Installation Manual

MOSAIC ROOFING SYSTEMS CORP

MOSAIC GRANDE SHINGLE
MOSAIC SHAKEWOOD
MOSAIC MEDITERRANEAN
MOSAIC SICILY TILE

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Introduction

Welcome to the Mosaic installation manual. It has been designed as a pictorial instructional tool to clearly depict to the contractor, installer, distributor and architect, the recommended installation techniques and procedures to confidently estimate and install a complete Mosaic Grande Shingle, Shakewood, Mediterranean, or Sicily Tile roofing system.

This manual depicts generally practiced application techniques only, which should not be substituted for local building code specifications. Mosaic carries product approval reports for many building code agencies which should be referenced for specific local requirements.

These methods have been developed by Mosaic as proven acceptable and tested methods of installing Mosaic stone coated roofing products and does not construe that these are the only methods but again are tried and true proven techniques that are currently practiced by the majority of trained installers.

This manual emphasizes common roofing practices in use today. If application techniques vary from those illustrated in this manual or if using this manual for applications not covered, please consult Mosaic.

As Mosaic has no control over the installation techniques used, no warranty can be made relating to the installation of Mosaic products. Testing reports for various areas are available which should be analyzed for additional procedures after careful review of this manual.

A careful study of this manual will provide knowledge of how to complete a successful a Mosaic roof installation.

Mosaic assumes no liability for either incorrect installation of its products or personal injury that may occur because of installing such products. The installation methods demonstrated in these materials are not the only ways to install Mosaic products but have been developed as a reference guide using acceptable, tested and proven methods for the standard installation of Mosaic products.

Please Note: It is the responsibility of the installer to adhere to local building codes.

Index

Part 1

General Information

General Information

Storage

Product must be kept covered, well-ventilated and dry until installed. If stacked tiles become wet, they should be immediately separated and dried otherwise staining may occur. Prolonged wetness in the pile could create an electrolytic action which will negatively affect the products effective service life and subject the coating to permanent damage, especially if subjected to freezing weather, which is not covered by the product warranty.

Footwear

Rubber soled athletic type shoes or similar soft soled footwear is recommended when it is required to walk on the Mosaic panels in order to avoid damage and maintain a superior grip for safety.

Roof Traffic

The Mosaic panels are installed from the top-down minimizing traffic on the completed roof. When walking on the installed panels is required, walk on the front edge of the low sections with the weight on the balls of your feet, directly over the batten.

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 an acceptable condition to act as the roof's underlayment, except in areas of extreme weather conditions. In areas with extreme weather conditions, the underlayment should be of a type approved by the local building code. When installing over open rafters a self-supporting underlayment is recommended of quality which meets or exceeds local building code.

Galvalume

Galvalume steel is the base for the panels. Direct contact with lead or copper in a high humidity environment will create an unfavorable reaction with the galvalume coating. Rainwater run-off from copper roofs onto a Mosaic Roof should be avoided as it is very aggressive in nature and has a history of attacking the finishes. Only approved fasteners should be used. Please consult the Mosaic Technical Department for recommendations.

Roof Pitch

The Mosaic panels are designed to be installed from a minimum of 4:12 pitch up to a vertical face in all climates and down to 3:12 in warm weather climates. For slopes under

3:12, the panels generally act only as a decorative roof covering. In this type of installation please consult Mosaic and the local building officials.

Installation Labor

A minimum two-man crew is recommended from start to finish. This will ensure a cost-effective, quality installation. A qualified two-man crew is generally able to install one square (100 ft^2) per hour under normal circumstances.

Wood Battens

The system was designed and tested to install using 1 1/2" x 1 1/2" actual size wood battens. This manual uses the 'nominal' size description of 2" x 2" for convenience.

Pressure treated (CCA) or "green Treated" lumber should NOT be used in a Mosaic batten system because of its galvanic content.

Bending

The unique Mosaic ceramic granular coating is very dense and some minor cracking of the coating can be expected when bending the product. This tends to be more severe in colder weather and if the radius of the bends is too small. Mosaic recommends that where the bends are exposed (valleys, skylights) approved sealant should be applied followed by ceramic touch-up granular. This method should also be used to repair the coatings where accidental damage has occurred. Touch-up materials are available through Mosaic.

Building Codes

It is the responsibility of the contractor/installer to check and meet all the requirements of local and national building codes before starting the installation. Pay special attention to the specific ventilation requirements of the building code. All roofs over conditioned spaces are required to be ventilated unless it is considered a "closed roof system".

Severe Weather Conditions

If the area is prone to severe ice, snow, water or wind, additional measures may be required. Please contact Mosaic for more detailed procedures.

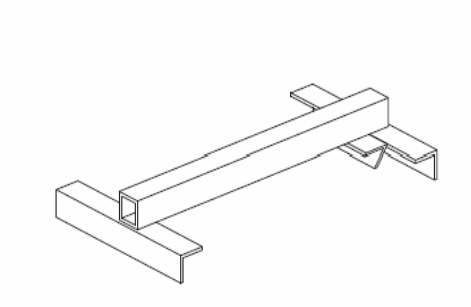
Scuffing

Minor scuff marks that show up will visibly disappear by washing with water. Full protection of the coating is restored with a spot application of approved sealant and Mosaic granular coating.

Tools

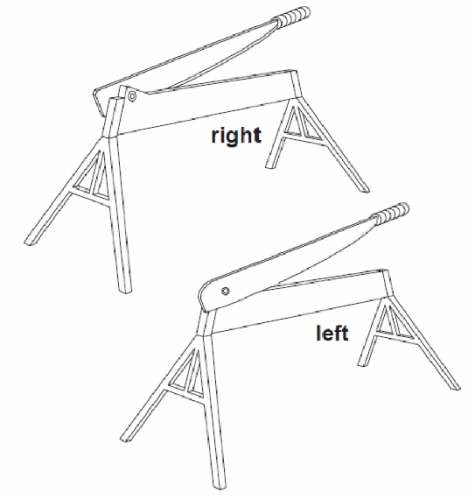
Mosaic Batten Spacer

Designed to space battens accurately and swiftly. Turned sideways it also spaces the valley battens. Batten spacers should be purchased in sets of 2.
Weight: 2.2 lbs. / 1 kg



Mosaic Shear

This tool is used to cut the Mosaic panels both across or length ways. The legs are removable for ease of handling. The shear comes with reversible blades.
Weight: 57 lbs. / 27 kg



Mosaic Panel Break

This universal tool is designed to perform four specific tasks:

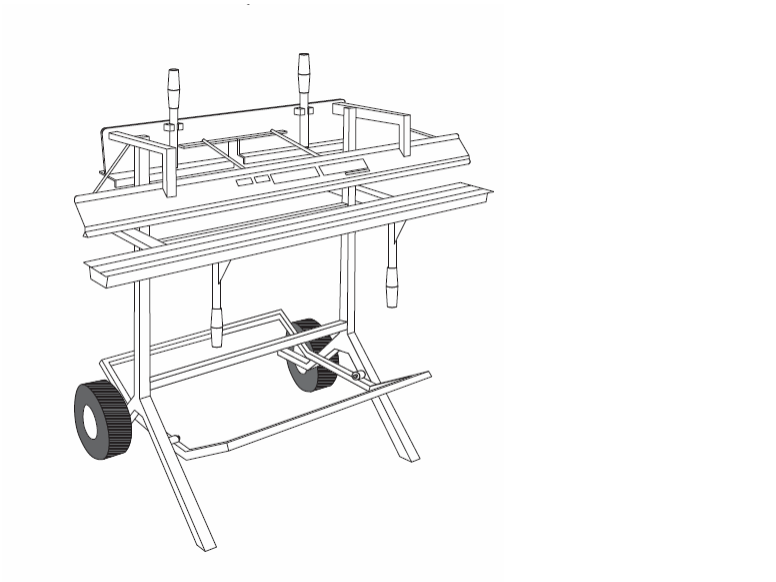
1. Half panel bends up or down across the width of a panel for hip, valley, gable, and roof to wall terminations.

2. Full panel bends up or down across the width of a panel for ridge, pitch change or roof to wall.

3. Bend flat stock or re-bend existing flashings.

4. Complete a tapered folded return across the width for finished end details.

Weight: 132 lbs. / 60 kg



Part 2

Specifications

Grande Shingle

Grande Shingle	Imperial	Metric
Thickness of steel	0.0177"	0.45 mm
Length of tile	52.8"	1,340 ± 10 mm
Cover length	50.8"	1,290 mm
Width of tile	16.5"	420 ± 10 mm
Cover width	14.6"	370 mm
Side overlap	2"	50 mm
Weight of tile	6 lbs 3 oz	2.8 ± 10 kg
Weight of tiled roof	12 lbs 8 lbs	5.6 kg^2
Coverage per tile	5.2 ft^2	.48 m^2

Shakewood

Shakewood	Imperial	Metric
Thickness of steel	0.0177"	0.45 mm
Length of tile	52.8"	1,340 ± 10 mm
Cover length	50.8"	1,290 mm
Width of tile	16.5"	420 ± 10 mm
Cover width	14.6"	370 mm
Side overlap	2"	50 mm
Weight of tile	6 lbs 3 oz	2.8 ± 10 kg
Weight of tiled roof	12 lbs 8 lbs	5.8 kg^2
Coverage per tile	5.2 ft^2	.48 m^2

Mediterranean

Mediterranean	Imperial	Metric
Thickness of steel	0.0177"	0.45 mm
Length of tile	52.8"	1,340 ± 10 mm
Cover length	50.8"	1,290 mm
Width of tile	16.5"	420 ± 10 mm
Cover width	14.6"	370 mm
Side overlap	2"	50 mm
Weight of tile	6 lbs 3 oz	2.8 ± 10 kg
Weight of tiled roof	12 lbs 8 lbs	5.6 kg^2
Coverage per tile	5.2 ft^2	.48 m^2

Sicily Tile

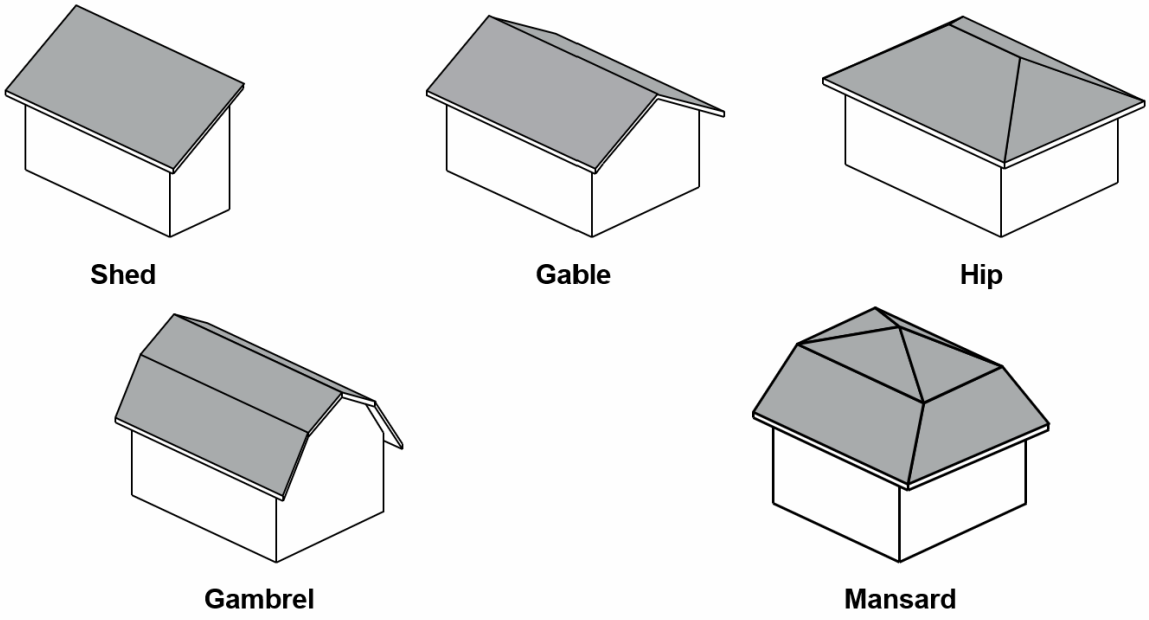
Sicily Tile	Imperial	Metric
Thickness of steel	0.0177"	0.45 mm
Length of tile	52.8"	1,340 ± 10 mm
Cover length	49.2"	1,250 mm
Width of tile	16.5"	420 ± 10 mm
Cover width	14.6"	370 mm
Side overlap	3.5"	90 mm
Weight of tile	6 lbs 9 oz	3 ± 10 kg
Weight of tiled roof	14 lbs 5 lbs	6.5 kg^2
Coverage per tile	5 ft^2	.46 m^2

Part 3

Estimating

Roof Styles

Five Roof Styles



Shed

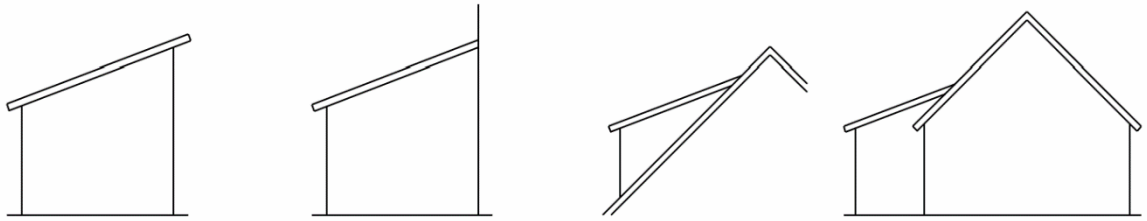
Gable

Hip

Gambrel

Mansard

Four Types of Shed Roofs



Independent Building

Porch Roof

Shed Dormer Roof

Lean-To Roof

Basic Steps

Following these simple steps can greatly reduce the risk of errors in your roofing project:

1. Accurate Measurements: Always measure precisely; never rely on guesswork or scaling from drawings.
2. Proper Roof Plane Drawing: Draw the roof to scale, indicating slope direction and dimensions clearly.
3. Divide and Label: Divide the roof into rectangular sections and label them to ensure all areas are accounted for.
4. Identify Roof Junctions: Use the provided table to identify roof junctions, aiding in selecting the right accessories and minimizing waste.
5. Study the Manual and Video: Fully understand the system by thoroughly reviewing the product manual and instructional videos.
6. Two Sides per Section: Keep in mind that each section typically has two sides.
7. Consistent Square Footage: Whether hipped or gabled, each roof section generally covers the same square footage.

R - Ridge

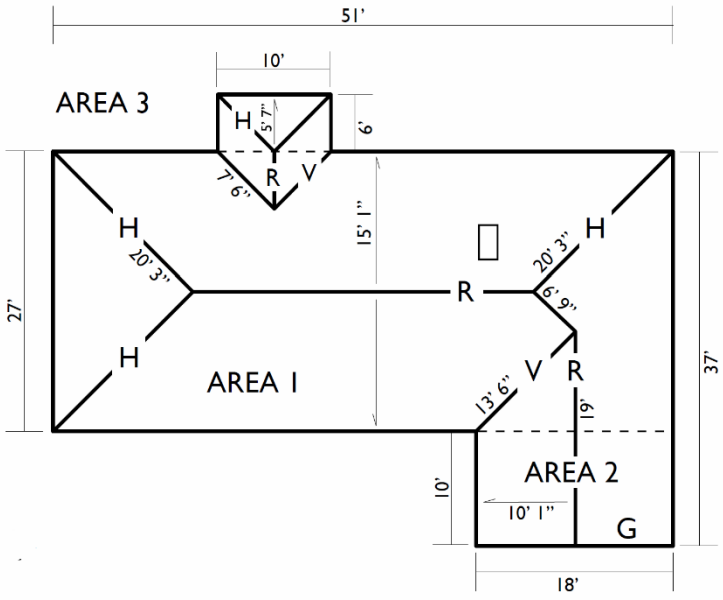
H - Hip

V - Valley

W - Wall

G - Gable

Pitch $\frac{12}{6}$



Calculating Batten Coverage, Fasteners and Sealant Requirements

Battens Factoring

The 2” x 2” battens come in 8’ lengths. To determine the total number of battens required, the total number of squares (pre waste calculations) of the roofing system is converted to square footage by multiplying the number of squares by 100. This number is then divided by 8. The final number is multiplied by 1.10 and rounded up to the next whole number to account for waste and cuts.

Calculating Fastener Requirements

Panel screws - #10-15 2” colored screws are used to fasten the panels. These screws come in boxes of 2,000. Allow 1 box per 11 squares.

Super Screw – SWS 5/16" screws are offered in boxes of 1,000. Allow 1 box per 20 squares.

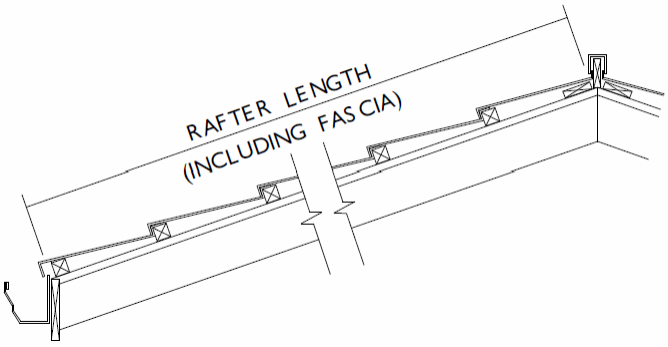
Framing Nails – 16D ring shank nails are used for pinning. Assu,e a 4,000 count per box and allow 1 box per 100 squares.

Vulkem Sealant- Vulkem is the recommended sealant for transitions and for granule touch ups. Recommend allowing 10 tubes per 25 squares.

Calculating Tile Required

Tile Required by Rafter Length

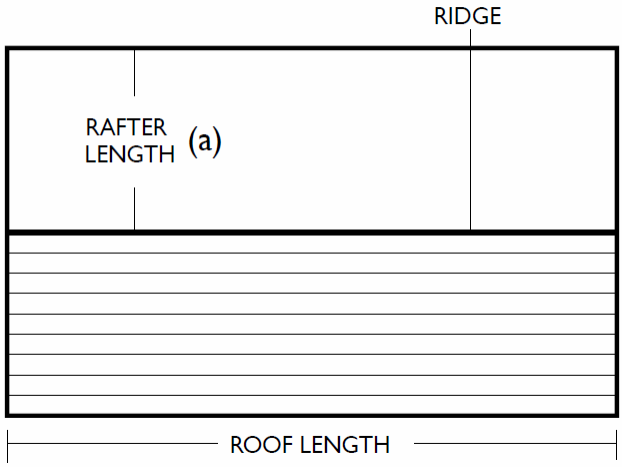
Mosaic roofing panels lay 14 1/2" or 368 mm ± 10 mm. A minimum of 3/4" or 19 mm of overhang is required at the eaves, hence the first course allotment is 13 ½" or 343 mm (1" clearance or 25 mm). Additionally, an allowance must be made for bending up of the top course if square ridge/hip trim is utilized.



Note: If the rafter lengths are unknown, building width and pitch will yield the appropriate rafter length.

Tile Required by Roof Length

The Grande Shingle, Shakewood, and Mediterranean profiles tile profiles cover 50.8" or 1,290 mm. The Sicily Tile profile covers 49.2" or 1,250 mm Understand that the Mosaic Sicily Tile has pattern repeats in its length so some waste must be allotted for. A minimum of .2 of a tile should be allowed as waste for gabled end conditions. If the roof section has a hip or valley end, then use the simplistic waste formulas explained later which convert lineal feet of hip and valley into an appropriate amount of waste tiles.



Waste Calculations

Theoretical

1. When cutting tiles for hips or valleys, the amount of waste varies based on the roof pitch. For instance, a 0/12 pitch (flat roof) results in a 45-degree angle cut, while a vertical wall creates a 90-degree angle cut. Therefore, lower pitches produce larger angle cuts and more waste.
2. Since hips and valleys have opposing but equal angles, the cut piece from a hip can be used for a valley, and vice versa.
3. Waste calculations for cuts only need to consider the difference between the amounts required for hips and valleys.

Practical

1. Allow for waste tiles to accommodate the pattern repeat on Mosaic panels for both hips and valleys.
2. Account for waste tiles needed when bending tiles up and down at junctions.
3. To determine the length of hips and valleys, measure them directly. For pitches up to 4:12, multiply the linear footage of hips or valleys by 0.4 to calculate the appropriate amount of waste tiles. For pitches greater than 4:12, multiply by 0.3.

Note: When dealing with roofs featuring both hips and valleys, apply this calculation factor only to the greater amount of either hips or valleys.

Examples

Example 1 - 90 LF of hip @ 7:12 pitch
90 x .3 = 27 waste tiles

Example 2 - 50 LF of valley @ 5:12 pitch
50 x .3 = 15 waste tiles

Example 3 - 40 LF of hip and 30 LF of valley @ 4:12 pitch
80 x .4 = 16 waste tiles

Waste Tile Calculations/Accessories

Gables

For proper termination of tiles at each end, a minimum allowance of 0.2 tiles per course is necessary. This figure should be included in your calculations for the "tiles per roof length" of the main roof tiles.

Skylights and Chimneys

Typically, no adjustments are made to tile counts for skylights or chimneys since the tiles saved generally equal the tiles wasted on standard-sized protrusions.

Dormers

The required field tiles are factored into the main section calculations. Waste from hips or valleys should also be considered in the overall waste calculation. However, an allowance should be made for overhangs, with a recommended minimum of 16”. A simple method is to divide the total lineal feet of overhang by 4 to determine the additional tile required per linear meter of overhang.

Barrel and Shake Ridge Cap

Gables - For gabled ends, allocate one additional barrel cap per course or part course, along with an extra cap for each "bull nose" end detail. Near the top course, if it's close to a full course of tiles, an extra cap should be allotted on each side for coping.

Ridge/Hip - Calculate the number of barrel caps required by allowing 1 barrel cap for each LF. Include 3 additional caps for each junction of a ridge with two hips. (For metric measurements, divide the total lineal millimeters by .3) Additionally, allocate an extra cap for each end detail with a "bull nose."

Extended Barrel and Shake Ridge Cap

Gables - For gabled ends, take total LF of rake and divide by 3.8. Add 4 Barrel or Shake Ridge caps for starting and finishing detail

Ridge/Hip - Calculate the number of barrel caps required by dividing the total LF by 3.9 (For metric measurements, allow 1 piece for each meter of length. Include 3 additional caps for each junction of a ridge with two hips. Additionally, allocate an extra cap for each end detail with a "bull nose."

Bird Stop Ridge

This product is used not only at the ridge but also in some roof-to-wall installations and with skylights. Divide the LF by 6 adding in at least one extra to the total dependent on number of bends and cuts. Avoid using small pieces, especially as starters, to ensure accurate calculations.

Bird Stop Eave 3,5” and 5”

The profiling of this product requires an allowance of approximately one foot at each termination. Avoid using small pieces, especially as starters, to ensure accurate calculations.

Eave Drip Flashing 3.5” and 5”

This product serves as eave and gable trim on wood reroofs, covering the roof buildup from batten strapping and used as wall flashing. Allow a minimum of 6 inches for each lap, avoiding the use of short pieces whenever possible. Divide the LF by 6 adding in at least one extra to the total dependent on number of bends and cuts. Avoid using small pieces, especially as starters, to ensure accurate calculations.

Box Barge

The profiling of this product requires an allowance of approximately 6” at each termination. Avoid using small pieces, especially as starters, to ensure accurate calculations.

Valley Trim

Allocate minimum 1” overlap at the eave, 6” for each lap, and extra material for cutting and folding over at the top. Minimize the use of short pieces to maintain a clean finish. Sealant required at overlaps in valleys to maintain seal.

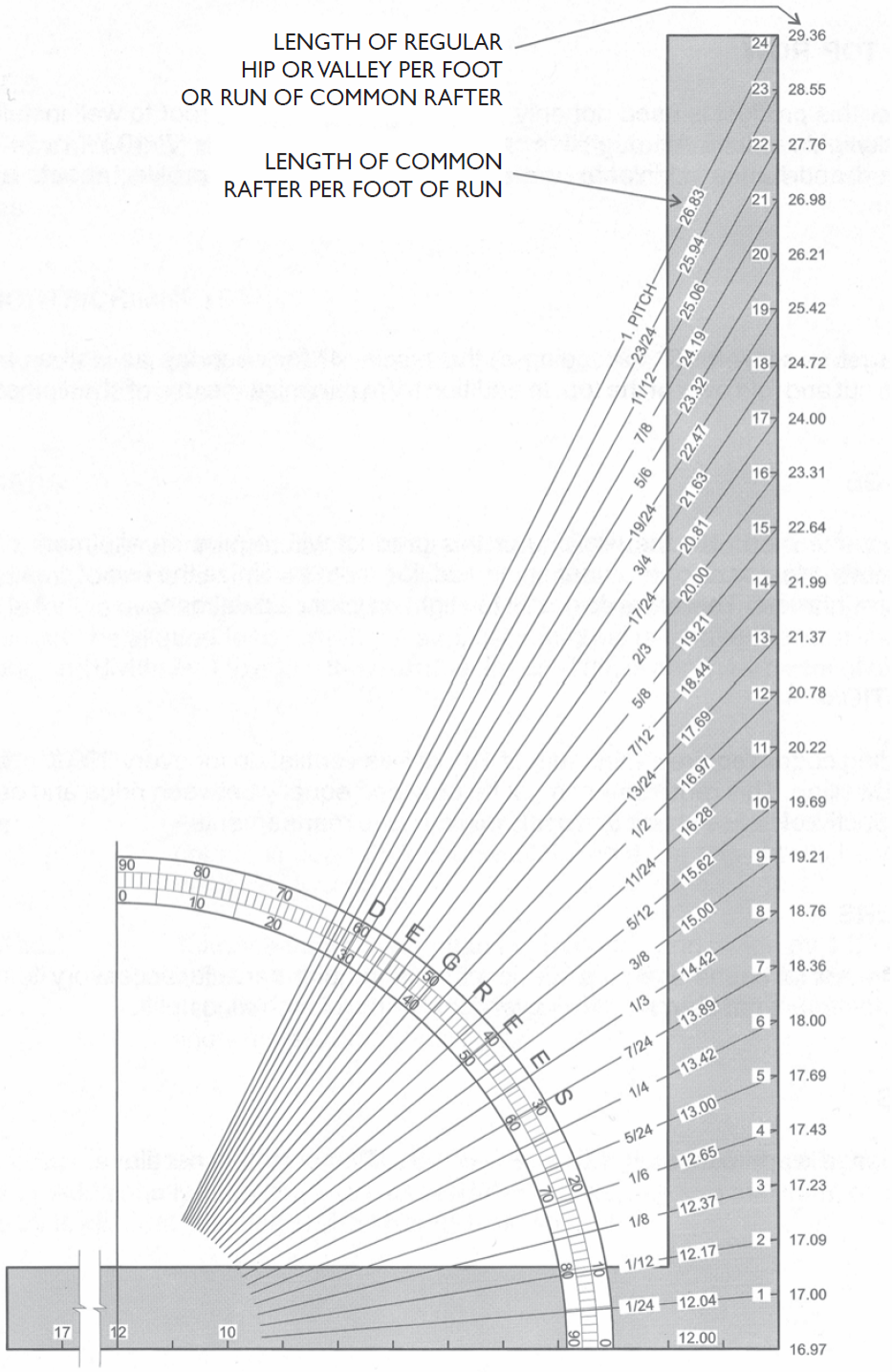
Z-Bar

The profiling of this product requires an allowance of approximately 6” at each overlap. Avoid using small pieces, especially as starters, to ensure accurate calculations. Sealant bleed out required at top of the Z-bar and in overlaps to maintain seal.

Ventilation

Refer to local building codes for required ventilation. Mosaic systems offer a ridge venting system with the Mosaic Foam Ridge Vent. The Mosaic Foam Ridge Vent comes in 20’ rolls and are applied on both sides of the ridge. Calculate the number of rolls needed by multiplying the length of the ridge by 2 and rounding up to nearest whole roll.

Pitch to Degree Scale



Understanding the Length Chart for Common and Hip/Valley Rafters

This chart is a helpful tool for calculating the lengths of common rafters and regular hips or valleys per foot of run based on different pitches.

Using the Chart

1. Identifying the Pitch:

   Locate the pitch of your roof on the left side of the chart (e.g., 1/12, 2/12, 3/12, etc.).

2. Determining the Length of the Common Rafter per Foot of Run:
   a. Find the diagonal line corresponding to your roof pitch.
   b. Follow this line horizontally to the right side of the chart to find the length of the common rafter per foot of run.
3. Determining the Length of Regular Hip or Valley per Foot of Run:
   a. Use the same pitch line.
   b. Follow this line vertically to find the length for regular hip or valley per foot of run at the top of the chart.

Example

For a 4/12 Pitch:

1. Locate the "4/12" pitch line on the chart.
2. Follow this line horizontally to the right to find the length of the common rafter per foot of run, which is approximately 17.32.
3. Follow the same line vertically to the top to find the length of the hip or valley per foot of run, which is approximately 18.36.

Practical Applications

Roof Planning:

Use these measurements to plan out the length of materials needed for common rafters and hips/valleys during roof construction.

Material Estimation:

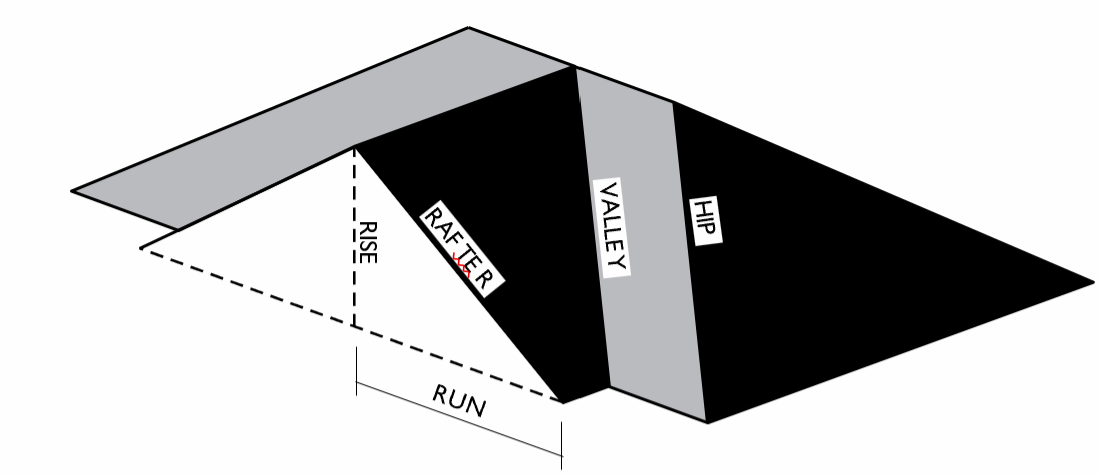
Accurate length calculations help in estimating the amount of material required, reducing waste and cost.

Summary

This chart is a valuable reference for roof construction, providing essential measurements for common rafters and hips/valleys based on various roof pitches. Accurate use of this

chart ensures efficient and precise planning and material estimation for your roofing project.

Factoring Table



PITCH		RUN	x	RAFTER FACTOR	=	RAFTER LENGTH	x	HIP/VALLEY FACTOR	=	HIP/VALLEY LENGTH
? / 12	DEGREES									
1	4.50	RAFTER RUN		1.0035		RAFTER LENGTH		1.42		HIP & VALLEY LENGTH
1 1/2	7			1.0078				1.41		
2	9.50			1.0138				1.408		
2 1/2	11.75			1.0215				1.402		
3	14			1.0310				1.396		
3 1/2	16.25			1.0412				1.39		
4	18.50			1.0541				1.39		
4 1/2	20.50			1.0680				1.38		
5	22.50			1.0833				1.37		
5 1/2	24.50			1.1000				1.36		
6	26.50			1.1180				1.35		
6 1/2	28.25			1.1373				1.34		
7	30.25			1.1577				1.33		
7 1/2	32			1.1793				1.32		
8	33.75			1.2019				1.30		
8 1/2	35.25			1.2255				1.29		
9	37			1.2500				1.28		
9 1/2	38.50			1.2754				1.27		
10	40			1.3017				1.263		
10 1/2	41.25			1.3288				1.25		
11	42.50			1.3566				1.24		
11 1/2	43.75			1.3851				1.23		
12	45			1.4142				1.226		
14	49.50			1.5366				1.195		
16	53.25			1.6666				1.168		
18	56.25			1.8028				1.145		
20	-			1.9440				1.125		

This table and diagram provide a comprehensive reference for calculating the lengths of rafters and hips/valleys based on the pitch of the roof. Here's how to interpret and use the information effectively:

Understanding the Diagram and Table

Diagram

- RUN: The horizontal distance from the wall to the point directly under the peak of the roof.
- RISE: The vertical distance from the top of the wall to the peak of the roof.
- RAFFER: The sloped part of the roof extending from the wall to the peak.
- HIP/VALLEY: The sloped sections of the roof where two roof sections meet at an angle.

Table Columns

1. Pitch ("/12"): The roof pitch expressed as the ratio of rise over run (e.g., 4/12).
2. Degrees: The angle of the roof pitch in degrees.
3. Run x Rafter Factor = Rafter Length: This calculation gives the length of the common rafter.
4. Rafter Length x Hip/Valley Factor = Hip/Valley Length: This calculation gives the length of the hip or valley rafter.

Using the Table for Calculations

1. Identify the Roof Pitch:
   Locate the pitch of your roof in the first column (Pitch ?/12).
2. Determine the Degrees:
   Find the corresponding angle in degrees for your pitch.
3. Calculate the Rafter Length:
   Use the given rafter factor for your pitch to calculate the rafter length. Multiply the run length by the rafter factor.
   Example: For a 4/12 pitch:
   Run x Rafter Factor: If the run is 10 feet, then 10 x 1.0541 = 10.541 feet.
4. Calculate the Hip/Valley Length:
   Multiply the rafter length by the hip/valley factor for your pitch.

Example: Continuing with the 4/12 pitch:

Rafter Length x Hip/Valley Factor: 10.541 x 1.39 = 14.63 feet.

Practical Applications

Material Estimation: Use these calculations to determine the exact lengths of rafters and hips/valleys, ensuring you purchase the right amount of materials.

Construction Planning: Accurate measurements aid in precise cutting and fitting, reducing waste and improving the quality of construction.

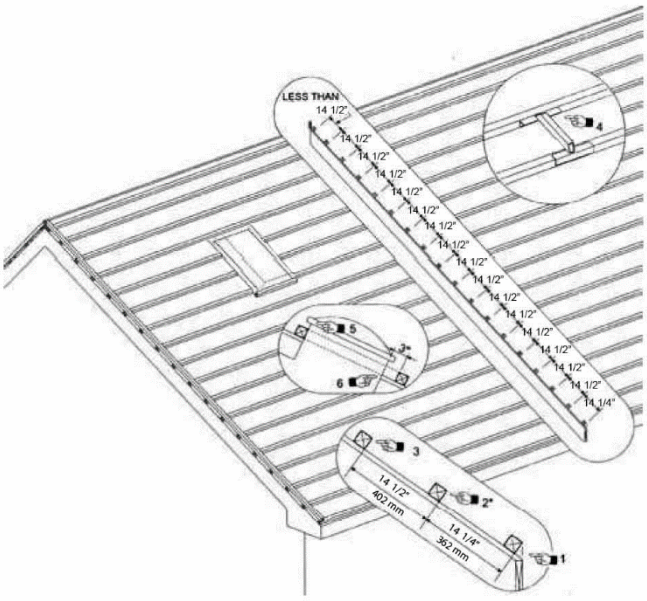
Summary

This tool is essential for roof construction, providing precise calculations for rafter and hip/valley lengths based on different pitches. By following the steps outlined above, you can ensure accurate planning and efficient use of materials for your roofing project.

Part 4

Installation

Batten Framing Field, Skylight



Main Framing

The first batten should be installed with the top corner plumb with the fascia (note 1). The second batten is installed by chalking a straight line approximately 13 1/2" (343 mm) (max.) from the lower edge of the first batten (note 2) to provide overhang

Please Note: This measurement may vary as the straightness of the eve may vary. The remaining battens are installed at 14 1/2" (368 mm) centers (note 3).

This spacing is crucial to obtain a tight, proper panel fit. The most accurate method is to use the "Mosaic Batten Spacer" (note 4), which will lock onto a fastened batten and hold spacing while the next batten is butted to the spacer and fastened.

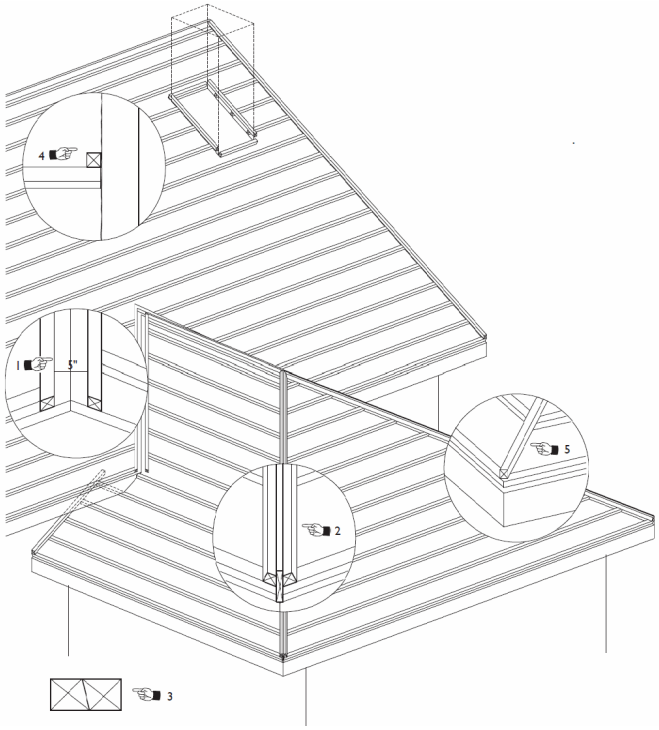
Skylight Framing

Butt the main tile battens to the sides of the skylight. Run blocking along the top and bottom to support the bent tile and flashing (note 5). Ensure the curb is high enough. If the skylight is too low and cannot be raised, we recommend framing for Valley Trim down each side and across the top (note 6).

Note: As the roof slope increases, this dimension should be reduced accordingly to allow the front lip of the panel to clear the fascia.

Note: Check local building codes to ensure compliance of methods of fastening battens.

Batten Framing Valley, Hips, Chimney



Valley

Two battens are installed approximately 7" (152 mm) apart edge to edge, centered on the valley (note 1). The batten spacer positioned sideways guarantees accurate spacing.

Hips (Side by Side)

Two 2” x 2”'s are ran parallel on each side of the hip edge 5 1/2" (140 mm) apart (note 2) from edge to edge on top of the horizontally ran panel battens. After installation of first hip battens, double check spacing with a hip cap. Pop chalk line on each after spacing is confirmed. This is the preferred hip batten installation method.

Hips (Vertical Stack)

Alternatively, two, 2” x 2”' battens are stacked vertically on top of one another on top of the horizontally ran panel battens (note 4).

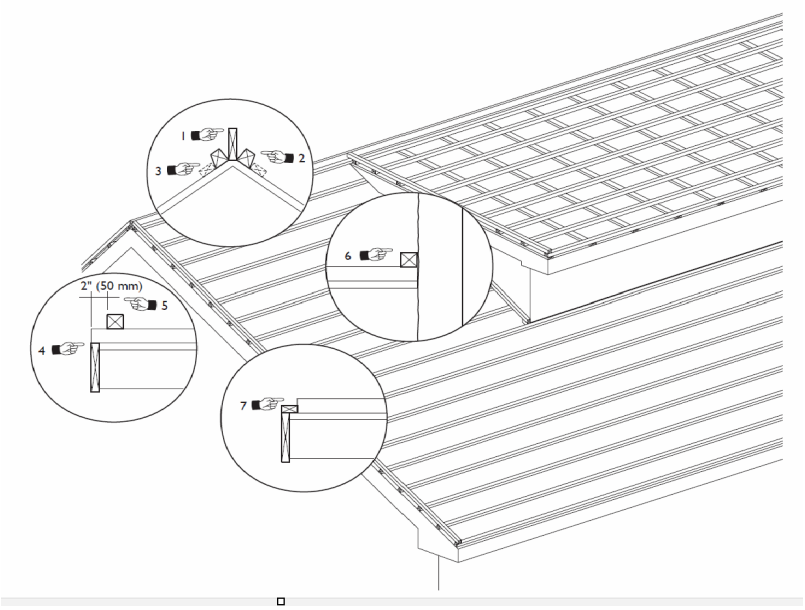
Chimney

Butt the horizontal battens to the sides, then place an additional batten across the top and bottom. A batten is then fastened to each side of the chimney on top of the horizontal battens (note 3).

Note: All accessory battens for hip, ridge, valley and gables are installed with 3” 12D or 3 1/2" 16D ring shanked framing nails, 6" on center at a minimum.

Note: Check local building codes to ensure compliance of methods of fastening battens.

Batten Framing Ridge (Barrel/Shake), Rake (Barrel/Shake), Sidewall



Ridge Framing Barrel Cap

A vertical stack of 2 (or 3) 2” x 2” battens are fastened to the center of the roof ridge (note 1) as needed for required height. The last course of panel battens is ran parallel and tight against this vertical stack (note 2). Some installers prefer to place an additional 1" (25 mm) backer board in front of the batten to rest the final course of panels on as they are generally cut and bent back and have no back lip to rest the panel on (note 3).

Rake Framing – Barrel/Shake Cap

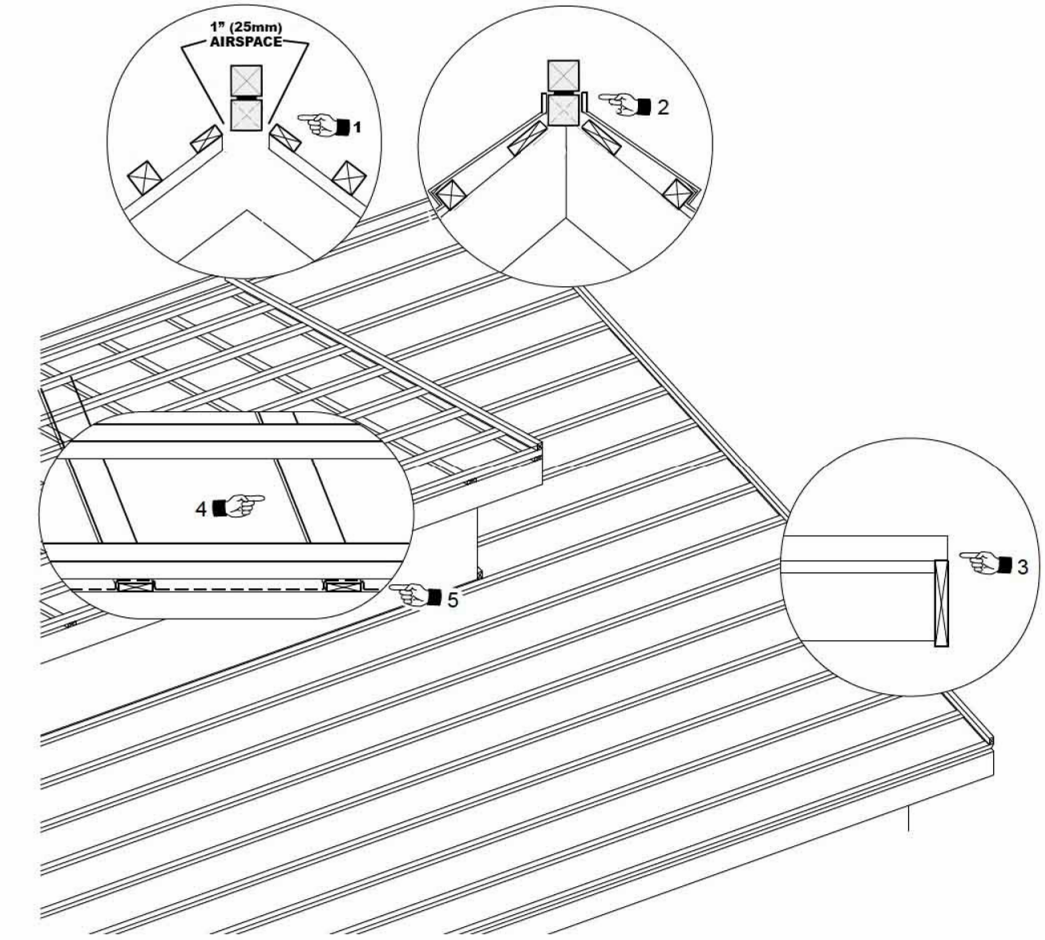
The main panel battens are terminated flush with the fascia (note 3). A rake batten is then placed vertically up the rake over the main horizontal battens set in approximately 2" (50 mm) from the fascia (note 4) for barrel/shake caps.

Sidewall Framing

The main panel battens are terminated against the vertical wall.

Note: Check local building codes to ensure compliance of methods of fastening battens.

Batten Framing Ridge (Ventilating) Low Slope



Ridge Framing - (Ventilating)

A 1” x 2” (25 mm x 51 mm) backer board is laid parallel with the ridge on each side leaving a 2" (51 mm) minimum airspace (note 1). On a retrofit application, slot the sheathing to allow for air flow.

Low Slope Framing - Counter Battens

Minimum 1” x 4” (25 x 101 mm) counter battens are run vertically centered over existing rafters 6” (152 mm) and fastened through (note 4). A code approved moisture membrane is placed horizontally with proper lap and allowance for the membrane to loop over the spacers (note 5). The main panel framing, and details are then continued over. Care must be taken to protect the membrane from penetrations and tears. Repair any cuts and areas of at roof penetrations with the appropriate corresponding tape for the moisture membrane.

Note: Please refer to local code requirements and the applicable approval report for fastener sizes, quantities and other requirements.

Metal Framing Over Steel Decking

Horizontal Decking

Generally, all aspects of metal framing are similar to wood framing. Some installations require insulation so a standard "Z" sub-girt is used (note 1) to fasten the insulation to the decking, The metal batten is then fastened to the rafter or "Z" girt with 2 fasteners at each junction (note 2). If insulation is not required, then vertical strapping of some nature needs to be installed to transfer the loads equally across the decking and provide for proper fastening locations. Care must be taken to ensure proper fastener type, quantity, and location. Please consult a professional engineer to calculate these loads.

Note: Custom make batten spacers to fit the metal batten for best results.

Vertical Decking

Horizontal batten connection works well; however, care must be taken to ensure that the proper fastener type, quantity, and its location is used. If a rigid installation board is required over the decking, the batten must have a seat area large enough to spread the load and fasteners. The fastener used must be strong and long enough to connect through to the deck and carry the loads. Please consult a professional engineer to calculate these loads.

NOTE: Steel decking is usually used as a structural part of the building and although Mosaic has completed various engineering calculations and specific tests generally around product fastened at 24" centers, it cannot make representations on the required wind uplifts etc. This is a responsibility of the projects design engineer.

Metal Framing Trim Blocking

BarrelShake Cap, Ridge Hip

The two-piece metal ridge-hip backer is used to frame out the ridges for an unventilated installation (note 3) and /or hips (note 4) to accept the barrel/shake cap trim. Stitch screw the two pieces of metal hip backer together with one screw per length per side. This product is fastened with screws through each lower flange at each rafter junction (note 5). The hip backer is available vented on request.

Square Trim

If square trim is used, then a custom hat profile should be fabricated to suit the individual job need.

Vented Ridge

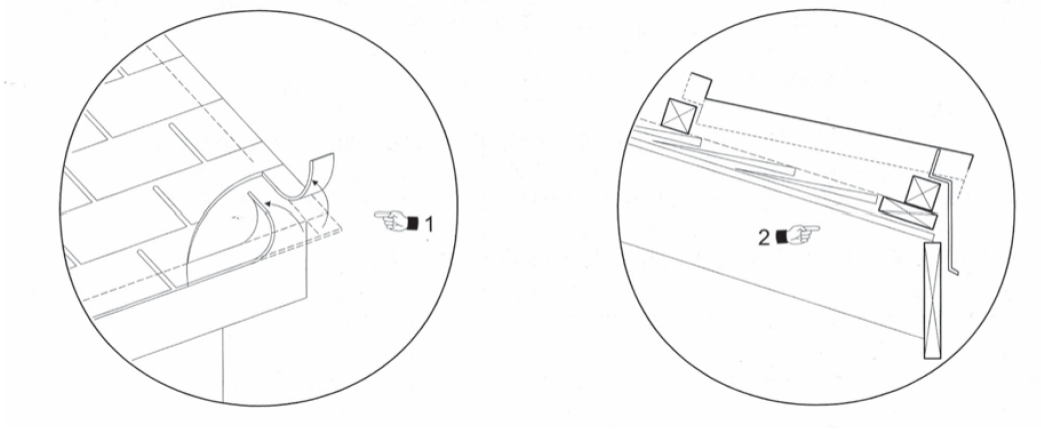
Bend and cut the top course of tile so as to leave 1" (25 mm) gap and a 1/2" (12 mm) upstand centered on the ridge when ventilation is required (note 2). Place a strip of vent mesh down each side of the ridge and place the shake cap over. Fasten the cap on each side down through to the 1" (25 mm) strapping (note 2).

Metal Framing Metal Batten Snow Loading Guide

The following table is provided as a general reference tool only to provide a guide to maximum allowed spans for 26 gauge 1 1 /2" galvanized metal hat channels. The spans shown were based on the following data and reference documents as listed below.

1. Snow loads shown are ground snow loads as per table 2.5.1.1., O.8.C., 1990. No increase loading due to snow accumulation was considered. Reference sentence 7, Article 4.1.7.1 O.B.C., 1991.
2. Calculations are based on a fixed 'Ground Snow Load' of 0.4 Kpa. See table 2.5.1.A O.B.C., 1991.
3. Roof slope is equal to or less than 30 degrees. A dead load of 0.0623 Kpa for the Mosaic roof tiles was used.
4. A dead load of 0.0623 Kpa for the Mosaic roof tiles was used.

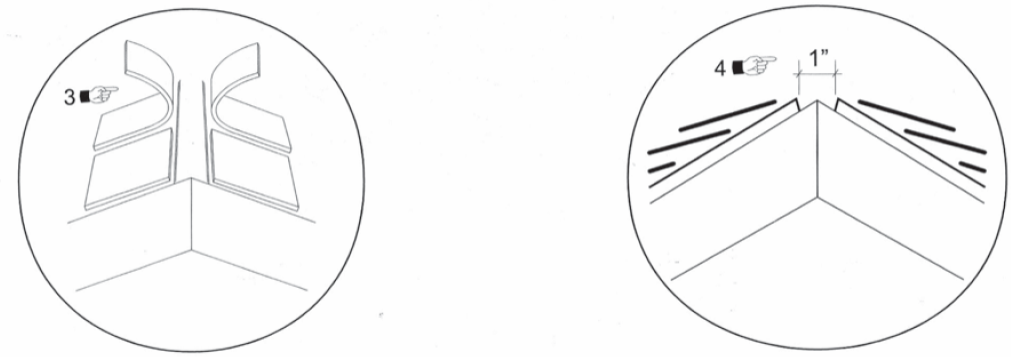
Re-Roofing Preparation



Eaves and Gable Preparations

All existing protruding roofing should be removed to a point inside the vertical line of the fascia (note1). In cases of multiple layers of shingles or shakes, it will become necessary to install a fille, shim, or thicker starter batten (note 2).

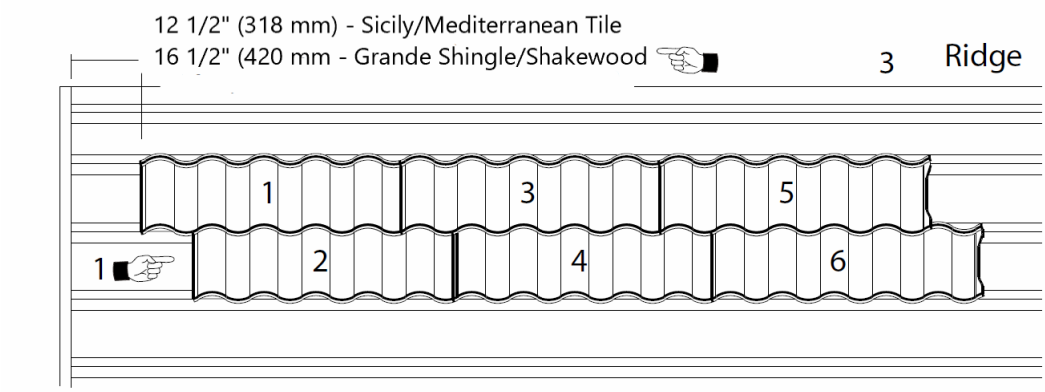
Note: If the starter course is not held in the same plane as the balance of the roof the profiles will look distorted. Please ensure proper shimming of the eave batten.



Hip and Ridge Preparations

Remove any existing hip and ridge caps that protrude above the plane of the roof (note 3). If the attic space is to be ventilated through the ridge, cut back the existing roof materials and decking to provide a minimum 1” wide slot along the required area (note 4).

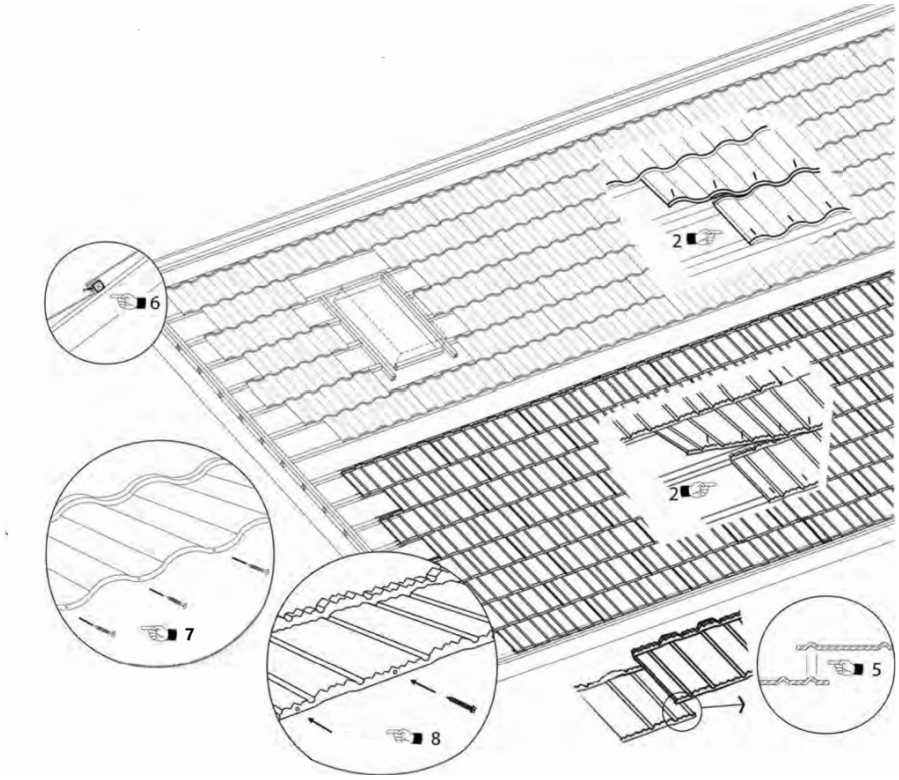
Full Panel Installation



Panel Laying

Starting at the first full course from the ridge, lay two rows of panels simultaneously. The second course is used to accurately space the joints of the first course. This is crucial in maintaining tight fitting joints and pattern throughout the plane of the roof (note 1). Temporarily fasten the top course with galvanized nails trough the top of the back flange into the top of the batten. Proceed to lay all full panels, staggering the joints in adjacent courses. Each course is laid by lifting up the preceding panel and tucking the back of the panel up under (note 2). This ensures accurate fitting of the panels. To better facilitate this, always leave two courses of panels loose then reach back and fasten the third course.

Full Panel Installation



Start your first Mosaic "Sicily Tile" panel from left gable (note 3). This will place your bends in the valley of the profile. On a gable-to-gable roof adjust this so each gable is identical. This measurement is 16 1/2” (420 mm) for Grande Shingle and Shakewood panels which will place your bend centered on the flat exposure (note 3). Again, adjust this on a gable-to-gable roof to balance the pattern. This will ensure that you are handling practical size pieces which eliminate waste. This measurement is to be a minimum of 4 1/2” (114 mm) for hips and valleys from the closest point. The Mosaic panels only lap right over left (notes 4, 5) but panels may be laid right to left by lifting and tucking under (this is slightly more time consuming). The panels are fastened up through the front lip (note 6) in the proper location (notes 7,8). System is designed to utilize #10-15 x 2" minimum hex headed screws; color matched to Mosaic material.

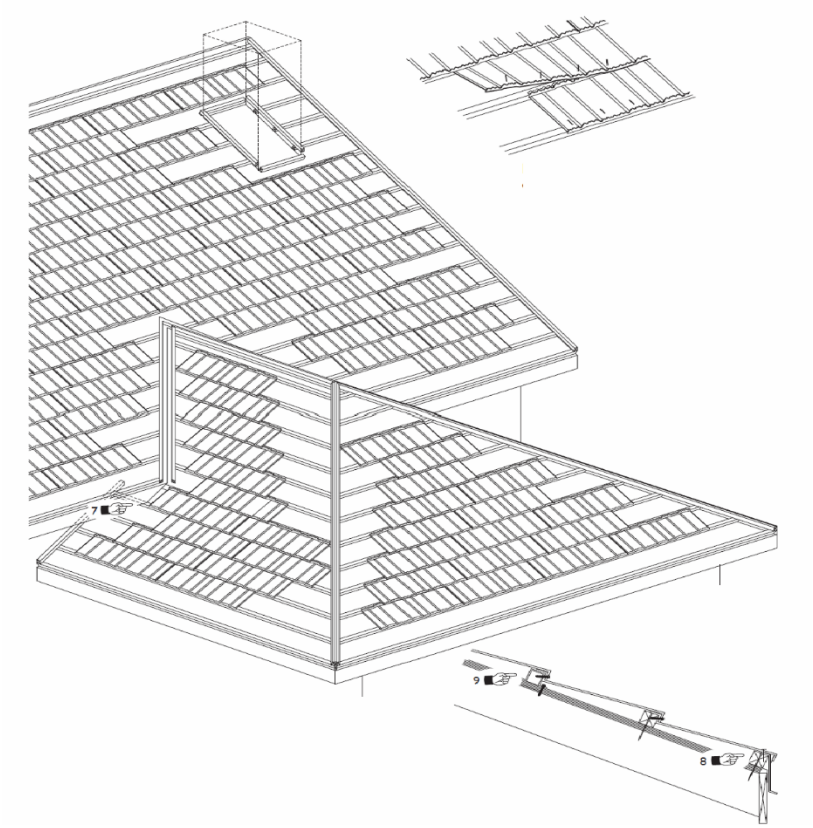
Note: The eave courses of panel are left until all other areas of the roof are complete to minimize the roof traffic on the installed product. Please install highest roofs first to minimize foot traffic on lower roofs.

Panel Laying

When installing the tiles from the top down, the pattern should be shifted a minimum of 6" to 35" alternately between courses.

DO NOT RACK PANELS BETWEEN ADJACENT COURSES (LINE UP VERTICALLY FROM ONE COURSE TO THE NEXT)!

Full Panel Installation General Installation



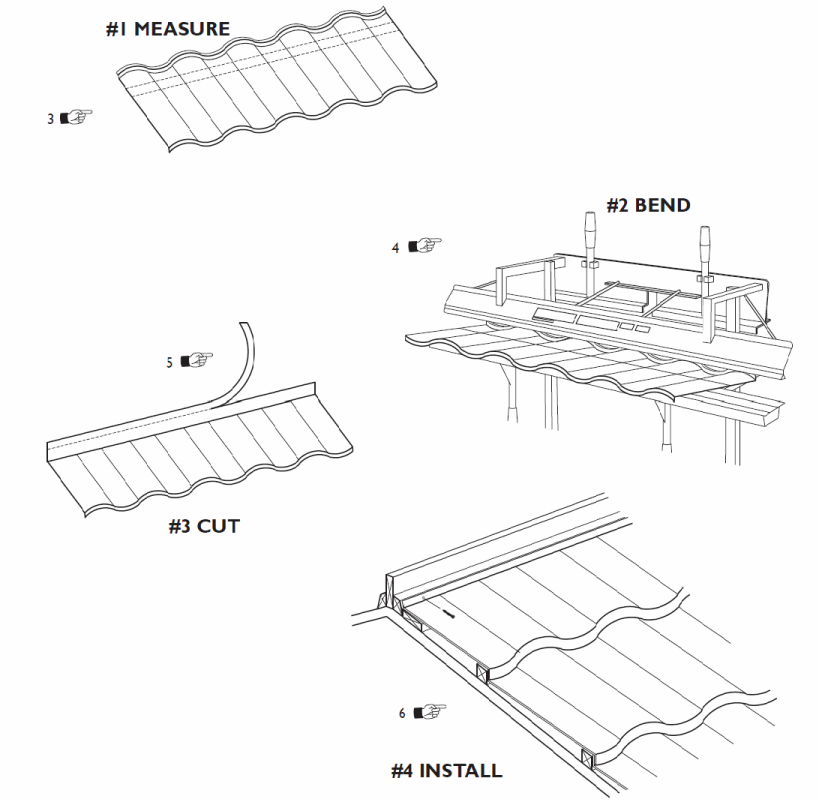
As the pattern slowly advances to the left it is at your convenience where you start your first panel although for a hip/valley installation you should try to adjust this so as to eliminate cuts and bends diagonally across the ends of a panel. Please contact Mosaic for additional layout questions as needed.

Note: Where a valley terminates onto a lower roof you must install the panels just under and below the termination point first (Note 7).

Note:

1. The eave course of panels is fastened down through the top of the tile into the eaves batten (note 8). Seal the head with a small amount of caulking, then coat with granules.
2. When metal hat channels are used for battening, they are fastened to the deck or framing members through the lower flanges with the panels fastened in the normal manner (note 9).

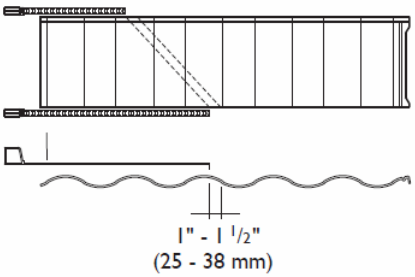
Top Course Installation Bending and Cutting



Full Panel Bends

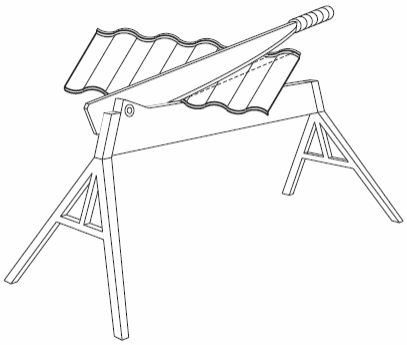
If the top course is less than a full panel, (notes 1, 2) and the panels termination requires a full tile bend up, remember to measure first (note 3) bend second (note 4), and then cut (note 5). If a full panel is cut across the width first it will accordion making bending impossible. A break must be used for this operation. Some distortion will appear but will work itself out as you fasten the panel in place (note 6).

Half Panel Installation Cutting and Bending



Measure

Measure and mark the bend first. Then add **1 1/2” (38 mm) minimum** and mark the cut.

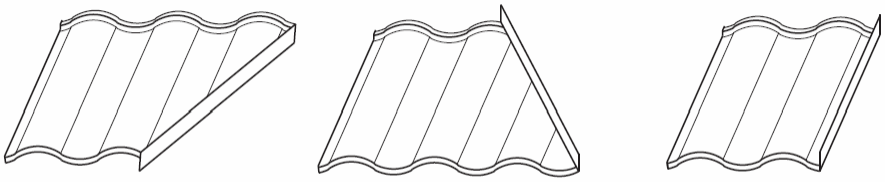


Cutting

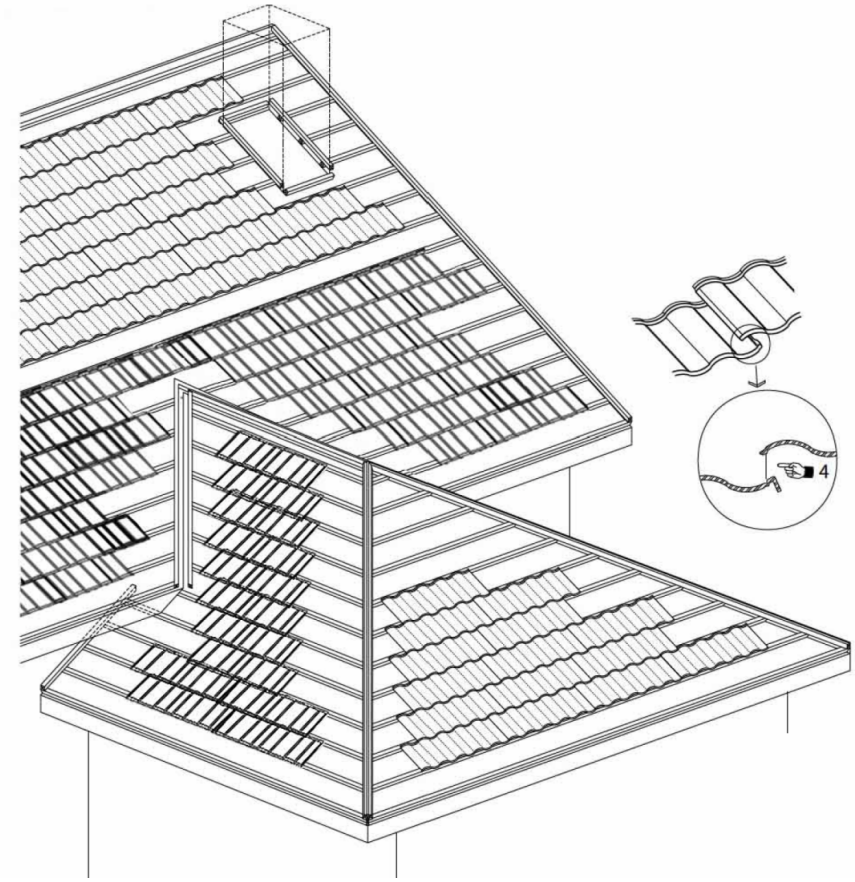
Place the panel face up on the shear with the desired piece on the body of the shear. When you are cutting over hills and valleys diagonally, the shear will tend to wander, and the panel must be adjusted during the cutting.

Bending

Place the cut piece in the break with the bend line at edge of brake on the half tile side. Depress foot pedal and hold then lift or lower the panel manually to give the required upturn or downturn. As you are bending across the profiles, the panel will accordion slightly when broke. Compensation must be made when transferring the measurement to the panel.



Half Panel Installation General Information



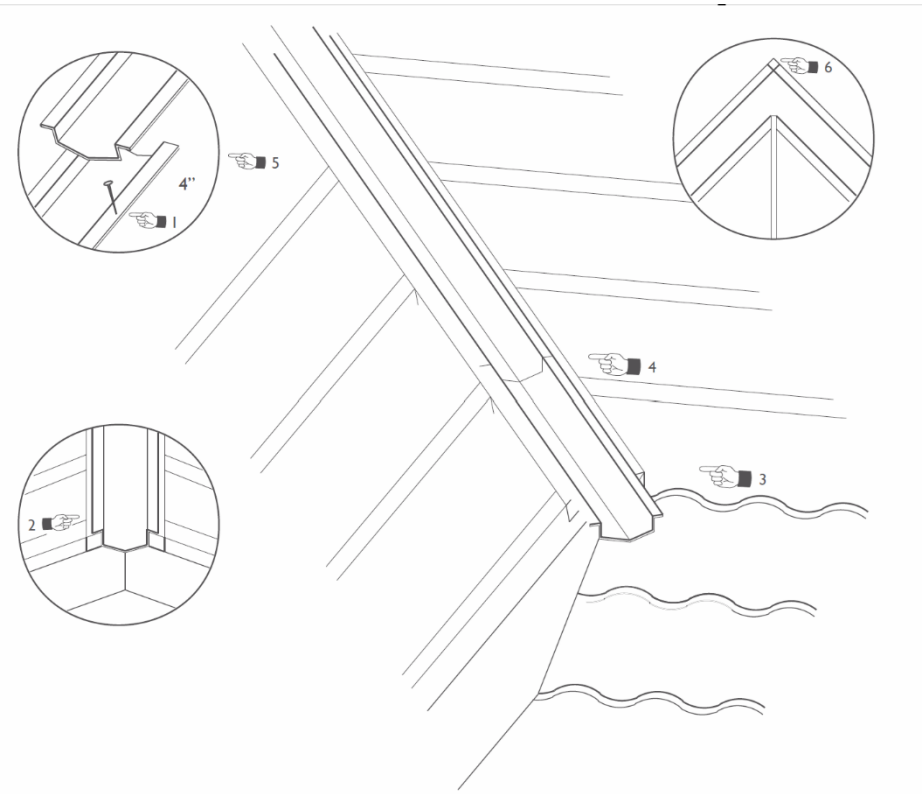
General

Measurements are taken top and bottom for each piece. Each installer has his own preferred spot on the panel to use as a common base point to measure from. This generally is at the top or bottom transformation point on the Sicily Tile panel where concave meets convex (note 1) or a profile bar on the flat panels (note 2). Add 1/8” (3 mm) to the bottom measurement of gable cuts to allow for lapping. Remember the measurements taken are the bend points. An additional 1 1/2” – 2” (38 - 59 mm) must be then added to find the cut line. Any excess should be hammered flat over 2” x 2”. Multiple measurements can be taken, then panels cut and bent in order. This will eliminate unnecessary travel up and down the roof. Note: As the rear of our panels are stronger than the front, a slight distortion of the front edge will occur on diagonal bends, depending on the angle, you may have to compensate for this distortion on the bottom measurement.

Part 5

Standard Details

Valley Trim Installation

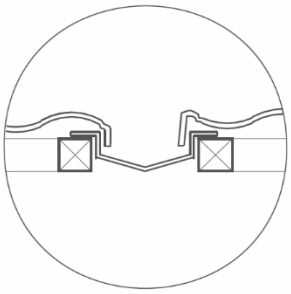


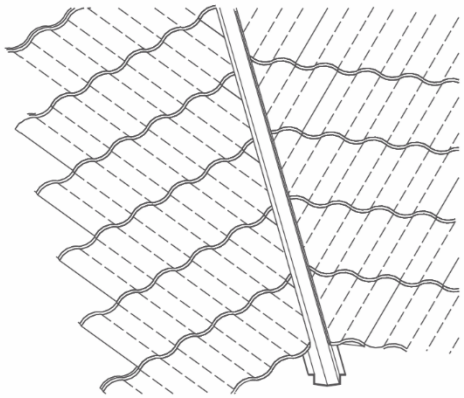
The Mosaic Valley Trim is laid in between the two valley battens and fastened with galvanized nails down through the top flange (note 1). Where the valley terminates at the fascia, the valley flashing should extend past the fascia a minimum of ¾" (19 mm), then scribed to the fascia (note 2). Where the valley terminates on to a lower roof, the lower roof panel should be laid through (note 3) with the valley flashing transitioning out on top of the lower panel, preferably in a lower part of the panel. It is generally wise to start with a shorter piece of valley to allow for this transition (note 4). The valley flashing should be lapped a minimum of 6" (100 mm) and set in a bead of Vulkem (note 5). Junctions in valleys should be formed by standard sheet metal practices of notching and folding each piece in opposite directions, again setting in a bead of sealant (note 6).

Note: Conditions of lower slopes and ice damming will require large laps than 4" (100 mm) (note 5) and an ice and water shield should be considered.

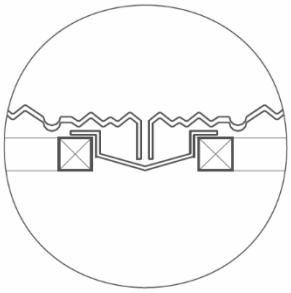
Valleys Tile Termination – Open/Closed

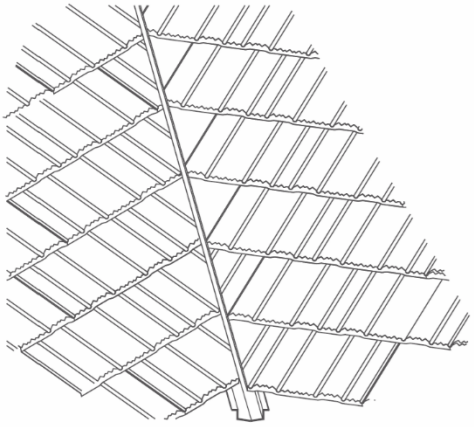
Open





Closed

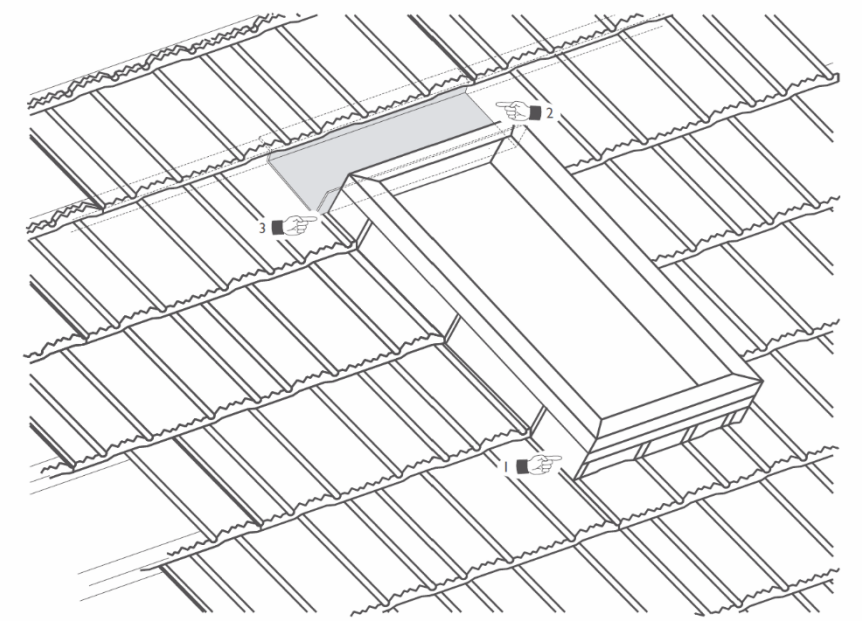




Note:

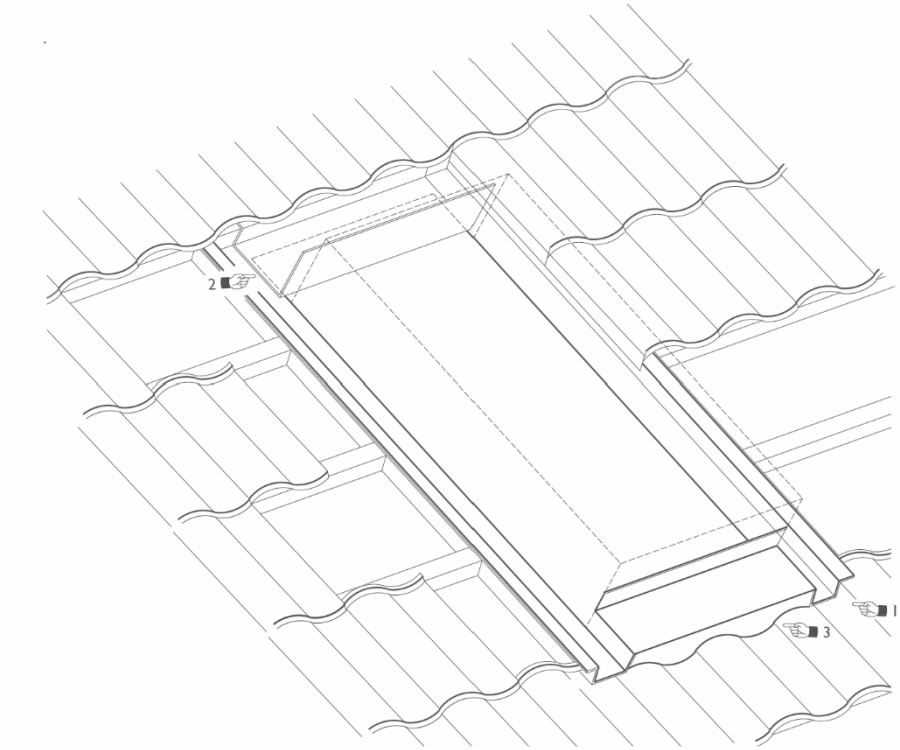
1. This alternate application is utilized in areas of high debris such as trees over hanging the roof system.
2. This application is not generally recommended for snow and ice climates without additional consideration in the installation. Please contact Mosaic for more information.

Skylight Flashing Standard Curb Detail



The panels are bent up against the sides and bottom of the skylight to a sidewall and head wall condition (note 1). They are flashed over with either the skylight flashing, or a counter flashing made to fit from all-purpose flashing. The partial panel directly above the skylight is left out and a pan flashing is formed from an all-purpose flashing with a back shelf similar to a panel and returning up the full height of the skylight (note 2, 5). Carry the pan flashing past each side of the skylight a minimum of 4” and bed the joint with the panels in caulking (note 3). Cut and fold the protruding corners of the pan flashing around the sides using standard sheet metal practices and seal. Use a Mosaic closure strip to seal the top shelf where the panels overlap the top of the pan flashing (note 4).

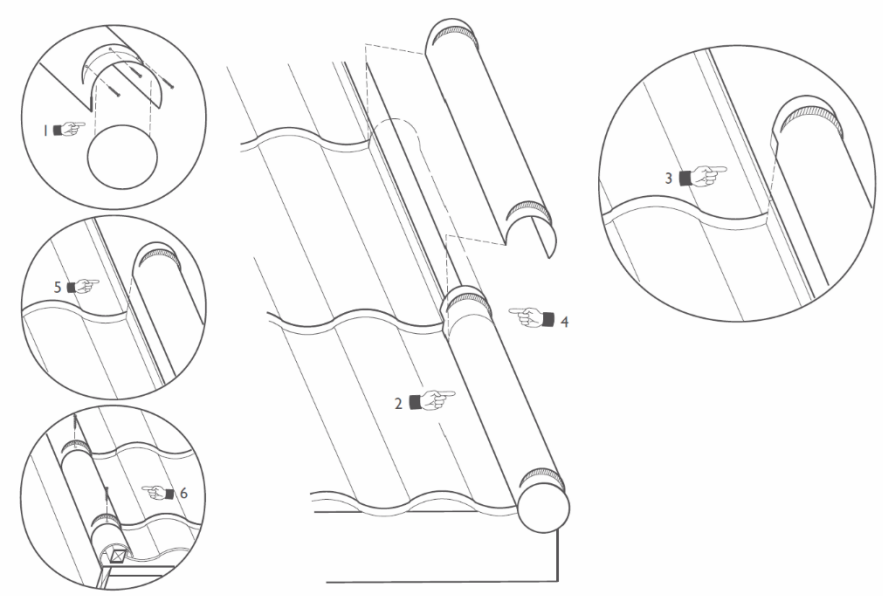
Skylight Flashing Low Curb Detail



A valley flashing is reformed such that one leg is vertical and is placed up each side of the skylight with the top being cut and folded and the bottom transitioned out 6” (150 mm) past the end of the skylight onto the last full panel course below the skylight (note 1). An all-purpose flashing is bent up and placed along the top of the skylight. The ends are folded as per proper sheet metal techniques (note 2). After fastening, caulk the joints with Vulkem and stone granular over joint. The bottom of the skylight is then closed off with vented top row for Sicily Tile (note 3) or with all-purpose flashing for Grande Shingle and Shakewood. Field panels are then cut and bent down into the flashing.

NOTE:
If possible, when laying out field panels allow for the skylight flashing to exit at the lower profile of the tile (note 1).

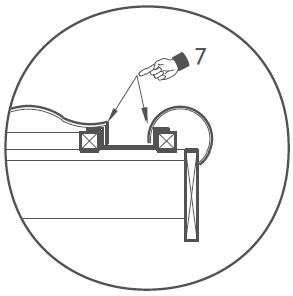
Gable Flashing Barrel/Shake Ridge Cap



The barrel cap trim is installed from the bottom up, course for course with the panels. Install the end disk with screws as shown (note 1). Position the first cap on the rake with the rear portion against the panel flange (note 2). Noting the open distance between the end disk and fascia, notch the cap (note 3) so the barrel trim will fit with the fascia. Install the balance of the caps with the back edge tight to the panel upstand (note 5). This will give a larger gap between the first and second course of caps (note 4). Position caps by rolling so as the exposed edges along with the fascia form a straight line while remaining tight to the panel. Fastening is by a single fastener down through the front flange into the 2” x 2” backer (note 6).

Note: When installing the end disk, a more pleasing finished product is achieved by snipping the lower flange and flattening flush with the disk, then caulking and granular chipping the joint.

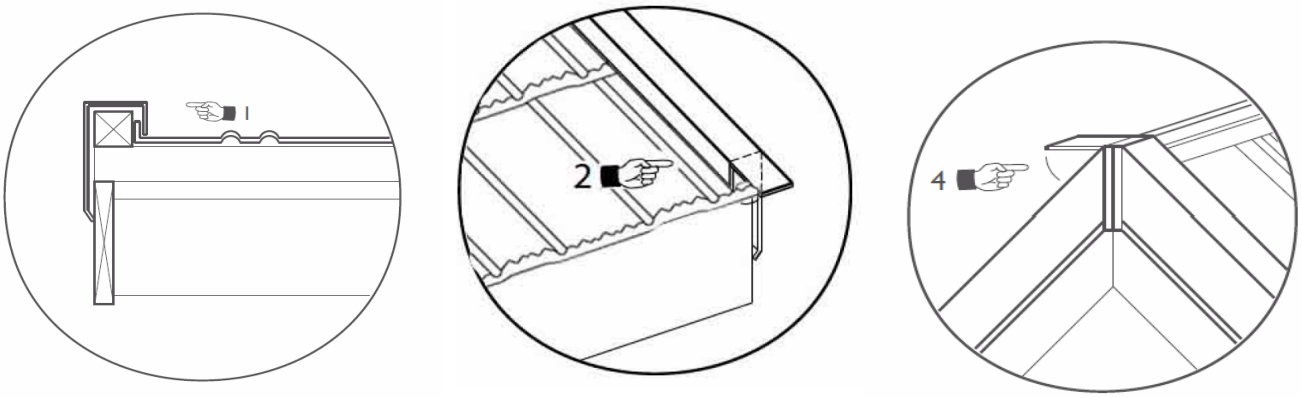
Note: Please ensure that the caps are installed with the correct lap. The small flange overlaps the large flange and faces down the roof. Also ensure that the panel upturns are to the top of the 2” x 2” blocking.

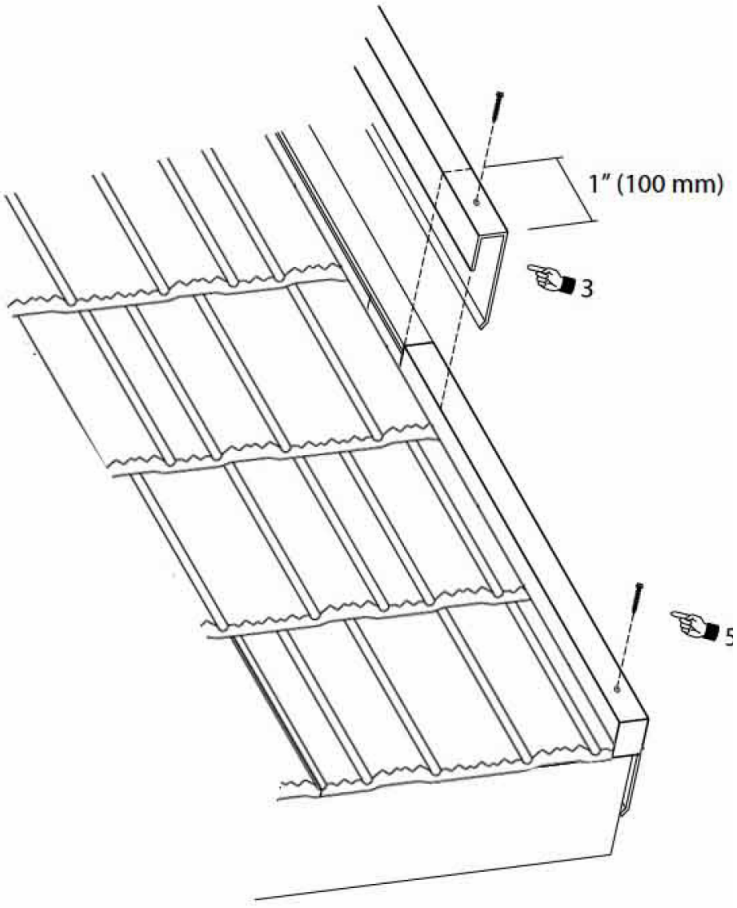


Splayed Gables

If you do not want water running over the fascia then we recommend installing a Mosaic valley flashing down the rake with both the panels and trim bent down into it (note 7). The gutter can be partially concealed by the trim and produces the most aesthetically pleasing and functional detail.

Gable Flashing Box Barge Installation



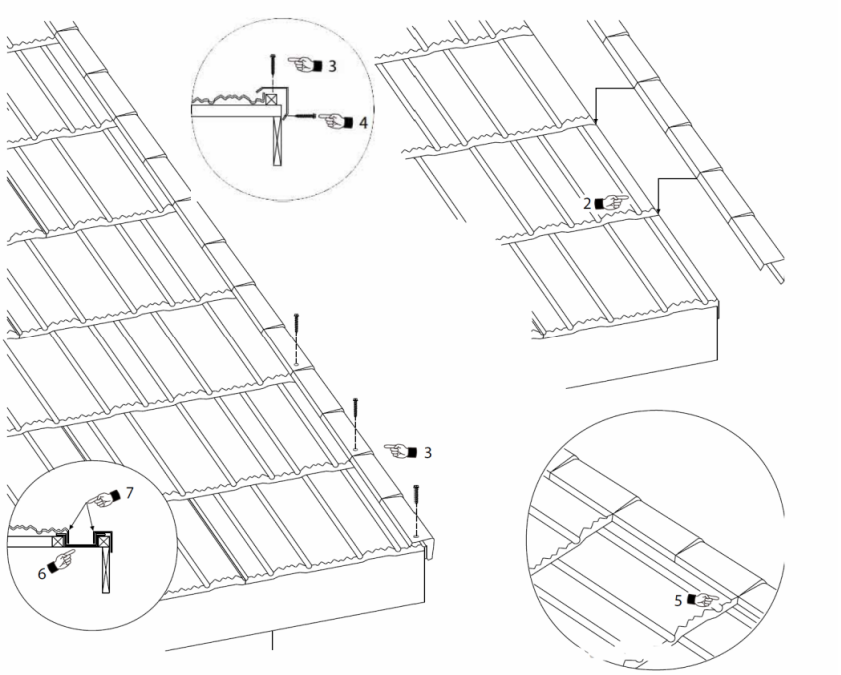


The trim fits down over the rake 2" x 2" and upturned panel (note 1). Installed from the bottom up, it's important to start and end each rake of a gable end with the same length of pieces for visual purposes. The exposed lower end of this trim is cut, notched and bent down to close in the end (note 2). The following pieces should be lapped a minimum of 4" (100 mm) (note 3). The barge trim is lapped and mitered at the peak as shown (note 4).

The trim is fastened down through the top (note 5). A small amount of Vulkem caulking or equivalent and stone chip should be used to cover any exposed fastener heads.

Note: Please ensure that the panel upturns are to the top of the 2” x 2” blocking.

Gable Flashing Eave Trim

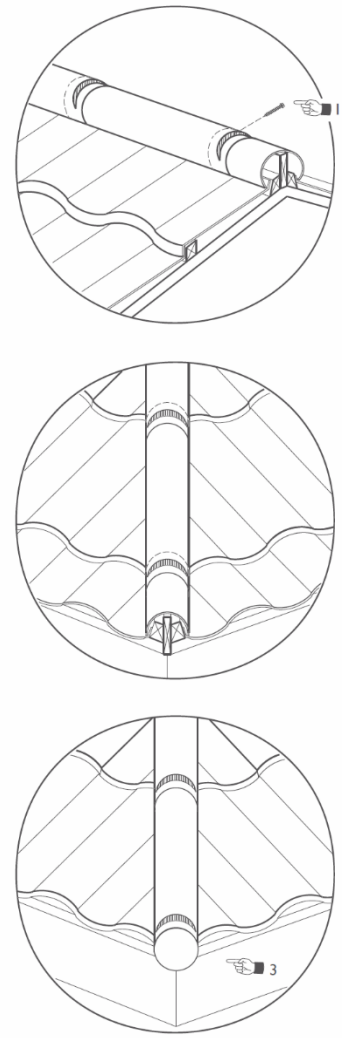


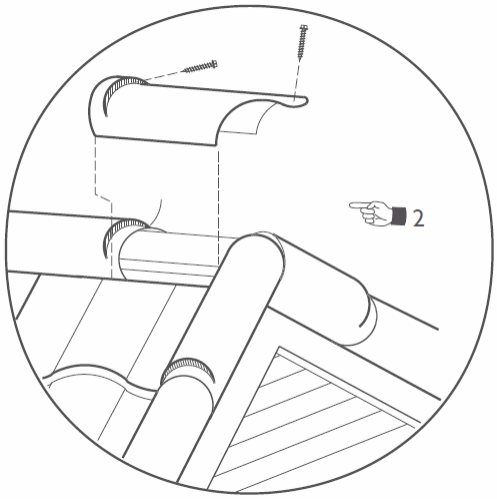
The Mosaic panels are terminated by bending up the panel edge a minimum of 1 1/2” along a 2” x 2”. Place a square trim over the gable aligning the front of the Grande Shingle/Shakewood panel with a profile in the trim. Hold the square trim plumb with the fascia and level with the plane of the roof and fasten down through the top leg into the 2” x 2” battens (note 3). In high wind areas we recommend an additional fastener be placed through the side into the fascia (note 4). Snip the top leg of the trim 3/4” (19 mm) flush with each front downturn of the panels and bend the leg of the trim down tight to the tile to close the gap (note 5).

Splayed Gables

If you do not want water running over the fascia then we recommend installing a Mosaic valley flashing down the rake (note 6) with both the panels and trim bent down into it (note 7). The gutter can be partially concealed by the trim and produces the most aesthetically pleasing and functional detail.

Hip-Ridge Barrel Cap - Unvented





Ridge

The barrel caps can be laid across the ridge in either direction and are fastened down through the top of the front flange into the ridge backer (note 1). The end barrel caps are coped to fit over the junction of rake or hip barrel caps (note 2). The exposed cut edges should be caulked with Vulkem then covered with granular chip.

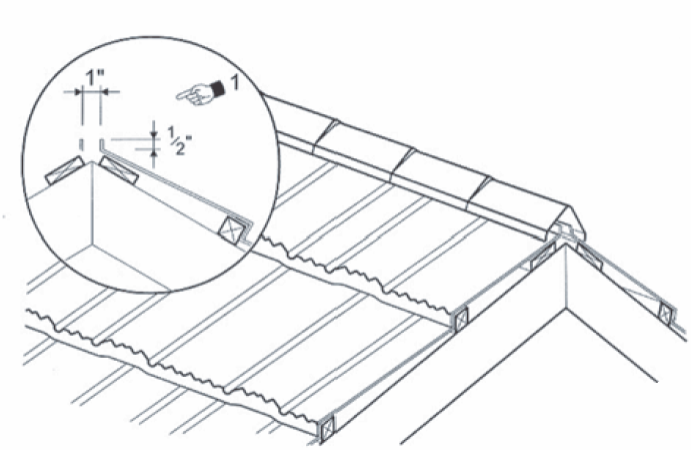
Hips

An end disc is installed in the first cap at the fascia. The barrel cap is then positioned, scribed and cut to ensure a tight fit of the disc to the panel and fascia (note 3). The balance of the barrel caps is then laid from the bottom up. Fastening is again down through the front flange into the hip board. The junction of the hip caps at the peak is similar to the rake installation above (note 2) where they are coped and lapped over.

Note: The fitment and design of the barrel ends particularly at the hip is varied and considered to be an installer's signature. Please ensure that all voids are sealed to stop vermin and bird entrance.

Shake Ridge Cap – Vented and Unvented

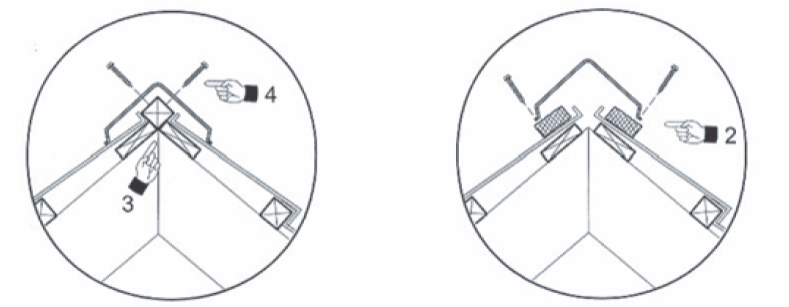
Vented Ridge



Bend and cut the top course of tile so as to leave a 1” (25 mm) gap and a 1/2” (12 mm) upstand centered on the ridge when ventilation is required (note 1). Place a strip of vent mesh down each side of the ridge and place the trim over. Fasten the trim on each side down through to the 1” (25 mm) strapping (note 2).

The panels are bent up approximately 1/2” (12 mm) so as to leave a 1” (25 mm) wide gap up the center of the hip (note 5). Place a strip of vent mesh up each side of the hip similar to note 2 above. Adjust the angle of the trim to equal the roof plane and fit over fastening the trim on each leg down into the tile battens (note 6).

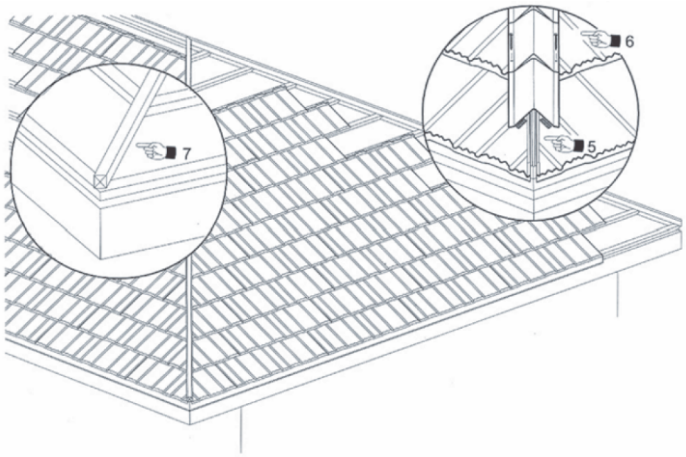
Standard Ridge



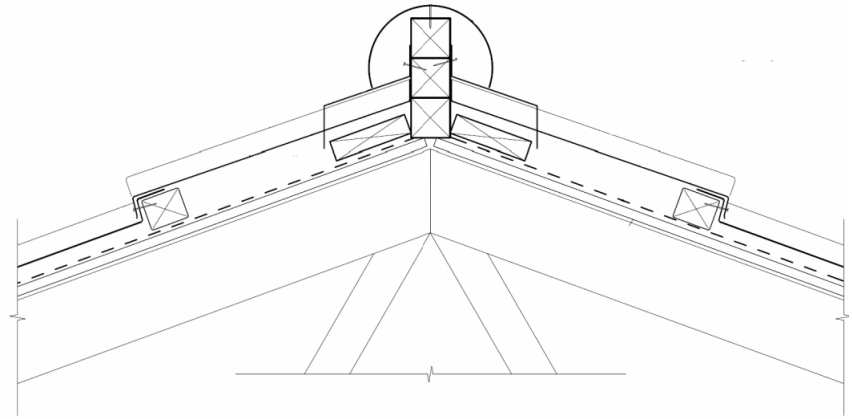
If venting is not required, then the panels are bent up against a 2” x 2” (50 x 50 mm) (note 3) with the trim placed over and fastened down through into the blocking (note 4).

Note: Adjust the angle of the trim to fit the roof plane.

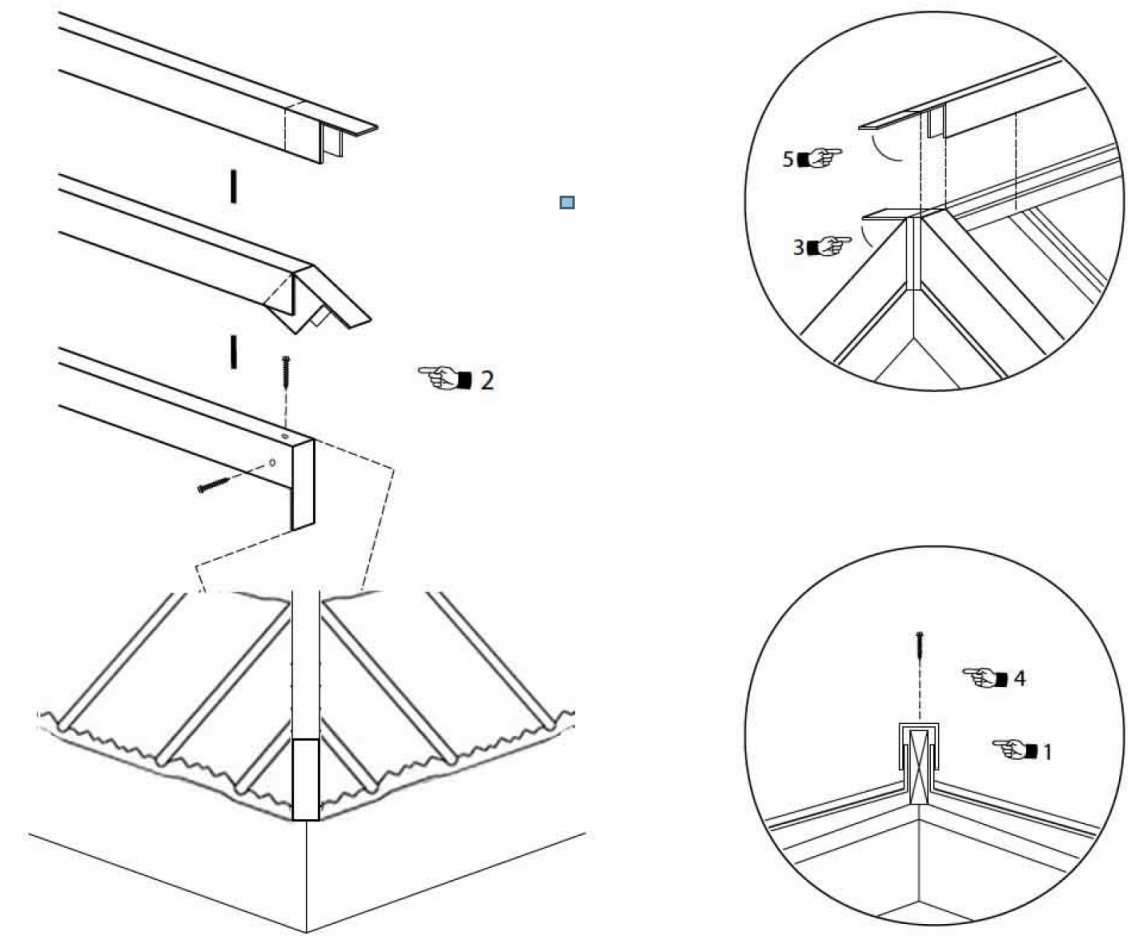
Standard Hip



If venting is not required, then the panels are bent up against a batten (note 7) centered on the hip. Adjust the angle of the trim and place it centered down the hip and fasten down into the tile battens. Snip each leg 3/4” (19 mm) at the panel upstand and bend the leg down tight to the panel to close the gaps as in rake installation.



Hip-Ridge Flashing Ridge/Hip Trim



Hip

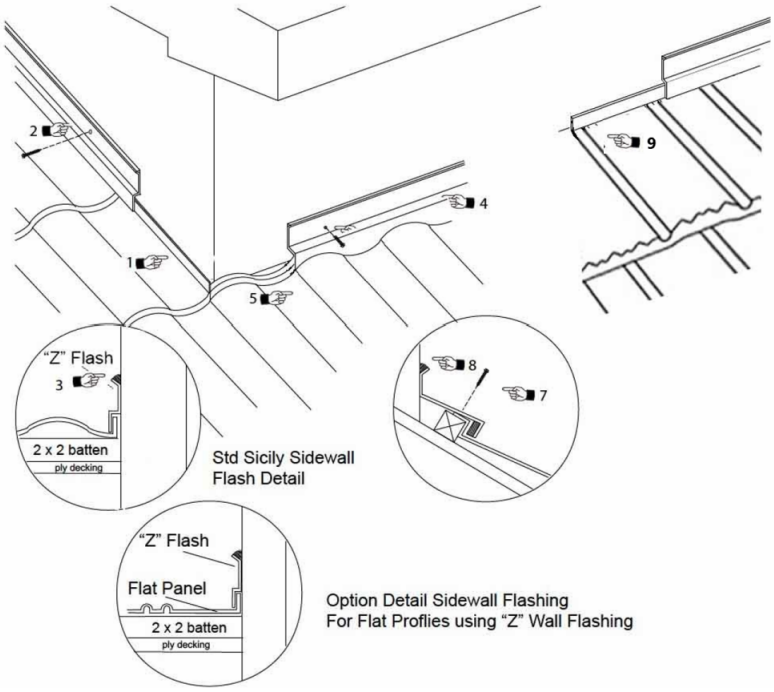
This trim is installed from the bottom up over the backer board (note 1) with a minimum lap of 4” (100 mm) at joints. The exposed end of the hip trim is cut, notched and folded (note 2). At the junction of the hip trim at the ridge, it is again cut, mitered and folded (note 3). The trim is fastened down through the top into the backer board (note 4).

Ridge

The ridge trim is installed in the same manner as above. For end junctions with rake or hip, the trim is cut, notched and folded over (note 5).

Note: The heads of all fasteners used to attach trims should be caulked with Vulkem then covered with granules.

Wall Flashings Sidewalls and Headwall



Sidewall – All Products

The panels are cut and bent up against the sidewall. Wall flashing is formed from 3” (76 mm) or 5” (172 mm) Z-bar and then fitted over and fastened to the wall (note 2) minimum 2’ (610 mm) on center. Corners are lapped to standard sheet metal practices. The top edge (caulk tray) of the flashing is then caulked as per instructions on the tubes of caulking (note 3). In new construction, alternately the panels can be bent up against the wall and sided over.

Cross Walls Sicily/Mediterranean Tile Head

If the last full panel course is more than 1” (76 mm) away from a vertical wall then a course of panels is cut and installed with a minimum 11/2” up turn on panel (note 8). Bird stop ridge is then installed over the panels with Vulkem sealant at every joint and wall attachment including on back of bird stop and panels and Z-bar to wall. Z-bar is used to finish the flashing. If less than 3”, headwall flashing is installed over as per (note 4). Again, it is fastened to the wall (note 6) minimum 2’ (610 mm) on center and down through the tile (note 7) at a minimum of 18” (457 mm) on center. The top edge of the Z-bar (Gum Edge) is caulked (note 8).

Cross Walls – Grande Shingle/Shakewood

The panel is cut and bent up (note 9) which is similar to sidewall.

Note: Ensure that the panel upturns are a minimum of 11/2” up the head wall or sidewall.

Trim Details 3.5/5" Fascia — Bird Stop Eave

3.5" & 5" Fascia – Eave

Place the fascia over the first batten or extended fascia board. Fasten down through the top flange at minimum 12” (305 mm) on center. In high wind areas, place additional fasteners in the face as required, being careful not to over tighten and buckle the metal (note 1). The Fascia trim is available with a 3” leg to cover the 2” x 2” batten or 5” to cover existing roofing materials in re-roofing applications.

Bird Stop Eave

This trim is designed primarily to fill the exposed void in the Sicily Tile profile at the eaves course. It is available with a 3” leg to cover the 2” x 2” batten or 5” to cover existing roofing materials in re-roofing applications.

3.5” & 5” Eave Drip Flashing

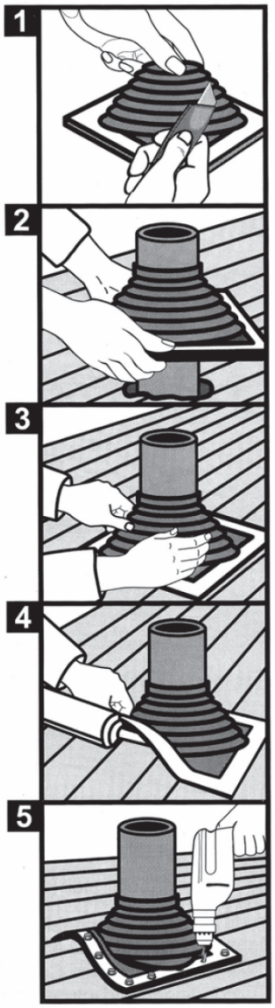
Fascia metal is designed to be used on re-roof projects where the trim will not cover over the additional built-up framing material. This molding is applied up the rake by placing a screw 12” (300 mm) on center through the top flange (note 4). This molding is positioned so the exposed edge of the gable trim follows the fold line. This trim is designed to match the metal Bird Stop Eave. On eave 5” recommended for counter

Jack Flashings – MasterFlash

Easy 5-Step Installation

- Master Flash can be installed onsite quickly and easily, usually under 10 minutes.
- One-piece construction makes Master Flash easy to handle.
- Bendable base forms seal with any contour, surface irregularities or roof pitch.

- Seals tightly and dependably with Vulkem sealant to eliminate costly call backs.
- Pipe opening is easily customized with a sharp knife or scissors for any application.
- Install MasterFlash pipeFix flashing to pipe with stainless steel hose clamp where snow load conditions exist.



1. Select and Trim
   Choose appropriate Master Flash with opening at least 20% smaller than pipe diameter. If necessary, trim opening to 20% smaller than pipe diameter.
2. Slide
   Slide Master Flash down over pipe. (A nonpetroleum-based lubricant will ease installation.)
3. Form`
   Press Master Flash down, bending it to conform to roof profile or roof irregularities. A blunt tool will help press flashing into tight roof angles.
4. Seal
   Apply appropriate sealant between base and roof.
5. Fasten
   Use fasteners to complete sealing. For UPC installation, may not exceed 1 1/2 (38 mm).

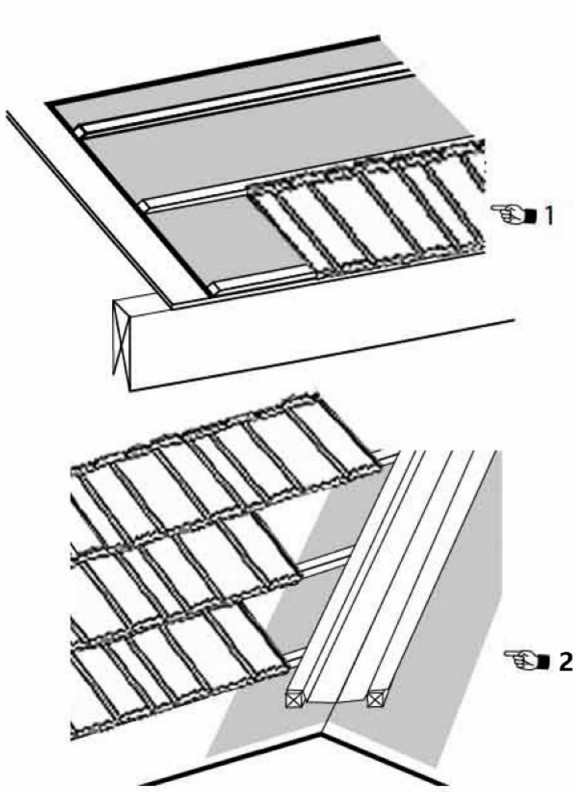
Mandatory - Completely cover pipe and flashing with Vulkem or approved sealant, brush on if needed for 100% coverage and granular coat to match roof surface.

Part 6

Underlayment

General and Low Slope Underlayment

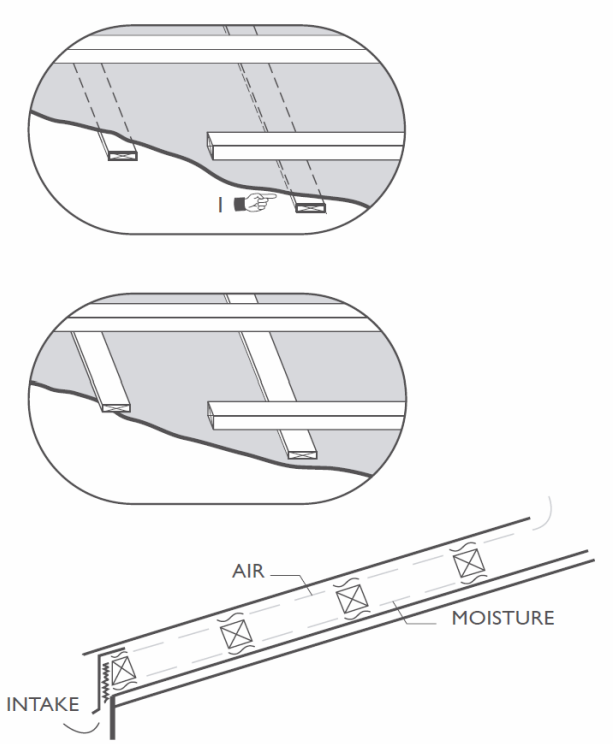
General



Most building codes require underlayment. Mosaic recommends a self-adhesive/self-sealing ice and water shield or a modified bitumen underlayment for the entire field. At a minimum, the underlayment should be a product that has current product approvals that meet the state and local building codes. Additionally, it may be required and is recommended in areas that have occasions of severe weather conditions, to install a self-adhesive/self-sealing ice and water shield for the eaves (note 1) and valley (note 2) areas.

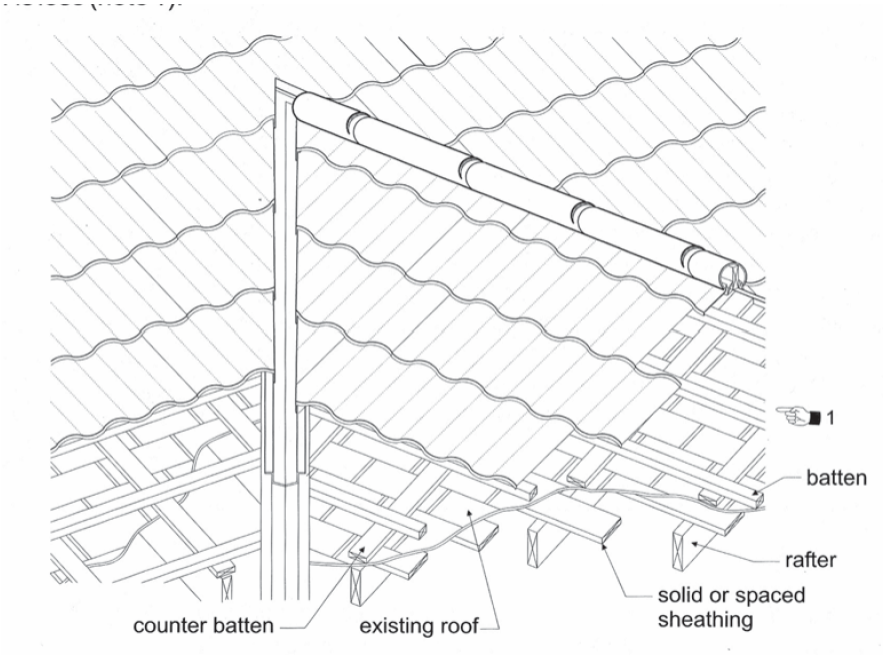
Note: Synthetic underlayment is NOT recommended as a primary underlayment.

Low Slope

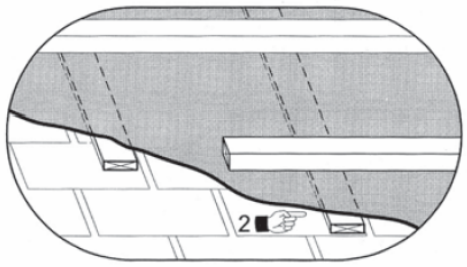


After the pitch of the roof falls below 4:12 in cold weather climates and 3:12 in warm weather climates, additional protection must be provided under the roof system. The types of additional measures are related to a number of factors such as slope, roof area, configuration, location, etc. At a minimum, a reinforced underlayment should be considered; however, a good quality self-sealing/adhesive ice and water shield provide excellent protection. Additional consideration may need to be given so that the 2” x 2” battens do not form a dam. The 2” x 2” should be raised off the deck by installing 1” x 4” counter battens over the rafters nailed 7” on center. An alternative is to utilize serrated “Breeze Dried” battens could be used. An approved sealant must be applied to all side laps and roof penetrations.

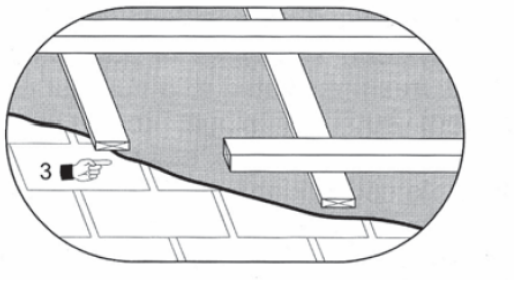
Re-roofing Over Wood Shingles or Shake



Prepare the roof edges as noted on page 37. Minimum 1” x 4” (25 x 100 mm) counter battens are placed vertically over the rafters and fastened through the existing roofing screws of sufficient length to penetrate 1” (25 mm) into the framing member or through the sheathing, whichever is less (note 1). Use approved fasteners per local code.



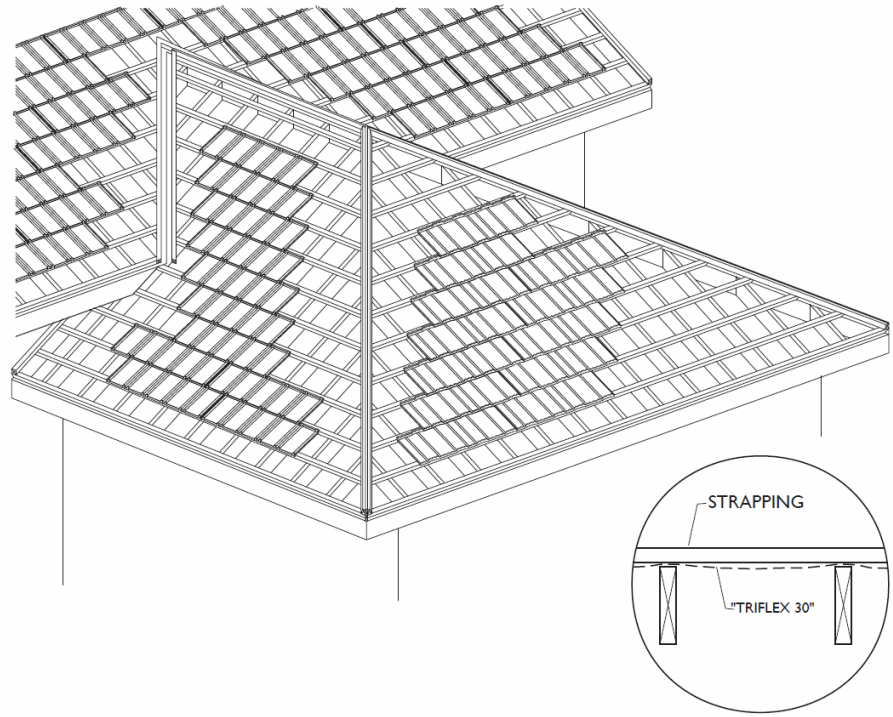
Some existing roofing membranes may be in sufficient condition to perform as the underlayment. If the material is insufficient to use or if local building codes require a new underlayment, we recommend it be installed over the counter battens whenever possible (Note 2).



Some building codes require the existing roof to be covered with fire block over the cavity space. Any approved Class A underlayment per local building code, must be laid over the existing roof material prior to installing the counter battens (note 3).

Open Rafter Application

Open Rafter



When permitted to install on open rafters, most local codes call for underlayment. Extra care should be given to installing the underlayment straight, tight and neat with sufficient laps. Particular attention should also be given to valleys and roof penetrations. Extra care should be taken to ensure accurate fitment of the panels from battening through to cutting and bending.

Note:

1. Apply Mosaic butyl tape or approved sealant on all side laps and roof penetrations.

2. If the Mosaic panels are installed without underlayment on open rafters, please realize that differentiating air pressures can occur which could siphon snow or other elements into the building. Consideration should be given to building location, local weather conditions and intended use.

Part 7

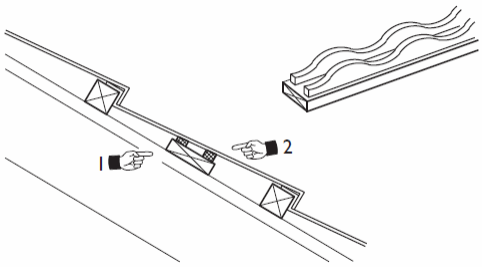
Maintenance

High Traffic Protection

General

When access is required to a Mosaic roof system on a regular basis (i.e. to service an air conditioner, chimney, etc.), we recommend that the following measures be taken to provide for extra strength and durability.

Install an intermediate 1” (25 mm) batten under the traffic area (note 1) with a double wide strip of ridge foam placed profile up in line with the profile of the tile (note 2).



Working on a Completed Mosaic Roof System

When tradespeople need to work on a completed Mosaic roof, it is important to follow these precautions to prevent damage and maintain the roof's integrity.

1. Review Walking Procedures:

   Ensure all tradespeople understand the proper procedure for walking on a Mosaic roof as outlined in the product manual.
   For additional guidance tailored to specific needs, contact the Mosaic Technical Department for more information.

2. Document Roof Condition:

   Take dated photographs of the roof immediately after installation and before any tradespeople begin work. These photos serve as a reference for identifying any damage that might occur later. If damage is detected, contact Mosaic Technical Department to discuss appropriate repairs to avoid affecting the warranty.

3. Protect the Mosaic Coating:

   The Mosaic coating consists of stone granules bonded to steel with acrylics. Avoid prolonged contact with latex paints, stucco, and mortar, as they can stain the coating and create a permanent bond. Solvent-based paints will damage the coating permanently. For repair advice, contact Mosaic technical department.

4. Nailable Foam Base:

   Cutting a sheet of “nail base insulation” minimum of 1’ (25 mm) in half and laying foam side down on the panels will provide 2 2’ by 8’ (.6 x 1.2 m) walkable roof planks to stand on while doing repairs and the foam’s contact with the granules will prevent slippage. **TEST PLANK SECURITY BEFORE UTILIZING.**

By adhering to these guidelines, you can help ensure that the Mosaic roof remains undamaged and that any necessary repairs do not impact the warranty.

Maintenance and Care for Mosaic Roof Systems

Caulking

Caulking is typically used where different roof and wall planes meet and around mechanical roof protrusions. Check the caulking every 5 years for cracks and signs of stress. Due to the different expansion rates of materials at these intersections, we recommend using a urethane-based sealant like Vulkem for our roofing systems.

Washing

The Mosaic coating consists of ceramic coated stone granular stone that do not support fungi growth and are UV resistant. For light stains, use a light cleaning solution, such as "Wet and Forget," available at major building supply stores. Apply and rinse with a low-pressure washer. For tougher stains, moderate scrubbing with a soft bristle brush may be used. For stucco and mortar droppings, moisten the area slightly and use moderate pressure with a wooden paddle to dislodge. After cleaning, dry the area and inspect for coating damage. Touch up moderate scuffing with Vulkem caulking and granular. For severe cases, contact Mosaic.

Gutters

Ensure gutters are installed below the plane of the roof. Clean gutters regularly to prevent water backup on or under the Mosaic roof system. Avoid walking on the roof to clean gutters. If necessary, contact the Mosaic Technical Department or a Mosaic Certified Installer for proper instructions on walking on the roof.

Chimneys

Chimneys, especially stone or masonry, can create substantial problems due to warm gases escaping up the flue and causing differential movements, particularly in cold weather. The warm masonry can absorb moisture, which may freeze and cause the masonry to splay and leak behind the flashings.

Pay extra attention to stone chimneys as some stone types are very porous and can absorb significant amounts of moisture, leading to potential damage.

Please note prior sections regarding footwear and roof traffic.