

CertainTeed

# MASTER CRAFTSMAN

Education & Development Program



Vinyl and Polymer Siding

**CertainTeed**  
SAINT-GOBAIN



## Become a CertainTeed

# MASTER CRAFTSMAN

The Master Craftsman Education and Development Workbook is the only training manual of its kind in the industry, and it is brought to you by CertainTeed. Use it to master the information critical to a thorough understanding of CertainTeed's line of siding, soffit, and accessories and their installation. Also, a mastery of this workbook is one of the components needed to benefit from the wealth of opportunities offered by the CertainTeed Building Solutions® program.

After you have reviewed this workbook, you will be prepared to take the Master Craftsman Test, which will earn you valuable rewards. These rewards—and more importantly, the advantages you'll have over the competition—are not available to everyone, just to those who have successfully passed the test.

### **When you pass, you will:**

- Receive a personalized Certificate of Completion that you can use to promote your professional services.
- Be listed as a Master Craftsman on our website, where potential customers can find you. The listing will include your name, company name, phone number, e-mail address, and a link to your website if you have one.

By passing the test, you will have completed one of the three training requirements to achieve CertainTeed's 5-Star siding and trim contractor status.

### **If you complete two or more Building Solutions® education programs, you will receive:**

- A Building Solutions certificate designating you as a Building Solutions Specialist. Your certificate will highlight the CertainTeed education programs you have successfully completed.
- Preferential listing on our contractor locator site.

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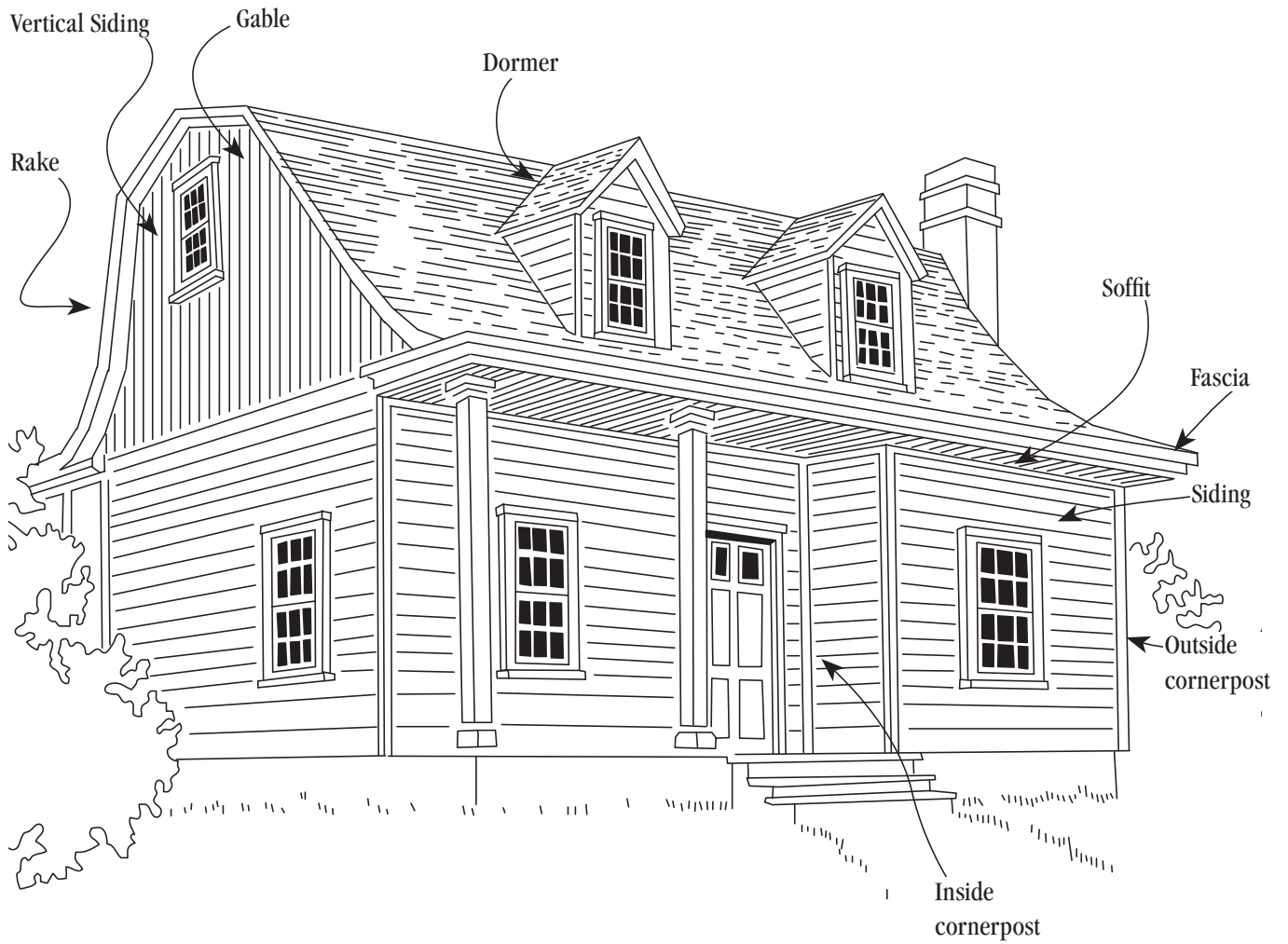
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# Siding Overview

## Home Exterior Terms



## Features of Polymer Shake Siding

### **QuickReference™ Nail Mark Indicators**

- Industry exclusive easy-to-use nailing guide
- No measuring needed for correct panel nailing

### **Extra Long Top Locking Tabs**

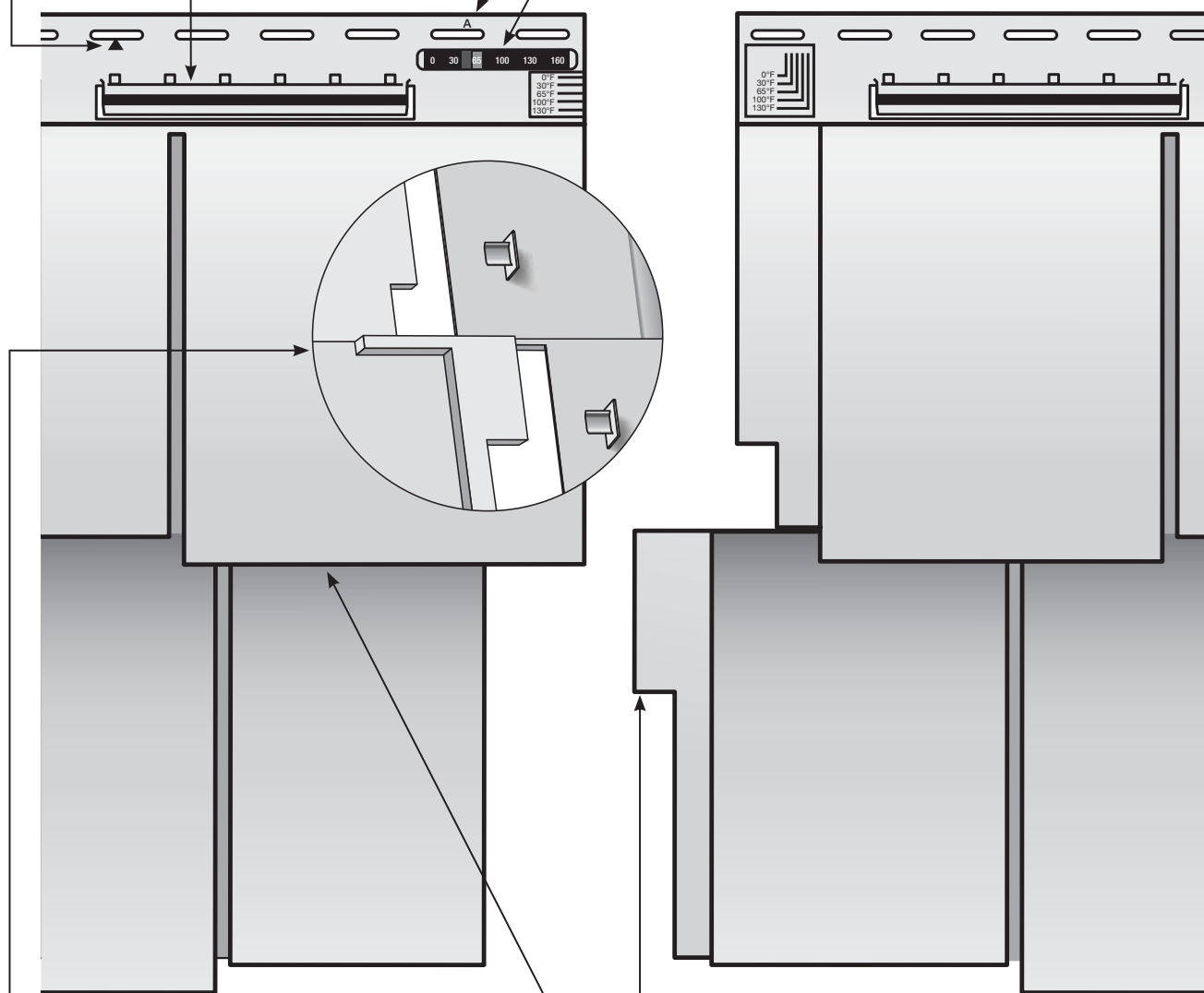
- Create an easier locking panel

### **QuickReference™ Panel Cut Indicators**

- Improves speed and ease of installation

### **Patented PanelThermometer™**

- Displays panel temperature!
- Easy-to-use temperature gauge
- The brightest cell indicates panel temperature
- Increases installation accuracy, decreases call backs



### **Oversized Perimeter Side Locking Tabs**

- Helps create seamless appearance
- Allow for fast and easy panel engagement
- Offer greater tab strength and less breakage
- Extended lead-in allows for ease of installation

### **Straight-Up Installation**

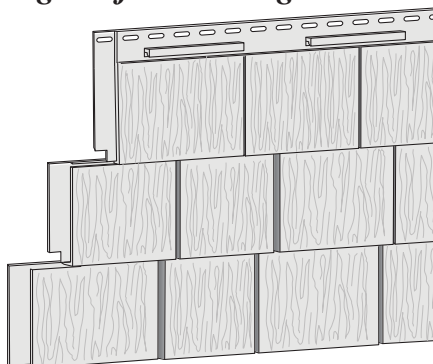
- Notched side laps allow you to push in and straight-up to lock the panel securely — just like traditional vinyl siding!

### **Deep Panel Projection**

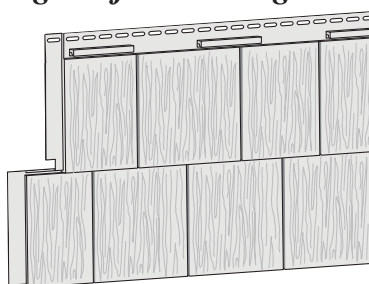
- Created distinctive shadow lines and shingle definition
- Perfection and Half-Round Shingles: 3/4" projection
- Rough-Split Shakes: 1" projection

## Polymer Shake and Shingle Siding Styles

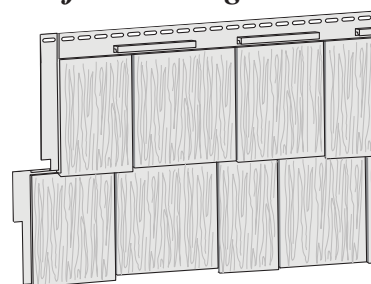
**Triple 5" Straight  
Edge Perfection Shingles**



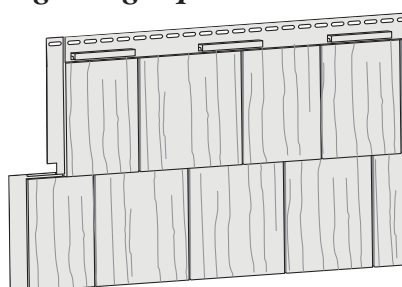
**Double 7" Straight  
Edge Perfection Shingles**



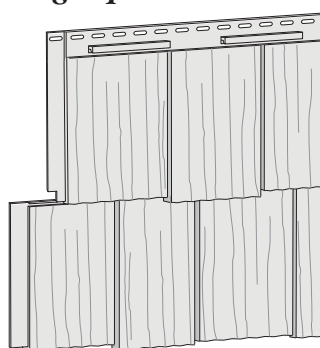
**Double 7" Staggered  
Perfection Shingles**



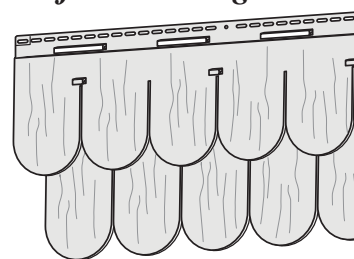
**Double 7" Straight  
Edge Rough-Split Shakes**



**Double 9" Staggered  
Rough-Split Shakes**



**Double 6-1/4"  
Half-Round Shingles**



### **Exclusive Positive Lock**

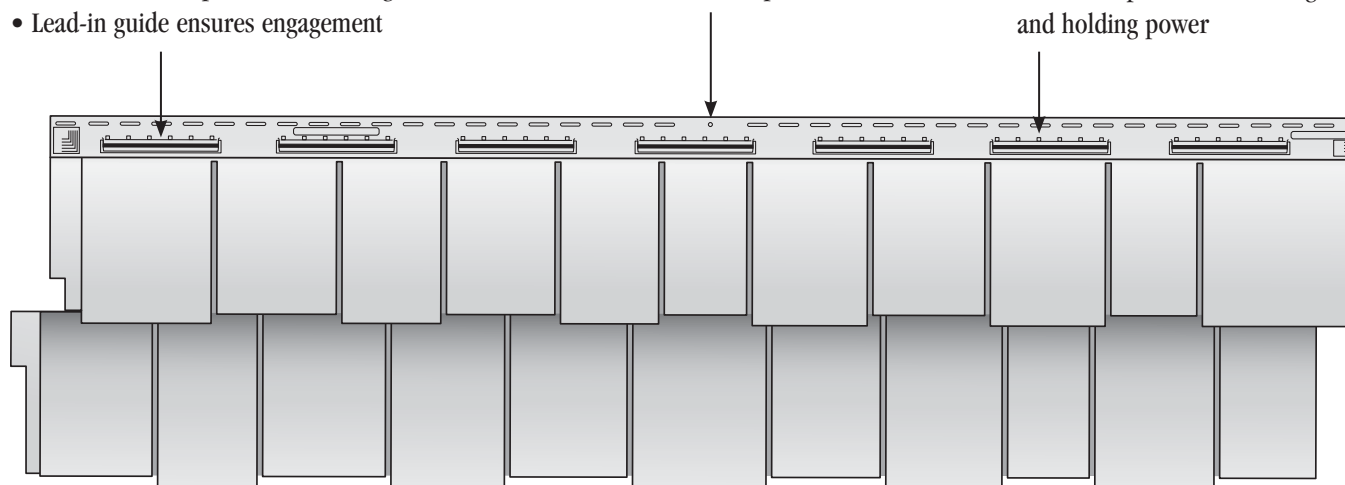
- Self-supporting, friction lock
- No need to hold panel while nailing
- Lead-in guide ensures engagement

### **Center Pin Hole**

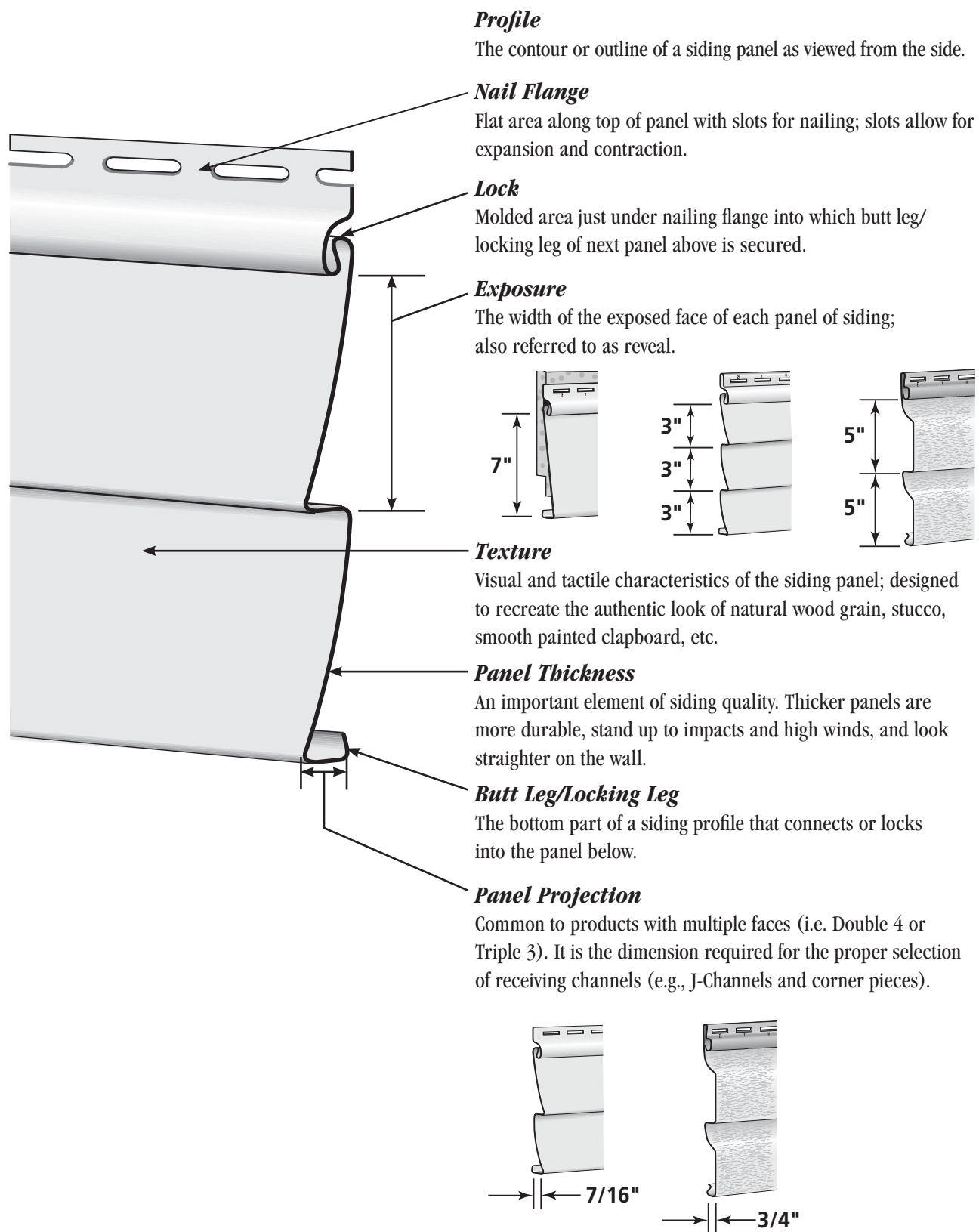
Allows for even expansion and contraction of the panel.

### **Reinforced Ribs on Nail Slots and Lock Tabs**

- Provide improved lock strength and holding power



## Traditional Vinyl Siding Terms





## Vinyl Siding Styles

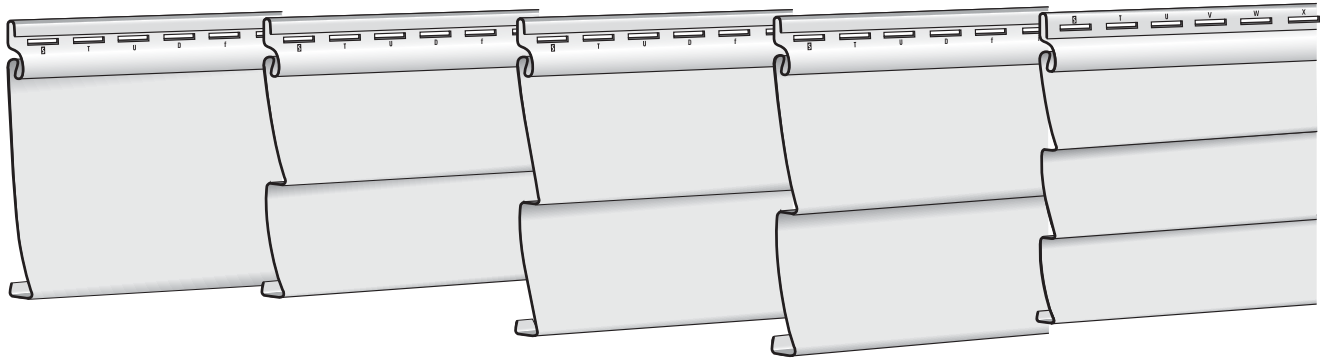
**Single 8"  
Clapboard**

**Double 4"  
Clapboard**

**Double 4-1/2"  
Clapboard**

**Double 5"  
Clapboard**

**Triple 3"  
Clapboard**

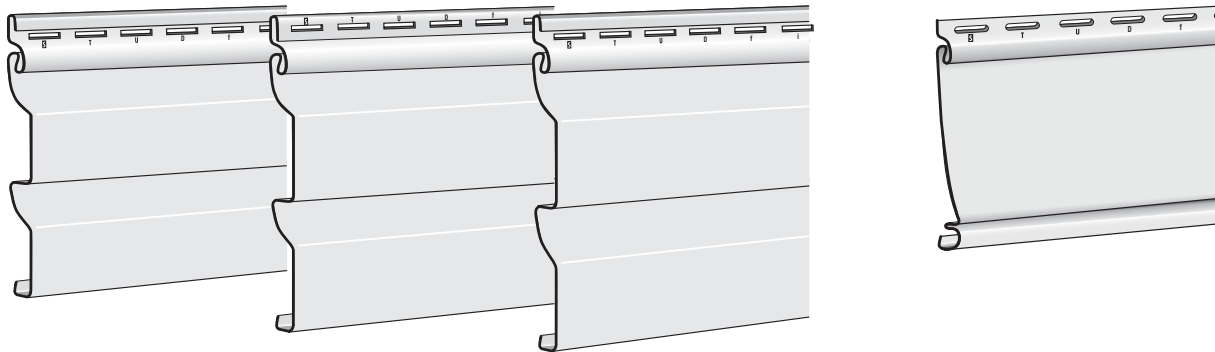


**Double 4"  
Dutchlap**

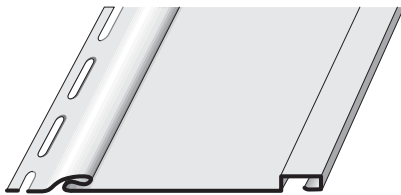
**Double 4-1/2"  
Dutchlap**

**Double 5"  
Dutchlap**

**Single 6-1/2"  
Beaded**

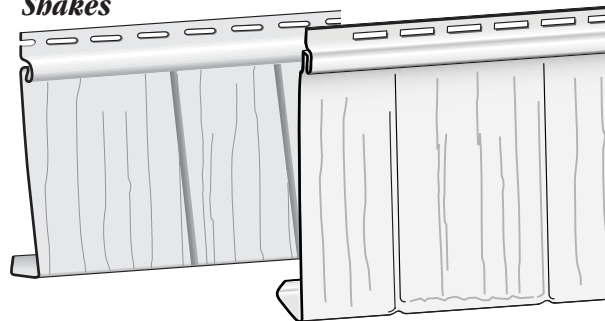


**Single 8" Vertical  
Board & Batten**



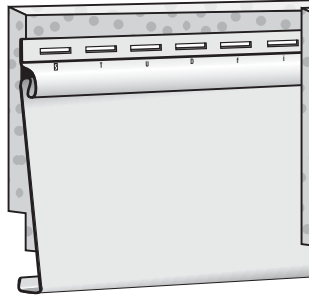
**Single 7" Straight  
Edge Rough-Split  
Shakes**

**Single 9" Staggered  
Rough-Split Shakes**

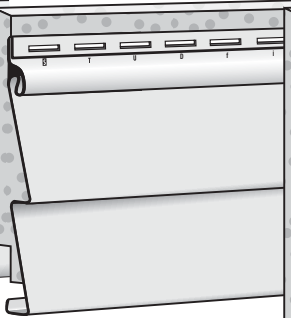


## Insulated Siding Styles

***Single 7"  
Clapboard***



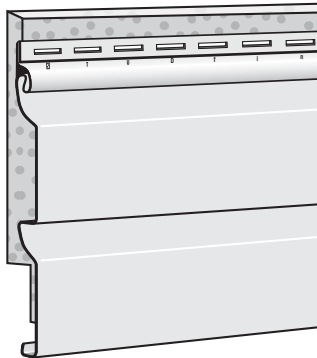
***Double 4"  
Clapboard***



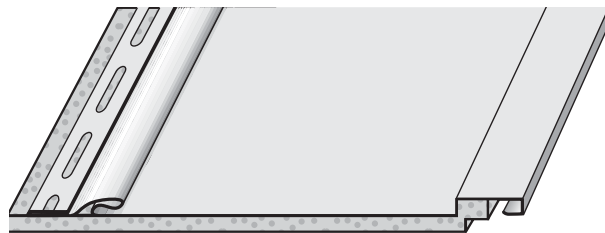
***Double 6"  
Clapboard***



***Double 4.5"  
Dutchlap***

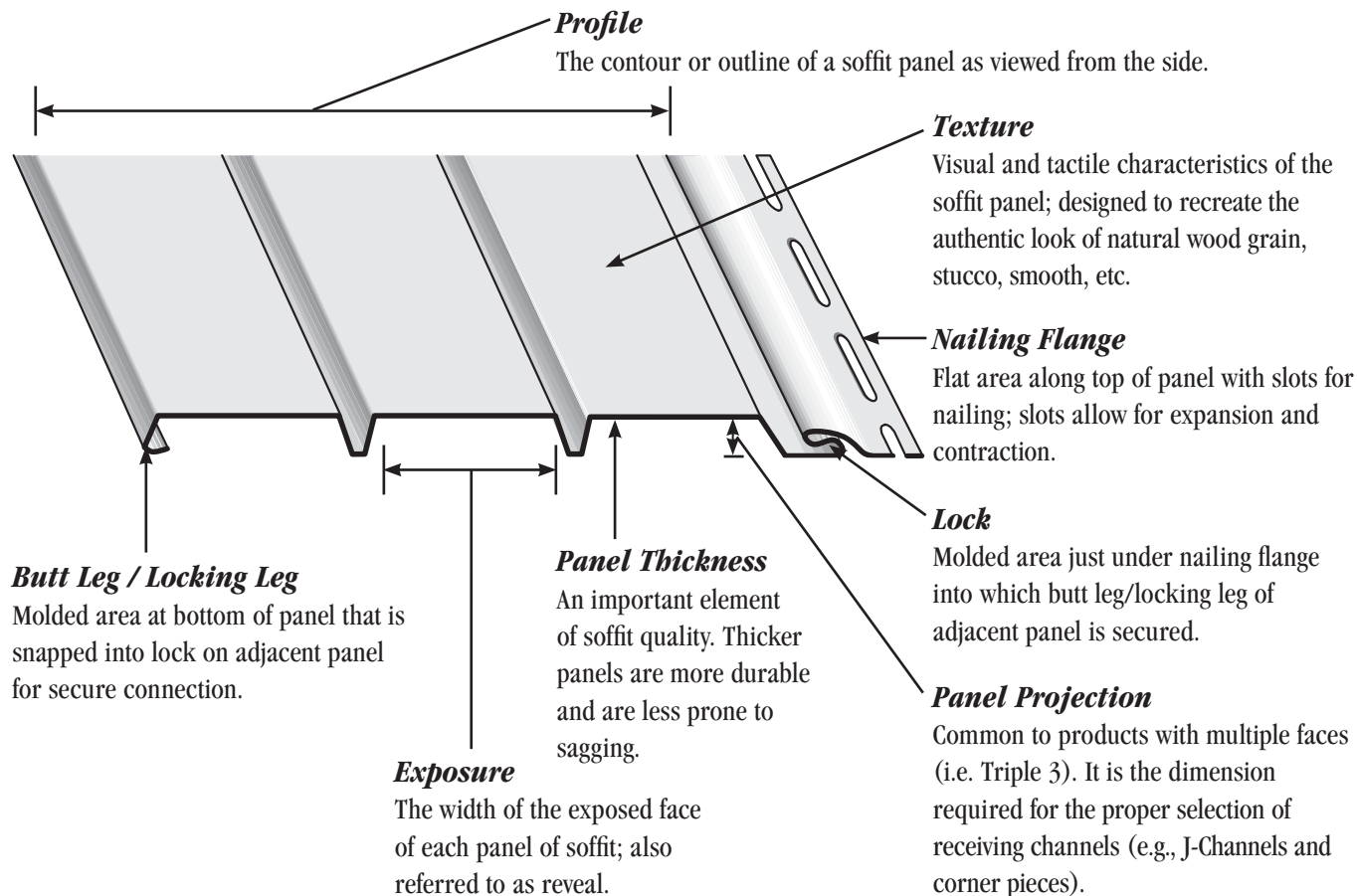


***Single 12" Vertical  
Board and Batten***

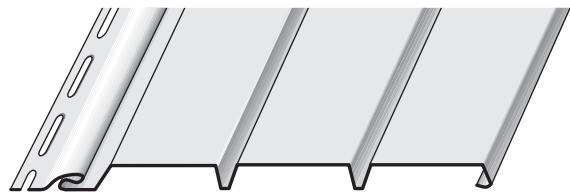


# Vinyl Soffit and Ventilation

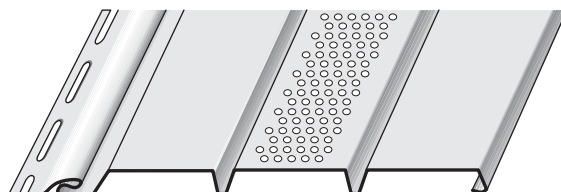
## Features of Vinyl Soffit



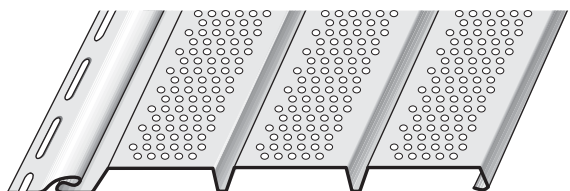
### Solid Soffit



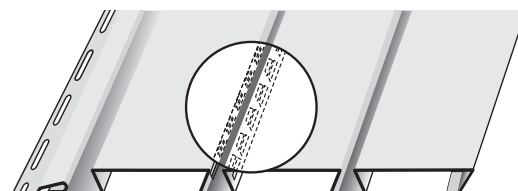
### Center Vented Soffit



### Fully Vented Soffit



### Invisibly Vented Soffit



# 1. Balancing Price and Quality

## Objectives

This chapter contains an introduction to CertainTeed:

- Product innovations
- Product diversity
- Extensive sales support
- Customer service
- Commitment to quality

In the delicate balance between high quality products and low-priced suppliers, the first often gets in the way of the second. Thus, whether they like it or not, companies are sometimes characterized by their priority, either price or quality. Most siding suppliers aim for the middle road and try to optimize both: a line of quality product that satisfies customer expectations at prices they can afford. After all, not everyone needs a Cadillac, yet we demand reliable transportation even in economy automobiles.

At CertainTeed, quality is never sacrificed. While we do produce some economically priced products, our quality is the best in the industry. We ensure this quality with every order because we inspect every panel before it is packaged to verify that it meets our high quality standard.

## Warranty

Warranty and customer service indicate the price versus quality priority of a competitor. Suppliers who respond promptly to customer service questions and special requests are more likely to be quality conscious. Likewise, because the warranty's "fine print" is a better indicator than its stated duration of the company's willingness to back up its product, you—and your customers—should examine product warranties carefully. Reasonable claims about the company and its product that are supported by a long history of customer service are preferable to broad promises that can be voided at a manufacturer's whim.

## Commitment to Continual Improvement

No company can rest on its past successes. Products and processes must be continually refined, improved, and even reinvented. For that reason, CertainTeed maintains a dedicated Research and Development Center separate from our manufacturing facilities. The Research and Development Center is constantly testing new materials, processes and tooling that will produce even higher quality, more innovative products. CertainTeed is one of the few manufacturers to support a dedicated Research and Development facility.

## Distribution Policy

High-quality products are most often produced for and distributed mainly to the professional trade suppliers. This market demands consistent quality and predictable performance because professionals know that low cost raw materials do not necessarily translate into cost effective performance. When forced to choose, professional installers generally prefer quality over price. So do we. CertainTeed siding and accessories are manufactured for professional installers and sold through independent building materials distributors that cater to professionals.

## Product Diversity

As you'll see in Chapter 15 of this manual and in our product literature, CertainTeed vinyl siding is produced in a wide array of profiles, categories, and colors. This broad product line is the basis for the CertainTeed Siding Collection™. The Siding Collection is a total package approach to exteriors. It begins with an unsurpassed selection of siding profiles, each designed for architectural accuracy and superior performance. Then we add expansive trim options, decorative details, and color choices, all of which work together to give each home a unique look. This system benefits professionals like you, who want to offer customers a choice of products. This wide product line demands specialized manufacturing and marketing efforts, but each innovation also offers saleable benefits. These benefits are significant, and more often than not demand a premium price.

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## Sales Support

Selling tools cost money. Manuals like this, samples, literature, and adequate technical support require financial resources and personnel. The narrow profit margins of the lowest-cost products do not generate the money for ongoing, high quality customer education and support. CertainTeed has developed an extensive line of the industry's best marketing and merchandising materials to aid you in selling more siding profitably.

### Summary

- At CertainTeed, every panel is inspected to verify that it meets our high standards.
- CertainTeed maintains a dedicated Research and Development facility.
- CertainTeed's wide product selection and complete line of trim and decorative accessories offer a siding solution for every budget and look.
- CertainTeed's siding and accessories are sold through independent distributors of building materials.



## 2. Company History

### Objectives

This chapter will give you some insight into the history of CertainTeed:

- Beginnings
- Commitment to vinyl siding products
- Commitment to quality

Quality Made CERTAIN . . . Satisfaction GuarANTEED. More than just a slogan, it's our name. And since 1904, when the General Roofing Manufacturing Company began producing asphalt roofing materials, quality products and satisfied customers have been the hallmark of CertainTeed Corporation.

### One Man's Dream

First established in 1904 by George M. Brown, the General Roofing Manufacturing Company was created to produce a fire resistant and less expensive alternative to wood shingles. In 1917, the company changed its name to CertainTeed to reflect its expanding product line and Brown's business philosophy. In 1923, it began manufacturing gypsum wallboard for new home construction.

During World War II, CertainTeed lent its extensive management and production expertise to the war effort, but in 1946 began investigating the potential of a new product—fiber glass insulation. Within 10 years, CertainTeed was supplying roofing materials, gypsum, and fiber glass insulation to the booming construction industry and had established itself as a leader in the country's effort to supply affordable housing to former GIs and their families.

In 1965, CertainTeed took its first step into PVC. Its later acquisition of Plains Plastics made CertainTeed a major manufacturer of plastic pipe. In 1969, the company began offering solid vinyl (PVC) siding to builders and contractors. A natural addition, vinyl siding incorporated the company's extensive research and development efforts in PVC pipe, while expanding its building materials product line.

Today, CertainTeed is part of the worldwide Saint-Gobain organization. Saint-Gobain is a global manufacturer and distributor of flat glass, building products, glass containers and high-performance materials.

With over 1,000 subsidiaries in more than 64 countries, it is the world's largest building materials company and a leading distributor of building products. Founded in 1665 and headquartered in Paris, France, Saint-Gobain employs more than 193,000 people worldwide. [www.saint-gobain.com](http://www.saint-gobain.com)

### Building Products Today

The Siding Products Group, which supplies siding and accessories, is just one of a number of operating groups that make up CertainTeed Corporation. The Siding Products Group includes a polymer plant that manufactures Certavin™, CertainTeed's proprietary PVC resin. This resin is used by the Siding Products Group to manufacture vinyl siding and accessories.

Because of this vertical integration, CertainTeed is the only supplier of vinyl building products that controls the entire process from raw materials, machinery, manufacturing, sales, and marketing through to you. CertainTeed's polymer plant in Louisiana and three PVC extrusion plants ensure consistently high quality raw materials and building products for its customers nationwide.

CertainTeed siding products have consistently landed at the top when building products are rated by trade magazines such as *Builder*, *Remodeling*, and *Residential Architect*.

In the years to come, you can expect the Siding Products Group and CertainTeed Corporation to continue its ongoing search for innovative products that will keep it—and you—out in front of the competition and a perennial favorite of builder's and homeowners.

## Summary

- CertainTeed was established in 1904 to produce a fire-resistant roofing shingle and quickly grew into a manufacturer of building supplies.
- In 1969, CertainTeed began offering solid vinyl siding to builders and contractors.
- CertainTeed is one of the few vertically integrated suppliers of vinyl siding in the market today.
- CertainTeed siding products consistently land at the top when rated by building trade magazines.

## 3. A Short History of Siding

### Objectives

This chapter discusses the history of the siding market:

- Siding prior to the 1970s
- Alternate siding materials
- Growth of vinyl siding

Most of the siding being installed on homes today is vinyl, but that has not always been the case. Wood, asbestos, aluminum, and asphalt have all had their heyday. Consequently, much of the vinyl re-siding that is done today replaces one of these older materials.

---

### Wood

Once the leading siding material in the nation, wood was, of course, the material of choice for early settlers. Wood is still a popular siding in new home construction, but the high cost of repainting and wood's tendency to deteriorate over time have caused nearly all the re-siding market to convert to non-wood products. As wood prices have risen due to environmental protection harvest restrictions, wood is being used less frequently as a siding material in new construction.

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### Asbestos

Asbestos siding was the first practical alternative to wood siding. Made from the fibers of minerals, asbestos won't burn or be eaten by termites, and, when it is combined with cement and formed into rigid sheets, is a practical, hardy alternative to wood. Unlike treated wood, asbestos siding absorbs moisture, fades quickly, and is a poor insulator, but it remained popular until aluminum siding was introduced. When aluminum siding was introduced in the '50s, homeowners abandoned asbestos siding in droves.

### Asphalt Siding

Asphalt siding was a heavy felt-like material coated with thick asphalt and crushed mineral granules. Much like asphalt roofing shingles, it did not shatter, it resisted weathering, and it was widely available in imitation brick and stone. Because it was less expensive than brick or stone, asphalt siding was used extensively during the 1940s and early '50s in low-cost development homes.

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### Aluminum

Aluminum siding is manufactured from aluminum coil. It is chemically coated to protect the metal, then painted to further protect the metal and give it color. Finally, it is baked so the outer coating remains bright and durable. Aluminum was introduced in the 1940s and quickly caught the attention of homeowners and re-siders alike because it is lightweight, easy to handle, and can be applied over existing siding.

Homeowners favored aluminum over the alternatives because it is "permanent." It will not rust, is available in many popular colors and styles, and generally does not require repainting. However, because aluminum siding is painted, the paint will often chalk, leaving a white residue that can stain brick and masonry foundations. The painted surface can also be scratched, exposing the raw aluminum below. Aluminum siding dents easily and does not "bounce back." Aluminum production is energy-intensive; thus, aluminum siding became increasingly expensive as energy costs escalated in the 1970s.

---

### Steel

Steel siding has many of the same advantages as aluminum: a wide range of colors and easy maintenance. On the downside, steel siding is heavy and difficult for installers to work with. Also, it is expensive to ship, conducts electricity, and is susceptible to rusting if the paint is scratched and the steel exposed. Like aluminum, when energy prices rose, so did the price of steel siding.

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## Hardboard

An engineered product generally made of wood chips and epoxy resin, hardboard is sold primed and is painted on site. Many hardboard products have had problems with moisture absorption, causing them to swell, peel, crumble, and grow fungus. For these very reasons, hardboard manufacturers have been the subject of several class action lawsuits.

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## Fiber Cement

Although fiber cement has been used as a building material in Europe for nearly 100 years, fiber cement siding is a relative newcomer to the United States. Composed of Portland cement, pulp fiber, sand, and special additives, fiber cement is manufactured as a smooth sheet and then embossed with a wood grain or stucco finish. Fiber cement is an absorptive cladding that can hold moisture, creating the potential for penetration leading to rot, mold and/or poor indoor air quality. It is also susceptible to freeze/thaw complications.

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## Vinyl

PVC was first used as a siding material in the late '50s and early '60s. During these early years, vinyl suffered setbacks from expansion and contraction problems, discoloration, and brittleness. Once the leading manufacturers, including CertainTeed, overcame these problems, vinyl became the dominant siding material.

By the '70s vinyl siding began to compete directly with aluminum. Vinyl siding had all the low maintenance and easy installation benefits of aluminum and none of the drawbacks. For example:

- Vinyl siding color goes clear through the panel, so scratches don't show.
- Vinyl siding is tough and resists denting from everyday occurrences such as falling branches, hail, stones thrown up by lawn mowers, etc.
- Vinyl does not conduct heat or cold and does not "pop" with temperature changes.
- Vinyl siding does not conduct electricity and does not require grounding.

- Vinyl siding does not magnify the sound of rain or hail.
- Vinyl won't pit, rust, peel, corrode or flake away.
- Vinyl incurs less damage on the jobsite, so there is less waste.

Besides vinyl's obvious advantages, a key to its popularity was the rising price of aluminum in the late '70s and early '80s. By the early 1980s, vinyl had the price advantage and became the siding of choice for remodeling.

As vinyl's popularity grew in re-siding, it drew the attention of new-home builders, gaining share from aluminum, hardboard and wood siding. By 1995, vinyl had passed wood and hard-board sidings and became the dominant siding material. Vinyl siding now accounts for over 32 percent of the cladding market for new single-family homes and 35 percent of the re-siding market.

### Summary

- Wood was once the most popular siding material. Wood is still used today, but its high materials and maintenance costs have driven many homeowners to less expensive and more durable materials for re-siding.
- Asbestos and asphalt siding are no longer used.
- Aluminum is still a popular siding material, but the energy-intensive process used to manufacture aluminum siding makes it costly. Also, aluminum siding is painted, so bare metal shows through scratches and dents.
- Hardboard and fiber cement are used in siding applications. Many hardwood products absorb moisture and, thus, are prone to swell, peel, crumble, and grow fungus. Fiber cement is an absorptive cladding that can hold moisture, creating the potential for penetration leading to rot, mold and/or poor indoor air quality. It is also susceptible to freeze/thaw complications.
- Since 1995, vinyl has been the dominant siding material. It accounts for over 32% of the market for new single-family homes and 35% of re-siding applications. Homeowners prefer vinyl siding because it's tough: scratches don't show and it resists denting. Also, vinyl siding never needs scraping or painting.

## 4. Raw Materials

### Objectives

This chapter contains a short discussion of the raw materials that are used to manufacture CertainTeed siding:

- PVC
- Polypropylene
- Micro-ingredients
- Processing aids

The quality you've come to expect from CertainTeed vinyl siding and accessories is built in at the factory. From the time raw materials are manufactured until finished product is shipped to our customers, we control, adjust, inspect, and test throughout every step of the manufacturing process. As part of on-going quality assurance, we work with all our suppliers to develop tight specifications and test for their consistency. The result is a line of vinyl building products you can count on for superb appearance, durability, and ease of installation—every time.

All siding is not created equal, and raw materials significantly contribute to their differences. Though siding is referred to simply as “vinyl,” CertainTeed vinyl siding is actually a precise blend of carefully tested and controlled materials, all of which contribute to its performance, durability, and appearance.

### Resin

#### *Polyvinyl Chloride*

Polyvinyl chloride resin gives vinyl siding its name. PVC, which starts as a powder, is a thermoplastic, which means that when it is exposed to high temperatures in the manufacturing process, the compound can be shaped, embossed, and formed. Eighty percent of the weight of siding is PVC resin. The remaining 20 percent is the critical micro-ingredients that impart distinctive color, opacity, gloss, texture, impact resistance, flexibility, and durability to CertainTeed vinyl siding and accessories.

CertainTeed manufactures its own Certavin™ resin at its Lake Charles, Louisiana, polymer plant. CertainTeed is one of the few siding manufacturers to produce its own PVC resin, allowing us to control the quality of this critical ingredient to our own exacting specifications.

#### *Polypropylene*

The most recent addition to CertainTeed's extensive line of vinyl building products, Cedar Impressions® Perfection and Half-Round Shingles and Rough-Split Shakes are manufactured from a specially blended polypropylene copolymer. This copolymer capitalizes on the rigidity, weatherability, and processing properties of polypropylene and other micro-ingredients. Unlike our PVC siding, which is extruded, polypropylene Cedar Impressions® is injection molded into its authentic cedar shingle patterns.

#### *ASA*

ASA are polymer alloys used specifically because they impart particular performance characteristics to siding. ASA forms the capstock—protective surface—for CertainTeed premium colors. Darker colors are harder to protect against “fading” than lighter colors. In fact, unprotected dark colors don't fade, they oxidize, and they lose their rich appearance as the white products of oxidation build up on the surface of the siding. ASA is extremely stable. They resist oxidation and, hence, maintain their rich, dark hues.

### Micro-Ingredients

While resin constitutes the bulk of the raw material in vinyl siding, CertainTeed's Certavin™ resin includes various micro-ingredients that give siding its texture, low gloss, and color and help process the raw materials. Following is a description of those micro-ingredients and the role they play.



## ***Color Technology***

All colors—or pigments, as they are sometimes called—are carefully manufactured to meet our precise specifications. We select and test all our pigments to verify that they are stable and have excellent weathering properties, even without the protectants (like  $\text{TiO}_2$  and stabilizers) that are added to PVC compound. To verify batch-to-batch and run-to-run consistency, spectrophotometers carefully measure color in every lot of pigment. This rigorous quality control is at the heart of CertainTeed's PermaColor™ process and the rich, durable colors of our siding and accessories.

### ***TiO<sub>2</sub>***

Titanium dioxide is a critical additive in vinyl siding because it protects PVC from potentially harmful UV rays. It makes siding and vinyl accessories opaque and acts to prevent the sun from degrading the resin, which could become cracked and brittle. Typically, manufacturers of low cost vinyl siding use less  $\text{TiO}_2$ , because this additive is expensive and unsuspecting consumers will not notice the weathering for a few years.

### ***Calcium Stearate***

CertainTeed uses only fused granular calcium stearate. It helps the various ingredients in the PVC compound blend into a uniform, stable dispersion and aids in the manufacturing process. Its use particularly improves the fusion of the PVC compound and produces a smooth, uniform finish that resists cracking.

### ***Waxes***

Waxes prevent the PVC compound from sticking to the metal surfaces in the extrusion process. Wax also affects the gloss on the finished product, so it is always used in precise amounts to ensure consistent, reproducible finishes from batch to batch.

### ***Impact Modifiers***

Impact modifiers do just that. They make vinyl siding more resistant to the dings and dents that routinely occur on the wall and during and after installation. Carefully selected and blended impact modifiers help CertainTeed vinyl siding withstand most hail storms as well as normal installation and use.

## ***Acrylic Processing Aids***

The acrylic processing aids used in CertainTeed siding have been developed specifically to help in manufacturing. They produce a uniformly thick siding that is strong and durable.

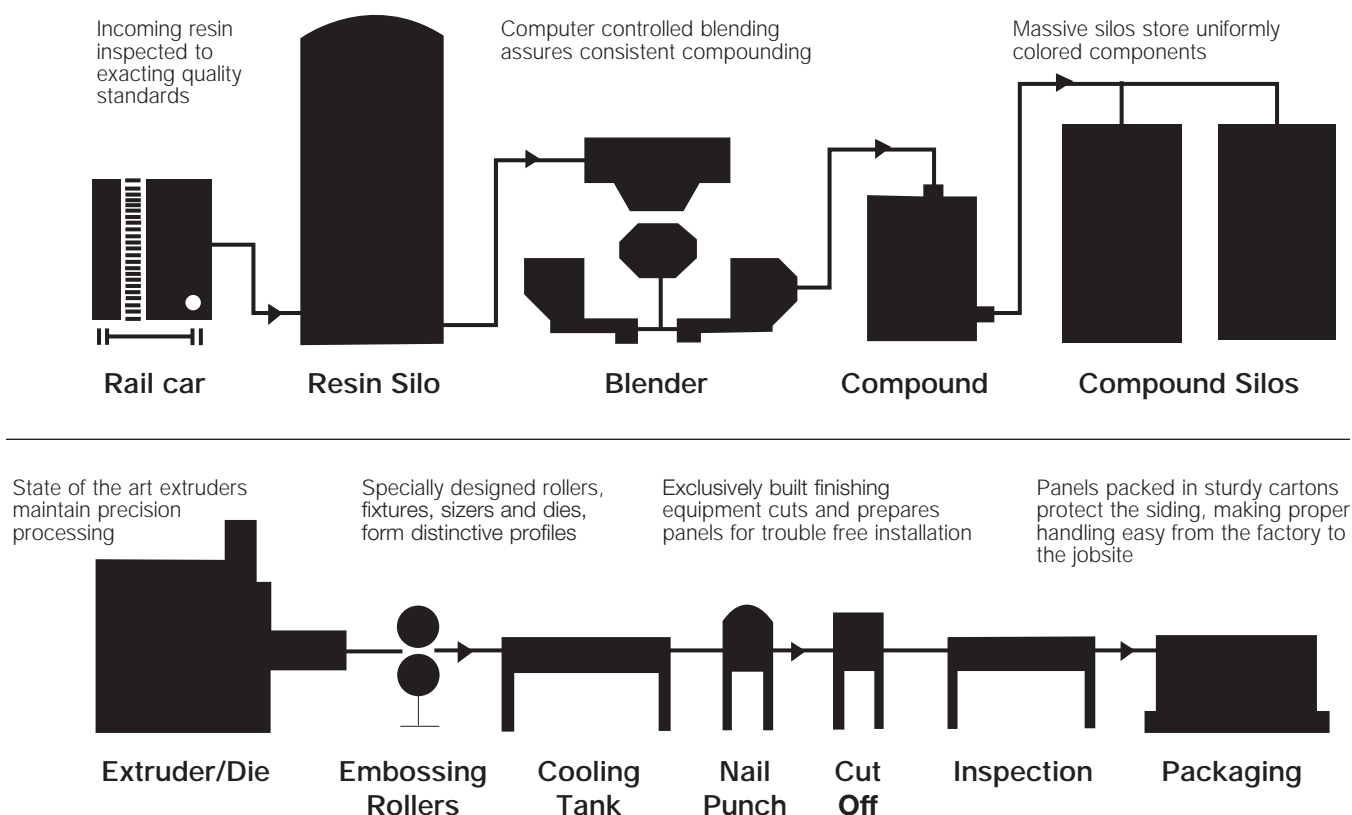
### ***Stabilizers***

Stabilizers are used to protect the PVC compound from degrading as it is heated and subjected to pressure. This keeps the plastic ductile. Also, additional UV stabilizers protect the color from oxidizing and fading.

## **Summary**

- CertainTeed is able to control the quality of the PVC used in its vinyl siding because it manufactures its own resin. All raw materials are tested and controlled through every step of the manufacturing process.
- To ensure quality and batch-to-batch consistency, the pigments that give siding its color are held to very tight specifications.  $\text{TiO}_2$ , which protects against UV rays, is added during the manufacturing process to protect the color and reduce fading in siding.
- Impact modifiers help CertainTeed siding withstand most hail storms and normal installation and use.
- Polypropylene copolymer can be processed into a rigid, weatherable siding product. Using a process called injection molding, CertainTeed processes polypropylene into Cedar Impressions® Perfection and Half-Round Shingles and Rough-Split Shakes.

## 5. Manufacturing



### Objectives

In this chapter, you'll learn about the processes used to manufacture vinyl siding and Cedar Impressions polypropylene panels:

- Extrusion
- Co-extrusion
- Embossing
- Post-forming
- Cutting
- Injection Molding

Technical excellence, processing expertise, and an unwavering commitment to quality characterize the equipment, processes, and personnel at our three vinyl

siding manufacturing plants. Since our company's beginning, CertainTeed has been developing innovative products and processes to improve the look and durability of building products. Today, tried and true manufacturing methods are tested and retested to ensure that you consistently receive the highest quality siding and accessories.

### Blending

The manufacturing process begins as resin is unloaded from railroad cars through an air-conveying system into silos holding up to 250,000 pounds. From these main storage silos, resin is conveyed to the blender where  $\text{TiO}_2$  and other micro-ingredients are added to create the processing compound. This precise measuring of ingredients and uniform blending under proper heat conditions are critical for production of uniform, high quality products.

After blending, the compound is conveyed to the siding extrusion line where it is carefully metered so a consistent amount enters the extruder.

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## Extrusion

Basically, extrusion is a process in which a thermoplastic resin (one that softens when heated and hardens when cooled) is pushed through a heated barrel and die by two large, precisely tooled screws. As they turn, the screws knead and thoroughly mix the PVC compound. Both the screws and the barrel of the extruder are heated, which melts the resin and makes it easier to mix and push. The heat (300° to 400° F) also accelerates the physical reaction (fusion) between PVC and the micro-ingredients in the compound.

All vinyl siding is extruded, but CertainTeed was the first to extrude all its siding and accessories<sup>1</sup> with twin-screw extruders. Twin-screw extrusion is preferable to single-screw extrusion because it heats and distributes material more evenly, resulting in a product with better physical properties. As the PVC compound is forced ahead of the rotating screws, the very tight tolerances in the double barrel promote complete fusion of the ingredients. Color concentrate is added at the extruder, a technique that produces rich, durable color in every siding panel.

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## Co-extrusion

Co-extrusion is the joining of two flows of molten PVC compound from two extruders in a single die to produce a single sheet made of two layers of material: substrate and capstock. This is how we incorporate ASA plastic on our dark color sidings.

Co-extrusion technology allows us to concentrate the most important, expensive micro-ingredients in the capstock, which acts as a shield of protection for the panel.

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## Embossing

As it exits the extruder, the vinyl sheet is still very hot, nearly molten. Between the extruder die and cooling tank, the sheet passes between a textured roller and a rubber roller for embossing. Depending upon the rollers, CertainTeed siding and vinyl accessories are embossed in either rough cedar, woodgrain, smooth brushed, or smooth textures.

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## Post-forming

CertainTeed adopted the post-form extrusion process two decades ago after its research demonstrated that post-form extrusion produces more batch-to-batch consistency in thickness and profile. In addition, post-form locking devices have tighter tolerances and more intricate interlocking devices, which result in higher wind load ratings. The specially designed pre-sizers and vacuum sizers immediately prior to the cooling bath create the distinctive profiles and wide range of available sizes of vinyl siding. In a vacuum sizing calibrator, the siding is given its crisp finished profile.

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## Water Tank

The siding profile enters a water tank immediately after vacuum sizing. Once the hot profile is in the cooling tank, the panel temperature quickly drops and the final shape thermally sets.

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## Nail Punch and Cut Off

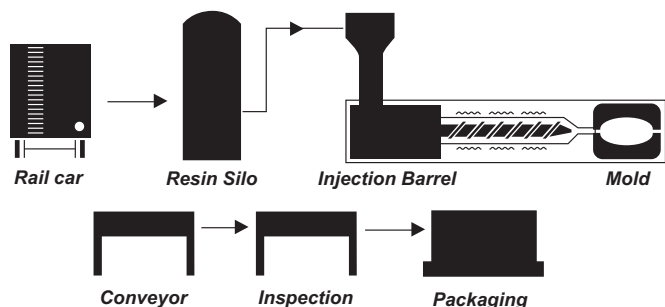
After passing through a cooling tank, the ribbon of siding is punched at precise intervals for nail holes. Finally, it is cut to length, inspected<sup>2</sup>, and packaged.

## Injection Molding

We use the injection molding process to manufacture our Cedar Impressions family of siding and accessories. The process itself is fairly straightforward. Basically, the resin is poured into a hopper where it mixes with pigment and other additives. The compounded resin drops into the throat of the equipment, where the pellets form a solid bed. This bed of resin is pushed through the barrel of the equipment by a metal screw, and the mechanical shear between the screw and the barrel heats up the compound.

The hot compound flows into the cavity of the mold. Processing additives and computer controls ensure that the compound flows smoothly into every nook and cranny. Under the proper heat and pressure, the polypropylene panel sets. After the mold opens and ejector pins push the panel out, robotic arms lift it and place it into a conveyor, where it slowly cools.

Operators inspect each panel as it comes off the conveyor, apply the patented PanelThermometer™, and package the finished siding.



### Summary

- Vinyl siding is manufactured by a process called extrusion. Basically, PVC resin is pushed through a heated barrel and die by two precisely tooled screws. Vinyl sheets are pushed out of the die.
- CertainTeed uses the co-extrusion process—two flows of molten PVC compound into a single die—to incorporate the plastic that protects dark colors from fading.
- After they are extruded, smooth vinyl sheets are embossed with either a rough cedar, wood-grain, smooth, or brushed finish.
- In the post-forming operation, the vinyl sheets are formed into the distinctive profiles and sizes of CertainTeed siding.
- Cedar Impressions siding is injection molded.

## 6. The PermaColor™ Process

### Objectives

In this chapter you'll learn about color:

- PermaColor™ process
- Blended colors
- Dark colors

All CertainTeed vinyl siding and accessories are produced using the PermaColor™ resin system. In the process, PVC resin, superior micro-ingredients, and state-of-the-art pigment chemistry combine to produce an array of rich, durable colors.

CertainTeed is a vertically integrated siding manufacturer. We know our pigments are of the highest quality because we control every step of the process. On an ongoing basis, CertainTeed research and development personnel collaborate with suppliers to fine tune the physical and chemical properties of their highest quality colorants. Chemical and physical properties as well as levels of color, antioxidants, and UV stabilizers have been tested and re-tested to produce innovative, durable colors.

### VSI Color Certification

CertainTeed vinyl siding and trim has earned the Vinyl Siding Institute (VSI) Color Certification for its siding and trim. The VSI color-retention certification process requires a two-year, outdoor weathering study. Each certified CertainTeed color demonstrated the ability to resist major changes in a variety of climates. The color-retention certification is based on the performance standard for color retention, ASTM D6864.

### Streaked Colors

The “streaked” colors of Monogram® Blends are deluxe colors. They have a streaked, semi-transparent stained wood appearance, which is achieved through CertainTeed's SpectraGrain MVF™ (multi-viscosity fusion) process.

This multi-viscosity fusion process uses multiple colorants of different viscosity, or thickness. Each color flows and mixes differently in the extruder. The first, usually the lighter color, melts easily and quickly and, thus, forms the background color for the siding. The second (usually, darker) color melts later in the extrusion process and streaks because it does not disperse completely. The blended effect is actually the darker color sitting on top of the base color, creating a semi-transparent stained wood appearance.

### Dark Colors

Dark colors are co-extruded with ASA plastic as the capstock. The properties of ASA and CertainTeed's twin-screw extrusion process are such that the capstock physically bonds to the vinyl compound, though it remains concentrated on the surface of the sheet. Darker colors, particularly blues, greens, browns and grays, would quickly chalk and fade if made in only PVC. The ASA capstock ensures long-term weatherability for these dark colors.

### Summary

- CertainTeed siding is consistent from batch-to-batch because the PermaColor™ Process tightly controls the level of color.
- Streaked colors like those in Monogram® siding are produced using the SpectraGrain MVF Process. In this process, two or more colors are added at the extruder. The colors melt at different times and blend differently, so one color “sits” on top of the base color.
- ASA plastic is added as a capstock to darker colors. The ASA physically bond with the vinyl sheet, but they sits on top and help protect the dark colors from chalking and fading.



## 7. Quality Assurance

### Objectives

In this chapter you'll read about CertainTeed's Quality Assurance:

- Raw materials testing
- Product testing
- Testing physical properties

Before, during, and after it is manufactured, CertainTeed siding is tested against a set of manufacturing and product specifications. These specs define the minimums, maximums, and tolerances that a raw material or sample of a finished product must meet to satisfy either our standards, ASTM International requirements, Vinyl Siding Institute (VSI) recommendations, or local and national building codes. While some of these tests don't appear to directly relate to the conditions siding is exposed to during installation and use, they all contribute to the quality and durability of the final product.

### Raw Material Testing

Each lot of raw material that comes into our plants is thoroughly examined and approved as part of an ongoing quality assurance plan. CertainTeed quality assurance verifies that our suppliers maintain consistently high standards and that minor variations in materials do not affect the appearance or quality of our siding. While the raw data that these tests generate are of little value to you or your customers, we mention them because it's worth noting that top quality siding and accessories can be produced only from the highest quality raw materials. Above right are just a sampling of the raw material properties that are tested on a regular basis.

color	density
flow time	porosity
weight	grit
trace elements	hardness
melt viscosity	Izod impact
Y-brightness	needle penetration
percent moisture	percent insolubles
particle size	specific gravity
viscosity	pH
oil absorption	resistance (ohms)
contaminants	refractive index
congealing point	percent ash
percent free fatty acid	percent stearic acid

### Product Testing

Finished products are also subjected to a series of tests to evaluate how well they meet specifications. The first tests occur during the manufacturing process. The materials that go into each product are continually scrutinized manually and by computer. Computer evaluation systems adjust mixes, line speeds, and other process variables to ensure optimal finished quality. Blending operators check resin and all micro-ingredients for weight even as they draw samples for quality assurance testing.

- |                    |                   |
|--------------------|-------------------|
| • panel width      | • butt angle      |
| • warp             | • nail slots      |
| • bow              | • weep holes      |
| • panel weight     | • color           |
| • gloss            | • embossing       |
| • panel projection | (panel thickness) |

Extruder attendants visually and physically check:

- locking mechanisms
- panel squareness
- warp
- bow
- length

The final product check includes:

- factory codes
- labels
- number of panels per box
- number of boxes per pallet

Together, these tests make up our CertaVision™ quality control. We test and retest our products to maintain our high standards.

## Physical Property Testing

Siding gets some of its appearance and much of its installation properties from its shape, known in the industry as “profile.” As you read earlier, the sheet that emerges from the extruder is still pliable but chemically stable. It is at this point that the highly trained operators at the plants begin testing for important physical properties of, first, the vinyl sheet, then the finished panel.

- **Length and width:** Siding that is not uniformly sized cannot be installed properly, even by the best of applicators. Inconsistent width produces uneven courses, especially on adjacent walls or around doors and windows. For this reason, all CertainTeed siding is held to close tolerances, closer than the  $\pm 0.250$  in. (length) and  $\pm 0.062$  in. (width) required by the ASTM.
- **Thickness:** There is some relationship between the thickness of a panel and its ability to bounce back when it is struck by hail, baseballs, and other objects that crash into it. Also, siding that is too thin or is not uniform in thickness is unforgiving and may buckle (oil can) during installation. Because of variations in grain and patterning, thickness varies across the length of all siding, but the ASTM requires a nominal (average) minimum thickness of .035 in. for vinyl siding, though many styles and embossing patterns yield thicker siding.

- **Weight:** Each CertainTeed siding has its own weight specification. Wall thickness and panel projection determine the weight of siding. For example, a .044 in. exposure with a 3/4 in. panel projection will weigh more than a similar panel with a 1/2 in. panel projection. Other panel components can affect weight. CertainTeed’s CertiLock™, which is featured on Monogram® siding, has 35 percent more vinyl than competitive locks. Thus, they are heavier panels.
- **Bow:** Panels must be straight to be installed and perform properly. CertainTeed’s carefully designed panel profile and rigorous quality control ensure uniformly straight panels.
- **Gloss:** Gloss must be uniform because gloss that is blotchy reflects light unevenly, giving the appearance of color variation or a checkerboard effect. Also, uneven and inconsistent gloss will weather inconsistently. To prevent this, gloss level is checked at several points on a panel every hour during the manufacturing process with a gloss meter. It indicates the relative reflectance of the sample on a scale of 0 to 100. The standard (ASTM D3679) requires readings of at least three points on the sample; the three readings must not vary more than  $\pm 10$  percent to be considered a surface with a uniform gloss. This gloss control process ensures consistently low gloss from panel to panel, carton to carton, in all CertainTeed siding.
- **Fading and weathering:** Everything that is exposed to the weather fades, so normal fading can be expected for all siding. However, CertainTeed siding weathers consistently and retains its beauty because every style and color undergoes accelerated weathering tests in our laboratories as well as at least two years of accelerated outdoor testing in such places as hot, dry Arizona; hot, humid Florida; and the temperate industrial air of Michigan. Six-inch-long samples are hung outdoors, facing south, at a 45° angle and at an angle representative of normal installation requirements for at least two years. At the end of the test, the material must be free of any visual surface defects such as peeling, chipping, cracking, flaking, or excessive weathering due to manufacturing conditions.

This test is also used to evaluate chalking on painted surfaces. The tester transfers chalk from an exposed weathered surface to a piece of black test fabric. The quantity of chalky material is visually compared to photographic reference standards of increasingly chalky standards.

- **Expansion and contraction:** As outside temperatures change, all polymer siding expands and contracts. Laboratory tests have shown that a 12-ft. length of PVC, a thermoplastic, will expand and contract as much as 1/2 inch over temperature swings of 100° F. However, when it is installed correctly, the normal expansion and contraction of CertainTeed vinyl and Cedar Impressions® siding are not visible to the homeowner. When vinyl siding is free to “float” on the wall, it retains its profile and fit as it expands and contracts. And even though its installation procedure calls for Cedar Impressions® polypropylene siding to be hard nailed to a solid substrate through the round hole in the nail hem, Cedar Impressions® expands and contracts equally on both sides of the nail, thus preserving its appearance on the wall.

In the laboratory, siding is tested for expansion and contraction (its coefficient of linear expansion) by alternately exposing it to hot and cold environments and measuring the changes in length throughout the test. The coefficient of linear expansion is the change in length per degree of temperature change. This number is used to calculate the amount of space that should be left during installation to accommodate contraction and expansion between the panel and channel.

- **Impact:** The ability of siding to resist impact is measured in a Gardner impact test (ASTM D4226). From a specified height, a test instrument drops an 8-lb. weight with a rounded tip onto an area of siding. When the siding fails, it will either crack, split, or tear (ductile failure), or it will shatter (brittle failure). Thick, high quality siding with good elasticity is likely to suffer only ductile failure.

Our field experience shows that CertainTeed siding far exceeds the minimum impact resistance rating for ductile break.

- **Surface Distortion (oil canning):** In the ASTM test for surface distortion (D3679), three 6-ft. pieces of siding are installed on a frame. The middle course is gradually heated to 120° F and then visually inspected for bulges, waves, or ripples. The ASTM specifies that no distortion be present at 120° F; CertainTeed siding shows no distortion at 120° F. To take heat build-up into consideration, darker colors are heated to 130° F without distortion.

## Summary

- CertainTeed siding is tested against a set of manufacturing and product specifications.
- Raw materials are tested before and during the manufacturing process. These tests ensure batch-to-batch quality and consistency.
- As the product moves through the manufacturing process, the vinyl sheets are tested to ensure that they meet manufacturing specifications like width, thickness, and weight; color and gloss; the height and angle of the panel projection; and warp, bow, and squareness.
- Finished product is also tested for physical properties: fading and weathering, expansion and contraction, impact resistance and surface distortion. These tests ensure that every CertainTeed siding panel performs as promised.
- The molds used to create our Cedar Impressions siding are created and regularly inspected by our in-house tool shop.

## 8. Jobsite Safety and Workmanship

The care and skill that you and your crew use on the jobsite can positively affect the outcome of the job as well as the reputation and profitability of your company. The National Green Building Standard (NGBS) has assembled a set of suggestions for jobsite safety and care. This chapter highlights some of those recommendations.

### Objectives

This chapter contains recommendations for working safely and maintaining a professional jobsite.

- Tools
- Scaffolding
- Ladders
- Personal protective equipment
- Housekeeping
- Professionalism

### Tools

- One of the most important things you can do to make the job go smoothly is to make sure that all tools are in good shape and everyone understands how to use them properly.
- Maintain all hand tools and equipment in a safe condition and check regularly for defects. Do not use broken or damaged tools.
- Use double insulated tools or ensure that all tools are grounded. Protect all temporary power with ground fault circuit interrupters (GFCI). Plug into GFCI-protected generators or use GFCI extension cords.
- Equip all power saws with blade guards and turn them off when they are not being used.
- Before you or your crew uses pneumatic or power-actuated tools, make sure everyone has been trained and checked out on their proper use.
- Wear proper eye protection at all times, especially when using power tools.

- Never leave cartridges for pneumatic or power-activated tools unattended. Keep all equipment in a safe place, and store it according to the manufacturer's instructions.

### Scaffolding

The proper use of scaffolding is particularly important when installing second-story trim.

- Ensure that all scaffolding is erected on stable footings or mud sills.
- Don't take shortcuts—install all guardrails and cross bracing and complete the planking across the entire scaffold.
- On fabricated frame scaffolding, make sure workers have ladder access.
- Pump jack scaffolding must be erected with guardrails and roof connectors.
- No more than two workers (500 pounds) can work on pump jack scaffolding at a time.
- Use safety harnesses to prevent serious falls.

### Ladders

Ladders should be well maintained and used only as they were intended.

- Regularly inspect all job-made and manufactured ladders to verify that they are in good condition and free of defects.
- Before you climb a ladder, make sure it is stable and level.
- Secure ladders at the top to keep them from slipping and causing falls.
- Extend ladders 3 feet above the landing to provide a handhold for balance when getting on or off the ladder from other surfaces.
- Locate and identify overhead electrical lines. Make sure ladders and scaffolds never come within 10 feet of electrical power lines.
- Use ladders only for what they were made—not as platforms, runways, or scaffold planks.
- Please refer to [www.osha.gov](http://www.osha.gov) for more information on the proper use and maintenance of ladder.

---

## Personal Protective Equipment

The Occupational Safety and Health Administration (OSHA) requires that workers wear applicable personal protective equipment.

- Falling debris is a hazard when installing trim. All workers and visitors should wear hard hats while they are on the jobsite.
- When cutting or nailing trim, always wear safety glasses or face shields.
- Wear sturdy shoes or boots. They keep toes from being crushed and help prevent protruding nails from penetrating shoes.

---

## Housekeeping

Most remodeling applications involve working around families and neighborhoods. For this reason, it is particularly important to keep the area clean at all times.

- Keep all walkways and stairways clear of trash and debris.
- Use and store tools and supplies away from walkways and doors.
- Scrap lumber and trim, boxes, and other discarded material are tripping hazards. Throw them into a dumpster or other trash receptacle or recycling container.
- Exercise care around shrubs and flower beds. Some minor damage to the landscaping is unavoidable, but be prepared to replace shrubs that are accidentally crushed or broken.

---

## Professionalism

Remodelers rarely have the luxury of working alone. Your jobsite is often in the heart of a busy neighborhood, where your customers, their families, and their neighbors can watch you work. For this reason, it is particularly important that you and your crew look and act professionally.

- Wear appropriate clothing. Avoid work clothes that are excessively worn and tee-shirts with inappropriate graphics.
- Watch your language—the fact that you don't see anyone but your co-workers is no guarantee that others can't hear you.
- Pick up cigarette butts, drink containers, and other trash that accumulates during the day.
- Keep the homeowner informed of your progress. Show up on time. If you run into unexpected delays or are unavoidably called from the jobsite, let the homeowner know when you will return to complete the job.
- Follow-up. A simple phone call or visit with the homeowner when the job is complete is an opportunity to answer minor questions and avoid unnecessary call backs.

### Summary

- Keep all tools well maintained, and use the appropriate tool for the job.
- Before using power tools, read and follow the manufacturer's instructions. All power tools should be grounded.
- Falls can be deadly. Install scaffolding correctly and completely. All guardrails, cross bracing, roof connectors, and planking must be securely attached. Ladders should be stable and level and secured at the top. Harnesses help prevent serious injury from falls.
- Workers should wear the appropriate personal protective equipment, including hard hats and sturdy shoes or boots.
- Keep the area clean. To minimize tripping hazards, pick up tools, supplies, and trash and keep walkways and steps clear.
- Follow lead-safe work practices when working on homes built before 1978.



## 9. How to Install Horizontal Siding

### Objectives

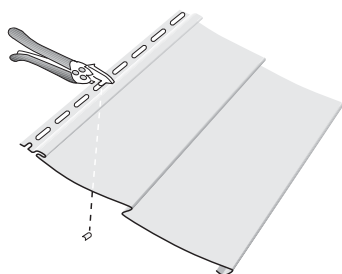
In this chapter you'll learn proper techniques for installing horizontal siding:

- Sheathing and wall preparation
- Proper cutting and nailing
- Installing trim
- Flashing around windows, doors, and the roof line
- Hanging the siding
- Attaching shutters and external fixtures

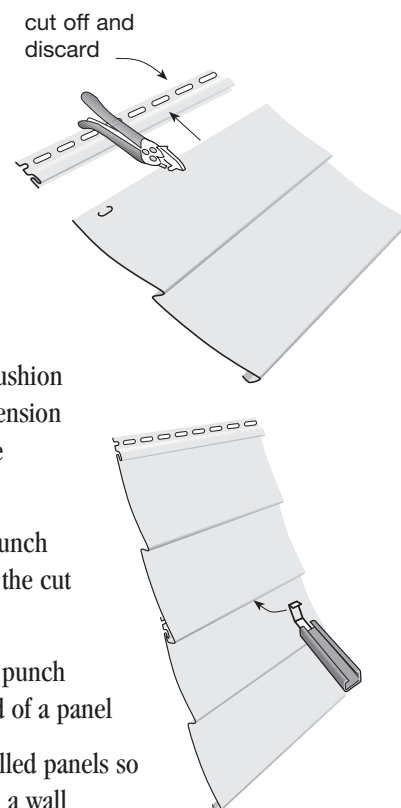
This chapter includes basic instructions for installing CertainTeed vinyl siding. (These guidelines **should not** be used to install Cedar Impressions®, Northwoods®, or CedarBoards™, products, which are featured in Chapter 11 of this manual.) For more detailed instructions, refer to the CertainTeed *Installation Guide* (CTS205). These instructions describe and illustrate the steps involved in installing CertainTeed siding and trim. Their purpose is to provide detailed information and how-to tips that will simplify the installation process. CertainTeed shall not accept any liability or responsibility under its written warranty for failure caused by application that does not meet the requirements for proper installation. These requirements are outlined throughout this book and in the *Installation Guide*. Any deviations from these requirements should be addressed and approved in writing by CertainTeed Corporation.

### Tools

- Chalk line
- Hacksaw
- Hammer
- Level
- Shears
- Square



- Tape measure
- Tin snips
- Utility knife
- Circular saw—attach a sharp, fine-tooth plywood blade mounted in reverse direction
- Ladders and scaffolds—cushion the upper side rails of extension ladders to prevent damage during installation
- Nail slot punch—use to punch elongated nailing holes in the cut edge of a panel
- Snap lock punch—use to punch locking tabs in the cut end of a panel
- Zip tool—“unlocks” installed panels so they can be removed from a wall



### Wall Preparation and Sheathing

Vinyl siding must be applied over a rigid sheathing that provides a smooth, flat surface or an underlayment that is no more than 1" thick. **Do not** apply vinyl siding directly to studs. Vinyl siding is an exterior cladding; it is not a complete weather resistant barrier.

### New Construction

Fasten the sheathing securely to the studs. **Make certain the substrate is watertight.**

Attach CertaWrap™ Weather Resistant Barrier securely to the wall. (Installation instructions for CertaWrap are available at [www.certainteed.com](http://www.certainteed.com))

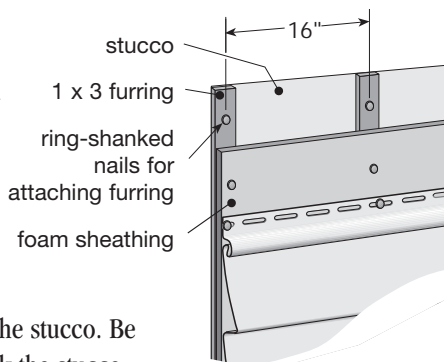
## Remodeling

If you are covering old siding, there are three ways to prepare the surface of the building for the new siding.

1. Strip off the old siding and level the wall. If there is felt under the old siding, either nail it securely to the wall or strip it off completely. If there is no solid sheathing under the siding, you will have to install it. See New Construction for details.
2. Apply rigid sheathing over the old siding. Nail it securely and evenly, taking care to bridge the low spots.
3. Nail vertical furring on top of the old siding. Apply rigid sheathing to the furring just as you would for **New Construction**.

## Stucco

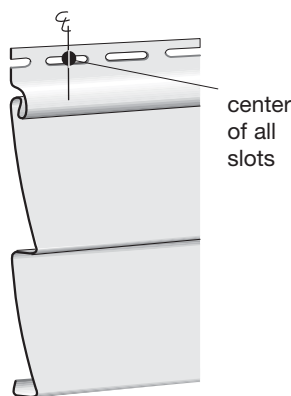
If you are applying siding to stucco, you will have to create an even, solid surface to attach the siding to.



- Carefully chip the high spots off the stucco. Be careful not to crack the stucco.
- Fasten 1" x 3" furring strips, 16" on center, over the stucco. Use ring-shanked nails or screws, and attach the fasteners to the studs.
- Install rigid foam sheathing to the furring strips. Follow the manufacturer's instructions, and use washers to prevent penetrating the sheathing with the nail heads.

## Fastening

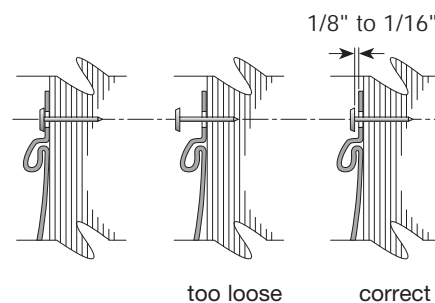
Use only corrosion-resistant fasteners (aluminum, galvanized, or stainless steel roofing nails, staples, or screws) with a minimum head diameter of 5/16" and a minimum shank diameter of 1/8". To determine the length of the fastener you'll need, measure the thickness of the sheathing and add 1". Do not use fasteners smaller than 1-1/2".



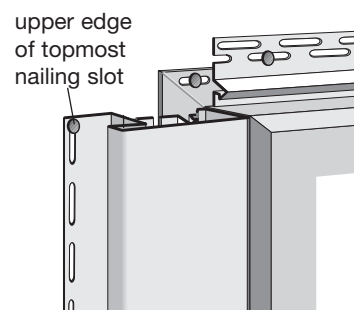
Fasteners are typically spaced a maximum of 16" apart. In new construction, fasten studs on 16" centers. Do not skip studs. Some vinyl siding may be used in 24"-on-center construction in areas without special wind-load requirements. Check your local building code for special requirements.

When installing horizontal accessories and panels, set the fasteners in the center of the elongated nailing slots. **Drive the fasteners straight in; do not angle them**). Also, **do not fasten too tightly**. Drive the fasteners until there is up to 1/16" of space between the fastener head and the nailing flange. This will allow the panels to expand and contract as the temperature changes.

If the height of the fastener head is more than 1/8" above the nailing flange, it can interfere with the locking tab on the next row of siding.

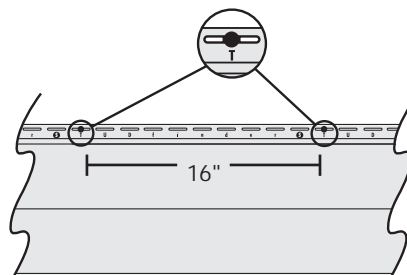


For vertical accessories and panels, position the first fastener at the upper edge of the top-most nailing slot. This will allow the panels to hang freely from the fasteners and expand and contract as the temperature changes. Position the remaining fasteners in the center of the nailing slots. Allow for 1/3 of the total expansion at the top of the panel and 2/3 at the bottom.



## STUDfinder Installation System

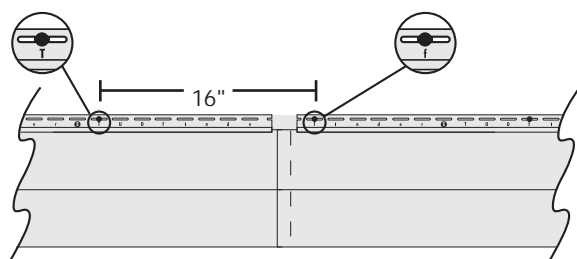
STUDfinder™ Installation System combines precisely engineered nail slot locations with graphics to create a siding panel that is designed to help ensure quick, accurate and secure installation.



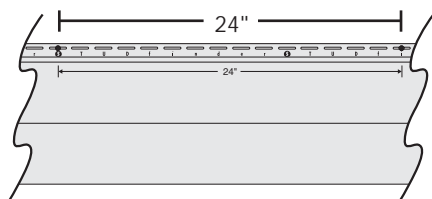
The nail slots are positioned 16" and 24" on center (O.C.) to allow for alignment with studs, with STUDfinder™ graphics centered directly under each nail slot. This provides a quick and easy guide to help ensure fastening to studs.

Here's how it works:

1. Locate the first stud and fasten in the center of the nail slot. Notice which STUDfinder letter appears below the slot. Check that nail/staple penetration is at least 3/4".



2. Simply go to the next repeat of the letter to find the next stud. For example, if your first stud is at "T," so will the succeeding studs in 16" O.C. applications (every 10th slot). When installing 16', 20' or 25' Monogram XL or Cedarboards XL 16' 8" panels on 16" centers, the succeeding studs are at every 8th slot.
3. When you apply the next panel, adjust the overlap, as necessary, to line up with studs and repeat steps 1 and 2.
4. Each panel will use the same letter in 16" O.C. application.
5. 24" O.C. applications will use a similar pattern of letters, with 2 letters that repeat every-other stud (every 15th slot). For example, if the first stud is located at "S," the next will be at "I," then "S," then "I," etc. When installing 16', 20' or 25' CedarBoards XL or Monogram XL panels on 24" centers, the succeeding studs are at every 12th slot.

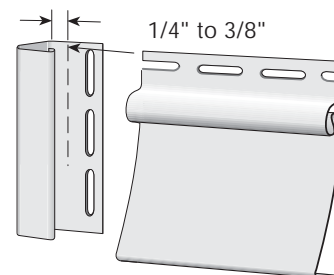


**NOTE: When lapping horizontal panels up to 12' 6", overlap the ends 1". Panels longer than 12' 6" must be overlapped 1-1/2".**

## Expansion and Contraction

Vinyl building products expand and contract as the temperature changes. You must allow for this movement when you fasten siding and accessories to the wall. Follow these guidelines to determine the space required for expansion and contraction between the siding and the trim:

- In a horizontal application, a vinyl panel tends to expand equally in both directions, so when the temperature is warmer than 40°F at the time of installation, leave 1/4" at both ends of the panel.



- When the temperature is below 40°F at the time of application, leave 3/8" at both ends of the horizontal panel.
- When overlapping horizontal panels, overlap the ends 1".

## Cutting

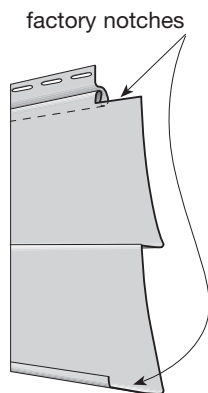
To cut panels to size, make either cross cuts or rip cuts. Note: whenever you cross cut a panel that is used in an overlap area, duplicate the factory notch at the cut end.

### Cross Cuts with a Power Saw

- For a precise cut, use a power circular saw equipped with a sharp, fine-toothed plywood blade. For best results, reverse the direction of the blade.
- Cut one or two panels at a time.
- The lower the outside temperature, the lower your feed rate should be.

### Cross Cuts with Snips

- Use a square to mark the cut line.
- Start the cut at the top lock and continue to the bottom of the panel.



### Rip Cuts

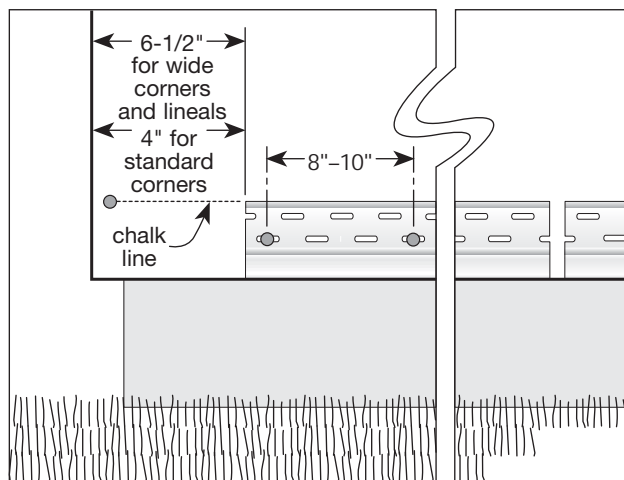
- Use a utility knife to score the panel along the cut line.
- Bend the panel back and forth along the score line until it snaps cleanly.
- To fit panels around windows and doors, cut the panels with tin snips and a utility knife.

## Installing Accessories

### Snap a Chalk Line

If the house is reasonably level, find the lowest point of the sheathing (in new construction) or old siding (when remodeling).

1. Partially drive a nail at one corner, starter height minus 1/4" above the lowest corner.
2. Attach a chalk line.



3. Stretch the chalk line from this nail to the opposite corner of the house.
4. Use a line level or 4' (minimum) level to make sure the line is level.
5. Snap the chalk line and repeat the entire procedure around the entire house.

A laser level or water level, a long clear plastic tube 90% filled with water, is useful in marking points around the house and on opposite sides of openings like doors.

### Install a Starter Strip

Correctly installing a level starter strip is the first step to a professional installation.

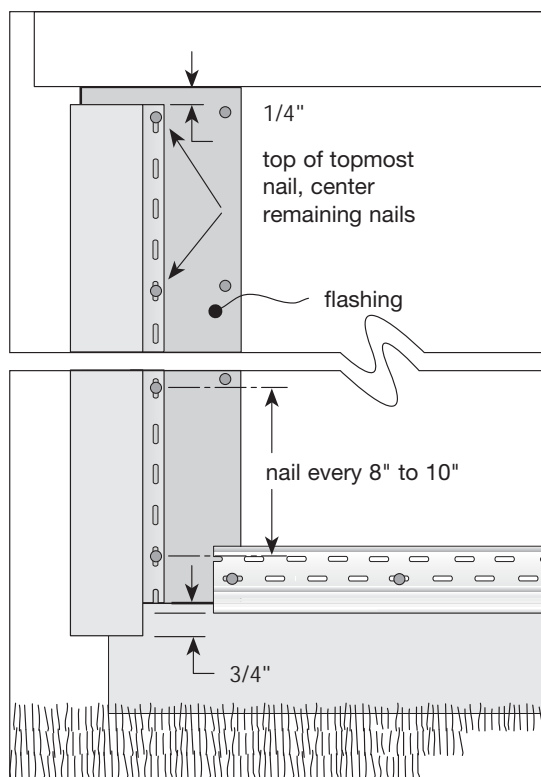
1. Position the starter strip with the top edge on the chalk line. If you are using lineals or wide corners, keep the ends of the starter strip 6-1/2" away from the outside and inside corners. Keep the ends 4" away from standard one-piece corners.
2. Fasten the strip to the wall. If there are hollows in the wall, shim out the starter strip. This will prevent a wavy appearance in the finished job. Nail every 8" to 10 ".
3. As you add starter strip sections, be sure to leave 1/4" space between them for expansion.

### Outside Cornerposts

Before you install outside cornerposts, flash the corners of the building by bending a 20"-wide piece of aluminum trim coil 90° so you have two 10" legs. Cover the entire length of the corner, lapping the upper pieces of the flashing over the lower pieces. (Self-adhering flashing may be substituted for trim coil. Follow the manufacturer's installation instructions and observe local building requirements.)

### For cornerposts 12' long or less

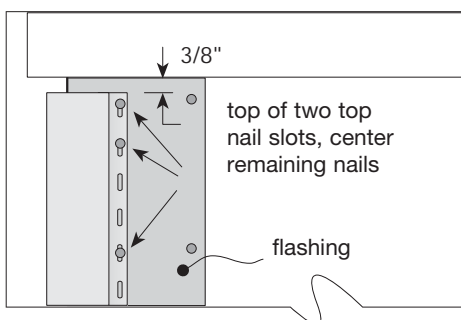
1. Position the outside cornerpost so that the top of the post is 1/4" from the underside of the eave. Extend the bottom of the cornerpost 3/4" below the starter strip.
2. Before nailing, make sure the post is straight and true.
3. Hang the cornerpost by first positioning a nail at the top of the topmost nail slot.



4. Position all remaining nails in the center of nail slots a maximum of every 8" to 10". Leave 1/8" to 1/16" between the nail head and the cornerpost to allow the cornerpost to move during normal expansion and contraction. (DO NOT NAIL TIGHT.) Follow this nailing pattern on both nail flanges of each post.

**NOTE:** CedarBoards corners install similar to standard outside cornerposts.

### *For cornerposts longer than 12'*

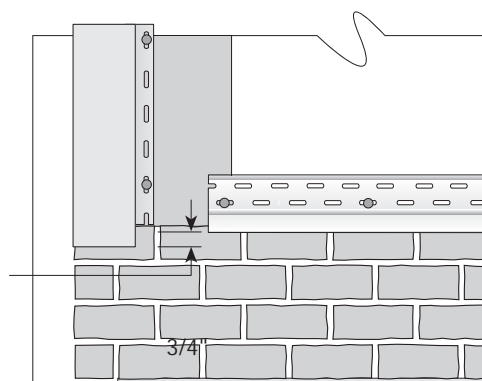


1. Position the top of the outside cornerpost 3/8" from the underside of the eave. The bottom of the cornerpost should fall 3/4" below the starter strip.
2. Make sure the cornerpost is straight and true before you nail it.
3. Hang the cornerpost by first positioning a nail at the top of the two top nail slots.

4. Position the remaining nails in the center of the nail slots a maximum of every 8" to 10". Leave 1/8" to 1/16" between the nail head and the cornerpost to allow the cornerpost to move during normal expansion and contraction. (DO NOT NAIL TIGHT) Follow this nailing pattern on both nailing flanges of each post.

**NOTE:** When installing cornerposts longer than 12', position the fasteners at the top of the top two nail slots on each side of the corner.

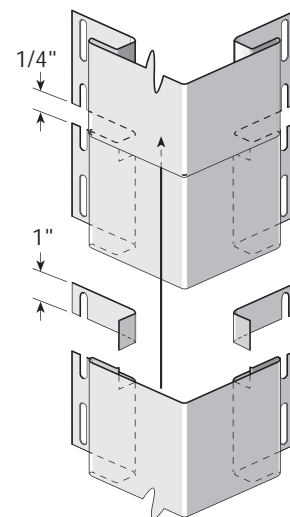
### *Transitioning from masonry or stucco*



Position the bottom of the cornerpost 3/4" below the starter strip. If the corner is less than 12', leave 3/8" from masonry/flashing to allow for expansion. If the corner is greater than 12', leave 5/8" from masonry/flashing for expansion.

**PRO TIP:** If the transition material allows, the bottom 3/4" of the channels may be removed from the outside cornerpost so that the face of the corner may be positioned lower and more in line with the bottom of the siding. This method creates a transition with more pleasing aesthetics. The outside cornerpost face must still maintain 3/8" or 5/8" clearance from obstructions.

If you must splice posts for high walls, cut 1" off the nailing flanges and back so just the face of the outside cornerpost remains. Then lap 3/4" of the upper post over the lower post. Allow 1/4" for expansion. There will be an obvious joint between the two posts, but water will flow over the joint and be less likely to infiltrate behind the post.



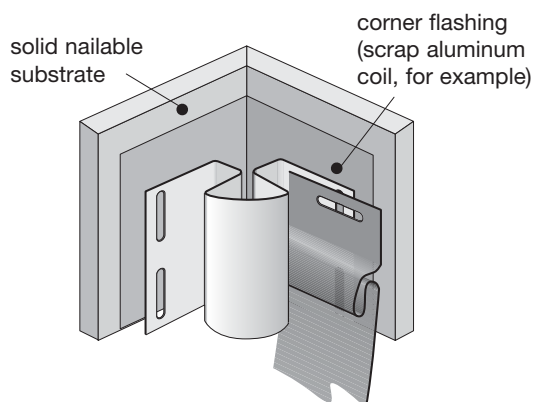
## Inside Corner Options

There are three options for trimming inside corners: Standard 3/4" inside cornerpost, single J-Channel, and two J-Channels.

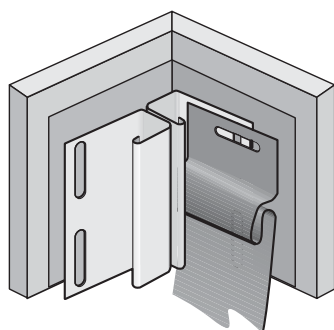
To flash the inside corner:

1. Bend a 20"-wide piece of aluminum coil stock 90° so you have two 10" legs.
2. Insert the flashing into the corner.

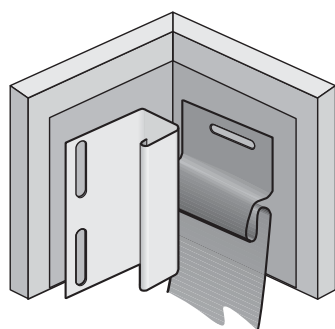
If you use more than one piece of flashing, overlap the upper pieces of the flashing over the lower pieces.



standard 3/4" inside cornerpost



two J-Channels



single J-Channel

(when using a single J-Channel, the corner must have corner flashing)

To install inside cornerpost:

1. Hang the post from the top of the eave. The bottom should extend 3/4" below the starter strip.
2. Remove the bottom 3/4" of the nailing flange so it does not show below the siding.
3. Set the post straight and true.
4. Position the top nail in the top of the nailing slot. All other nails should be in the center of the nail slots.

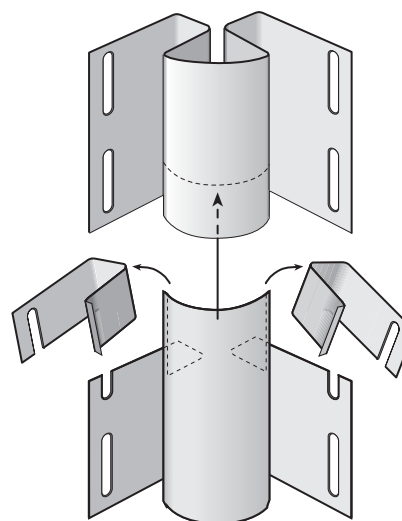
If you have to splice the inside cornerpost:

1. Cut 1" off of all but the outer face of the lower post.
2. Lap 3/4" of the upper post over the lower post, leaving 1/4" for expansion.

If you are using two pieces of J-Channel instead of inside cornerpost. Hang the J-Channel from the top of the eave. The bottom should extend 3/4" below the starter strip. Remove the bottom 3/4" of the nailing flange so that it will not show below the siding. Use the same positioning and nailing guidelines as inside cornerpost.

To create a narrower corner, you can also use a single length of J-Channel and flashing. First, install the siding on one wall. Then place the J-Channel lightly against the siding and nail it to the substrate on the adjacent wall. Follow the same positioning and nailing guidelines as inside cornerposts.

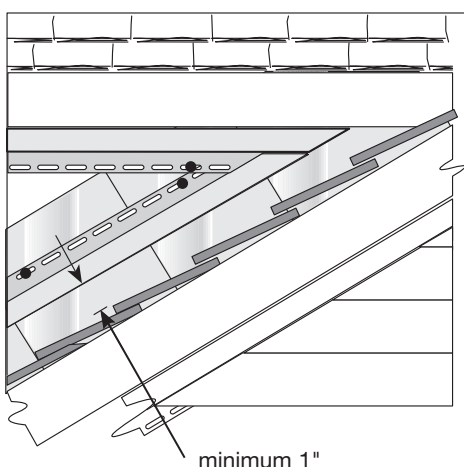
inside cornerpost splice





## Trim at the Roof Line

There are places where vinyl siding and accessories will meet at a roof line. These areas will be trimmed with J-Channel. However, if you install the J-Channel directly on the roof, it can build up an excessive amount of heat. This heat might cause the J-Channel to expand excessively. Therefore, at these places—like where a gable dormer or second-story side wall intersect with the roof—position the J-Channel so it is a minimum of 1" away from the roof line. Also, if you use more than one length of J-Channel to span a wall surface, overlap the J-Channels 3/4".

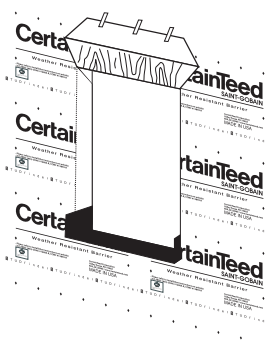
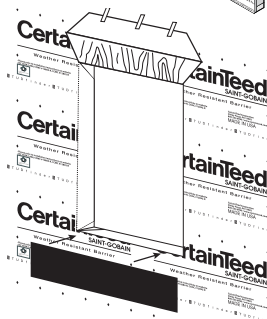


To keep water from infiltrating along the intersection of the roof and wall, install flashing before you install J-Channel.

## Installing CertaFlash™ BA around a Rectangular Window

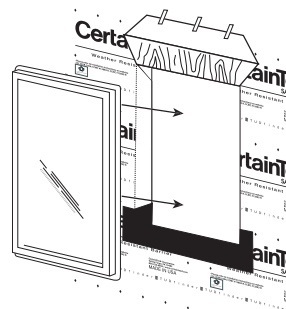
To install CertaFlash around a rectangular opening:

1. Make diagonal cuts in the weather-resistant barrier at the upper corners of the top (head) of the rough opening. Gently lift and tape the flap temporarily in place.
2. Cut a piece of CertaFlash™ Flex flashing for the bottom (sill) that is 12" longer than the width of the rough opening. Remove the backer from the flashing and begin applying one end to the jamb of the rough opening 6" above the sill. (NOTE: the tape will extend over the exterior edge

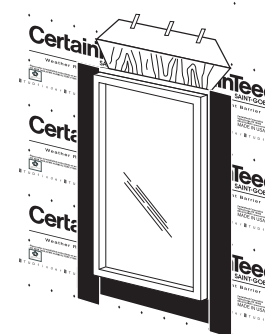


of the jamb.) Applying even pressure to the tape with your hands, work your way down the jamb, across the sill, and up the opposite jamb, finishing 6" above the sill. Flex the overhanging tape down onto the wall covering the weather resistant barrier in weatherboards fashion, again applying even pressure to ensure adhesion.

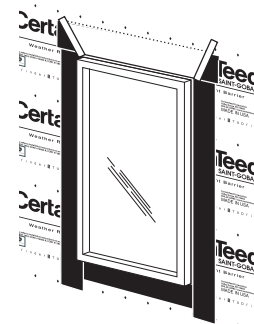
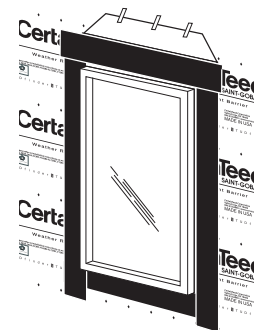
3. Before installing the window, apply a continuous bead of sealant to the interior of the window's mounting flange. Install the window according to the manufacturer's instructions.



4. Cut two strips of CertaFlash™ BA for the sides (jamb) of the window. Jamb flashing tape should extend a minimum of 3" above the top of the jambs of the window unit and a minimum of 1" beyond the bottom flashing tape installed in step #2, covering the width of the previously installed flashing at the base. Slowly peel release paper off as you press the flashing in place. Ensure the flashing covers all nails and mounting slots on the window's mounting flange.



5. Cut BA flashing for the top (head) of the opening so it will extend beyond both ends of the jamb flashing. Ensure the flashing covers all nails and mounting slots on the window's mounting flange.
6. Finally, lay weather resistant barrier over the head flashing. Apply CertaTape over both diagonal cuts.



To install CertaFlash around a geometric window, see the installation instructions for CertaFlash™ Weather Resistant Barrier and Accessories (CW005) available at [www.certainteed.com](http://www.certainteed.com)

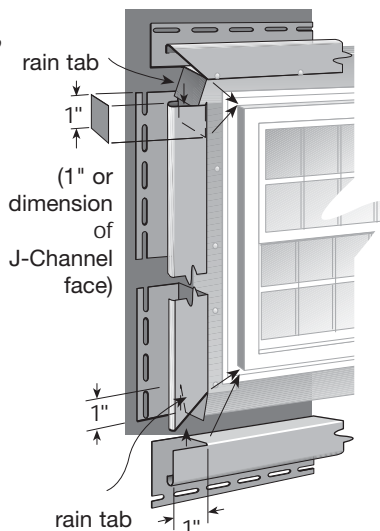
## Window and Door Trim

To trim windows and doors, install J-Channel along the top and sides of the door casings and around windows.

If you are installing J-Channel around replacement windows that do not have nail flanges, flash the window before you trim it. Also, for best results, use aviation snips when cutting the J-Channel.

Before you begin to miter the corners, make sure the J-Channel is cut to the proper length. Leave the proper allowance for the width of the face of the J-Channel. Then:

1. Square cut the bottom J-Channel so that its ends extend beyond the window casing to the width of the face of the J-Channels.
2. Notch the ends for clearance.
3. Position and fasten the bottom J-Channel.
4. Measure the side J-Channels. Add the width of both the top and bottom J-Channels.
5. Miter cut (45 degree angle) the lower ends of both J-Channels, and create rain tabs.
6. Notch the tops of the channels, position them, and fasten the side J-Channels.
7. Mark the top J-Channel so its ends extend beyond the casing to the width of the side J-channels.
8. Miter cut (45° angle) the channel ends.
9. Cut and bend water tabs on the J-channel.
10. Position and fasten the top J-Channel.



## Installing Horizontal Courses

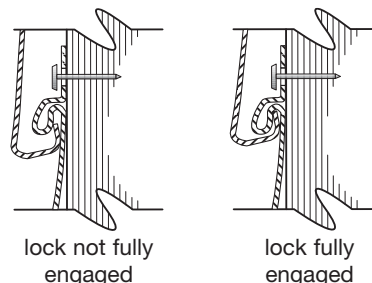
The key to creating a visually attractive installation is to avoid using panels that are shorter than 3' and to lap away from the areas where people normally walk or gather.

- On the front wall, work from the corners to the entrance door, so the overlaps face away from the door.
- On side walls, work from the rear to the front.

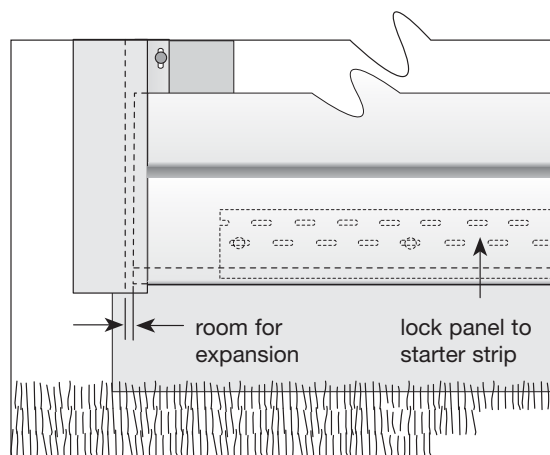
## First Course

To install the first horizontal course:

1. Slide the first panel into the cornerpost recess. Leave room for expansion.



2. Hook the bottom lock of the panel into the interlock bead of the starter strip. Double check to make sure you've locked the panel along its entire length. You may need to apply a light upward pressure to snap the panel securely in place.
3. Make certain the panel can slide freely.
4. Start at the center of the panel and work out, and fasten the siding to the substrate.
5. Install the remaining first course panels, overlapping the panel ends 1".
6. To allow for a neat lap, the last fastener in the panel should be at least 4" from the end.
7. Remember to leave room for expansion when fitting the panels into the remaining inside and outside cornerposts.



## Subsequent Courses

For the best appearance, plan the positioning of the panels to avoid unsightly joint patterns. Follow these guidelines:

- Separate joints by at least two courses.
- Avoid joints above and below windows.
- Leave at least 3' separating joints on successive courses.
- Use short cutoff lengths at narrow openings between windows.
- Follow your pattern through all the courses.



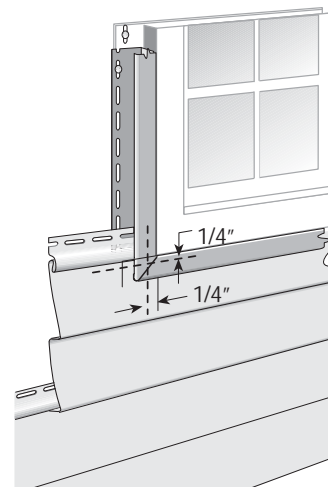
## Fitting under Windows

To fit siding panels under windows:

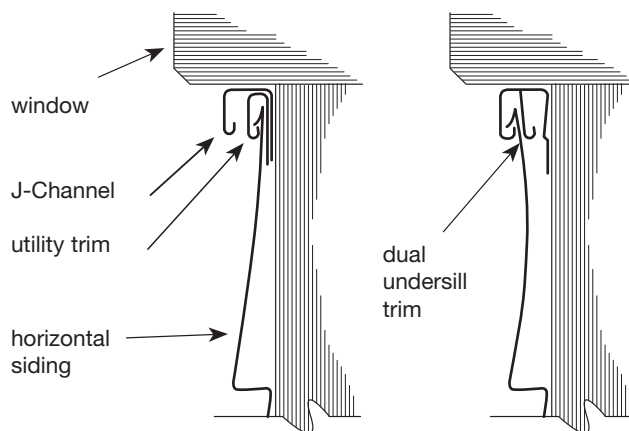
1. Hold the panel in place and mark the width of the window opening. Add 1/4" to 3/8" to both ends to allow for expansion and remark the panel. These marks are the location of the vertical cuts. Extend the marks onto the panel using a square.
2. Create a template for the horizontal cut with a piece of scrap siding. Lock the scrap piece into the lower panel and mark 1/4" below the sill height. This will provide clearance for the undersill trim. Because the window may not be perfectly level, repeat this procedure on the opposite side of the window.
3. Transfer the marks from your template onto the panel. With a straightedge to guide you, connect the marks.
4. Cut the panel. Use tin snips to make the vertical cuts and a utility knife to make the horizontal cut.

## Installing under Windows

If it is necessary to maintain the slope angle, install furring under the sill or use dual undersill trim. This trim has two receiving channels. Use the inner channel if you've cut the siding panel near the locking edge. Use the outer channel if the cut has been made near the butt edge.



1. Use the snap lock punch to raise tab faces on the outside of the panel. Punch out a tab every 6".
2. Push the horizontal edge of the cut into utility trim. Slide the vertical edge of the cut into J-Channels at the window sides. Make certain the installed panel locks into the panel below.



## Fitting over Windows and Doors

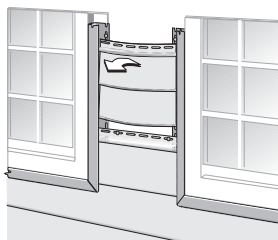
The procedure for cutting panels for installation over windows and doors is similar to that explained earlier.

1. If it is necessary to maintain the slope angle, install furring above the window.
2. Drop the panel into position, making certain that it fits into the undersill trim and J-channel at the top and at the sides. Interlock the panel with the siding panels below.

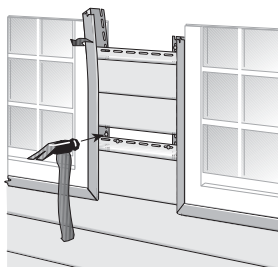
### ***Fitting Narrow Openings Between Windows***

When you install siding in the narrow openings between windows, be sure to leave adequate tolerances for expansion and contraction.

To simplify installing siding panels in the narrow openings between windows, install J-channel on both sides of the opening. Bow the panel toward you and slip it into the channel.

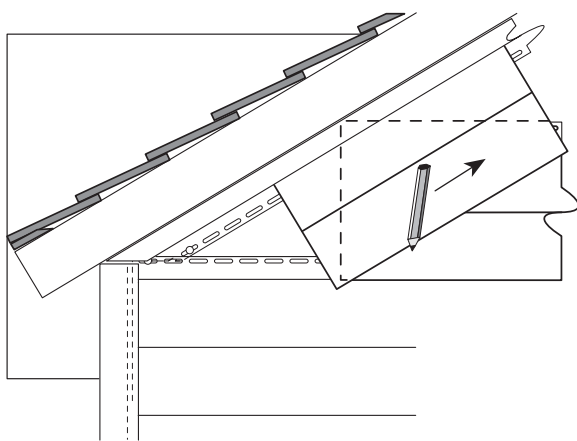


If the channel is very narrow, leave one J-channel loose except at the lowest point. Bend the channel out slightly to insert the panel. When the panel is in place and fastened, fasten the J-channel immediately above the panel and repeat the procedure.



### ***Fitting at Gable Ends***

Before you begin to install panels on a gable end, you will

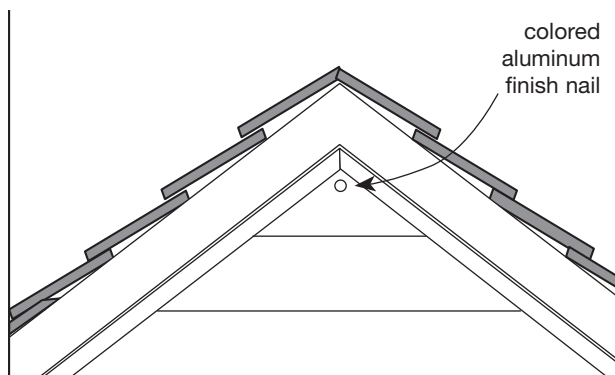


have to make a pattern duplicating the gable slope. Use this pattern to guide the cutting of the panels to fit the gable ends. To make the pattern:

1. Lock a short piece of siding into the panel starter strip as shown in the illustration.
2. Hold a second piece of siding against the J-Channel on the slope. Run a pencil along the edge of this piece, transferring the slope of the angle to the first piece of siding.
3. Cut along the line using a power saw or tin snips. Use this pattern to mark the siding panels before cutting them.

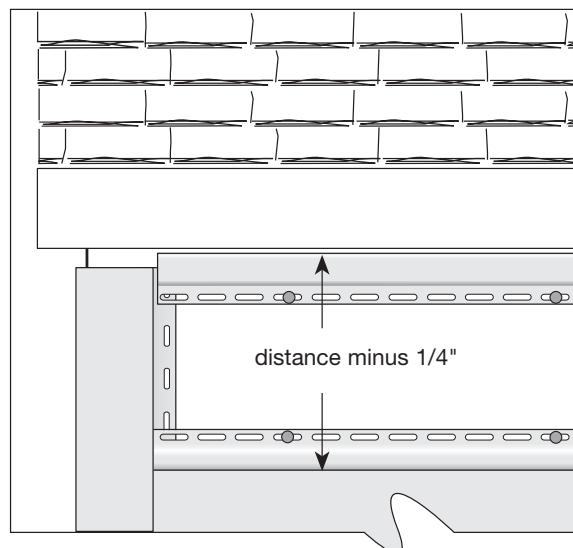
To install the cut panels:

1. Slip the angled end of the panels into the J-Channel along the gable edge. Leave space for expansion.
2. Interlock the panel with the course below.
3. It may be necessary to fasten the last panel to the top of the gable peak. If so, use a 1-1/4" to 1-1/2" aluminum or stainless steel trim nail with a painted head to face nail the panel. This is the only time you will face nail vinyl siding.



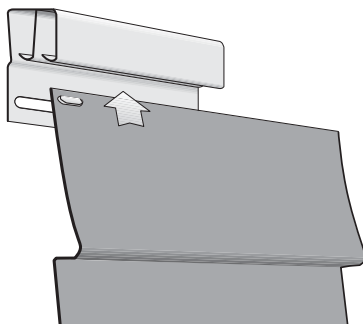
### ***Fitting under Soffit***

When you reach the last course of siding, you will probably have to rip cut the panels lengthwise to fit the panels under the soffit. Once again, if it is necessary to maintain the proper slope angle, furr out the area.



1. Install J-Channel and undersill trim or dual undersill trim.
2. Measure from the soffit to the base of the upper lock on the course of the panels below. Subtract 1/4".

3. Mark this dimension on the panel to be cut, taking the measurement from the bottom edge of the panel. For a more precise cut, repeat this procedure at several other points along the span to be covered by the panel.
4. Using a square or straightedge, draw a pencil line connecting these points. Then score along the line with a utility knife. Bend the panel back and forth until it snaps.
5. Use the snap lock punch to create tabs on the outside face of the panel, 1/4" below the cut edge. Space the tabs every 6".
6. Lock the bottom of the cut panel into the panel below.
7. Push the top edge into the undersill trim. The tabs will catch in the trim and hold the panel firmly in place. You will not fasten this last course, so it is important that the tabs fit properly in the undersill trim.



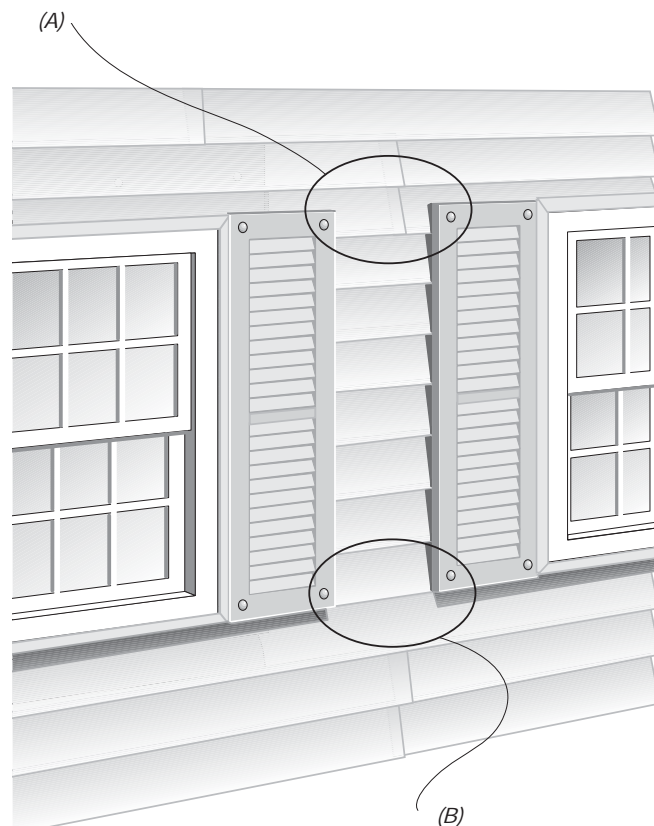
## Attaching External Products

All external products (downspouts, shutters, lights, for example) are attached to walls after you've installed the vinyl siding.

- All external fixtures must have a secure mounting surface. They must be attached to a solid backing, such as 3/4" exterior grade plywood.
- Never attach a fixture directly to vinyl siding.
- Allow for expansion and contraction of the siding under the accessory.
- Drill holes in the siding 1/4" larger than the diameter of the screws, bolts, or nails being used to fasten the objects.
- Do not fasten screws, bolts, or nails tightly.

## Lights

The most convenient way to attach light fixtures is with light blocks. Light blocks provide a simple way to allow for expansion and contraction because they contain receiving channels to hold the siding panels.



## Shutters

- (A) The ideal application has a joint between the two shutters where the shutters are secured to the house. In this way, the siding panel is not hard fastened between the two shutters and the siding can expand or contract.
- (B) When there is no joint between the shutters where the shutters are secured to the home, the shutter fasteners keep the siding panels from moving freely.
  - Enlarge the hole in the siding for securing the shutter. The hole clearance should be approximately 1/4".
  - If possible, stagger the screws on the shutter so that they do not line up on the same panel.
  - Apply caulk around the screws.



## Summary

- Vinyl siding must be installed over a rigid sheathing that supplies a smooth flat surface. Use furring or shims to correct uneven walls.
- In general, fasteners must be spaced no more than 16" apart.
- Vinyl siding expands and contracts as the temperature changes. Fastening the siding too tightly prevents the siding from moving freely. Fasteners that are too loose will interfere with the locking hem.
- Flashing should be installed at the roof line, on inside corners, and around all windows and doors before siding is installed.
- For the best appearance, position the siding panels to avoid unsightly joint patterns. Follow the pattern for the entire installation.
- Do not install panels that are shorter than 3'. On the front wall, work from the corners to the front door. On side walls, work from the rear to the front.
- Shutters, lights, and other exterior products are attached to the walls after the siding has been installed. Exterior products must have secure mounting surfaces and they must never be attached directly to the siding.
- Wood shims and/or aluminum trim coil or vinyl lineals can be used to build out windows, doors, and other openings in insulated siding.



## 10. How to Install Vertical (Board & Batten) Siding

In general, CertainTeed vertical siding is installed using the same techniques you learned for lap siding. However, there are some different things to remember about preparing the wall and fastening the siding. For more detailed instructions about vertical siding, refer to the *Vinyl Siding Installation Guide* (CTS205).

### Objectives

In this chapter, you'll learn that some of the installation techniques for vertical siding differ from those for horizontal siding.

- Sheathing, particularly for new construction
- Vertical expansion and contraction
- Installing J-Channel
- Panel layout

### Preparing Wall Surfaces

For the most part, the wall preparation instructions given for horizontal siding (see Chapter 9) also apply to vertical siding. The key requirement, of course, is that you start with a smooth, level, and rigid substrate (plywood, wood composite, rigid foam, or fiber sheathing).

#### ***New Construction***

When the substrate is plywood or wood composite, you will not have to modify the substrate. You can attach the fastener into the substrate at any point.

If the sheathing is rigid foam or fiber:

- Install solid wood nailer strips horizontally to the studs before you apply the sheathing.
- Use 1 x 3 wood furring positioned 12" on center.

#### ***Remodeling***

When remodeling over wood siding, apply rigid foam or fiber sheathing. Shim the sheathing as necessary to create a level surface.

When you remodel over brick, block, stucco, or irregular wall surfaces:

- Fasten 1" x 3" furring strips horizontally, 12" on center, to the stucco. Use ring-shanked nails or screws, and attach the fasteners to the studs.
- Install rigid foam sheathing to the furring strips. Follow the manufacturer's instructions, and use washers to prevent penetrating the sheathing with the heads of the fasteners.
- On masonry, use masonry fasteners. Follow the manufacturer's instructions for use.

#### ***Snap a Chalk Line***

If the house is reasonably level, find the lowest point of the sheathing (in new construction) or old siding (when remodeling).

1. Partially drive a nail at one corner 1" above the lowest corner.
2. Attach a chalk line.
3. Stretch the chalk line from this nail to the opposite corner of the house.
4. Use a line level or 4' (minimum) level to make sure the line is level.
5. Snap the chalk line and repeat the entire procedure around the entire house.

A laser level or water level, a long clear plastic tube 90% filled with water, is useful in marking points around the house and on opposite sides of openings like doors.

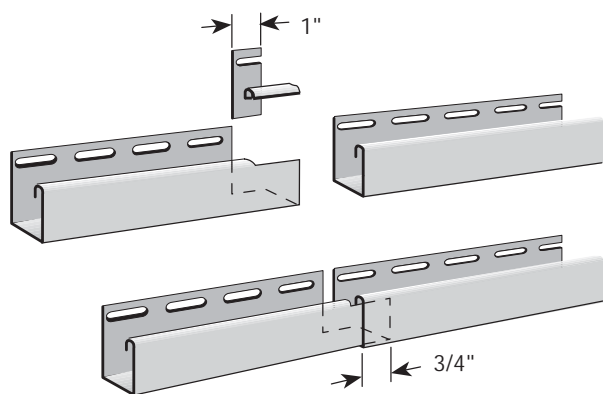
## Installing Trim

Install outside and inside cornerposts using the dimensions and procedures described on pages 21-23.  
Do not install starter strips for vertical siding.

### Top and Bottom J-Channel

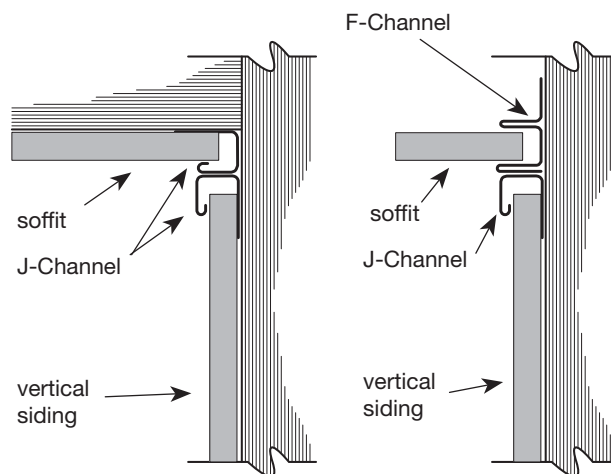
You will have to install top and bottom J-Channel to receive the vertical siding.

1. Snap a base line 1" above the low point of the house.
2. Using the chalk line as your guide, install J-Channel along the bottom of the sheathing.
3. To overlap the J-Channel, cut a 1" section of the nailing flange and face return. Overlap the J-Channels 3/4".



4. Install inverted J-Channel along the top of the wall, under the eave.
5. Leave a 1/4" gap between the J-Channel and the cornerposts.
6. You should also allow for the vertical expansion of the siding panel. In most cases, position the J-Channel at a point equal to the length of the panel, plus 5/8" (1/4" for upper expansion and 3/8" for lower expansion).
7. If the wall requires more than one course of siding, use two lengths of J-Channel, back-to-back, at the joint between the two courses.

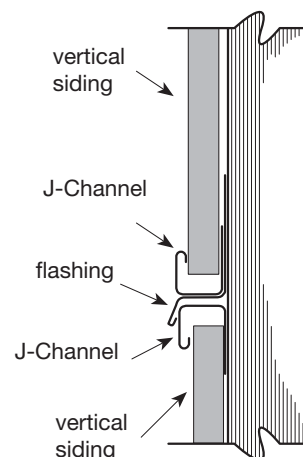
If you are going to install soffit, you may want to install the receiving channels for the soffit now. You can use either inverted J-Channel (back-to-back with the panel J-Channel) or F-channel to receive the soffit.



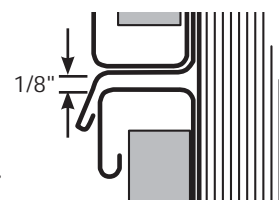
### Intermediate J-Channel

If the wall requires more than one course of siding, you will have to install J-Channel for each course.

1. Snap a chalk line parallel to the bottom J-Channel, at a height equal to the length of the lower panel, plus an allowance for expansion. For example, if the lower panel is 144" long and you're adding 1/2" for expansion (because the temperature is above 40° F), strike a line 144-1/2" from the bottom J-Channel.



2. Attach inverted J-Channel along this line to receive the panels from below.
3. Leave a 1/4" gap between the panels and the cornerpost.
4. Overlap the J-Channel 3/4".
5. Apply head flashing above the inverted J-channel.
6. Fasten the J-Channel over the flashing to receive the upper panel. Be sure to leave 1/8" gap.
7. Drill 3/16" weep holes in the J-Channel, a minimum of 24" on center.



## Window Flashing

All windows must be properly flashed before you install trim. Before you begin, determine the width and the height of the flashing. There are two things that determine these important measurements:

1. The type of accessory surrounding the window—the flashing should extend past the nail flanges of the accessory.
2. Where the final complete course of siding stops below the window—the flashing must be wide enough to divert water over it.
3. The height of the window—the flashing should be long enough to divert water over the nail flange of the last complete course of siding panels and extend up under the top flashing.

## Window and Door Trim

To trim windows and doors, install J-Channel along the top and sides of the door casings and around windows.

If you are installing J-Channel around replacement windows that do not have nail flanges, flash the window before you trim it. Also, for best results, use aviation snips when cutting the J-Channel.

Before you begin to miter cut the corners, make sure the J-Channel is cut to the proper length. Leave the proper allowance for the width of the face of the J-Channel. Then:

1. Square cut the bottom J-Channel so that its ends extend beyond the window casing to the width of the face of the J-Channels.
2. Notch the ends for clearance.
3. Position and fasten the bottom J-Channel.
4. Measure the side J-Channels. Add the width of both the top and bottom J-Channels.
5. Miter cut (45 degree angle) the lower ends of both J-Channels, and create rain tabs.
6. Notch the tops of the channels, position them, and fasten the side J-Channels.
7. Mark the top J-Channel so its ends extend beyond the casing to the width of the side J-channels.
8. Miter cut the channel ends.
9. Cut and bend water tabs on the top J-channel.
10. Position and fasten the top J-Channel.

## Gable Ends

To hang vertical and Board & Batten siding on gable ends, you must first install J-Channel. For a professional look, follow these four easy steps.

1. Hold a piece of J-Channel against the slope of the gable. With a pencil, transfer the angle to another piece of J-Channel. This is your template for the angle of the gable.
2. Trace the angle of the template on the end of a length of J-Channel. Be sure to extend the line onto the nail flange. Cut away the channel face and the nail flange.
3. Turn the pattern over and transfer the opposite angle to the second J-Channel. Be sure to extend the angle onto the nail flange. Cut away the nail flange and the return lip, but do not cut the J-Channel face.
4. Insert the full-faced J-Channel into the mitered J-Channel. If the nail flange or return lips butt and prevent a tight fit, trim off additional material from the second J-channel.

**Note: For a more decorative appearance, you can also use 3-1/2" lineals or 5" lineals to trim gable ends.**

**Instructions for installing lineals are in the *Vinyl Carpentry™ Installation Guide* (CTS205).**

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## Installing Vertical Siding

Before you begin to install the panels, there are two things you should consider: the layout and expansion and contraction.

### Planning the Layout

When vertical siding is installed on a wall, it should have a balanced appearance. This means that if you draw a vertical line down the center point of a wall, you should have an equal number of panels on each side of the line. For example, if the wall requires 25 full 12" panels plus 10", rip cut two 5" widths of vertical panels to create the end pieces.

### Expansion and Contraction

Vinyl building products expand and contract as the temperature changes. You must allow for this movement when you attach siding and accessories to the wall. Follow these guidelines to determine the space required for vertical expansion and contraction:

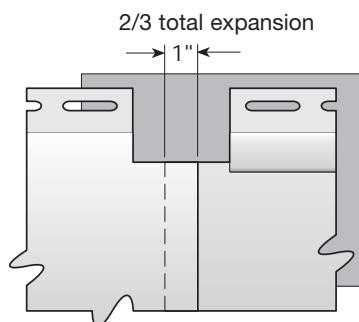
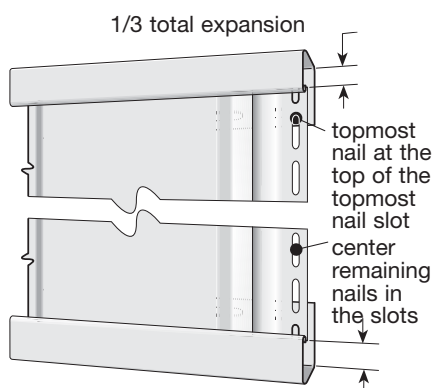
- In a vertical installation, most of the expansion is downward. So, instead of allowing equal space for expansion at both ends, leave more space at the lower end. Allow for 1/3 of the expansion at the top and 2/3 at the bottom.

- In a vertical installation, if the temperature is above 40°, allow 1/4" at the top and 1/2" at the bottom.

## Installing Wall Panels

If partial panels are necessary, cut the first of the partial panels.

1. Mark the cut line by measuring from the nail hem edge.
2. Rip cut the panel.
3. Do not cut off the nail hem.
4. Use a snap lock punch to cut locking tabs 6" apart along the cut edge.



You will need to compensate for the locking channel that was trimmed off before you install the partial panel into an inside or outside cornerpost.

1. Insert furring into the channel of the cornerpost and fasten it to the substrate.
2. Install a length of undersill trim into the cornerpost and fasten it to the furring.
3. Slide the cut edge of the panel into the undersill trim, making sure you engage the snap locks.

Using a level, make sure the panel is plumb and nail it every 12". Install the next panel by locking it into the previous panel. Fasten the panels every 12".

When it is necessary, cut the panels to fit around doors and windows.

1. When marking the cut, remember to allow for expansion.
2. If a cut was made next to a remaining V-groove, insert the panel into the J-channel.
3. If a cut removes the support supplied by a V-groove:
  - Insert furring into the J-channel receiving pocket and fasten it to the substrate.
  - Install a length of undersill trim into the J-channel receiving pocket and fasten it to the furring.
  - Slide the cut edge of the panel into the undersill trim, making sure you engage the snap locks.

To finish the first course of the wall, cut the final panel to size, and install it in the cornerpost, using the method described above.

## Summary

- Vertical siding must be installed over a rigid, solid, and even substrate.
- Vertical siding is fastened through the nail slots of the siding, with fasteners spaced no more than 12" apart.
- When vinyl siding is installed vertically, most of the expansion is downward. When installing vertical siding, allow for 1/3 of the expansion at the top and 2/3 at the bottom.
- Vertical siding should look balanced. Make sure that any partial panels are divided equally on both sides of the wall. When you use partial panels, rip cut two equal panels. Use these partial panels as end pieces.
- Top and bottom J-Channel are installed to receive vertical siding. If more than one course of siding is installed, install inverted J-Channel at a height equal to the length of the lower panel, plus an allowance for expansion.
- When installing more than one course of siding, always install head flashing above the inverted J-Channel. Nail the J-Channel over the flashing.

# 11. Installation Techniques for Specific CertainTeed Products

## Objectives

In this chapter, you will learn that, because of special features and/or manufacturing techniques, some CertainTeed siding products require different installation techniques.

- Cedar Impressions D7" Straight Edge Perfection Shingles
- Cedar Impressions D7" Staggered Perfection Shingles
- Cedar Impressions D7" Straight Edge Rough-Split Shakes
- Cedar Impressions D9" Staggered Rough-Split Shakes
- Cedar Impressions T5" Straight Edge Perfection Shingles
- Cedar Impressions 6-1/4" Half-Round Shingles
- Cedar Impressions Mitered Cornerposts and Cornice Cap
- Northwoods S7" Straight Edge Rough-Split Shakes
- Northwoods S9" Staggered Rough-Split Shakes
- Cedar Boards and CedarBoards XL Insulated Siding

Cedar Impressions® is not ordinary siding. Created from the texture and random sizes of real cedar shingles, Cedar Impressions offers the most natural looking cedar shingle siding available without the expense and heavy maintenance of wood. Cedar Impressions is manufactured in three styles. Perfection and Half-Round Shingles and Rough-Split Shakes are injection molded in polypropylene. Because these panels are unique in design, special installation techniques are required for each. Knowing these special requirements will help you quote a Cedar Impressions installation properly.

See the *CertainTeed Installation Guide* (CTS205) for complete installation instructions.

## General

Before applying siding and accessories, make certain the substrate is watertight. In order to be properly protected from precipitation, the substrate may need to be flashed to shed water to the exterior. The siding and accessories alone are not meant to be a watertight barrier.

Cedar Impressions panels will be installed from the right to the left.

## Cedar Impressions®:

**D7" Straight Edge Perfection Shingles**

**D7" Staggered Perfection Shingles**

**D7" Straight Edge Rough-Split Shakes**

**D9" Staggered Rough-Split Shakes**

**T5" Straight Edge Perfection Shingles**

## Important

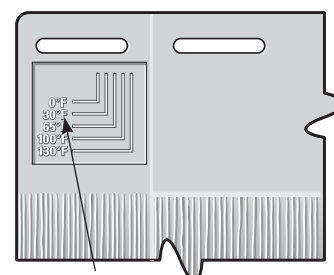
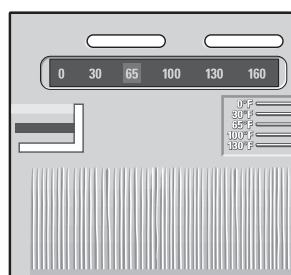
This product is not designed for roof application. It is designed solely for installation on vertical surfaces.

Panels must be installed with nails over a solid substrate with nail holding strength such as plywood, oriented strand board, or existing wood siding (minimum 7/16" thick). This product cannot be installed with staples.

**NOTE: Each panel must be nailed through the round hole in the center of the nail hem to control the direction of normal expansion and contraction. If you are installing a partial panel and the center nail hole has been cut off, drill a nail hole in the center of the nail hem of the cut panel and nail through it.**

## Panel Spacing at Different Temperatures

As with any plastic siding, Cedar Impressions expands and contracts with changes in temperature. For this reason, it is important that you space the panels according to the panel temperature at the time of installation. Failure to provide the proper spacing according to these temperature ranges may result in gaps that are too large or too small, thereby creating the potential for side locking tabs disengaging, panel distortion, or buckling. Spacing of panels previously installed at a different temperature does not require adjustment.



panel temperature indicator lines

Each panel has a patented



PanelThermometer™ that displays panel temperature and indicator lines that serve as guides for proper spacing between the panels. The PanelThermometer is located on the upper right-hand corner of the panel; the indicator lines are on the upper left-hand corner.

Note that the panel temperature may change throughout the day. Space the panels according to the panel temperature at the time of installation.

The cells on the PanelThermometer will change color to indicate the temperature of the panel.

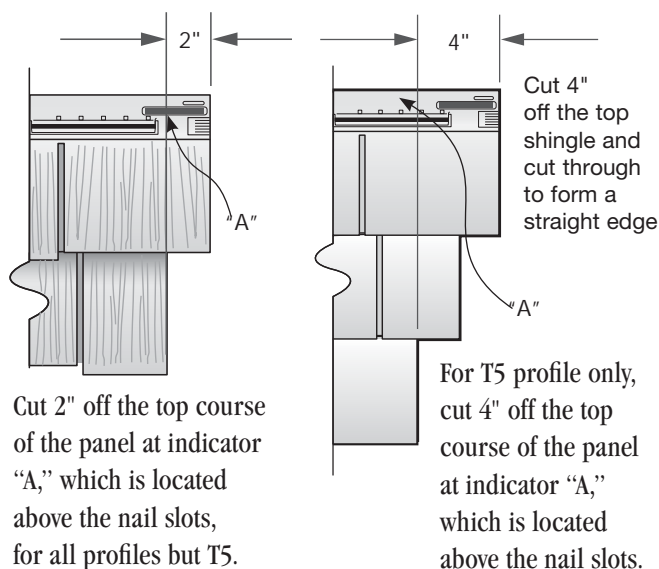
**NOTE: If two temperature cells on the Panel-Thermometer show a color change, use the brighter color as the indicator.**

PanelThermometer Reading	Temperature Indicator Lines
0	Set to 0 line
30	Set to 30 line
65	Set to 65 line
100	Set to 100 line
130	Set to 130 line
160	Butt panels tight

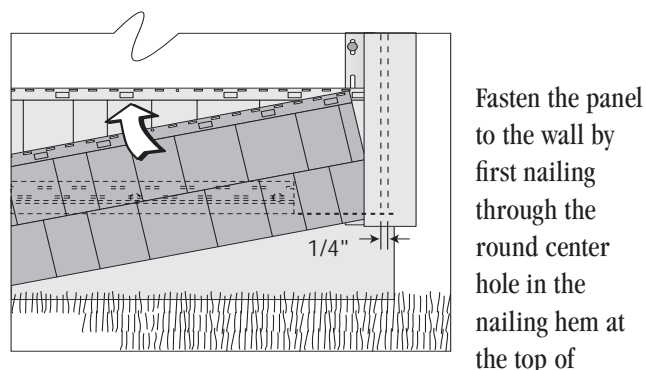
If the brighter cell is between the numbered temperature cells, position the panel between the corresponding temperature indicator lines. Example: If the PanelThermometer reads 65, align the second panel to the 65 temperature indicator line on the first panel. If the cell between the 65 and 100 is brighter, position the panel between the 65 and 100 temperature indicator lines.

### First course

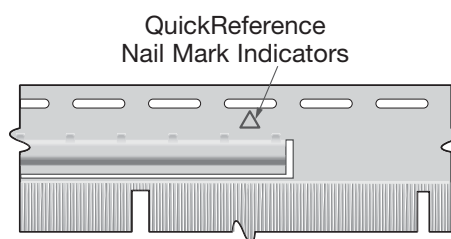
Strike a level line around the house and install Cedar Impressions Metal Shingle Starter. If you plan to use Cedar Impressions Mitered Cornerpost, make sure the starter strip is installed to the edge of the corner. An alternative method of starting Cedar Impressions is to use J-Channel in place of starter strip to receive the bottom edge of the panel. Drill 3/16" weep holes in J-Channel, a minimum 24" on center.



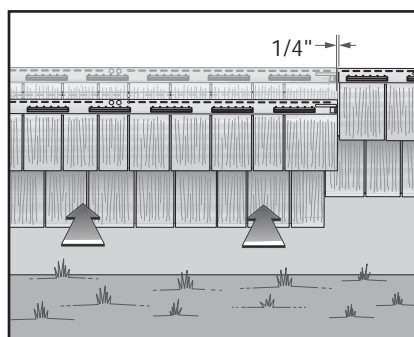
Starting on the right side of the wall, hook the bottom locking leg of the panel into the starter strip and slide the panel into the cornerpost or receiving channel. Leave 1/4" space between the panel and the corner for expansion. If you are planning to install the Mitered Cornerpost, space the panel 3" from the corner.



the panel. Continue nailing the panel with 5 nails: one in the right-end nail slot and one at each of the QuickReference™ Nail Mark Indicators. Leave 1/8" to 1/16" between the nail heads and the panel to allow freedom of movement during normal expansion and contraction.







Install the next panel by positioning it below the starter strip and next to the first panel. Push in and up to lock the panel into the starter strip and the side tabs

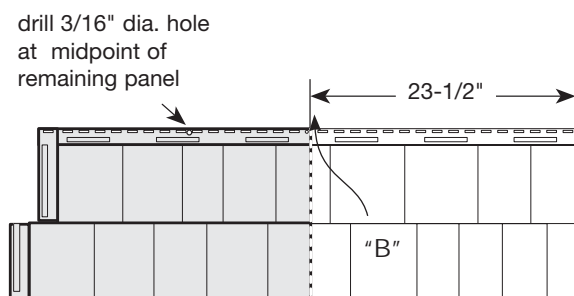
into the first panel. Space the second panel according to the panel temperature at the corresponding temperature indicator lines.

Nail the panel into position starting with the round center hole and then placing the next nail in the right-end nail slot (which overlaps the previous panel's left-end slot) so that the nail goes through both panels' nail slots simultaneously. Continue nailing the rest of the panel as described earlier.

Continue to install the remaining panels of first course as described earlier.

### Second course

Cut 23-1/2" off of the right side of the D7 shingle at indicator "B," which is located above the nail slots, cutting straight through the panel. Drill a 3/16" hole in the center of the nail hem and nail the siding through this hole to control the direction of expansion and contraction. Another option is to nail each end of a nail slot located at the center of the panel.



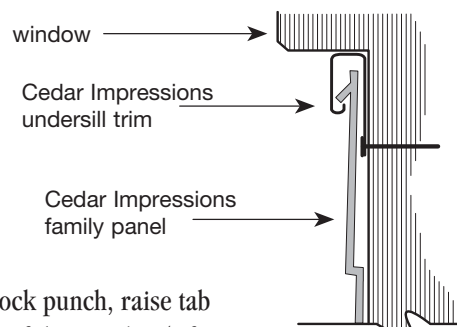
Install remaining panels of the course, same as the first course, using panel thermometer and temperature indicator lines for proper spacing.

Continue to stagger the panel courses, alternating each time to ensure a random shingle pattern up the wall. "A" cuts for odd number courses and "B" cuts for even courses.

### Installing under a window or opening

Install Cedar Impressions undersill trim. Cut the panel to fit under the window. Drill a 3/16" hole in the center of the nail

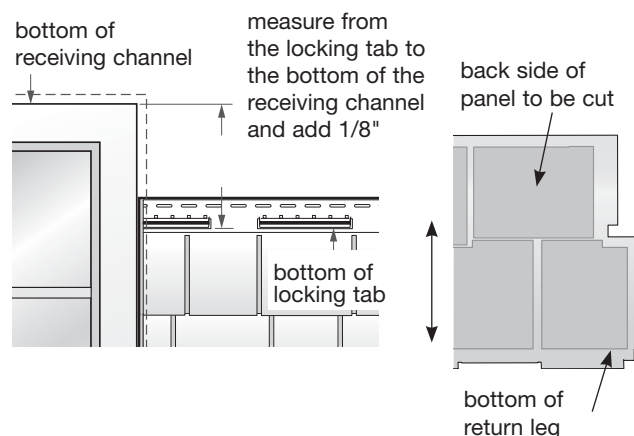
hem. Using a snap lock punch, raise tab faces on the outside of the panel 1/4" from the trimmed edge, 6" apart. Lock the panel into the previous course, and center nail the siding through the 3/16" hole drilled earlier. (Center nailing controls the direction of the panel's expansion and contraction.) Lock the panel into place.



### Installing over a window or opening

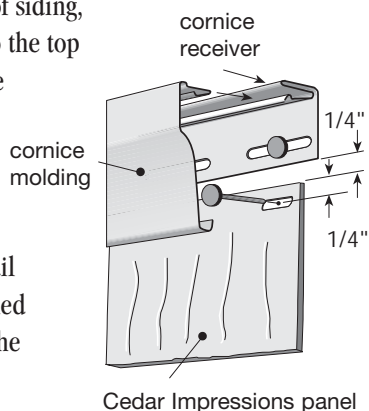
Cut the panel to fit over the window by measuring from the locking tab of the previous row to the bottom of the receiving pocket. Add 1/8" to this measurement. Turn the panel over and, using this measurement, measure from the bottom of the return leg. Cut the panel to this dimension.

Install the cut panel by positioning the panel over the window and into the receiving pocket. Lock the cut panel into the previous course by pushing in and up. The cut edge should be 1/4" below the top of the receiving pocket.



### Finishing the top course

To finish the top course of siding, attach cornice receiver to the top of the wall under the eave or soffit. Trim the top panel to within 1/4" of the cornice receiver. Using a nail slot punch, punch nail slots 1/4" from the trimmed edge, 16" apart. Nail off the top course and snap the cornice molding into the cornice receiver.



An alternate method is to use J-Channel and undersill trim, as described for installing under a window.

### Installing Cedar Impressions Mitered Cornerpost with Straight Edge Perfection Shingles

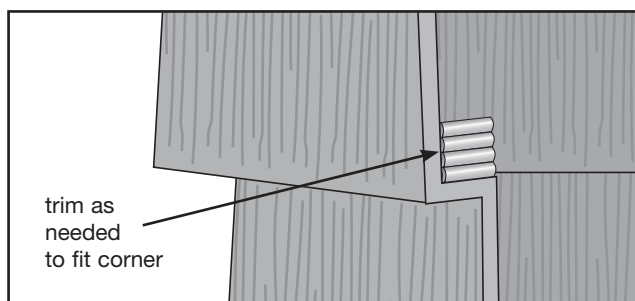
If you are planning to install Mitered Cornerposts, space the siding panel 3" from the edge of the corner. Lock the first corner over the siding, making sure it also locks into the starter strip. Nail the corner through the top two nail slots.

### Installing Cedar Impressions Mitered Cornerpost with Staggered Edge Perfection Shingles

If you are planning to install Mitered Cornerposts, space the siding panel 3" from the edge of the corner. Lock the first corner over the siding, making sure it also locks into the starter strip. Nail the corner through the top two nail slots.

Install the siding on both sides of the wall before you install the cornerpost. Space the siding 3" from the edge of the corner. The corners are designed to fit over the panels that are used to start a new course. Lock the first corner over the siding, making sure it also locks into the starter strip. The top of the corner must be in line with the top of the panel. Nail the corner through the top two nail slots.

The right-side corner gap has cut marks at 1/8" increments. They allow you to fit the corner to the different butt heights you may encounter as you finish a course. Trim the corner gap as needed to fit the panel.

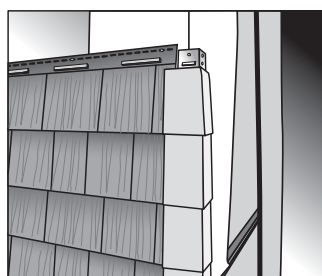


**NOTE:** Install both wall sides of the corner at the same time so you can make small corrections to the corner-post installation.

### Installing Cedar Impressions Mitered Cornerpost

If you are planning to install Mitered Cornerposts, space the siding panel 3" from the edge of the corner. Lock the first corner over the siding, making sure it also locks into the starter strip. Nail the corner through the top two nail slots.

### Cedar Impressions® Mitered Cornerpost and Cornice Cap



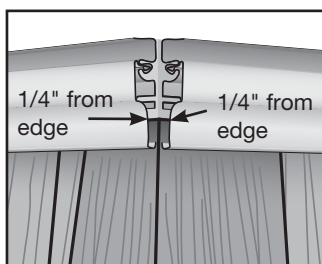
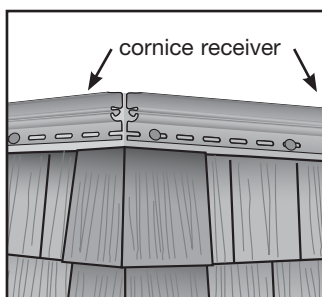
When you reach the top panel, cut to length and nail with color-matched finish nails.

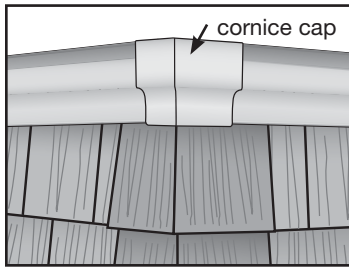
Install the top section of Mitered Cornerpost. Leave 1/4" between the top corner piece and the cornice receiver.

Snap the cornice molding into the cornice receiver.

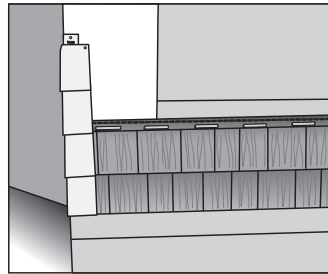
The cornice molding should be 1/4" from the edge of the wall.

Hook the top of the cornice cap over the end of the cornice moldings and snap the bottom into place.





Alternately, you can slide the cornice cap over one of the cornice moldings until the other cornice molding can be inserted.



If you end on an outside corner that has a cornerpost installed, you need to measure from the edge of the panel to the edge of the cornerpost. Add 1-1/2" to this dimension; it will be the panel length.

Angle the panel into the cornerpost and slide to the left until the side tabs clear. Next, slide the panel to the right until you have the correct temperature marks lined up.

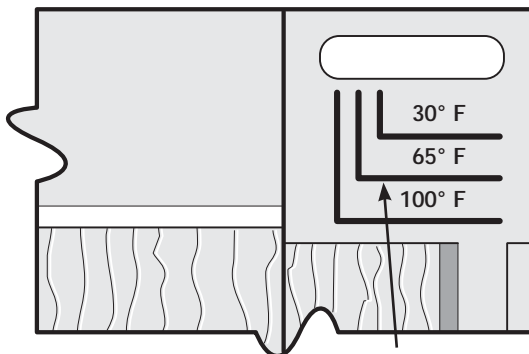
## Cedar Impressions® Half-Round Shingles

### Important

This product is not designed for roof application. It is designed solely for installation on vertical surfaces.

Panels must be installed with nails over a solid substrate with nail holding strength such as plywood, oriented strand board, or existing wood siding (minimum 7/16" thick). This product cannot be installed with staples.

**NOTE:** Each panel must be nailed through the round hole in the center of the nail hem to control the direction of normal expansion and contraction. If you are installing a partial panel and the center nail hole has been cut off, drill a nail hole in the center of the nail hem of the cut panel and nail through it.

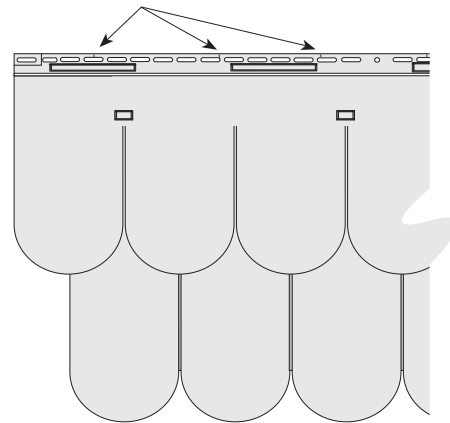


### Panel Spacing at Different Temperatures

As with any plastic siding, Cedar Impressions expands and contracts with changes in temperature. For this reason, it is important that you space the panels according to the panel temperature at the time of installation. Failure to provide the proper spacing according to these temperature ranges may result in gaps that are too large or too small, thereby creating the potential for side lock tabs disengaging, panel distortion, or buckling. Spacing of panels previously installed at a different temperature does not require adjustment.

Each panel has indicator lines that serve as guides for proper spacing between the panels. The indicator lines are on the upper left-hand corner. Before you install Half-Round Shingles, make sure the panels are acclimated to the ambient temperature. As the ambient temperature changes during the day, it may be necessary to adjust the panel spacing to reflect the change in the panel temperature.

use these marks on installed panels for quick alignment of second course – use temperature indicators for final panel adjustments



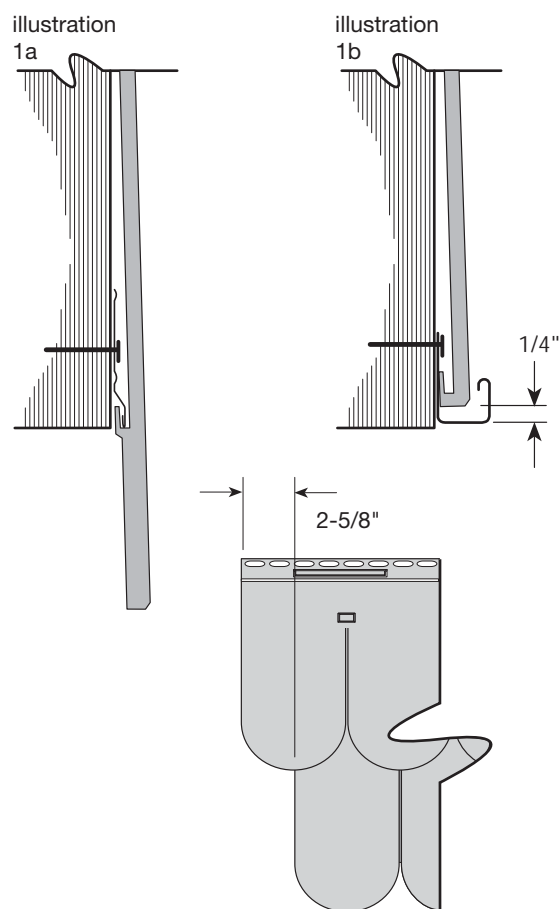
Space the panels according to the panel temperature at the time of installation.

Panel Temperature	Temperature Indicator Lines
30° to 40°	Set to 30 line
41° to 55°	Set halfway between 30 and 65 lines
56° to 75°	Set to 65 line
76° to 90°	Set halfway between 65 and 100 lines
91° to 100°	Set to 100 line

### First course

Strike a level line around the house and install Shingle Starter Strip (see illustration 1a). An alternative method of starting Half-Rounds is to use J-Channel in place of starter strip, to receive the bottom edge of the panel (see illustration 1b). To use this method, the rounded portion of the panel must be removed below the locking leg to create a continuous straight edge.

**NOTE: Half rounds are installed on the wall from left to right, which is opposite of all other Cedar Impressions profiles.**



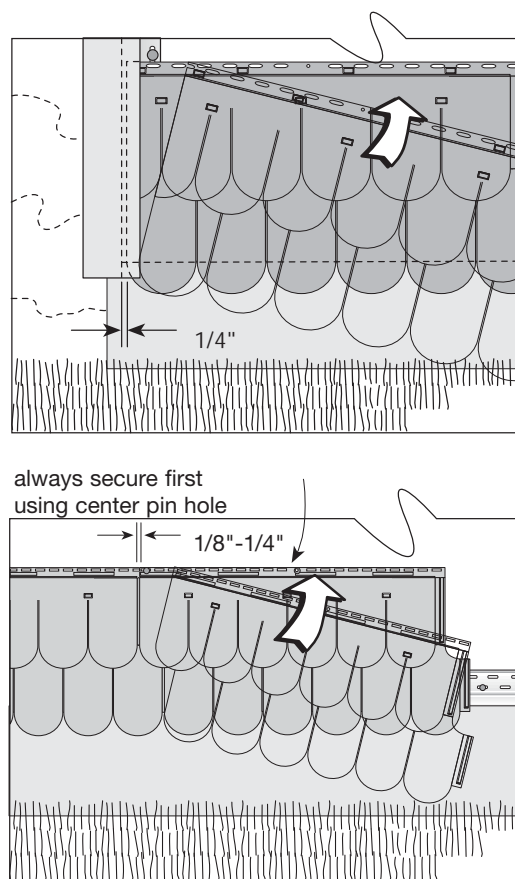
**NOTE: When using a J-Channel as a starter, leave 1/4" between the siding panel and pocket.**

Drill 3/16" weep holes in J-Channel a minimum of 24" on center. Remove 2-5/8" from the left side of the upper panel course, leaving a 90° left side edge.

Starting on the left side of the wall, hook the bottom edge of the panel into the starter strip and slide the panel into the corner-post or receiving channel. Leave 1/4" space between the panel and the inside wall of the cornerpost for expansion.

Fasten the panel to the wall by first nailing through the round center hole of the nailing hem at the top of the panel. Then fasten the rest of the panel by nailing through the centers of the remaining nail slots a maximum of every 8" to 16" on center. Provide 1/8" to 1/16" between the nail head and the panel to allow freedom of movement during normal expansion and contraction. Failure to provide this space between nail head and panel will cause the panel to buckle. Do not put a nail into the far right slot until overlapping panel is positioned for installation.

Install the next panel by using a dual motion of hooking into the starter strip and sliding over the previous panel. This will ensure a proper lap.



Position overlapping panel so that there is 1/8" to 1/4" between the panels, depending on the panel temperature at time of installation. The spacing may appear larger or smaller than the spaces between the shingles on the panel. This is normal and necessary in order to allow for expansion and contraction.

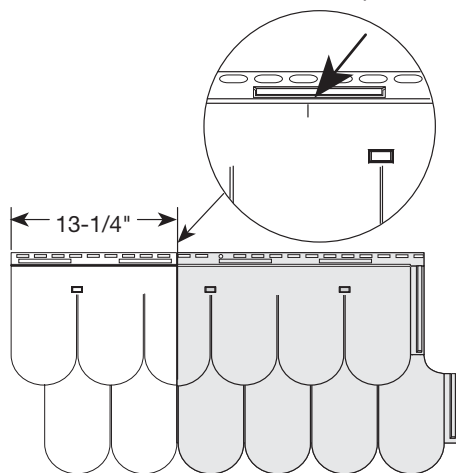
First, nail through the round center hole. Next, nail in the center of the far left slot of the overlapping panel. Finish installing the panel as you did the first one.

Continue to install the remaining panels of first course as described above.

### Second course

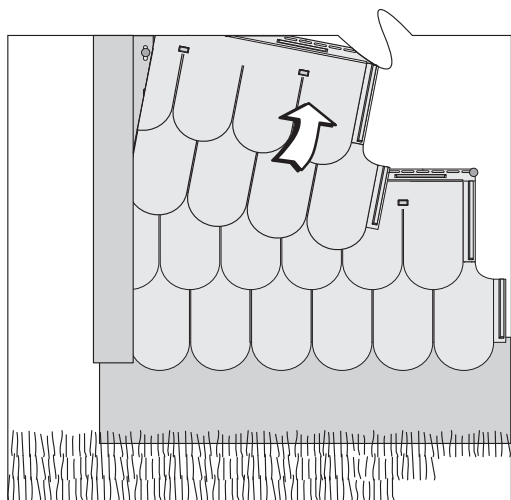
Remove 13-1/4" of the left side measured from the upper panel, cutting straight through the lower panel course. (Note the small mark on the face of the panel.) Drill a 3/16" hole in the center of the nail hem and nail the siding through this hole to control the direction of expansion and contraction.

drill 3/16" diameter hole at midpoint of remaining panel

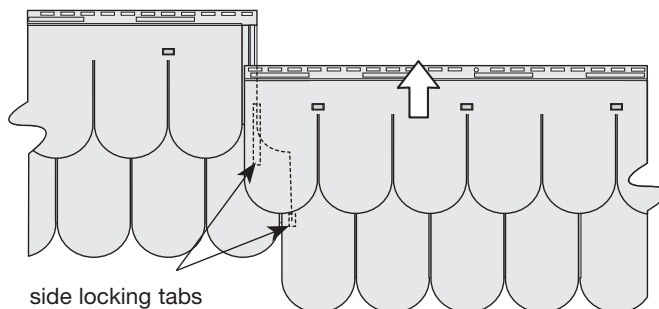


**NOTE: The 13-1/4" spacing provides the farthest separation of overlapping courses.**

For easier application of complete panels, 1/4" vertical lines have been added to the top edge of the nail flange for quick initial alignment. Simply align the right edge of the upper panel with one of the vertical alignment marks on the lower course. However, always use the temperature indicator marks on the right side of the upper panels for final alignment.



Cedar Impressions Half-Rounds may also be installed by sliding the right panel up while ensuring the side lock tabs engage with the flange of the left panel. This method is useful when installing panels into cornerposts and J-Channel around windows and doors.



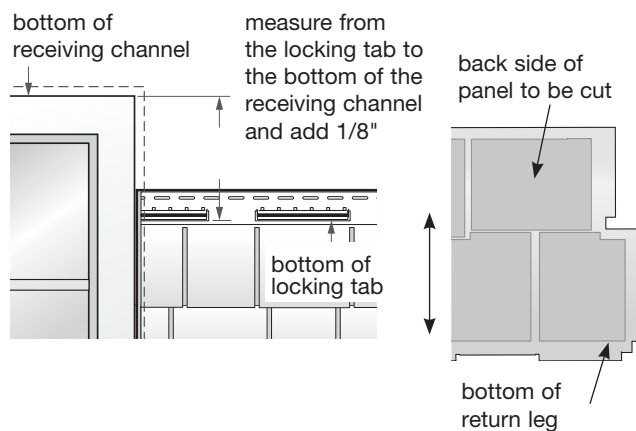
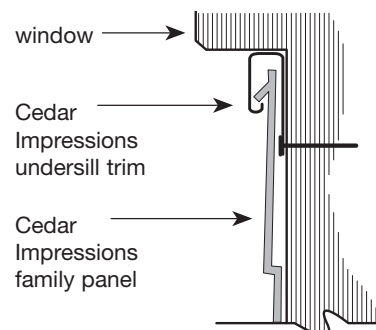
Continue to stagger panel courses, alternating each time to ensure a random shingle pattern up the wall.

### Installing under a window or opening

**NOTE: Same as other Cedar Impressions profiles.**

Install Cedar Impressions undersill trim. Cut the panel to fit under the window. Drill a 3/16" hole in the center of the nail hem.

Using a snap lock punch, raise tab faces on the outside of the panel 1/4" from the trimmed edge, 6" apart. Lock the panel into the previous course, and center nail the siding through the 3/16" hole drilled earlier. (Center nailing controls the direction of the panel's expansion and contraction.) Lock the panel into place.





## Installing over a window or opening

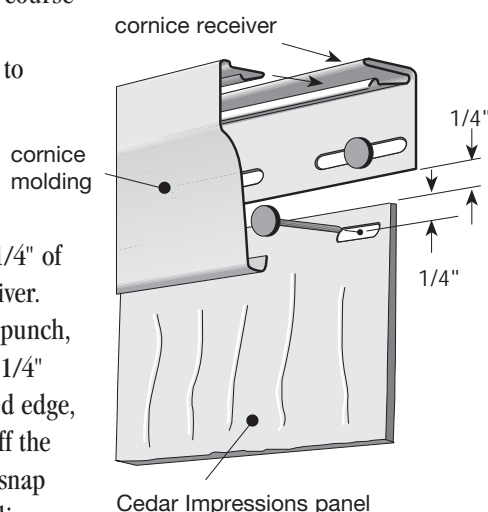
**NOTE: Same as other Cedar Impressions profiles.**

To install siding over a window, measure from the lock tab of the course below the window top to the top of the window. Add 3/4". Cut the panel to this dimension. This will allow the panel to be lowered down far enough to engage the locking tabs of the lower panel. After it is positioned into the locked position, the cut edge will still be 1/4" below the top of the J-Channel.

## Finishing the top course

**NOTE: Same as other Cedar Impressions profiles.**

To finish the top course of siding, attach cornice receiver to the top of the wall under the eave or soffit. Trim the top panel to within 1/4" of the cornice receiver. Using a nail slot punch, punch nail slots 1/4" from the trimmed edge, 16" apart. Nail off the top course, and snap the cornice molding into the cornice receiver.



An alternate method is to use J-Channel and furring strips.

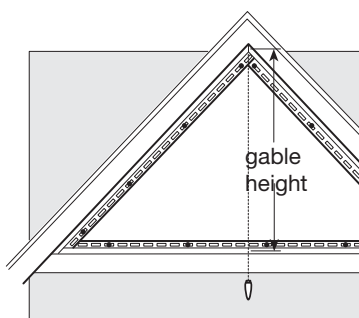
## Half-Round Shingles in Gable Ends

**NOTE: The following instructions focus on a gable installation. They also are geared towards an enclosed gable started with a J-Channel. The Half-Round can also be started with starter strip. This is an example only!**

## Installing receiving channels

Frame the border area with 3/4" J-Channel. Nail in place loosely. Miter joints accordingly.

**NOTE: You also can use 3-1/2" or 5" lineals to frame gable ends and gable base.**



Cut enough J-Channel to span the base of the gable. Then secure it in place. Drill 3/16" weep holes in J-Channel a minimum of 24" on center.

**NOTE: The instructions below show how to create a gable installation with a complete, centered Half-Round at the peak.**

## Making the starter course

Gable installations properly terminate with a single round at the peak. To create this effect, you usually have to adjust the height of the starter course.

To determine the height of the starter course, calculate the number of rows required to complete the gable.

Use the following formula:

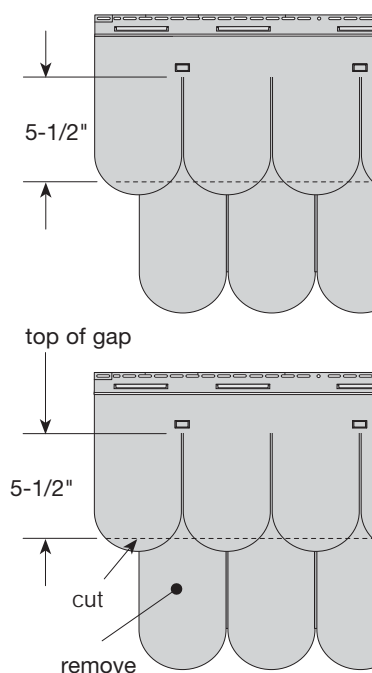
Gable height (inches) ÷ 12.5 (face exposure) = courses required

**NOTE: Gable height is measured from inside the horizontal receiving channel to the peak (allowing 1/4" at top and bottom for expansion).**

For example, with a 68" gable height, the calculations would be  $68 \div 12.5 = 5$  with a remainder of 0.44. This means you would need 5 full courses plus  $0.44 \times 12.5$  (face exposure of panel) = 5.5" measured from the top edge of the gap on the upper course (illustrated). This is the visible height for your starter course. The visible height is the vertical dimension of the panel you'll see below the first full row of rounds.

Once you've determined the visible height of the starter course, mark this dimension on a Half-Round Shingle panel. Measure from the top of the gap on the upper course (illustrated). Draw a cutting line the entire length of panel.

Cut and use the top section, which contains the locks, as your starter course. Cut enough panels to span base of the gable.



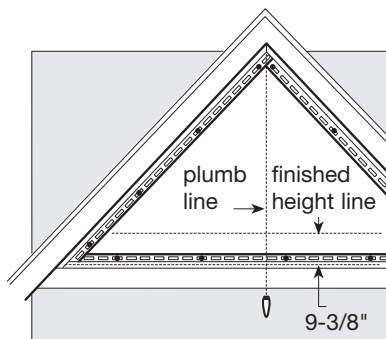
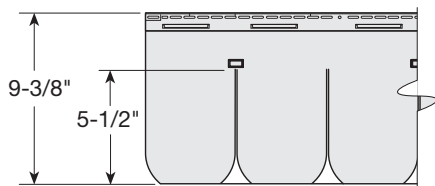


## Hanging the starter course

To end up with a single “round” centered at the peak of the gable, you must properly locate the first starter panel.

Begin by marking a vertical plumb line from the peak.

Then measure and mark the finished height line. In our example, using a starter course with a 5-1/2" visible height, the finished height is 9-3/8".



With your ruler inserted into the pocket of the lower J-Channel, mark a line on the substrate equal to the finished height (remember to allow 1/4" for expansion). Repeat at several points along the gable base. Use these marks to strike a horizontal level line that will guide the nailing of the starter course.

The point where the plumb line and the horizontal level line intersect marks the starting point for hanging the first starter course panel (if the first starter panel intersects the plumb line).

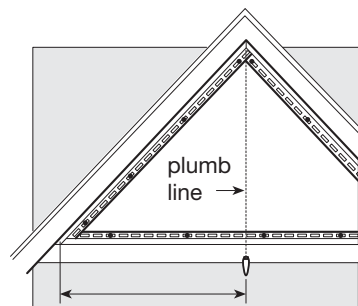
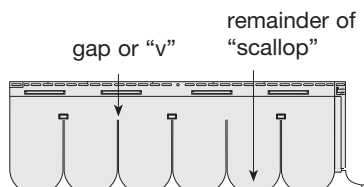
Determine whether you will center a “scallop” or a “V” at the starting point. This decision is based on the number of courses required to complete the gable.

The rule of thumb is:

Center an upper scallop if the initial calculations had less than 0.5 courses remaining (0.44 in our example).

Center the gap or “V” of the upper course if more than 0.5 courses remained.

(In our example we require 5.44 courses, so we would center on a scallop.)

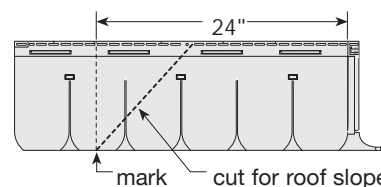
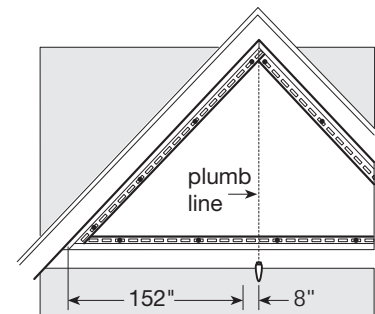


More than one panel will probably be required to reach the plumb line. Measure from the plumb line into the pocket receiving channel (leaving 1/4" for expansion) as illustrated at left.

If you require an odd number of courses (i.e. five full courses plus starting course), subtract 8" from the distance from the plumb line to the left receiving pocket (remember to allow 1/4" for expansion).

If you require an even number of courses (i.e. 6 full courses plus starting course), subtract 18-1/2" from the dimension.

**NOTE: The 8" and 18-1/2" dimensions ensure having a full centered scallop at the topmost part of the gable.**

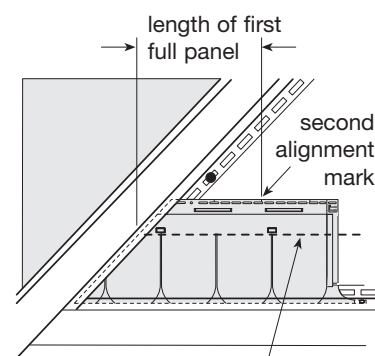


For example: If the measurement required to the plumb line (minus 8" for an odd number of full courses) is 152", then  $152 \div 32 = 4$  full panels plus 0.75% of one panel or 24" measured from the edge of the texture on the right side (temperature indicator side).

Create a cutting guide as described earlier for gable applications and trim first panel (for this example) at 24". Continue to hang the remaining starter course strips, remembering to center nail first.

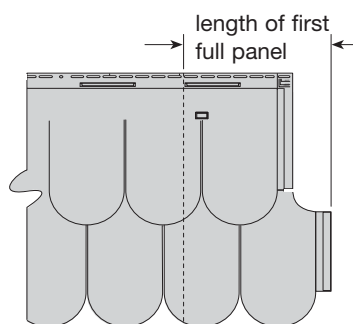
## Installing first full panel

It is important to stagger the panels, as described in this section. The easiest way to determine the length of panel required is to measure from the alignment line on the nail flange of the starter panel to the edge of the roof slope (see illustration).



line represents the bottom of the first full course of scallops

Using this measurement, drill a hole centered in the remaining nail flange as described earlier. Lock the first full exposure panel to the starter course after trimming for roof slope.



After locking panel in place, center pin the panel.

### ***Lapping remaining panels***

The remaining panels to be installed must be lapped in accordance with the current temperature.

Repeat this process for the entire course.

At the end of each course, trim panels to the gable angle. Be sure to allow for expansion at the J-Channels.

### ***Installing the last round***

When you reach the peak, trim the last round to the desired height by removing the locks. Then face nail to the substrate, using a color-matched finishing nail.

## **Northwoods® S7" Straight Edge Rough-Split Shakes and S9" Staggered Rough-Split Shakes**

### ***Overview***

The installation of Northwoods Shakes is unique because the lap joint is hidden in the ribs between the shake patterns. Positioning the laps in the rib area requires that special installation procedures be followed to maintain product performance and aesthetics.

Panels must be installed from right to left. The left panel will overlap the right panel.

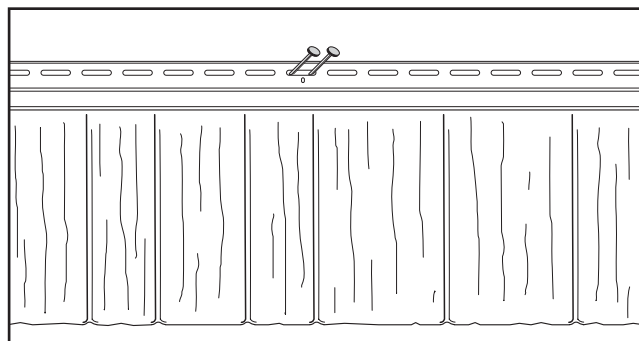
### ***Factory Laps***

All lap joints are cut at a predetermined point on the panel during the manufacturing process. All male laps must be factory cut. Female laps may be field cut using the gap. However, do not cut along the edge of the gap; leave 3/16" of the gap for the overlap. You do not have to notch the lock and shingle butt when you create a field-cut lap.

### ***Center Pinning***

Vinyl siding expands and contracts as the temperature of the panel changes. To maintain the proper rib width at the lap joint, you will have to limit the movement of the panels. To do this, you must center pin each panel. Center pinning prevents the rib width at the lap joint from becoming too wide or too narrow. **Center pin each panel regardless of its length.**

Center pin the panel by installing 2 nails at each end of the center slot. Install the siding according to one of the following methods, depending on whether the substrate is or is not fully nailable.



**NOTE:** Vinyl siding must be applied over a rigid sheathing that provides a smooth, flat surface or an underlayment (such as wood, wood composition, rigid foam or fiber sheathing) that is no more than 1" thick. Vinyl siding cannot be applied directly to studs. See page 18 for additional information about proper sheathing and substrates.

### ***Installation procedure for fully nailable substrate***

Lock the right side panel into place on the starter strip. Allow room for expansion and contraction in all accessory pockets:

- 1/4" if temperature is above 40° F.
- 3/8" if temperature is below 40° F.

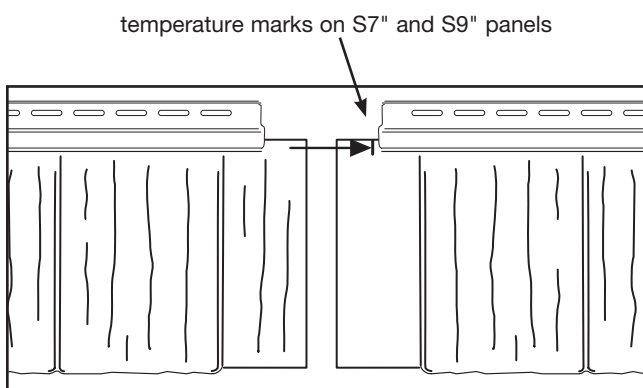
First center pin the panel as described above.

Next install nails in the center of the nail slots, 16" apart. Leave adequate room between the fastener head and the nail flange for expansion and contraction (approximately 1/16" to 1/8").

When installing a partial panel, use one of the following options:

- Place a nail on both ends of the same nail slot.
- Drill a 3/16" diameter hole through the nail hem, and place a single fastener through this newly drilled hole.

**NOTE: Do not hard nail these fasteners.**

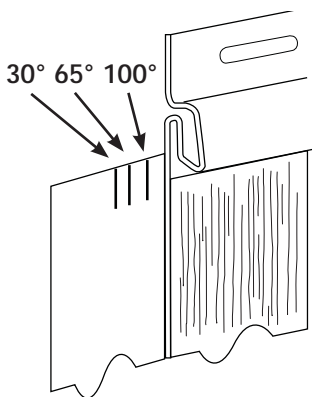


To install the next S7" or S9" panel position it to the left of the installed panel. Lap this panel over the installed panel, positioning the right edge of the panel to the appropriate temperature mark, which is located in the factory notch area.

If the panel temperature of a S7" or S9" panel is less than 45°F, lap the panel to the first (30°) mark.

If the panel temperature is between 45°F–80°F, lap the panel to the second (65°) mark.

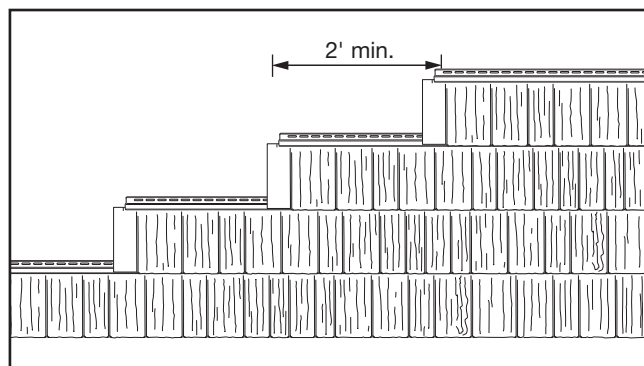
If the panel temperature is greater than 80°F, lap the panel to the third (100°) mark.



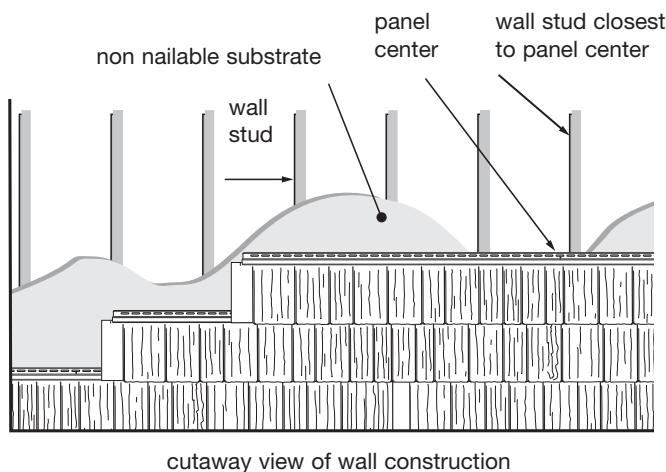
Continue the first course of siding.

Start the next course of siding from the right side, repeating the earlier steps. Offset the laps from course to course a minimum of 2'.

**NOTE: Note: make sure key ways do not line up to create a random pattern look.**



### ***Installation procedure for a NON-fully nailable substrate***



Lock the right side panel into place on the starter strip. Allow room for expansion and contraction in all accessory pockets:

- 1/4" if temperature is above 40° F.
- 3/8" if temperature is below 40° F.

Locate the framing member (wall stud) nearest the center of the panel and center pin the panel into framing member using one of the following options:

- a. If a nail slot is located over the framing member, install a nail on both ends of the same nail slot.
- b. Drill a 3/16" diameter hole through the nail hem and framing member, and place a single fastener through this newly drilled hole.

Install nails in the center of the remaining slots, 16" apart, secured into a framing member. Leave enough room between the fastener head and the nail flange for expansion and contraction (approximately 1/16" to 1/8"). **Do not hard nail these fasteners.**

Install the next panel to the left of the installed panel. Lap this panel over the installed panel, positioning the right edge of the panel to the appropriate temperature or alignment mark. Fasten the panel according to the procedure described earlier and continue the course of siding.

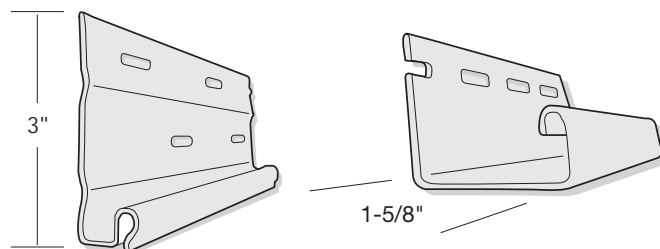
Start the next course of siding from the right side, repeating the steps described earlier. Remember, offset the laps from course to course a minimum of 2'.

## **CedarBoards™ and CedarBoards™ XL Insulated Siding**

CedarBoards and CedarBoards XL Insulated siding will help even out wall surfaces. However, to minimize extremes in the peaks and valleys of uneven walls, you may have to repair the underlayment. Make sure the substrate is smooth, flat, and weathertight. If the surface is significantly uneven, apply 1/4" (minimum) foam sheathing before installing CedarBoards Siding. If the wall surface is smooth, use standard underlayment practices.

The key to creating a visually attractive installation is to lap away from areas where people normally walk or gather. For example, on the front wall, work from the corners to the entrance door (so overlaps face away from door). On side walls, work from the rear corners toward the front. This approach minimizes the effect of lapping and produces the best appearance. Keep lap appearance in mind throughout installation.

### ***Starter strips***



Insulated siding is thicker than hollow vinyl siding. To accommodate the 1-1/4" thickness, we recommend that you use the CedarBoards starter strip.

An alternative method of starting CedarBoards is to use 1-5/8" J-Channel in place of starter strip to receive the bottom edge of the panel. Drill 3/16" weep holes in J-Channel a minimum of 24" O.C.

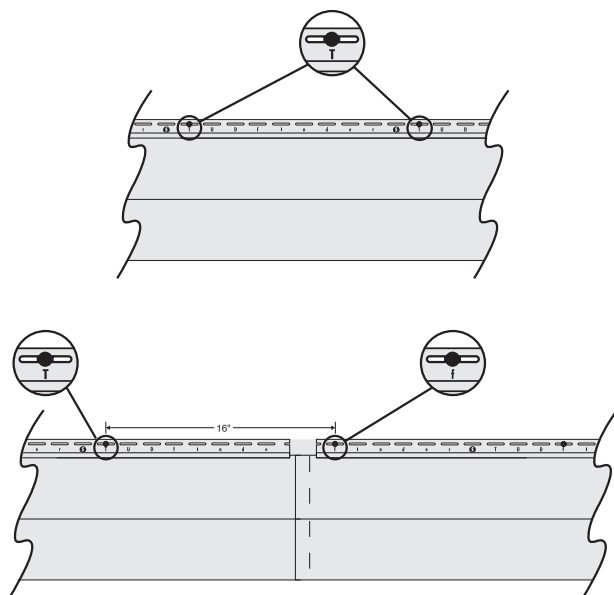
### ***Fastening***

Use 2" (minimum) corrosion-resistant nails to penetrate the wood substrate at least 3/4". Drive the nails until there is 1/16" between the nail head and the nail flange.

Center the nail in the slot and drive the nail straight in. Do not drive nails at an angle. Space nails 16" O.C.

## STUDfinder Installation

The STUDfinder™ Installation System combines precisely engineered nail slot locations with graphics to create a siding panel that is designed to help ensure quick, accurate and secure installation. The nail slots are positioned 16" and 24" on center to allow for alignment with studs, with STUDfinder graphics centered directly under each nail slot.



Locate the first stud and fasten in the center of the nail slot. Ensure that nail penetration is at least 3/4" to comply with ASTM D4756 (specification for vinyl siding installation). Notice which STUDfinder letter appears below the slot.

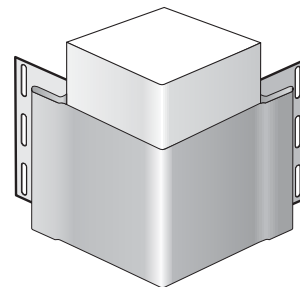
Go to the next repeat of the letter to find the next stud. For example, if your first stud is at "T," so will the succeeding studs in 16" O.C. applications (every 10th slot). When installing CedarBoards XL 16'8" panels, the succeeding studs are at every 8th slot.

When you apply the next panel, adjust the overlap, as necessary, to line up with studs and repeat the steps above.

**NOTE: CedarBoards panels must overlap 1"–1-1/2". Consequently, the overlapping panels may not use the same letter as your initial panel.**

## Fitting into trim pieces

Around windows, doors, and other openings, use 1-1/4" CedarBoards accessories. When the outside temperature is higher than 40° F, allow a 1/4" gap between the siding and the trim. When the temperature is less than 40° F, leave a 3/8" gap. For CedarBoards XL, allow a 3/8" gap between the siding and the trim when the outside temperature is above 40°F; 1/2" when the temperature is below 40°F.



## Around windows and doors

Because insulated siding is thicker than hollow vinyl siding, windows, doors, and other openings may have to be built out to avoid looking recessed. Use wood shims and either aluminum trim coil or vinyl lineals to build out openings. In some cases, the foam backing in CedarBoards siding will create enough stiffness to span over or under a window without additional support.

If you are using utility trim or dual undersill trim to secure the panel, shim the trim to accommodate the thickness of the siding panel. Remove the top 1" of the foam backing so the top of the panel fits into shimmed trim. Use a snap lock punch to raise tabs every 6" to lock the panels into the trim.

When you cut a siding panel to fit around an opening, use a nail slot punch to create additional nail slots. Fasten through these additional nail slots to secure the panel. Make sure the face of the J-Channel or other trim will cover the nail slots.

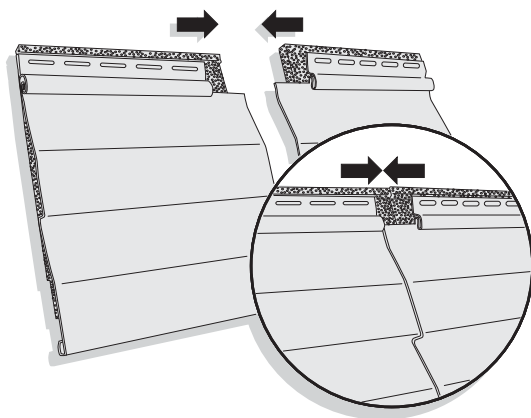
## Under soffit

Secure the last course of siding under the soffit with utility trim, dual undersill trim, or cornice receiver with finish board. You will have to create tabs or nail slots as described above. We recommend the cornice receiver with finish board, as it provides an attractive look and eliminates the need for shims.

## Overlapping panels

On factory-cut panels, the foam is set back from both ends of the panel. The adhesive begins 2" back from the end of the foam. To correctly overlap the panels, slip the vinyl edge of the bottom portion of the seam between the foam and the vinyl panel.

For standard length CedarBoards, slide the panels together until the foam ends touch or you achieve a minimum overlap of 1". The maximum overlap should not exceed 1-1/2" because exceeding an overlap of 1-1/2" can compromise the appearance of the lap.



For CedarBoards XL:

- Above 40°F, overlap the panels 1-1/4" to 1-3/4"
- 40°F and below, overlap panels 1" to 1-1/2" and leave a 1/4" space between the foam

**TIP:** For ease of handling extended length product, we recommend carrying the panels on edge, not flat. Two person installation is also suggested.

## Measuring CedarBoards

When lapping two factory laps, you will often butt the panel foam and not lap 1" as in standard vinyl applications. This mandates a different approach from standard practice when you measure CedarBoards panels.

When filling in a piece to end a course of siding, hold the tape tight into the receiver of the corner post, J-Channel, etc., and measure the distance to the foam of the existing piece already hung. Subtract the proper amount for expansion and contraction depending on the temperature.

As you measure on the full piece to be cut, measure from the foam on the factory end that butts to the existing piece to your desired measurement. This will ensure a butt fit on the foam and the proper room in the receiver for expansion and contraction.

## Creating a field lap

For best appearance, lap factory ends only. If you must lap a non-factory end, you will first have to remove the foam and adhesive.

**NOTE:** This is messy and tedious, and you will wish you never tried it.

Cut back the foam approximately 3/4" on the field cut, fabricate the top and bottom panel end notches, and always use a factory notch as the overlapping panel. Place the fieldcut end into the factory end.

## Summary

- Cedar Impressions panels feature a patented Panel-Thermometer and temperature indicator marks that help you correctly space the panels as the temperature of the panels changes throughout the day.
- Cedar Impressions Mitered Cornerposts are installed as you move up the wall with the siding. A special Cornice Cap finishes the top piece of the cornerpost.
- Northwood Shakes are installed from right to left and are center pinned before they are fastened to the wall.



## 12. Soffits and Ventilation

Perforated soffit panels play an important role in proper attic ventilation, and they prolong the life of the roof.

### Objectives

In this chapter, you'll learn about attic ventilation and how vented soffit contributes to it.

- Thermal convection
- Placement of vented soffit
- Open eave installation
- Closed eave installation
- Installing fascia
- Installing porch ceilings

### Thermal Convection

Warm air rises. In the home, moist, warm air from the living area can move into the attic and work its way up to the roof ridge. If the roof has ridge ventilation with adequate venting at the soffit, the hot air will rise up and out of the house. If the attic is not properly ventilated, the heat builds up. In the winter, this build-up promotes the formation of ice dams in areas that get snow. In the summer, heat build up can deteriorate the roofing insulation, sheathing, and shingles.

The American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) and Housing and Urban Development (HUD) have set standards for attic ventilation: 1 sq. ft. of net-free ventilation area for every 150 sq. ft. of attic floor space. If approximately half the open ventilation area is in the upper portion of the roof (the ridge) and half is in the lower area (the soffit), the standard changes to 1 sq. ft. for every 300 sq. ft. of attic floor space. This is because the high-low balanced system equalizes the air flow and ventilates more efficiently.

If customers begin to notice attic condensation or an appreciably warmer attic after new vinyl siding and soffit have been installed, they will attribute the problem to the siding, not inadequate ventilation. And that's why it's important for you to tell homeowners about the need for adequate ventilation.

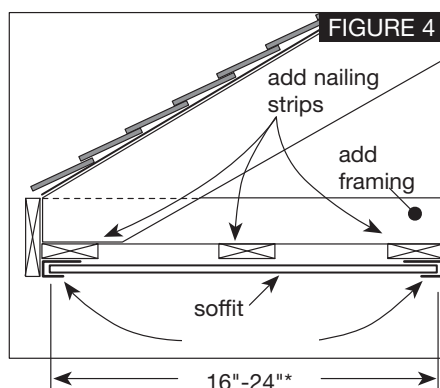
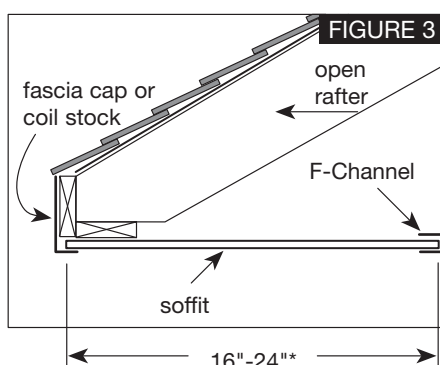
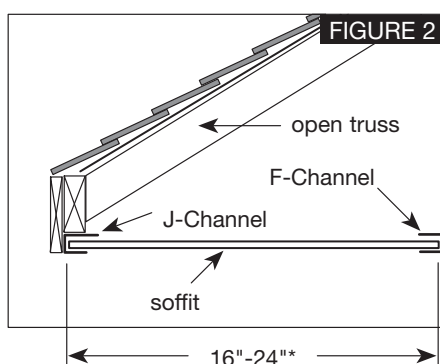
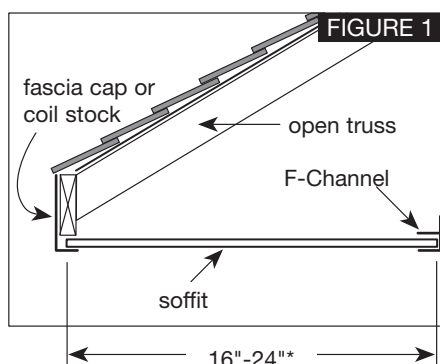
### Soffit Vents

There are many types of ventilation, but the most effective is a combination of soffit and ridge vents. Cool air is drawn into the attic through soffit vents, while the ridge vent allows the warmer air to rise and flow out the top. CertainTeed offers seven lines of ventilated soffit panels: T3-1/3" InvisiVent, Perimeter T3-1/3", Chamfer Board™, Ironmax™, Beaded, Universal, and Value. If specified and installed properly, all will provide adequate soffit ventilation.

To determine the amount of ventilation you'll need, check the local building code. How often to vent the soffit depends on the width of the overhang and how many square feet of airspace a particular panel provides. Typically, two solid soffit panels are installed for every one vented panel. That is, every third panel is vented. If you are ever in doubt about how many ventilated panels to install, err on the side of installing more than you think you need.

### Installing Soffit

You can use solid vinyl panels or perforated vinyl panels for soffit installations. Perforated panels provide ventilation, which helps to reduce heat buildup in the summer and ice dams in the winter. In buildings with roof ridge vents, you should install ventilated soffit. Check local building codes to determine the amount of ventilation required. In high wind load areas, you should also check local building codes to determine if application methods differ.



\* To determine the maximum permissible span, consult individual product specifications and local building codes.

The procedure used to install soffit depends on the construction of the eaves:

- Open eaves—eaves with exposed rafters or trusses—are typical of new construction. You will also have to use open eave installation procedures if you have to remove damaged soffit at a remodeling project.
- Enclosed eaves—eaves with soffit in place—are typical of remodeling projects.

### ***Installation over Open Eaves***

The first step in installing soffit is to install the proper receiving channels. You have several options for receiving channels. You can use accessories such as F-Channel or J-Channel, or you can make channels using coil stock. The best approach is to select a method that works most effectively with the construction techniques used to create the eave. Examine figures 1–4 and find the one that most closely resembles the construction methods used on your particular project.

If no F-Channel is available, J-Channel can be modified to create F-Channel. Simply cut slots in the nail flange area where it would be nailed to the wall. After cutting the nail flange, bend the flange back and nail to the wall. When installing Beaded T2" panels, use 3/8" H-bar or 3/8" J-Channel.

### ***Installing Receiving Channels***

Install the receiving channels following the details shown in figures 1–4. Nail the channels every 16", positioning the nail in the center of the slot. Do not nail tightly. If you're using Beaded T2" panel as soffit, nail both the channel and the soffit every 8"–12" to create added support.

If the eave span is greater than 16", you will have to install nailing strips (as shown in figure 4) and install the receiving channels on the nailing strips.

If the soffit will turn a corner, cut and install the channel so there is 1/4" for expansion at each of the adjoining walls.

Insert the panel into the channel on the wall, then into the channel at the fascia board. You may have to flex the panel slightly to insert it into the second channel. Make certain the panel is perpendicular to the wall, then nail. Depending on the installation method you're using, you'll nail either to a nailing strip or to the fascia board.

## Installing Soffit

Measure from the wall to the fascia board. Then subtract 1/2" to allow for expansion. Mark this dimension on a soffit panel and cross cut the panel using a power circular saw with a reversed fine-tooth blade. Cut one or two panels at a time, carefully advancing the saw through the vinyl.

Insert the panel into the channel on the wall, then into the channel at the fascia board. You may have to flex the panel slightly to insert it into the second channel. Make certain the panel is perpendicular to the wall, then nail. Depending on the installation method you're using, you'll nail either to a nailing strip or to the fascia board.

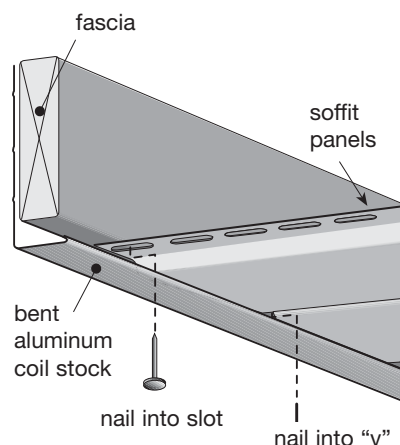
If you're nailing to the fascia board, use small-headed nails. Drive the nail through the nail flange and "V" groove. This is one of the rare instances when face nailing is permissible. Once a soffit panel is face-nailed, it will expand only in one direction—in this case, toward the receiving channel. Be sure to leave space for the full expansion allowance in the receiving channel.

If you're using a nailing strip (as in figure 4), do not nail tightly—allow movement for expansion.

Continue installing the panels by locking and nailing the soffit in place. Make certain soffit panels are fully locked along their entire length.

## Turning a Corner

To turn a corner, measure from the channel at the wall corner to the channel at the corner of the fascia board. Subtract 1/4" for expansion. If necessary, install nailing strips to provide backing for the lineal. Cut and install soffit double channel lineal or H-bar. Miter the corner soffit panels and install as described above. Back to Back J-Channel would also work.



## Completing the Installation

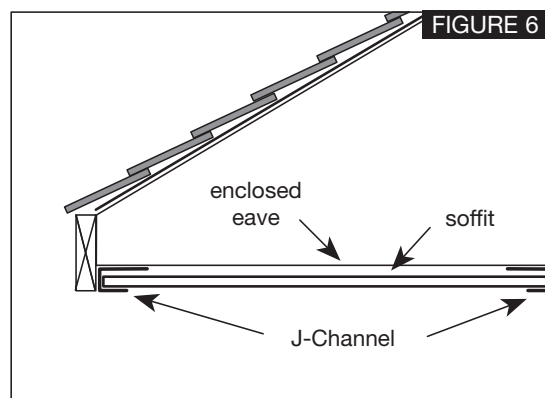
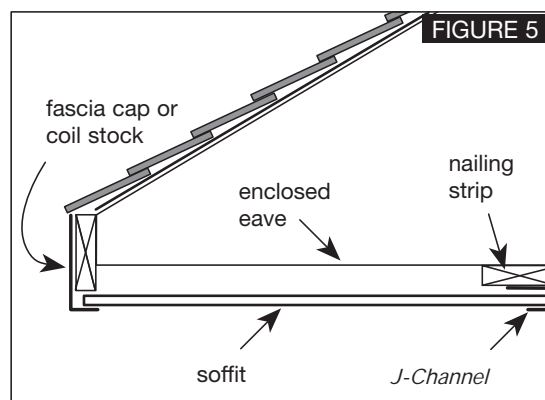
To complete the installation, apply utility trim and fasten aluminum fascia cap or formed aluminum coil stock with painted trim nails. If you must face nail fascia, drill holes for the trim nails to allow for expansion and to reduce denting of the aluminum.

## Installation over Enclosed Eaves

If the existing soffit is rotted or damaged, it's best to remove it completely before installing vinyl soffit. Then use the instructions for open eaves.

If you're installing perforated soffit panels and the existing soffit doesn't have openings for ventilation, cut an adequate number of openings. Then complete the installation as described for open eaves.

The procedure used to install soffit over an enclosed eave is almost identical to that used for an open eave. The major difference is the installation of the J-Channel. Determine the method you'll use to install soffit at the fascia board (see figures 5 and 6). When installing J-Channel at either the wall or the fascia board, nail the J-Channel every 12"–16".



## Turning a Corner

If the soffit is to turn a corner, cut and install J-Channel so there is 1/4" for expansion at each of the adjoining walls and adjoining fascia boards. Miter the corner soffit panels and install as described above.

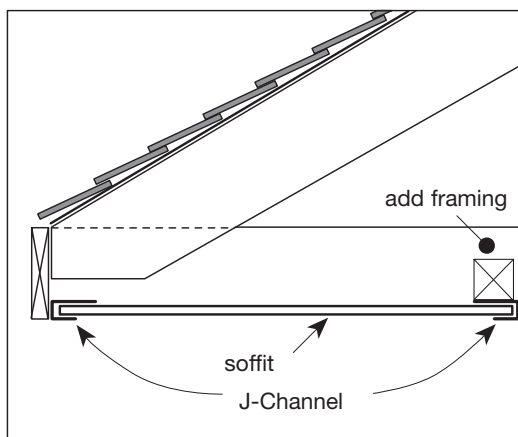
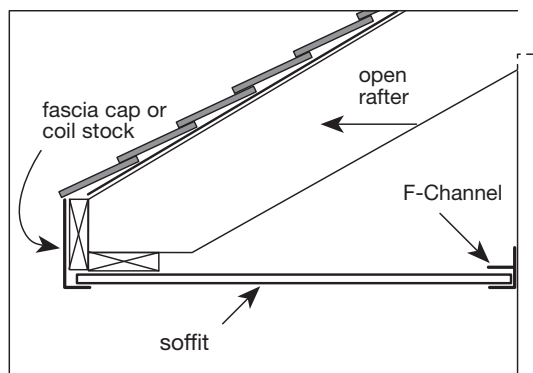
## Installing Triple 3-1/3" Soffit (InvisiVent and Perimeter)

### Installation over open eaves

In most situations, T3-1/3" InvisiVent and Solid Soffit should be installed like our standard soffit products. However, when T3-1/3" soffit is installed over open eaves, follow these installation techniques.

### Install receiving channels

There are two ways to install receiving channels for soffit. The best approach is to select a method that works most effectively with the construction techniques used to create the eave. Examine the illustrations, and find the one that most closely resembles the construction methods on your particular project.



Use either 3/4" J-Channel or 3/4" F-Channel, or you can make receiving channels using coil stock.

Install the receiving channels following the details shown in the illustrations.

Nail the channels every 12" to 16", positioning the nail in the center of the slot. Do not nail tightly.

**NOTE: If you are concerned about excessive insect infiltration with ventilated soffit, cover the opening with corrosion-resistant mesh or other screening before installing the soffit.**

### Install soffit

Nail the soffit every 16" or 24", depending upon local building codes and stud spacing. T3-1/3" soffit will span up to 24" without additional nailing strips.

### Installation over existing soffit

When installing T3-1/3" soffit over an existing solid wood soffit, you must cut openings into the existing soffit to provide adequate airflow through the soffit. The goal is to have at least 9 square inches of net free air per lineal foot of soffit. Removing a center portion of the existing soffit will provide the desired airflow.

Using a saw, cut along the length of the existing soffit. Leave 2" to 3" from both the wall and the fascia so that you will have enough wood surface to securely fasten the soffit.

Remove the center portion of the existing soffit.

Install the soffit as described above.

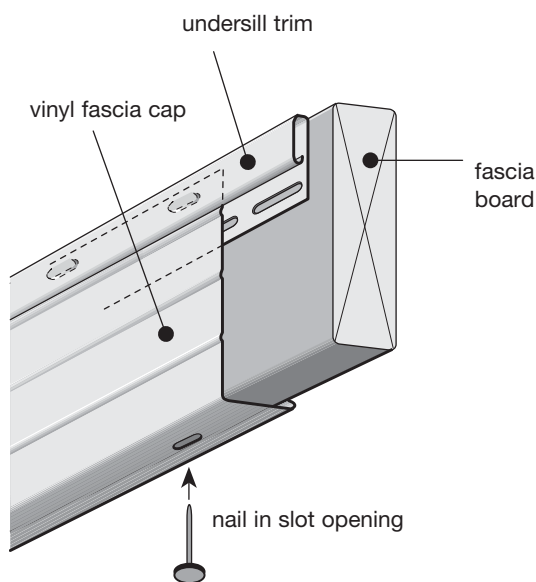
## Installing Fascia

The wooden fascia board that encloses the front of an eave also needs protection from the weather. To provide this protection, you can install vinyl or aluminum fascia panels.

There are two procedures for installing vinyl fascia panels—one for installations that include soffit, one for installations without soffit.

### *Installations without Soffit*

1. Fasten undersill trim in place along the top of the fascia board.
2. Use a snap lock punch to create tabs along the top edge of the fascia panel.
3. Hook the bottom of the fascia panel under the bottom of the fascia board. Push the top edge into the undersill trim, as shown, or behind the drip edge.
4. Secure the panel to the bottom of the fascia board with white trim nails. Nail at the slot openings only (see illustration). Do not face nail the fascia panel.
5. When overlapping fascia panels, first cut a notch in the underneath panel. The notch should be 1/2" deep by 1-1/2" long. Slip the notched panel into the adjacent panel.



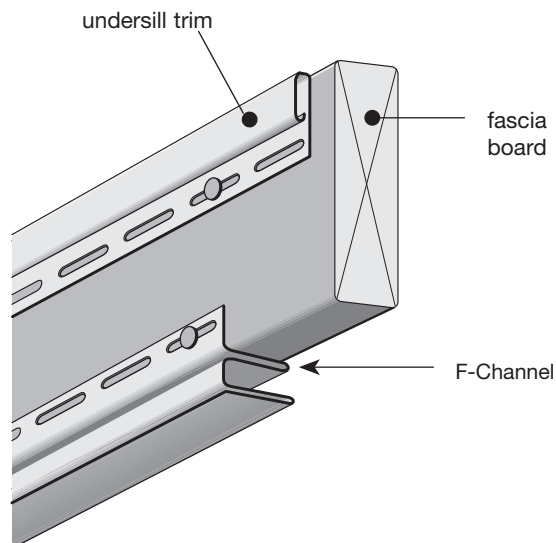
6. To turn a corner, you must first fabricate a corner piece.

- Cut a length of fascia panel so it extends 6" beyond the corner.
- Mark a vertical line to indicate the position of the corner and cut a 90° V-notch centered on the vertical line.
- Score along the vertical line and fold.
- With a snap lock punch, create tabs along the upper edge of the panel. The tabs must be raised on the outside face of the panel.

7. Fit the panel on the corner, making sure to overlap the preceding panel.

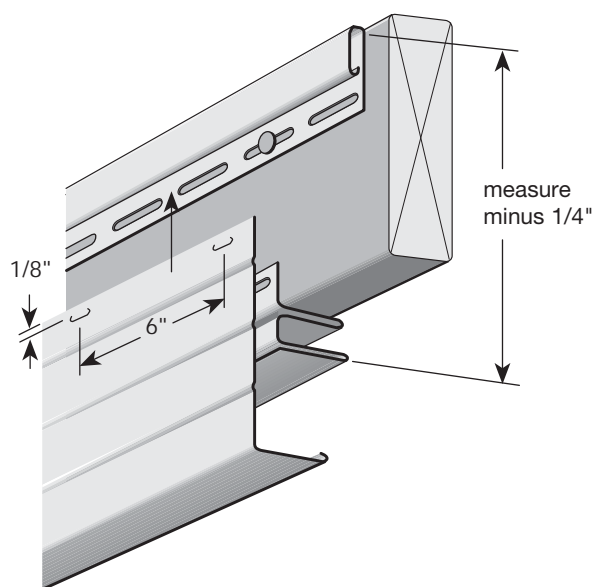
### *Installations that Include Soffit*

1. Fasten the undersill trim in place along the top of the fascia board.
2. Fasten F-Channel along the bottom outside of the fascia board as shown.



3. The fascia panel will have to be rip cut to fit over the fascia board and F-receiver.

- To determine the width of the panel, measure from a slot in the undersill trim to the bottom of the F-receiver.
- Deduct 1/4" and cut as shown in the illustration.
- Use a snap lock punch to create tabs 1/8" below the cut edge. Punch tabs every 6", with the tab raised on the outside face of the panel.



4. When using vinyl fascia, install the panel by hooking the bottom of the fascia panel under the F-receiver and pushing the top into the undersill trim as shown.
5. When using aluminum fascia, secure the panel to the bottom of the fascia board with white trim nails. Nail at the slot openings only. Do not face nail the fascia panel.
6. When overlapping fascia panels, first cut a notch in the underneath panel. The notch should be 1/2" deep by 1-1/2" long. Slip the notched panel into the adjacent panel.
7. To turn a corner, you must first fabricate a corner piece.
  - Cut a length of fascia panel so it extends 6" beyond the corner.
  - Mark a vertical line to indicate the position of the corner and cut a 90° V-notch centered on the vertical line.
  - Score along the vertical line and fold.
  - With a snap lock punch, create tabs along the upper edge. The tabs must be raised on the outside face of the panel as shown.
8. Fit the panel on the corner, making sure to overlap the preceding panel.

## Aluminum Fascia

The techniques used to install aluminum fascia panels are similar to those used with vinyl—with three exceptions:

1. There is no special undersill trim to use with aluminum fascia.
2. Aluminum fascia is made without nail slots, so you have to pay attention to proper nailing techniques.
3. Corners are handled differently.

Follow this four-step procedure to install aluminum fascia:

1. Install drip edge, gutter or all-purpose trim along the top of the fascia board to receive the top edge of the fascia panel.
2. Slip the fascia panel in place; then fasten the underside of the panel.
3. For best appearance and to avoid bending the aluminum, first drill a slightly oversized hole. Then, using a light touch, fasten the fascia with painted trim nails.
4. Nail every 24", keeping nails lined up with the soffit V-grooves.
5. At outside corners, bend a 1" flange at a 90° angle so it turns the corner. Then cut the overlapping fascia at a 45° angle. Position the panels and fasten.

**NOTE: If you need a piece of nonstandard size fascia board, use a portable break to form it from aluminum trim sheet. Install and attach it using the same techniques you need for standard fascia panels.**



## Installing Porch Ceilings

The procedures used to install a porch ceiling are in many ways similar to those used to install soffit. These procedures vary slightly, depending on whether you're working on new construction or a remodeling project.

### *New Construction*

1. Begin by installing receiving channels on all four sides of the porch. If you are using F-channels, fasten them to the existing walls. If you are using J-channels, you will have to install a nailing base.
2. If you plan to use light blocks to attach external light fixtures, install them to adequate backing.
3. Plan the layout of the ceiling panels to achieve an even balance or to align with adjacent work.
4. If the ceiling panels will run parallel to the ceiling joists, you will have to install additional 1" x 3" wood furring nailing strips. Install these nailing strips perpendicular to the ceiling joists, placing a strip every 12" to 16".
5. Invert J-Channels and fasten them to the underside of wood strips along the perimeter of the ceiling area.
6. Install the first panel into the channels at one end of the porch. Be sure to leave room for expansion. Fasten every 12" to 16", positioning the fasteners in the centers of slots. Do not fasten tightly.
7. Install the remaining panels. When cutting the last panel of the first course, be sure to allow room for expansion.

For areas where more than one panel length is needed, use a soffit H-bar. If necessary, rip cut the final panel and use a snap lock punch to create tabs every 8" to 10" along the cut edge. Attach undersill trim and insert the panels into the receiving channel.

### *Remodeling*

Before you begin, check to be sure the existing ceiling can serve as a solid nailing base. If the existing ceiling is solid, remove all existing moldings and fixtures from the ceiling and begin by fastening inverted J-Channels along the perimeter of the ceiling area. Then follow the steps for new construction. (Since you are working on a solid ceiling, you will not have to install the additional nailing strips called for in step 4).

If the existing ceiling is not solid, install nailing strips to provide a secure nailing base. Then install J-Channels. You will have to install additional nailing strips if your ceiling panels are to run parallel to the ceiling joists. If so, follow the instructions for new construction.

### Summary

- The most effective attic ventilation is a combination of vented soffit and ridge vents.
- Check local building codes for the amount of ventilation you'll need. Typically, two solid soffit panels are installed for every vented panel.
- When installing soffit on open eaves, you can use a combination of J-Channel, F-channel, and coil stock as channels to receive the soffit.
- For installations on closed eaves, use J-channel and either aluminum fascia cap or firmed coiled stock as receiving channels.
- Fasten most soffit every 16". Ironmax can be fastened 24" O.C.
- You should also install vinyl or aluminum fascia panels to protect the wooden fascia boards that enclose the front of an eave.
- Begin installing porch ceilings on new construction by installing either F-channel or J-channel. If more than one length of panel is needed, use a soffit H-bar.
- When remodeling, you can fasten J-Channel directly to the ceiling if it is solid.

## 13. Care and Maintenance

CertainTeed vinyl siding resists most common household stains, like oil and grease, but it will get dirty just like anything else that is left outside. Chalk may also accumulate on the surface. Chalking is normal and occurs on any pigmented surface that is constantly exposed to sunlight and the elements.

### Objectives

Vinyl siding is easy to care for. In this chapter, you'll learn how to clean and care for vinyl products.

- Cleaning dirt, chalk, and mildew
- Fire safety
- Weathering
- Color variation

Soil, grime, and chalk are easy to remove with soap and water. Especially stubborn stains can usually be removed with cleaners like Fantastik™, Formula 409™, and Simple Green™. When you clean vinyl siding, work from the bottom to the top to reduce streaking.

In some areas, mildew is a problem. Homeowners may call with questions about “black spots,” especially in the covered areas under eaves and porch enclosures. Commercially available mildew cleaners are available at good hardware stores.

Homeowners who prefer to mix their own cleaners can do so, but they should be cautioned against changing the proportions: Stronger proportions of TSP and/or bleach may damage vinyl and polypropylene siding.

### Mildew Cleaner

- 3 quarts water
- 1 quart household bleach
- 1/3 cup powdered laundry detergent
- 2/3 cup TSP (Socilax trisodium phosphate, for example)

These care and maintenance instructions are printed on the back of the warranty booklet, which you should leave behind after every job is completed.

**NOTE: CertainTeed does not recommend power washing because it can cause moisture intrusion, water damage, and/or discoloration.**

### Fire Safety

Exterior vinyl building materials require little maintenance for many years. Nevertheless, common sense dictates that builders and suppliers of vinyl products store, handle, and install vinyl materials in a manner that avoids damage to the product and/or the structure. Owners and installers should take a few simple steps to protect vinyl building materials from fire.

## Melting

Under normal conditions, vinyl siding will not melt or sag, even in the warm climates of the South and South West. Even though it is manufactured with a thermoplastic resin, vinyl has to be heated to its point of deflection (more than 168°F @ 264 psi) before it begins to soften. An unusual, but more likely situation occurs when the reflection (an awning, mirrored windows, glass windows with low-E coating, car windshields, even a metal chair) acts as a mirror and concentrates heat on a particular spot on the vinyl panel. If the spot gets hot enough, the vinyl will begin to sag. Unfortunately, there is no remedy for the distortion—short of moving the offending reflector and replacing the damaged panel. An external heat source such as a barbecue too close to the house will also melt siding.

Unfortunately, there is no fast rule for how far from the house the barbecue should be positioned, but homeowners should be cautioned about this heat source.

### *To the Building Trades*

When rigid vinyl siding is exposed to significant heat or flame, the vinyl will soften, sag, melt or burn and may expose the material underneath. Care must be exercised when selecting underlayment materials because many underlayment materials are made from organic materials that are combustible. You should ascertain the fire properties of underlayment materials prior to installation.

All building materials should be installed in accordance with local, state, and federal building codes and fire regulations.

## Excessive Weathering

Vinyl siding is warranted against excessive or inconsistent weathering. In the unlikely event that siding on the same wall weathers inconsistently, CertainTeed will, of course, replace it. But everything “weathers,” and the color changes, fading, even chalking that all outdoor exposures undergo are considered normal. Problems occur when damaged siding, incorrectly installed accessories (flashing, gutters, or soffit), or blow-off necessitate replacing siding. Siding that has been exposed to the weather will always look “faded” next to new siding.

## Color Variation

Variations in color are most often caused by manufacturing inconsistencies. Gloss is usually the culprit because different gloss levels reflect light differently, making color look deeper in some sections than in others. For this reason, CertainTeed vinyl siding is tested and re-tested for consistent gloss level at several points during the manufacturing of the vinyl sheet and the panels. In the rare instance that color varies conspicuously, CertainTeed will replace the siding.

CertainTeed siding and trim has earned the Vinyl Siding Institute (VSI) Color Certification for its siding and trim. The VSI color-retention certification process requires a two-year, outdoor weathering study. Each certified CertainTeed color demonstrated the ability to resist major changes in a variety of climates. The color-retention certification is based on the performance standard for color retention.

### Summary

- Like any other product that is exposed to the outdoors, vinyl weathers over time.
- Chalking, mildew, and dirt can be removed from vinyl siding with any number of commercial and homemade cleaning solutions.
- To avoid streaking, always clean vinyl siding from the bottom to the top.
- Over time, the color of the siding will fade. This should not be a problem because CertainTeed vinyl siding should fade evenly.
- Always keep sources of heat—grills and combustibles—away from sided walls.

# 14. Manufacturer's Warranty:

## What's Covered; What's Not

### Objectives

This chapter discusses the defects that are covered by the manufacturer's warranty and those that are not:

- Warranty coverage
- Oil canning
- Melting
- Blow off
- Water intrusion

Understanding the warranty requires, first, understanding the difference between a contractor's warranty and a manufacturer's warranty. The manufacturer's warranty is typically limited to defects in the product that result from the manufacturing process. It is not a negotiable instrument.

The contractor's warranty is your warranty and guarantees the workmanship and services you agree to provide. You negotiate with the client, and, typically, your warranty becomes a part of the job contract or agreement that you sign with the customer. The following discussion concerns only our manufacturer's warranty.

### How Long Is Long Enough?

CertainTeed warrants its siding for the lifetime of the original owner. This lifetime limited warranty is our promise that CertainTeed siding is manufactured to consistently high, reproducible standards that your customers can count on. Because few people live in the same home their entire lives, CertainTeed's warranty is transferable to the subsequent homeowner, making an investment in CertainTeed siding a selling feature of the home. Upon transfer, the warranty converts to a pro-rated warranty with a duration of 50 years from the date of installation.

There are some competitive brands available with lifetime warranties to the original owner and the transferee. It would appear these warranties are "forever" warranties. We believe this is absurd. First, nothing lasts forever—not products or companies. Second, a warranty is only as good as the company behind it. It may be to your advantage to point this out to your customers when they are considering competitive sidings. CertainTeed has been in the building materials business since 1904 and has produced vinyl siding since the 60s. Our ability to produce a quality product for decades at a price homeowners can afford testifies to the value of both the product and the warranty: We make siding that lasts a very long time, and we guarantee it for as long as makes good business sense. Companies that guarantee their products "forever" may have a difficult time staying in business forever.

## What Is a Manufacturing Defect?

First, CertainTeed siding and accessories are guaranteed to be free from manufacturing defects in material and workmanship.

Second, CertainTeed's warranty guarantees consistent gloss levels and colors from batch to batch. Panels from two different cartons which do not match in gloss and colors are defective.

Third, CertainTeed siding is guaranteed to weather evenly on any one wall. Different exposures to the elements may cause the siding to weather differently from wall to wall over time. Everything that is left in the sun weathers, but it should all weather at the same rate. All of our siding colors and accessories are tested outdoors and in accelerated weathering machines. These colors are our standard for normal weathering, and when contacted about a weathering claim, we use these standards as the basis for resolving the claim. Uneven weathering is quite noticeable because it produces a checkerboard effect. It is a manufacturing defect, and CertainTeed will replace siding and accessories that have weathered unevenly.

Occasionally, homeowners attempt to replace a few damaged panels in a wall of siding. This causes weathering to become very noticeable, because the new panels will not match the normally weathered panels.

Finally, though siding is not typically warranted against "acts of God," CertainTeed replaces siding damaged by hail **to the extent that homeowner's insurance does not pay for the damage.** (Subject to certain provisions set in the warranty itself.)

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## Oil Canning

Oil canning is a terminal problem for panels with traditional nail slots; once it occurs, the face of the vinyl siding is permanently distorted and must be replaced. It is a wrinkling or buckling of the panel face, so called because when the siding buckles, it has the appearance of the bottom of an oil can. It occurs because the siding is not free to "float" and is almost always an installation problem.

The most common causes of oil canning in panels with traditional nail slots are:

- **Improperly cut panels:** Panels that are cut too long will oil can because they have no room to expand. ***Vinyl siding should be cut to allow 1/4 to 3/8 in. movement in J-channels, cornerposts, and other accessories.***
- **Tight nailing:** Galvanized roofing nails must be driven through the center of the nail slots at least 3/4 in. into a solid substrate, ***with up to 1/16 in. clearance between the head of the nail and the siding.*** If the nail is driven tight against the nail hem, the siding "oil cans" because it cannot move as it expands and contracts.
- Expansion and contraction are also restricted if the panel is nailed at opposite ends of the nail slots. For horizontally installed siding, if the panel is nailed at the extreme left of the left-hand slot and the extreme right of the right-hand slot, it is effectively fixed in place. As the ambient temperature varies up or down from the temperature at installation, the nails will restrict the panel's movement to the area inside the nails, causing the vinyl panel to oil can. ***Always nail in the center of nail slots.*** Because vertically installed siding expands and contracts in one direction (down) rather than equally across the panel, vertical siding is nailed at the top of the top slot and in the middle of all remaining slots.
- **Face nailing, *nailing through the front of the panel rather than through the nail slots, also causes siding to oil can.*** Even novice installers rarely ever make this mistake on a flat wall. However, it is not uncommon for novices to nail through the panel face when shutters, strapping for gutters, or outdoor lights are installed. Experienced installers drill holes three times the diameter of the screws, bolts, or nails being used to fasten the objects in the siding. This provides clearance so the siding can move freely underneath.

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## Blow Off

Under normal conditions, properly installed vinyl siding from a reputable manufacturer will not blow off. Angular locking legs and properly fitted trim yield secure connections, even under high wind pressure.

Most blow-off begins at either the top course of siding or under windows. It occurs because the top course is not properly secured. Installing a J-Channel and undersill trim or a cornice receiver/cornice molding combination will generally prevent this. If the top edge of the last course of siding is pushed



under and locked into the trim, the siding will not blow off under normal wind pressure. If high winds are a problem, the most secure application is to punch nail slots through the face of the top panel. Then hang the top panel as you would a normal siding panel, covering the nail heads with the cornice receiver/cornice molding combination.

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## Water Intrusion

Siding is not a water-proofer; it is a water shedder. All problems of water intrusion, especially around windows, doors, trim, lights, etc. occur because the area around these openings is not protected by flashing or another water diverter. For example, unless directed otherwise, water will run down channels surrounding windows and under, not over, siding. The length and width of flashing you will have to use depends on the opening and the type of accessories, but it is essential that flashing be wide and long enough to direct water onto the butt leg of the siding. The butt leg acts as a gutter, carrying water to weep holes and ensuring proper drainage to the exterior surface of the panel.

**When in doubt, flash it.** If you're not sure whether an opening should be flashed, play it safe and flash it. It can't hurt, and flashing around an opening is always significantly less expensive and time consuming than a call back to repair water damage.

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## Some Common Warranty Questions

### *What is "normal" weathering?*

Normal weathering is exposure to sunlight, extremes of weather, or atmosphere that causes any colored surface to gradually, fade, chalk, or accumulate dirt or stains. The severity of weathering depends upon where the building is located, the pollution in the air, and other local conditions over which the siding manufacturer has no control.

### *If something hits the building and dents or cracks the siding, is replacement covered under the warranty?*

No. While CertainTeed siding is strong enough to withstand the normal dents and dings that can be expected during installation and normal use, we have no control over baseballs, bats, tree limbs, car bumpers, etc. For that reason, siding is not warranted against dents or cracks caused by impact.

### *Is siding guaranteed by CertainTeed against blow-off?*

While all CertainTeed siding meets or exceeds ASTM minimum standards, blow-off is outside the manufacturer's control. The type and condition of the substrate, the type and depth of the fasteners, the location of the nails, the direction the house faces, wind gusts, and positive and negative pressures all impact the ability of the siding to withstand wind. Because it is impossible to control all these factors, CertainTeed vinyl siding is not warranted against blow-off.

### *What is a wind load rating?*

Wind load testing is a laboratory measure of the siding's ability to withstand positive and negative wind pressure. This rating is CertainTeed's assurance that, based on ASTM D5206 Standard Test Method for Wind Load Resistance, the siding you purchase is manufactured to withstand specified wind load pressures when that siding is nailed to studs with roofing nails or staples penetrating  $\frac{3}{4}$ -in., spaced 16 in. O.C. The testing verifies that the locking devices are secure and tight fitting and nail hems are sufficiently durable—even when buffeted by the wind.

It is also important to understand that **wind load rating is a relative number**. It is calculated in an equation where the variable is a location's "exposure." For example, wind load rating for siding on a building that is 33 ft. high or less, at a wind load pressure of 85 psf, in a particular exposure (A) is 180 mph. The same siding, on the same building, at the same pressure, in a different exposure (D) has a wind load rating of 135 mph.

All CertainTeed siding has passed wind load requirements for Dade County, Florida, and the Texas Board of Insurance. These are the toughest wind load requirements of all code regulations.

### *Are kinks in the siding covered by the warranty?*

Probably not. Before it is packaged and then again before it leaves the factory, all CertainTeed siding is inspected for quality. It is stored flat, on pallets, and it is shipped flat, on pallets. In the unlikely event that the siding you receive from the factory has kinks in it, we will, of course, replace it free of charge. But it has been our experience that most kinks occur when siding is improperly stored or transported after delivery. It should always be stored flat, on a solid surface, and transported in such a way that cartons are not bent. Damage as a result of failure to properly store and/or transport the siding is not covered by our material warranty.



### ***Do I have to use CertainTeed accessories when I install CertainTeed siding?***

You should. The accessories that are recommended for CertainTeed siding have been designed and manufactured by us, to our exacting specifications. They allow the siding to perform optimally, particularly as it expands and contracts. Using generic accessories will likely result in fittings and locks that are too tight or too loose, or allow water to run behind the substrate. Also, accessories from other manufacturers are likely to weather differently from CertainTeed siding, causing unsightly variations in color.

Using generic accessories will not void the warranty. However, if a problem is caused by another manufacturer's product or accessory, the claim will be denied.

### ***Is water damage to the house or the substrate covered by my warranty?***

No. Siding is a system. When properly installed, the system will shed water. Therefore, it is the installer's responsibility to make certain that the substrate is properly prepared, every course of siding is properly locked and fastened, and all openings are flashed. When the system is installed correctly, water is diverted over rather than under the siding, and neither the substrate nor the building gets wet.

### ***What about underlayment? Is it included in the warranty?***

No. As you know, there's a saying among siding installers: Vinyl siding looks only as good as what's under it. If the underlayment is wavy, eventually the siding will take on the same wavy appearance. CertainTeed has no control over the types of underlayment and their installation, but providing a smooth, flat surface is mandatory when installing vinyl siding.

### ***What about so-called "professionally accepted" installation techniques?***

This falls under the "that's the way we've always done it" explanation when something goes wrong. CertainTeed siding must be installed according to the written instructions in this manual. This is particularly important with Cedar Impressions, CedarBoards, and Northwoods products because their installation instructions are different from vinyl. If so-called "professionally accepted" techniques are found to be the cause of any siding problem, the claim will be rejected.

Instructions for installing CertainTeed siding and accessories are included in this manual; basic must-do instructions are also included on our packaging. Finally, technical help for installers is available at 800-999-3654. We strongly recommend that before starting a job, you review our installation instructions for the type of siding you're using on that job. And if you run into an area not covered by our standard instructions, call Consumer Service. Our trained staff will be happy to recommend an installation technique.

### ***What should I do if I have a warranty claim?***

Simply call Consumer Services at 800-999-3654 if you have a technical question about CertainTeed siding or if it doesn't measure up to your expectations. If you're calling with a specific product concern, please know the product name, style, and color; the name and location of the distributor who sold you the siding and accessories; and the date you installed it. If we can't answer your question immediately, we will contact someone who can and get back to you.

## **Summary**

- CertainTeed siding is guaranteed not to peel, flake, rust, blister, or corrode.
- CertainTeed guarantees consistent color and gloss from batch to batch.
- CertainTeed siding is guaranteed to weather evenly on the wall.
- Oil canning is almost always an installation problem and is not covered by the manufacturer's warranty.
- Vinyl will sag and have to be replaced if exposed to excessive heat from reflected sunlight or a barbecue. This is not a manufacturing defect.
- CertainTeed siding is not warranted against blow-off.
- Siding sheds water; it will not waterproof a house. For that reason, it is not guaranteed to prevent water intrusion. Proper flashing is always required.
- To meet the requirements for warranty protection, CertainTeed siding must be installed according to our written instructions. "Professionally accepted" installation techniques may not comply with CertainTeed's instructions and may void the warranty.

# 15. The Siding Collection

## Objectives

In this chapter, you'll read about the CertainTeed Siding Collection.

- Cedar Impressions®
- Northwoods®
- CedarBoards™ and CedarBoards™ XL
- Monogram® and Monogram® XL
- Restoration Classic™
- Board & Batten
- Chamfer Board Vertical Siding
- Carolina Beaded™
- MainStreet™
- Wolverine American Legend™
- Encore™

An industry leader for more than 100 years, CertainTeed offers a comprehensive mix of exterior building products. In CertainTeed's Siding Collection™, **the widest, most complete line of siding, accessories, and decorative trim in the industry**, you have something to offer every homeowner. Whether your priority is economical pricing, easy installation, or custom design, the Siding Collection offers a “super premium,” “premium,” “standard,” and “economy” selections to fit each homeowner's need.

For architectural looks, choose from our super premium products: Cedar Impressions® and Northwoods®. These architecturally distinctive sidings create a natural cedar shingle look.

CedarBoards™, Monogram®, Restoration Classic™, Board & Batten and Carolina Beaded™, make up our premium line. CedarBoards insulated siding helps protect against the harsh weather while reducing exterior sound transmission. CedarBoards XL installs quickly and reduces the number of laps. The look and finish of Restoration Classic siding date back to the early colonists and 17th century clapboard. For the natural look of painted or stained cedar, homeowners choose Monogram. Installers particularly like Monogram XL—extra-long panels that speeds installation. Board & Batten siding is a favorite among homeowners looking for a classic tongue and groove look, while Carolina Beaded is reproduced from hand-crafted boards and has the low-gloss brushed finish of painted wood.

MainStreet™ and Wolverine® American Legend™, our standard brands, are two of our most popular sidings. Distributors and installers rely on these workhorses for a wide selection of colors and styles.

For quality and economy, homeowners choose Encore™. Available in both clapboard and dutchlap styles, this 0.40"-thick panel features wind-resistant hems and locks and the patented STUdfinder™ Installation System.

What follows is a brief description of the benefits and features of each product line. For complete information about up-to-the-minute styles and colors, please consult the most recent Product Catalog (CTS002).

## Cedar Impressions®

Cedar Impressions® is CertainTeed's super premium siding. Cedar Impressions is a family of cedar style shingles available in three styles: Perfection Shingles, Rough-Split Shakes, and decorative Half-Round Shingles. Used on the whole house or as an accent, any one of these products provides dimension and texture to any home.

### Real Wood Appearance

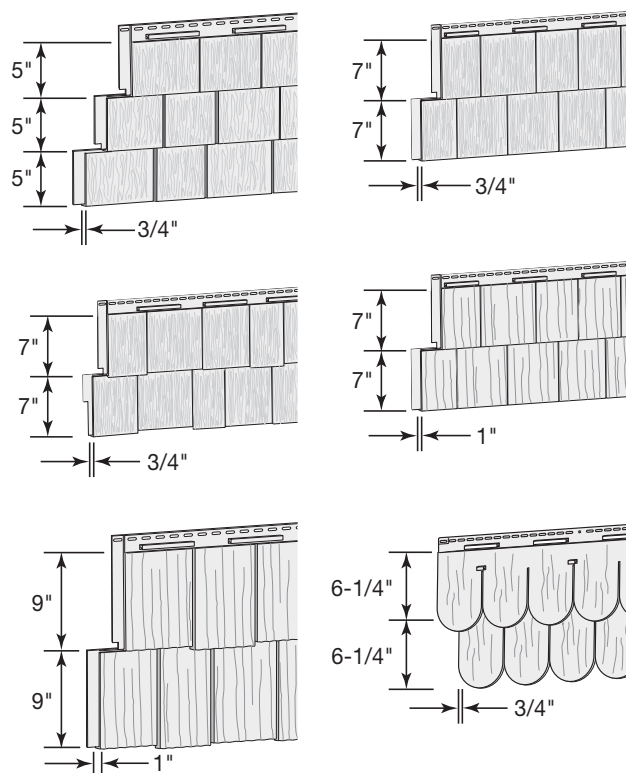
It's almost impossible to tell the difference between a real cedar shingle and Cedar Impressions, yet the panels will not rot, crack, split, or cup like real wood shingles. To underscore how remarkably similar Cedar Impressions is to its wood counterpart, consider how the product is made. Real cedar shingles are used to create rubber molds. The pattern is transferred onto a set of molds from which the Cedar Impressions panels are manufactured, creating CertainTeed's TrueTexture™ finish.

### Unique Construction

Cedar Impressions Perfection and Half-Round Shingles and Rough-Split Shakes are suitable for just about any climate. Thicker than standard lap siding and molded with color clear through, Perfection and Half-Round Shingles have a 3/4-in. panel projection, while our two Rough-Split Shakes panels have 1-in. panel projection. The high butt leg provides rigidity over the length of the panel as well as a distinctive shadow line. Molded ribs on the back of the panel provide structural stability to help prevent warping and distortion. Unlike vinyl lap siding, Perfection and Half-Round Shingles and Rough-Split Shakes have a molded perimeter locking system that does two things:

It gives the installation a virtually seamless appearance from top to bottom, end-to-end, and it enables the product to withstand high wind load pressures. This accounts for the products' popularity in the coastal, hurricane-prone states.

All Cedar Impressions panels are injection molded with durable polypropylene and feature our TrueTexture finish. Five of the panels feature the patented PanelThermometer™, which ensures precise installation every time.



### Distinctive Design

Cedar Impressions is recommended when design is important because its three styles offer the possibility to achieve a distinctive look. Like wood shingles, Cedar Impressions styles can be interchanged to create a unique, decorative effect. Also, all three styles can be installed with lap siding for a custom look. These super premium panels are available in a wide variety of popular colors.

Six Classic Styles	Length (in.)	Thickness (in.)	Exposure (in.)	Projection (in.)
Triple 5 in. Straight Edge Perfection Shingles	60	.100	15	3/4
Double 7 in. Straight Edge Perfection Shingles	48	.100	14	3/4
Double 7 in. Straight Edge Rough-Split Shakes	57	.125	14	1
Double 7 in. Staggered Perfection Shingles	48	.100	14	3/4
Double 9 in. Staggered Rough-Split Shakes	57	.125	18	1
Double 6-1/4 in. Half-Round Shingles	32	.100	12-1/2	3/4

Cedar Impressions styles can be installed with ordinary siding accessories, including wide decorative trim and Restoration Millwork® Trim—both of which resemble the lumber trim found on the most expensive, wood-shingled homes. When the job is completed, these lineals look like traditional wood carpentry.

### ***Complete Line of Accessories***

The Cedar Impressions line of siding is complemented by a complete set of custom accessories. There are Mitered Cornerposts for five of the six panels (Half Round Shingles are the exception) and Mitered Inside and Outside Bay Window Cornerposts for Double 7 in. Straight Edge Perfection Shingles. Matching Cornice Molding and Cornice Molding Cornerpost Cap are also available.

## **Cedar Impressions® Significant Features and Benefits**

<b>Feature</b>	<b>Benefit</b>
<ul style="list-style-type: none"> <li>• Appealing design: Triple 5 in. Straight Edge Perfection Shingles Double 7 in. Straight Edge Perfection Shingles Double 7 in. Staggered Perfection Shingles Double 7 in. Straight Edge Rough-Split Shakes Double 9 in. Staggered Rough-Split Shakes Double 6-1/4 in. Half-Round Shingles</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable for whole-house applications as well as accent areas</li> </ul>
<ul style="list-style-type: none"> <li>• D 7 in. Staggered Perfection Shingles and T 5 in. Straight Edge Perfection Shingles: Matching Mitered Cornerpost, Cornice Molding, and Cornice Cap</li> </ul>	<ul style="list-style-type: none"> <li>• Professional, finished appearance</li> </ul>
<ul style="list-style-type: none"> <li>• D 7 in. Straight Edge Perfection Shingles: Matching Mitered Inside and Outside Cornerposts; Mitered Bay Window Inside and Outside Cornerposts</li> </ul>	<ul style="list-style-type: none"> <li>• Professional, finished appearance</li> </ul>
<ul style="list-style-type: none"> <li>• Color clear through the panel</li> </ul>	<ul style="list-style-type: none"> <li>• Scratches won't show</li> </ul>
<ul style="list-style-type: none"> <li>• Extra-thick durable polypropylene</li> </ul>	
<ul style="list-style-type: none"> <li>• Limited Lifetime Warranty</li> </ul>	<ul style="list-style-type: none"> <li>• Helps protect homeowner's investment</li> </ul>
<b>Perfection and Half-Round Shingles</b>	
<ul style="list-style-type: none"> <li>• TrueTexture™ finish</li> </ul>	<ul style="list-style-type: none"> <li>• Looks like real cedar</li> </ul>
<ul style="list-style-type: none"> <li>• 3/4 in. projection</li> </ul>	<ul style="list-style-type: none"> <li>• Faithful reproductions of real shingles</li> </ul>
<ul style="list-style-type: none"> <li>• .100 in. thickness</li> </ul>	<ul style="list-style-type: none"> <li>• Super strength and rigidity</li> </ul>
<ul style="list-style-type: none"> <li>• Molded Perimeter Lock™</li> </ul>	<ul style="list-style-type: none"> <li>• Virtually seamless appearance</li> </ul>
<ul style="list-style-type: none"> <li>• PanelThermometer™ and temperature indicator lines</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure accurate spacing</li> <li>• Speed installation</li> </ul>
<ul style="list-style-type: none"> <li>• Reinforced nail slots</li> </ul>	<ul style="list-style-type: none"> <li>• Designed to withstand wind load pressure up to 180 mph</li> </ul>
<ul style="list-style-type: none"> <li>• Ribs on the back of the panel</li> </ul>	<ul style="list-style-type: none"> <li>• Structural stability</li> </ul>
<ul style="list-style-type: none"> <li>• Supplied in standard 48 in. (D7), 60 in. (T5), and 32 in. (Half-Round) panels</li> </ul>	
<ul style="list-style-type: none"> <li>• Matching Mitered Cornerpost and Cornice Cap for Perfection Shingles</li> </ul>	<ul style="list-style-type: none"> <li>• Professional, finished appearance</li> </ul>

*Cedar Impressions significant features and benefits continue on the next page.*

## Cedar Impressions® Significant Features and Benefits (Continued)

### Feature

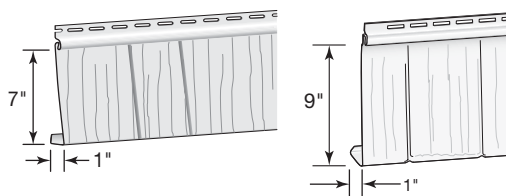
### Benefit

#### Rough-Split Shakes

• TrueTexture finish	• Looks like real cedar
• 1 in. projection	• Faithful reproductions of real shingles
• .125 in. extra thick	• Super strength and rigidity
• Molded Perimeter Lock	• Virtually seamless appearance
• Reinforced nail slots	• Designed to withstand wind load pressure up to 180 mph
• Ribs on the back of the panel	• Structural stability
• Supplied in standard 57 in. panels	• Ensure accurate spacing
• PanelThermometer™ and temperature indicator lines	• Speed installation
• Matching Mitered Cornerpost and Cornice Cap	• Professional, finished appearance

### Northwoods® Shakes

Northwoods Single 7 in. Straight Edge Rough-Split Shakes and Single 9 in. Staggered Rough-Split Shakes are made from vinyl using our patented TrueTexture™ process. They feature deep tapered shingle gaps and replicate the authentic look of milled cedar shingles. Northwoods Shakes can be combined with other CertainTeed siding styles, textures, and shapes and are an ideal option for creating accent areas or highlighting special architectural features.



## Northwoods® Shakes Features and Benefits

### Feature

### Benefit

• Random patterns	• Looks like hand-split cedar
	• Longer lengths without repeat
• TrueTexture finish	• Authentic reproduction of real cedar
	• Suitable for accent as well as whole-house application
• Deep, tapered shingle gaps	• Beautiful, distinct look
• 1 in. projection	• Faithful reproduction of real cedar
• .050 in. thickness	• Super strength and rigidity
• Post-formed lock	• Helps provide wind-load resistance that exceeds ASTM D3679
• Supplied in standard 10 ft. panels	• Decreases seams and speeds installation time
• Class 1(A) Fire Rating	
• Limited Lifetime Warranty	• Helps protect homeowners' investment

## CedarBoards™ and CedarBoards™ XL

CedarBoards insulated siding is a complete wall system that combines the low maintenance of vinyl with the energy efficiency of rigid insulation.

### Improved Appearance

The real beauty of CedarBoards siding lies in its ability to smooth out small imperfections in the wall. When applied over existing siding, CedarBoards will hide minor bumps and valleys in the substrate and help eliminate the waviness associated with hollow vinyl siding that has been applied over improperly prepared substrate. Because it is foam-backed, CedarBoards also resists damage from hail and everyday impacts.

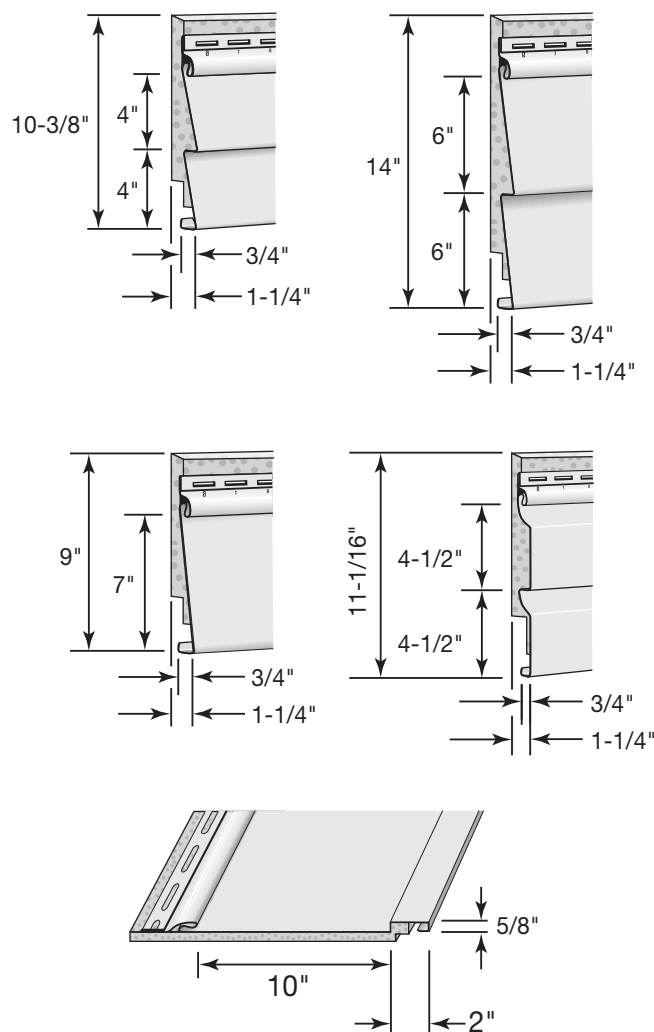
Chosen by builders and remodelers as the #1 insulated siding in performance and use, CedarBoards siding features a straight, even face with a flat surface that resembles wide board wood siding and a deep 3/4 in. straight-edge panel projection that looks like newly sawn wood.

### Improved Insulation

CedarBoards Insulated siding contributes to the thermal envelope that protects from wind and weather. It can increase overall thermal performance, helping to reduce energy costs, and it helps block sound and reduces exterior noise. Insulated siding will not contribute to mold growth and has a 5.0 permeability rating, allowing water vapor to escape.

### Product Details

A .044 in. panel, CedarBoards insulated siding features a Rough Cedar texture and comes in five popular profiles: Double 4 in., Double 6 in., and Single 7 in. Clapboard; Double 4-1/2 in. Dutchlap; and Single 12 in. Rough Cedar Board & Batten (.052"). The panels feature CertainTeed's patented STUDfinder™ Installation System, DuraLock™ positive locking system, and RigidForm™ rolled-over nail hem. Coordinating wood-like accessories are also available.



### Extra Long Panels

CedarBoards Insulated siding is also available in 16 ft. 8 in. panels. Double 6 in. XL Clapboard and Single 7 in. XL Clapboard can significantly reduce seams and speed installation. A two-story, 20 ft.-wide wall clad with the longer panels will have 40 percent fewer laps than a wall clad with standard 12 ft. 6 in. panels.

### LEED and NGBS Points

CedarBoards Insulated siding can also earn LEED points as an Energy STAR-rated product. Because it is up to 60 percent recycled pre-and post consumer recycled vinyl, CedarBoards D6 in. Clapboard also qualifies as an NGBS Research Center Green Approved Product.

Under the NGBS Green Building Standard, CedarBoards Insulated Siding may qualify for points under "Energy/Cost Performance" and "Building Envelope" criteria. CedarBoards D6 in. Clapboard can also earn points for "Recycled Content."



## CedarBoards™ Features and Benefits

Feature	Benefit
<ul style="list-style-type: none"> <li>• Rough Cedar texture</li> </ul>	<ul style="list-style-type: none"> <li>• Looks like real wood</li> </ul>
<ul style="list-style-type: none"> <li>• Five profiles to choose from: Double 6 in. Rough Cedar Clapboard Single 7 in. Rough Cedar Clapboard Double 4 in. Rough Cedar Clapboard Double 4-1/2 in. Rough Cedar Dutchlap Single 12 in. Rough Cedar Board &amp; Batten</li> </ul>	<ul style="list-style-type: none"> <li>• Styles for every home</li> </ul>
<ul style="list-style-type: none"> <li>• XL Double 6 in. and Single 7 in. Clapboard</li> </ul>	<ul style="list-style-type: none"> <li>• Faster Installation</li> <li>• Up to 40 percent fewer laps</li> </ul>
<ul style="list-style-type: none"> <li>• Double 6 in. Clapboard: Up to 60% pre-and post-consumer recycled vinyl</li> </ul>	<ul style="list-style-type: none"> <li>• NGBS Research Center Green Approved Product</li> </ul>
<ul style="list-style-type: none"> <li>• Supplied in 12 ft. 1 in. (D4-1/2), 12 ft. 3 in. (S7), 12 ft. 6 in. (D4 and D6) panels, and 16 ft. 8 in. (D6 and S7)</li> </ul>	
<ul style="list-style-type: none"> <li>• .044 in. thickness – D6, S7, D4, D4.5DL .052 in. thickness – S12 Board &amp; Batten</li> </ul>	<ul style="list-style-type: none"> <li>• Strong and rigid</li> </ul>
<ul style="list-style-type: none"> <li>• 3/4 in. projection (D6 and S7)</li> <li>• 3/4 in. projection (D4 and D4.5DL)</li> </ul>	<ul style="list-style-type: none"> <li>• Faithful reproduction of real cedar</li> </ul>
<ul style="list-style-type: none"> <li>• 1-1/4 in. custom contoured foam (complete assembly)</li> </ul>	<ul style="list-style-type: none"> <li>• Smooths out imperfections in the wall</li> <li>• Supports the contour of the siding</li> <li>• Resists impact up to five times better than hollow vinyl siding</li> <li>• Helps block sound</li> </ul>
<ul style="list-style-type: none"> <li>• Straight, even face</li> </ul>	<ul style="list-style-type: none"> <li>• Flat surface looks like wide board siding</li> </ul>
<ul style="list-style-type: none"> <li>• STUDfinder™ Installation System</li> </ul>	<ul style="list-style-type: none"> <li>• Ensures fast, accurate installation</li> </ul>
<ul style="list-style-type: none"> <li>• DuraLock® oversized, rigid lock</li> </ul>	<ul style="list-style-type: none"> <li>• Positive lock</li> <li>• Secure installation</li> </ul>
<ul style="list-style-type: none"> <li>• RigidForm™ technology</li> </ul>	<ul style="list-style-type: none"> <li>• Rolled-over nail hem stiffens siding</li> <li>• Straight-on-the-wall appearance</li> <li>• Designed to withstand wind load pressure up to 180 mph</li> </ul>
<ul style="list-style-type: none"> <li>• Limited Lifetime Warranty, PermaColor™ Lifetime Fade Protection</li> </ul>	<ul style="list-style-type: none"> <li>• Helps protect homeowner's investment</li> </ul>

## Monogram® and Monogram® XL

Monogram® has the widest color selection in the industry. It also has a stiff, double-thick .092" nail hem for a straighter on-the-wall appearance and wind load performance of up to 220 mph with nails.

### ***Premium Appearance with a Wood Look and Virtually No Maintenance***

Everyone compares the grain and texture of vinyl to the natural look of painted wood. It's the look homeowners know and want. But for all its aesthetic attributes, wood siding can be an expensive nightmare in terms of maintenance. Consequently, homeowners look for low-maintenance, quality alternatives with a premium appearance. Monogram and Monogram XL solids, and blends fill this need.

Unlike real wood, Monogram doesn't cup, split, warp or twist. There are no visible nail heads on the face of a Monogram panel, so there are no rust streaks. Finally, wood siding typically requires painting every 3 to 5 years; vinyl siding never needs painting.

### ***Product Details***

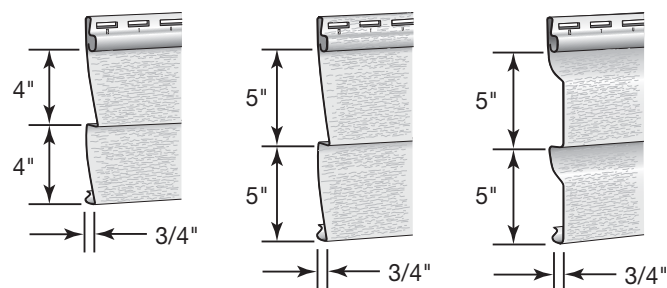
Monogram is available in Double 4 in. and Double 5 in. Rough Cedar Clapboard and Double 5 in. Rough Cedar Dutchlap.

The TrueTexture rough cedar texture was created directly from the source, real cedar clapboards. Monogram features a 3/4 in. panel projection for added rigidity and deep shadow lines. The CertiLock self-aligning post-formed positive lock provides easy, self-aligning installation to help ensure that panel courses match on adjacent walls.

Monogram also features the STUDfinder Installation System, which combines precisely engineered nail slot locations with graphics to help ensure quick, accurate, and secure installation. The nail slots are positioned to allow for alignment with studs. STUDfinder Installation System graphics are centered directly under each nail slot. This provides a quick and easy guide to fastening studs, which is the recommended and approved installation method.

Monogram is installed with 3/4 in. receiving channel accessories and is fully compatible with Vinyl Carpentry accessories and trim. Available accessories include 3-1/2 in. and 5 in. decorative trim lineals, cornerpost, quarter round accents, crown molding, corner block and rosette, and cornice molding.

With traditional 12 ft. siding, seams appear every two to three feet. Monogram XL panels are preferred by installers because they reduce the number of laps and speed installation. On a two-story, 25 ft.-wide wall, a 16-ft. Monogram XL panel will contain 30 percent fewer laps and a 20-ft. Monogram XL panel will contain 54 percent fewer laps. Using our 25 ft. Monogram XL panel on the same wall will eliminate the seams completely! For greater flexibility and to reduce waste, Monogram XL panels can be mixed with traditional length Monogram.



### ***Deluxe Colors***

Monogram's blend colors are actually multi-colored with the streaked appearance of semi-transparent stained cedar siding. The streaking pattern is subtle and consistent, and it doesn't have the harsh variations seen in competitive products. This subtlety and a look that provides smooth joint transitions from one panel to the next gives Monogram® the virtually seamless appearance that homeowners want.

Finally, Monogram vinyl siding has color that is processed clear through, eliminating the possibility of film delamination or fading inks. Some competitive streaked products are made with a thin film that can be scratched off and show a different color substrate underneath.

## Premium Colors

All CertainTeed siding is manufactured using our exclusive PermaColor™ color science technology. In the PermaColor process, PVC resin, superior micro-ingredients, and state-of-the-art pigment chemistry combine to produce an array of rich, durable colors. The premium colors, generally the darker hues like Autumn Red and Pacific Blue, also use ASA, highly durable polymer capstocks compounded with heat distortion modifiers to ensure long-term weatherability. The darker hues would otherwise fail quickly, but ASA, protects them from chalking and excessive fading.

Another feature that differentiates Monogram from competitive products is the color selection. Working with the prestigious Color Marketing Group—an association of professionals representing many different industries—CertainTeed developed a palette for Monogram that reflects the latest consumer color trends and color development and includes blended colors.

## Monogram® Significant Features and Benefits

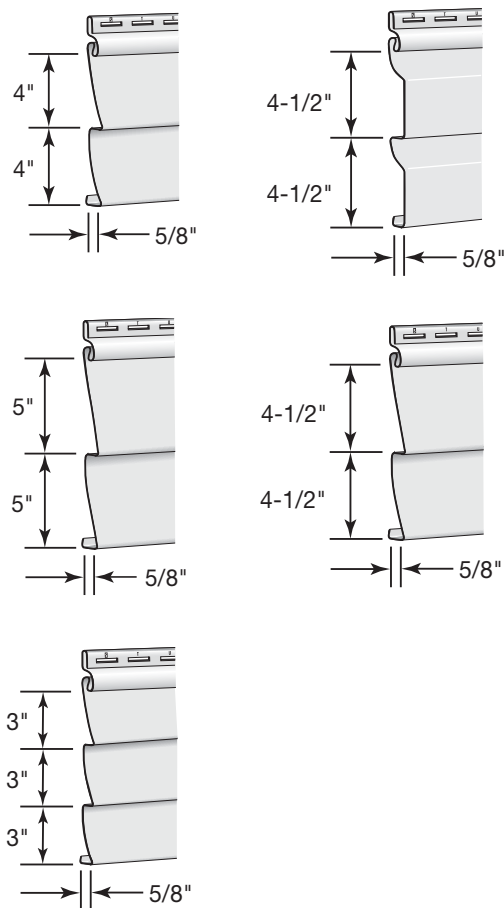
Feature	Benefit
<ul style="list-style-type: none"> <li>Three classic styles of Monogram                             <ul style="list-style-type: none"> <li>Double 4 in. Rough Cedar Clapboard</li> <li>Double 5 in. Rough Cedar Clapboard</li> <li>Double 5 in. Rough Cedar Dutchlap</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Wide choice of styles for greater designability                             <ul style="list-style-type: none"> <li>12 ft. 6 in. panel</li> <li>12 ft. panel</li> <li>12 ft. panel</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>Two classic styles of Monogram XL                             <ul style="list-style-type: none"> <li>Double 4 in. Rough Cedar Clapboard</li> <li>Double 5 in. Rough Cedar Dutchlap</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>16 ft. 8 in., 20 ft. and 25 ft. panels</li> <li>16 ft., 20 ft. and 25 ft. panels</li> </ul>
<ul style="list-style-type: none"> <li>Widest color selection in the industry, including blends</li> </ul>	<ul style="list-style-type: none"> <li>Color to meet every homeowner's needs</li> </ul>
<ul style="list-style-type: none"> <li>TrueTexture™ finish</li> </ul>	<ul style="list-style-type: none"> <li>True wood-like appearance</li> </ul>
<ul style="list-style-type: none"> <li>Low gloss finish</li> </ul>	<ul style="list-style-type: none"> <li>The appearance of freshly painted smooth clapboards</li> </ul>
<ul style="list-style-type: none"> <li>3/4 in. projection</li> </ul>	<ul style="list-style-type: none"> <li>Increased panel rigidity and distinct shadow lines</li> </ul>
<ul style="list-style-type: none"> <li>RigidForm™ 220 technology</li> </ul>	<ul style="list-style-type: none"> <li>Designed to withstand wind load pressure up to 220 mph</li> <li>Straighter on-the-wall performance</li> </ul>
<ul style="list-style-type: none"> <li>STUDfinder™ Installation System</li> </ul>	<ul style="list-style-type: none"> <li>Helps ensure quick, accurate, and secure installation</li> </ul>
<ul style="list-style-type: none"> <li>CertiLock™</li> </ul>	<ul style="list-style-type: none"> <li>Multiple bends provide for self alignment</li> <li>Faster, more consistent installation</li> <li>Audible “click” indicates locked, secure panel</li> </ul>
<ul style="list-style-type: none"> <li>Complementing wood-like accessories</li> </ul>	<ul style="list-style-type: none"> <li>More custom, natural appearance</li> </ul>
<ul style="list-style-type: none"> <li>Extra long (16 ft., 16 ft. 8 in., 20 ft. and 25 ft.) panels</li> </ul>	<ul style="list-style-type: none"> <li>Speed installation</li> <li>Reduce number of laps</li> </ul>
<ul style="list-style-type: none"> <li>.046 in. thickness</li> </ul>	<ul style="list-style-type: none"> <li>Strong, nearly invisible laps</li> <li>Straighter on-the-wall performance</li> </ul>
<ul style="list-style-type: none"> <li>Limited Lifetime Warranty, PermaColor™ Lifetime Fade Protection</li> </ul>	<ul style="list-style-type: none"> <li>Helps protect homeowner's investment</li> </ul>
<ul style="list-style-type: none"> <li>Class 1(A) Fire Rating</li> </ul>	

## Restoration Classic™

The look and finish of Restoration Classic Siding date back to the 17th Century. Harsh winters forced New World colonists to develop solid wood siding called clapboards. These were cut from oak, cedar, or white pine and planed on site. Nailed in an overlapping pattern of 3 or 4-1/2 in. exposures, then sealed and painted, clapboards created a weather resistant, eye-pleasing wall. Restoration Classic siding recreates that architectural style in vinyl.

Restoration Classic is available in Double 4 in. and Double 5 in. Select Cedar Clapboard, Double 4-1/2 in. Select Cedar Dutchlap, and Triple 3 in. and Double 4-1/2 in. Smooth Clapboard profiles. Manufacturing innovations include:

- **STUDfinder™** Installation System—Precisely engineered nail-hem graphics help installers find studs with greater accuracy.
- **RigidForm Hem**—A double-thick, .088 in. material gives Restoration Smooth higher strength and rigidity for straighter walls, long-lasting appearance, and outstanding wind resistance.
- **DuraLock**—Panels snap securely in place for a more rigid, straighter installation.



## Restoration Classic™ Features and Benefits

### Feature

- Double 4 in. Select Cedar Clapboard
- Double 4-1/2 in. Select Cedar Dutchlap
- Double 5 in. Select Cedar Clapboard
- Double 4-1/2 in. Smooth Clapboard
- Triple 3 in. Smooth Clapboard
- 5/8 in. panel projection
- Supplied in 12 ft., 12 ft. 1 in. and 12 ft. 6 in. panels
- .044 in. thickness
- STUDfinder Installation System
- RigidForm™ technology
- DuraLock®
- Limited Lifetime Warranty, PermaColor™ Lifetime Fade Protection
- Class 1(A) Fire Rating

### Benefit

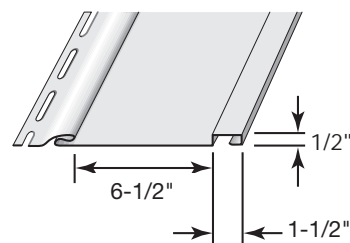
- Looks like 17th Century hardwood siding
- Deep shadow lines
- Minimizes seams
- Speeds installation
- Premium thickness; rigid panel
- Faster, more accurate installation
- Increased strength and rigidity
- Increased wind resistance
- Straighter-on-the-wall performance
- Helps protect homeowner's investment

## Board & Batten

Board & Batten vertical siding recreates the historic charm and rustic cedar look of a centuries-old siding style originally applied to log-built homes, barns, and other early American structures. This siding was favored by early settlers to protect and beautify homes and outbuildings. CertainTeed Board & Batten vertical siding combines alternating wide and narrow vertical panels in a simple, yet beautiful design well-suited to this distinctive architectural style.

### *Aesthetic Appeal*

Board & Batten's 6-1/2 in. board and 1-1/2 in. batten create a realistic natural cedar look. The flat face 6-1/2 in. board maintains its straight, even face and flat surface, while the sharp batten edge looks like finely crafted real wood.



### *Installation Advantages*

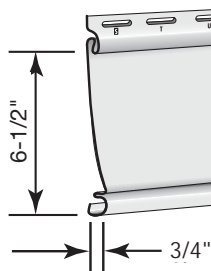
A full 30 inches longer than competitive panels, CertainTeed's 12 ft., 6 in. Board & Batten panels offer distinct installation and aesthetic advantages. Seams and transitions can be eliminated in walls up to 12 ft. 6 in. high, providing a smoother appearance. For traditional-height walls, we also manufacture a 10 ft. panel.

## Board & Batten Features and Benefits

Feature	Benefit
• 8 in. exposure	• Widest vinyl board span
• TrueTexture™ rough cedar finish	• Looks like textured wood
• 6-1/2 in. board with 1-1/2 in. batten	• Creates an 8 in. wide panel with widest board span
• Flat face board design	• Straight, even surface
• Straight, sharp-edged battens	• Sharp, carpentered look
• Long 12-1/2 ft. panels	• Seams and transitions eliminated from walls up to 12-1/2 ft. high
• Standard 10 ft. panel	• No waste on standard-height walls
• .048 in. thickness	• Strength and durability
• 1/2 in. projection	
• Limited Lifetime Warranty, PermaColor™ Lifetime Fade Protection	• Protects homeowner's investment
• Class 1(A) Fire Rating	

## Carolina Beaded™

Carolina Beaded was developed specifically for the look of the “Old South.” Carolina Beaded features a deep V-groove design, which creates a distinct shadow line between the face of the panel and the rounded bead. Its low gloss, smooth brushed finish looks like freshly painted wood. Carolina Beaded recreates the look of hand craftsmanship without the time consuming—and expensive—installation and maintenance.



## Product Details

Carolina Beaded is available in a 6-1/2 in. beaded profile with a low-gloss brushed finish. A .044 in. panel, it has a 3/4 in. projection, deep shadow lines, and CertainTeed's popular post-form locking mechanism.

Carolina Beaded features the STUdfinder™ Installation System. It is installed with 3/4 in. receiving channel accessories and is fully compatible with Beaded Porch Panel and Vinyl Carpentry accessories and trim. Available accessories include 3-1/2 in. and 5 in. decorative trim lineals, cornerposts, quarter round accents, crown molding, corner block and rosette, and cornice molding.

## Carolina Beaded™ Significant Features and Benefits

Feature	Benefit
• 6-1/2 in. exposure	• Faithful recreation of original wood siding
• Smooth-brushed texture	• The look of hand-crafted beaded wood siding
• Low-gloss finish	• Natural painted wood appearance
• 3/4 in. beaded projection	• Deeper shadow lines
	• Rigid panel
• 12 ft. 4 in. panel	• Decreases seams
	• Speeds installation
• Post-formed lock	• Resists blow-off
	• Helps provide secure installation
• .044 in. thickness	• Optimum thickness for strength, durability, and appearance
• STUdfinder Installation System	• Helps ensure quick, accurate, and secure installation
• Limited Lifetime Warranty, PermaColor™ Lifetime Fade Protection	• Helps protect homeowner's investment
• Class 1(A) Fire Rating	



## MainStreet™

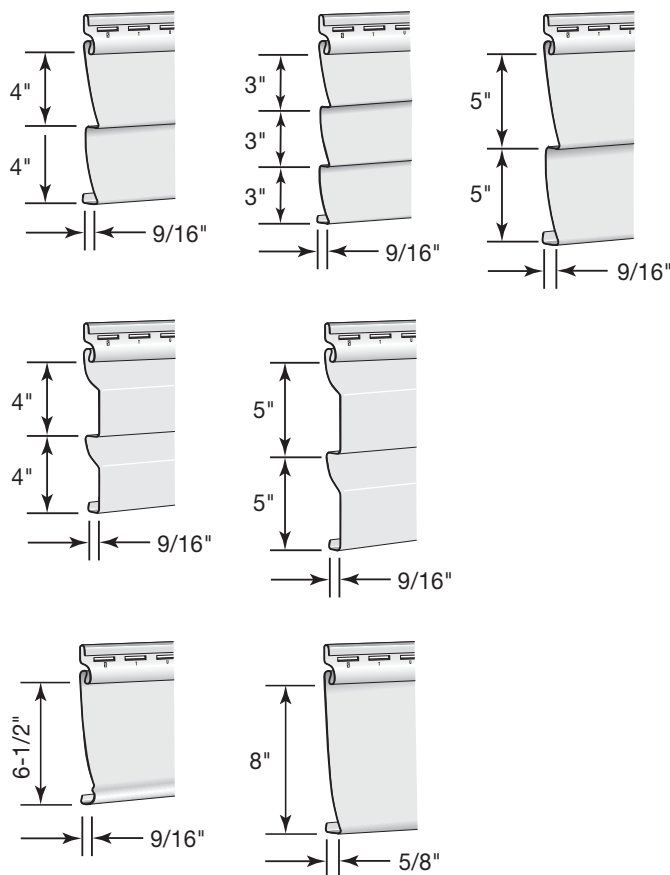
Available since the mid-80s, MainStreet is CertainTeed's best selling siding—and with good reason. MainStreet, which also incorporates the STUdfinder Installation System, is just the siding homeowners need when they're in the market for a panel that looks good, offers many style options, has a wide range of color selections, and is a good value.

### Product Details

MainStreet boasts the broadest style line in the CertainTeed Siding Collection.

- Double 4 in. Woodgrain Clapboard—  
12 ft. 6 in. panel, 9/16" projection
- Triple 3 in. Brushed Clapboard—  
12 ft. 1 in. panel, 9/16" projection
- Double 5 in. Woodgrain Clapboard—  
12 ft. panel, 9/16" projection
- Double 4 in. Woodgrain Dutchlap—  
12 ft. 6 in. panel, 9/16" projection
- Double 5 in. Woodgrain Dutchlap—  
12 ft. panel, 9/16" projection
- Single 6-1/2 in. Brushed Beaded—  
12 ft. 4 in. panel, 9/16" projection
- Single 8 in. Woodgrain Clapboard—  
12 ft. 6 in. panel, 5/8" projection

MainStreet™ also features an extensive color offering and is created with PermaColor™ color science, a unique blend of PVC resin, superior micro-ingredients, and state-of-the-art pigment chemistry. All colors go clear through the panel so scratches don't show.



With full 9/16 in. or 5/8 in. panel projection, MainStreet casts a dramatic shadow line and give homes the depth and definition homeowners love. This versatile siding product coordinates with all Vinyl Carpentry™ soffit textures and also blends well with other siding styles and decorative accessories. For a particularly striking look, MainStreet™ can be paired with Cedar Impressions®.

### RigidForm™ Technology

MainStreet's RigidForm 160 rolled-over nail hem stiffens the siding for a straighter on-the-wall appearance. It also provides wind load performance up to 160 mph with nails.

### DuraLock®

MainStreet is an installer-friendly panel because it installs quickly and evenly on the wall. It features DuraLock, an over-sized, rigid teardrop shape and angular locking leg, which provides a positive snap-fit installation.

## MainStreet™ Significant Features and Benefits

Feature	Benefit
• Wide variety of profiles	• Styles and widths to suit virtually any home design
• Low-gloss woodgrain finish or brushed finish	• Authentic wood look
• 9/16 in. projection for all but S8 in. clapboard	• Definitive shadow lines
• 5/8 in. projection for S8 in.	
• RigidForm™ 160 Technology	• Straighter on-the-wall performance
	• Designed to withstand wind load pressure up to 160 mph
• STUDfinder™ Installation System	• Helps ensure quick, accurate, and secure installation
• DuraLock™ post formed lock	• Easy to install
	• Helps provide secure installation
• .042 in. thickness	• Durability and protection at an affordable price
• Limited Lifetime Warranty, PermaColor™ Lifetime Fade Protection	• Helps protect homeowner's investment
• Class 1(A) Fire Rating	

## Wolverine American Legend™

American Legend vinyl siding is one of our best selling sidings. One of our standard sidings, American Legend can command a premium price when it is combined with a decorative trim package. American Legend is just the siding homeowners need when they're in the market for a panel that looks good, offers many style options, has a wide range of color selections, and is a good value.

### GripLock™

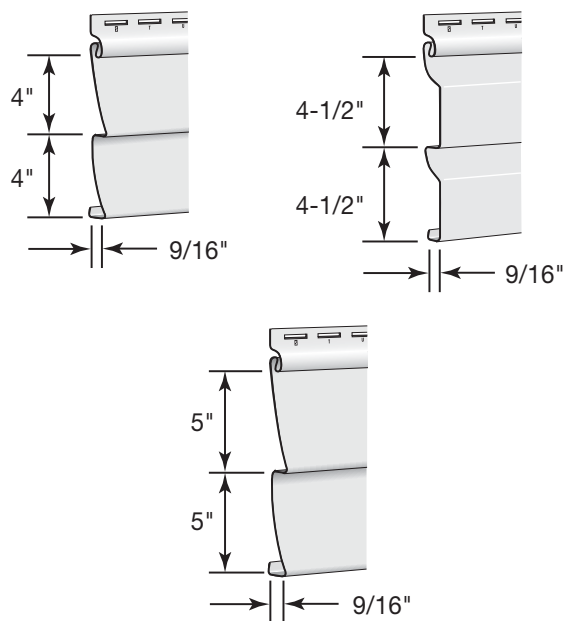
American Legend features the exclusive GripLock design. With GripLock, the panels “snap” securely together for extra stability. As a result, installation goes faster and the overall appearance is smoother and more attractive. The advanced lock makes one-person installation simple.

American Legend is often referred to as “the” installer-friendly panel because it also features the STUdfinder Installation System. The STUdfinder™ Installation System combines precisely engineered nail slots with graphics to help ensure quick, accurate, and secure installation.

### Product Details

American Legend boasts the following profiles and finishes:

- Double 4 in. Clapboard, woodgrain—12 ft. 6 in. panel
- Double 4-1/2 in. Dutchlap, woodgrain—12 ft. 1 in. panel
- Double 5 in. Clapboard, woodgrain—12 ft. panel



American Legend also features an extensive color offering created with a unique blend of CertainTeed's PermaColor™ resin system, superior micro-ingredients, and state-of-the-art pigment chemistry. All colors go clear through the panel.

This versatile siding product coordinates with all soffit textures and also blends well with other siding styles and decorative accessories.

## Wolverine American Legend™ Significant Features and Benefits

### Feature

- Wide variety of profiles
  - Double 4 in. Woodgrain Clapboard
  - Double 4-1/2 in. Woodgrain Dutchlap
  - Double 5 in. Woodgrain Clapboard
- GripLock™
- 9/16 in. projection
- .042 in. thickness
- Limited Lifetime Warranty, PermaColor™ Lifetime Fade Protection
- STUdfinder™ Installation System
- Class 1(A) Fire Rating

### Benefit

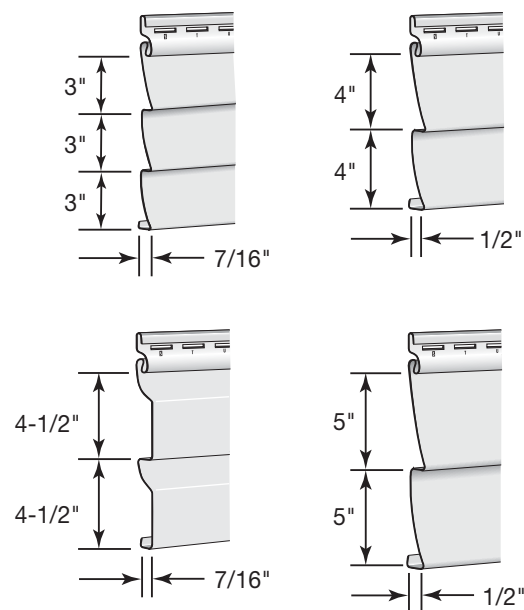
- Styles and widths to suit virtually any home design
- Snap-fit, secure installation
- Easy one-person installation
- Definitive shadow lines
- Helps protect homeowner's investment
- Helps ensure quick, accurate, and secure installation

## Encore™

High quality. Low maintenance. Great value. In a few phrases we can describe why many homeowners and installers love Encore siding. Encore coordinates with our complete line of soffit, trim, and accessories, so you can help homeowners achieve the look they want at a price they can afford.

### Product Details

Encore is available with a woodgrain finish in four profiles: Triple 3 in., Double 4 in., and Double 5 in. Clapboard, and Double 4-1/2 in. Dutchlap. Its color line coordinates with all Vinyl Carpentry™ decorative trim. Encore features the STUdfinder™ Installation System for quick, accurate, and secure installation.



## Encore™ Significant Features and Benefits

### Feature

- Four profiles  
Triple 3 in. Woodgrain Clapboard  
Double 4 in. Woodgrain Clapboard  
Double 4-1/2 in. Woodgrain Dutchlap  
Double 5 in. Woodgrain Clapboard
- Supplied in 12 ft. (D5), 12 ft. 1 in. (D4-1/2DL, T3) and 12 ft. 6 in. (D4) panels
- Woodgrain finish
- 1/2 in. projection (D4 and D5)  
7/16 in. projection (D4-1/2DL and T3)
- .040 in. thickness
- Post-formed lock
- STUdfinder Installation System
- Best selling colors with coordinating trim
- Limited Lifetime Warranty,  
PermaColor™ Lifetime Fade Protection
- Class 1(A) Fire Rating

### Benefit

- Homeowners can create the look they want
- Minimizes seams
- Speeds installation
- Looks like painted wood
- Provides subtle shadow lines
- Easy, secure installation
- Helps ensure quick, accurate, and secure installation
- Most popular colors in an economically priced line
- Helps protect homeowner's investment

## Summary

- The Siding Collection offers a wide selection to meet every homeowner's design choice and budget.
- All our siding panels feature TrueTexture™ finish and PermaColor™ Lifetime Fade Protection.
- The Cedar Impressions siding line offers a rich architectural look to homeowners. These panels can be used in whole-house applications or as accents.
- Northwoods Single 7 in. and Single 9 in. panels recreate the natural textures and variable patterns of cedar shakes and shingles.
- CedarBoards XL Insulated siding is 16 ft. 8 in. long. Longer panels can reduce the number of laps by up to 40 percent.
- Monogram has the widest color selection in the industry.
- Monogram XL is available in 16 ft. 8 in., 20 ft. and 25 ft. panels that speed installation and reduce or, in some cases, eliminate seams.
- Restoration Classic features an historically accurate finish that replicates smooth, sealed painted wood and Select Cedar finish which has a natural woodgrain appearance.
- Board & Batten siding has a straight, even face with a flat surface and straight-edge battens with a sharp, carpentered look.
- Homeowners and building professionals who want to recreate an Old-World look choose Carolina Beaded.
- MainStreet is the ideal choice for homeowners looking for value with the benefits of a premium panel.
- The three classic styles of Wolverine American Legend offer versatile looks and performance at an economical price.
- Encore has proven features that offer style and performance at an affordable price.
- Chamfer Board vertical siding has the authentic look of beveled-edge wood.

# 16. Vinyl Carpentry® Soffit & Vertical Siding

CertainTeed's line of soffit includes five very different products, all of which can be used to complement and customize siding applications. Like siding, CertainTeed soffit panels never need painting and are virtually maintenance-free.

## Objectives

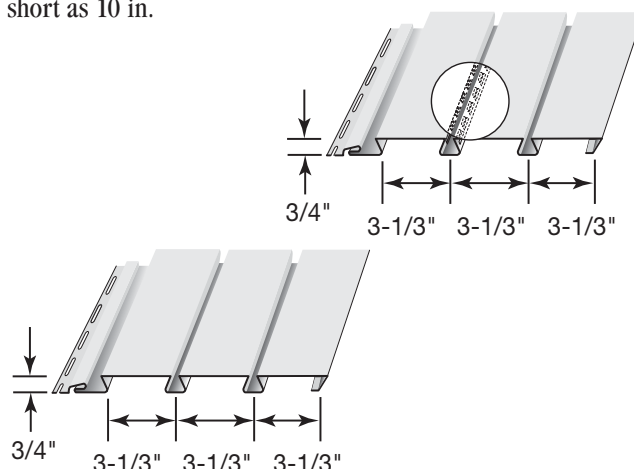
This chapter describes the CertainTeed line of vinyl soffit:

- Triple 3-1/3 in. InvisiVent™ and Solid
- Perimeter Triple 3-1/3 in.
- Chamfer Board™ Vertical Siding and Soffit
- IronMax™ Double 5 in.
- Beaded Triple 2 in.
- Universal Triple 4 in.
- Value Triple 4 in. and Double 5 in.

## Triple 3-1/3 in. InvisiVent® and Solid

CertainTeed's Triple 3-1/3 in. InvisiVent and Solid soffit looks like smooth, painted wood. The intake vents on InvisiVent soffit are concealed in deep, sharply-flared dovetails between the panel faces. All T3-1/3 in. soffit has a low gloss, matte finish and is available in popular siding colors.

InvisiVent soffit is invisibly vented, yet it provides more than 10 in. of net free intake per square foot. What's more, it will provide a balanced ventilation system with an overhang as short as 10 in.



## Triple 3-1/3 in. InvisiVent® and Solid Soffit Significant Features and Benefits

Feature	Benefit
<ul style="list-style-type: none"> <li>• Triple 3-1/3 in., invisibly vented</li> <li>• Triple 3-1/3 in., solid</li> </ul>	<ul style="list-style-type: none"> <li>• Provides more than 10 in. of net-free intake area</li> <li>• Increases roof life</li> <li>• Reduces energy costs</li> <li>• Reduces potential for mold</li> </ul>
<ul style="list-style-type: none"> <li>• Low gloss, matte finish</li> </ul>	<ul style="list-style-type: none"> <li>• Looks like smooth painted wood</li> </ul>
<ul style="list-style-type: none"> <li>• Deep, sharply etched dovetails</li> </ul>	<ul style="list-style-type: none"> <li>• Conceals vents</li> </ul>
<ul style="list-style-type: none"> <li>• 10 in. exposure, 12 ft. length</li> </ul>	<ul style="list-style-type: none"> <li>• Quick installation</li> </ul>
<ul style="list-style-type: none"> <li>• .044 in. thickness</li> </ul>	<ul style="list-style-type: none"> <li>• Rigid</li> </ul>
<ul style="list-style-type: none"> <li>• 3/4 in. projection</li> </ul>	<ul style="list-style-type: none"> <li>• Can span up to 24 in.</li> </ul>
<ul style="list-style-type: none"> <li>• Available in popular colors</li> </ul>	<ul style="list-style-type: none"> <li>• Available in many popular colors</li> </ul>
<ul style="list-style-type: none"> <li>• Lifetime Limited Warranty</li> </ul>	<ul style="list-style-type: none"> <li>• Helps protect homeowner's investment</li> </ul>



## Perimeter Triple 3-1/3 in. Hidden Vent and Solid Soffit Significant Features and Benefits

### Feature

- Triple 3-1/3 in., Hidden Vent
- Triple 3-1/3 in., solid

### Benefit

- Provides more than 9.65 in. of net-free intake area
- Increases roof life
- Reduces energy costs
- Reduces potential for mold

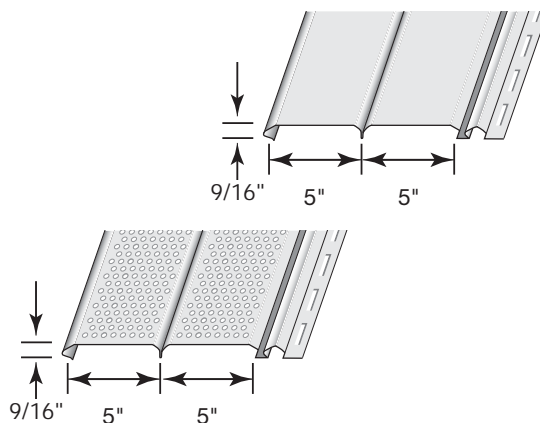
- Low gloss, matte finish
- 10 in. exposure, 12 ft. length
- .040 in. thickness
- 5/8 in. projection
- Available in popular colors
- Lifetime Limited Warranty

- Looks like smooth painted wood
- Quick installation
- Rigid
- Can span up to 24 in.
- Available in many popular colors
- Helps protect homeowner's investment

## Chamfer Board™ Soffit and Vertical Siding

CertainTeed's Double 5 in. Chamfer Board soffit and vertical siding has the authentic look of beveled edge wood plus the durability of vinyl siding. It is designed for vertical siding, porch ceiling and soffit applications.

Chamfer Board is solid for vertical siding applications, and fully vented for soffit.



## Chamfer Board™ Soffit and Vertical Siding

### Feature

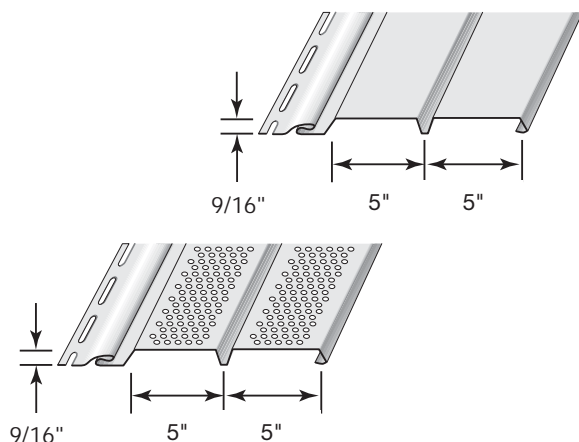
- Double 5 in. solid and fully vented
- Low-gloss brushed finish
- 9/16 in. projection
- .044 in. thickness
- 12 ft. panel
- Unique V-Groove lock design
- Weatherable formulation
- Available in a variety of colors
- Available in solid and vented panels

### Benefit

- Authentic look of beveled edge wood.
- Blends with all horizontal and vertical siding panels
- Adds structural integrity
- Strong and rigid
- May be used as a vertical siding as well as a soffit
- Speeds installation
- Easy-install, secure lock design
- Compliment or contrast siding
- Solid panels for use as porch ceilings and as vertical siding
- Vented panels ventilate attics while maintaining a consistent appearance
- Helps protect homeowner's investment

## Ironmax™ Soffit

Ironmax is a rigid, high performance product. It combines the attractive appeal of wood with the rigidity and durability of premium .046 in. vinyl. Available in Double 5 in. Woodgrain, it is perfect for vertical siding applications as well as for soffit and porch ceilings.



When compared head-to-head with competitive vinyl soffit, Ironmax soffit is definitely the industry leader. Its post-formed lock design assures maximum vinyl-to-vinyl contact for a secure, snug fit. A steep angular I-beam design provides more lateral and vertical rigidity and helps keep it tight to the nailing surface. This creates straighter lines and a flat face, virtually eliminating sagging and cupping. Because Ironmax soffit is so rigid, it can be nailed every 24 inches.\* Most soffit panels require nailing every 16 inches.

*\* High wind areas or local building codes may require additional fasteners.*

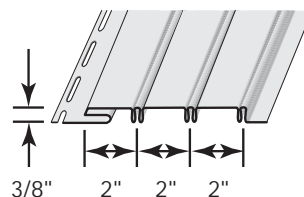
### Ironmax™ Soffit Significant Features and Benefits

Feature	Benefit
• Double 5 in. solid and fully vented	• Looks like tongue and groove boards
• Low-gloss universal woodgrain finish	• Blends with all horizontal and vertical siding panels
• 9/16 in. projection	• Adds structural integrity
• .046 in. thickness	• Strong and rigid
• 12 ft. panel	• May be used as a vertical siding as well as a soffit
• Post-formed lock	• Speeds installation
• Weatherable formulation	• Easy-install, secure lock design
• Available in solids and “blended” siding colors	• Match or contrast most siding colors, including streaked colors
• Available in solid and vented panels	• Solid panels for use as porch ceilings and as vertical siding
	• Vented panels ventilate attics while maintaining a consistent appearance
• Lifetime Limited Warranty	• Helps protect homeowner’s investment

## Beaded Triple 2 in.

CertainTeed's soffit line starts with a specialty product called Beaded Triple 2 in., a high-end panel that can be installed as both a soffit and a vertical siding. With the authentic appearance of wood wainscot-ing, Beaded soffit adds fine detailing and craftsmanship to any siding application. The Triple 2 in. Beaded panel features a 3/8 in. panel projection, .039 in. nominal thickness, and a low-gloss, smooth finish that resembles sanded, sealed, and painted wood. It is available in a variety of select colors that complement the entire line of CertainTeed siding.

This is a product designed for a specialty niche. It is very popular and is the ideal product for porch ceiling applications. Available in both solid and invisibly vented panels, Beaded Triple 2 in. soffit features an extra-long slip-lock design to provide a secure installation, whether it is used as a soffit or vertical siding.

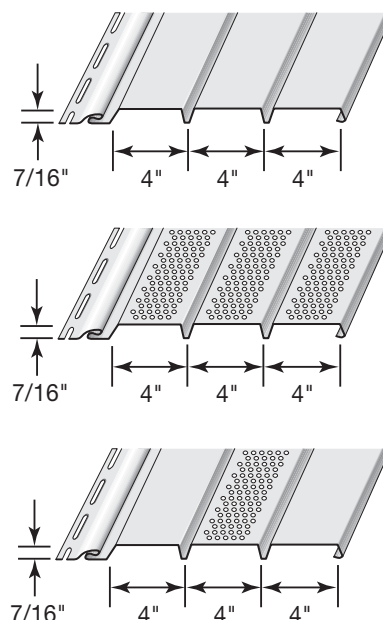


### Beaded Triple 2 in. Soffit Significant Features and Benefits

Feature	Benefit
• Beaded Triple 2 in.	• Looks like expensive wainscoting
• Smooth finish	• Most authentic product on market
• 3/8 in. projection	• Faithful to the appearance of real wood wainscoting
• .039 in. thickness	• Strong and rigid
• Extra long slip-lock design	• Helps prevent blow-off
	• Fast, easy installation
• Weatherable formulation	• May be used as vertical siding as well as soffit
• Available in solid and invisibly vented panels	• Solid panels for porch ceilings and vertical siding
	• Vented panels ventilate attics while maintaining a consistent appearance
• Lifetime Limited Warranty	• Helps protect homeowner's investment

## Universal Soffit

Our Universal soffit is the perfect complement to any siding project. Its Triple 4 in. V-groove design provides the look of traditional tongue and groove siding with a low-gloss matte finish. Universal soffit is .040 in. thick. Because it is fully weatherable, Universal soffit may be installed as a soffit and as a vertical siding. It is available in 12 in. solid, center vented, and fully vented panels.

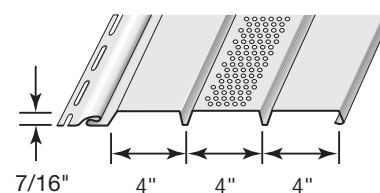
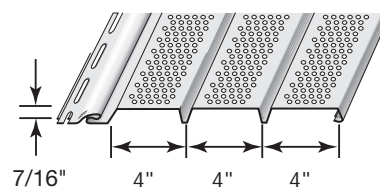
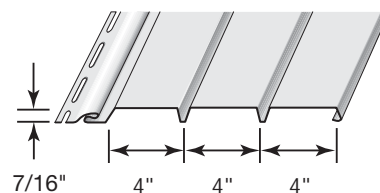
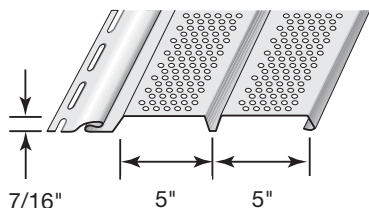
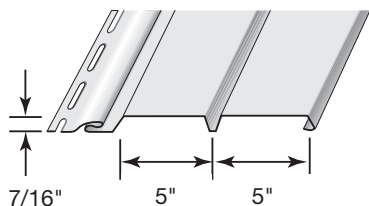


### Universal Soffit Significant Features and Benefits

Feature	Benefit
• Triple 4 in. solid, fully vented, and center vented	• Looks like tongue and groove boards
• 12 in. exposure	• Quick installation
• Matte finish	• Compatible with any siding texture
• 7/16 in. projection	• Rigid
• .040 in. thickness	• Strength and rigidity at competitive prices
• 12 ft. panel	• Speeds installation
• Post-formed lock	• Reduces the possibility of blow-offs
• Available in many popular siding colors	• Allows for monochromatic as well as contrasting color schemes
• Color matched trim coil available	• Match fascia and other trim with soffit
• Weatherable formulation	• May be used as vertical siding as well as soffit
• Solid, center vented and fully vented panels	• Solid panels perfect for porch ceilings and as vertical siding
	• Vented panels ventilate attics while maintaining a consistent appearance
• Lifetime Limited Warranty	• Helps protect homeowner's investment

## Value Soffit

For the value-minded customer, CertainTeed offers an economy priced soffit. Available in Triple 4 in. and Double 5 in., Value Soffit is available in popular colors. Solid, fully vented, and center vented panels may be used only as soffit.



### Value Soffit Significant Features and Benefits

Feature	Benefit
<ul style="list-style-type: none"> <li>Matte finish</li> </ul>	<ul style="list-style-type: none"> <li>Compatible with any siding texture</li> </ul>
<ul style="list-style-type: none"> <li>Solid, Fully Vented, and Center Vented (T4 only)</li> </ul>	
<ul style="list-style-type: none"> <li>12 in. exposure, 12 ft. panel length (T4)</li> <li>10 in. exposure, 12 ft. panel length (D5)</li> </ul>	<ul style="list-style-type: none"> <li>Fast installation</li> </ul>
<ul style="list-style-type: none"> <li>7/16 in. projection</li> </ul>	<ul style="list-style-type: none"> <li>Rigid, looks like tongue and groove wood boards</li> </ul>
<ul style="list-style-type: none"> <li>.036 in. thickness (T4)</li> <li>.036 in. thickness (D5)</li> </ul>	<ul style="list-style-type: none"> <li>Strength and rigidity at competitive prices</li> </ul>
<ul style="list-style-type: none"> <li>12 ft. panel</li> </ul>	<ul style="list-style-type: none"> <li>Speeds installation</li> </ul>
<ul style="list-style-type: none"> <li>Post-formed lock</li> </ul>	<ul style="list-style-type: none"> <li>Easy, secure installation</li> </ul>
<ul style="list-style-type: none"> <li>Available in popular siding colors</li> </ul>	<ul style="list-style-type: none"> <li>Compliment or contrast siding</li> </ul>
<ul style="list-style-type: none"> <li>Color matched trim coil available</li> </ul>	<ul style="list-style-type: none"> <li>Can match fascia and other trim with soffit</li> </ul>
<ul style="list-style-type: none"> <li>Lifetime Limited Warranty</li> </ul>	<ul style="list-style-type: none"> <li>Helps protect homeowner's investment</li> </ul>

## Summary

- T3-1/3 InvisiVent soffit provides more than 10 inches of net free intake area per square foot and will provide balanced ventilation with an overhang as short as 10 inches.
- Perimeter T3-1/3 soffit offers a smooth, flat surface and provides the perfect balance of aesthetics and performance.
- Chamfer Board vertical siding and soffit is designed for vertical siding, porch ceiling and soffit application, with the authentic look of beveled edge wood.
- Ironmax soffit has a low gloss, universal woodgrain finish and looks like traditional tongue and groove siding. It comes in solid and blended colors and can be mixed or matched with most CertainTeed siding.
- Beaded soffit looks like traditional wainscoting, is available in a variety of colors, and comes in both solid and invisibly vented panels.
- Universal soffit has a low gloss matte finish and looks like traditional tongue and groove siding. It comes in solid, fully vented, and center vented panels.
- Value soffit is CertainTeed's economy soffit and is available in Triple 4 in. and Double 5 in. styles and popular siding colors.
- Most CertainTeed solid soffits (except Value soffits) can also be used as vertical panels.



## 17. Vinyl Carpentry® Accessories

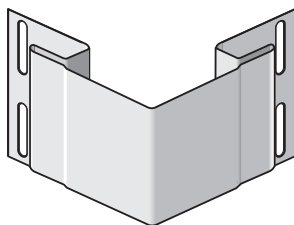
CertainTeed's Siding Collection can distinguish an ordinary house from an extraordinary one. By combining the design touches of CertainTeed decorative accessories, builders and remodelers can get the elegant look of traditional wood detailing. Like our siding and soffit, all of CertainTeed's trim colors use our PermaColor™ color resin system with superior micro-ingredients and color pigment chemistry.

### Corner Systems

#### Outside cornerposts

3/4" Outside cornerpost—woodgrain and matte.

Use with all sidings except Cedar Impressions D9 Rough-Split Shakes, Northwoods S9 Rough-Split Shakes and CedarBoards.



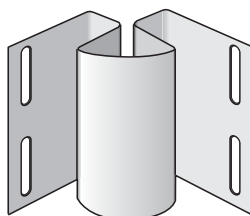
1" Outside cornerpost—woodgrain. Use with Cedar Impressions D9 Rough-Split Shakes and Northwoods Shakes.

1-1/4" Outside cornerpost with foam insert—woodgrain. Use with Cedar Impressions Rough-Split Shakes, Northwoods Shakes and CedarBoards.

#### Inside cornerposts

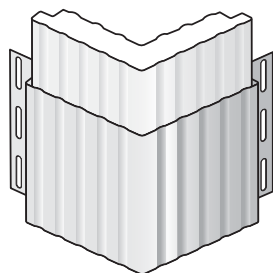
3/4" Inside cornerpost—matte. Use where siding meets at inside corners; provides a finished look.

1-1/4" Inside cornerpost—matte. Use with Cedar Impressions Rough-Split Shakes, Northwoods Shakes and CedarBoards.



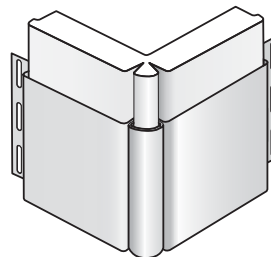
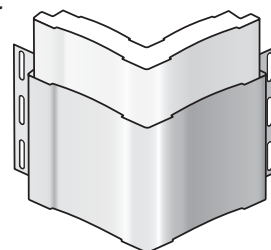
#### Fluted SuperCorner — matte

3/4" Fluted corner design with foam backing.



#### Traditional SuperCorner™ — matte

3/4" and 1-1/4" Wide decorative traditional corner treatment with foam backing. The 1-1/4" is used with Cedar Impressions Rough-Split Shakes, Northwoods Shakes, and CedarBoards.

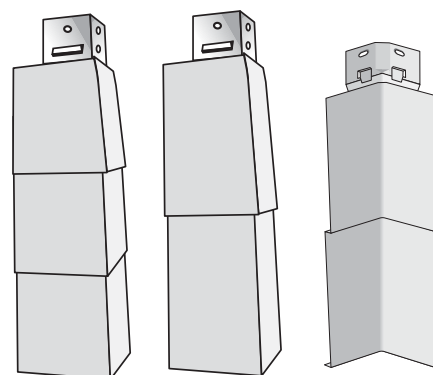


#### Beaded SuperCorner™ — matte

Wide decorative beaded corner treatment with foam backing.

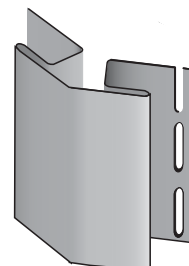
#### Mitered cornerposts

Outside and inside corner treatment for use with Cedar Impressions.



#### Bay window cornerpost — matte

Adapts to odd angles of bay windows.



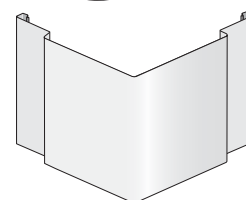
#### Quarter round insert —matte

Installed with a Corner Starter and lineals as a decorative corner treatment.



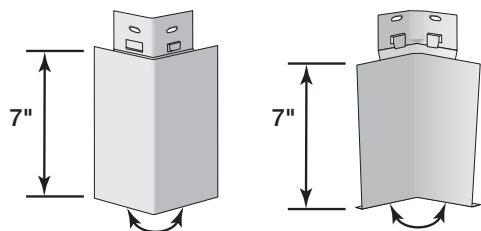
#### 5" Corner cap—matte

Used to create corner systems.



### ***Cedar Impressions S7" bay window inside and outside cornerposts***

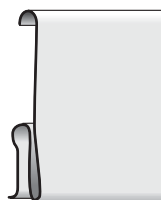
Use with Cedar Impressions D7" Straight Edge Perfection Shingles only to adapt to the odd angles of a bay window.



### **Lineals**

#### ***3-1/2" Snap-on lineal***

Use with J-Channel.

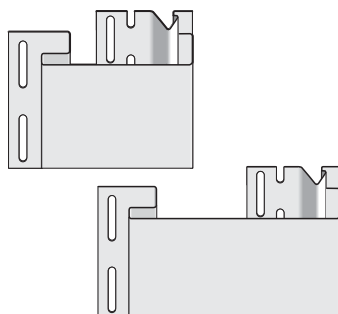


#### ***3-1/2" Lineal***

#### ***5" Lineal***

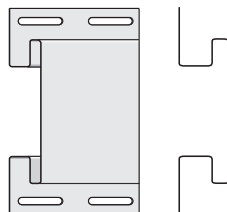
#### ***3-1/2" Lineal with foam insert***

For use with a New Construction Window and Door Starter around windows and doors as a casing. Two lineals can be used to create a corner system when installed with a corner starter and corner insert. The 3/4" channel receives siding panels. Lineals with foam inserts are available for use with insulated siding.



#### ***3-1/2" Double channel lineal*** ***5" Double channel lineal***

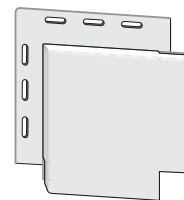
For use with horizontal or vertical siding transitions. Exposure matches 3-1/2" window and door surround lineals.



### **Decorative Trim**

#### ***Corner block***

Used with 3-1/2" lineals to finish corners around windows and doors.



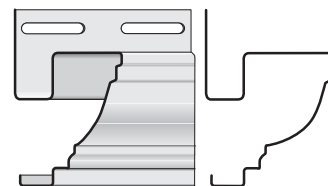
#### ***Rosette***

Attaches to Corner Block as a decorative treatment.



#### ***Crown molding***

Used in conjunction with 5" lineals to create a custom molded window or door header. Can also be used with 3-1/2" lineals and 3/4" pocket J-Channels. Crown has a 2-1/4" top exposed edge.



#### ***Crown molding cap***

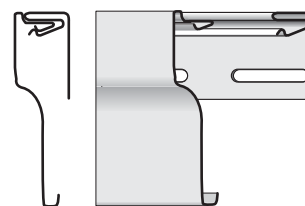
Caps the ends of a crown molding with minimal cutting.



NOTE: Shown already cut in half—one piece makes a left and right-end cap.

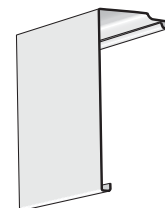
#### ***Cornice molding Finish board***

Held in place by the F-Channel or Cornice Molding Receiver, this accessory hides the installation of the topmost siding panels. With the help of a nail slot punch, topmost siding panels can be installed with nails every time. Can also be used under windows.



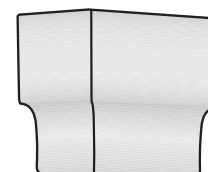
#### ***Cornice molding receiver***

Installed under eaves to hold the Cornice Molding or Finish Board in place. Does not receive soffit panels.



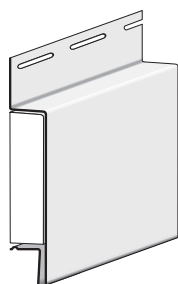
#### ***Cornice molding cornerpost cap***

Used to cap Cornice Molding over Mitered Cornerposts.



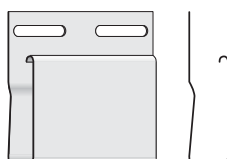
### **Band board**

7-1/4" foam backed, decorative trim used with Cedar Impressions Rough-Split Shakes, Northwoods Rough Split Shake, and CedarBoards.



### **2-1/2" Window and door casing**

A 2-1/2" wide-face J-Channel that accentuates windows and doors. Designed to accommodate new construction window flanges and fit snugly against window and door frames. This accessory is also ideal for gable trim applications.



## **J-Channels**

### **J-Channel**

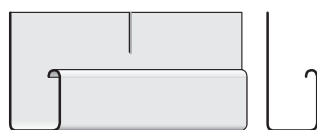
3/8" J-Channel  
1/2" J-Channel  
5/8" J-Channel  
3/4" J-Channel  
1" J-Channel  
1-1/4" J-Channel



Universal siding and soffit receiving channel for use around utility openings, under eaves, etc.

### **3/4" Flexible J-Channel**

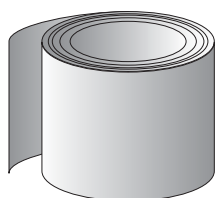
Specialized 3/4" siding receiving trim; particularly useful around curved windows and ventilation treatments.



## **Functional Trim**

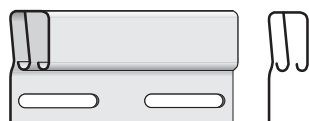
### **Aluminum trim coil**

24"-wide PVC-coated aluminum.



### **Dual undersill trim**

Secures trimmed siding panels under windows and eaves regardless of the profile or where in the panel face the panel has been trimmed.



### **Undersill trim**

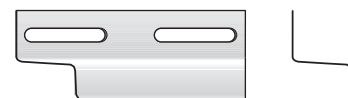
#### **Cedar Impressions undersill trim**

Helps secure trimmed siding panels under windows and eaves.



### **Drip cap**

Acts as a flash over windows and doors.



### **Vinyl fascia**

Installed with F-Channel and undersill trim to provide a virtually maintenance-free fascia board.



## **Starter Strips**

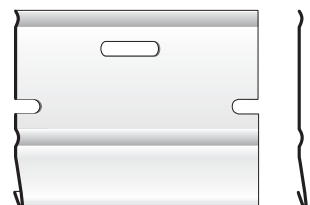
### **2-1/4" Vinyl starter strip**

Secures the first course of siding to the home. For use with all sidings except Monogram®, Monogram® XL, CedarBoards, CedarBoards XL, and Cedar Impressions®.



### **2-1/2" Metal starter strip**

For use with all sidings except CedarBoards and Cedar Impressions.



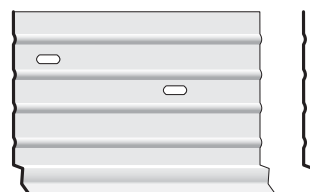
### **5" Metal starter strip**

Designed to be used on remodeling jobs to help level the first course and span areas that cannot be nailed. For use with all sidings except CedarBoards and Cedar Impressions.



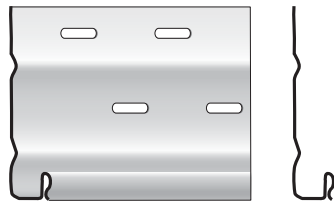
### **4" Metal shingle starter strip**

4" metal starter to be used with Cedar Impressions.



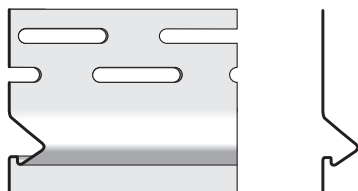
### ***Starter strip for Insulated Siding***

Vinyl starter strip that accommodates 1-1/4" thickness of insulated siding.



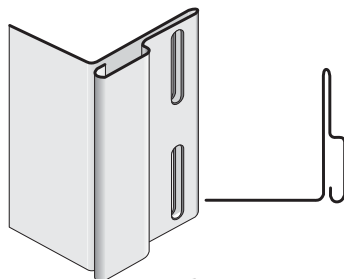
### ***New construction window and door starter***

Butts up against protruding window and door jambs and overhangs for installation of 3-1/2" and 5" lineals.



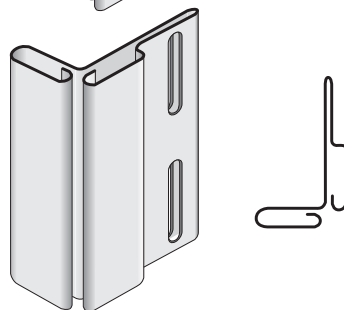
### ***Remodeling window and door starter***

Holds 3-1/2" and 5" lineals in place around window and door openings. Used in re-siding applications where existing casings have not been removed.



### ***Corner starter strip***

Secures 3-1/2" and 5" lineals and quarter round insert to create a 4-piece corner.

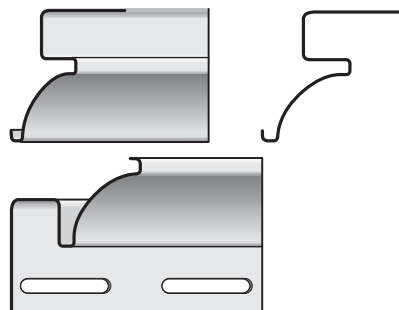


### **Soffit Trim**

#### ***Soffit cove trim***

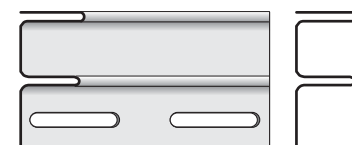
A decorative soffit receiver featuring a 9/16" receiving pocket.

This profile can also be used as an inside cornerpost. Will not work for all profiles.



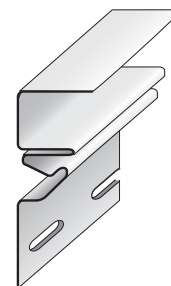
#### ***5/8" and 3/4" F-Channel***

Receives soffit panels.



#### ***Deluxe F-Channel***

Receives soffit panels and cornice molding or finish board.



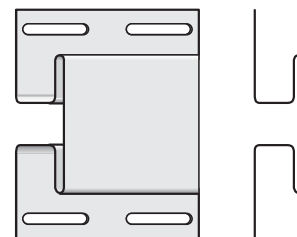
#### ***3/8" H-Bar***

#### ***1/2" H-Bar***

#### ***3/4" H-Bar***

Joins soffit panels.

Particularly useful on porch ceilings and hip roof applications.



# 18. Sales Support

As a leader in the vinyl siding industry, CertainTeed is committed to helping you specify and sell CertainTeed siding and accessories. To do this, we have created a sales support program that contains various product literature, samples, displays, continuing education, and tools to help you build your business. The following is just a sampling of some of the sales tools available from CertainTeed. For more information about the specific sales support items available to you, call 800-233-8990 or log on to [www.certainteed.com](http://www.certainteed.com)

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## Product Literature

- **Glamour Brochures:** Large, full-color consumer brochures are organized to guide your presentation of each product's features and benefits. Full color photographs display both full-house installation and details of available styles and trim options.
- **Pocket Brochures:** Stuffers contain the same important information as our brochures; they are recommended for use as "leave-behinds," for trade shows, and for direct mail.
- **Warranties:** An absolute must when the job is done, each warranty gives homeowners peace of mind.
- **Product Reference Guide:** This comprehensive guide contains basic descriptions of products manufactured by CertainTeed's Siding Products Group.

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## Samples

- **Folders:** Include examples of each profile in the CertainTeed line of siding, large color chips, and color coordination suggestions for siding and trim.
- **Box samples:** Individual pieces of each color, finish, and profile in the line.
- **ExampleSamples™:** Designed to provide a large section of profiles, for detailed demonstration of features and benefits.
- **Color Chips:** Fan fold displaying all colors.
- **Wallboard Displays:** Both table top and modular showroom displays available.

## Selling Tools

- **5-Star Contractor:** As a 5-Star contractor, you can separate your business from other contractors in your market, increase your market share by promoting your professionalism, receive training for you and others in your company on the latest products and techniques, and earn rewards for your loyalty to CertainTeed.
- **Award of Excellence:** The Award of Excellence salutes our best customers, builders, contractors and remodelers who create outstanding projects using CertainTeed products. This program acknowledges those who demonstrate creativity, craftsmanship, and business professionalism.
- **CurbAppeal®:** Make product selection a breeze with CertainTeed's new CurbAppeal app for the iPad®. Review and select colors, styles, textures for all of our siding, decking, railing and fence products, or browse our gallery of homes for ideas that inspire.
- **ColorCoach™:** ColorCoach is a simple web-based tool that acts as a virtual color swatchbook, and helps contractors and builders recommend CertainTeed roofing, siding, and trim color combinations that look great together, providing customer's confidence in their color choices. These "swatches" can then be saved, shared on social media and used on actual home pictures in ColorView.
- **ColorView® Exterior Style & Color Selector:** This multimedia design tool provides you with an on-line tool to assist you through the process of choosing exterior home colors. The mix-and-match feature allows the viewer to experiment with different siding, roofing, trim, and paint combinations or apply one of our preset designer pallets.
- **ColorView DIY:** Lets users who are short on time begin designing today – upload a project picture and in just a few minutes you can mix and match colors and styles on your own project.
- **ColorView Pro:** Gives users the opportunity to have a photo of their home professionally masked in just a few days for them to use in ColorView Online.

## Lead Generation

- **MarketZone:** A proprietary direct mail program that helps generate qualified leads.
- Site and Truck Signs grab the attention of potential customers.
- Business Cards help you prospect in the immediate neighborhood.
- Digital Marketing Library lets you quickly and easily design your own ads.

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## Continuing Education

- **Master Craftsman:** The Master Craftsman program offers advanced education and training for building professionals. Pass this course and a similar course on Restoration Millwork Trim, and you'll receive preferential listing on our online contractor locator site and a certificate designating you as a Building Solutions Specialist. Participation in the Master Craftsman Program is also the first step to becoming a 5-Star Contractor.
- **Professional Education:** Many of our online professional education courses earn NAHI and NARI continuing education credits. Courses like Designing with Siding, Sustainable Designs for Homes, and The Exterior Wall will keep you up to date on the industry's principles and best practices.

## Summary

- CertainTeed product literature includes warranty booklets, envelope stuffers, and full-color consumer glamour brochures that feature full-house installations and product details.
- Samples are a must to demonstrate siding profiles, finishes, and colors. CertainTeed offers sample options that let you show all the product and color options available to your customers.
- The ColorView™ Exterior Style & Color Selector and Color Selection Guide let homeowners mix and match CertainTeed roofing, siding, and accessories and see how siding styles and accessories will look on their homes.
- CertainTeed offers MarketZone™ and on-site lead generators you can use to generate qualified leads.
- CertainTeed's continuing and professional education programs can help keep you up to date on the industry's best practices.



## 19. Taking the Master Craftsman Test

Now that you've reviewed the Master Craftsman Education and Development Program workbook, you are ready to take the test.

Answer all the questions with the best possible answer. If you're unsure of the answer, review the material in the workbook before proceeding. Select one answer for each question, and indicate your answer on the perforated answer sheet by shading in the appropriate circle. If you make a mistake or change your mind, please erase completely before shading another circle.

You can also take this test online. Point your browser to [www.certainteed.com/mastercraftsman](http://www.certainteed.com/mastercraftsman). Answer the questions and your results will be immediately displayed. Fill in the required information, and your rewards will be sent to you.

To pass, you must answer 24 of the 25 questions correctly. If you fail to qualify, you may take the test again. When you answer 24 of the 25 correctly, you'll receive:

1. A personalized Certificate of Completion, ready to be framed and used to promote your professional services.
2. A free listing as a Master Craftsman on CertainTeed's web site where potential customers can find you. The listing will include your name and company, phone number, e-mail address, and a link to your web site if you have one.

When you've answered all the questions, fill in your name and mailing information and return the test to us. The answer sheet is a postage paid mailer. Just tape it closed and drop it in the mail. You can also fax the answer sheet to 610-254-5436.

**Take the Test Online.**

**[www.certainteed.com/mastercraftsman](http://www.certainteed.com/mastercraftsman)**

- 1. Cedar Impression Rough-Split Shakes**
  - a. looks like brushed wood
  - b. has a 15 in. exposure
  - c. features a PanelThermometer™
  - d. is available in a 32 in. long panel
- 2. If local building codes permit, Ironmax Double 5 in. soffit can be nailed**
  - a. every 18 in.
  - b. every 24 in.
  - c. every 30 in.
  - d. every 36 in.
- 3. InvisiVent ventilated soffit provides more than**
  - a. 10 in. of net free intake area per square foot
  - b. 12 in. of net free intake area per square foot
  - c. 14 in. of net free intake area per square foot
  - d. 16 in. of net free intake area per square foot
- 4. The installation of Cedar Impressions and Northwoods panels is similar because**
  - a. both styles have PanelThermometers
  - b. neither style can be installed directly to a nailable substrate
  - c. both styles must be center nailed
  - d. neither style requires room for expansion and contraction
- 5. Which of the following statements is always true?**
  - a. Over time, everything that is left out in the weather will fade, chalk, or accumulate dirt.
  - b. Inconsistent fading is a problem for all siding manufacturers.
  - c. CertainTeed does not warranty its siding against inconsistent weathering.
  - d. Most siding matches from batch to batch, so replacement panels will match even after years of weathering.
- 6. During the manufacturing process, TiO<sub>2</sub> is added to the PVC compound to**
  - a. protect the siding from UV rays
  - b. let the sun through the underlayment
  - c. decrease the amount of resin in the mix
  - d. control gloss
- 7. The minimum acceptable length of nails used for hanging vinyl siding is**
  - a. 3/4 in.
  - b. 1-1/2 in.
  - c. 3 in.
  - d. 4 in.
- 8. The Northwoods line of siding is available in**
  - a. D6 in. and D4 in. Clapboard panels
  - b. S7 in. and S9 in. Shakes panels
  - c. D5 in. and S8 in. Dutchlap panels
  - d. S6-1/2 in. Beaded panel
- 9. The following can be used to trim around windows:**
  - a. Undersill
  - b. Outside Cornerpost
  - c. J-Channel
  - d. Inside Cornerpost
- 10. To properly gap Cedar Impressions panels, it is important to know**
  - a. the relative humidity
  - b. the barometric pressure
  - c. the five-day forecast
  - d. the panel temperature
- 11. The STUDfinder Installation System**
  - a. features graphics and precisely engineered nail slots
  - b. can be used only in 16 in. O.C. installations
  - c. can be used only for 24 in. O.C. installations
  - d. is nailed tight to the wall
- 12. The PanelThermometer indicates the temperature of**
  - a. Cedar Impressions Perfection Shingles and Rough-Split Shakes
  - b. all Classic panels
  - c. all MainStreet panels
  - d. Monogram XL panels and CedarBoards XL panels

- 13. When installing Northwoods panels, use one of two options for center pinning the panels:**
- drive two nails into the same nail slot or drill a center pin hole
  - drive two nails into the same nail slot or hard nail the panels where they overlap
  - hard nail one nail through a nail slot or drill a center pin hole
  - Northwoods panels do not have to be center pinned
- 14. Cedar Impressions can be used as either roofing or siding material.**
- True
  - False
- 15. Which of the following statements about CedarBoards is true?**
- CedarBoards is available only in 12' panels
  - CedarBoards contributes to LEED and NGBS points
  - CedarBoards can be installed with 3/4" accessories
  - CedarBoards panels should be butted together
- 16. The key to CertainTeed's continuous improvement is its**
- breadth of colors
  - manufacturing locations
  - distribution strategy
  - separate, dedicated R&D center
- 17. The procedures for installing soffit over open eaves and over closed eaves are the same.**
- True
  - False
- 18. The following CertainTeed soffit can not be used as vertical siding.**
- Beaded Triple 2 in.
  - Ironmax Double 5 in.
  - Universal Triple 4 in.
  - Value Triple 4 in.
- 19. For vertical siding and vertical accessories, \_\_\_\_ of the expansion will occur at the bottom.**
- all
  - none
  - 2/3
  - 10%
- 20. To clean vinyl siding, start at the \_\_\_\_\_ and work your way \_\_\_\_\_.**
- top; down
  - bottom; up
  - left side; to the right
  - right side; to the left
- 21. CedarBoards Insulated Siding**
- can improve overall thermal performance, helping to reduce energy costs
  - helps reduce sound transmission
  - helps smooth out uneven walls
  - all of the above
- 22. Cornice Cap is used to**
- finish the installation of outside cornerpost
  - finish the installation of SuperCorners
  - finish the installation of Cedar Impression Mitered Cornerpost
  - finish the installation of CedarBoards Insulated Cornerpost
- 23. When installing CedarBoards siding,**
- fashion a starter strip from 3/4 in. J-Channel and foam shims
  - caulk each lap
  - use a CedarBoards starter strip
  - center pin the panel tight to the wall
- 24. Carolina Beaded siding**
- features the STUDfinder Installation System
  - has a PanelThermometer
  - has PermaFlex cables
  - is available in white only
- 25. MainStreet is an installer-friendly panel because**
- it installs quickly and evenly on the wall
  - it features DuraLock
  - it has a positive snap-fit installation
  - all of the above

# Glossary

Because this manual was written for building professionals, we have freely used the language and jargon of the siding industry. To avoid confusion, we thought it a good idea to share our understanding of each of these terms with you.

**Band Board**—A decorative piece of horizontal trim placed between two floors along the rim joist.

**Beaded**—A narrow, half-round molding at the base of a lap siding panel.

**Casing**—Molding of various widths used to trim door and window openings at the jambs; also referred to as lineal, window, or door surround.

**Contraction**—Commonly refers to building products contracting due to outside temperature changes.

**Course**—A row of siding panels running the width of the wall.

**Dormer**—A gabled extension built out from a sloping roof to accommodate a vertical window.

**Drip Cap**—A horizontal flashing placed over exterior door or window frames to divert rainwater.

**Dutchlap**—Refers to a drop-style panel that was popularized by early American settlers in the seaboard states; lap siding panel with a horizontal bevel at the top of the panel that sits just below the bottom of the next course of siding.

**Eave**—The overhang of a pitched roof at the bottom edge, usually consisting of a fascia board, a soffit for a closed cornice, and appropriate moldings.

**Expansion**—Commonly refers to building products expanding as outside temperature changes.

**Exposure**—The width of the exposed face of each panel of siding; also referred to as reveal.

**Face**—The side of the siding, trim, or soffit that is exposed to view after the product has been installed.

**Fascia**—A flat, horizontal band that covers the rafter tails and runs along the bottom edge of the roof line.

**Flashing**—A thin, impervious material, usually metal, placed around openings to prevent water penetration or to direct the flow of water over the cladding.

**Frieze**—The horizontal trimboard connecting the top of the siding with the soffit.

**Furring/Furring Strip**—Long, thin strips of wood or other materials used to build out the fastening surface of a wall; commonly used to correct imperfections in wall surfaces, to establish a rainscreen, or to re-establish a structural fastening surface on the exterior of nonstructural products such as foam insulation.

**Gable**—The triangle formed on the side or the front of a building by a sloping roof.

**Hot-dip Galvanized**—The process of dipping metal into molten zinc to apply a protective coating that prevents corrosion; hot-dipped galvanized iron and steel are corrosion resistant.

**Keyway**—A recess or groove in a manufactured shake or shingle siding panel.

**Lap**—Where two siding panels join horizontally, one over the other.

**Lineal**—Molding of various widths used to trim door and window openings at the jambs; also referred to as casing, window, or door surround.

**Miter Cut**—A beveled cut, usually 45°, made at the end of a piece of molding or board that is used to form a mitered joint.

**O.C.**—On center; a measurement of the distance between the centers of two repeating members in a structure, usually studs.

**OSB**—Oriented Strand Board.

**Panel Projection**—The distance that the bottom edge of the siding projects from the wall.

**Profile**—The contour or outline of a siding panel as viewed from the side.

**Rainscreen Wall**—A method of constructing walls in which the cladding is separated from a membrane by an airspace that allows pressure equalization to prevent rain from being forced in. It consists of an exterior cladding, a cavity that is typically created through the use of furring strips behind the cladding, and an inner wall that incorporates a weather-resistant barrier.

**Rake**—Trim members of a gable roof that run parallel to the roof slope from the eave to the ridge.

**Rigid Sheathing**—Plywood, OSB, or foam sheathing.

**Rim Joist**—The board that the rest of the joists are nailed to. It runs the entire perimeter of the house.

**Rip Cut**—A cut made lengthwise on a piece of siding or trim.

**Kick-Out Diverter Flashing**—A flashing piece located where sloped roofs meet vertical walls; designed to divert water into a gutter.

**Sheathing**—Sheets of plywood, exterior gypsum board, or other material nailed to the outside face of studs as a base for exterior siding.

**Shim**—A building material, usually wood, used to even a surface.

**Skirtboard**—Treated lumber or PVC trimboard installed horizontally; used as a transition from foundation to siding or as a starter strip.

**Soffit**—The underside of an overhanging eave.

**Square**—Unit of measure for siding; equal to 100 square feet of exposure (e.g. a 10-ft. by 10-ft. wall section = 100 square feet = 1 Square).

**Starter Strip**—An accessory used to engage the locking leg of the first course of siding.

**Structural Member**—A support that is a constituent part of any structure or building.

**Structural Sheathing**—The layer of boards, wood or fiber materials applied to the outer studs, joists, and rafters of a building to strengthen the structure and serve as a base for an exterior cladding.

**Substrate**—A layer of material applied over the studs at the exterior walls of a building.

**Weather-Resistant Barrier**—A building membrane that protects building materials from exterior wind and water penetration.

**NOTE: When the terms “recommend” and “should” are used in this manual, the step is optional for installing fiber cement. However, it is included because the step represents best practice. When the terms “required” and “must” are used, the step is a necessary part of the installation process and must be adhered to.**

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