

BRAVA

Slate Installation Guide

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Brava Technical Services, Training and Resources

Brava provides installation guidance for all products at https://www.bravarooftile.com/training/

Complete Level 1 Training and Access Resources and Support at https://www.bravarooftile.com/technical-services/. If you have any questions regarding Brava Roof Tile products and manufactured accessories, call 844-290-4196 and ask for Technical services. You can also contact us through our website at bravarooftile.com.

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

Brava Slate has all of the true to life natural beauty and rustic textures of quarried slate, combined with the incredible benefits of a composite roofing material. When it comes to quality and craftsmanship, no one does it better. Brava Slate can be installed in straight courses or in a staggered application to give it a more rugged appearance. With a 1" profile, Brava's Slate polymer tile has the volume of traditional slate roof tiles with a fraction of the weight. This allows for less expensive shipping costs and ease of installation. Our Slate shingles have the thickest synthetic slate roof profile available. The 1" thick profile of this product creates beautiful color exposure and an unsurpassed durability.

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 quarried slate often produces visible variation. This is apparent at closer viewing angles and can be more pronounced due to slate dimensions, neither of which undermines the performance or aesthetic of the completed roof.

Field Slates are the primary component of the Brava Slate roof system. These slates are manufactured using real slate as examples, defining texture and width. Additionally, Brava offers Starters for installation at eaves, Hip and Ridge Caps, and a Solid Slate 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 Slate Installation Instructions

Before installing Brava Slate, verify local building codes and requirements. Use a minimum 15/32" CDX plywood deck or an approved equivalent. **Do not install** if material temperature is below 32°F. A minimum 3/16" keyway between each slate is required to allow for expansion—this is critical. Confirm proper flashing, Ice & Water Shield, and underlayment per code. Review the packing list, verify product specs, and blend colors as you load the roof. Check that the roof is square and plumb, and correct any major deviations. Review this entire installation guide thoroughly before beginning any work.

Access Training, Resources, and Service through the Technical Services Portal.

https://www.bravarooftile.com/technical-services/

All crew members should complete the Level 1 Installation Training available on the Technical Services Portal before beginning installation. This training helps ensure proper installation practices, sets your team up for a smooth project, and supports eligibility for warranty coverage.

Brava Installation Training

https://www.bravarooftile.com/training/

These 30-minute online courses cover the Keys to Success for each roof system, equipping your crews with the knowledge they need for a smooth and successful installation.

Why Take Our Training?

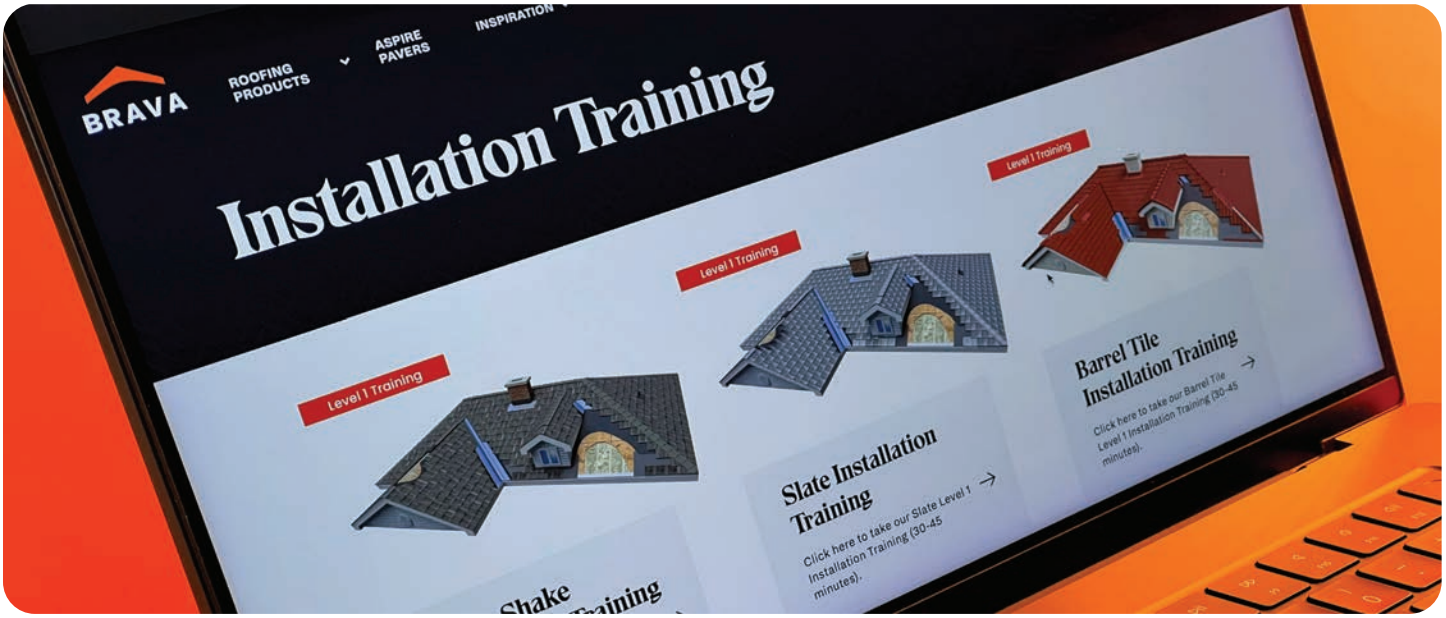
Fewer Issues, Less Downtime: Crew training reduces errors and keeps projects on track.

Convenient Access: Training is available on both mobile and desktop devices.

Completion Verification: Completing the course also qualifies your company for our Preferred Contractor Program.

Sales and Ordering: The training is also helpful for sales and operations teams. Understanding product components and installation methods streamlines planning and ordering.

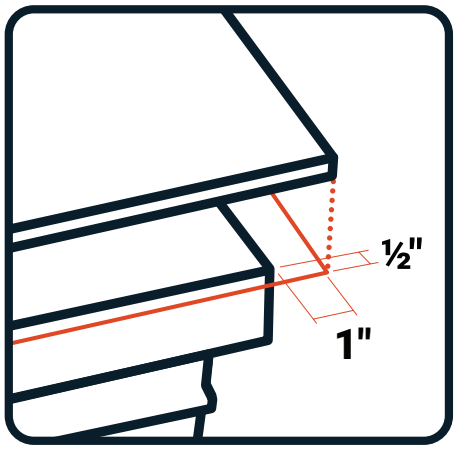
Bilingual Access:
Available in English and Spanish.



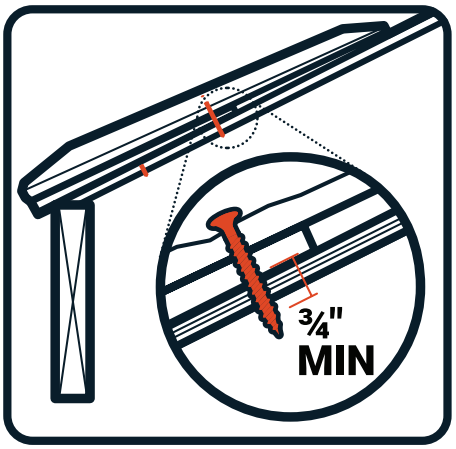
Keys to Success



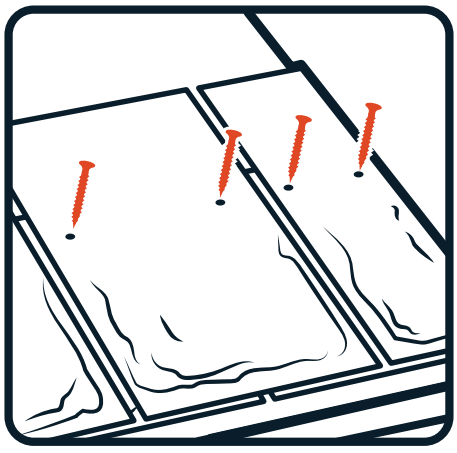
- Chalk Lines



- ½" Eave Overhang
- 1" Rake Overhang



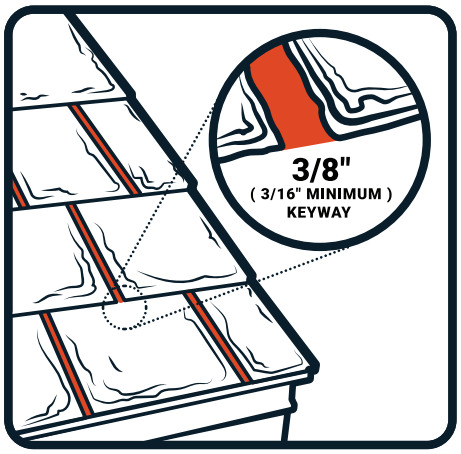
- ≥ ¾" Fastener Penetration



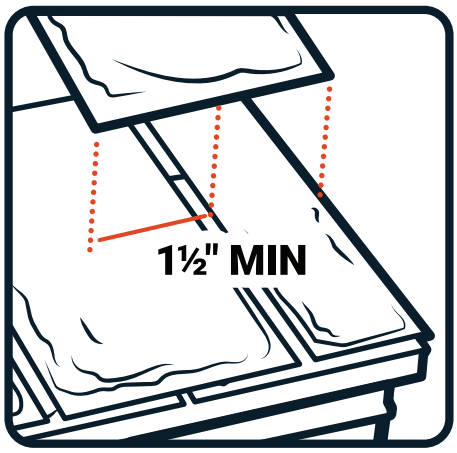
- 2 Fastener Per Slate



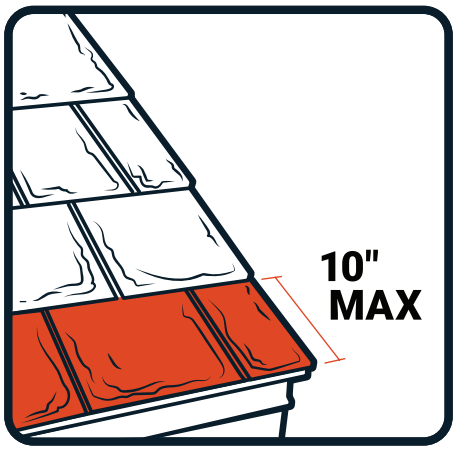
- No Smooth Nails



- ≥ 3/16" Keyway Spacing



- ≥ 1 ½" Sidelap



- ≤ 10" Exposure



- No Exposed Fasteners
- Solid Slates at Rakes and Valleys (Recommended)

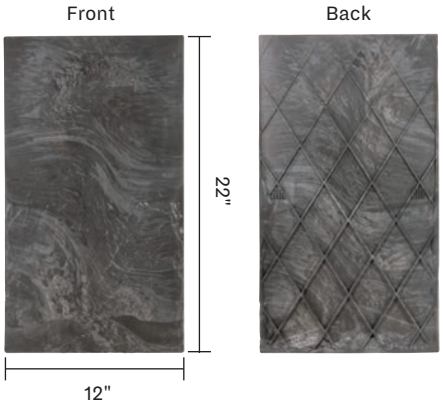
1.1 Materials

Roof Components and Specifications

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

Standard Field Slates

(Structural Ribbing Back)



Field Slates are the primary component of the Brava Slate roof system and are used on all roof sections. They use a variety of molds based on real quarried slate.

Accessory Solid Slate

(12" No Structural Ribbing)



Optional Solid Shake accessory gives the roof a realistic appearance at visible cut edges. These “solids” are recommended for use along rakes (gable ends) and in open valleys. When installed with 10" maximum exposure, each 5 pc/22.5 lb bundle provides 4.1 lineal feet of rake or valley coverage.

SEPARATE FROM STANDARD FIELD SHAKES
Note: These bundles and pieces are twice as heavy during roof loading and installation.

Low, Standard, and Steep Hip/Ridge

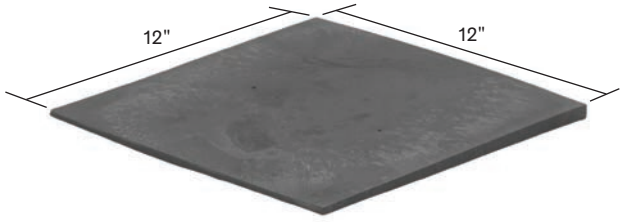


14" Length x 5 ½" Width x 6" Height

Hip/Ridge Caps give a finished appearance at hips and ridges. Slate Hip/Ridge Cap is manufactured in three different slope ranges. Measure the angle at the hip or ridge and choose the closest matching angle of Hip/Ridge Cap. When installed with 10" maximum exposure, each 10 pc/20 lb bundle provides 8.3 lineal feet of hip or ridge coverage. Install at hip and ridge.

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

Starter



12" Length x 12" Width

The Starter is used along the eave line and slope transitions to provide proper coverage for the first row of slate. Each 10 pc/16 lb bundle provides 10 lineal feet of eave or slope transition coverage.

Brava Slate Specifications



Dimensions

Length	22"
Width	12" (6", 9", 12": Multi-Width)
Thickness	1"
Maximum Exposure	10"
Minimum Keyway	3/16" 3/8" Recommended
Minimum Sidelap	1-1/2"

Weight

Lb./Piece	1.4 (6"); 1.8 (9"); 2.7 (12")
Lb./Square	311 (305: Multi-Width)
Lb./Bundle	27
Lb./Multi-Width Bundle	25.8
Lb./Pallet	1836

Packaging

Pieces/Bundle	10
Pieces/Bundle (Multi-Width)	12 (3 x 6", 3 x 9", 6 x 12")
Bundles/Square	11.5
Bundles/Pallet	66
Squares/Pallet	5.74

Testing & Performance

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

**See Appendix A Wind Warranty Installation Requirements and Appendix F – Fire Rating*

Visit bravarooftile.com for any product and testing updates.

Code Compliance

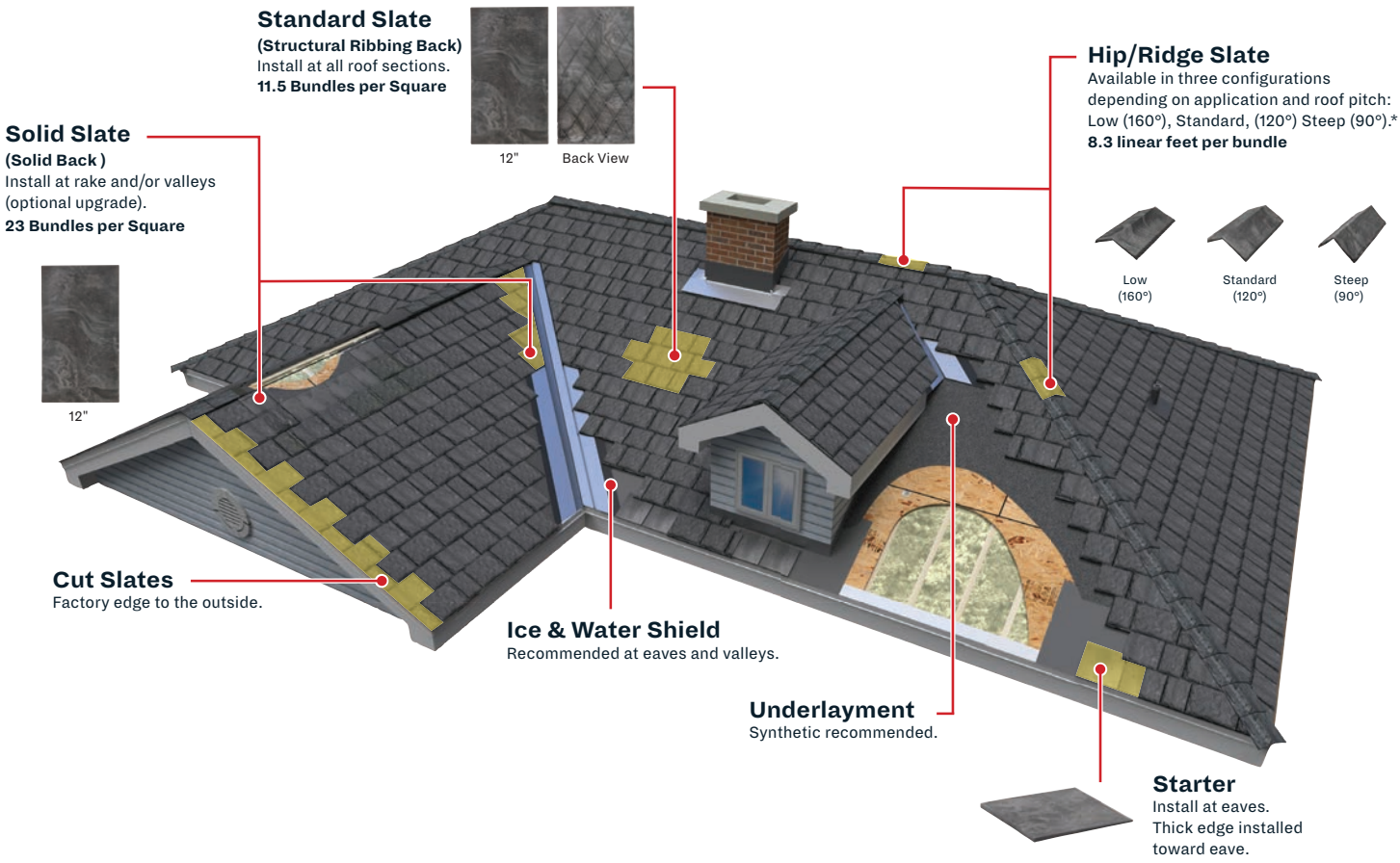
Miami-Dade Approved	Miami-Dade NOA
Florida Building Code Approval (FBC)	FL 41880
TDI Approval	RC-12
Title 24 / Cool Roof Approval	Select Colors
International Building Code (IBC) Compliant	Yes
International Residential Code (IRC) Compliant	Yes
ICC AC07	Yes

Bundles Per Square

Slate	
10"	– 11.5 Bdl/Sq
9"	– 12.8 Bdl/Sq
8"	– 14.4 Bdl/Sq
7"	– 16.4 Bdl/Sq
6"	– 19.2 Bdl/Sq
5"	– 23.0 Bdl/Sq
4"	– 28.8 Bdl/Sq

Multi-Width Slate	
10"	– 11.8 Bdl/Sq
9"	– 13.2 Bdl/Sq
8"	– 14.8 Bdl/Sq
7"	– 16.9 Bdl/Sq
6"	– 19.7 Bdl/Sq
5"	– 23.6 Bdl/Sq
4"	– 29.5 Bdl/Sq

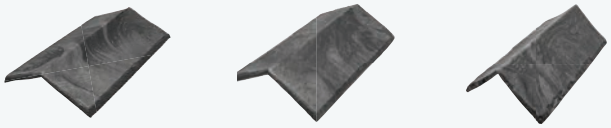
Brava Slate Roofing System



Note: Images not to scale.

Hip & Ridge

Brava recommends measuring the angle of the hip or ridge before ordering material to ensure the best fit. 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

Low: 4:12 or lower
Standard: 5:12 – 10:12
Steep: 11:12 or higher

2 Hip Cap

Low: 5:12 or lower
Standard: 6:12 – 14:12
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 Services. For example, a 5:12 slope meeting an 11:12 slope.

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: Slates 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 Slate check local building codes for roofing requirements. Brava recommends that installers 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 Slate has a recommended minimum slope of 4:12. There is no maximum slope, however, Brava Slate is designed as a roofing product and has not been extensively tested in vertical applications. Testing standards for roofing and siding often differ. When installed in a siding application, confirm code compliance. 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 Limited Lifetime 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 Slate can be installed at different exposures depending on application and code requirements. Ensure no fasteners are exposed between slates 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"**

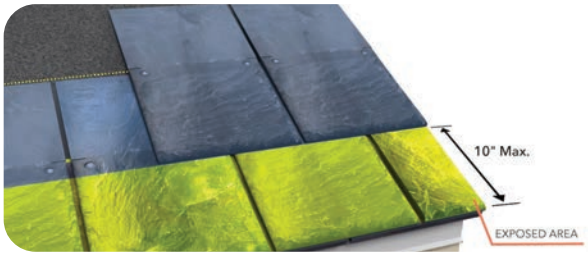


Figure 2.3.1 *Exposure 10" max*

Exposure Guidelines

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

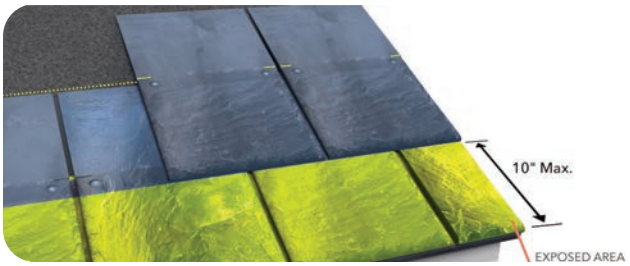


Figure 2.3.2 *Exposure Guidelines flush with top of slate*

Exposure for High Wind

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

See Appendix A – Wind Warranty Installation Requirements

2.4 Keyway, Lap, and Overhang

Keyway Spacing

Brava requires a minimum spacing of 3/16" between all Field Slates, Solid Slates, 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 "**

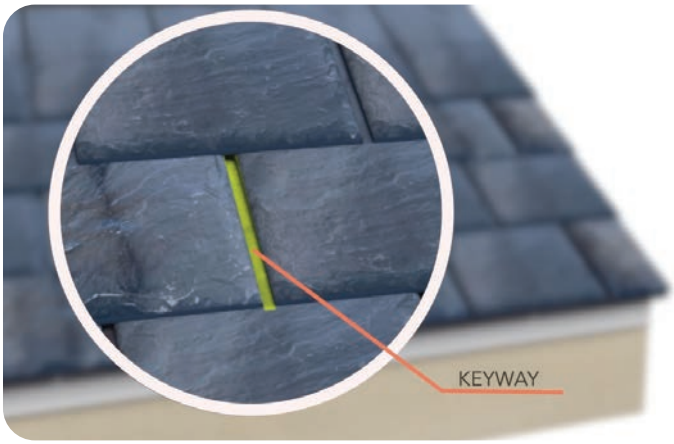


Figure 2.4.1

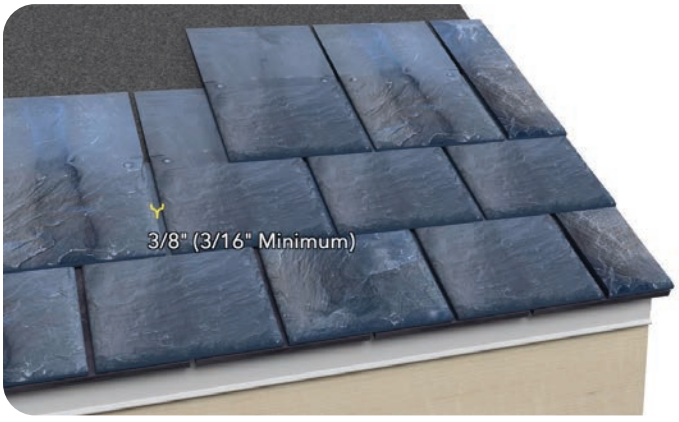


Figure 2.4.1 Figure 2.4.2

Sidelap

When installing Brava Slate, ensure a sidelap of at least 1 ½" for all Field Slates, Solid Slates, and Starters. This allows water to shed as designed and covers fasteners on the previous course of slates. Use an offset layout to ensure sidelap and no exposed fasteners in the keyway.

- **Minimum Sidelap – 1 ½"**

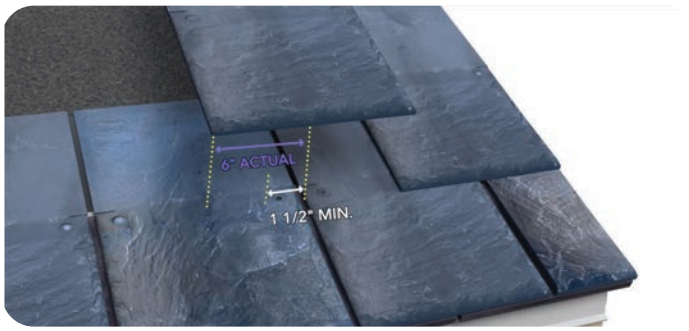


Figure 2.4.3

Brava Slate is designed to be installed with an offset layout pattern. Standard Slate layout is a 6" offset putting each consecutive course at the midpoint of the previous course of slate. Start each course with a full slate or half slate at the rake. . Solid Slates are recommended at the rake. Multi-Width Slate installation should be varied to ensure sidelap requirements are met while minimizing visible patterning.

- **Standard Offset - 6", Multi-Width Offset - ≥ 1-1/2"**

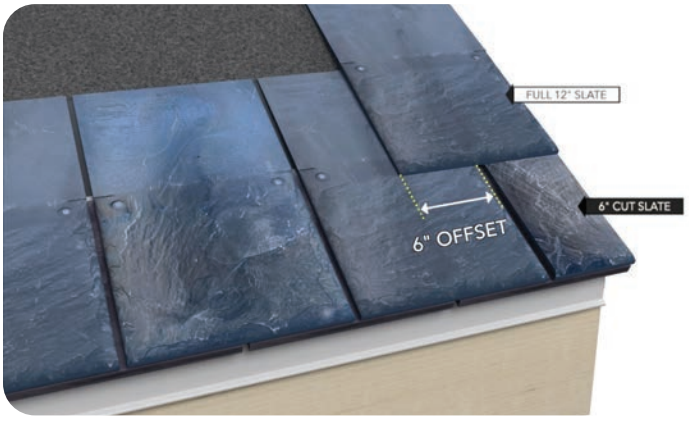


***Figure 2.4.4** Standard Layout with 6" Offset*

Lap

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

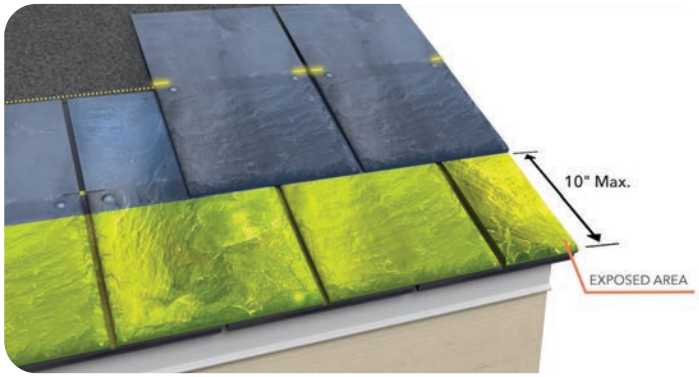


Figure 2.4.5

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

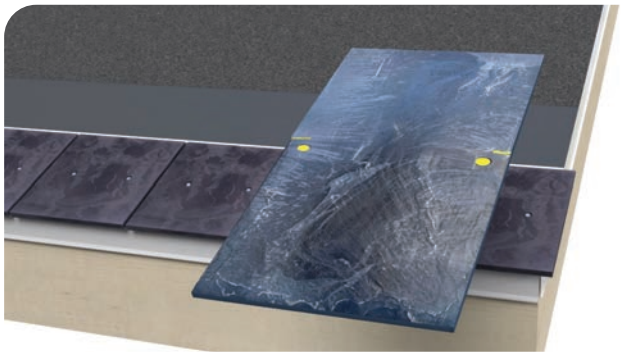


Figure 2.4.6

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.

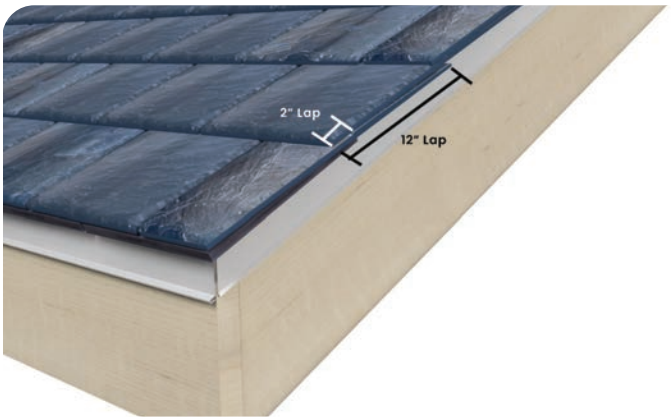


Figure 2.4.7

Overhang

Starters and Field Slate should be installed with a 1/2" eave overhang and a 1" rake overhang. Slates 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"**

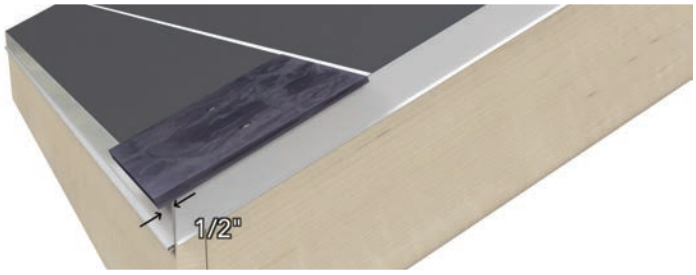


Figure 2.4.8

- **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 slates be installed on a smooth, flat, clean surface (plywood or OSB) 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 Slate 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.

Slate Roofing System Overview

- **Minimum Plywood Deck – 15/32-inch CDX**
- **Minimum Deck OSB – 7/16-inch**

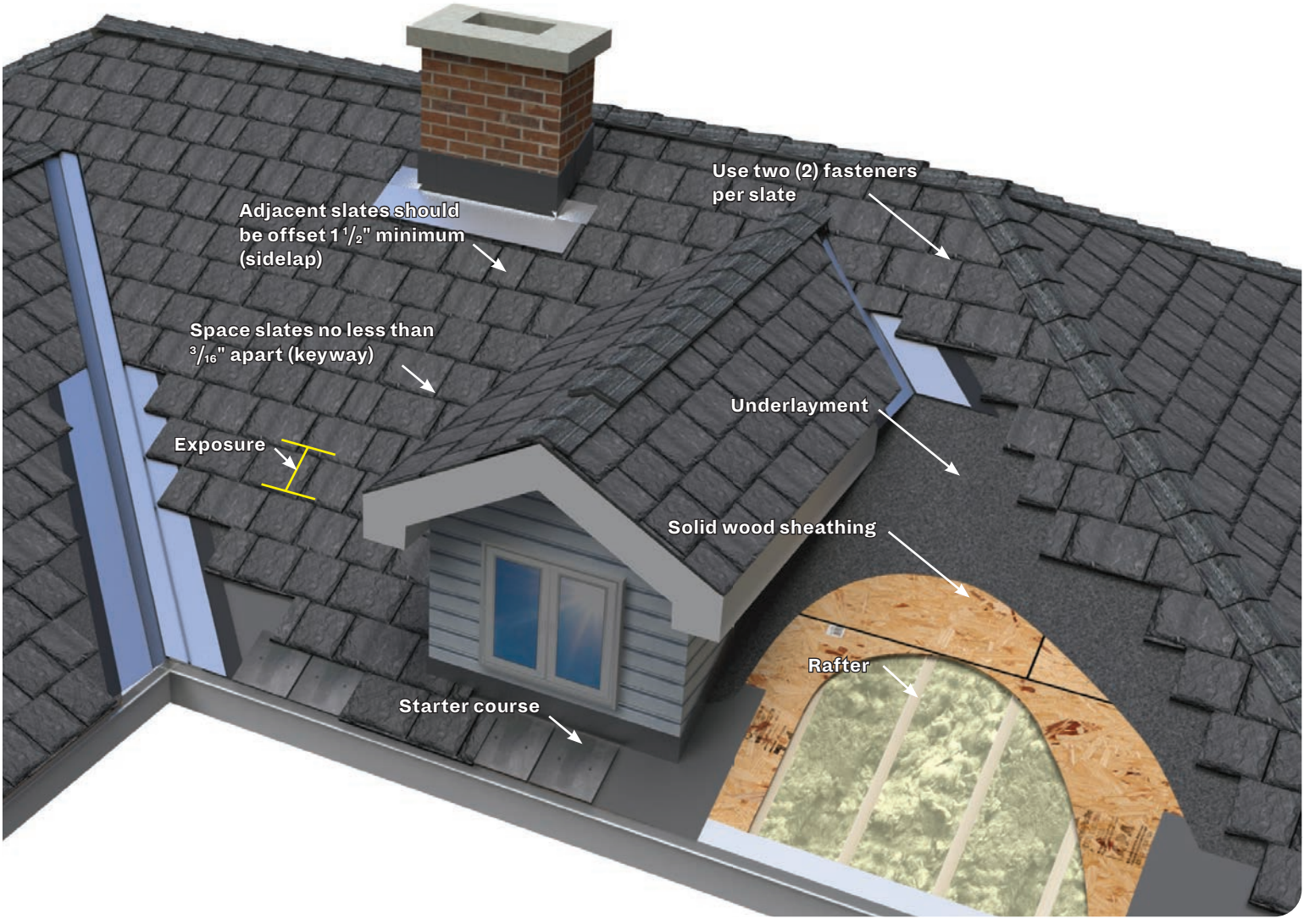


Figure 2.5.1

Spaced Sheathing Deck

- A solid deck is always recommended, especially in areas where high wind and wind-driven rain/ snow are common.
- Plank and spaced sheathing must be a minimum nominal 1x lumber.
- Spaced sheathing should be minimum nominal 1x6 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.
- Maximum allowable spacing is 4 1/2" measured from edge to edge between the sheathing boards. Roofing felt system interlay between the Shake courses is required when installed on spaced sheathing.
- TB-231101 - Brava Roof Sheathing Options

https://www.bravarooftile.com/resources/tb-231101-brava-roof-sheathing-options/

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 warranty of Brava Cedar Shake.

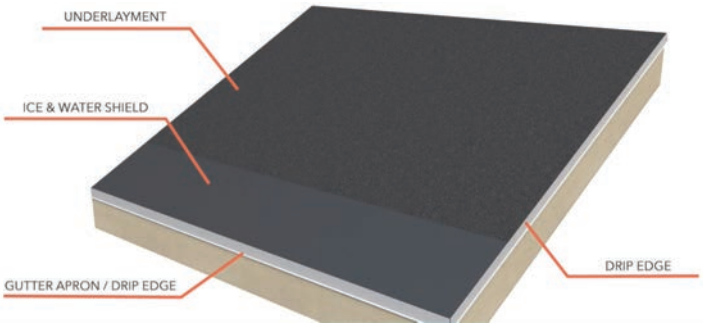


Figure 2.6.1

**See Appendix F – Fire Rating.*

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.

In areas where the average daily temperature in January is 25° F or lower or where ice formation is possible along the eaves causing backup of water, a minimum ASTM D1970 self-adhering membrane shall be installed from the eave edge extending to a point not less than 24" inside the exterior wall line of the building. A minimum 36" wide self-adhering membrane is required in all valleys regardless of average daily temperatures or the possibility of ice formation. Additionally, a 36" strip of Ice & Water Shield is recommended at rakes.

All Brava Cedar Shake is tested as Class A when installed over tested fire-resistant underlayment.*

- **Minimum Underlayment – 30# ASTM D226 Type II Felt**
- **Recommended Underlayment – Synthetic Underlayment and Ice & Water Shield**
- **Underlayment for Class A Fire Rating – See Appendix F - Fire Ratings***

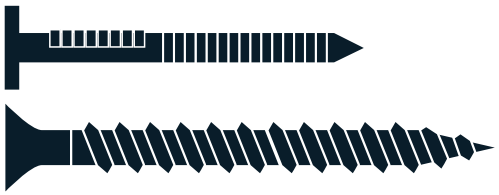
Low Slope Applications

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.

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. ≥ 1-3/4" Ring shank roofing nails or #8, #9, or #10 x ≥ 2" screws are required and should be selected based on application and code requirements. Nails must have a minimum shank diameter of 0.120" and a head diameter of at least 3/8". Screws must be a minimum of #8 gauge to comply with and validate testing performed using #8 screws. 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. Stainless steel fasteners are recommended for installations within 10 miles of a body of salt water.



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 3/4" 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)≥ 1-3/4" Ring Shank Roofing Nails or Two (2) ≥ 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.

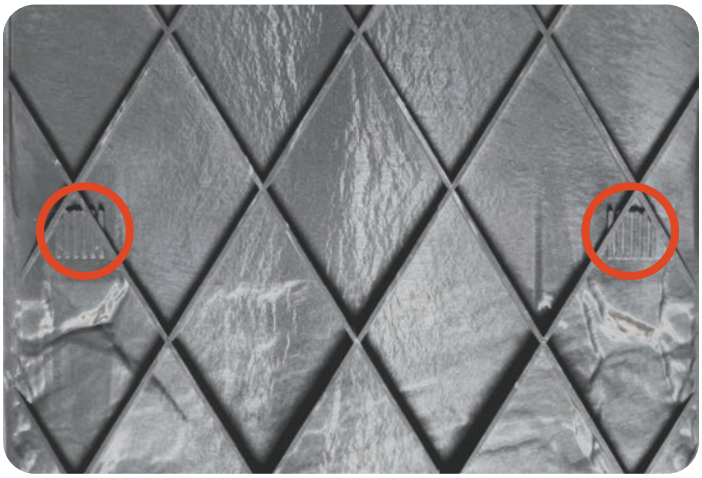


Figure 2.7.3 *Fastener pads (back)*

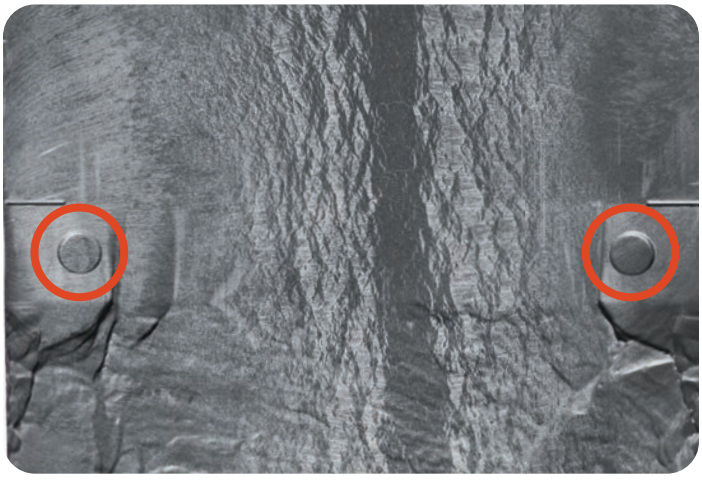


Figure 2.7.4 *Fastener locators (front)*

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

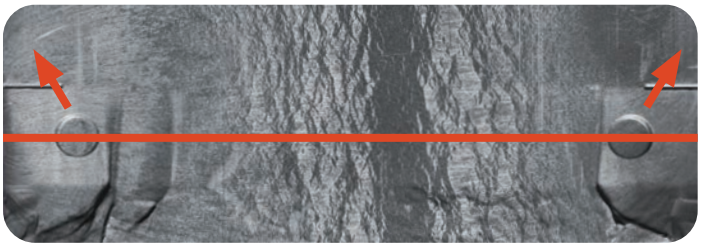


Figure 2.7.5 *Fastener Locator Line*

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

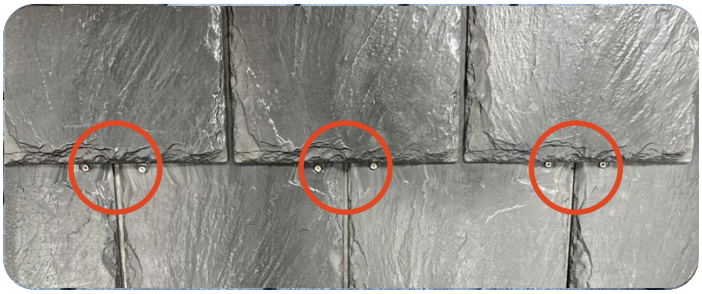


Figure 2.7.6 *Exposed Fasteners*

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. 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 –

See Appendix A – Wind Warranty Installation Requirements.

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.

Brava Technical Services has tested and approved OSI Quad, Geocel 4600 Hybrid, and MasterSeal NP1 for use with Brava Roof Systems. Given that Brava Roof Systems are manufactured using a Recycled Polymer Composite, many conventional roof sealants and adhesives may not adhere effectively. It is essential for installers to conduct a preliminary test with any adhesive or sealant on the current batch of Brava material to ensure adequate bonding and effectiveness prior to application. Approved Sealants: OSI Quad, Geocel 4600 Hybrid, MasterSeal NP1

3. Getting Started

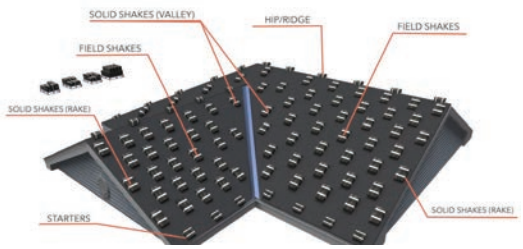
3.1 Measuring and Marking the Roof

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 from 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, slates from different bundles may be intermixed.

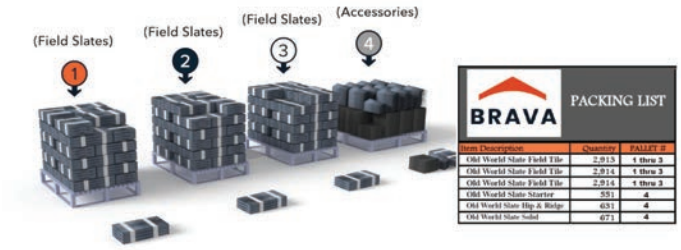


Figure 3.3.1 *Blend bundles from different pallets*



Figure 3.3.2 *Color blend from different pallets*

3.4 Material Inspection and Storage

Brava Slate and accessories should be inspected before and during installation for conformity and fit. If there are any tiles that fall outside 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 to avoid damaging the material with construction vehicles or 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 these parts of the roof assembly are not manufactured by Brava and do not fall under Brava's Limited Lifetime 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.



Figure 3.6.1 *Valley metal*

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 Slate 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.

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 Slates 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 Slate accessory at the valley. When cut, Field Slate's structural ribbing may be visible. Solid Slates are designed with a solid back and allow for clean lines and best appearance at cut edges. Alternatively, if Solid Slates are not used with 1 1/2" crimps, a "Double W" flashing may be used to cover exposed structural ribbing on cut Field Slates.

Open Valley ≥ 4" Opening
W-Style Center Crimp - 1"
Double W-Style Crimp - 1 1/2"

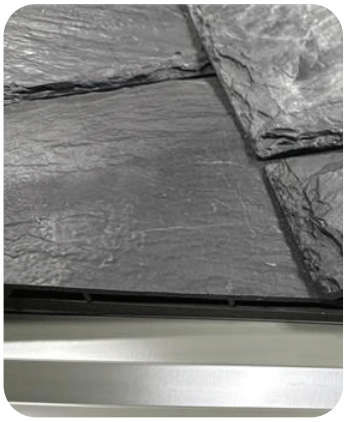


Figure 3.6.2 *Open valley without accessory Solid Slates*

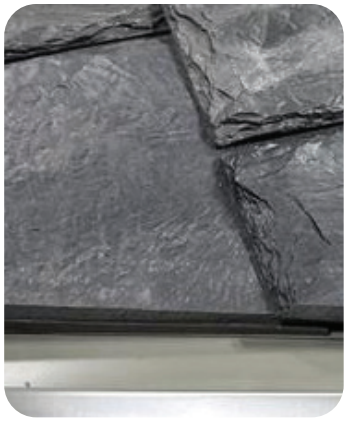


Figure 3.6.3 *Open valley with accessory Solid Slates*

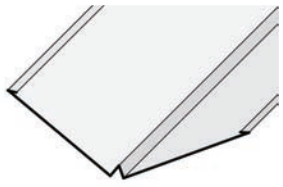


Figure 3.6.4 *"W" style valley metal for open and closed valleys*

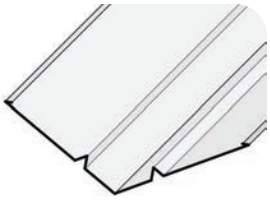


Figure 3.6.5 *"Double W" style valley metal option for open valleys*



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 slates 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. Brava Slate Installation Instructions

4.1 Starter and Slate Installation

Material should be stored covered to protect it from environmental and jobsite debris. Masonry work should be completed and cleaned prior to installation of Brava material.

1 **Snap chalk lines** to ensure straight courses. Snap lines for the Starter course and each consecutive course of slates. *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).*

PRO TIP: *Start at the rake with a cut Starter reduced to 10" wide. This helps prevent fasteners from landing in visible keyways on the first course of shake.*

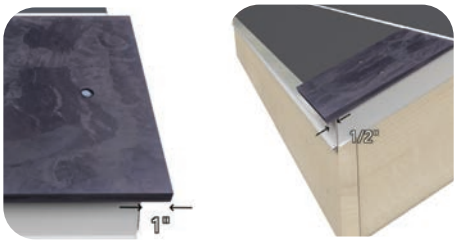


Figure 4.1.2

3 **Use Two Fasteners** for each Starter, Slate, and Accessory. **Ensure ≥ 3/4" fastener penetration** or completely through the deck. *See Section 2.7 (Fasteners).* **Ensure no exposed fasteners.**

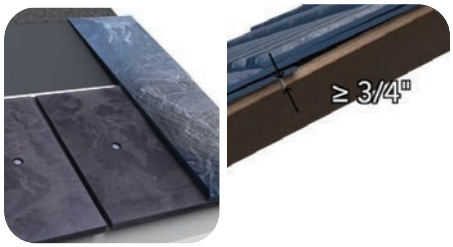


Figure 4.4.13

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

5 **Install Field Slate** first course flush with the Starter course Use an offset layout to ensure a **≥ 1 1/2" sidelap** for all slates and accessories. *See Section 2.4 (Keyway, Lap, and Overhang).*

Standard Offset is 6" course to course.

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

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

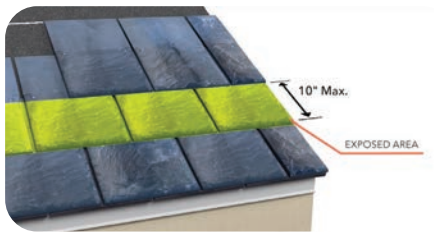


Figure 4.1.7

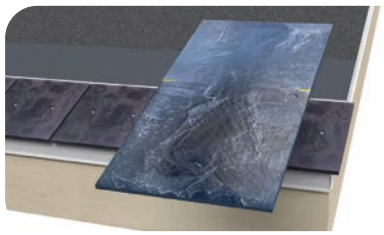


Figure 4.1.7

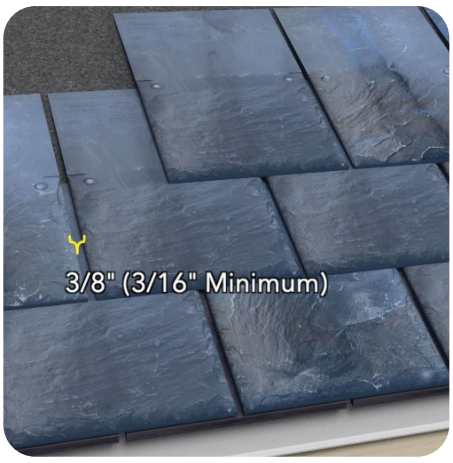


Figure 4.1.5

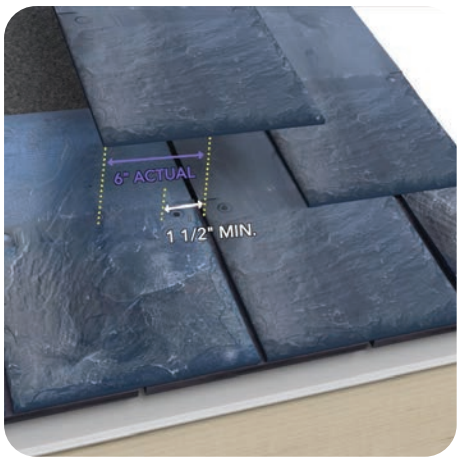


Figure 4.1.6

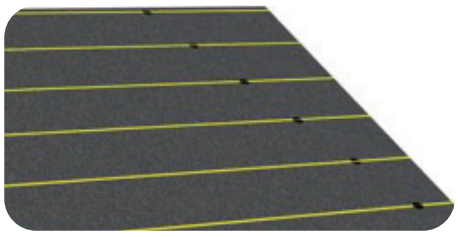


Figure 4.1.8

Multi Width Slate Installation

Brava Multi-Width Slate follows the same installation guidelines as standard Brava Slate (Single-Width Slate), including underlayment and decking requirements, fasteners, minimum 3/16" keyway spacing (3/8" recommended), minimum 1½" sidelap, and all other specifications and guidance. The only difference is in the layout using multiple slate widths. Each bundle includes 12 pieces: 3 6" slates, 3 9" slates, and 6 12" slates. Since there are twice as many 12" slates, installers must plan layouts that maintain proper proportions and meet appearance goals. Layout Options: – Randomized Pattern: Use a varied layout while maintaining minimum sidelap and hiding all fasteners. – Repeating Pattern: A 6", 12", 9", 12" repeating pattern may be used if a more structured look is preferred. As with standard Brava Slate, fasteners must not be visible in keyways, and the overall installation must ensure water-shedding performance and durability.



4.2 Valley and Rake Installation

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

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

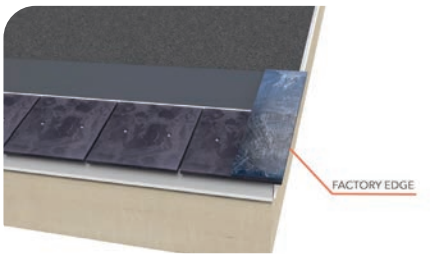


Figure 4.2.1

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

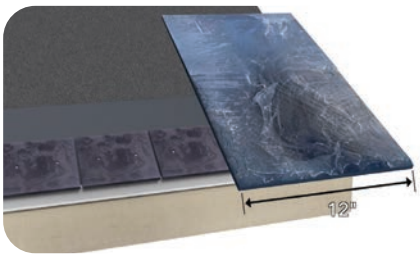


Figure 4.2.2

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



Figure 4.2.3 (Solid Slate at rake)

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*

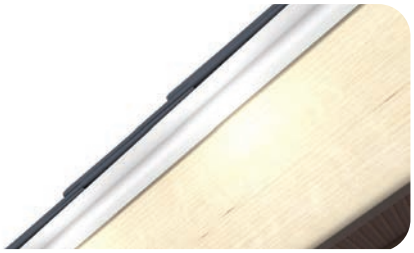


Figure 4.2.4

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 Slates.

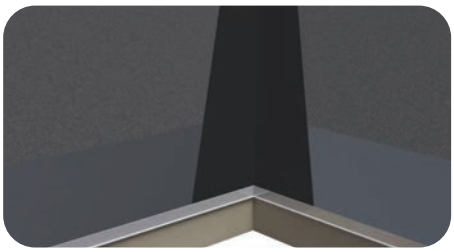


Figure 4.2.5

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

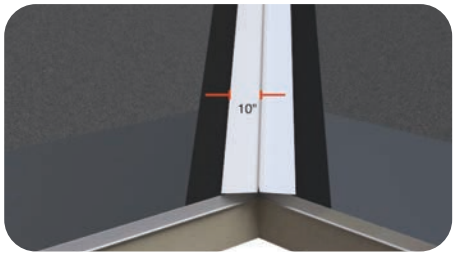


Figure 4.2.6

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

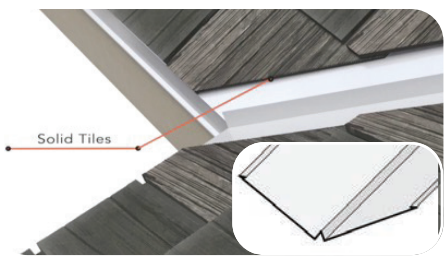


Figure 4.2.7

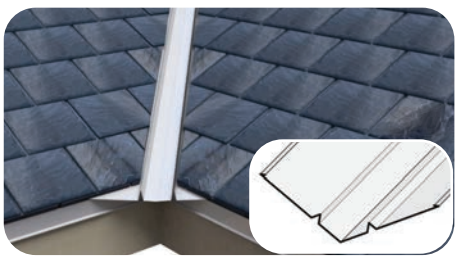


Figure 4.2.8

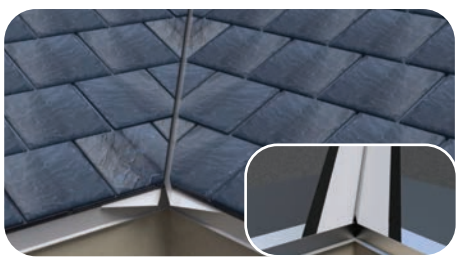


Figure 4.2.9

4.3 Ridge Installation

1 **Trim slates evenly and tightly at the hip and ridge.** Left and right side should be cut the same distance from (minimum 3/16") hip or ridge to allow for uniform installation. Brava Recommends a $^{3}/_{8}$" gap with a $^{3}/_{16}$" minimum gap for expansion.

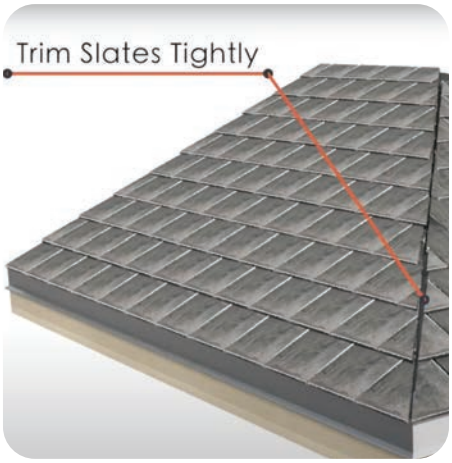


Figure 4.3.1

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.

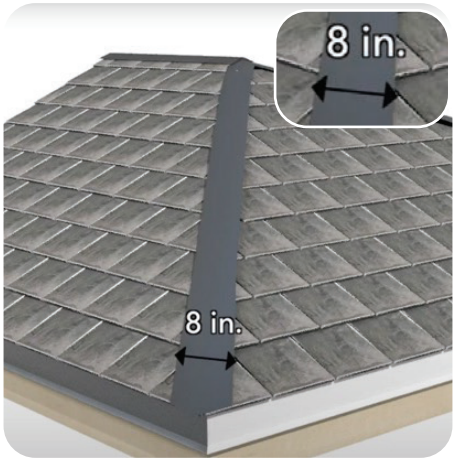


Figure 4.3.2

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

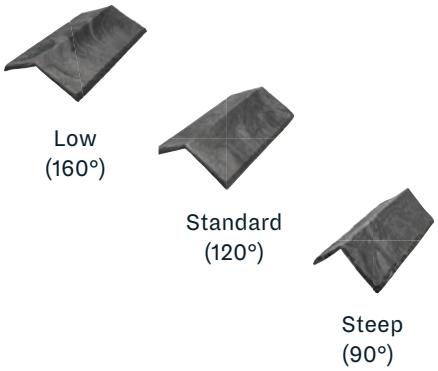
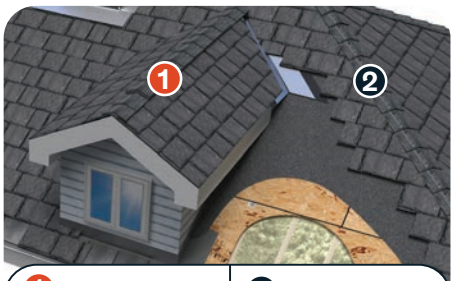


Figure 4.3.3

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 **nstall Hip/Ridge Caps with two fasteners** at the formed fastener locators penetrating ≥ 3/4" into the deck or completely through the deck.

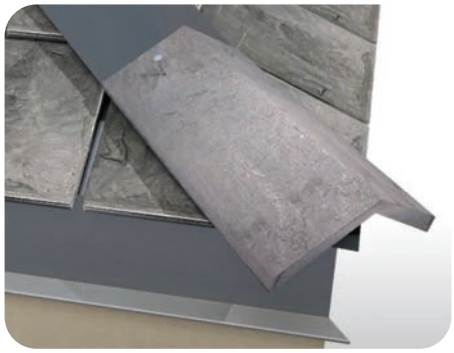


Figure 4.3.5

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



Figure 4.3.3

4.4 Penetrations and Chimney Flashing

Installation at Penetrations

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

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

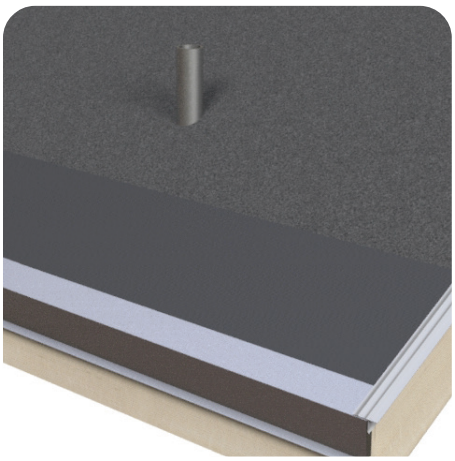


Figure 4.4.1

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

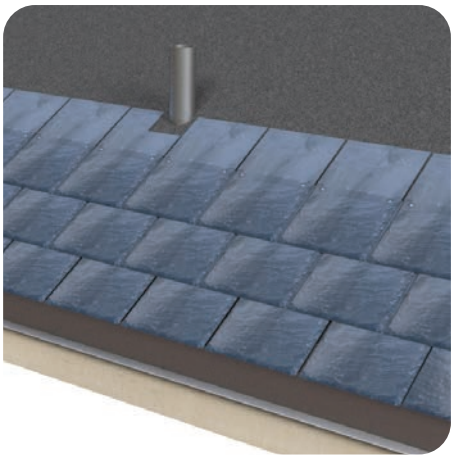


Figure 4.4.2

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

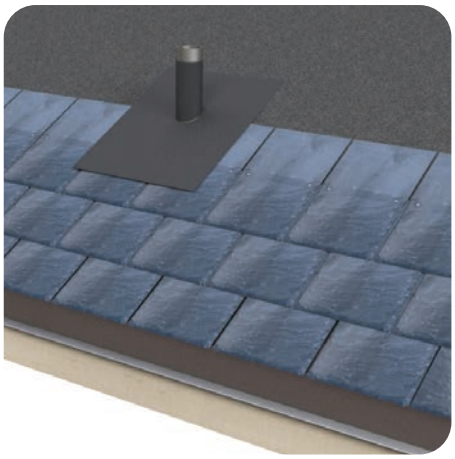
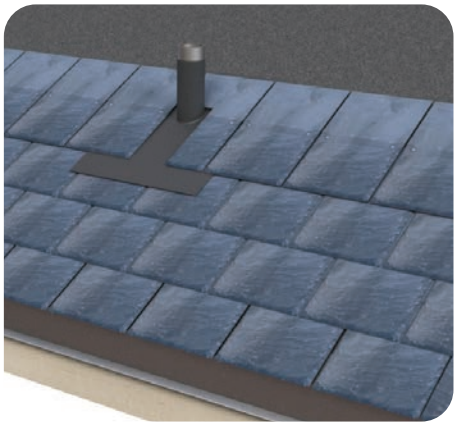


Figure 4.4.3

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



Do not place fasteners within 5" of the penetration. ***Figure 4.4.4***

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

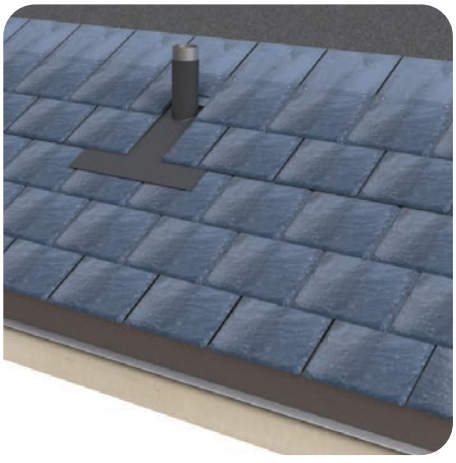


Figure 4.4.5

6 **Continue installing** following courses.

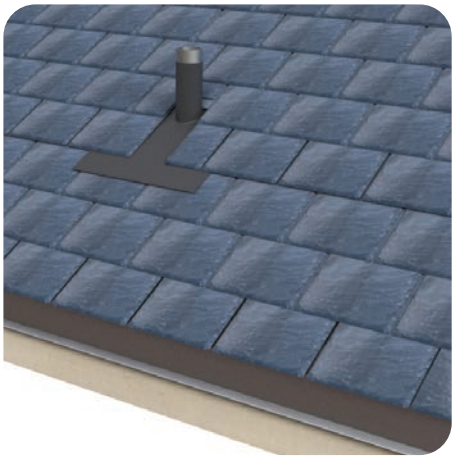


Figure 4.4.6

Installation at Chimneys

1 **Install Field Slates** 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 Slates.



Figure 4.4.10

5 **Continue installing slate courses and Step Flashings.**



Figure 4.4.12

6a Step flashings should overlap no less than 2" and extend under slates a minimum of 6".



Figure 4.4.11

7 **Install preformed metal Cricket**

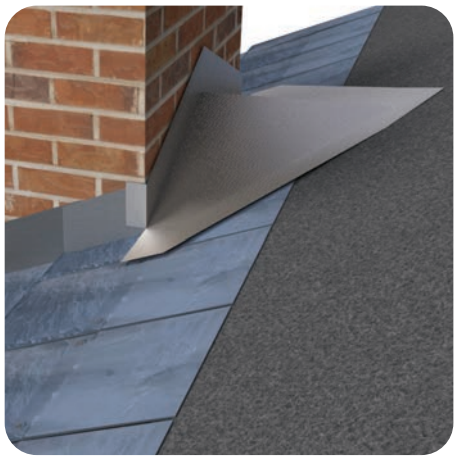


Figure 4.4.14

7a as required and install counter-flashing into sawcut reglets.



Figure 4.4.13

4.5 Roof Slope Transitions

This section provides installation instructions for two common slope transition types: steep to low / low to steep.

General Requirements

Flashing: Use corrosion-resistant metal flashing, minimum 12" wide, with ≥ 6" coverage in both directions. Flashing edges maybe embedded in sealant or butyl tape for added water resistance. Follow code and regional industry best practices.

Self-Adhered Underlayment: Install self-adhering underlayment (ASTM D1970 compliant) along the length of the slope, extending ≥18" upslope and ≥18" downslope from the transition.

Underlayment: Apply standard underlayment (or self-adhered as required) over the flashing, overlapping in accordance with manufacturer guidelines. See Section 2.6 - Underlayment.

NOTE: Additional Starters should be ordered for use along all slope transitions with a change in slope of 2:12 or greater (e.g., 6:12 to 8:12).

Steep to Low Roof Slope Transitions

Slope transitions where the pitch increases by 2:12 or more moving up the roof (e.g., 6:12 to 8:12).

1 **Install Slate to Transition** with ASTM D1970-compliant self-adhered membrane at the transition.

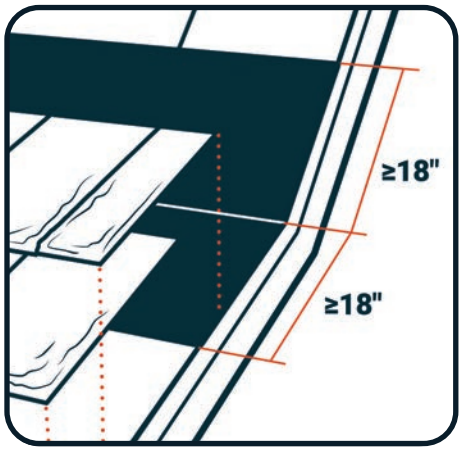


Figure 4.5.1

2 **Install Metal Flashing** with ≥ 6" lap over slates and ≥ 6"up the slope.

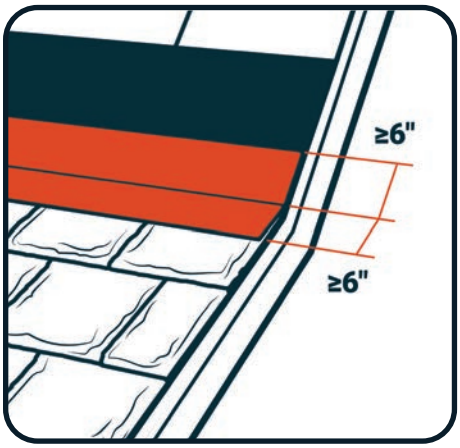


Figure 4.5.2

3 **Apply Standard Underlayment** lapping over the metal transition flashing ≥ 3". See Section 2.6 Underlayment

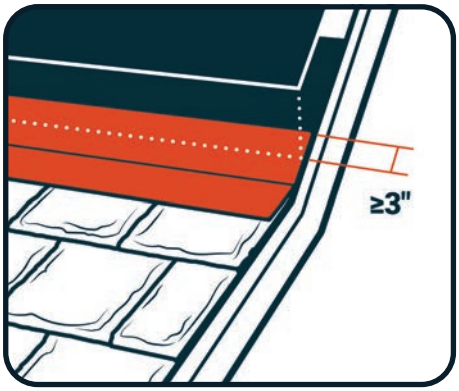


Figure 4.5.3

4 **Install Starter Course** flush with the transition line to begin the upslope roof section.

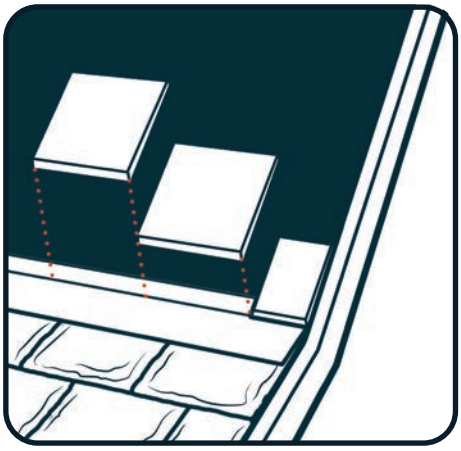


Figure 4.5.4

5 **Install First Field Course** laying Field Slates flush with the starter course per standard installation guidance.

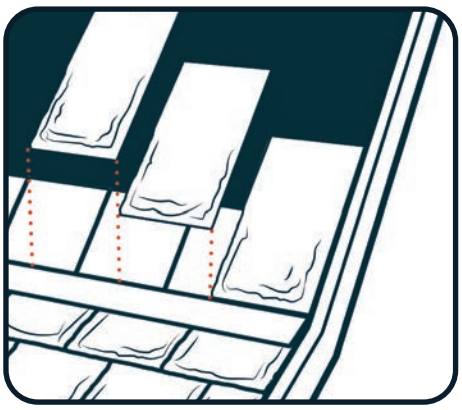


Figure 4.5.5

6 **Inspect and Seal Transition** Seal any exposed fasteners or penetrations. Confirm watertight installation.

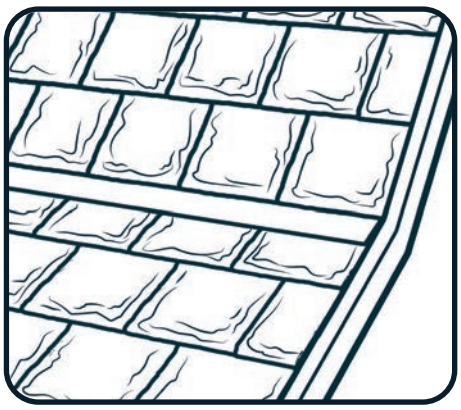
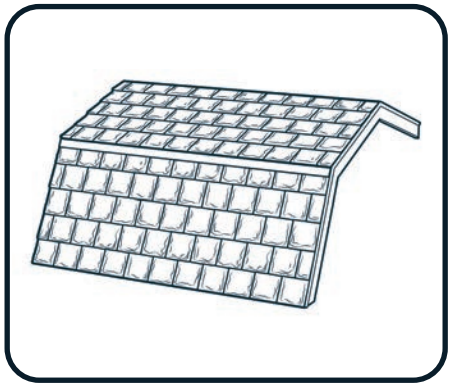


Figure 4.5.6

Low to Steep Slope Transitions

Slope transitions where the pitch decreases by 2:12 or more moving up the roof (e.g., 8:12 to 6:12). Also applicable for Mansard Roof Slope Transition or Roof Transition directly to Slate Siding.



1 **Install Slate to Transition** with minimum ASTM D226 Type II underlayment at the transition.

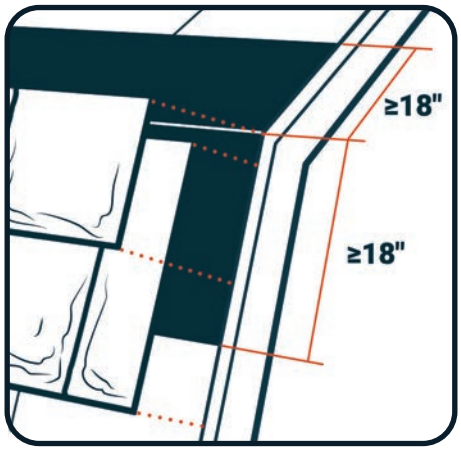


Figure 4.5.7

2 **Install Metal Flashing** with ≥ 4" lap over slates and ≥ 8" up the slope.

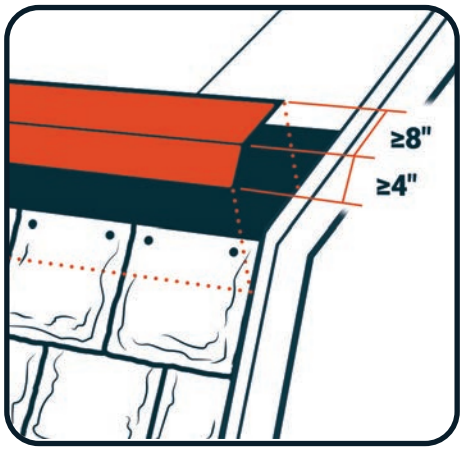


Figure 4.5.8

3 **Install Self-Adhered Underlayment** minimum ASTM D1970 lapping over the metal ≥ 3".

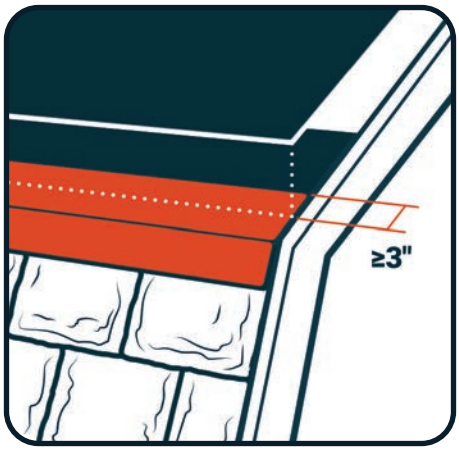


Figure 4.5.9

4 **Install Starter Course** with a 1/2" overhang of the transition line to begin the upslope roof section.

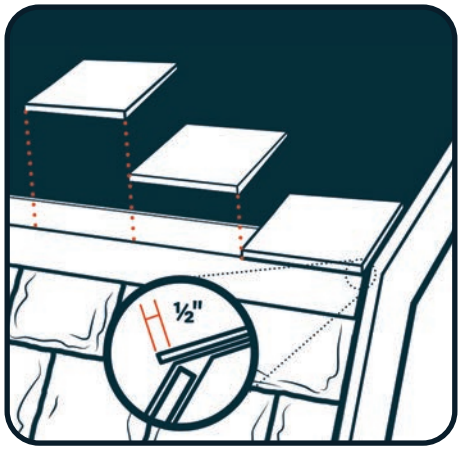


Figure 4.5.10

5 **Install First Field Course** laying Field Slates flush with the starter course per standard installation guidance.

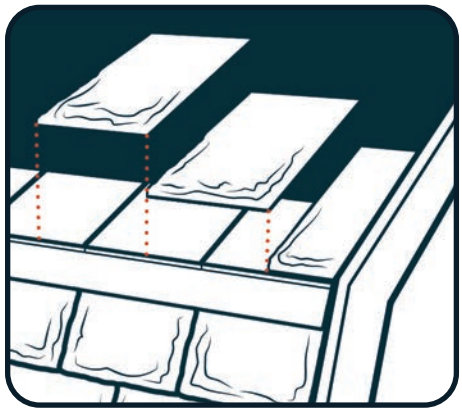


Figure 4.5.11

6 **Inspect and Seal Transition** Seal any exposed fasteners or penetrations. Confirm watertight installation.

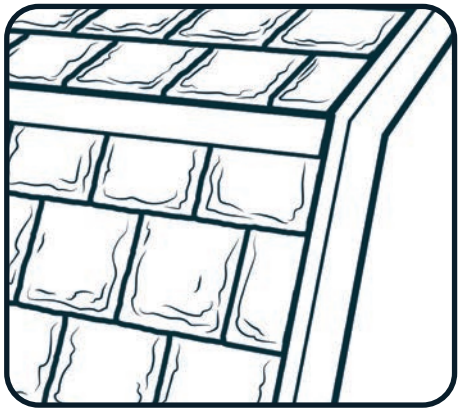


Figure 4.5.12

Appendices

Appendix A – Wind Warranty Installation Requirements

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 slate at the ridge *(See Appendix E – Swing Tape Method)*. This will usually set a slightly lower exposure and does not require additional material.

Table 1 - BRAVA Cedar Shake and BRAVA Slate - Wind Warranty Matrix

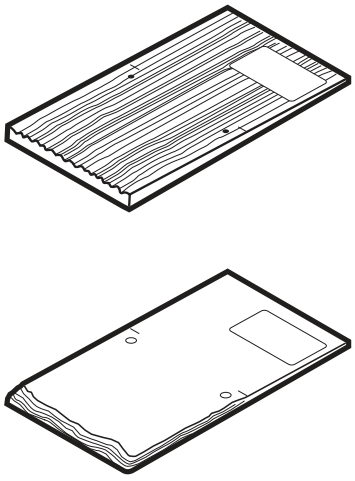
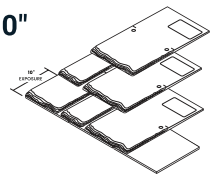
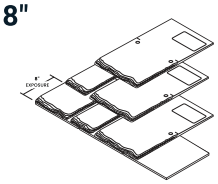
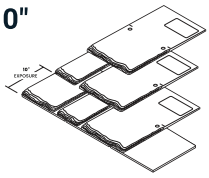
TILE	Fastener Requirements*	Maximum Exposure	Warranty Eligibility
	STANDARD  (2) 0.120" x ≥ 1¾" Ring Shank Roofing Nails	≤ 10" 	90 MPH 
	ALTERNATE  (2) 0.120" x ≥ 1¾" Ring Shank Roofing Nails	≤ 8" 	110 MPH 
	RECOMMENDED  (2) #8 x ≥ 2" Screw High Wind Installation	≤ 10" 	130 MPH 

Figure A.1

Appendix B – Install Accessories

Any accessories or products used in conjunction with Brava Slate should be installed according to the manufacturer's guidelines and in compliance with the applicable code and industry best practice. Brava Slate, 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 Field Services Representative.

Roof Vents

When installed according to manufacturer's specifications, many common roof and ridge vents are compatible with Brava Slate. Vents may be installed and used as with cedar shake, quarried 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 slates, 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 Slate. 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 Services. 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

Slates 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 of a subtle variation would be to use alternating exposures of 9 and 10". Ensure that maximum exposure does not exceed 10" or code requirements whichever is less.

Appendix D – Staggered Exposure

Slates 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 of a subtle variation would be to use alternating exposures of 9 and 10". Ensure that maximum exposure does not exceed 10" or code requirements whichever is less.



Figure D.1

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:

Exposure	Bundles per Square
4" exposure:	**~28.8** bundles per square
5" exposure:	**~23** bundles per square
6" exposure:	**~19.2** bundles per square
7" exposure:	**~16.4** bundles per square
8" exposure:	**~14.4** bundles per square
9" exposure:	**~12.8** bundles per square
10" exposure:	**~11.5** 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
   = (14.4 + 11.5) / 2 = 12.95 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.

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.

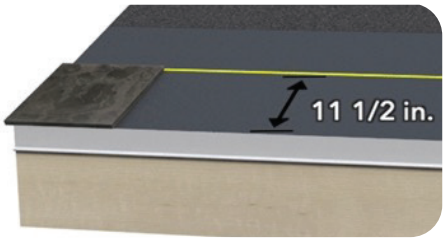


Figure E.1 *Use Starter to snap chalk line for ½" overhang at the eave.*

2 Snap a line 1 ½" from the ridge.

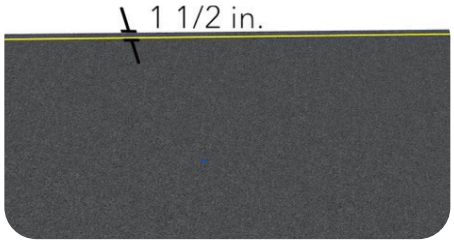


Figure E.2 *Snap a line 1 ½" from the ridge as illustrated.*

3 Mark maximum acceptable exposure on tape measure. Maximum exposure is 10" for Brava Slate 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.

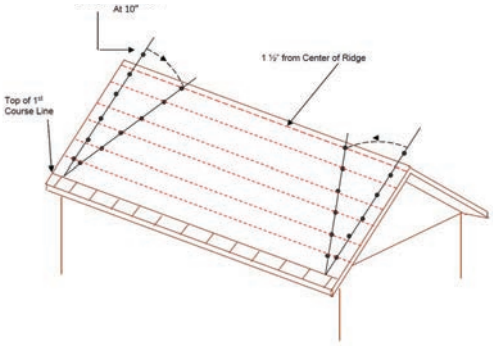


Figure E.4

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.

NOTE: *The measurements used in this section are used as an example. Exposure should be set based on product specs, design requirements, aesthetic preferences, and applicable code.*

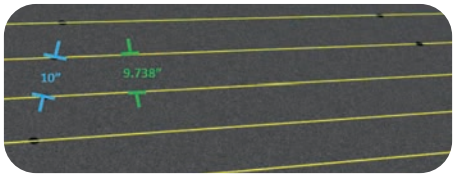


Figure 4.4.13

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 slate.

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 ratings. 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.

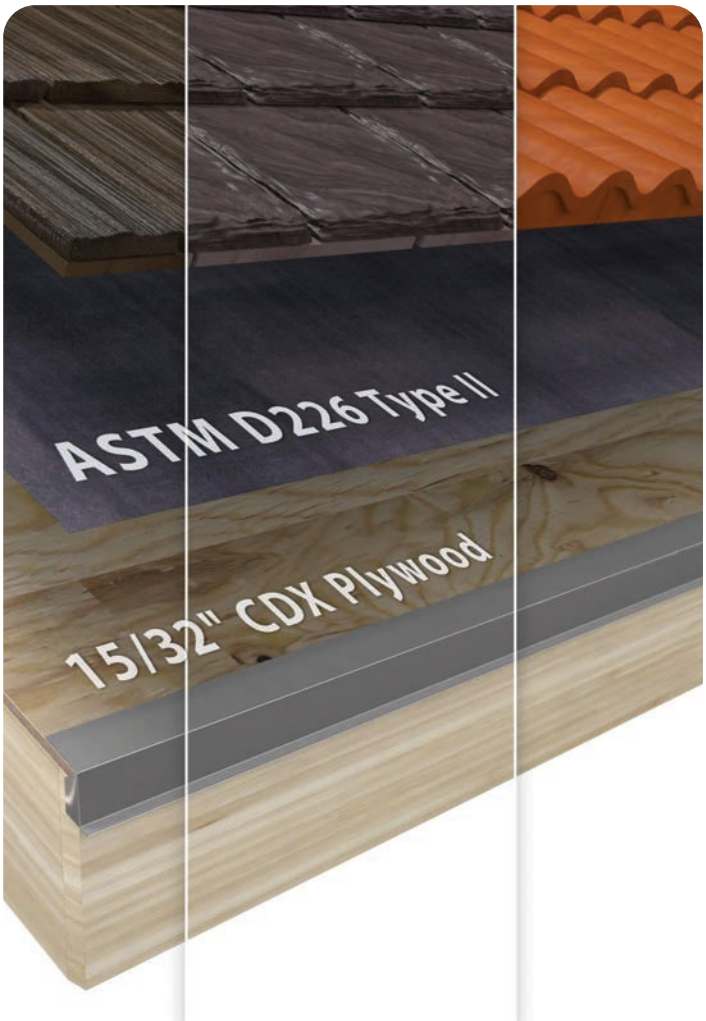
Tested Assembly
For a Brava product to achieve its designated fire rating, it must be installed using the specific underlayment with which it was tested. This ensures the roofing system qualifies as a tested assembly, meaning that the complete roof system, including the Brava product and the approved 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.

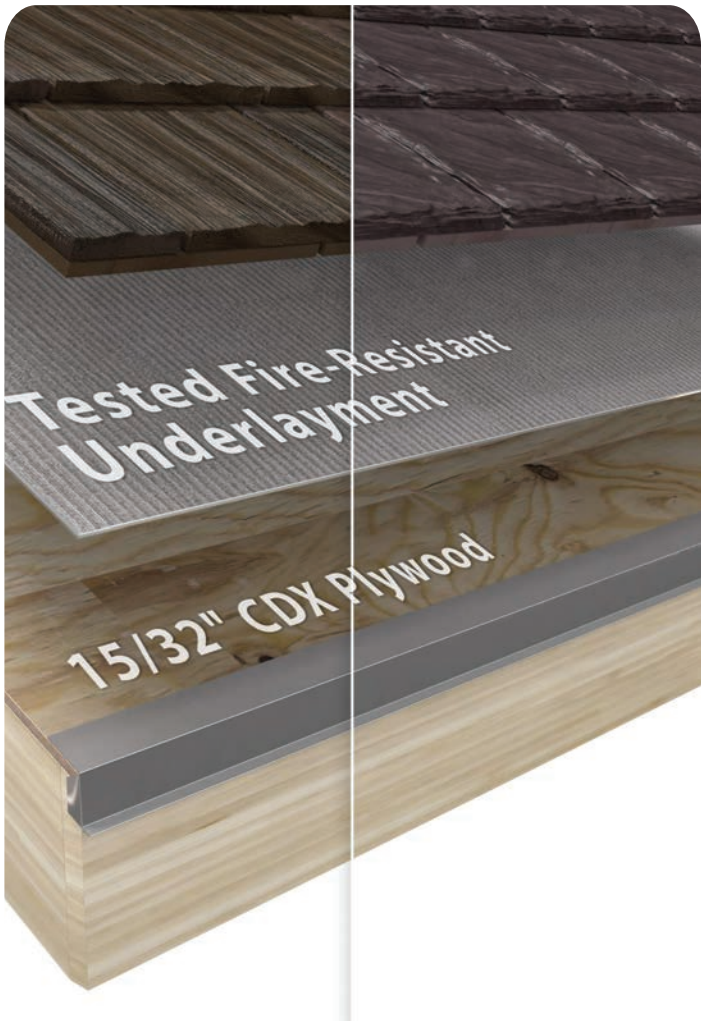
TESTED ASSEMBLY TABLE

Product Name	Fire Rating	Brava Material	Minimum Sheathing	Minimum Underlayment
Brava Cedar Shake 	Class A	Brava One	Minimum 15/32" Exposure 1 Plywood	Tested Fire-Resistant Underlayments: • Low-E ThermaSheet • Eco Chief Solarhide SRW
	Class C			Standard Underlayments: Minimum ASTM D226 Type II Asphalt Felt

Always verify code compliance source documentation and system components meet building code criteria and ensure building officials and inspectors have access to the Code Evaluation Report from which these tables were extracted. These tables and illustrations are not intended to replace source code compliance and testing documents.



Class C Assembly



Class A Assembly

BRAVA

Slate Installation Guide

Published January 1, 2026

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