

Barrel Vault Batten Install Guide

Battens over Optional Counter Battens



BARREL VAULT Tile

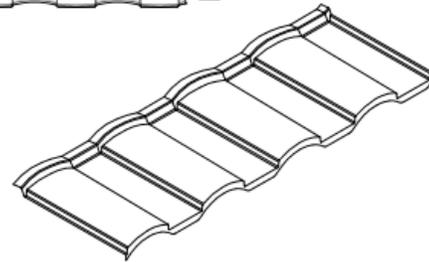
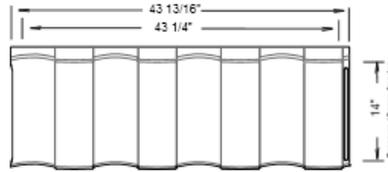
Actual Size= 43 13/16" x 15 5/8"

Exposure= 43 1/4" x 14"

Weight= 5.4lbs. per panel

Panels per square (100 sq. ft.) = 23.8 pcs

Weight per square= 130 lbs.

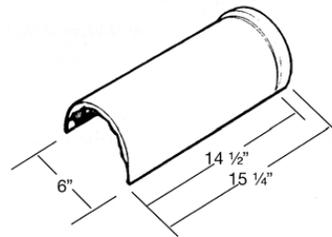


Mission Cap

Actual Size= 15 1/4" x 6"

Exposure= 14 1/2" x 6"

Weight per cap= 1lb.

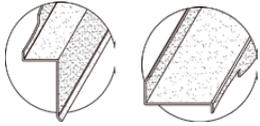
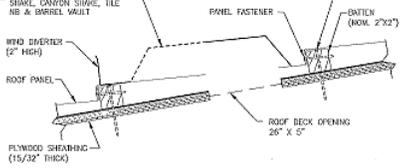


BARREL VAULT

The BARREL VAULT is designed to simulate traditional Spanish tile. The profile gives a traditional look of a spanish "S" tile appearance and adds strength and durability making it a very walkable stone coated steel roof.

The installation procedures demonstrated in this manual are recommended methods for the installation of the Boral Steel BARREL VAULT battenless roofing system. 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 at all times use their professional judgment, and modify and tailor details to fit their specific installation and to meet local codes and ordinances. Due to the fact that 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 lifetime 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.

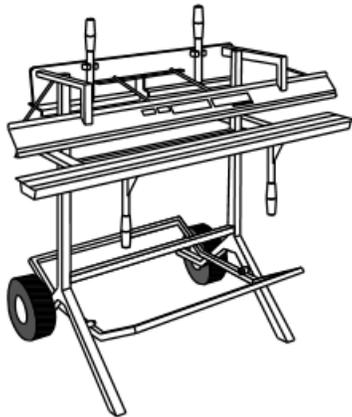
Parts and Accessories

<p>Stone Coated Valley (6")</p>	
<p>Bird-stop 3 ½" and 5" (top and bottom) Matching foam closures required</p>	
<p>Z-bar (3" or 5")</p>	
<p>Chimney Saddle (18.5" wide)</p>	
<p>Flat Sheet</p>	<p>16" wide Granule coated on one side</p>
<p>Ridge Vent</p>	<p>As provided by Boral Steel (or similar to Python) 3" Python</p>
<p>Fasteners</p>	<p>As provided by Boral Steel ¾" Stitch Screw 2" Panel Screws (non-washer) 2 3/8" (for battens and panels) and 3 ¼" Ring Shank Nails (for battens)</p>
<p>EZ Vent</p>	



Tile Cutter

This tool is used to cut the panels both in length and width. The legs are removable for ease of handling; the cutter adjusts for left or right-handed use. The blade is reversible and able to be sharpened.



Panel 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 trimless details.

General Safety Notes:

The safety tips provided here are for general awareness of the user. Boral Steel Roofing Technologies 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 in the vicinity of 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.

General Information

Batten Only Install

When installing a batten only project, all details are the same as developed herein, save the use of the counter battens and 1"x4" framing at the hips, rakes, valleys and ridge are omitted.

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 Batten tiles by Boral Steel are installed from the ridge down. When walking on the installed tiles, walk on the front edge of the low sections where the two rows come together and are attached to the battens. 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 tile is designed to be installed from a minimum of 4:12 pitch up to a vertical face in all climates and down to 3:12 pitch in warm weather climates. For slopes under 3:12, the tiles act only as a decorative roof covering. In this type of installation please consult our technical department (1-800-237-6637) and the local building officials.

Underlayment

Underlayment is generally required by most building codes. When allowed by the building code, underlayment is not required in re-roofing over existing composition roofs when the existing roof is

in acceptable condition to act as the roofs underlayment. 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 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 Roof should be avoided as the run-off can be aggressive in nature and may attack the finishes. Only approved fasteners should be used. Please consult the technical department for recommendations.

Pressure Treated Battens

The use of copper based pressure treated lumber should NOT be used when installing Boral Steel roofing products. The use of such will void the warranty offered by Boral Steel. Any questions call our technical department at 1-800-237-6637.

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. Please contact the Boral Steel technical department for more detailed procedures 1-800-237-6637.

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 (100 sq. ft.) per hour under normal circumstances.

Best Installation Sequence

When installing on a counter batten and batten system:

1. Begin with code compliant underlayment (minimum #30 felt)
2. Install 1"x4" framing and counter battens fastened from the bottom up, attached to building structural members
3. Install panel battens from the bottom up at correct spacing, use batten spacers
4. Begin laying panels from the top and work down (Install the first full course of panels below the short course at the ridge first) **BARREL VAULT panels MUST be installed Left to Right**
5. Lay field panels with the correct offset/stagger to cover major areas of the structure quickly (including sub-panel for pipe flashings)
6. Install the detail panels at hips, rakes, valleys and ridge
7. Install trim and flashing
8. Caulk and seal all flashings
9. Touch-up any areas that may be required

Roof Preparation

*Boral Steel BARREL VAULT Tile can be installed over composition shingle or over solid sheathing (solid sheathing will require code approved underlayment).

1. Re-roof over composition shingles, the procedures are as follows:

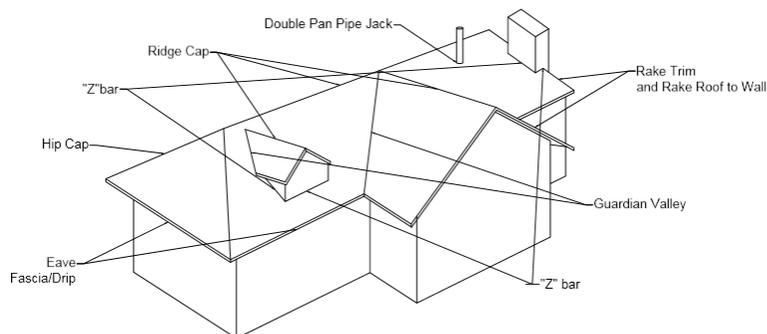
1. Cut back existing shingles flush with the perimeter of the roof.
2. Remove existing drip edge.
3. Remove hip and ridge cap.
4. Dry-in with a minimum #30 felt underlayment in proper “shingle” method as per manufacturer.

2. New Construction or full Removal of existing roof, procedures as follows:

1. Remove all existing roofing materials to deck. Ensure deck is to local code.
2. Install new minimum #30 felt underlayment according to local 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.

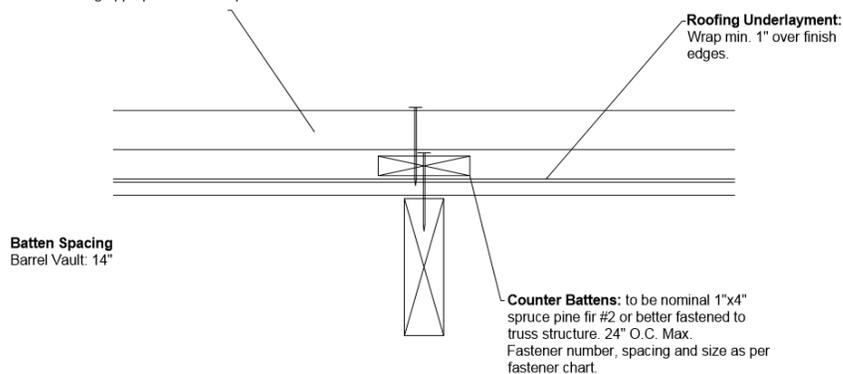
Notes:

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.

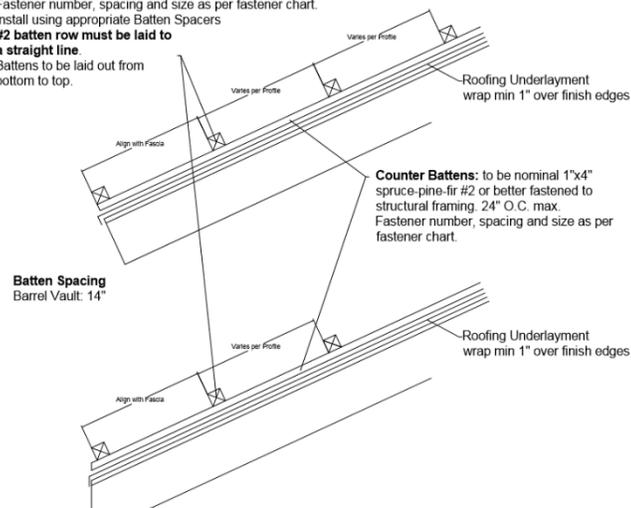


Counter Batten and Batten Install Detail

Battens: to be nominal 2"x2" spruce pine fir #2 or better fastened to counter battens. Fastener number, spacing and size as per fastener chart. Install using appropriate Batten Spacers.



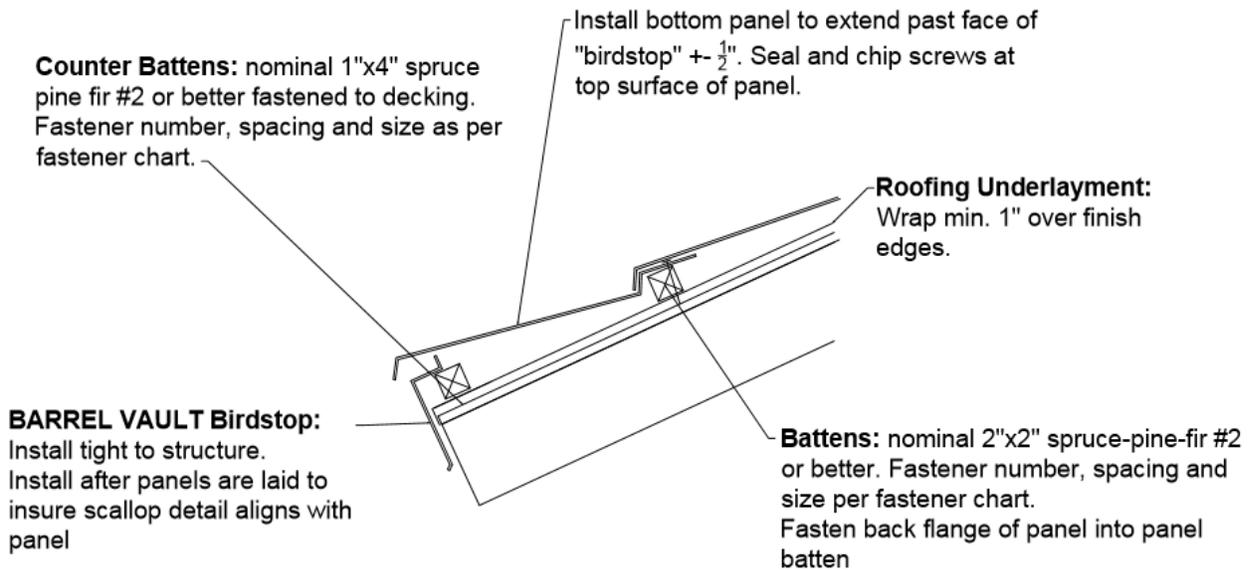
Battens: to be nominal 2"x2" spruce-pine-fir #2 or better fastened to counter battens. Fastener number, spacing and size as per fastener chart. Install using appropriate Batten Spacers. **#2 batten row must be laid to a straight line.** Battens to be laid out from bottom to top.



Counter Battens and Battens:

1. Lay 1"x4" counter battens over roof trussing (Maximum 24" O.C.) bottom of counter batten is to be in line with eave fascia
2. Fasten counter batten with fastener of sufficient length to penetrate truss by min. 1" twelve inches on center
3. Install first row of battens even with eave and counter batten
4. Fasten battens with fastener of sufficient length to penetrate counter batten by min. 1" If no counter battens are use, battens must be fastened into the roof trussing with penetration of fastener a 1" min
5. Install second row of battens at 13 3/4" (this measurement may change depending upon the eave line.
6. If eave line is irregular, second row of battens can be adjusted to allow an average of 1/2" overhang of bottom panel
7. All successive battens spaced at 14" as spaced by the Boral Steel Batten Spacers
8. Batten ends must end over a counter batten

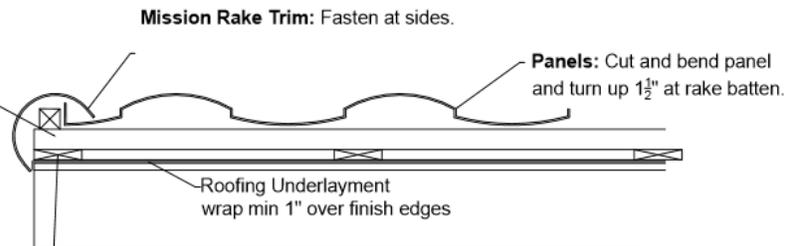
Eave Detail



1. The bottom Bird-stop is installed after the BARREL VAULT panels are laid to help align the die-cut trim
2. Overlay the bottom panel so that the Bird-stop can be slid to the appropriate location in the panel profile
3. Fasten the Bird-stop into the 2"x2"
4. Install bottom panel. Fastener to enter the top of the panel, away from the water channel. Caulk and chip the screw

Rake Trim Detail

Battens: to be nominal 2"x2" spruce pine fir #2 or better fastened to counter battens. Fastener number, spacing and size as per fastener chart. Install using appropriate Batten Spacers.

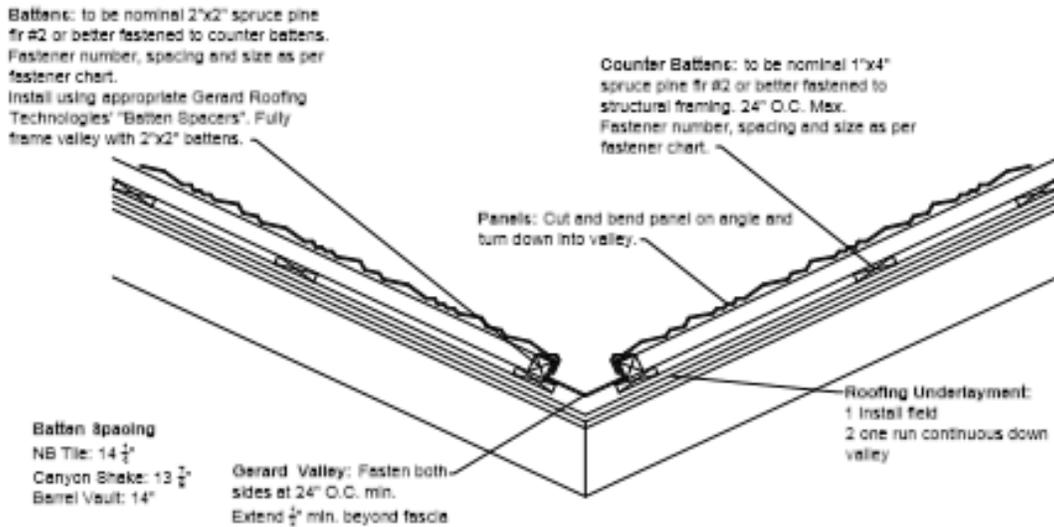


Counter Battens: to be nominal 1"x4" spruce pine fir #2 or better fastened to structural framing. 24" O.C. Max. Fastener number, spacing and size as per fastener chart.

Batten Spacing
Barrel Vault: 14"

1. Install 2"x2" rake batten. Inside edge of rake batten should measure 3" from the rake fascia
2. Fasten rake batten into battens with ring shank nails or screws
3. Cut BARREL VAULT panel to the correct length. **DO NOT CUT PANEL WITH SAW OR GRINDER**
4. Fold BARREL VAULT up at the rake batten a minimum of 1 1/2"
5. Install Mission Trim tight to the BARREL VAULT turn up (for a tighter fit the Trim may be formed at the "hugger" bend to square the cap)
6. Fasten caps with two fasteners in the rake and one into the rake batten on the top of the cap. Fasten panels as required

Stone Coated Valley Trim Detail



1. Frame valley with two (2) 1"x4" counter battens
2. Place 2"x2" nominal battens spaced 6" O.C. centered in valley trough
3. Install 6" stone coated valley fastened 24" O.C. on both sides
4. Measure, cut and form panels to fit valley angle **DO NOT CUT PANEL WITH SAW OR GRINDER**
5. Turn 1 1/4" of panel into the valley pan
6. Fasten panels as required (DO NOT fasten in valley trough)

NOTE: valley can be formed with a closed detail

7. The same technique is used but with the panel turn downs meeting in the center of the valley pan

NOTE: other valley material is available (see full install manual for details or contact the Boral Steel Technical Staff)

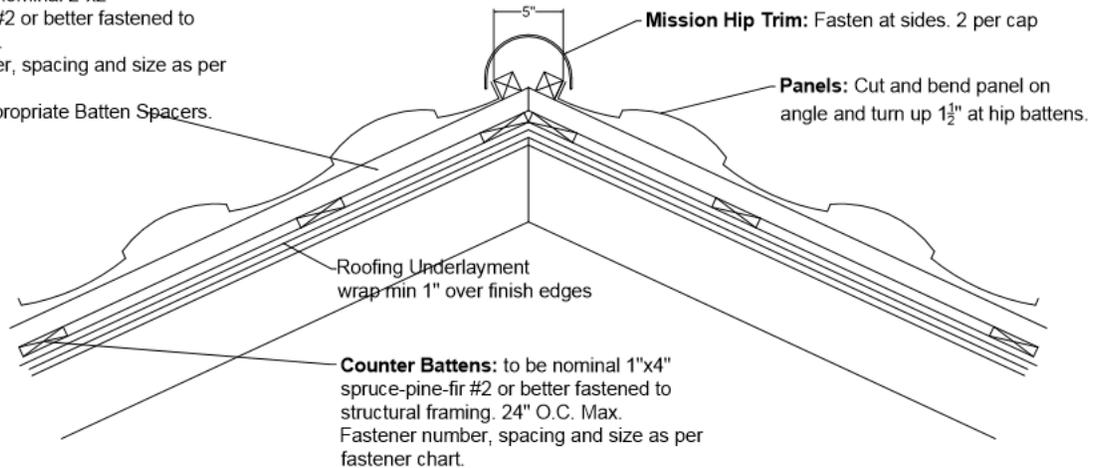
Hip Trim Detail

Battens: to be nominal 2"x2"

spruce-pine-fir #2 or better fastened to counter battens.

Fastener number, spacing and size as per fastener chart.

Install using appropriate Batten Spacers.

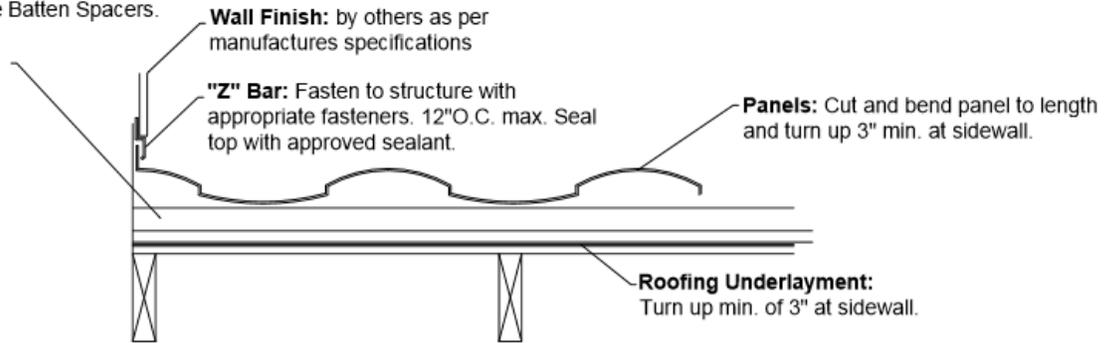


At the hip intersection:

1. Position two (2) nominal 2"x2" batten 5" apart centered on the sheeting joint
2. Fasten batten to the structure 12" O.C.
3. Cut BARREL VAULT panel to match hip angle. **DO NOT CUT PANEL WITH SAW OR GRINDER**
4. Bend BARREL VAULT panel up against stacked battens a minimum of 1 ½"
5. Shape and install Mission Trim with two panel screws, one on each side, into the 2"x2"s
6. Fasten panels as required

Wall Trim Details

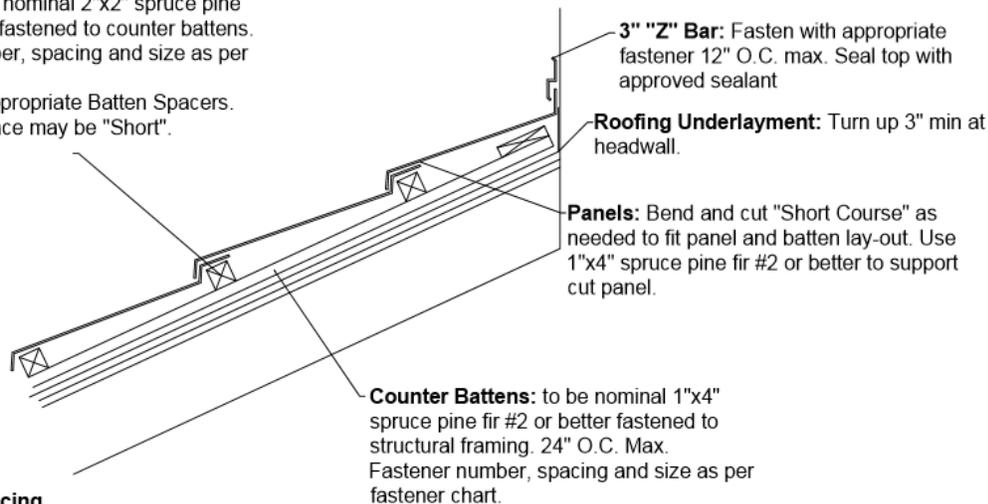
Battens: to be nominal 2"x2" spruce pine fir #2 or better fastened to counter battens. Fastener number, spacing and size as per fastener chart. Install using appropriate Batten Spacers.



Batten Spacing
Barrel Vault: 14"

1. Measure, cut and form BARREL VAULT panel to the correct length. Panel turn-up minimum 1 ½" **DO NOT CUT PANEL WITH SAW OR GRINDER**
2. Fasten panels as required
3. Flash panel turn up with Z-bar
4. Fasten Z-bar with appropriate fasteners maximum 16" O.C.
5. Caulk Z-bar with gun grade polyurethane sealant
6. As an optional detail, the top row bird-stop and foam closure may be used at the head wall

Battens: to be nominal 2"x2" spruce pine fir #2 or better fastened to counter battens. Fastener number, spacing and size as per fastener chart. Install using appropriate Batten Spacers. Top batten space may be "Short".



Behind Chimney, Skylight, etc.:

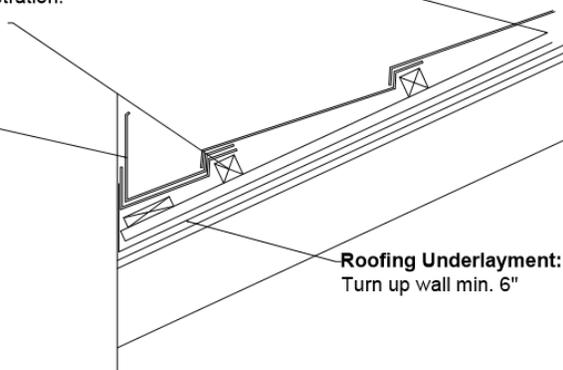
1. Measure, cut and form BARREL VAULT panel to the correct length. **DO NOT CUT PANEL WITH SAW OR GRINDER**
2. Fasten panels as required
3. Flash panel turn up with Z-bar
4. Fasten Z-bar with appropriate fasteners
5. Caulk Z-bar with gun grade polyurethane sealant
6. An overlay of a diverter may be installed to move water farther from corner detail

Battens: to be nominal 2"x2" spruce pine fir #2 or better fastened to counter battens. Fastener number, spacing and size as per fastener chart. Install using appropriate Batten Spacers. Install 1"x4" support at back of penetration.

Counter Battens: to be nominal 1"x4" spruce pine fir #2 or better fastened to structural framing. 24" O.C. Max. Fastener number, spacing and size as per fastener chart.

Panels: Bend and cut bottom edge to fit. Top saddle to be bent short to create diverter. Fasten and seal with approved sealant.
NOTE: this must be done as to not leave a joint behind wall. (<36") Custom pan must be used if solid panel will not suffice.

Batten Spacing
Barrel Vault: 14"

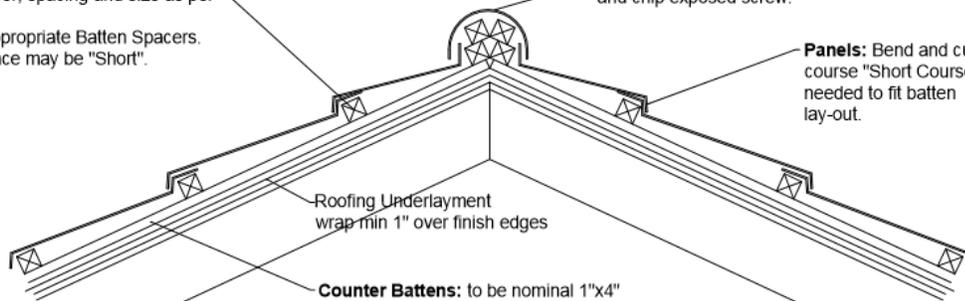


Non-Vented Ridge Detail

Battens: to be nominal 2"x2" spruce pine fir #2 or better fastened to counter battens. Fastener number, spacing and size as per fastener chart. Install using appropriate Batten Spacers. Top batten space may be "Short".

Mission Ridge Trim: Fasten at sides. Seal and chip exposed screw.

Panels: Bend and cut top course "Short Course" as needed to fit batten lay-out.



Roofing Underlayment
wrap min 1" over finish edges

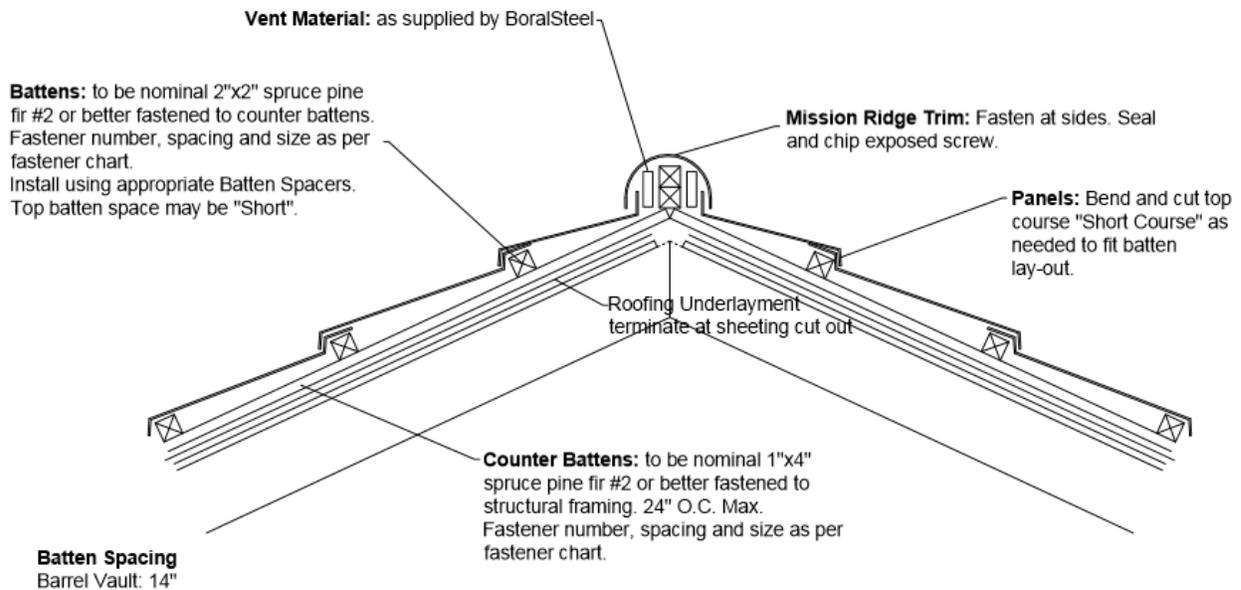
Counter Battens: to be nominal 1"x4" spruce pine fir #2 or better fastened to structural framing. 24" O.C. Max. Fastener number, spacing and size as per fastener chart.

Batten Spacing
Barrel Vault: 14"

At the ridge:

1. Stack two (2) sets of two (2) nominal 2"x2" on the ridge and fasten to the structure
2. Cut and bend BARREL VAULT panel to size needed. **DO NOT CUT PANEL WITH SAW OR GRINDER**
3. Install Mission Trim, fastening into the 2"x2" on each side
4. Fasten panels as required

Vented Ridge Detail



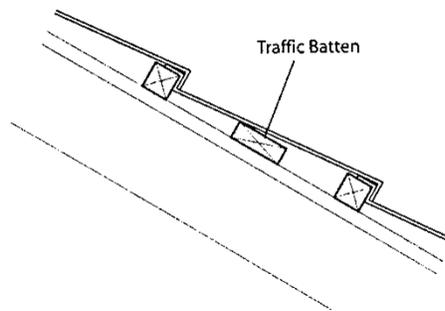
At the ridge:

1. Make certain that appropriate opening is provided in roof decking (**equal to soffit venting**)
2. Stack three (3) nominal 2"x2" on the ridge and fasten to the structure
3. Install vent material to stacked 2"x2"'s. Number of battens varies with roof pitch
4. Cut and bend BARREL VAULT panel to size needed. **DO NOT CUT PANEL WITH SAW OR GRINDER**
5. Install Wind Soffit to bent panel
6. Install Shake Cap, fastening (2) into the top of the 2"x2" to maintaining air space
7. Fasten panels as required
8. As an optional detail, the top row bird-stop and foam closure may be used at the ridge

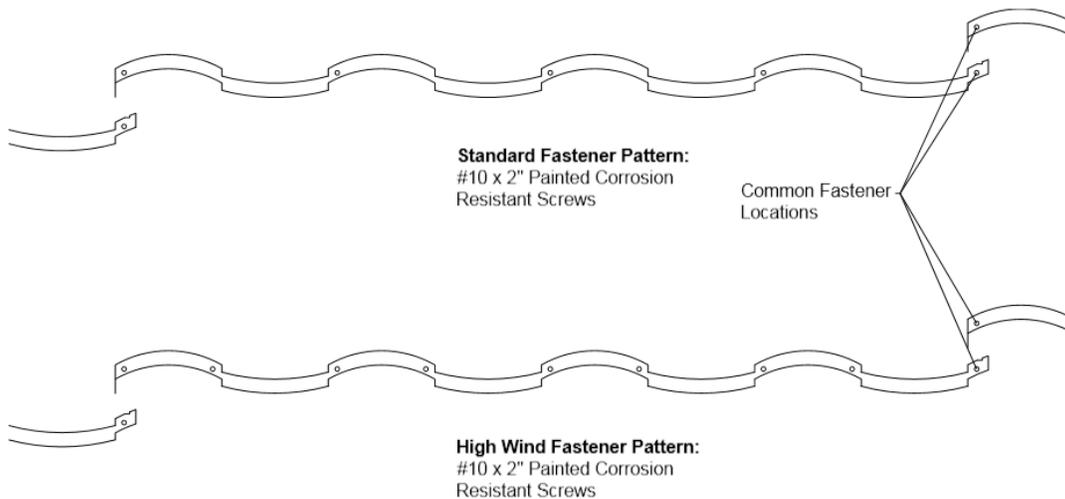
Roof Traffic Locations

For roof areas that will receive frequent traffic (around roof-top mechanical units, TV antennas, chimney areas, etc.) install a 1"x 4" batten four to five feet in length between each regular batten row up to and around where the foot traffic pattern will be. Fasten the traffic batten into the decking to maintain its position.

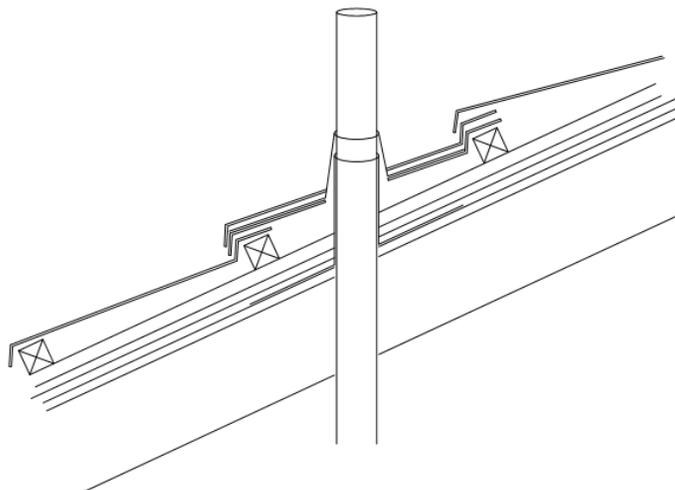
This technique can be used in areas that may have addition impact from snow loads or snow fall from higher roof elevations to prevent excessive denting of the panel.



Standard and High Wind Panel Fastener Locations



Double Pan (Sandwich) Pipe Penetrations



1. If dry-in state is required, a sub-pipe jack may be installed with dry-in material
2. Install minimum #30 felt under batten system
3. Install one BARREL VAULT panel with a hole of sufficient size to fit easily around pipe
4. Size and form granule coated steel pipe boot and seal it to under-panel
5. Cut the second panel tightly to the boot
6. Set the panel over the boot
7. Caulk and chip the hole and top of the boot

NOTE: other flashing methods are available. Contact technical support or review full Installation Manual



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