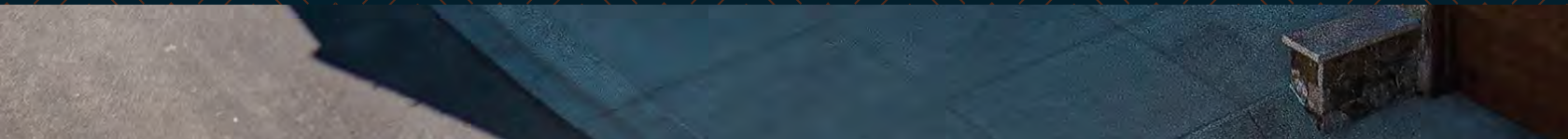
BRAVA

Cedar Shake Installation Guide

Published May 15, 2025



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Brava Technical Support, Training, and Resources

Access Training, Resources, and Service through the Technical Services Portal. https://www.bravarooftile.com/technical-support/

We recommend taking the Level 1 Installation Training available on the Technical Support Portal before starting any projects. This will ensure your team is prepared for a smooth and successful installation.

Brava Installation Training
https://www.bravarooftile.com/training/

These 30-minute online courses cover the Keys to Success for each roof system installation, equipping your crew with the knowledge they need for a smooth and successful installation. Completing this course also qualifies you for our Preferred Contractor Program.

Why Take Our Training?

Fewer Issues, Less Downtime: Ensure your crew has the skills to avoid errors and keep projects on track.

Convenient Access: The training works seamlessly on mobile and desktop devices, making it easy for everyone to use.

Completion Verification: After finishing the course, each crew member will receive a confirmation email and training certificate. Ask them to forward it to you for easy verification.

Sales and Ordering: This training can be useful to your whole organization. Understanding the pieces, installation accessories, and methods will help during planning and ordering.

Bilingual Training: Available in English and Spanish.

The information and instructions presented in this installation guide are based on Brava's best understanding, believed to be reliable and accurate. However, they are subject to updates and improvements as Brava and our partner installers continually gain knowledge and experience. Brava strives to offer comprehensive support and instructional materials for our Spanish-speaking community, but please note all our training, marketing, and instructional materials originate in English and are then translated into Spanish. In the event of any discrepancy between English and Spanish language materials, we encourage you to contact Brava for clarification.

La información y las instrucciones presentadas en esta guía de instalación se basan en el mejor entendimiento de Brava, se consideran confiables y precisas. Sin embargo, están sujetas a actualizaciones y mejoras a medida que Brava y nuestros instaladores asociados adquieren conocimientos y experiencia continuamente. Brava se esfuerza por ofrecer un soporte integral y materiales instructivos para nuestra comunidad hispanohablante, pero tenga en cuenta que, como empresa principalmente de habla inglesa, todo nuestro entrenamiento, marketing y materiales instructivos se originan en inglés y luego se traducen al español. En caso de cualquier discrepancia entre los materiales en inglés y en español, le recomendamos que se comunique con Brava para aclaraciones y siempre consulte la versión en inglés como fuente principal.

1. Introduction

Brava Cedar Shake is manufactured from recycled materials and can be recycled again if the roof is ever replaced, making it sustainable and environmentally friendly.

Brava Cedar Shake has all of the true to life natural beauty and rustic split textures of real cedar, combined with the incredible benefits of a composite roofing material. When it comes to quality and craftsmanship, no one does it better. Brava Cedar Shake can be installed in straight courses or in a staggered application to give it a more rugged appearance. Brava's composite roof shakes vary in thickness from ½" to 1" creating desirable shadow lines to complete the aesthetic of natural shake.

Using recycled materials can cause variation in final product dimensions. These variations fall within a ½" manufacturing specification for all dimensions and allow for consistent installation and performance.

It is worth noting that the fit, appearance, and color of traditional cedar shake often produces visible variation. This is apparent at closer viewing angles and can be more pronounced due to shake dimensions, neither of which undermines the performance or aesthetic of the completed roof.

Field Shakes are the primary component of the Brava Cedar Shake roof system. These shakes come in three sizes and use a variety of molds based on real cedar shakes to define texture, shape, and size. Additionally, Brava offers Starters for installation at eaves, Hip and Ridge Caps, and a Solid Shake accessory for best appearance at valleys and rakes. No special tools are required for installation and no additional structural support is needed. This makes our product ideal for new construction and re-roofs, for both residential and commercial projects.

1. Brava Cedar Shake Installation Instructions

Before installing Brava Cedar Shake, check local building codes for roofing requirements. Brava Cedar Shake must be installed to a minimum $^{15}/_{32}$" CDX plywood deck or equivalent. Material temperature should be above 32° Fahrenheit during installation. Ensure appropriate flashing, Ice & Water Shield and underlayment meet minimums and applicable code. Ensure materials required, product specification conformity, and color blending while checking packing list and loading the roof. Always check for roof square and plumb and correct for any significant out of square conditions. Please review Sections 1, 2, and 3 of this guide before beginning.

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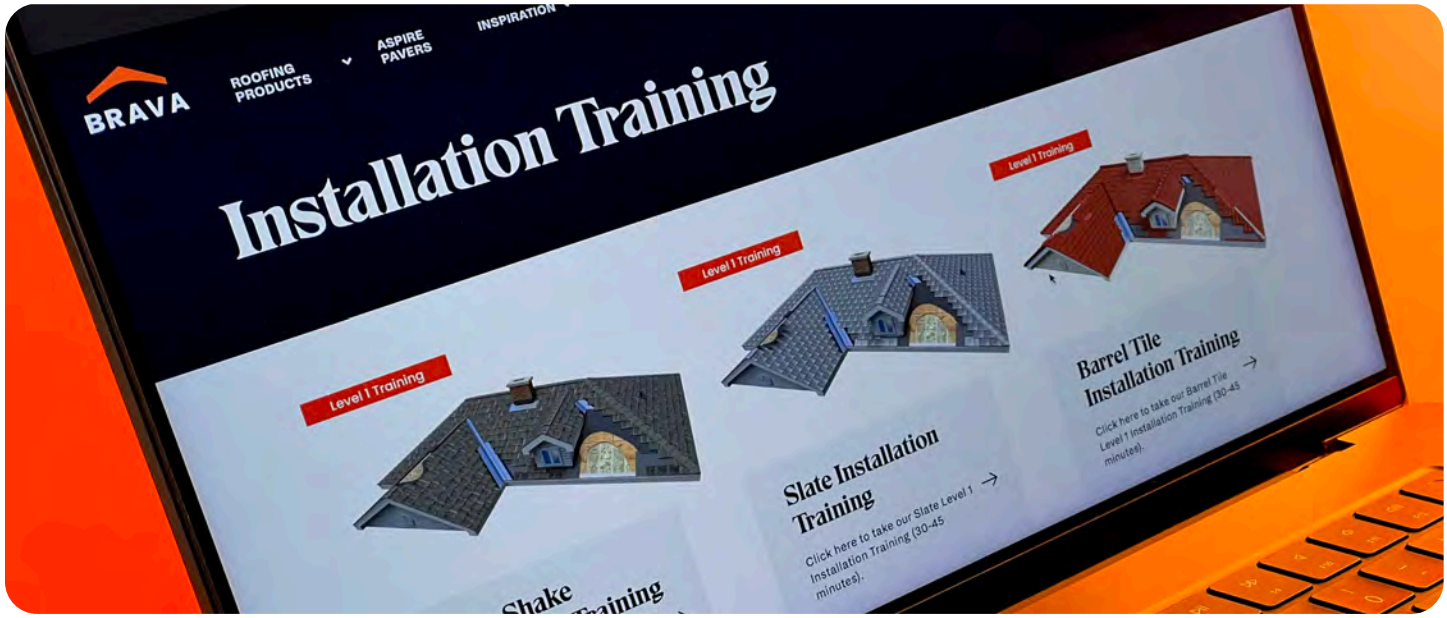
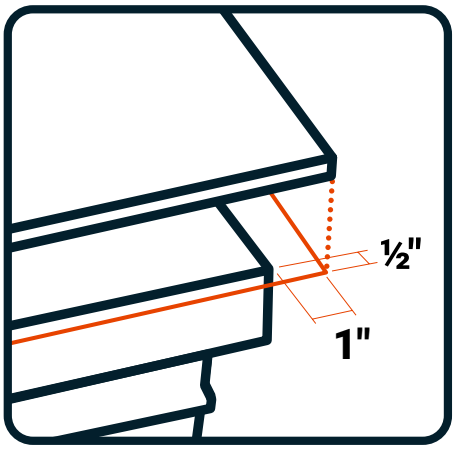
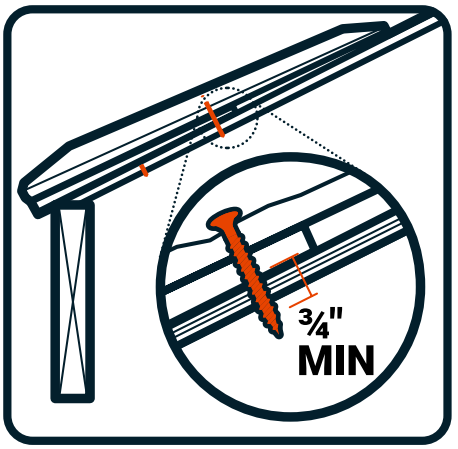


Keys to Success

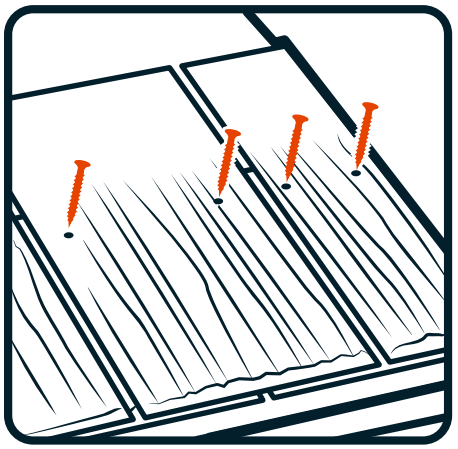
• Chalk Lines



• ½" eave overhang
• 1" rake overhang

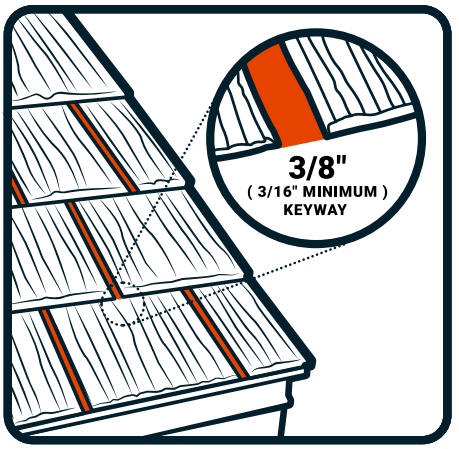


• ≥ ¾" fastener penetration

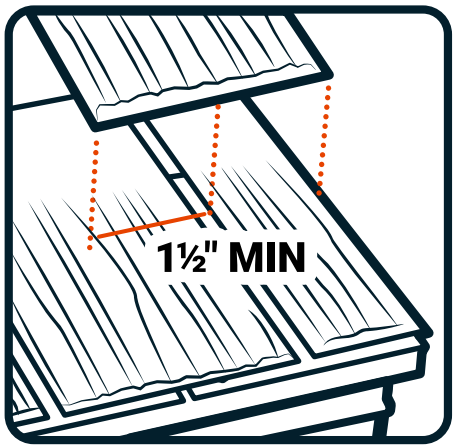


• 2 fastener per shake

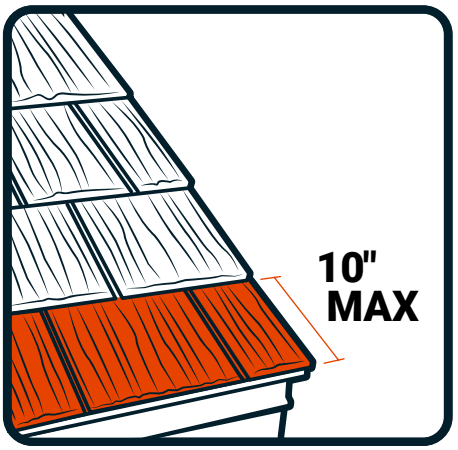
• No Smooth Nails



• ≥ 3/16" keyway spacing



• ≥ 1 1/2" side lap



• ≤ 10" exposure

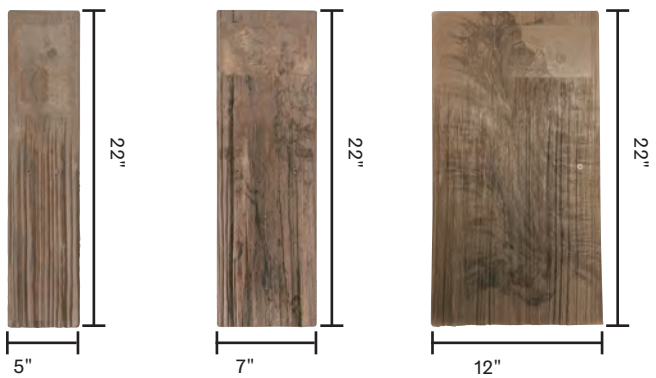
• No Exposed Fasteners
• Solid Shakes at rakes and valleys (Recommended)

1.1 Materials

Roof Components and Specifications

Product material temperature should be above 32° F during installation.

Standard Field Shakes
(Structural Ribbing Back)



Field Shakes are the primary component of the Brava Cedar Shake roof system and are used on all roof sections. They come in three sizes and use a variety of molds based on real cedar shakes.

Accessory Solid Shake
(12" No Structural Ribbing)

This 12" shake is solid throughout instead of using structural ribbing on the back. This allows for a clean, solid edge when cut at rakes, valleys, and other details. Additionally, when the bottom of the Solid Shake is visible, as at rakes, no structural ribbing is exposed.

Install at valleys and rakes for the most natural aesthetic.

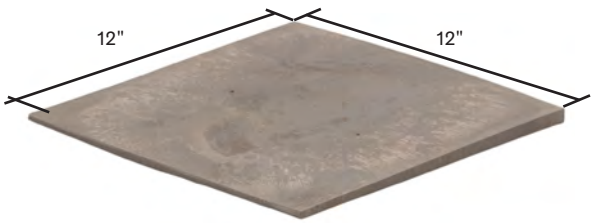
Low, Standard, and Steep Hip/Ridge

14" (Length) x 5 ½" (Width) x 6" (Height)

This shake accessory is used on hips and ridges and can be ordered in three slope angles – Low, Standard, and Steep. Installed exposure should match Field Shake exposure with a maximum of 10 inches.

Install at hip and ridge.
Low (160°), Standard (120°), Steep (90°)

Starter



12" x 12"

The starter is used along the eave line to provide proper installation of the first course of shakes. Recommended for slope and product transitions.

Install at eaves.

Brava Cedar Shake Specifications

Dimensions

Length	22"
Width	5", 7", 12"
Thickness	1/2" –1"
Maximum Exposure*	10"
Minimum Keyway	$^{3}/_{16}$"
Minimum Sidelap*	1-$^{1}/_{2}$"

Weight

Lb./Piece	1.1 (5"); 1.4 (7"); 2.8 (12")
Lb./Square	304
Lb./Pallet	1835

Packaging

Pieces/Bundle	12 (4 each size)
Bundles/Pallet	84
Bundles/Square	14.3
Squares/Pallet	5.86

Testing & Performance

See Appendix A High Wind Installation and Appendix F – Fire Rating

Class A Material

Weatherometer	ASTM G155
Fire Resistance	ASTM E108 Class A
Impact Resistance	UL 2218 Class 4
Wind-Driven Rain	TAS 100
Wind Uplift	TAS 125
Temperature-Cycling	ICC-ES AC07
Penetration	ICC-ES AC07

Class C Material

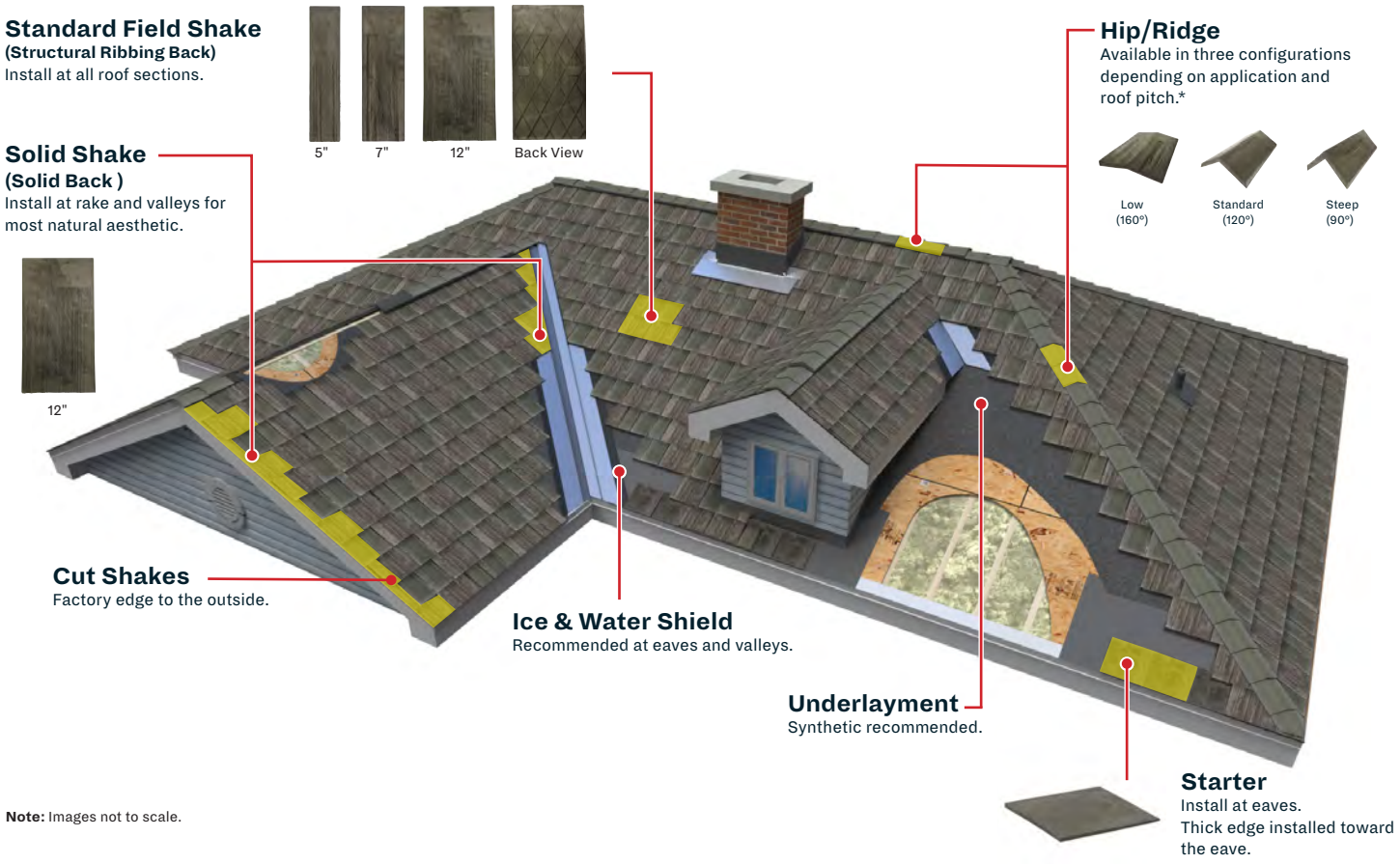
Weatherometer	ASTM G155
Fire Resistance	ASTM E108 Class C
Impact Resistance	UL 2218 Class 4
Wind-Driven Rain	TAS 100
Wind Uplift	TAS 125
Temperature-Cycling	ICC-ES AC07
Penetration	ICC-ES AC07

Code Compliance

Miami-Dade Approved	NOA 21-1213
Florida Building Code Approval (FBC)	FL 41880
TDI Approval	RC-703
Title 24 / Cool Roof Approval	Select Colors
International Building Code (IBC) Compliant	Yes
International Residential Code (IRC) Compliant	Yes
ICC AC07	Yes

Visit bravarooftile.com for any product and testing updates.

Brava Cedar Shake Roofing System



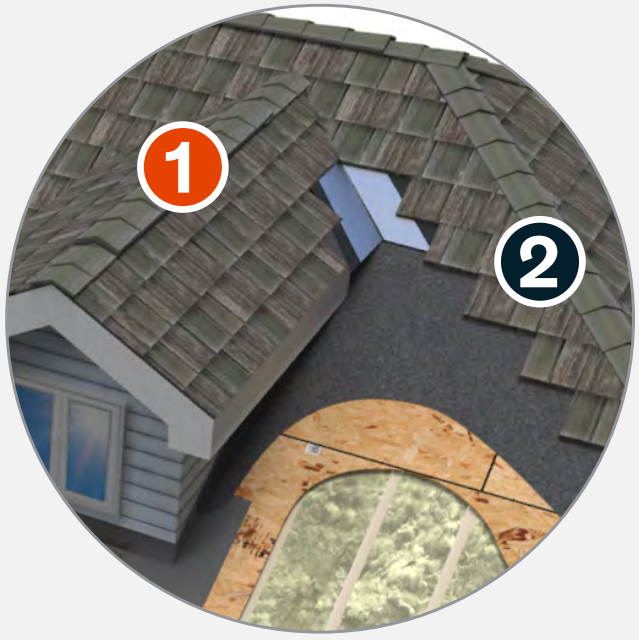
Note: Images not to scale.

Hip & Ridge

Follow the chart below to determine correct hip and ridge cap for the slope of your project installation.

Low (160°) Standard (120°) Steep (90°)

1 Ridge Cap	2 Hip Cap
Low: 4:12 or lower	**Low:** 5:12 or lower
Standard: 5:12 – 10:12	**Standard:** 6:12 – 14:12
Steep: 11:12 or higher	**Steep:** 15:12 or higher



Note: Recommendations are for symmetrical Hip/Ridge only. For example, a 5:12 slope meeting a 5:12 slope. Calculate angle for asymmetric Hip/Ridge, or contact Brava Technical Support. For example, a 5:12 slope meeting an 11:12 slope. Brava recommends measuring the angle of the hip or ridge before ordering material to ensure the best fit.

1.2 Safety

WARNING: Always use Safety and Personal Protective Equipment (PPE) per regional requirements and apply common safety practices when working on or around a roof.

Always keep the roof clean and free of items that can cause accidents.

WARNING: Shakes can be slick when wet or dry.

To ensure safety and prevent gutters and downspouts from clogging, remove cuttings regularly from the roof surface.

2. Roof Preparation

2.1 Building Codes and Best Practices

Before installing Brava Cedar Shake, check local building codes for roofing requirements. Additionally, Brava recommends that any installer follow regional and industry best practices. This includes but is not limited to city, county, state, and country code. Additionally, weather phenomenon, common practice, and aesthetic, architectural, and design requirements should be considered.

2.2 Slope

Brava Cedar Shake has a recommended minimum slope of 4:12. There is no maximum slope, however, Brava Cedar Shake is designed as a roofing product and has not been extensively tested in vertical applications. When installed in vertical applications, special considerations may be necessary. Check for siding installation instructions and limitations at https://www.bravarooftile.com/resources.

When installed on a 3:12 slope or lower, a self-adhered waterproof membrane (commonly referred to as Ice & Water Shield) should be used on the entire slope. Brava considers installation on slopes lower than 3:12 to be decorative and special care should be taken regarding underlayment and waterproofing. Any section with a slope of less than 3:12 will fall outside the Brava 50-Year Limited Warranty

- **Recommended Minimum Roof Slope – 4:12**
- **Warranty Minimum Roof Slope – 3:12 (with Ice & Water - see Section 2.6)**

2.3 Exposure

Standard Exposure

Brava Cedar Shake can be installed at different exposures depending on application and code requirements. Ensure no fasteners are exposed between shakes or on any visible surface. The maximum installed exposure is 10" and Brava suggests a minimum exposure of 4".
See Appendix D for Staggered Exposure Installation.

- **Maximum Exposure: 10"**
- **Minimum Exposure: 4"**

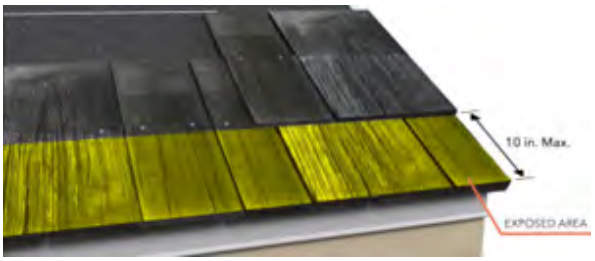


Figure 2.3.1 *Exposure 10" max*

Exposure Guidelines

All Field Shakes and Solid Shakes are manufactured with preformed exposure guidelines to set the maximum exposure. These horizontal lines indicate where to place the shake relative to the top of the previous course or shakes. If setting less than 10" exposure, do not use guidelines to set exposure.

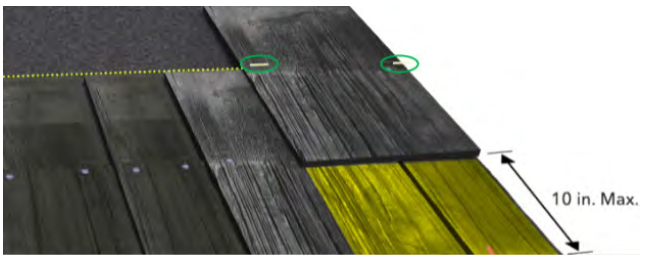


Figure 2.3.2 *Exposure Guidelines flush with top of shake*

Exposure for High Wind

Some building codes specify exposure for wind uplift. Ensure code and design requirements are met.

See Appendix A – High Wind Installation

2.4 Keyway, Lap, and Overhang

Keyway Spacing

Brava requires a minimum spacing of 3/16" between all Field Shakes, Solid Shakes, and Starters. This spacing accommodates the normal thermal expansion and contraction that occurs with daily and seasonal temperature changes. Failure to meet this minimum spacing requirement may affect product appearance and will limit warranty coverage. For optimal performance, a 3/8" keyway spacing is recommended to ensure compliance with this standard.

- **Warranty Minimum Keyway: 3/16"**
- **Recommended Keyway: 3/8 "**

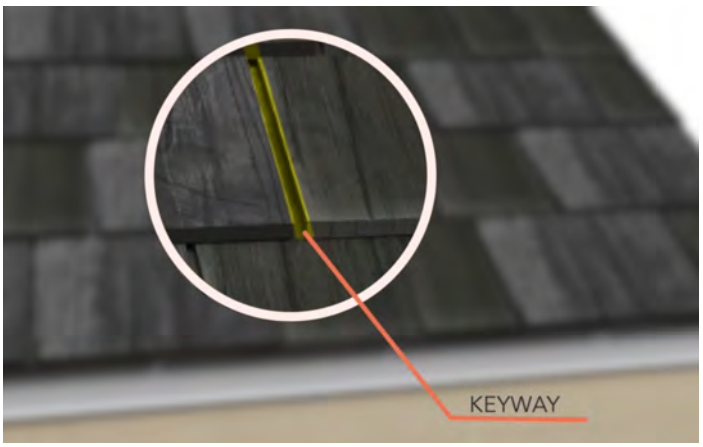


Figure 2.4.1

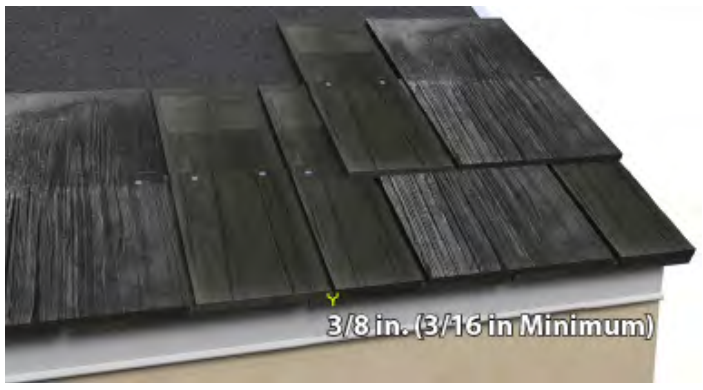


Figure 2.4.2

Sidelap

When installing Brava Cedar Shake, ensure a sidelap of at least 1 ½" for all Field Shakes, Solid Shakes, and Starters. This allows water to shed as designed and covers fasteners on the previous course of shakes. Use a combination of shake widths (5", 7", and 12"), in a random order to ensure sidelap and no exposed fasteners in the keyway.

- **Minimum Sidelap – 1 1/2"**

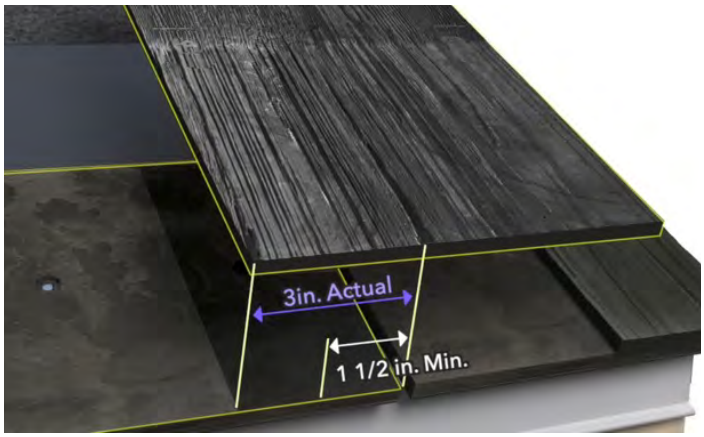


Figure 2.4.3

Figure 2.4.4

Lap

Field Shakes and Solid Shakes are 22" long with the fastener locator at 11" from top and bottom. A maximum installed exposure of 10" ensures all fasteners are covered.

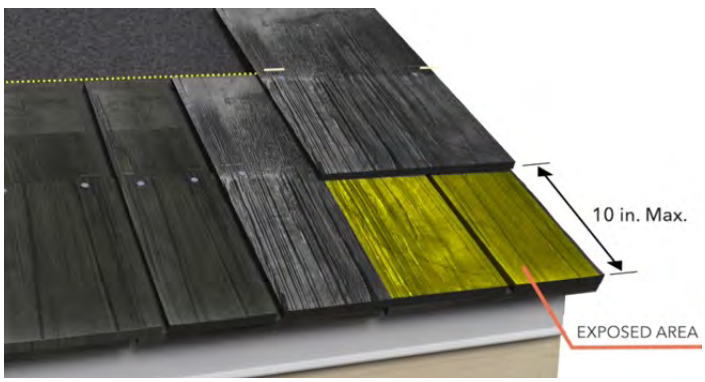


Figure 2.4.5

Each shake also has preformed guidelines to set the maximum exposure.

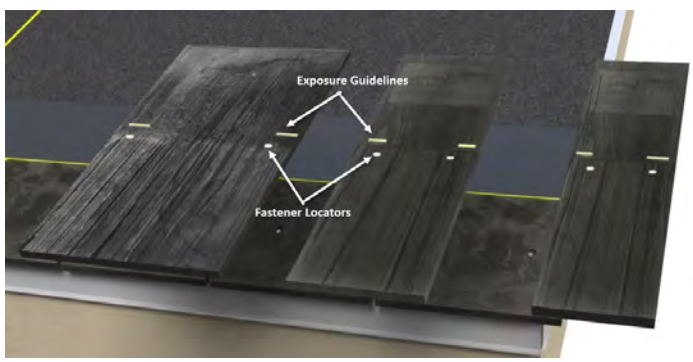


Figure 2.4.6

Ensure exposure is ≤ 10" and use fastener locators to maintain ≥ 12" lap from course to course. This will create a ≥ 2" lap of each 3rd course.

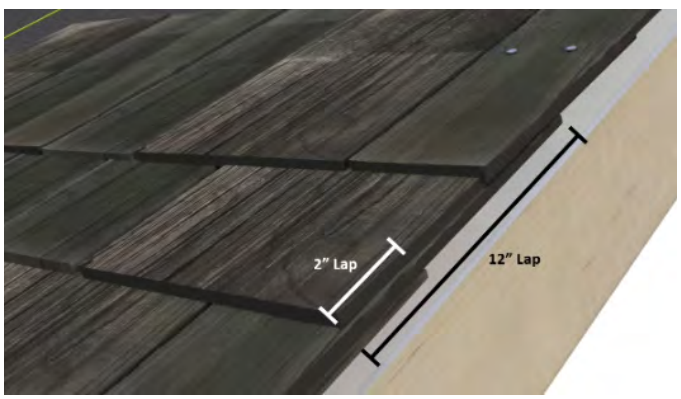


Figure 2.4.7

Overhang

Starters and Field Shake should be installed with a ½" eave overhang and a 1" rake overhang. Shakes at the eave should be installed flush with the Starters. This overhang is specified from the edge of the fascia board and is not extended from the edge metal.

- **Eave Overhang: ½"**

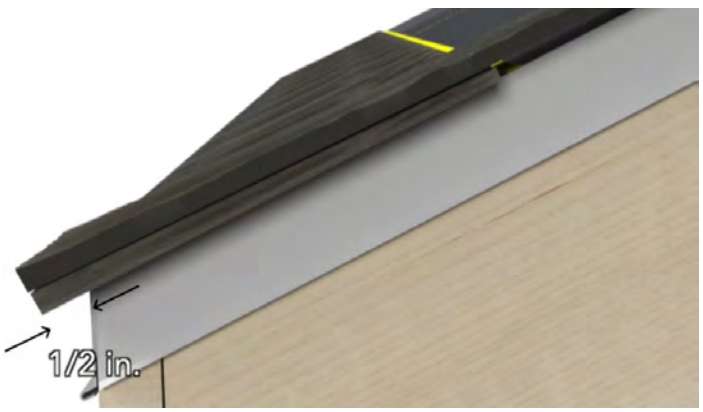


Figure 2.4.8

- **Rake Overhang: 1"**

Figure 2.4.9

2.5 Roof Deck

CAUTION: Roof deck loss is one of the most common structural failures in hurricanes or high wind environments. Fastener spacing and size requirements for coastal construction are typically different than for non-coastal areas. Check your local codes. The highest uplift forces occur at roof corners, eaves, and ridge lines. Improved fasteners such as ring shank nails or screws increase the uplift resistance of the roof sheathing.

Solid Deck Sheathing

Brava recommends that shakes be installed on a smooth, flat, clean surface (OSB or plywood) with a minimum of $^{15}/_{32}$" CDX plywood or minimum $^{7}/_{16}$" Oriented Strand Board (OSB). Plywood will provide a higher fastener head pull-through resistance and is preferable for high wind environments. Installation of Brava Cedar Shake should always be on a roof deck that complies with IBC, IRC, and any additional regional or local codes. Check with your building official to ensure deck compliance with applicable codes. Ensure roof venting meets industry standards and code requirements.

- **Minimum Plywood Deck – $^{15}/_{32}$" CDX**
- **Minimum Deck OSB – $^{7}/_{16}$"**

Cedar Shake Roofing System Overview

Figure 2.5.1

Spaced Sheathing Deck

Brava Cedar Shake may be installed on spaced sheathing with the following considerations.

- 1x6 inch boards spaced on centers equal to the desired shake exposure. For example, if the desired exposure is 10", the 1x6 inch boards would be installed at 10" on center.
- Spaced boards must be placed to leave no more than a 3 ½" gap between boards. For example, if 1x4 inch boards are used, additional boards should be installed between each set to meet this requirement.
- A solid deck is recommended in areas where high wind and wind-driven rain/snow are common.
- Roofing felt system interlay between the shake courses is required when installed on spaced sheathing.

2.6 Underlayment

Standard Application

Install underlayment products according to the manufacturer's specifications and as required by applicable building code. Brava recommends using a synthetic underlayment and suggests finding an underlayment that matches the durability and 50-year limited warranty of Brava Cedar Shake.

At a minimum, underlayment of not less than 30 lb. felt (ASTM D 226 Type II) should be used. Brava Cedar Shake is designed to form a watershed roof assembly. When installed correctly, underlayment, flashing, and roof metal are designed to seal the roof from water incursion. Check with your local building official to ensure underlayment compliance with applicable codes.

At eaves, Brava recommends that Ice & Water Shield extend no less than 36" inside the plate line. Additionally, a 36" or greater strip of Ice & Water Shield is recommended in valleys and at rakes.

All Brava Cedar Shake is tested as Class A when installed over SOLARHIDE-SRW, or equivalent fire barrier.*

- **Minimum Underlayment – 30# ASTM D226 Type II Felt**
- **Recommended Underlayment – Synthetic Underlayment and Ice & Water Shield**
- **Underlayment for Class A Fire Rating – ECO CHIEF SOLARHIDE-SRW or equivalent***

Low Slope Applications

When Brava Cedar Shake is installed on a 3:12 slope or lower, a self-adhered waterproof membrane (Ice & Water Shield) should be used on the entire slope.

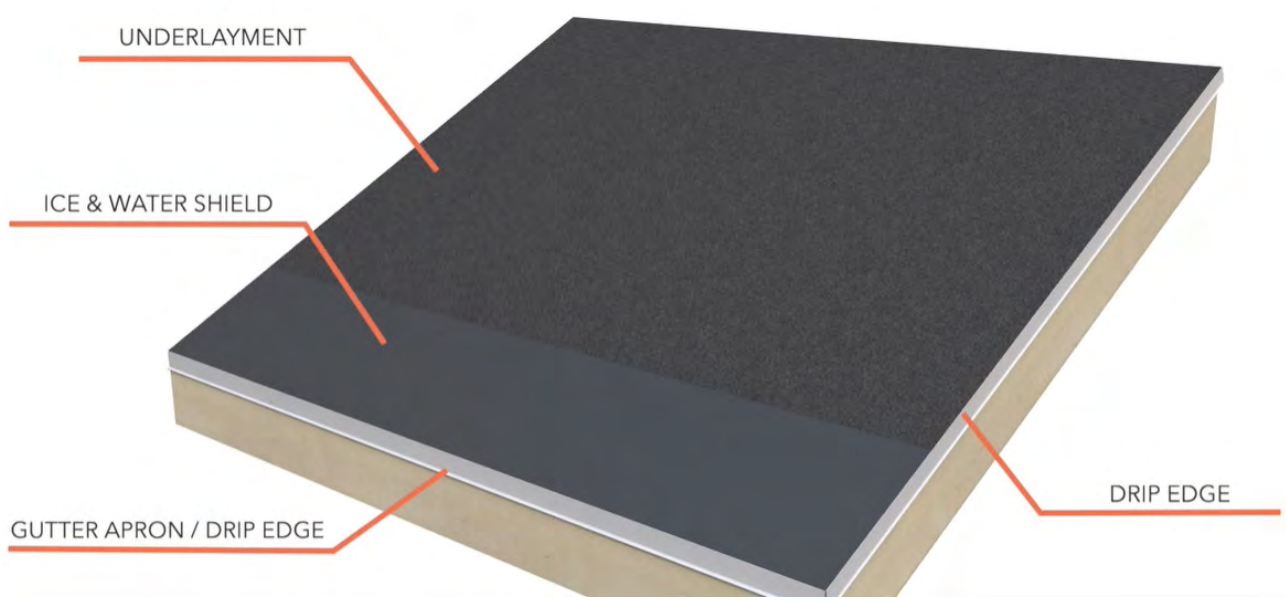


Figure 2.6.1

**See Appendix F – Fire Rating.*

2.7 Fasteners

Standard Fasteners

All shakes and accessories should be installed with two corrosion-resistant fasteners of sufficient length to penetrate no less than ¾” into the deck or completely through the roof deck. Ring shank roofing nails or screws are required and should be selected based on application and code requirements. Brava recommends using screws whenever high winds are typical. Always ensure fasteners are in compliance with building codes and design requirements and that corrosion protection is sufficient for regional conditions.

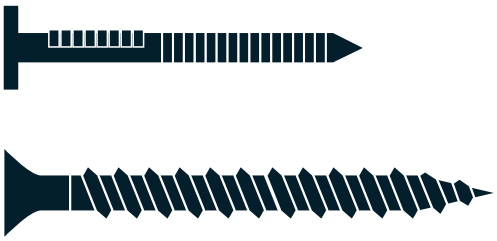


Figure 2.7.1 *Ring Shank Roofing Nails or Screws*

CAUTION: Fasteners should not be exposed in the keyway gap between shakes, beneath the exposure line, or anywhere that is not covered and sealed.

1 ¾" Collated Ring Shank Roofing Nails may be used while ensuring building code and penetration requirements are met.

Two (2) fasteners must be used for all full shakes and for cut shakes when possible. It is acceptable to fasten a cut tile with only one (1) fastener if the cut tile is less that a half piece. Use approved adhesive to prevent shifting of the tile.

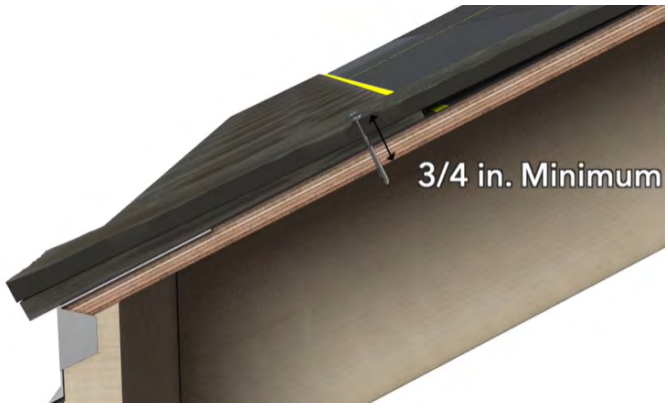


Figure 2.7.2

Standard Fasteners – Two (2) Ring Shank Roofing Nails or Two (2) Screws

Fastener Locators

Each Starter, Shake, and accessory has preformed fastener locators. Fastener locators aid installation by marking the fastener pad (*see Figure 2.7.3*) and indicate the lowest level that fasteners should be installed.

If it is necessary to place a fastener away from the locator due to side lap requirements, flashing details, or valley metal, ensure that the installed shake is not damaged and that no fasteners are exposed.

Fasteners may be moved slightly up and out from the fastener locator to allow correct sidelap, keyway, and fastener coverage. When possible, Brava recommends placing fasteners so they will penetrate through the fastener pad seen on the back of the shake and be no less than 1" from the edge of the shake.

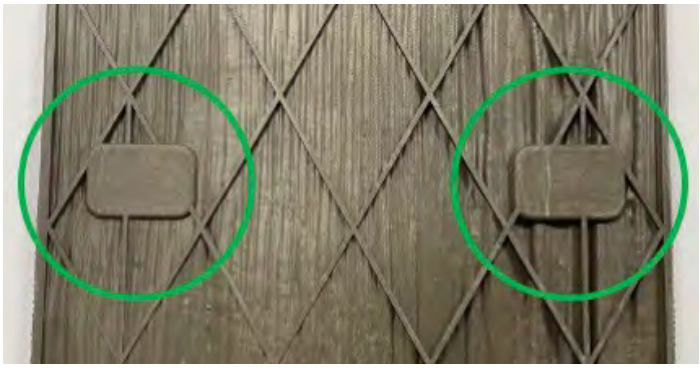


Figure 2.7.3 *Fastener pads (back)*

Figure 2.7.4 *Fastener locators (front)*

CAUTION: Install fasteners no lower than the fastener locators and ensure no exposed fasteners.

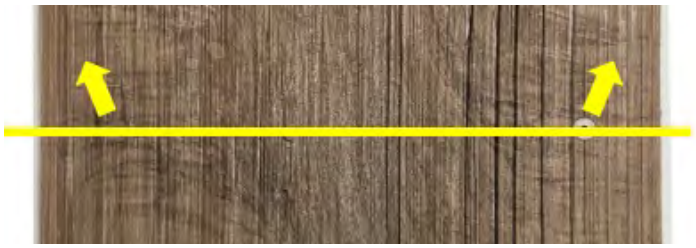


Figure 2.7.5 *Fastener Locator Line*

CAUTION: Fasteners should not be exposed in the keyway between shakes, or anywhere that is not covered and sealed.

Figure 2.7.6 *Exposed Fasteners*

Fasteners for Hip/Ridge Cap
Hip/Ridge Cap will need longer fasteners due to the multiple layers of material and flashing/vent under the cap. In most cases, Brava recommends 3" screws or 3" hand-drive Ring Shank Roofing Nails may also be used.

Hip/Ridge Fastener: Two (2) 3" Screws or Two (2) 3" Ring Shank Roofing Nails

Fasteners for High Wind
To be eligible for Brava's highest wind warranty, install all shakes with two (2) #8 x ≥ 2" corrosion resistant screws. See Appendix A – High Wind Installation.

High Wind Fasteners: Two (2) #8 x ≥ 2" Screws

Adhesives
When required due to location or to avoid unwanted penetrations, a roofing adhesive may be used in some cases. Check with adhesive manufacturer for compatibility and usage guidelines.

3. Getting Started

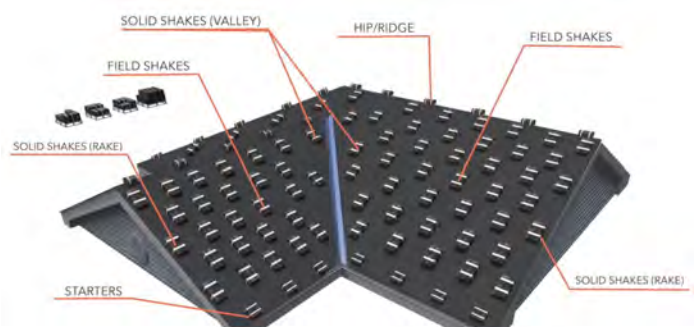
3.1 Measuring and Marking the Roof

Before installing Brava Cedar Shake Starters, chalk a line to set a ½" overhang at the eave. This line will be about 11 ½" from the eave. From that mark, each course may be chalked using the desired exposure as the distance between each line. For example, if using the maximum exposure of 10", snap lines 10" apart beginning at the starter line. When setting exposure, check with your building official to ensure compliance with applicable codes. *See Appendix E – Swing Tape Method*.

CAUTION: Do **NOT** use RED or BLUE chalk as it can stain the shakes. Brava recommends using white marking chalk.

3.2 Roof Loading

For best results verify that the roof is loaded with the proper products in the correct locations using the provided jobsite packing list. Load bundles of shakes and accessories on the roof – Starters at the eave, Field Shakes on the roof slopes, Solid Shakes at the rakes and valleys, and Hip/Ridge Cap at the hips and ridges.*



***NOTE:** Accessory Solid Shakes are recommended for use at valleys, rakes, and in other special cases such as turrets. If selected, ensure that these do not get mixed with regular Field Shakes.

3.3 Color Blending

Bundles should be selected from multiple pallets during roof loading to ensure proper color blending. Color blending is recommended for both solid and variegated colors. For best results, shakes from different bundles may be intermixed.

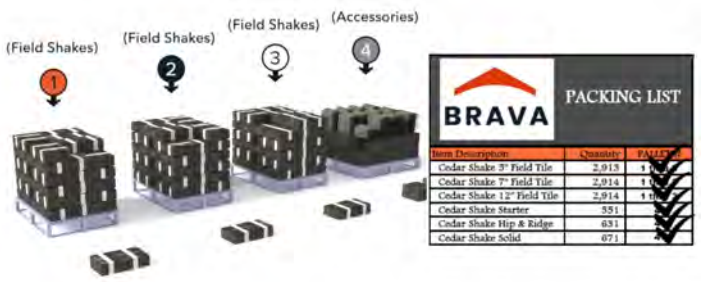


Figure 3.3.1 *Blend bundles from different pallets*

Figure 3.3.2 *Color blend from different pallets*

3.4 Material Inspection and Storage

Brava Cedar Shake and accessories should be inspected before and during installation for conformity and fit. If any tiles are outside the manufacturer's specifications for dimensions, do not meet project needs, or have been damaged in shipping or storage, set them aside and do not install them.

Store materials on the pallet as shipped on a flat level surface. Pallets of material should not be stacked in a manner that deforms the tile. Cover material that will be stored for an extended period to protect it from environmental debris, paint, and masonry dust. Masonry work should be completed prior to installation of Brava material as masonry dust can be difficult to remove.

Use caution during loading, unloading, and storage not to damage material with construction vehicles or loading equipment. Use appropriate safety and lifting procedures and equipment when handling pallets of material.

CAUTION: Do not install nonconforming tiles. Once a roof section is installed, replacing individual tiles may not be practical.

3.5 Flashing

Flashing should be installed by a licensed professional using industry best practices and meeting all applicable codes. Proven durable flashing materials include copper, tin, lead, galvanized or painted steel, and stainless steel. Each roof will be different but common areas which need flashing include places where the roof surface meets a wall (sidewall/headwall), valleys, penetrations, eaves, and rakes.

NOTE: When dissimilar metals are placed in contact with one another, galvanic action can result causing electro-positive metals to deteriorate. One solution for this is to place strips of lead sheeting between the two metals.

While Brava provides some common usage information regarding flashing and roof metal details (*See Section 4.4 Penetrations and Chimney Flashing*), these parts of the roof assembly are not manufactured by Brava and do not fall under Brava's 50-year limited warranty. Please ask a roofing professional for roof flashing recommendations and requirements and check with your local building official to ensure compliance with applicable codes.

3.6 Valley Metal

Valley metal should be installed by a licensed professional using industry best practices. Open or Closed valleys may be used with Brava Cedar Shake and should be selected depending on building specifications, application, and the desired aesthetic. 24–26-gauge corrosion resistant flashing is recommended. Proven durable valley metals include copper, tin, lead, galvanized or painted steel, and stainless steel. Check with your local building official to ensure compliance with applicable codes.

Figure 3.6.1 *Valley metal*

Recommended Valley Metal: 24–26-gauge corrosion resistant flashing

Open Valleys

For Open Valleys, a 4" opening at the top of the valley is recommended using Solid Shakes with a “W” style flashing and 1" center crimp. Do not place fasteners within 5" of the center line.

With an “Open Valley” design, special consideration should be given to using the optional Solid Shake accessory at the valley. When cut, Field Shake’s structural ribbing may be visible. Solid Shakes are designed with a solid back and allow for clean lines and best appearance at cut edges. Alternatively, if Solid Shakes are not used with 1 $^{1}/_{2}$" crimps, a “Double W” flashing may be used to cover exposed structural ribbing on cut Field Shakes.

Open Valley ≥ 4" Opening
W-Style Center Crimp - 1"
Double W-Style Crimp - 1 $^{1}/_{2}$"

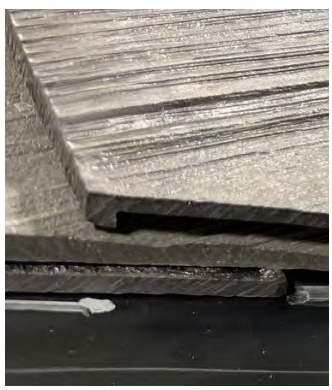


Figure 3.6.2 *Open valley without accessory Solid Shakes*

Figure 3.6.3 *Open valley with accessory Solid Shakes*

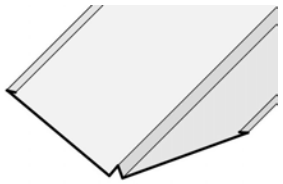


Figure 3.6.4 *“W” style valley metal for open and closed valleys*

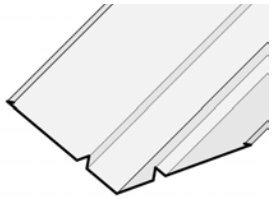


Figure 3.6.5 *“Double W” style valley metal option for open valleys*

Figure 3.6.6 *Open Valley Example with minimum 1" center crimp*

Closed Valleys

For Closed Valleys, a “W” style flashing may be used with a 1 ½" center crimp. Leave a minimum $^{3}/_{16}$" gap between the shakes at the valley for thermal expansion.

Closed Valley Center Crimp - 1 $^{1}/_{2}$"

Figure 3.6.7 *Closed valley example with 1 ½" center crimp*

4.1 Starter and Field Shake Installation

1 **Snap chalk lines** to ensure straight courses. Snap lines for the Starter course and each consecutive course of shakes. *See Section 3.1 (Measuring and Marking the Roof).*

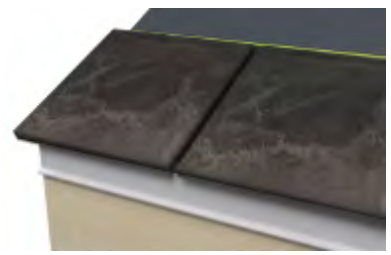


Figure 4.1.1

2 **Install starter course** with a **1/2" eave overhang** and a **1" rake overhang.** *See Section 2.4 (Keyway, Lap, and Overhang).*

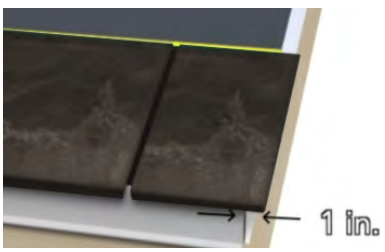


Figure 4.1.2

3 **Use Two Fasteners** for each Starter, Shake, and Accessory. **Ensure ≥ 3/4" fastener penetration** or completely through the deck. *See Section 2.7 (Fasteners).*

Ensure no exposed fasteners.

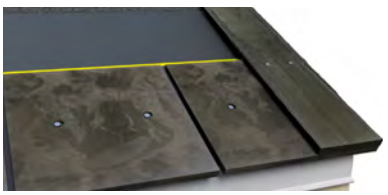


Figure 4.1.3

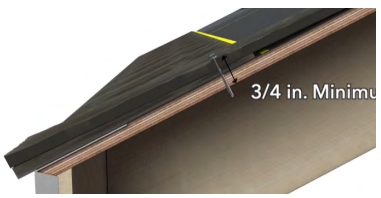


Figure 4.1.4

4 **Space Starters and Field Shakes** to allow for thermal expansion. Brava recommends 3/8" keyway between each shake with a minimum **≥ 3/16" keyway.** *See Section 2.4 (Keyway, Lap, and Overhang).*

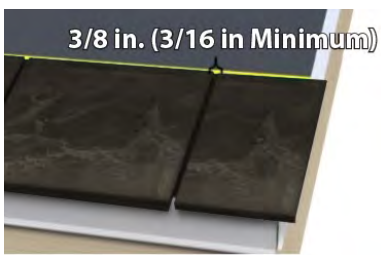


Figure 4.1.5

5 **Install Field Shake** first course flush with the Starter course using a combination of shake widths to ensure a **≥ 1 1/2" sidelap** for all shakes and accessories. *See Section 2.4 (Keyway, Lap, and Overhang).*

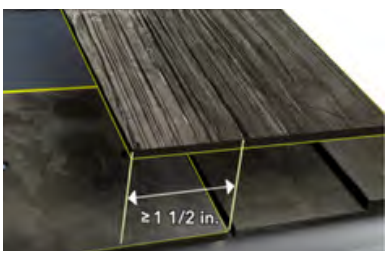


Figure 4.1.6

6 **Continue installing Field Shakes** using chalk lines* and guidelines to maintain **≤ 10" exposure** and straight courses. *See Section 2.3 (Exposure).*

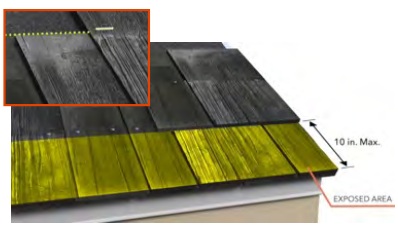


Figure 4.1.7

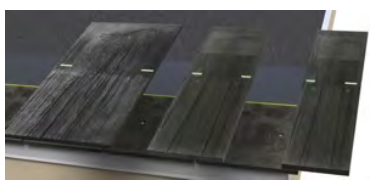
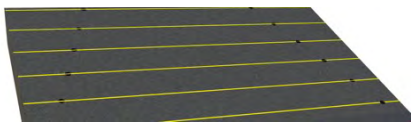


Figure 4.1.8

NOTE: Material should be stored covered to protect it from environmental and job site debris. Masonry work should be completed and cleaned prior to installing Brava material.

**NOTE: For best results chalk lines should be snapped for the head of each shake course and exposure should be verified regularly throughout installation.*



4.2 Valley and Rake Installation

When it is necessary to cut shakes at valleys, rakes, and other details, make straight even cuts and place the factory edge to the outside. At rake edge, install Starters and Shakes with a 1" overhang. *See Section 2.4 (Keyway, Lap, and Overhang).*

For the most natural aesthetic, Brava recommends using the Solid Shake accessory at valleys and rakes. This will allow for a solid edge when the shake is cut (*Figure 3.6.3*), and no structural ribbing will be exposed when the underside of the shake is visible (*Figure 4.2.3*).

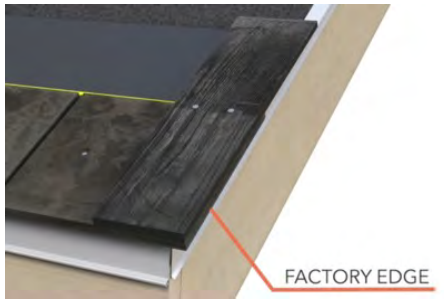


Figure 4.2.1

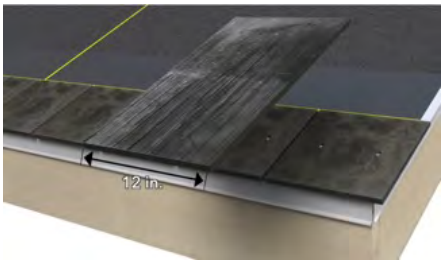


Figure 4.2.2

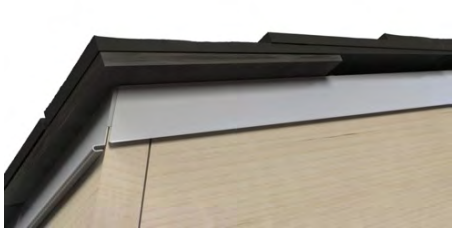


Figure 4.2.3 (Solid Shake at rake)

At rakes and eaves, a D-Style flashing may be used to conceal structural ribbing on standard Field Shakes. *See Figure 4.2.4.*

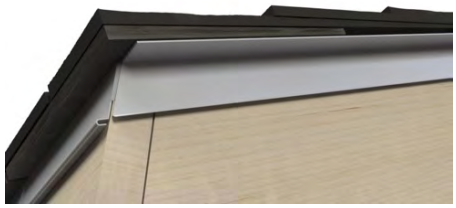


Figure 4.2.4

At valleys, install a 36" strip of Ice and Water Shield. Ensure compliance with project and code requirements.

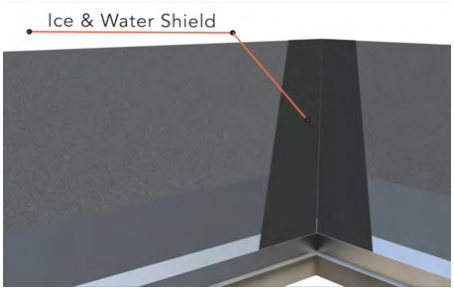


Figure 4.2.5

Code compliant flashing should extend 10" from the center crimp on either side for slopes of 4:12 and up or 14" for slopes of 3:12 and below.

Do not place fasteners within 5" of the center crimp. *See Section 3.6 Valley Metal*

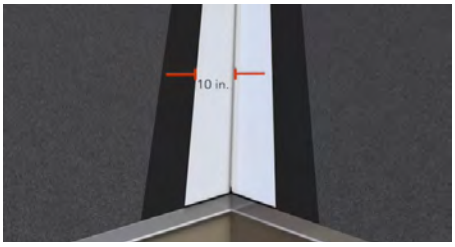


Figure 4.2.6

For Open Valleys, a “W” style valley metal may be used with a 1" center crimp. For best appearance at cut edges, use accessory Solid Shakes.

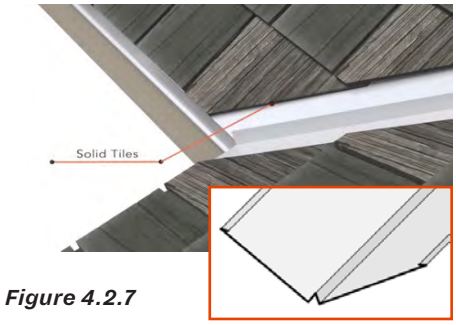


Figure 4.2.7

If Solid Shakes are not used, a Double “W” valley metal, with 1 1/2" crimps, may be used to conceal cut edges.

Figure 4.2.8

For Closed Valleys, a “W” style valley metal may be used with a 1 1/2" center crimp and shakes cut along with the center crimp. leaving a 3/16" gap for expansion.

Figure 4.2.9

4.3 Hip and Ridge Installation

1 **Trim shakes evenly and tightly at the hip and ridge.** Left and right side should be cut the same distance (minimum $^{3}/_{16}$") from hip or ridge to allow for uniform installation.

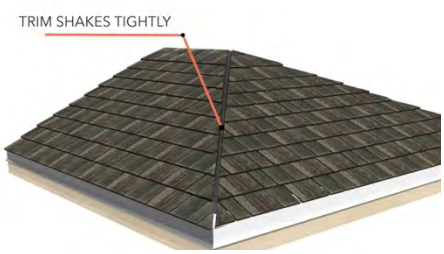


Figure 4.3.1

2 **Install an 8"-wide strip of Self-Adhering Membrane** over the center of the hip and any unvented sections of ridge.

Applicable ridge vents may be installed at this time. Alternatively, a flexible flashing may be used.

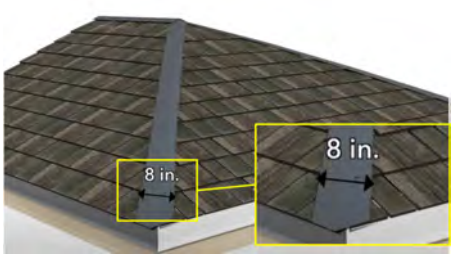


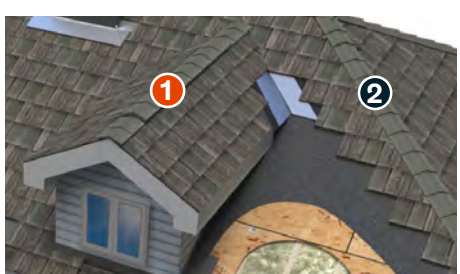
Figure 4.3.2

3 **Brava offers varied Hip/Ridge Cap angles to enable proper fit.** Check packing lists and load correct angles to each hip or ridge.

See Section 1.1 - Materials

Figure 4.3.3

4 **Install (1) Ridge or (2) Hip Caps** using correct angles.



1 Ridge Cap	2 Hip Cap
Low: 4:12 or lower	**Low:** 5:12 or lower
Standard: 5:12 – 10:12	**Standard:** 6:12 – 14:12
Steep: 11:12 or higher	**Steep:** 15:12 or higher

Note: Recommendations are for symmetrical Hip/Ridge only. For example, a 5:12 slope meeting a 5:12 slope. Calculate angle for asymmetric hip/ridge.

Figure 4.3.4

5 **Install Hip/Ridge Caps with two fasteners** at the formed fastener locators penetrating ≥ $^{3}/_{4}$" into the deck or completely through the deck.

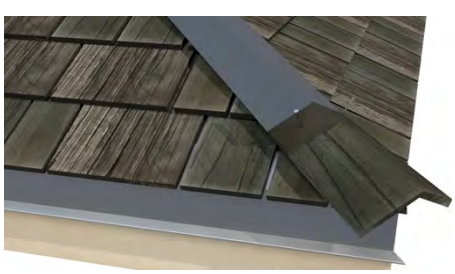


Figure 4.3.5

6 **Match Hip/Ridge exposure to Field Shake exposure ≤ 10".**

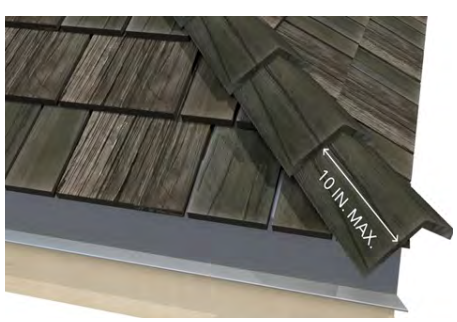


Figure 4.3.6

4.4 Penetrations and Chimney Flashing

Flashing should be installed by a licensed professional using industry best practices and meeting all applicable codes. *See Section 3.5 Flashing*.

Installation at Penetrations

1. **Waterproof all penetrations** with Ice & Water Shield.

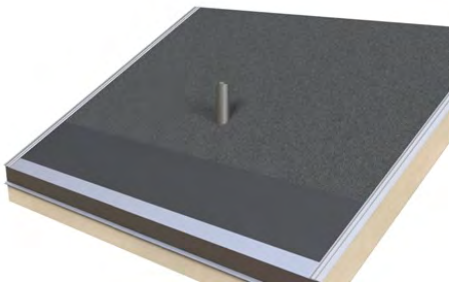


Figure 4.4.1

2. **Install shakes** below and up to the penetration.

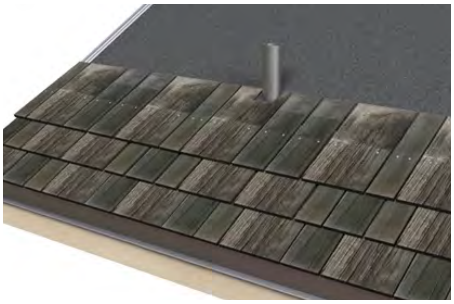


Figure 4.4.2

3. **Install a flashing sleeve** over the penetration.

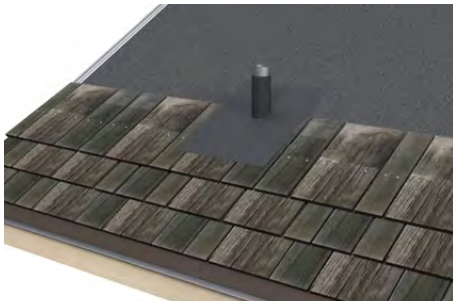


Figure 4.4.3

4. **Cut shakes to fit neatly around penetration and fasten. Ensure no exposed fasteners.**

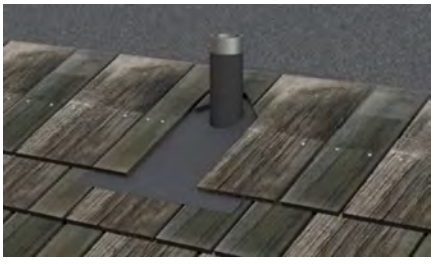


Figure 4.4.4

Do not place fasteners within 5 inches of the penetration.

5. **Install next course of shakes over the flashing sleeve.**

Figure 4.4.5

6. **Continue installing** following courses.

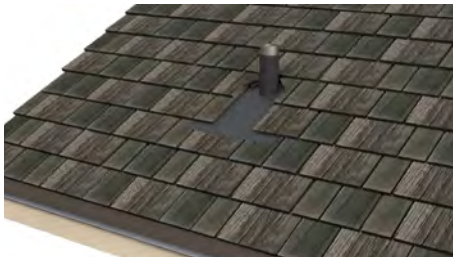


Figure 4.4.6

Installation at Chimneys

1. **Install Field Shakes** up to the base of the chimney.

Figure 4.4.7

2. **Install Apron Flashing** so it extends around the chimney and fasten at upper ends.

Figure 4.4.8

3. **Install 6" minimum counter-flashing** and fasten at upper corner.

Figure 4.4.9

4. **Install next course** of Field Shakes.

Figure 4.4.10

Do not place fasteners within 5 inches of the chimney.

5. **Continue installing shake courses and Step Flashings.** Step flashings should overlap no less than 2" and extend under shakes a minimum of 6".

Figure 4.4.12

Figure 4.4.11

6. **Install preformed metal Cricket** as required and install counter-flashing into sawcut reglets.

Figure 4.4.13

Figure 4.4.14

Appendices

Appendix A – High Wind Installation

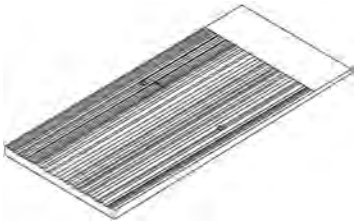
Use the table below to determine installation requirements and associated wind warranty eligibility. Warranty eligibility requires meeting all published installation instructions. To register your warranty and view the full document, go to https://www.bravarooftile.com/customer-service/.

Building Code requirements may be different than warranty requirements.

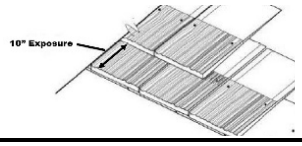
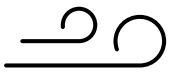
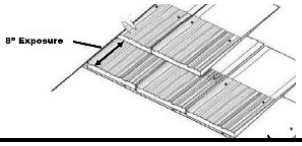
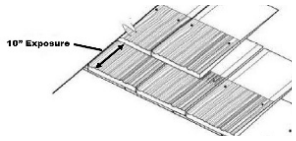
Ensure compliance with applicable codes prior to installation.

CAUTION: In high wind regions such as Florida, maximum exposure may be dictated by the building department. Verify code requirements when setting exposure. Using recycled materials can cause variation in final product dimensions. Take this variation into account to ensure code exposure requirements are met. To this end, it may be necessary to set exposure lower than the code maximum in some cases. Brava recommends setting exposure to end with a full shake at the ridge *(See Appendix E – Swing Tape Method)*. This will usually set a slightly lower exposure and does not require additional material.

Brava Cedar Shake – Wind Warranty Matrix



Brava Cedar Shake

	Fastener Requirements*	Maximum Exposure	Warranty Eligibility
STANDARD	(2) 0.120" x ≥ 1 ¾" Ring Shank Roofing Nails 	≤ 10" 	90 MPH 
ALTERNATE	(2) 0.120" x ≥ 1 ¾" Ring Shank Roofing Nails 	≤ 8" 	110 MPH 
RECOMMENDED	(2) #8 x ≥ 2" Screws  High Wind Installation	≤ 10" 	130 mph 

* Fasteners must be of sufficient length to penetrate 3/4" into the sheathing or completely through the sheathing. When a fastener gauge or length is specified, a longer or larger fastener may be acceptable depending on code, application, or availability. Brava requires two (2) fasteners per tile for all roofing products. Screw drive head type may vary.

Figure A.1

Appendix B – Install Accessories

Any accessories or products used in conjunction with Brava Cedar Shake should be installed according to the manufacturer's guidelines and in compliance with the applicable code and industry best practice. Brava Cedar Shake, underlayment, and flashing should remain intact and undamaged. Consult a roofing professional to ensure the final installation is sound and watertight. For questions on specific applications, contact your Brava Technical Support Specialist.

Roof Vents

When installed according to manufacturer's specifications, many common roof and ridge vents are compatible with Brava Cedar Shake. Vents may be installed and used as with cedar shake, slate, and composition roofs. Insufficient venting may lead to roof deck failure. Consult vent manufacturer and building code for attic venting requirements.

Snow Guards

Due to the textured surface of the shakes, snow may slide off easily. The need for snow guards will increase in areas with above average snowfall. Be sure to follow the snow guard manufacturer's installation guidelines for installation and correct spacing and check with your building official to ensure compliance with applicable codes.

Solar

Follow the manufacturer's guidelines for installation of any solar mounts or equipment and check with your building official to ensure compliance with applicable codes. Mounts and Brackets may be installed and used as with cedar shake, slate, and composition roofs. Snow guards and Solar mounts should be installed during installation of Brava Cedar Shake. Retrofit installation of these systems has limitations.

CAUTION: Installing additional systems and fasteners into a roof system increases the risk of leaks. Ensure all accessories and fasteners are sealed.

Appendix C – Cleaning and Maintenance

Due to construction dust and other environmental factors, cleaning may be necessary to maintain color and aesthetic.

Masonry Dust: Cutting of concrete, stone, masonry, brick, and other jobsite materials may leave a layer of fine dust on building materials stored on site or installed. This dust can affect the appearance of Brava Roof Tile. Keep stored materials covered and remove any dust appropriately after the work is completed.

Evaporation Residue: In high altitude and very dry conditions, the Residue of Evaporation (ROE) from rain can accumulate and cleaning may be desired to restore original color.

Cleaning: Consult with a professional and take appropriate safety precautions when working on or around a roof. Brava recommends the use of soapy water with a mild detergent and a cloth, brush, or push broom with soft or medium bristles. Simple Green, diluted to manufacturer's specifications, has been tested and approved by Brava Technical Support. If necessary, a power washer may be used at a low pressure setting, angling the spray down the slope of the roof, while ensuring that the nozzle is not too close to the roof.

What to avoid:

- High pressure washers or close contact with spray nozzles
- Acid based cleaners
- Cleaners not recommended for plastics
- Strong abrasives

Maintenance and Foot Traffic: Avoid walking on the roof whenever possible. Excessive or careless roof traffic may cause damage. When maintenance or other needs require accessing the roof, use caution as it can be slick when wet or dry.

CAUTION: Do not use high pressure washers, snow blowers, heaters, or other power equipment on the roof.

If you have a specific maintenance question, contact Brava at (844) 290-4196.

Appendix D – Staggered Exposure

Shakes may be installed with varied exposures to produce a staggered look if desired. Staggered installation is accomplished by choosing two (2) or more exposures and alternating or randomizing those exposures throughout the installation. Depending on the desired aesthetic, choose a subtle or more pronounced variation. An example would be to use alternating exposures of 8 and 10".

Exposure and Bundle Requirements per Square
Use the table below to determine the bundles required per square (100 square feet) based on the chosen exposure:

- 4" exposure: ~25.1 bundles per square
- 5" exposure: ~23.3 bundles per square
- 6" exposure: ~21.5 bundles per square
- 7" exposure: ~19.7 bundles per square
- 8" exposure: ~17.9 bundles per square
- 9" exposure: ~16.1 bundles per square
- 10" exposure: ~14.3 bundles per square

Calculating Material for Multiple Exposures
For installations that use a mix of exposures (e.g., 8" and 10") to create a staggered look, you can determine the total bundles by averaging the requirements for each exposure:

1. Determine Bundles for Each Exposure:
   Look up the bundles per square needed for each exposure.

2. Calculate the Average:
   Add the bundle requirements for each chosen exposure and divide by the number of exposures.
   For example, with 8"and 10" exposures:
   Average Bundles per Square =
   17.9+14.3\2 = 16.1 bundles per square

3 Multiply by Total Square Footage: Multiply this average by the roof area (in squares) to get the total bundles needed before adding waste.
   This simple averaging method helps estimate the material required for staggered installations with consistent exposure patterns.

Figure D.1

Appendix E – Swing Tape Method

1 Snap a line for the starter course. Determine course placement with ½" overhang and snap a line to place head of the Starter. This should be about 11 ½" from the eave.

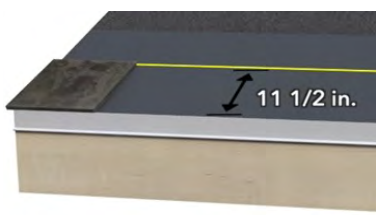


Figure E.1 *Use Starter to snap chalk line for ½" overhang at the eave.*

2 Snap a line 1 ½" from the ridge.

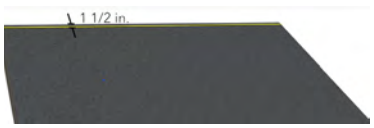


Figure E.2 *Snap a line 1 ½- inches from the ridge as illustrated.*

3 Mark maximum acceptable exposure on tape measure. Maximum exposure is 10" for Brava Cedar Shake but may be further restricted by application and code requirements. For this example, mark the tape at every 10" interval. 10, 20, 30, etc.

Figure E.3 *See Section 2.3 for more information on exposure.*

4 Using a layout tape or a marked tape measure, measure straight to the ridgeline. Swing the tape to the left or right until a mark aligns with the top-row chalk line.

If using layout tape, fasten the tape. If using a marked tape measure, mark the underlayment at each mark on the tape measure.

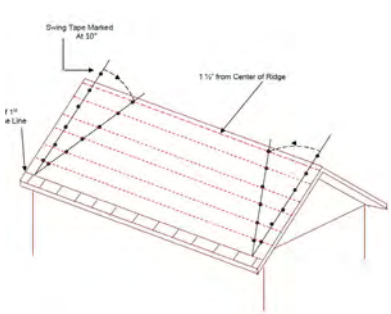


Figure E.4

5 Repeat this process at the other end of the roof.

Figure E.5 *Repeat process and mark the other end of the roof.*

Figure E.6

6 Snap lines between the arrows or marks on the underlayment.

Figure E.6 *Allowable (10") vs Set (9.738–inches) exposure example.*

NOTE: *The measurements used in this section are used as an example. Desired exposure should be set based on product specifications, aesthetic preference, design requirements, and applicable code.*

Alternative Measuring Method
An alternative method is to measure the distance of the slope, divide by the maximum desired/required exposure, and determine the number of courses. This number then can be divided out of the total inches of the roof slope to determine the exposure setting to complete with a full shake.

Begin by completing steps 1 and 2 of the swing tape method. Measure from the starter course line to the ridge line in inches to determine Slope Distance. Divide the Slope Distance by the Maximum Exposure and round up to the nearest whole number to determine the number of Courses needed. Then divide the Slope Distance by the number of Courses needed. This will give you the Set Exposure at which to chalk lines. Use the chart below if the decimal inches are not simple fractions.

Decimal Inches	Fractional Inches
.125"	1/8"
.25"	1/4"
.375"	3/8"
.5"	1/2"
.625"	5/8"
.75"	3/4"
.875"	7/8"

Appendix F – Fire Rating

Established testing and rating standards for fire resistance of roof systems include ASTM E108, UL 790, and CAN/ULC-S107. These methods categorize roof systems as Class A, B, or C, with Class A offering the highest level of fire resistance and Class C providing basic protection against light fire exposures. While there are some differences, the standards and methods used are comparable and often can be used interchangeably depending on country, state, and other code requirements. Brava roof systems have been tested to achieve ASTM E108 Class A or Class C. A fire rating is not always mandatory; consult with your local building department to confirm fire resistance requirements, which can vary based on regional risk factors and specific building types or uses.

Brava One is the proprietary composite formulation used for all Brava roof systems. This material has excelled in extensive third-party testing to validate product performance under various environmental conditions. These performance standards include durability and resiliency against wind uplift, wind-driven rain, hail impact, UV, and fire.

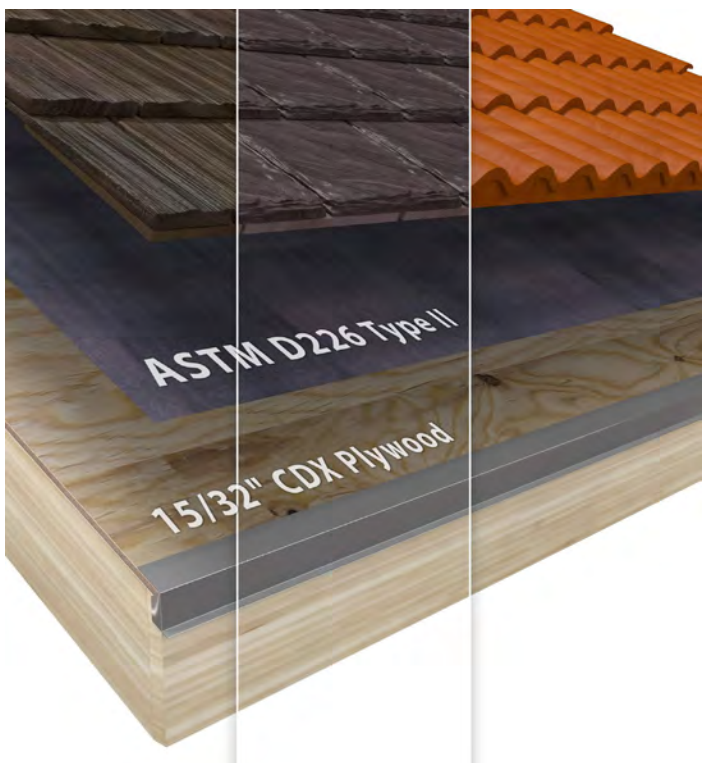
CLASS C with standard underlayment: Brava One roof systems are tested and rated as Class C over standard underlayments.

CLASS A with FR underlayment: Brava Class A systems incorporate tested fire-resistant (FR) underlayments combined with Brava One material, independently holding a Class C fire rating. To achieve a Class A fire rating, a tested assembly must be used as listed in Brava's Code Evaluation Report. This configuration ensures Brava systems meet rigorous safety standards while providing flexibility in fire resistance options and maximizing production and ordering efficiency.

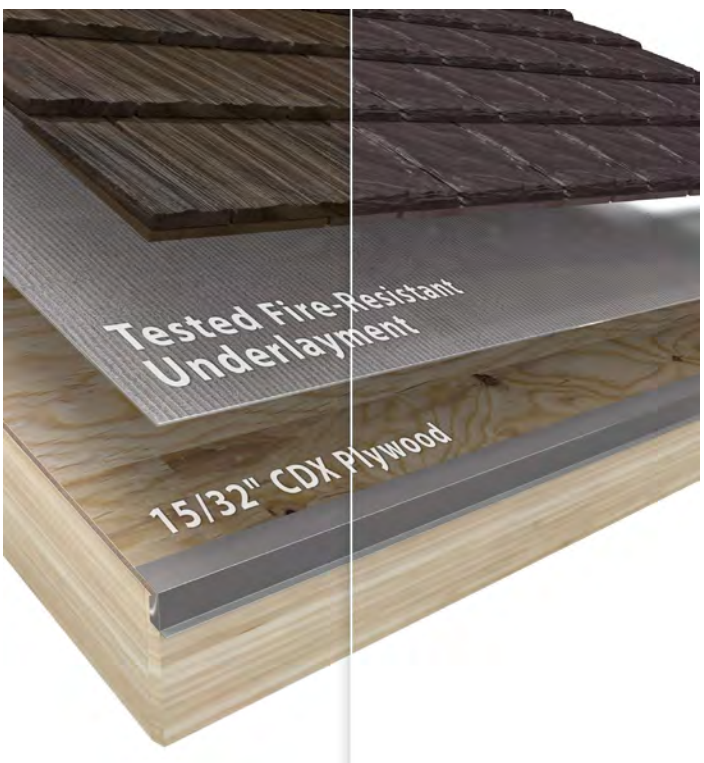
Fire-resistant (FR) underlayment is a protective layer installed beneath the roof system to provide an additional barrier against fire. It is typically made of materials designed to resist high temperatures and prevent the spread of flames. Some FR underlayments may meet standard underlayment requirements. Confirm system requirements are met.

Tested Assembly
For a Brava product to achieve its designated fire rating, it must be installed using the specific underlayment with which it was tested. This ensures the roofing system qualifies as a tested assembly, meaning that the complete roof system, including the Brava product and the approved underlayment, has been evaluated together for fire resistance. Installing any other underlayment could invalidate the fire rating because it would no longer match the tested and certified combination. Refer to our code and testing documents at https://www.bravarooftile.com/resources/#codes-testing to review the available tested assemblies and underlayment options.

Figure F.1 Symbol shows standalone Class A material



Class C Assebly



Class A Assebly

BRAVA

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