that the keyways are fully backed by fiber cement, install the first course of Octagons and Half-Rounds siding over a full piece, starter course of 8-1/4" lap siding. If you are transitioning from less than 8 1/4" lap siding to Shapes siding, use 8-1/4" lap siding as your starter course at that transition. If you are starting the wall with Octagons or Half-Rounds siding, place a starter strip under the 8-1/4" starter course.

POSITIONING AND NAILING GUIDE FOR OCTAGONS AND HALF-ROUNDS



Starter Strip

You can use fiber cement, pressure treated wood, or vinyl utility trim as a starter strip. It must be 2" wide and 1/4" to 5/16" thick.

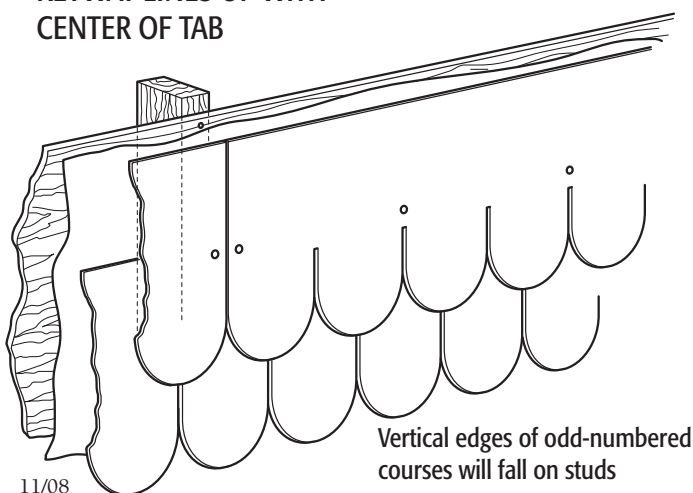
When starting installation at ground level, establish a straight, level reference line (chalk line) to guide the positioning of the starter strip and the siding starter course (minimum 8 1/4" lap siding).

1. Find the lowest point of the sheathing and partially drive a nail at one corner 1" above the lowest corner. Make sure this point is high enough to ensure that the siding is installed at least 6" above the finished grade or 1" above surfaces where water may collect.
2. Attach a chalk line to the nail, and stretch the chalk line from this nail to the opposite corner of the house, using a line level or 4' (minimum) level to ensure that the lines are straight.
3. Snap the chalk line and repeat the procedure around the entire house.
4. Using the chalk line as a guide, attach a starter strip.

Starter Course

1. Using the starter strip as a guide, attach the starter course so that the bottom edge will project at least 1/4" below the bottom edge of the starter strip.
2. Fasten to wall per Lap Siding instructions.

KEYWAY LINES UP WITH CENTER OF TAB



First Course

1. Start at the left side of the wall.
2. Measuring from the inside of the trimboard, locate the center of the furthest framing member within 48" of the trimboard.
3. Take the measurement from step two, subtract 1/8". This is the dimension of the first panel. Measuring from the right side of the first panel, cut the left side of panel at this dimension.
4. Set the trimmed panel 1/8" from the left-side trim. Fasten the panel above every other keyway. Do not fasten between keyways.
5. Working left to right, install the panels. Be sure to install the siding with the proper textured, sealed, or painted surface facing out.
6. Leave a 1/8" gap between the last panel and the trim for caulk.
7. Octagons and Half-Rounds should be installed with joints butted together; caulking is not necessary. Always caulk between the siding and the trim.

Second Course

1. Starting at the left side, locate the first full panel installed on the first course.
2. Offset the 2nd course 21" (3-1/2 tabs) from the first full piece. This horizontal shift will vertically align the center of each tab on the 2nd course with the keyways of the 1st course.
3. To achieve proper exposure measure down from the top of the panel 9" and make a mark. Align this mark with the top of the panels on the first course. (See the illustration.)
Important: Make sure the tops of the keyways are concealed by the overlapping panel before fastening the siding panels.
4. Fasten the panel. You will have to fasten it to the sheathing because the vertical edges of the 2nd course will not lie on studs set 16" O.C.

Subsequent Courses

1. Install the 3rd, 5th, and all other odd courses in the same horizontal position as the 1st course. Leave a 7" exposure.
2. Install the 4th, 6th, and all other even courses in the same horizontal position as the 2nd course. Leave a 7" exposure.
3. When a window or doorway breaks a course, continue the application as if the opening did not exist.

Centering Half-Rounds and Octagons on Gable Ends

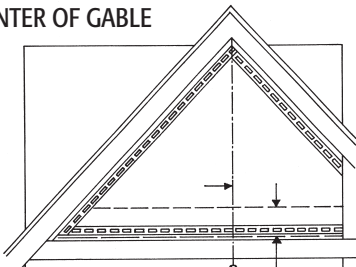
NOTE: When estimating for materials, allow for a much higher scrap rate than for a straight wall. Scrap rates can exceed 30% in gable applications.

When possible, gable installations should end with a single round or octagon at the peak.

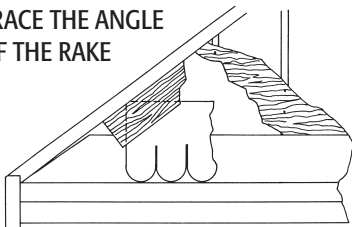
To End with a Single Round or Octagon

1. Measure the height of the gable (in inches).
2. Divide the height of the gable by 7".
3. If the answer is an even number, center the first course of Half-Rounds or Octagons on a keyway.
4. If the answer is an odd number, center the first course on a Half-Round or Octagon.

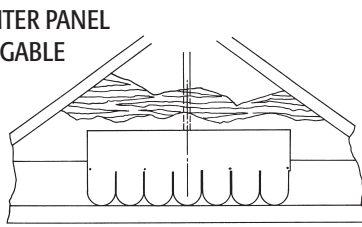
DROP A PLUMB LINE TO FIND CENTER OF GABLE



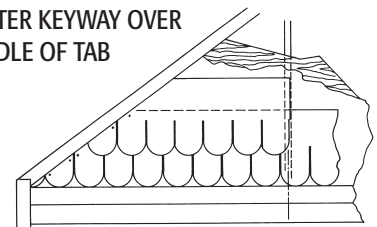
TRACE THE ANGLE OF THE RAKE



CENTER PANEL ON GABLE



CENTER KEYWAY OVER MIDDLE OF TAB



Making a Rake Angle Template

1. Mark the center of the gable.
2. If you are continuing from a previous course of 8-1/4" lap siding, do not install a starter strip. If not, install a starter strip and a 8-1/4" piece of lap siding starter course.
3. Hold a short piece of siding along the starter strip against the left edge of the gable.
4. Hold a second piece of siding against the trim at the rake angle of the gable.
5. Use this template as a guide when you cut the panels to fit the gable.

Run a pencil along the edge of this piece, transferring the rake angle to the piece of siding.

First Course

1. Locate the first piece relative to the centerline of the gable. The panel may be positioned anywhere along its length, as long as the keyway or shingle face is centered.
2. Nail approximately 1" above the top of every other keyway. Do not nail between the keyways.
3. Finish to the right and left sides, leaving 1/8" gaps between the trim and the side of the first and last panels.

Subsequent Courses

1. Use the rake angle template to trim the starting panel of the 2nd course.
2. Install the 2nd and subsequent courses according to the directions for installing Half-Rounds or Octagons.
3. Face nail the final piece at the top of the gable and small pieces required to fill in at the rake angle.

VERTICAL SIDING

Install each panel vertically or parallel to wall framing. Support all panel edges with framing. Vertical siding is face nailed. It can be installed over properly prepared walls with a maximum 24" O.C. framing spacing. It is recommended that siding be fastened into studs or framing. Refer to ICC-ES report ESR-1668 found on CertainTeed.com for specific fastening recommendations. Fastening into other structural materials may be acceptable if in accordance with local building codes and/or project conditions.

NOTE:

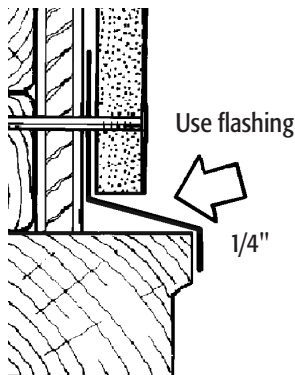
1. Irregularities in framing can mirror through the finished application. To minimize the affect of uneven walls, shim the siding as necessary.
2. Before you install the siding, review and comply with all local building codes and regulations regarding the proper use of weather resistive barriers, house wraps, vapor barriers, etc.

Chalk Line

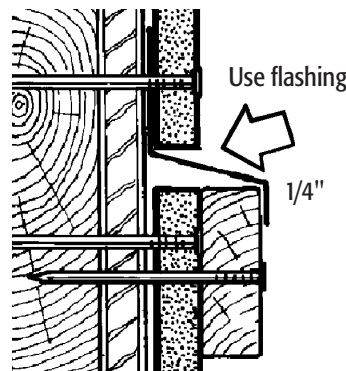
Establish a straight, level reference line to guide the positioning of the panel.

1. Find the lowest point of the sheathing and partially drive a nail at one corner 1" above the lowest corner. Make sure this point is high enough to ensure that the siding is installed at least 6" above the finished grade or 1" above surfaces where water may collect.
2. Attach a chalk line to the nail, and stretch the chalk line from this nail to the opposite corner of the house, using a line level or 4' (minimum) level to ensure that the lines are straight.
3. Snap the chalk line and repeat the procedure around the entire house.

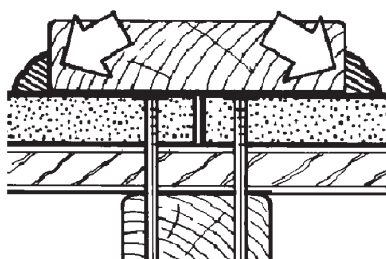
OVER OPENINGS



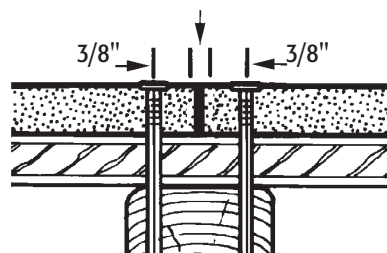
PANEL STACKING OPTION



OPTIONAL VERTICAL JOINT



BUTTED PANEL JOINT

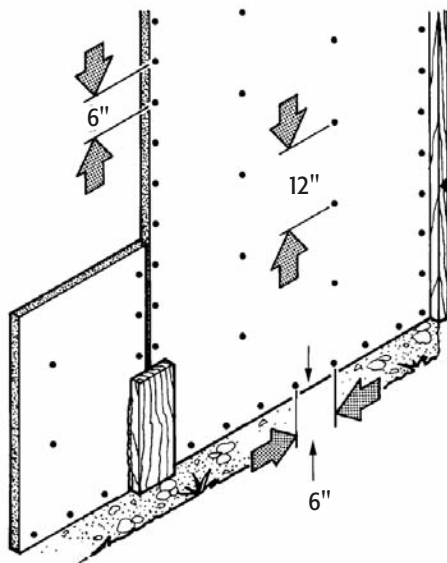


Installation

Do not install a starter strip.

1. Use the chalk line as a guide.
2. Leave a 1/8" gap between the siding and the trim to allow for structural movement. Always caulk between the siding and the trim.
3. Fasten the siding at all stud locations.
4. Do not fasten closer than 2" from the corners in either direction.
5. Space fasteners vertically a maximum of 6" O.C. on all siding edges and 12" O.C. at intermediate framing members. **Refer to ICC-ES ESR-1668 for specific fastening requirements.**
6. Paint all field-cut edges.
7. Butt all vertical panel joints together.

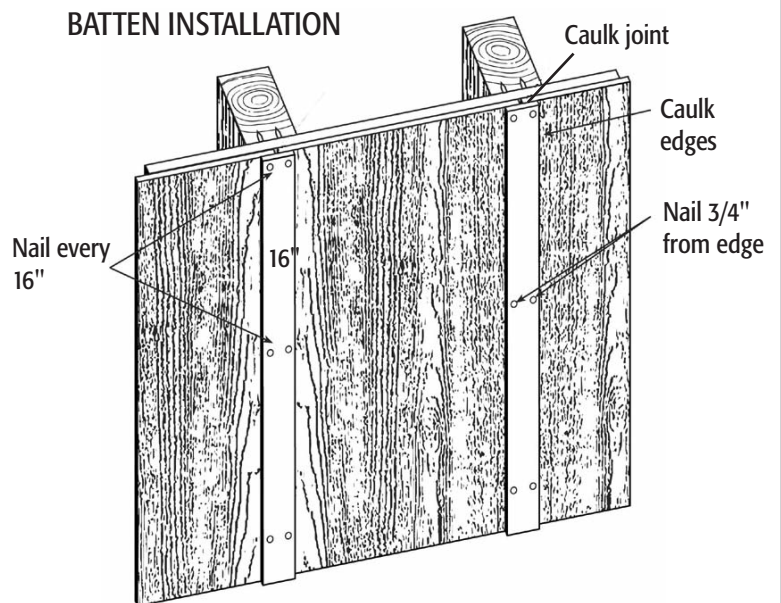
DO NOT INSTALL A STARTER STRIP



Board and Batten Application

CertainTeed FiberCement Siding can also be applied in a board and batten style. You can use wood, fiber cement, composite lumber or cellular PVC as battens.

If you install battens cut from fiber cement, paint or stain the cut edges. **Do not seal the back of fiber cement battens.**



SOFFIT

Soffit Preparation

CertainTeed FiberCement Soffit should be applied **to structural** framing members spaced no more than 24" O.C., with the longest dimension perpendicular to the framing.

Prepare for soffit installation by **nailing a minimum of a 2x nailer board** along the wall, with the bottom edge of the **nailer** board level with the bottom edge of the fascia. At every butt joint of the soffit, back up the joint with **2x framing** going from the fascia back to the wall. If the soffit corners are going to be mitered, nail **2x blocking** from the corner of the fascia to the corner of the wall.

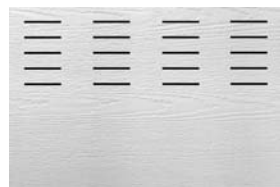
If you are going to use H-channel at the mitered corners, nail the H-channel to the **2x blocking** and slide the cut soffit into it. Cut the soffit 1/8" shorter than the H-channel to allow for expansion and contraction.

Installation:

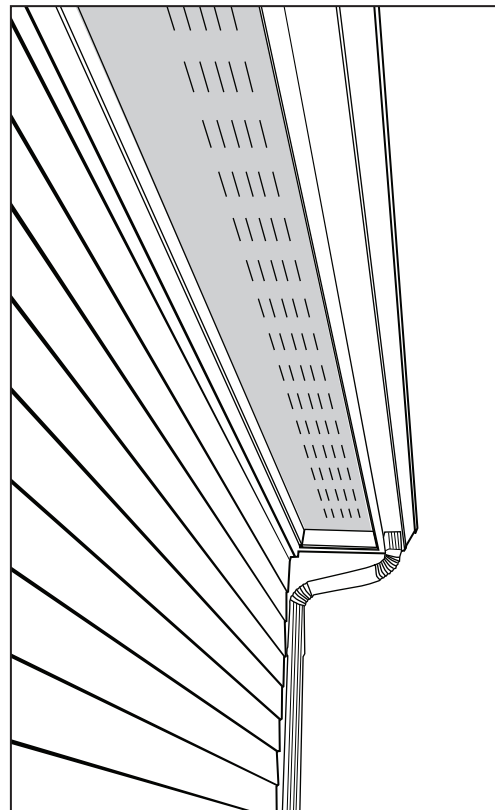
1. Cut CertainTeed FiberCement Soffit panels face down with a mechanical shear or circular saw.
2. Prime or paint the cut edges before installing the soffit. Do not prime or paint the back of the soffit.
3. Use double hot-dipped galvanized or stainless steel 6d or 8d nails. (1/4" head minimum.)
4. Fasten the soffit at least 3/4" from the side edge, 3/8" from the butt **end**, and at least 2" from the corner. Space the fasteners every **12"** along both the front and back **edge**.
5. The butt ends should be in contact, fastened at corresponding ends, and supported by framing.



Smooth Ventilated Soffit



Cedar Ventilated Soffit



Requirements for Proper Soffit Ventilation

Proper attic ventilation is important for any home. The 2006 International Building Code (IBC) Section 1203 Ventilation furnishes a basic guide for determining proper ventilation for any home. The information provided here may under certain circumstances not result in enough ventilation. Therefore, the calculation provided should be used as a guide only.

The IBC guideline requires that any attic or space between the top floor, ceiling and roof must be ventilated. It requires one square foot of ventilation area for every 150 square feet of attic space.

If a vapor retarder of less than one perm has been installed on the warm side of the ceiling or if at least 50% of the required ventilating area has already been provided by gable and vents or ridge vents, you need add only one-half of the ventilation area that would otherwise be required. The requirement would then be one square foot of ventilation area for every 300 sq. ft. of attic space.

How to Determine Soffit Ventilation

1. Determine the local code requirement for total attic ventilation.

1:150 requires 1 sq. ft. of ventilation for every 150 sq. ft. of attic space.

1:300 requires 1 sq. ft. of ventilation for every 300 sq. ft. of attic space, if a vapor barrier having a transmission rate not exceeding 1 perm is installed on the warm side of the ceiling.

2. Determine the total area of the attic (sq.ft.) to be ventilated.

40 ft. x 30 ft. = 1,200 sq. ft.

3. Total free area of ventilation required for the attic.

1,200 sq. ft. / 150 = 8.0 sq. ft.

4. Convert square feet into square inches (sq. in.).

8.0 sq. ft. x 144 = 1,152 sq. in.

5. Location of vents.

50% at ridge, roof vent or gable vent = 1,152 x .50 = 576 sq. in.

50% at soffit / eave = 1,152 x .50 = 576 sq. in.

6. Total soffit ventilation area required.

Area of the soffit available for ventilation:

80 lineal ft. x 2 ft. soffit depth = 160 sq. ft.

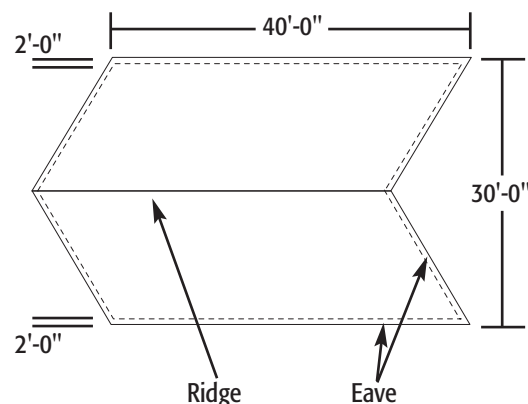
Ventilation area required per sq. ft. of soffit = 576 sq. in. / 160 sq. ft. = 3.6 sq. in. / sq.ft.

7. Soffit product selection.

Determine the amount of vented soffit required:

Divide the required net free determined for the eave locations by the net free area of the soffit product.

Install the required amount of vented soffit accordingly.



SPECIAL SITUATIONS

Non-Vertical Walls

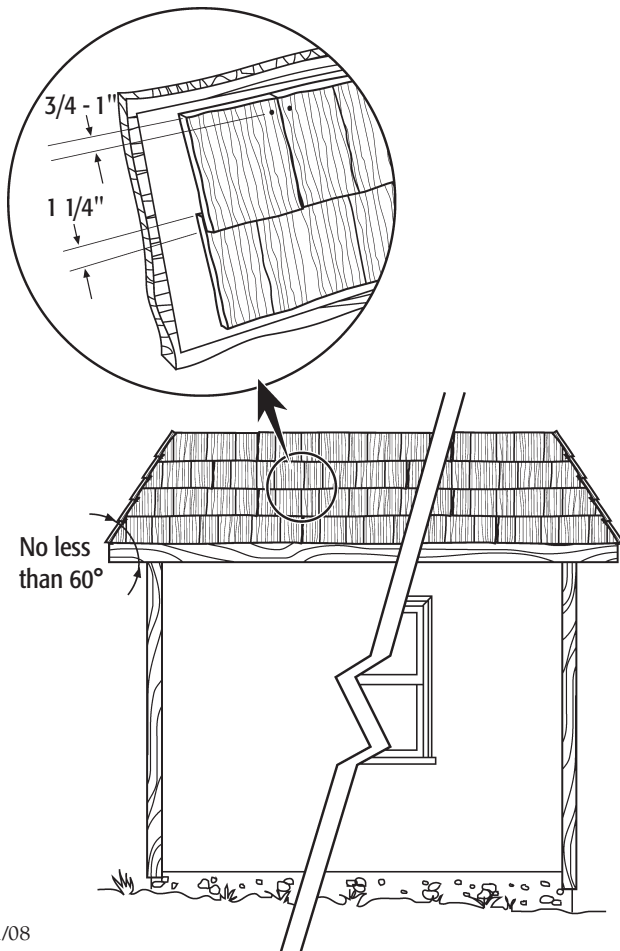
CertainTeed FiberCement Siding can be installed on non-vertical walls when:

1. The walls are at least 60°, measured from the plane of the ground.
2. The wall **is not** a functional roof above occupied space.

Before you install CertainTeed FiberCement Siding on non-vertical walls, install an underlayment of 15 lb. (minimum) felt or waterproofing membrane.

- Cap the uppermost edge of the top siding course to prevent the water from getting behind the siding.
- Flash all accessories to shed water away from the substrate.

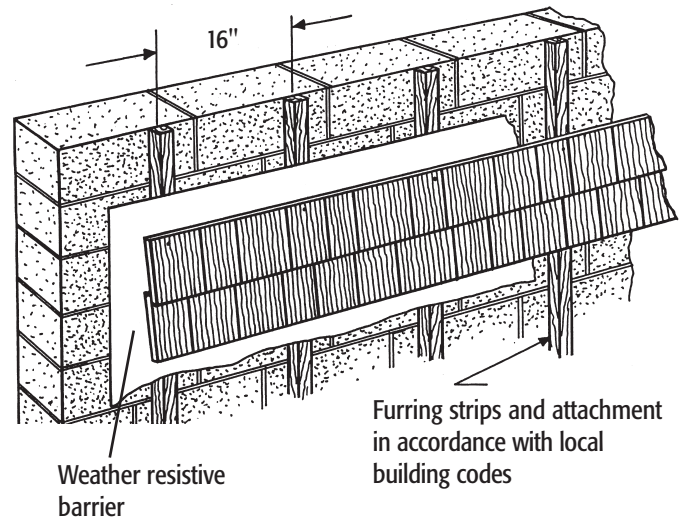
NON-VERTICAL WALL



Concrete Block and Poured Concrete Walls

CertainTeed FiberCement siding may be installed over concrete block and poured concrete walls. CertainTeed recommends that siding be installed over furring. (See illustration below.) Siding may also be applied direct to the wall using specialized fastening systems. For specific installation recommendations, refer to technical documents on our website, CertainTeed.com.

ATTACHING TO MASONRY



Alternative Wall Systems

CertainTeed FiberCement Siding may be applied over alternative wall systems such as Structural Insulated Panels (SIP), Insulated Concrete Forms (ICF) and Rainscreen Systems. Fastening requirements for the siding is dependent on the specific wall system design. Fastening siding onto alternative wall systems must be in accordance with local building codes. Refer to the specific wall system manufacturer for cladding recommendations.

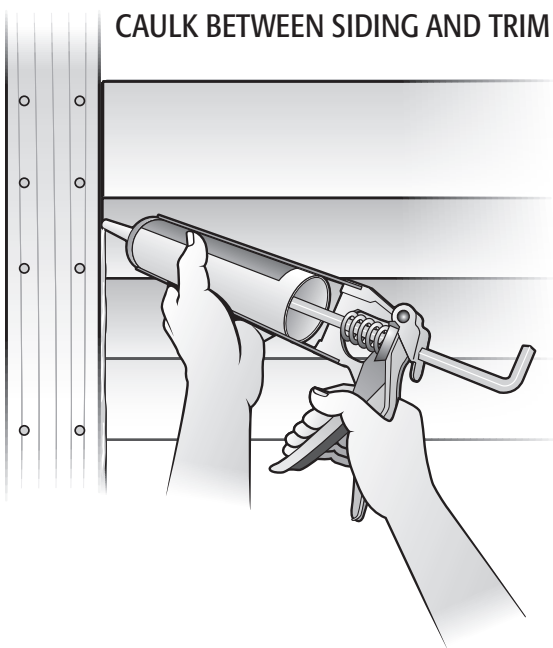
FINISHING

Caulking

Use a high quality, exterior-grade caulk or sealant that meets ASTM Standard C-920 (Grade NS, Class 25). The caulk or sealant should be color matched or paintable. It should be compatible with both fiber cement siding and the materials used for the trim. Check the gloss and texture of the caulk to make sure it is compatible with the paint.

Before you begin to caulk, it is recommended to remove any dust and debris. Caulk wherever siding meets the trim vertically at the corners and around windows and doors.

Follow the caulk manufacturer's application instructions.



Painting

CertainTeed FiberCement Siding, Soffit and Trim must be allowed to breathe. Never completely prime, paint, or stain the back side. Some factory-applied primer, paint, or stain on the back is normal.

All CertainTeed FiberCement Siding, Soffit, and 7/16" Trim are sealed with CertainTeed's FiberTect™ Sealing System. You have up to 24 months to apply a finish coat. Use a high-quality, 100% acrylic latex paint or stain.

Before applying the finish coat, always follow the paint manufacturer's recommendations for surface preparation and paint application.

Never apply oil-based paints or stains to CertainTeed FiberCement Siding, Soffit, or Trim.

Staining

If you desire stained WeatherBoards FiberCement, we highly recommend that you purchase one of the six standard prestained options. This will give the best overall appearance and performance of the product. If you do elect to have the primed WeatherBoards FiberCement stained after purchase we recommend that the staining be done in a horizontal position, prior to application. A small amount of material should be stained and evaluated to ensure satisfaction with the appearance before staining all material needed for the job.



This booklet describes and illustrates the steps involved in installing CertainTeed FiberCement Siding, Soffit, and Trim. Its purpose is to provide information and how-to tips that will simplify the installation process.

CertainTeed shall not accept any liability or responsibility under its written Limited Warranty for failure to meet our minimum requirements for the proper installation process as described in this booklet. Please refer to the Limitations section in CertainTeed's FiberCement Siding Limited Warranty. Any deviations from our minimum requirements for installation should be addressed to and approved in writing by CertainTeed Corporation.



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