The installation procedures demonstrated in this manual are recommended methods for the installation of the Boral Steel GRANITE-RIDGE Shingle roofing systems. They are not the only ways to install a Boral Steel system but are acceptable methods for the standard installation of the Boral Steel product. Contractors and installers should always use their professional judgment, and modify and tailor details to fit their specific installation and to meet local codes and ordinances. Since Boral Steel has no control over the actual installation of the product, Boral Steel assumes no liability for incorrect installation of its product or any personal injury that may occur while installing such product. Nor does Boral Steel express nor imply any warranty related to the installation of the product. Boral Steel’s liability with regards to the Boral Steel product is limited exclusively to its standard written limited warranty. Therefore, Boral Steel recommends that only professional roofing contractors, who have completed the Boral Steel Factory Training Program, should install the Boral Steel roofing system. Although a contractor has completed the factory training course, Boral Steel does not guarantee the success of the installation.
Boral GRANITE-RIDGE Shingle

Coverage = 44" x 14.25"

Panels per square (100 sq. ft.) = 24 pcs

Boral Shingle Cap

Coverage = 8" x 14"

Pieces per Box = 40
## GRANITE-RIDGE SHINGLE

### ACCESSEORIES

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Description</th>
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<tbody>
<tr>
<td>5 “V” Valley</td>
<td>Used at the eave</td>
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<tr>
<td>Starter Strip</td>
<td>Used at the eave</td>
</tr>
<tr>
<td>Rake/Roof-to-Wall</td>
<td>Used at rake edges and side wall in conjunction with Rake Cover or Z-Bar Attachment</td>
</tr>
<tr>
<td>Rake Cover</td>
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<td>Z-Bar Attachment</td>
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<td>Fasteners</td>
<td>As provided by Boral Steel ¾” Stitch Screws 2” Panel and Trim Screws (non-washer)</td>
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<tr>
<td>Valley Center Cover</td>
<td>Used at valley in conjunction with 5 “V” Valley and Char-Filter Foam</td>
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<tr>
<td>Char-Filter Foam</td>
<td>Used under Valley Center Cover</td>
</tr>
<tr>
<td>Head-Side Wall</td>
<td></td>
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</tbody>
</table>

*Other trims and accessories are available. Contact your local sales personnel for additional information.*
Tools

Tile Cutter
This tool is used to cut the panels both in length and width. The legs are removable for ease of handling. The blade is reversible and able to be sharpened.

Shake Brake
The brake can perform multiple tasks:

1. Make half panel bends up and down.
2. Bend full panels across the width.
3. Bend flat stock and modify existing flashing.
4. Complete taper bends for trim less details.

General Safety Notes:
The safety tips provided here are for general awareness of the user. Boral Steel assumes no liability or responsibility for incorrect use of the products or any personal injury that may be caused as a result of use.

- Select an open area and establish a safe working perimeter to set up tools. Instruct anyone near the safe working area.
- Inspect each tool before each use. Do not use a tool that is not in good working condition. Regularly maintain tools for best performance.
- Wear personal protective equipment.
- Be aware of “pinch points” and keep hands and clothing away from such.
- Use the correct tool for the job.
Storage
Product must be kept covered, well ventilated and dry until installed. If the stacked tiles become wet, they should be immediately separated and dried. Refer to MCA minimum performance guidelines for more detailed standard practice information relating to site storage of metal roofing.

Roof Traffic
The GRANITE-RIDGE Shingle panels by Boral Steel are installed from the eave up. When walking on the installed panels, walk on the flat areas of the shingle where the shingle has the most support from the roof decking. Avoid stepping on side laps.

Footwear
When it is required to walk on the Boral Steel tiles, rubber soled athletic type shoes or similar soft soled footwear is recommended to avoid damage to the finished product and to provide grip for safety.

Roof Pitch
The Boral Steel GRANITE-RIDGE Shingles are designed to be installed from a minimum of 4:12 pitch up to a vertical face in all climates. For slopes under 4:12, the tiles act only as a decorative roof covering.

Fasteners
All fasteners (Screws or Nails) used on a Boral Steel system shall meet or exceed the corrosion resistant standard as defined in ASTM B-117, (1,000-hr minimum Salt Spray Corrosion Resistance).

Underlayment
The minimum underlayment for the Boral Steel system is a single layer of ASTM D226 #30 asphalt saturated felt. The exception to this condition will be in areas of extreme weather conditions where the underlayment should be of a type required by the local building code and official.

Galvalume
The Boral Steel Stone Coated Steel Roof System is produced exclusively from long lasting Galvalume Steel. The Galvalume coating will react unfavorably if in direct contact with lead or copper in a wet environment. Rain water run-off from copper roofs onto a Boral Steel Roofing should be avoided as the run-off can be aggressive by nature and may attack the finishes. Only approved fasteners should be used. Please consult the technical department for recommendations.

Use of Fasteners in Saltwater Areas
All exposed fasteners used for the installation of Boral Steel Roofing products within one mile of non-freshwater properties must be stainless steel.

Severe Weather Conditions
If the area to which the Boral Steel panels are to be installed is prone to severe ice, snow, water or wind, additional measures may be required.

Installation Labor
A minimum two-man crew is recommended from start to finish. This will provide a cost effective, quality installation. A qualified two-man crew is generally able to install a minimum of one square (150 sq. ft.) per hour under normal circumstances.
When installing a GRANITE-RIDGE Shingle system:

1. Begin with code compliant underlayment (minimum ASTM D226 #30 felt)
2. Install Starter Strip, insuring that the underlayment finishes on top of the Starter. In extreme weather areas, high rain or snow fall, the underlayment may run below and then be stripped in over the top to sandwich the Starter.
3. Install Rake/Roof-to-Wall at rakes and walls
4. Install Rake Cover onto the Rake/Roof-to-Wall
5. Install valley
6. Begin laying panels from the bottom left and work to the right and up the roof
7. Lay field panels with the correct offset/stagger
8. Install finish trim and flashing
9. Caulk and seal all flashings
10. Touch-up any areas that may be required

To avoid adverse corrosive effects caused by dissimilar metals, COPPER and LEAD flashings should not be used with the Boral Steel roof products.
1. **Re-roof:**

   1. Remove all existing roofing material.
   2. Dry-in with a minimum ASTM D226 #30 felt underlayment in proper “shingle” method as per manufacturer. In cold regions, a self-adhering underlayment is required at perimeters and valleys.

2. **New Construction:**

   1. Ensure roof decking meets the local building code requirements.
   2. Install a minimum ASTM D226 #30 felt underlayment according to local building code requirements and manufacturer specifications.
   3. Install valley materials including water barrier underlayment.
   4. Install ice and water shield at all valleys, rakes and eaves.

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**Notes:**

1. Make sure deck attachment is to code but at a minimum 8d x 2 3/8” Ring Shank Nails spaced 6” O.C.

2. Minimum underlayment should be ASTM D226 Type II #30 felt fastened according to code.

3. Where fire barrier is required UL listed fire barrier with valid evaluation report is approved when installed according to code and ICC report.

4. Local building codes govern.
1. Remove all the existing roofing and inspect the roof decking to ensure it meets local building codes.
2. Install the Starter Strip. Use a chalk line to ensure that the Starter maintains a straight line across the eave. Fasten the starter every 16”.
3. At valleys, rakes and eaves, install peel and stick underlayment as per local code and manufacturer specifications.
4. Cover the roof decking with minimum ASTM D226 #30 felt. In areas of ice damming or wind driven rain, peel and stick underlayment should be used.
5. Insure that the underlayment finishes on top of the Starter Strip.
1. Install the uncoated Rake/Roof-to-Wall up the gable/rake edge. Run fasteners where indicated, 16” O.C.
2. Extend Rake/Roof-to-Wall a minimum of 1/2” beyond the starter at the eave.
3. Seal the Rake/Roof-to-Wall to the Starter Strip.
4. When the rake edge is longer than 10’, notch and lap the Rake/Roof-to-Wall a minimum of 3”
5. When the rake is longer than 10’, stagger the Rake Cap and the Rake/Roof-to-Wall so that the seams do not align with each other.
1. Extend the 5 “V” Valley pan a minimum of 1/2” beyond Starter Strip.
2. Install 5 “V” Valley, centered in valley.
3. Seal valley pan to Starter Strip.
4. Fasten valley pan a minimum of 24” O.C. up both sides of valley.
5. When valley length is over 10’, lap and seal the joint a minimum of 6”.

Fasten and seal in outer channel
Place sealant
1. **Notch the left edge nose hook of the shingle where it enters the Rake/Roof-to-Wall to insure drainage of the rake detail. The notch must be the full width of the Rake/Roof-to-Wall.**

2. **At all gables, roof to walls and valley panels, cut the fastening strip at a 45-degree angle, “dog-ear”, to prevent contact into the drainage channels.**

3. **At the eave and starting from left to right, begin installing the GRANITE-RIDGE Shingles. Take care to interlock the nose fully into the Starter Strip.**

4. **Fasten the panel using SEVEN (7) fasteners into the fastener strip. Fasteners must penetrate the roof decking a minimum of 3/4".**

**NOTE:** When installing any panel except the first one of each course, it is **VERY** important to bend the shingle at the horizontal step feature to a minimum of 90 degrees. This is to insure a better fitting joint and to prevent “fish-mouthing” of the side lip.

5. **At the bottom of all rake to wall and valley exits, clip and fold under the nose of the shingle to allow drainage.**

**NOTE:** When installing the GRANITE-RIDGE Shingle, it is very important to install the panels in a straight and uniform course. Always be sure to install each shingle fully into the Pittsburg seam.
Chimneys, skylights and roof to walls are flashed using the Rake/Roof-to-Wall (R/R-to-W) and the Z-Bar Attachment at the side walls, 110-degree Headwall Flashing is used at the head walls and saddles are used at the back of the details.

1. Measure and notch the Rake/Roof-to-Wall to provide flashing behind the detail and extend the R/R-to-W beyond the front of the curb to provide drainage. R/R-to-W must exit onto the top of the shingles below the detail.
2. Measure and cut the shingles to finish into the R/R-to-W. Ensure to “dog-ear” the fastening strip.
3. Install the Z-Bar Attachment onto the R/R-to-W. If there is a builder installed receiver, finish up and under the flashing. If there is no flashing, the Z-Bar Attachment may be fastened and sealed using the caulking bead.
4. Install the 110-degree Headwall Flashing over the trimmed shingles and seal down to the shingles as well as at the top of the flashing.
1. Measure and cut the Char-Filter Foam to the length of the valley.
2. Measure and cut the Valley Center Cover to the length of the valley.
3. Install the Char-Filter Foam and the Valley Center Cover, centered down the valley pan.
4. Fasten Valley Center Cover with two stitch screws (3/4” maximum), at each full shingle course/joint.

NOTE: Take care to not touch or penetrate the valley pan with the Valley Center Cover fasteners.
1. Measure and cut the left side shingles to finish flush to the hip framing. Install all left-side shingles before moving to the right-side of the roof.
2. Measure and cut right side shingles to finish a minimum of 1 1/2" beyond the hip framing. Install all right-side shingles.
3. Install sealant under the extended shingles.
4. Fold the extended right-side shingles over tight to the left-side shingles.
5. Install the Hip & Ridge Caps over the formed hip panels.
   a. Bend caps to roofing angle.
   b. Using two screws of sufficient length to penetrate the roof sheeting a minimum of 3/4", fasten caps in a straight line.
6. Install successive caps, ensuring to fully interlock hooks and maintain a straight line.

Left side panel cuts off at hip intersection with the right side panel overlapping over the hip intersection and left panel by approximately 2 inches.

**Note:**
This detail can also be used for “non-vented” ridge.

Optional Hip and Ridge detail:
1. Measure, cut and install both sides of hip shingles tight to the hip framing.
2. Place a 5”-6” wide high temperature peel-n-stick on top of the hip or ridge shingles.
3. Cover with Hip & Ridge Cap as normal.

**NOTE:** Ensure that peel-n-stick is not exposed from under the cap.
The Short Course Cleat/Reglet is available to provide for offset eaves, extended rakes or uneven eave lines.

1. Identify the minor eave length. (least visible)
2. Align the Short Course Cleat with the adjacent Starter Strip.
3. Set cleat in a bed of sealant and fasten every 6”.
4. Install shingles as if the cleat was the hook of the shingle.
1. Cut a hole of sufficient size to allow the Pipe Jake Tray to interlock onto the shingle below.
2. Apply an upside-down “U” of sealant to allow for any drainage.
3. Install Pipe Flashing onto the penetration.
4. Apply an upside-down “U” of sealant to allow for any drainage.
5. Cut a hole into the GRANITE-RIDGE Shingle tight to the Pipe Flashing.
6. Install the GRANITE-RIDGE shingle, ensuring that the joint is fully engaged.
7. Seal and stone chip the hole of shingle.
8. Seal and stone chip the top of the Pipe Flashing.
If a side lap has popped up to form a “fish-mouth” of the joint, the following repair can be made.

1. Open the joint slightly to allow access to clean and seal the opening.
2. Apply a small bead of sealant along the full width of the joint. Ensure that the sealant is not exposed on surface.
3. Bring the panels back together.
4. Fasten the joint together by either:
   a. Running a screw of sufficient length to penetrate the decking to the right of the joint, ensuring not to penetrate the lower panel and seal and stone coat the screw head.
   b. Or, running a stitch screw into the upturn of the center rib and then seal and stone coat the screw head.