

CertainTeed WeatherBoards™

Fiber Cement Siding

Installation Manual



CertainTeed
*Weather*Boards™
Fiber Cement Siding

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SECTION 1: BEFORE YOU BEGIN

Please read the instructions completely. The installation techniques in this manual describe and illustrate the steps involved in installing WeatherBoards™ Fiber Cement Siding, Soffit, and Trim.

No instruction manual can anticipate all the questions or conditions that might arise during installation. Recognizing this, we've focused on the tools and techniques used to complete typical installations. If you encounter an installation situation not covered in this manual, we suggest you contact CertainTeed's Sales Support Group at 1-800-233-8990.

First Steps to a Successful Project

- Before installing the material, inspect for breakage, foreign objects, surface defects, correct product, correct color, and color consistency. In addition, check for wet or saturated product. 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 1-800-233-8990. Additional information is available on our website, www.certainteed.com.

- Be sure to read and review with your team:
 - ▶ **Working Safely** information on page 3.
 - ▶ **Storage and Handling** information on page 4.
 - ▶ **Cutting** on page 5.
 - ▶ **Fastening** on page 7.
 - ▶ **Wall Preparation** on page 10.
- Review the instructions for your specific product style/type, for example, "Installing Lap Siding".
- Assemble the right tools, fasteners, and accessories before starting.



AN IMPORTANT NOTE ABOUT CERTAINTEED WARRANTIES:

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.

SECTION 2: WORKING SAFELY

Use Proper Ventilation and Safety Equipment

When fiber cement is cut or drilled, it will create dust. 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 (Fig.2.1).

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 (Fig.2.2).

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 (Fig.2.3).

Consult the WeatherBoards™ Material Safety Data Sheet (MSDS) on our website www.certainteed.com and a qualified industrial hygienist for further health and safety information related to this product.

Choose the Proper Tools and Cutting Methods

Shear-type tools will cause little dust emissions. Using polycrystalline diamond-tipped and carbide-tipped blades will create dust. See pages 5 and 6 for more information on tools and cutting methods.

Fig. 2.1 **IDEAL: CUT OUTDOORS**
and use cutting tools that minimize dust.

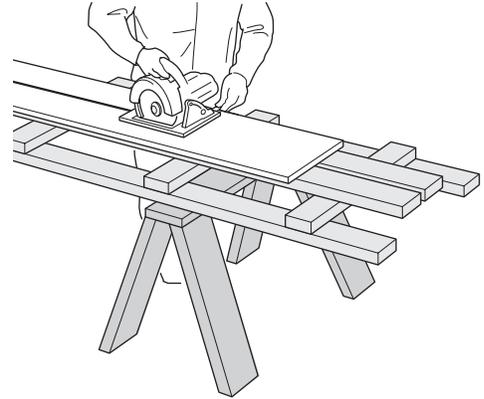


Fig. 2.2 **CUTTING INDOORS:**
PLAY IT SAFE by providing good
ventilation and wearing a respirator.



Fig. 2.3 **WEAR SAFETY EQUIPMENT**
Work safely and use the proper precautions.

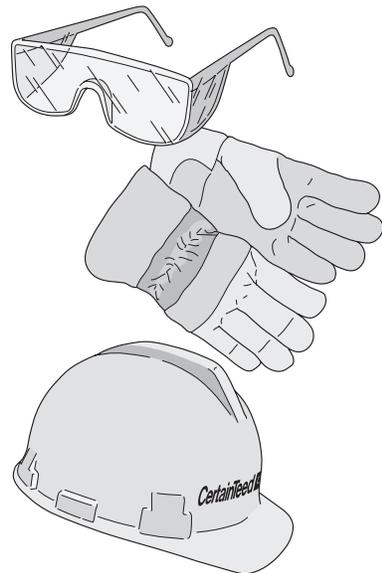


Fig. 3.1 **PROPER STORAGE**
Store covered, on pallets.

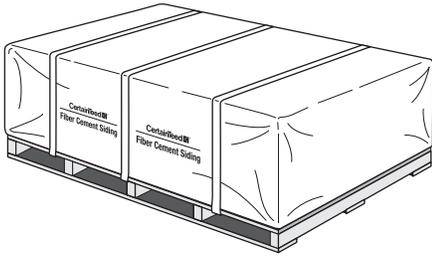


Fig. 3.2 **IMPROPER STORAGE**

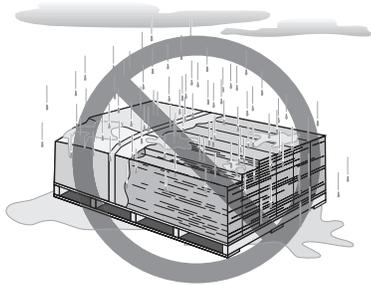


Fig. 3.3 **PROPER HANDLING**
Pick up the boards from the center, carry by the narrow edge.

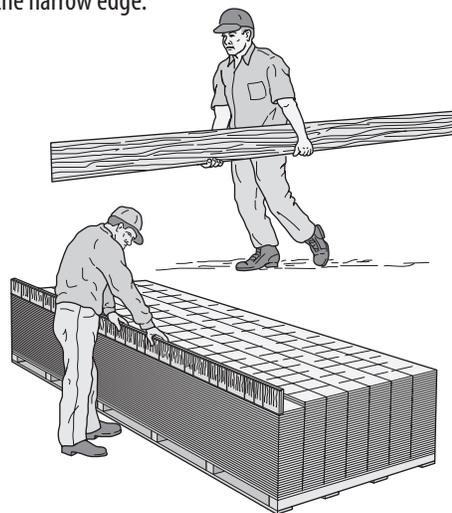


Fig. 3.4 **IMPROPER HANDLING**



SECTION 3: STORAGE AND HANDLING

WeatherBoards™ Fiber Cement must be kept covered and stored off the ground, on a clean, flat, and level surface. Protect it from direct exposure to the weather.

Proper Storage

- ▶ 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 (Fig.3.1, Fig. 3.2).
- ▶ If the siding is packaged with slip sheeting, ensure that the slip sheeting stays between the boards to protect against marring the surface, boards sticking together, and moisture infiltration.
- ▶ WeatherBoards™ Fiber Cement Siding is coated with our FiberTect® Sealing System to protect against moisture. However, 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 thoroughly.)

Proper Handling

- ▶ Always carry fiber cement boards by holding the narrow edge.
- ▶ If handled incorrectly, the surface of prefinished boards will scratch. Always pick up the boards from the center to avoid marring the surface of the board below (Fig.3.3, Fig. 3.4).
- ▶ When cutting fiber cement boards support the product along its length and near the cut.
- ▶ The outside face of CertainTeed WeatherBoards™ Fiber Cement Cedar Lap Siding with ColorMax® Finish is covered with a patented protective film*. Do not remove this film before cutting or fastening. See page 6 for more information on proper use of the protective film.

⚠ DO NOT INSTALL FIBER CEMENT MATERIAL THAT IS WET.
Installing boards that are wet or saturated may result in shrinkage at butt end/joints.

* Not available in all areas

SECTION 4: CUTTING

Installing a professional fiber cement siding project requires “carpentry” skills and knowledge that are unique to this material. There are two key techniques to the way the material is cut and fastened. Also, good wall preparation is extremely important to a quality job, so much so that we have devoted a full section to it starting on page 10.

General Cutting Guidelines

Below are recommended cutting practices that will give you the best performance of your newly purchased WeatherBoards™ Fiber Cement products.

When fiber cement is cut or drilled, it will create dust. 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.

The use of recommended cutting tools and blades can greatly reduce the amount of dust generated when cutting fiber cement.

Types of Cutting Tools and Blades

Use a polycrystalline 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 jigsaw equipped with a medium polycrystalline diamond-tipped blade or coarse grit carbide-tipped blade.
- ▶ Use a masonry hole saw for making penetrations for plumbing pipes or other similar cuts.
- ▶ Circular saws with either polycrystalline diamond-tipped or conventional carbide-tipped blades can also be used (Fig.4.1).
- ▶ For speed, smoothness, and reduced effort, polycrystalline diamond-tipped blades outperform carbide-tipped blades. Fiber cement dulls carbide-tipped blades faster than polycrystalline diamond-tipped blades. You can expect to use five or more carbide-tipped blades per average residential installation, whereas polycrystalline diamond-tipped blades will perform satisfactorily for five to six residential installations. When equipped with polycrystalline diamond-tipped blades, power miter saws can also be used with excellent results.
- ▶ Shear-type tools will also cut fiber cement. These tools cut with relatively little effort, less noise, and virtually no dust. The cut is not as smooth as the cut of a polycrystalline diamond-tipped blade, but is acceptable (Fig.4.2).

*** TIP:** Do not cut wood with a polycrystalline diamond-tipped blade—cut only fiber cement.

Fig. 4.1 **IDEAL: CIRCULAR SAW** with polycrystalline diamond-tipped blade for minimal dust and a clean cut.

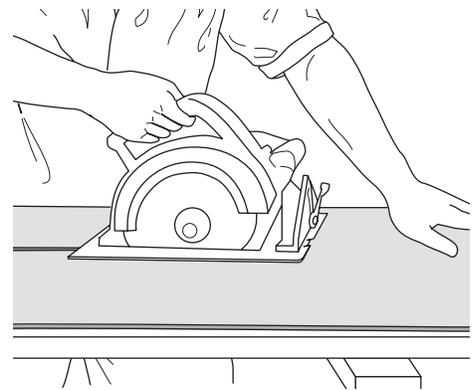


Fig. 4.2 **ALSO GOOD: MECHANICAL SHEARS** create virtually no dust.

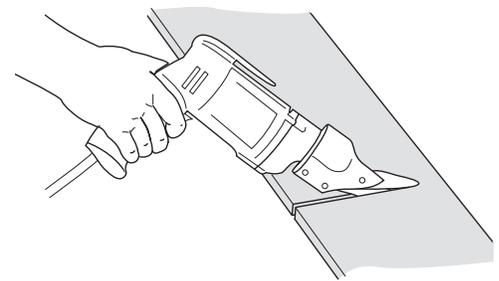


Fig. 4.3 **LEAVE PROTECTIVE FILM IN PLACE** until board is installed (for Cedar Lap Siding with CertainTeed ColorMax® Finishing System only).

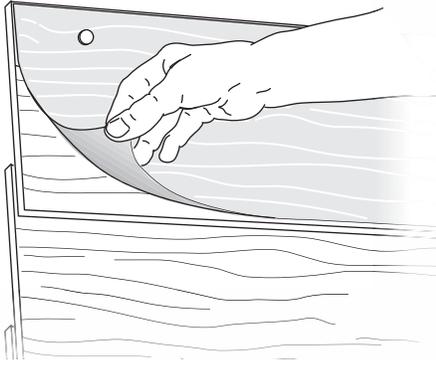


Fig. 4.4 **RE-SEAL FIELD CUT EDGES** with 100% acrylic latex paint or primer



Fiber Cement Cutting Know-How

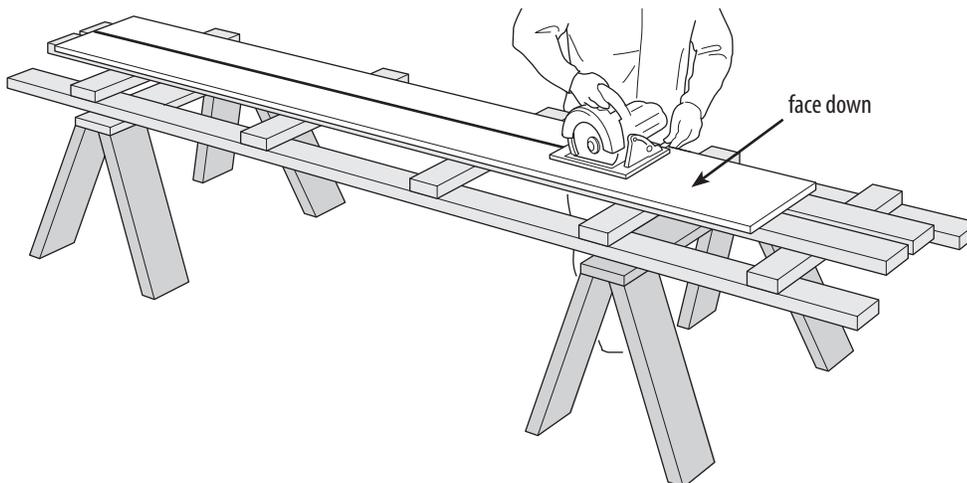
- ▶ Cut fiber cement board face down when using a circular saw or mechanical shears.
- ▶ Cut fiber cement board face up when using a chop/miter saw.
- ▶ When cutting, support the board along its length and near the cut (Fig. 4.5).
- ▶ To avoid breakage, use extra care when you cut near the edge.
- ▶ Handle narrow and notched pieces carefully to avoid breakage.
- ▶ When cutting beaded siding profile, the cut should start against the bead.
- ▶ For irregular or radius cuts, use scroll cutting shears or a jigsaw equipped with a medium or coarse grit carbide or polycrystalline diamond-tipped blade. For holes such as plumbing pipes, use a hole saw with a masonry blade.
- ▶ When cutting CertainTeed WeatherBoards™ Fiber Cement Cedar Lap Siding with CertainTeed ColorMax® Finish, leave the protective film in place until the siding is nailed to substrate, then remove it before applying the next sequence (Fig. 4.3).

*** TIP:** Always re-seal field-cut edges of butt end/joint with 100% acrylic latex paint or primer prior to installation (Fig. 4.4).

⚠ 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.

Fig. 4.5 **PROPER CUTTING SETUP**

Use good support and position face down when using a circular saw or mechanical shears.



SECTION 5: FASTENING

General Fastening Guidelines

Fiber Cement should be fastened to studs or solid framing with a maximum of 24" on center (o.c.). In some instances, there may not be a stud or framing member available to fasten into—such as along a rake, inside or outside corners, or at a window or door opening. In these areas, the fiber cement must be fastened to a structural-rated sheathing. Refer to the “Basic Fastening Schedule” below for applications in wind zones up to 110 mph (≤ 30 ft. high, Exposure B).

Building codes and regulations vary throughout the country. In some specific situations, fastening into other structural materials may be acceptable. Refer to local building codes and/or ICC-ES Report ESR-1668 found on www.certainteed.com for alternative applications or wind conditions.

*** NOTE:** *Whenever possible, you should fasten to framing. However, there may be some job site conditions where framing is not available. In this instance, place two fasteners 1" apart into structural rated sheathing if no stud is available.*

Basic Fastening Schedule ^{1,2}				
PRODUCT	FASTENER ³	FASTENING METHOD ⁴	WALL FRAMING	
			TYPE	SPACING
Vertical Siding	6d Siding Nail (0.095 x 0.235 HD x 2" long)	6" Edges, 12" Field into Framing	Wood Studs 2x4 min.	16" o.c. max.
$\leq 9\text{-}1/4$ " Lap Siding	6d Siding Nail (0.095 x 0.235 HD x 2" long)	Blind Nailed into Framing	Wood Studs 2x4 min.	16" o.c. max.
	6d Roofing Nail (0.120 x 0.375 HD x 1-3/4" long)	Blind Nailed into Framing	Wood Studs 2x4 min.	24" o.c. max.
	Ribbed Bugle-Head Screws ⁵ (#8 x 1-5/8" x 0.375" HD)	Blind Screwed into Framing	Metal Studs 3.625" x 1.375" 16 ga	16" o.c. max.
$> 9\text{-}1/4$ " Lap Siding	8d Siding Nail (0.095 x 0.235 HD x 2-1/2" long)	Face Nailed into Framing	Wood Studs 2x4 min.	24" o.c. max.
Shapes Siding	6d Ring Shank Siding Nail (0.095 x 0.235 HD x 2" long)	Blind Nailed into Sheathing	Wood Studs 2x4 with 7/16" OSB Sheathing	24" o.c. max.
Individual Shakes	6d Roofing Nail (0.120 x 0.375 HD x 1-3/4" long)	Blind Nailed into Sheathing	Wood Stud 2x4 with 7/16" OSB Sheathing	24" o.c. max.
Soffit	6d Siding Nail (0.095 x 0.235 HD x 2" long)	Face Nailed 12" o.c. into Framing	Wood Framing 2x4 min.	24" o.c. max.
Porch Ceiling	6d Siding Nail (0.095 x 0.235 HD x 2" long)	6" Edges, 6" Field into Framing	Wood Framing 2x4 min.	24" o.c. max.

¹ Wind Design: 110mph, Exposure B, ≤ 30 ft Ht., $D_p = -29.1$ psf (2009 IRC/IBC)

² Refer to Building Code or ESR-1668 for applicable requirements or other wind conditions.

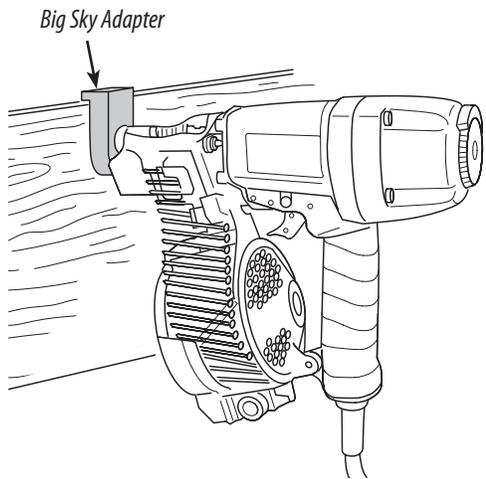
³ Fasteners must be corrosion-resistant (HD Galvanized or Stainless Steel).

⁴ 1-1/4" min. fastener penetration into framing unless indicated otherwise in these instructions.

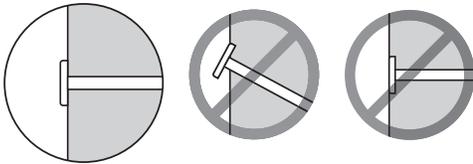
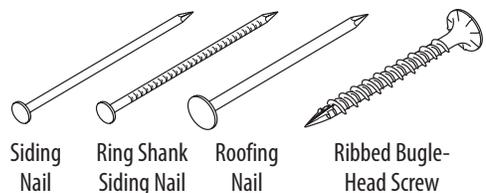
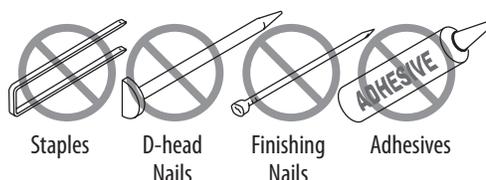
⁵ Screws designed for fiber cement siding.

Fig. 5.1 **IDEAL: PNEUMATIC NAILERS**

Do not use framing nail guns to apply fiber cement because they will over drive nails. Do not use finishing nail guns or staplers.

Fig. 5.2 **PROPER NAIL SEATING**

Nail head must lay on the surface of the fiber cement. Do not over drive the nails or nail on angle.

Fig. 5.3 **IDEAL: FASTENERS DESIGNED FOR FIBER CEMENT**Fig. 5.4 **DO NOT USE THESE FASTENERS**

Types of Tools for Fastening

- ▶ A pneumatic nail gun designed for siding applications is faster than hand nailing. When pneumatic nailing to a solid wood substrate, adjust the air pressure to meet job site conditions, typically 80-85 psi.
- ▶ Fiber cement siding can be hand-nailed. When hand nailing, avoid over-driving the nail. Seat the bottom of the nail head flush with the surface of the siding (Fig. 5.2). This will allow the nail to retain its maximum holding power and avoid distorting or cracking the siding. When hand nailing face-nailed rake-angle cuts, you may have to predrill the holes.
- ▶ Collated and uncollated screw guns can be used.
- ▶ CertainTeed recommends the use of a *Big Sky Adapter* for proper nail placement when blind nailing (Fig. 5.1). www.bigskyadapter.com.

Types of Fasteners

Non-corrosive, double hot-dipped, galvanized or stainless steel nails or screws specially designed for fiber cement are recommended.

Nails

- CertainTeed recommends non-corrosive, double hot-dipped, galvanized or stainless steel siding nails.
- Other non-corrosive nails may be acceptable, refer to local building codes (Fig. 5.3).
- Color-matched, double hot-dipped, galvanized nails for face nailing siding and trim with CertainTeed ColorMax® Finish are available from Maze Nails (see www.mazenails.com).

Screws

- Must be non-corrosive and designed for use with fiber cement (Fig. 5.3).
- Screw type is determined by application and/or wall design. Other fasteners such as pneumatic pins are available for certain applications.

Fastening to Structural Materials

Fastening to Wood

- ▶ Stud spacing should be 24" on center at maximum (Fig. 5.5).
- ▶ Nails must penetrate a minimum of 1-1/4" into the structural framing. The minimum penetration may include structural sheathing thickness. Minimum is 7/16" OSB or 1/2" plywood.
- ▶ If you use screws, a minimum of 3/4" must penetrate the structural framing.

- ▶ Hand nailing WeatherBoards™ Fiber Cement is acceptable. Fiber cement is harder than wood, so be sure the nails are well set before driving them. It may be necessary to predrill the holes to help prevent the corners from breaking.

Fastening to Metal Framing

- ▶ WeatherBoards™ Fiber Cement 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 fiber cement 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.

Fastening to Other Materials and Surfaces

Non-Vertical Walls

WeatherBoards™ Fiber Cement can be installed on non-vertical walls when:

- ▶ Requirements are: The walls are at least 60°, measured from the plane of the ground; the wall is not a functional roof above occupied space (Fig. 5.6).
 1. Before you install fiber cement on non-vertical walls, install an underlayment of 15 lb. (minimum) felt or waterproofing membrane.
 2. Cap the uppermost edge of the top siding course to prevent the water from getting behind the siding.
 3. Flash all accessories to shed water away from the substrate.

Concrete Block and Poured Concrete Walls

- ▶ WeatherBoards™ Fiber Cement Siding may be installed over concrete block and poured concrete walls over 2x furring strips. It may also be applied directly to the wall using specialized fastening systems (Fig. 5.7). For specific installation recommendations or 1x furring strips, refer to technical documents on our website, www.certainteed.com.

Alternative Wall Systems

- ▶ WeatherBoards™ Fiber Cement 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 fiber cement onto alternative wall systems must be in accordance with local building codes. Refer to the specific wall system manufacturer for cladding recommendations.

Fig. 5.5 FASTEN AT STUDS

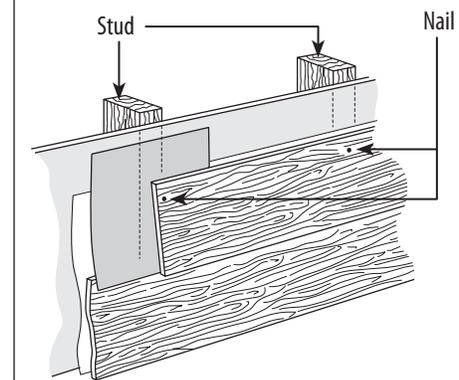


Fig. 5.6 NON-VERTICAL WALL

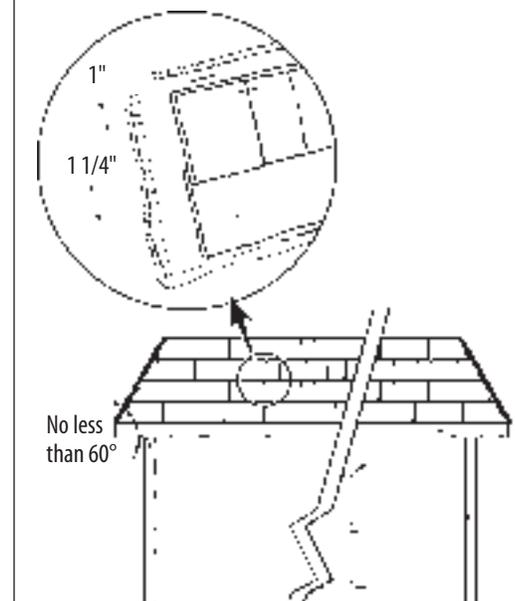


Fig. 5.7 ATTACHING TO MASONRY

Studs 16" – 24" o.c. max

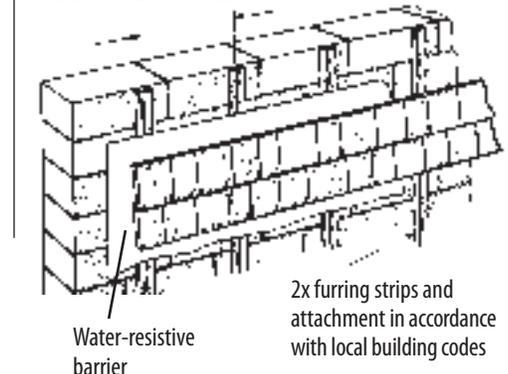
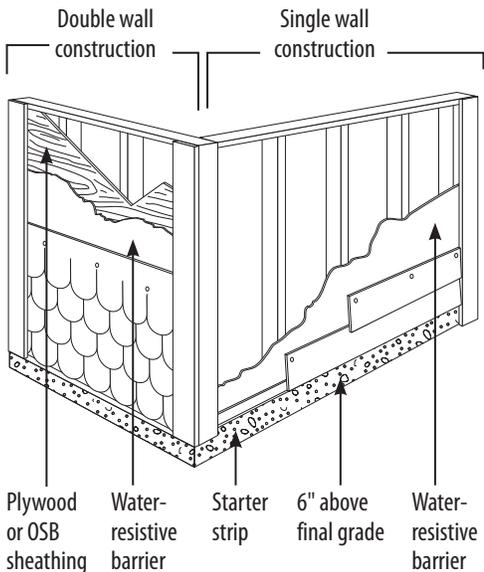
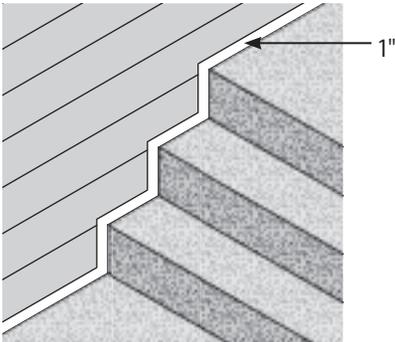
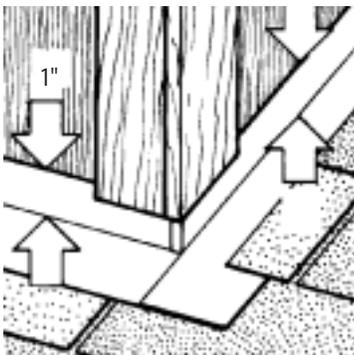


Fig. 6.1 **DOUBLE AND SINGLE WALL CONSTRUCTION**Fig. 6.2 **MINIMUM CLEARANCE:**
Steps, Deck, and Exterior Slab or PavementFig. 6.3 **MINIMUM CLEARANCE:**
Roof Line

Paint bottom edge

SECTION 6: WALL PREPARATION

Before installing WeatherBoards™ Fiber Cement Siding, review and comply with all local building codes and regulations regarding wall construction including the proper use of framing (24" o.c. max.), water-resistant barriers, flashings, and other building materials and systems.

Do not install siding over questionable wall construction.

Irregularities in framing may become visible in the finished application. To minimize the effect of uneven walls, shim the wall as necessary.

In accordance with best building practices, there should be a gap between dissimilar materials. Fiber cement should be separated from other materials such as brick, stone, wood, and metal. A 1/8" gap is recommended. Caulk between siding and dissimilar materials.

Sheathings

For best results, WeatherBoards™ Fiber Cement should be installed over plywood, OSB, or comparable sheathing. Fiber cement siding can be installed over braced wood or steel studs in accordance with local building codes (Fig. 6.1).

- ▶ Installation over non-structural sheathing, builder board, foam-type sheathings, and gypsum board, such as CertainTeed's GlasRoc® Sheathing, are also acceptable if the siding boards are fastened to structural framing. Non-structural sheathing thickness should not exceed 1".
- ▶ Take extra care when installing fiber cement over a non-structural substrate such as foam sheathing. Foam sheathings may crush, especially when they are hand-nailed, therefore it is best to predrill the holes at the corners to avoid accidental breakage. Panels must be nailed into structural framing (16" or 24" on center).

Clearances

- ▶ WeatherBoards™ Fiber Cement 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 fiber cement products and steps, decks, and driveways and 6" above grade should be maintained (Fig. 6.2).
- ▶ Where roofs and vertical surfaces meet, flashing and counterflashing need to be provided according to the roofing manufacturers' instructions. A minimum of 1" clearance should be provided between the roofing and the bottom edge of the fiber cement (Fig. 6.3).

Flashing

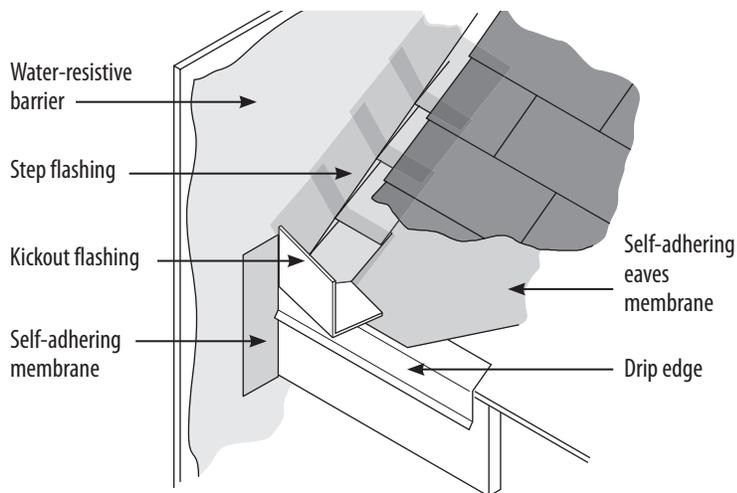
CertainTeed recommends the use of flashing to ensure a long-lasting, weather-resistive installation.

- ▶ Using non-corrosive materials, install flashing around all doors, windows, rake boards, chimneys, and other areas where needed. Apply drip cap flashing above all horizontal openings (Fig. 6.4).
- ▶ Provide a 1/4" clearance between the bottom of WeatherBoards™ Fiber Cement products and the horizontal flashing. Caulk should not be used at this location (Fig. 6.5).
- ▶ The horizontal joints on a building sided with vertical siding must be weatherproofed with non-corrosive "Z" flashing (Fig. 6.6).

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

⚠ DO NOT use uncoated aluminum or metal materials with fiber cement siding.

Fig. 6.7 **EXAMPLE OF ROOF KICKOUT***



*Figure 6.7 is an example of a typical flashing for a roof kickout. Consult and comply with all local building codes when designing your flashing system.

Fig. 6.4 **FLASHING AROUND WINDOWS**

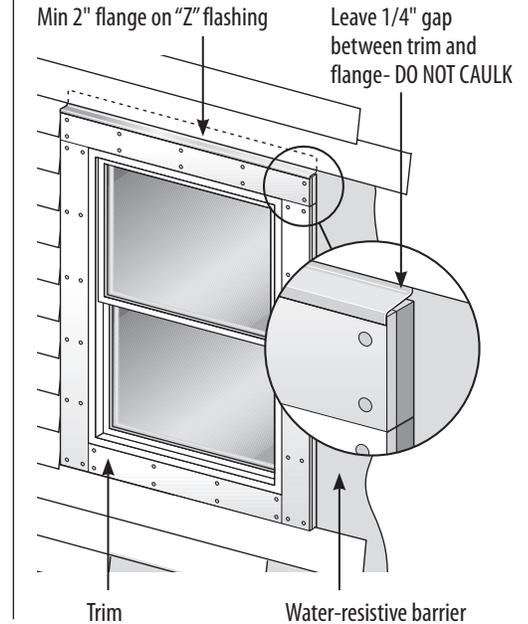


Fig. 6.5 **"Z" FLASHING OF HORIZONTAL JOINTS**

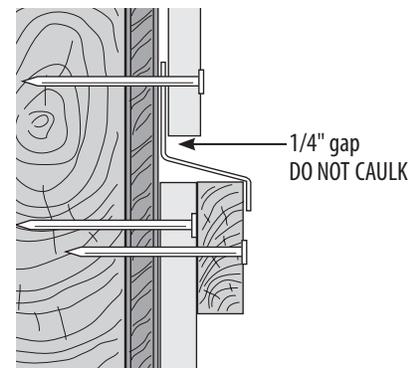


Fig. 6.6 **"Z" FLASHING**

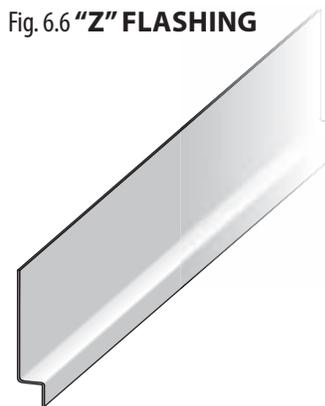
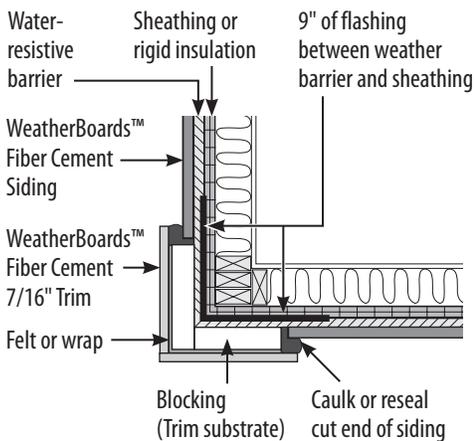
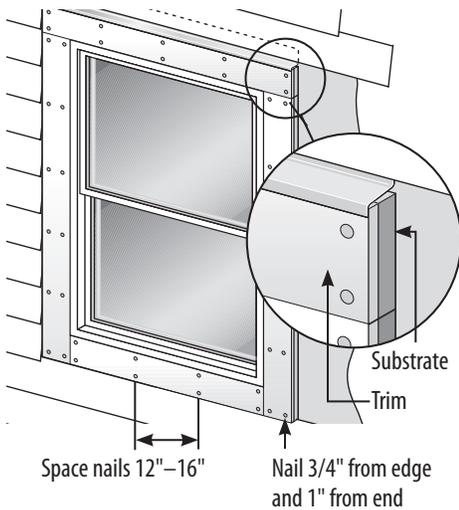
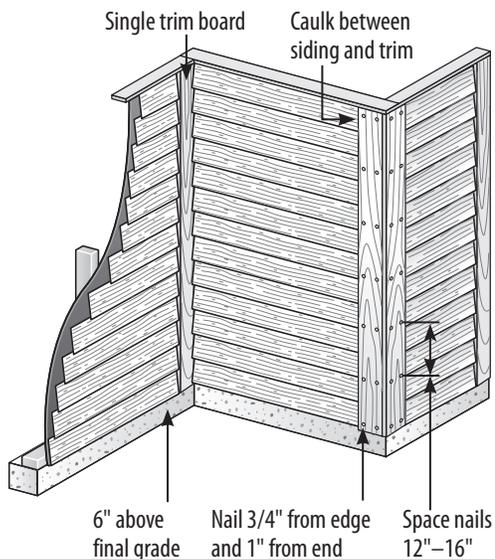


Fig. 7.1 **OUTSIDE CORNER**Fig. 7.2 **WINDOW DETAIL**Fig. 7.3 **CORNER DETAILS**

SECTION 7: 7/16" FIBER CEMENT TRIM

For best results with WeatherBoards™ Fiber Cement Siding, we recommend you install either WeatherBoards™ Fiber Cement Trim or Restoration Millwork™ Cellular PVC Trim. For CertainTeed's Restoration Millwork Trim installation instructions, refer to www.certainteed.com and look for the Restoration Millwork section.

Other trims can be used in conjunction with WeatherBoards™ Fiber Cement Siding. Refer to the trim manufacturer for compatibility and their installation instructions.

*** NOTE:** When using CertainTeed 4/4 or 5/4 Fiber Cement Trim, please refer to www.certainteed.com for specific installation instructions.

Before You Start

Before you install the trim, review and comply with all local building codes and regulations regarding wall construction, including the proper use of framing, water-resistive barriers, flashing, and other building materials and systems.

Review the general cutting, fastening, and wall preparation instructions on pages 5 through 11 in the "Cutting", "Fastening", and "Wall Preparation" sections. Some important reminders:

- ▶ Cut WeatherBoards™ 7/16" Fiber Cement Trim face down with mechanical shears or a circular saw. Cut face up with a chop or miter saw.
- ▶ Prime or paint the cut edges before installing with a coating of 100% acrylic latex paint or primer. Do not prime or paint the back of the trim.
- ▶ Be sure to install all trim with the proper textured, sealed, or painted surface facing out.
- ▶ Keep the trim at least 6" above final grade and 1" above surfaces where water may collect (Fig. 7.3).
- ▶ Do not over drive the fasteners. When a fastener is driven below the surface of the siding, its holding power is reduced.
- ▶ Irregularities in framing may be visible in the finished application. To minimize the effect of uneven walls, shim the wall as necessary (Fig. 7.5).
- ▶ If you are hand nailing, it may be necessary to predrill to help prevent the corners from breaking.

Installation

- ▶ WeatherBoards™ 7/16" Fiber Cement Trim should be installed over a naturally decay-resistant or preservative-treated trim substrate material (Fig. 7.1).
- ▶ Use a trim substrate that provides the finish trim surface a 1/2" (minimum) projection from the sided surface.
- ▶ Attach the trim substrate to the studs; then attach WeatherBoards™ 7/16" Fiber Cement Trim as described below. Be certain to prime or paint the trim substrate to prevent rot.
- ▶ Fasten WeatherBoards™ 7/16" Fiber Cement Trim every 12" to 16" o.c. and 3/4" from edge and 1" from ends, minimum.
- ▶ When you install the siding, leave 1/8" between the siding and the trim; caulk between the siding and the trim (Fig. 7.3).

Windows and Doors:

- Square or miter-cut the trim boards.
- Nail trim flush to the window or door (Fig. 7.2).

Outside Corners:

- When assembling a traditional corner from two pieces, fasten the trim to the trim substrate every 12" to 16" (Fig. 7.3).

Applying Trim as Band and Frieze Boards, Rakes, and Fascia

WeatherBoards™ 7/16" Fiber Cement Trim can also be installed as band boards, frieze boards, rakes, and fascia (Fig. 7.4).

Band Boards:

- Install fiber cement trim over the wood furring with the appropriate flashing.
- Butt the ends of the trim and nail every 12" to 16".

Rakes and Frieze Boards:

- Butt the ends of the trim and nail through the trim substrate and siding into the framing or into a wood substrate every 12" to 16".
- Leave 1/8" between the siding and the trim when you install the siding, caulk between the siding and the trim.

Fascia:

- Install fiber cement trim over a wood substrate.
- Butt the ends of the trim and nail every 12" to 16".

Fig. 7.4 **BANDS, RAKES AND FASCIA**

Install trim over wood substrate.

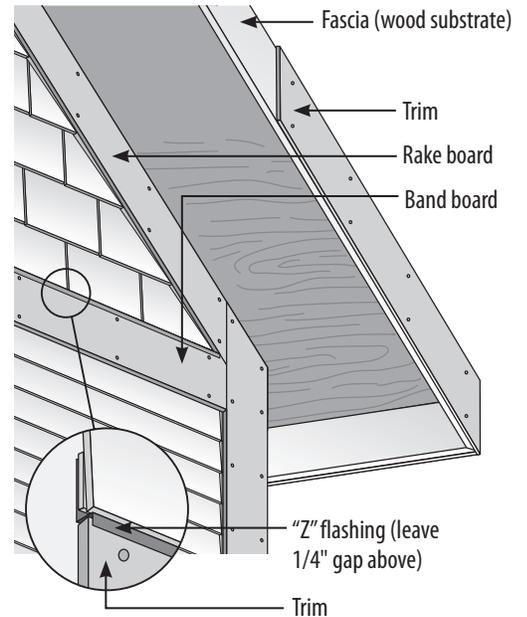
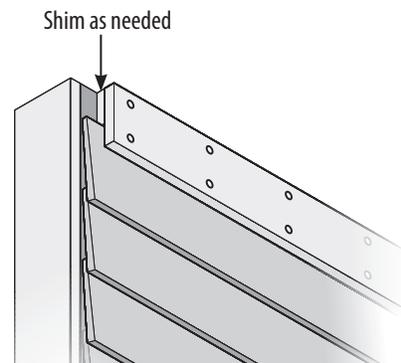


Fig. 7.5 **SHIM FOR AN EVEN LOOK**



SECTION 8: LAP SIDING

Before you install the siding, review and comply with all local building codes and regulations regarding wall construction including the proper use of framing, water-resistive barriers, flashings, and other building materials and systems.

The siding should be installed over wall construction with framing spacing 16" to 24" o.c. (max.) and a minimum of 7/16" OSB or 1/2" plywood sheathing. Overlap all lap siding 1-1/4".

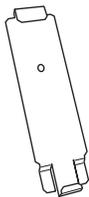
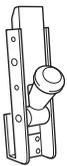
Before You Start

Review the general cutting, fastening, and wall preparation instructions on pages 5 through 11 in the "Cutting", "Fastening", and "Wall Preparation" sections. Some important reminders:

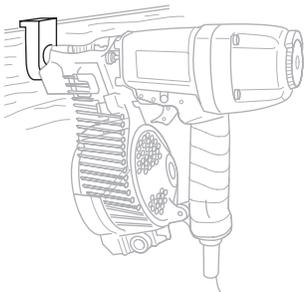
- ▶ WeatherBoards™ Fiber Cement lap siding may only be installed over a flat, vertical wall surface.
- ▶ Cut WeatherBoards™ Fiber Cement Siding face down with mechanical shears or a circular saw. Cut face up with a chop or miter saw.
- ▶ *CertainTeed WeatherBoards™ Fiber Cement Cedar Lap Siding with ColorMax® Finish*: When cutting, leave the protective film on the siding until it is nailed to substrate, then remove before applying the next sequence.
- ▶ *Beaded Board*: When cutting beaded siding profile, the cut should start against the bead.
- ▶ Prime, paint or caulk all field cut edges of siding. Do not prime or paint the back of the siding panel. Refer to instructions on butt joints and trim locations for specific requirements.
- ▶ Be sure to install all siding with the proper textured, sealed, or painted surface facing out.
- ▶ Do not over drive the fasteners. When a fastener is driven below the surface of the siding, its holding power is reduced.
- ▶ Irregularities in framing may be visible in the finished application. To minimize the effect of uneven walls, shim the wall as necessary.
- ▶ If you are hand nailing, it may be necessary to predrill to help prevent the corners from breaking.

Fig. 8.1 **INSTALLATION ACCESSORIES**

Overlap gauge Off-stud joiner Butt joint cover



Nail placement adapter for pneumatic nail gun (*Big Sky Adapter*)



Lap Siding Accessories

- ▶ Proper fastener placement is important. You can use accessory items such as the *Big Sky Adapter* that attach to siding nail guns to assist in the proper placement of nails. www.bigskyadapter.com.
- ▶ The right accessories can improve the quality of the project and make the job go faster. Some lap siding accessories are (Fig. 8.1):
 - Nail placement adapter for pneumatic nail gun (*Big Sky Adapter*)

- Overlap gauge
- Off-stud joiner
- Lap siding clip (butt joint cover)

Determine the Appropriate Fastening Style—Face or Blind.

Determine if the siding will be blind fastened or face fastened. Lap siding that is wider than 9-1/4" must be face fastened. Other factors that determine fastening style include wind load, exposure, wall construction and type of fastener used. Refer to "Basic Fastening Schedule" on page 8 for more information or ICC-ES-ESR-1668 report found on www.certainteed.com.

Blind Fastening (Fig. 8.2)

- Make sure the panel overlaps 1-1/4"; leave a gap of 1/8" from all trim before fastening. Always caulk between the siding and the trim.
- Place the fastener 1" (nominal) from the top of the panel and no closer than 3/8" from the butt edge.
- Fasteners must penetrate a minimum of 1-1/4" into the structural framing. Penetration may include thickness of structural rated sheathing (OSB or plywood).
- Do not over drive the fasteners. Seating them below the surface of the siding reduces their holding power. Do not place fasteners in the center, unsupported area of the siding (Fig. 8.4).
- If you are hand nailing, it may be necessary to predrill to help prevent the corners from breaking.
- Fasten from one end of the panel to the other.

Face Fastening (Fig. 8.3)

- Make sure the panel overlaps 1-1/4"; leave a gap of 1/8" from all trim before fastening. Always caulk between the siding and the trim.
- Place the fastener 3/4" from the bottom of the overlapping panel. This will help ensure that the fastener penetrates both courses of siding. Place the fasteners no closer than 3/8" from the butt edge.
- Fasteners must penetrate a minimum of 1-1/4" into the structural framing. Penetration may include thickness of structural rated sheathing (OSB or plywood).
- Do not over drive the fasteners. Seating fasteners below the surface of the siding reduces their holding power. Do not place fasteners in the center, unsupported area of the siding (Fig. 8.4).
- If you are hand nailing, it may be necessary to predrill to help prevent the corners from breaking.
- Fasten from one end of the panel to the other.

Fig. 8.2 **BLIND FASTENING DETAIL**

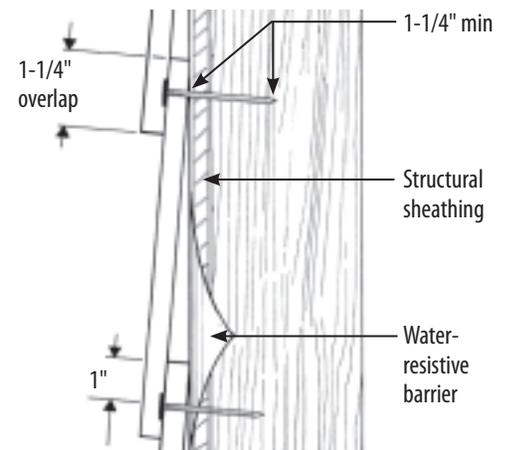


Fig. 8.3 **FACE FASTENING DETAIL**

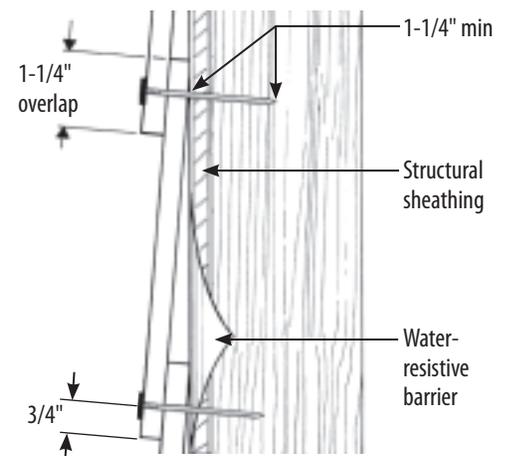


Fig. 8.4 **IMPROPER FACE FASTENING NAIL POSITION**



Fig. 8.5 ESTABLISH A CHALK LINE

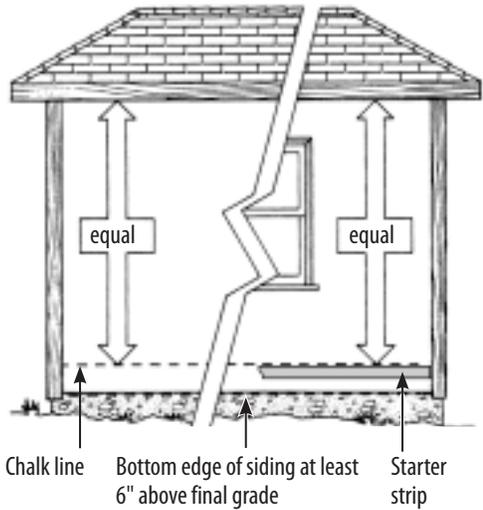


Fig. 8.6 STARTER STRIP DETAIL

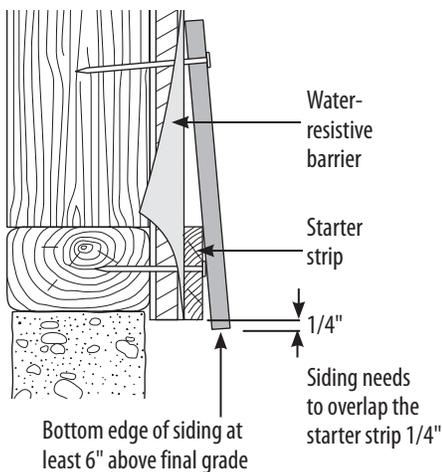
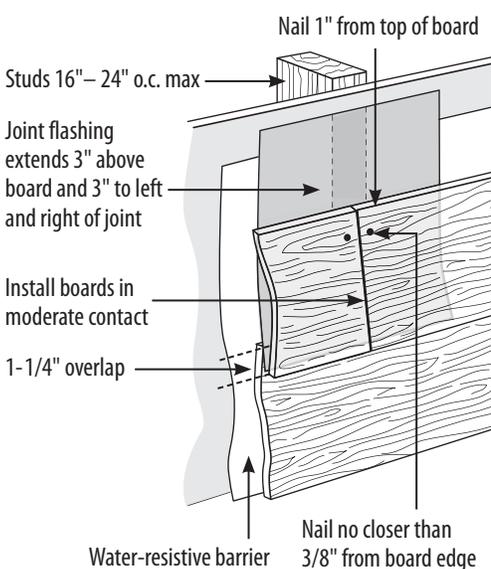


Fig. 8.7 SIDING INSTALLATION



Installation

Mark a Starting Chalk Line

Establish a straight, level reference line to guide the positioning of the starter strip and the first course of siding (Fig. 8.5).

1. Find the lowest point of the sheathing(s) and make a mark that is 1" above the lowest corner. Make sure this point is high enough to ensure that the bottom edge of the siding is installed at least 6" above the final grade or 1" above surfaces where water may collect.
2. From this mark, snap a level chalk line to the opposite end of the wall.
3. Repeat the procedure around the entire house.

Aligning the Starter Strip

A starter strip must be used with lap siding. You can use fiber cement, pressure treated wood, or vinyl utility trim. The starter strip must be 2" wide and 1/4" to 5/16" thick (Fig. 8.6).

- Align the top of the starter strip with the chalk line and fasten (Fig. 8.5).

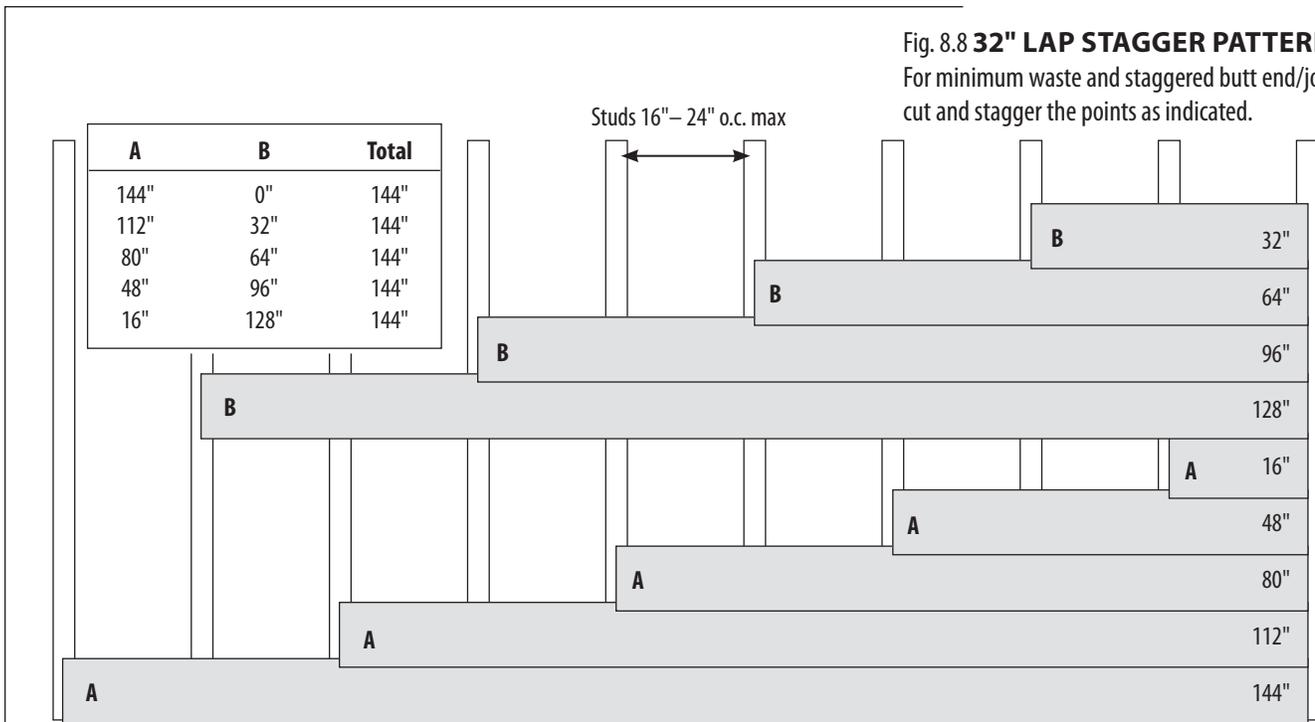
Installing the First Course

- Using the starter strip as a guide, position the bottom edge of the first course of lap siding so that the bottom edge hangs 1/4" below the bottom of the starter strip (Fig. 8.6).
- Leave a 1/8" gap between the siding and the trim or other materials to allow for structural movement. Always caulk between the siding and the trim.

Installing Subsequent Courses

- Overlap all lap siding 1-1/4" (Fig. 8.7).
- Stagger the butt end/joints at least 32" to avoid noticeable patterns (Fig. 8.8).

⚠ IT IS NEVER ACCEPTABLE TO LEAVE A GAP of any size at a butt end/joint.



Butt End/Joint Application

There are three ways to fasten butt end/joints:

- Into solid framing
- Into structural sheathing
- When neither solid framing or structural sheathing is present behind the butt end/joints, off-stud joiners should be used.

Butt End/Joints Fastened Into Solid Framing or Structural Sheathing
CertainTeed recommends that butt end/joints be fastened into a stud or framing member (Fig. 8.9). If no stud or framing member is available, butt end/joints may be fastened into structural-rated sheathing (Fig. 8.10).

- Butt end/joints should be installed with factory-sealed or factory-prefinished ends butted together in moderate contact. Back flashing is recommended.
- If you choose to use a cut end at a butt joint, side edges must be re-sealed with 100% acrylic latex paint or primer prior to installation.
- **Fastening to Stud or Framing Member:** Place one fastener 1" below the top of the board and no closer than 3/8" from butt edge into the stud.
- **Fastening to Structural Sheathing:** Place one fastener 1" below the top of the board and 1" from butt edge. Place another fastener 3" from butt edge.
- Butt end/joints should be flashed with durable, non-corrosive material that is compatible with Fiber Cement.

Fig. 8.9 **BUTT JOINT APPLICATION**

Fastening to stud or framing member

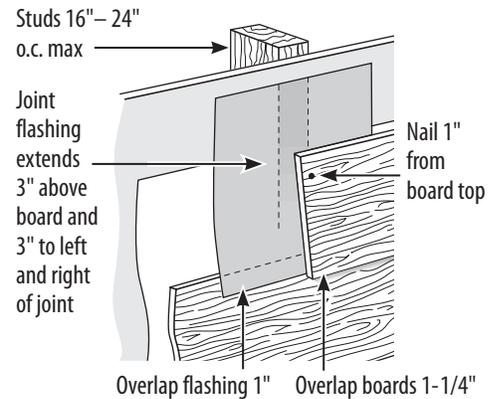


Fig. 8.10 **BUTT JOINT APPLICATION**

Fastening to structural sheathing

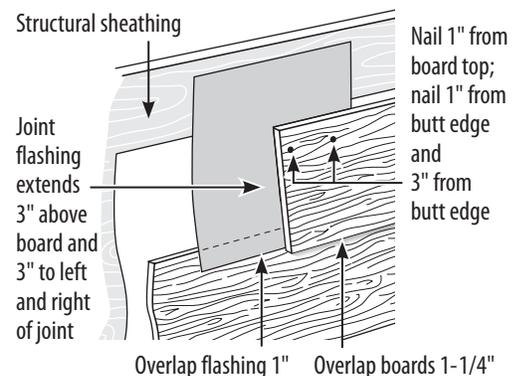
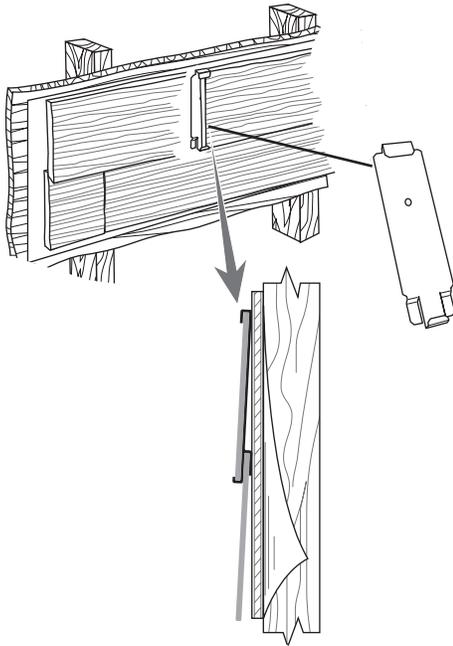


Fig. 8.11 OFF-STUD JOINERS



⚠ IT IS NEVER ACCEPTABLE TO LEAVE A GAP of any size at a butt end/joint.

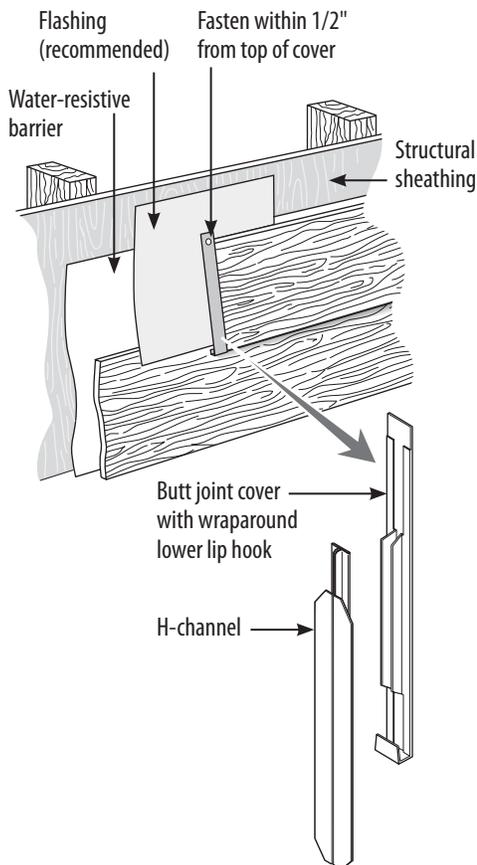
Joints Where Solid Framing or Structural Sheathing are **NOT PRESENT**

If boards cannot be joined into solid framing or structural sheathing, *off-stud joiners* must be used. 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 (Fig. 8.11).
2. Insert the edge of the next panel of siding into the other side of the joiner.
3. Make sure both butt edges of the board are sealed (either factory-sealed or sealed after a cut). Then butt the ends of boards together.

⚠ DO NOT fasten the off-stud joiner to the wall.

Fig. 8.12 BUTT JOINT COVERS



Lap siding joint covers may be used for aesthetic purposes and are available in different sizes and designs (Fig. 8.12). If you choose to use a joint cover, use the correct size for the siding that you are installing. Follow specific joint cover manufacturer's instructions. Regardless of joint cover design:

- Uncoated metal joint covers are not acceptable.
- Side edges at butt joints with cut ends must be re-sealed with 100% acrylic latex paint or primer prior to installation.
- Back flashing at the butt joints is recommended.
- Butt end/joints should be flashed with durable, non-corrosive material that is compatible with Fiber Cement.

SECTION 9: SHAPES SIDING

Before you install the siding, review and comply with all local building codes and regulations regarding wall construction including the proper use of sheathings, framing, water-resistive barriers, flashings and other building materials and systems.

Before You Start

Review the general cutting, fastening, and wall preparation instructions on pages 5 through 11 in the “Cutting”, “Fastening”, and “Wall Preparation” sections. Some important reminders:

- ▶ Cut WeatherBoards™ Fiber Cement face down with mechanical shears or circular saw.
- ▶ Prime, paint or caulk all field cut edges of siding. Do not prime or paint the back of the panel. Refer to instructions on butt joints and trim locations for specific requirements.
- ▶ Be sure to install all siding with the proper textured, sealed, or painted surface facing out.
- ▶ Do not over drive the fasteners. When a fastener is driven below the surface of the siding its holding power is reduced.
- ▶ Irregularities in framing may be visible in the finished application. To minimize the effect of uneven walls, shim the wall as necessary.
- ▶ If you are hand nailing, it may be necessary to predrill to help prevent the corners from breaking.

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 “rotated 180°”. Install the 1st course as described for Lap Siding. When you install the 2nd course, rotate the panel 180° and fasten. Install the 3rd course with the panel in the same direction as the first, and so on (Fig. 9.1).

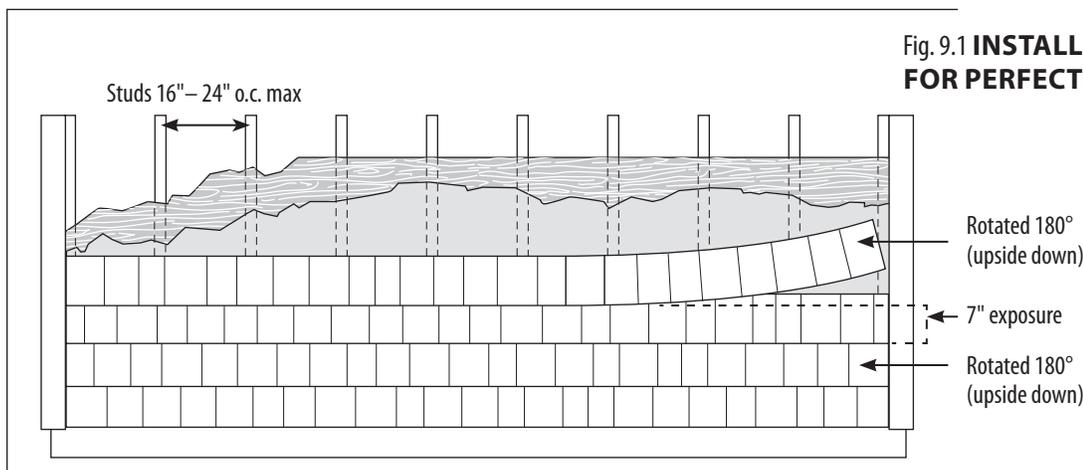
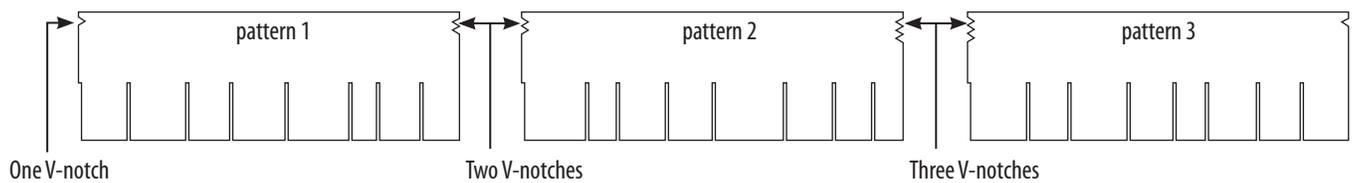


Fig. 9.1 **INSTALLATION SEQUENCE FOR PERFECTION SHINGLES**

Fig. 9.2 IDENTIFYING V-NOTCHES



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 (Fig. 9.2).

To ensure a random look, the panels must be installed in the order shown (Fig.9.3). The panels should be installed over wall construction with framing spacing 16" to 24" o.c. (max.) and a minimum of 7/16" OSB or 1/2" plywood sheathing (see NOTE below).

*** NOTE:** *Because of the random nailing pattern, panels must be installed over structural rated sheathings. Fasteners may or may not hit framing/stud locations. Minimum structural rated sheathings are 7/16" OSB or 1/2" plywood.*

WeatherBoards™ Fiber Cement Random Square Straight Edge and Staggered Edge siding may only be installed over a flat, vertical wall surface.

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.

Installation

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 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(s) and make a mark that is 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. From this mark, snap a level chalk line to the opposite end of the wall.
3. 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

Start at the left side of the wall, 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 next page—Fig. 9.4).

*** NOTE:** Leave a 1/8" gap between the siding and the trim or other materials to allow for structural movement. Always caulk between the siding and the trim.

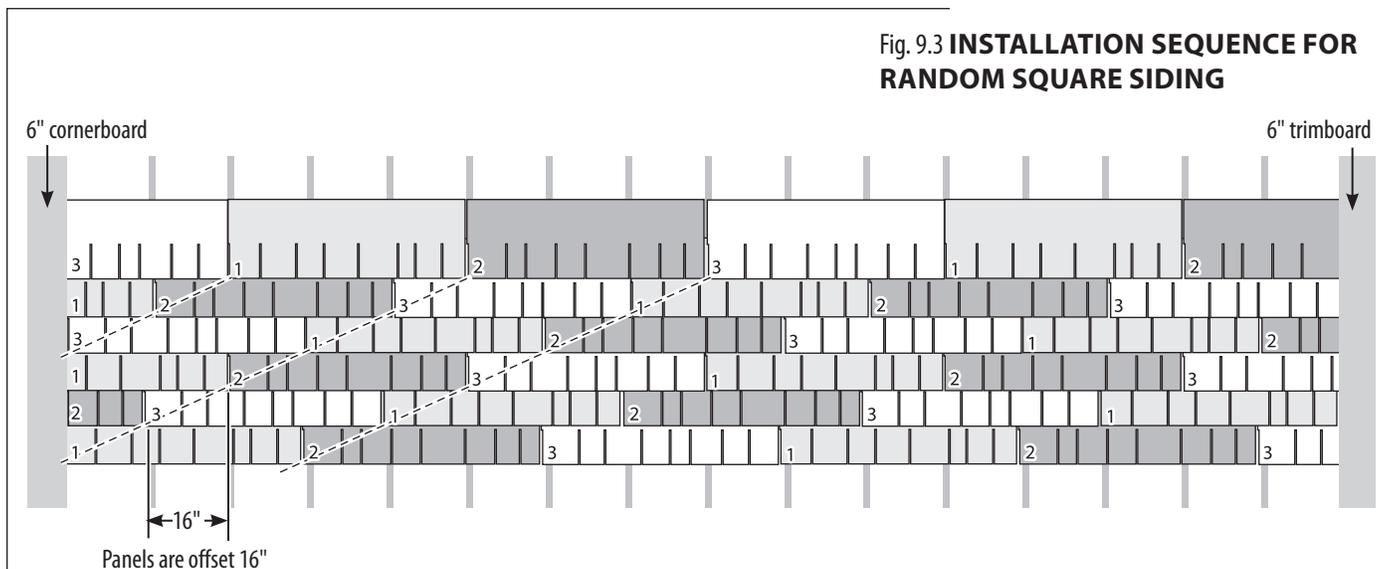
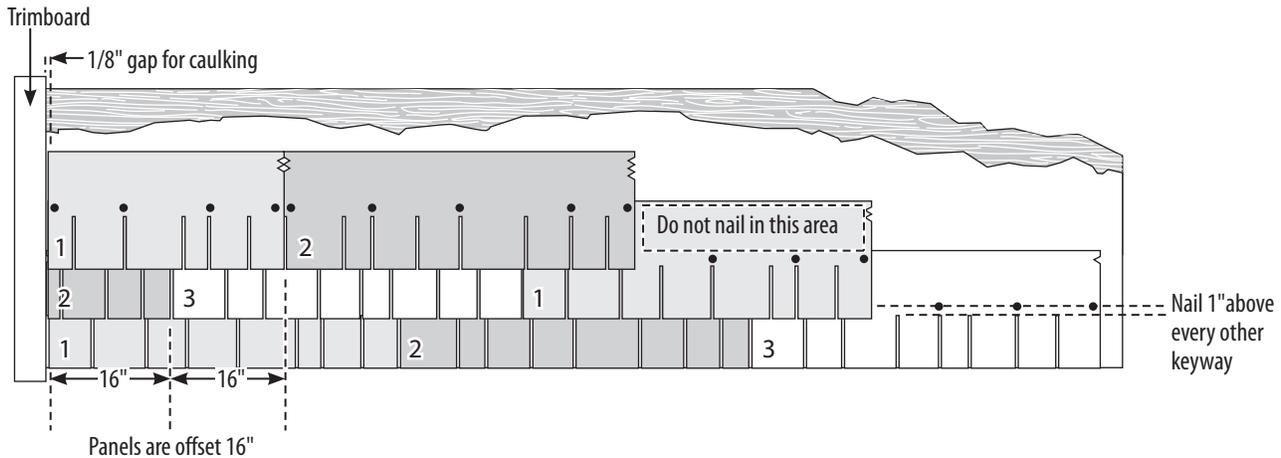


Fig. 9.4 **NAILING GUIDE FOR
RANDOM SQUARE SIDING**



Second, Third and Subsequent Panels

1. Match up the corresponding panel V notches (1 to 1, 2 to 2, 3 to 3) (Fig. 9.2). Attach the corresponding panels to the wall in the same manner as the first panel (Fig. 9.4).
2. Continue this sequence to the end of the wall.

Remember to leave a 1/8" gap between the siding and the trim or other materials to allow for structural movement. Always caulk between the siding and the trim.

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" from the left side of the #1 panel on the first course and make a mark. Panels should be stair-stepped up the wall on 16" offsets (Fig. 9.3).
2. Install the #3 panel from the mark to the right.
3. To achieve proper exposure measure up 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 up 5" from the bottom of the panel or measure up 5" from the top of the panel and make a mark on the wall.
 - b. **Random Square Straight Edge 7" Exposure:** Measure up 7" from the bottom of the panel or measure up 7" from the top of the panel and make a mark on the wall.
 - c. **Random Square Staggered Edge:** Measure up 7".

4. Install the panels by matching up the identifying V-notches (1 to 1, 2 to 2, 3 to 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).

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 (Fig. 9.3).
4. Be sure to leave a 1/8" gap between the siding and the trim or other materials to allow for structural movement. Always caulk between the siding and the trim.
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.*

Fig. 9.5 **INDIVIDUAL SHAKES INSTALLATION**

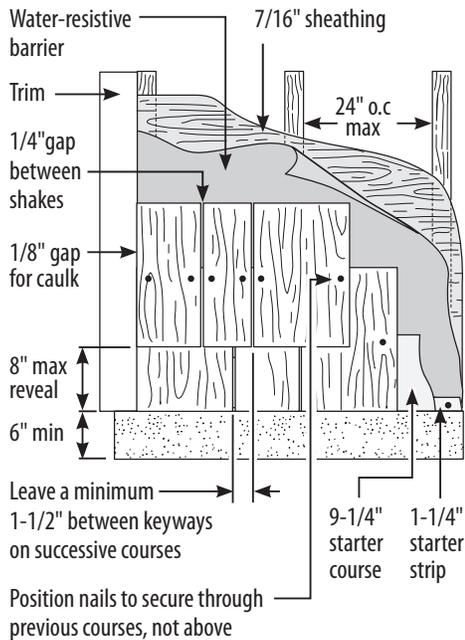
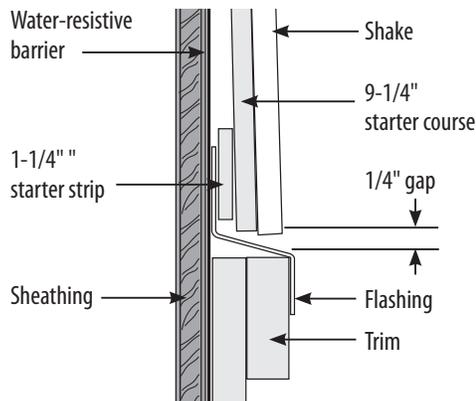


Fig. 9.6 **STARTER STRIP AND "Z" FLASHING DETAIL**



Individual Shakes

Before you install the Individual Shakes, review and ensure compliance with all local building codes and regulations regarding the selection and proper use of sheathings, water-resistive barriers, flashings, and other building materials and systems.

Individual Shakes must be installed over wall construction with framing spacing 16" to 24" o.c. (max.) and a minimum of 7/16" OSB or 1/2" plywood sheathing (Fig. 9.5).

*** NOTE: WeatherBoards™ Fiber Cement Individual Shakes siding may only be installed over a flat, vertical wall surface.**

Fastening Requirements

- ▶ CertainTeed recommends the use of double hot-dipped galvanized or stainless steel fasteners. Electro-plated or exterior corrosion resistant fasteners are acceptable but not recommended.
- ▶ Use 6d siding nail, 0.113" x 0.281" HD x 2" long; or 6d roofing nail, 0.120" x 0.375" HD x 1-3/4" long, or ribbed bugle-head fiber cement screws, #8 -18, 1-5/8" x 0.375" HD.

Installation

Starter Strip / Starter Course

To ensure that the keyways are fully backed by fiber cement, install the first course of Individual Shakes over a full starter course of 9-1/4" lap siding. If you are transitioning from a less than 9-1/4" lap siding to Individual Shakes, use 9-1/4" lap siding as your starter course at the transition. If you are starting the wall with Individual Shakes, place a starter strip under the starter course (Fig. 9.5).

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" 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 shake starter course (9-1/4" lap siding).

1. Find the lowest point of the sheathing(s) and make a mark that is 1" above the lowest point. Make sure this point is high enough to ensure that the shakes are installed at least 6" above the finished grade or 1" above surfaces where water may collect.
2. From this mark, snap a level chalk line to the opposite end of the wall.
3. Repeat 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 (Fig. 9.6).
2. Fasten the starter course to the wall per the Lap Siding instructions.

First Course of Individual Shakes

- ▶ Install the first shake with the bottom edge slightly below the starter course. Be sure to maintain a 1/8" gap at all trim locations (Fig. 9.5). Always caulk between the siding and the trim.
- ▶ Place fasteners 1" from the side edges and 9" up from the bottom of the shake (Fig. 9.7).
- ▶ Continue installing shakes in a random manner, mixing the 6-1/4", 8-1/4" and 12" shake sizes. Maintain a 1/4" keyway gap between shakes.

Second and Subsequent Courses

- ▶ Select and position shake 8" up from the bottom of the previous course and such that course to course keyway spacing is no closer than 1-1/2".
- ▶ Place fasteners 1" from the side edges and 9" up from the bottom of the shake. Fasteners must penetrate the top of the shakes of the previous course (Fig. 9.7).
- ▶ Continue installing shakes in a random manner, mixing the 6-1/4", 8-1/4" and 12" shake sizes to maintain the 1/4" keyway gaps and 1-1/2" minimum keyway spacing.

Individual Shakes are designed and installed to create a straight-edge, 8" exposure finished application. Alternative applications, such as staggered edge, can be achieved with the Individual Shakes following the basic steps noted above.

⚠ FASTENER PLACEMENT MUST BE CONSIDERED to ensure penetration through shakes of previous courses (Fig. 9.7).

*** NOTE:** *Stagger must have no greater than an 8" max reveal and no less than a 6-1/2" reveal.*

Fig. 9.7 **SECOND AND SUBSEQUENT COURSES**

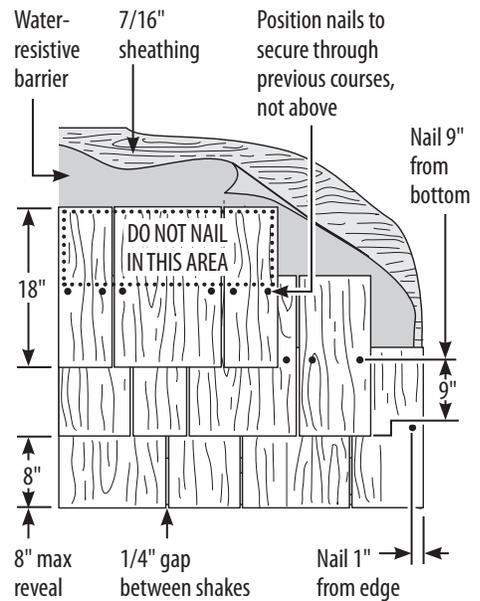


Fig. 9.8 **POSITIONING AND NAILING GUIDE FOR OCTAGONS AND HALF-ROUNDS**

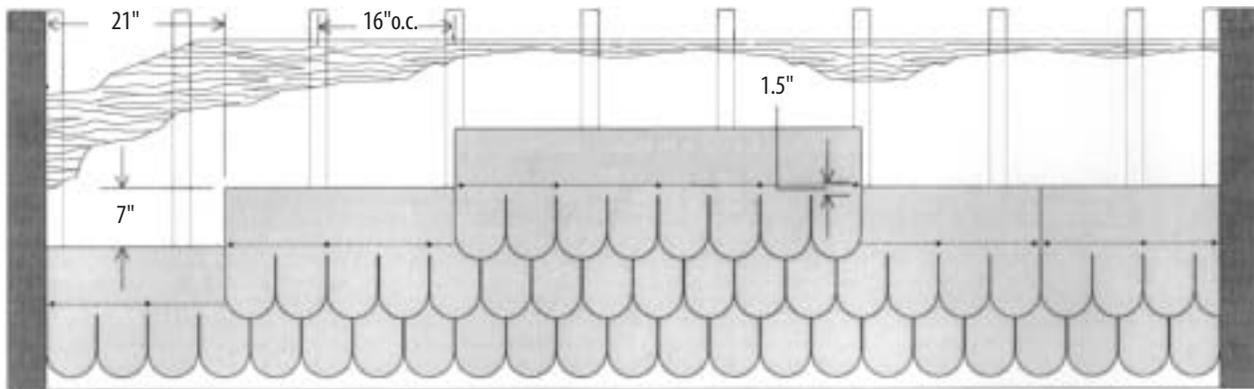
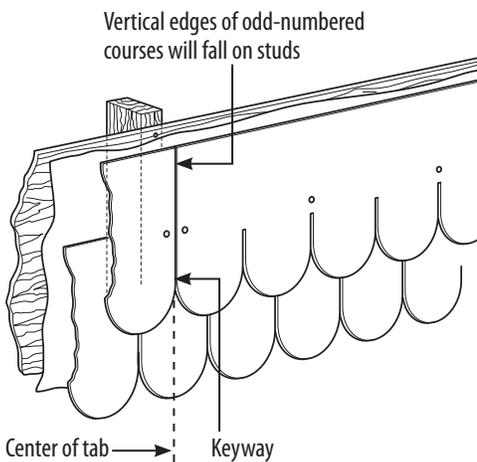


Fig. 9.9 **KEYWAY LINES UP WITH CENTER OF TAB**



Octagons and Half-Rounds

Octagons and Half-Rounds panels are made in a single design. There are eight 6"-wide tabs per panel. The panels must be installed over wall construction with framing spacing 16" to 24" o.c. (max.) and a minimum of 7/16" OSB or 1/2" plywood sheathing.

*** NOTE:** *WeatherBoards™ Fiber Cement Octagons and Half-Rounds siding may only be installed over a flat, vertical wall surface.*

Installation

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 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.

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(s) and make a mark that is 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. From this mark, snap a level chalk line to the opposite end of the wall.
3. 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 (see page 14).

Installing Octagons and Half-Rounds on Gable Ends/Walls

When possible, gable installations should end with a single Half-Round or Octagon at the peak.

1. Measure the height of the gable/wall (in inches).
2. Divide the height of the gable/wall 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.

First Course for Gable/Wall

1. Drop a plumb line to find the center of the gable (Fig. 9.10).
2. Locate the first piece relative to the centerline of the gable/wall. The panel may be positioned anywhere along its length, as long as the keyway or shingle face is centered (Fig. 9.11).
3. Starting from left side of the panel, place first nail 1" above top of keyways and no closer than 3/8" from 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 (Fig. 9.9).
4. Finish installation of the first course to the right and left sides, leaving 1/8" gaps between the trim and the side of the first and last panels. 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 (Fig.9.8).

Fig. 9.10 **FINDING THE CENTER OF GABLE**

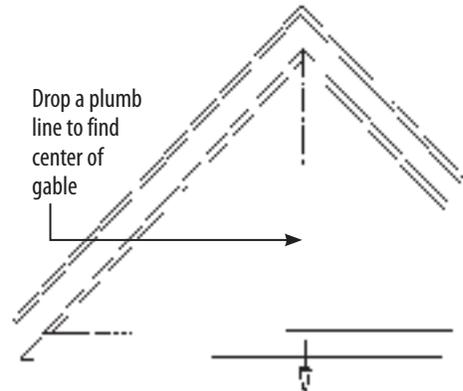


Fig. 9.11 **CENTER PANEL ON GABLE**

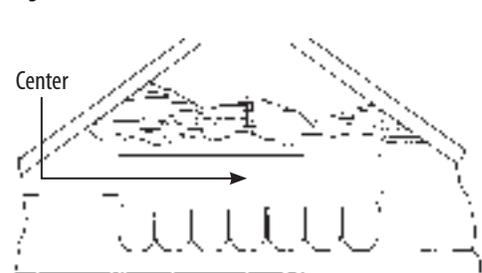
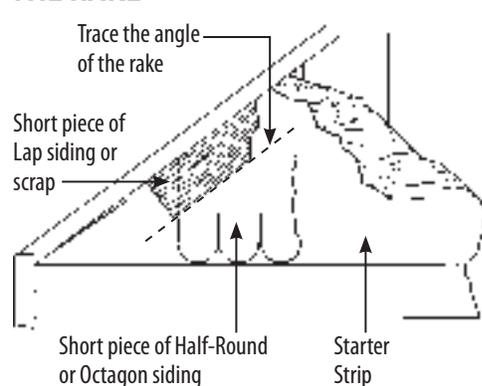


Fig. 9.12 **TRACING THE ANGLE OF THE RAKE**



- To achieve proper exposure, you can measure up 7" from the top of the panel and make a mark on the wall. Then place the top of the next course/panel on the mark that you made and nail. Or measure down 7" from the top of the next panel and make a mark on the edge of the panel. Then align the mark on the edge of the panel with the top of the installed course and nail.

⚠ IMPORTANT: *Make sure the tops of the keyways are concealed by the overlapping panel before fastening the siding panels.*

- Fasten the panel as directed for the first course.

Subsequent Courses in Wall Areas

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

Subsequent Courses in Gable Areas

- Make a Rake Angle Template for Gable:
 - Hold a short piece of siding along the starter strip against the left edge of the gable (Fig. 9.12).
 - Hold a second piece of siding against the trim at the rake angle of the gable.
 - Use this template as a guide when you cut the panels to fit the gable.
- Run a pencil along the edge of the template piece, transferring the rake angle to the piece of siding.
- Use the rake angle template to trim the starting panel of the subsequent courses.
- Install the 2nd and subsequent courses according to the directions previously shown.
- Face nail the final piece at the top of the gable and small pieces required to fill in at the rake angle.

*** NOTE:** *When estimating for materials, allow for a much higher scrap rate on gables than for a straight wall.*

SECTION 10. VERTICAL SIDING

Before you install the siding, review and comply with all local building codes and regulations regarding wall construction including the proper use of sheathings, framing, water-resistive barriers, flashings, and other building materials and systems.

The panels must be installed over wall construction with framing spacing 16" to 24" o.c. (max.) and a minimum of 7/16" OSB or 1/2" plywood sheathing.

Before You Start

Review the general cutting, fastening, and wall preparation instructions on pages 5 through 11 in the "Cutting", "Fastening", and "Wall Preparation" sections. Some important reminders:

- ▶ Cut WeatherBoards™ Fiber Cement face down with mechanical shears or a circular saw.
- ▶ Prime, paint or caulk all field cut edges of siding. Do not prime or paint the back of the siding panel. Refer to instructions on butt joints and trim locations for specific requirements.
- ▶ Be sure to install all siding with the proper textured, sealed, or painted surface facing out.
- ▶ Do not over drive the fasteners. When a fastener is driven below the surface of the siding its holding power is reduced.
- ▶ Irregularities in framing may be visible in the finished application. To minimize the effect of uneven walls, shim the wall as necessary.
- ▶ If you are hand nailing, it may be necessary to predrill to help prevent the corners from breaking.
- ▶ WeatherBoards™ Fiber Cement Vertical Siding (Panels) may only be installed over a flat, vertical wall surface.

Installation

Mark a Starting Chalk Line

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

1. Find the lowest point of the sheathing(s) and make a mark that is 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. From this mark, snap a level chalk line to the opposite end of the wall.
3. Repeat the procedure around the entire house.

Fig. 10.1 OVER OPENINGS

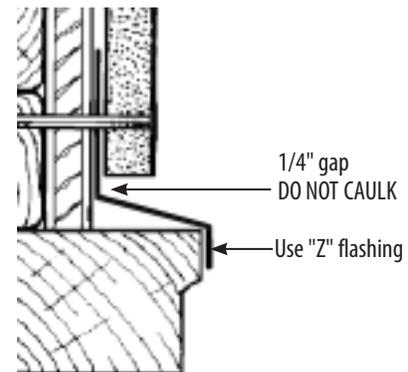


Fig. 10.2 PANEL STACKING OPTION

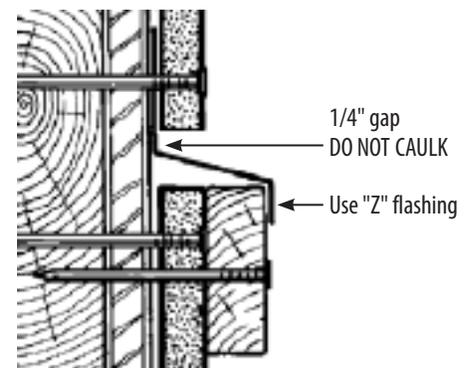


Fig. 10.3 VERTICAL BUTTED PANEL JOINT

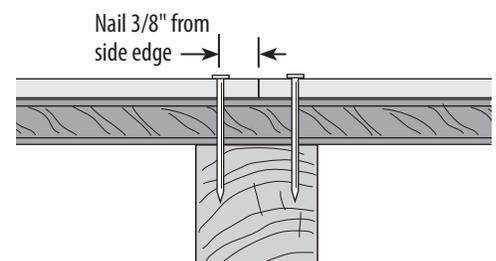


Fig. 10.4 VERTICAL BUTTED PANEL JOINT WITH OPTIONAL BATTEN

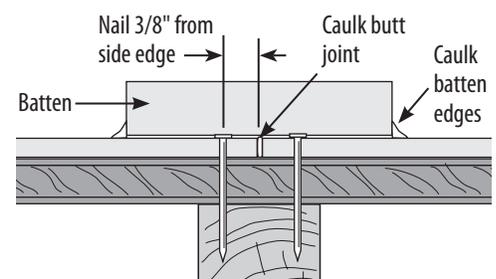


Fig. 10.5 FASTENING VERTICAL SIDING

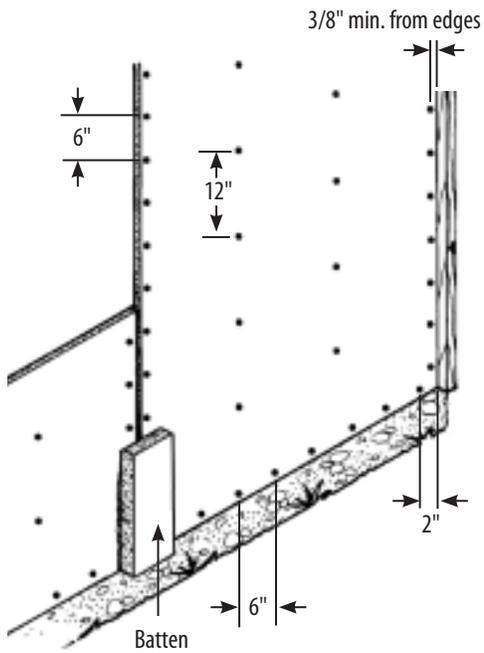


Fig. 10.6 BATTEN INSTALLATION

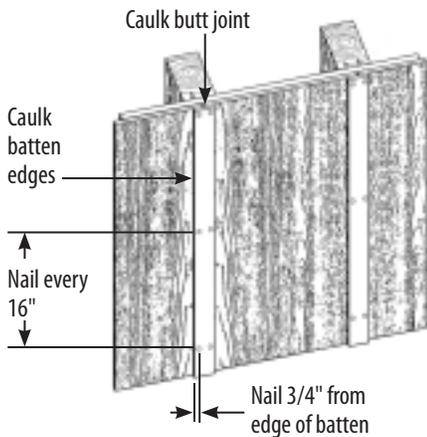


Fig. 10.7 H-CHANNEL

**Do Not Install a Starter Strip.**

- ▶ Use the chalk line as a guide.
- ▶ Leave a 1/8" gap between the siding and the trim to allow for structural movement. Always caulk between the siding and the trim.
- ▶ Fasten the siding at all stud locations (Fig. 10.3).
- ▶ Do not fasten closer than 2" from the corners in either direction and place fasteners no closer than 3/8" from edge.
- ▶ Space fasteners a maximum of 6" o.c. on all siding edges and 12" o.c. at intermediate framing members (Fig. 10.5). *Refer to ICC-ES ESR-1668 for specific fastening requirements.*
- ▶ Paint all field-cut edges.
- ▶ Butt all vertical panel joints together (Fig. 10.3).

Board and Batten Application

WeatherBoards™ Fiber Cement Siding can also be applied in a board and batten style. You can use wood, fiber cement, composite lumber or cellular PVC as battens (Fig. 10.4, Fig. 10.6). If you install battens cut from fiber cement, paint or stain the cut edges.

⚠ DO NOT seal the back of fiber cement battens.

SECTION 11: SOFFIT

Before you install the Soffit, review and comply with all local building codes and regulations regarding wall construction, including the proper use of sheathings, framing, water-resistive barriers, flashings, and other building materials and systems (Fig. 11.1, Fig. 11.2, Fig. 11.3).

Before You Start

Review the general cutting, fastening, and wall preparation instructions on pages 5 through 11 in the “Cutting”, “Fastening”, and “Wall Preparation” sections. Some important reminders:

- ▶ Cut WeatherBoards™ Fiber Cement face down with a mechanical shear or circular saw.
- ▶ Prime, paint or caulk all field cut edges of soffit. Do not prime or paint the back of the soffit panel. Refer to instructions on butt joints and trim locations for specific requirements.
- ▶ Be sure to install all soffit with the proper textured, sealed, or painted surface facing out (Fig. 11.5).
- ▶ Fasten the soffit 3/4" from the side edge, 3/8" from the butt end, and 2" from the corner. Space the fasteners every 12" along both the front and back edge.
- ▶ Do not over drive the fasteners. When a fastener is driven below the surface of the siding, its holding power is reduced.
- ▶ Irregularities in framing may be visible in the finished application. To minimize the effect of uneven walls, shim the wall as necessary.
- ▶ If you are hand nailing, it may be necessary to predrill to help prevent the corners from breaking.
- ▶ Fasten from one end of the panel to the other.

Fig. 11.1 **INSTALLED SOFFIT**

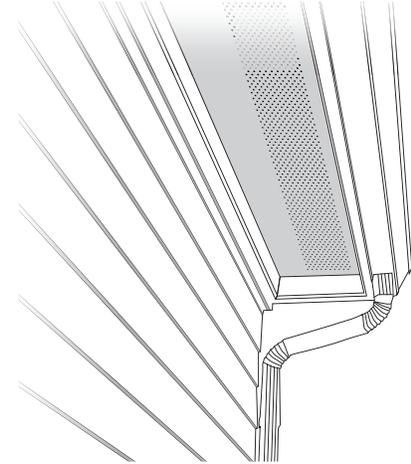


Fig. 11.2 **SMOOTH VENTILATED SOFFIT**

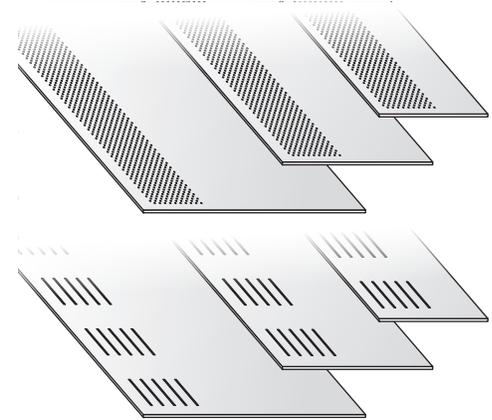


Fig. 11.3 **CEDAR VENTILATED SOFFIT**

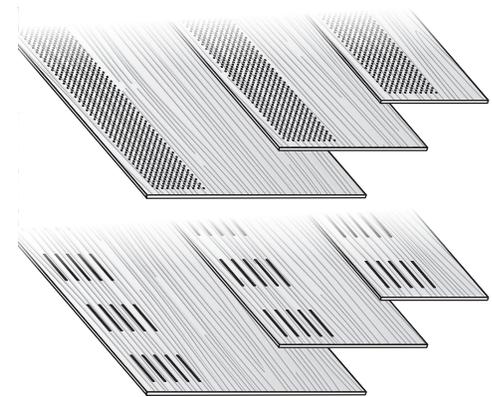
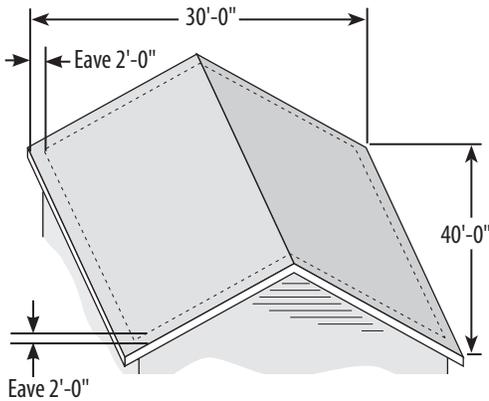


Fig. 11.4 EXAMPLE OF TOTAL ATTIC AREA CALCULATION



Installation

Check Requirements for Proper Ventilation

Proper attic ventilation is important for any home. The 2009 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 300 square feet of attic space provided at least 50% of the required ventilating area has already been provided by gable and vents or ridge vents.

How to Determine Soffit Ventilation (Fig.11.4)

1. **Determine the local code requirement for total attic ventilation.**
1:300 requires 1 sq. ft. of ventilation for every 300 sq. ft. of attic space.
2. **Determine the total area of the attic (sq. ft.) to be ventilated:**
 $40 \text{ ft.} \times 30 \text{ ft.} = 1,200 \text{ sq. ft.}$
3. **Total free area of ventilation required for the attic:**
 $1,200 \text{ sq. ft.} / 300 = 4.0 \text{ sq. ft.}$
4. **Convert square feet into square inches (sq. in.):**
 $4.0 \text{ sq. ft.} \times 144 = 576 \text{ sq. in.}$
5. **Factor in the location of vents:**
50% at ridge, roof vent or gable vent = $576 \times .50 = 288 \text{ sq. in.}$
50% at soffit/eave = $576 \times .50 = 288 \text{ sq. in.}$
6. **Determine the total soffit ventilation area required:**
Area of the soffit available for ventilation = 80 lineal ft.
Ventilation area required per lin. ft. of soffit = $288 \text{ sq. in.} / 80 \text{ lin. ft.} = 3.6 \text{ sq. in.} / \text{lin. ft.}$
7. **Select soffit product.**
 - 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.

Preparing for Soffit Application

WeatherBoards™ Fiber Cement Soffit should be applied to structural framing members spaced no more than 24" on center with the longest dimension perpendicular to the framing.

1. Nail a 2x (minimum) nailer board along the wall, with the bottom edge of the nailer board level with the bottom edge of the fascia (Fig.11.5).
2. 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.
3. If you are going to use H-channels 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 WeatherBoards™ Fiber Cement Soffit panels face down with mechanical shears or a 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 3/4" from the side edge, 3/8" from the butt end, and 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.

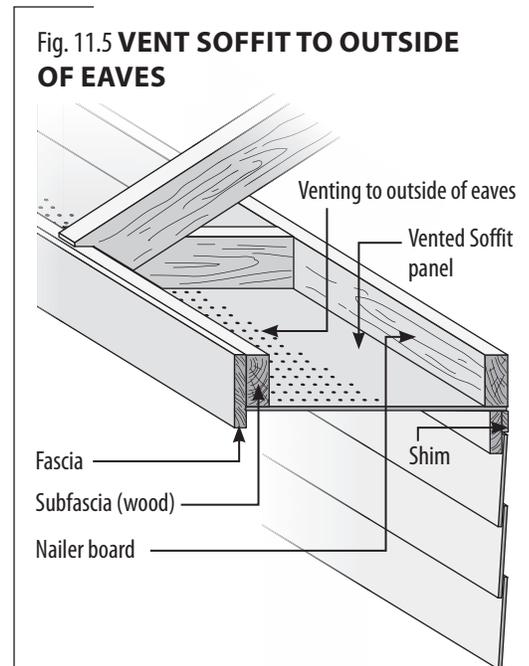


Fig. 12.1 **PORCH CEILING PANEL INSTALLATION**

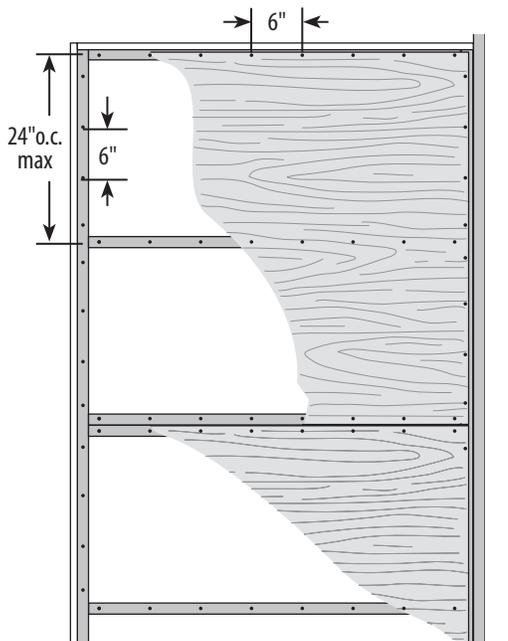
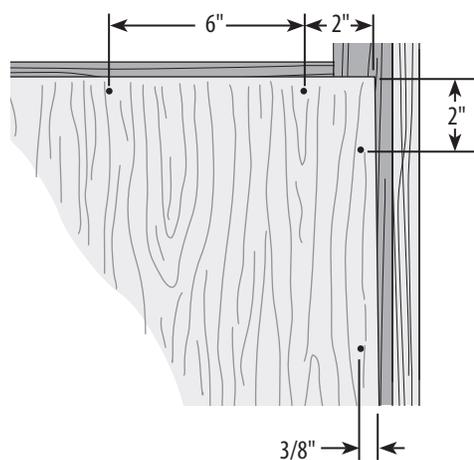


Fig. 12.2 **FASTENING PORCH CEILING PANELS** Position fasteners no closer than $3/8$ " from panel edges and 2" away from corners.



SECTION 12: PORCH CEILING PANELS

WeatherBoards™ Porch Ceiling panels are specifically designed to be used in porch and/or ceiling applications. Panel size is 1/4" x 4' x 8'.

Before you install the Porch Ceiling Panels, review and comply with all local building codes and regulations regarding wall construction including the proper use of sheathings, framing, water-resistive barriers, flashings, and other building materials and systems.

Before You Start

Review the general cutting, fastening, and wall preparation instructions on pages 5 through 11 in the "Cutting", "Fastening", and "Wall Preparation" sections. Some important reminders:

- ▶ Cut WeatherBoards™ Fiber Cement Porch Ceiling Panel boards face down with a mechanical shear or circular saw.
- ▶ Prime, paint or caulk all field cut edges of panels. Do not prime or paint the back of the panels. Refer to instructions on butt joints and trim locations for specific requirements.
- ▶ Be sure to install panels with the proper surface facing out.
- ▶ Do not over drive the fasteners. When a fastener is driven below the surface of the panel, its holding power is reduced.
- ▶ Irregularities in framing may be visible in the finished application. To minimize the effect of uneven ceilings or framing, shim as necessary.
- ▶ If you are hand nailing, it may be necessary to predrill to help prevent the corners from breaking.
- ▶ Fasten from one end of the panel to the other.

Porch Ceiling Panel Preparation

- ▶ WeatherBoards™ Fiber Cement Porch Ceiling Panels must be installed over solid wood or steel framing spaced no more than 24" on center. Additional framing may be required for proper fastening (Fig.12.1). Be sure all edges are supported by framing.

- ▶ **Allowable windload:** 38.3psf (125 mph, Exposure B, ≤30ft high. 2009 IRC/IBC). Refer to local building codes for applicable windload requirements in specific project conditions.
- ▶ For 2x wood framing, use a minimum of 6d nails spaced 6" on center at panel edges and field framing members (Fig.12.1).
- ▶ For light gauge steel frame construction, use a minimum No. 8 x 0.385" head diameter x 1-1/4" long ribbed bugle head fiber cement screws spaced 6" on center at panel edges and field framing members.

⚠ IMPORTANT: Do not use finishing nails.

Installation

- ▶ Position fasteners no closer than 3/8" from panel edges and 2" away from corners (Fig. 12.2).
- ▶ Install panel with all edges butted in moderate contact. Panels can be installed with or without battens (Fig. 12.3, Fig. 12.4).

Fig. 12.3 BUTTED PANEL JOINT

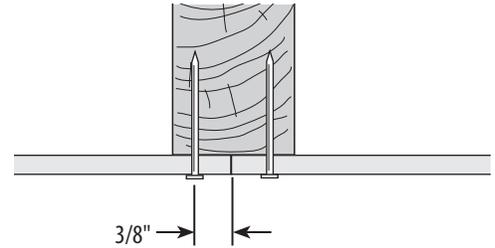


Fig. 12.4 BUTTED PANEL JOINT WITH BATTEN

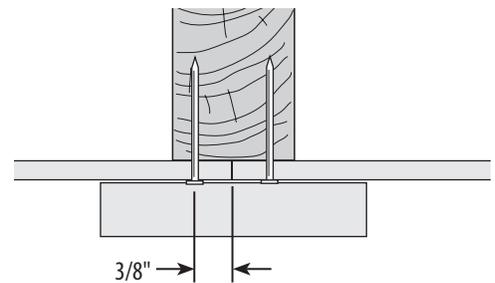


Fig. 13.1 CAULK BETWEEN SIDING AND TRIM

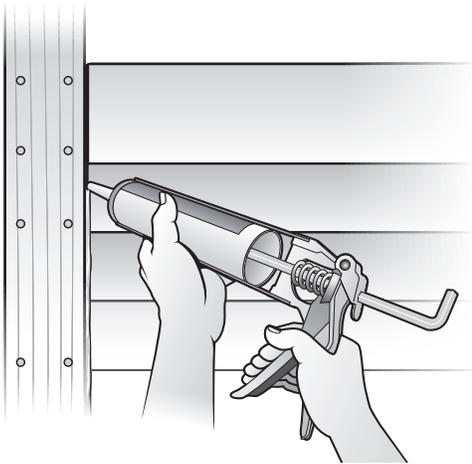


Fig. 13.2 USE 100% ACRYLIC LATEX PAINT



SECTION 13: 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 (Fig. 13.1).

Before you begin to caulk, it is recommended to remove any dust and debris. Caulk wherever siding meets the trim, non-self-flashing penetrations, and around all windows and doors. Follow the caulk manufacturer's application instructions and comply with all local building codes.

Painting

All WeatherBoards™ Fiber Cement Siding, Soffit, and 7/16" Trim are sealed with CertainTeed's FiberTect® Sealer/Primer. Any field cuts made to fiber cement siding must be coated with a high-quality 100% acrylic latex paint or primer, or caulked. WeatherBoards™ Fiber Cement Siding, Soffit and 7/16" Trim must be allowed to breathe. Do not prime, paint, or stain the back side. Some "spill-over" from primer, paint, or stain on the back is normal.

You should apply a finish coat within 24 months of installation. Use a high-quality, 100% acrylic latex paint. Before applying the finish coat, always follow the paint manufacturer's recommendations for surface preparation and paint application (Fig. 13.2).

⚠ IMPORTANT: *Never apply oil-based paints or stains to WeatherBoards™ Fiber Cement Siding, Soffit, or 7/16" Trim.*

Staining

If you desire a stained look, we highly recommend that you purchase *WeatherBoards™ Fiber Cement Prefinished with Premium Stain*. This will give the best overall appearance and performance of the product. If you do elect to field-apply stain to primed WeatherBoards Fiber Cement, we recommend that the stain be applied prior to installation and with the fiber cement in a horizontal, flat position. A small sampling of material should be stained and evaluated for satisfactory appearance before staining all material needed for the job.

This booklet describes and illustrates the steps involved in installing CertainTeed WeatherBoards™ Fiber Cement Siding, Soffit and 7/16" 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 WeatherBoards™ Fiber Cement 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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