Stone coated steel roof tile

DIVINE

INSTALLATION GUIDE

KD ONE

Ⅰ. Introduction

These installation details are provided to demonstrate recommended installation methods for KD One roof products and accessories. Consult with KD One for additional information.

Ⅱ. Product

1)Panel

DIVINE *ventus*

Overall length: 1,285mm
Length of cover: 1,225mm
Width of cover: 372mm

Weight: 3.0kg
Roof cover: 2.20EA/m²
Upstand: 25mm

DIVINE *crown*

Overall length: 1,350mm
Length of cover: 1,280mm
Width of cover: 372mm

Weight: 3.0kg
Roof cover: 2.10EA/m²
Upstand: 25mm

DIVINE *orbis*

Overall length: 1,340mm
Length of cover: 1,270mm
Width of cover: 370mm

Weight: 3.0kg
Roof cover: 2.13EA/m²
Upstand: 25mm

DIVINE *shake*

Overall length: 1,347mm
Length of cover: 1,282mm
Width of cover: 374mm

Weight: 3.0kg
Roof cover: 2.09EA/m²
Upstand: 28mm

2)Accessories

Barge Board Cover

Overall length	1,400mm
Length of Cover	1,300mm
Width	60mm
Weight	1.90kg

Side Flashing

Overall length	1,400mm
Length of Cover	1,300mm
Weight	0.88kg

Fascia Flashing

Overall length	1,400mm
Length of Cover	1,300mm
Width	10mm
Weight	1.15kg

Flat Sheet

Overall length	1,400mm
Length of Cover	1,300mm
Weight	3.10kg

V-Valley

Overall length	1,400mm
Length of Cover	1,300mm
Width	150mm
Weight	1.20kg

Ridge trim

Overall length	1,400mm
Length of Cover	1,300mm
Width	50mm
Weight	1.36kg

Barrel trim

Overall length	407mm
Length of Cover	377mm
Width	153mm
Weight	0.53kg

Angle trim

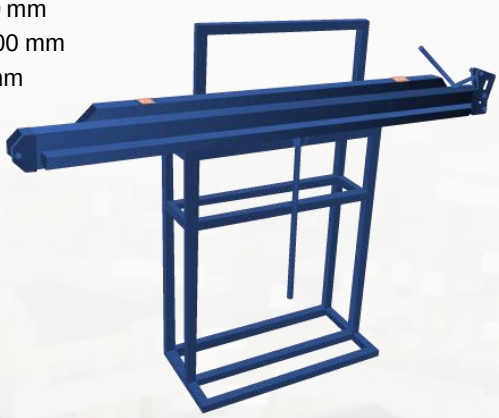
Overall length	405mm
Length of Cover	377mm
Width	160mm
Weight	0.53kg

3)Finishing Kit

Finishing Kit is available to repair damage on the surface if occurred during installation.

4)Equipment

Bender(L)
Width:1,700 mm
Length: 1,200 mm
Depth:350mm



Bender(S)
Width:750 mm
Length: 1,000 mm
Depth:350mm

Cutter
Width:900 mm
Length: 680 mm
Depth:350mm

Batten spacer

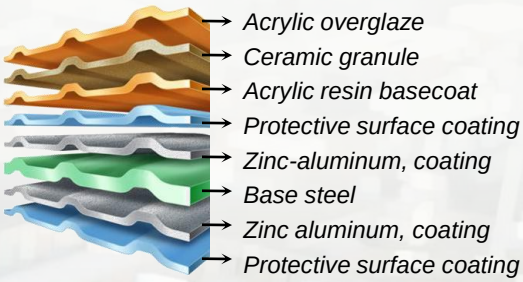
Other required equipment

-Hammer or nail gun, stainless steel or galvanized nail, Measuring rod, Electric saw, Extension cord, Caulk line, Tin snips, Caulking gun, Drill, Pen and notepad and etc.

Ⅲ. General Information

1)Material Breakdown

DIVINE panels and accessories are formed from Galvalume steel (Aluminum-zinc alloy coated steel) with a protective coating of ceramic coated stone granules.



2)Building code

It is the responsibility of the installer or contractor to check and know about the specific building codes before installation begins.

3)Roof slope

DIVINE panels are installed on new or existing roofs pitched a minimum of 3:12 (14degrees.)

4)Warranty

DIVINE panels carry a limited warranty for fifty years and it is transferable. Each DIVINE panel it sells, will be free from manufacturing defects in workmanship and materials, and will resist hail damage for fifty years from the date of installation. (Hail damage is defined as penetration of hail stones completely through the panel; and/or cracks or splits of the panel's steel substrate around the point of impact.)

The warranty may vary depends on the region (or environmental conditions). See your contract or separate warranty for further detail.

5)Handling & Storage

Care should be taken when handling the panels to avoid damage on the surface. They should be placed under a tarp, or placed in an area free from moisture and debris. If stored outside, a waterproof cover must be placed over the panels to keep them dry and prevent damage.

Ⅳ. Deck preparation

1)New Construction

Prepare roof deck to meet local building code.

2)Reroof

When reroof, you may tear-off old roof, or install them over existing roof. Check local building code if re-roof over existing roof is possible.

If you are tearing off old roof, clean and prepare deck to meet local building code.

If you are reroofing over existing roof weather even surface or irregular surface, remove all existing ridge and hip materials first, and cut the existing overhang back as needed to install battens and accommodate flashings.

If the local building code requires fire rating, underlayment must still be installed over existing fire retardant roof materials.

3)Underlayment

An underlayment should be installed as per local code and manufacturer's instructions.

Unless local conditions require otherwise, either one layer of traditional type 30 organic fiber felt, or two layers of type 15 lb or equivalent are recommended.

All underlayment should be self-supporting.

Ⅴ. Roof framing

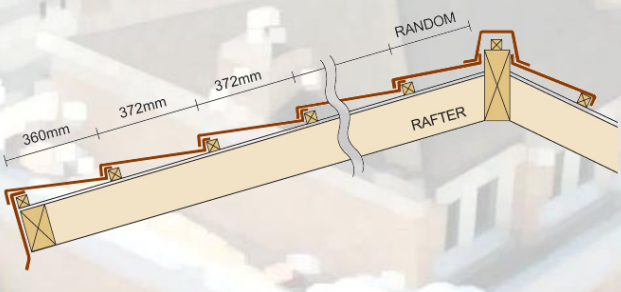
1)Battens

Steel battens may be used. They should be a Min.22AWG gauge corrosion resistant material and shaped either a "Z", "C", "J", or "U" section.

Upstand of panels should be considered for minimum batten size to adhere DIVINE panel correctly.

Usually 2"*2" of wooden batten or 1.5"*1 of steel battens are used.

Batten spacing will be determined by the panel profile (tile spacing is 372mm, shake spacing is 374mm). Position the first batten flush with the fascia or batten build-up. The second batten is positioned at 365mm to allow adequate overhang at the fascia for gutter/water shed from the roof. The last batten at the ridge is random depending on the rafter length.



2)Counter battens

Counter battens are size of 1"*4". These are used when roofing over uneven surfaces or where a cold roof installation is desired.

Counter batten spacing is approximately 600mm directly over the rafter and shall be placed across the existing roof surface parallel to the framing members.

Ⅵ. Tile & Accessory installation

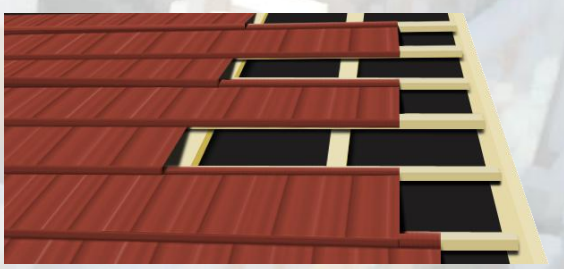
1)Fascia

Fascia flashing covers batten installed at the fascia and a panel is laid on the fascia flashing to act as a drip edge.

2)Panel lay-out

Interlock each panel using the side-lap.

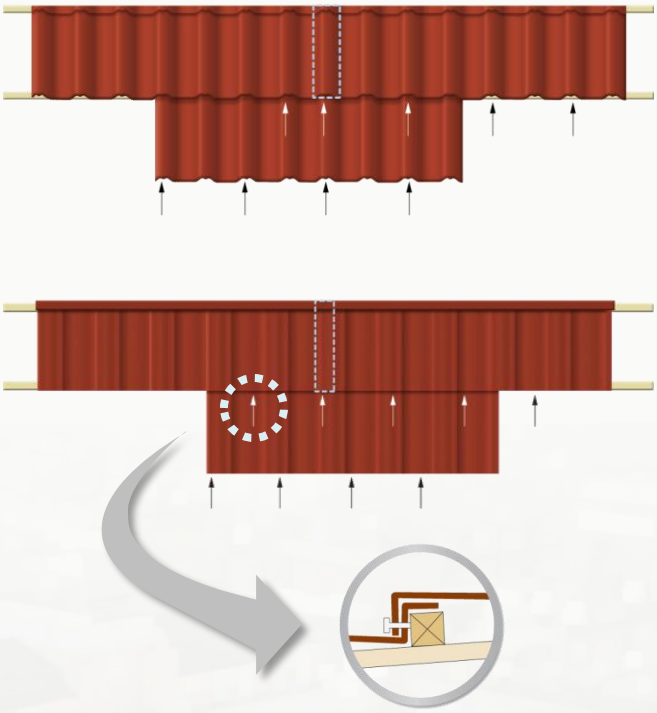
DIVINE panels may be laid either left to right or right to left. But DIVINE shake panels must be laid only left to right.



*If loading panels on the roof, panels should be stack on the wall area.

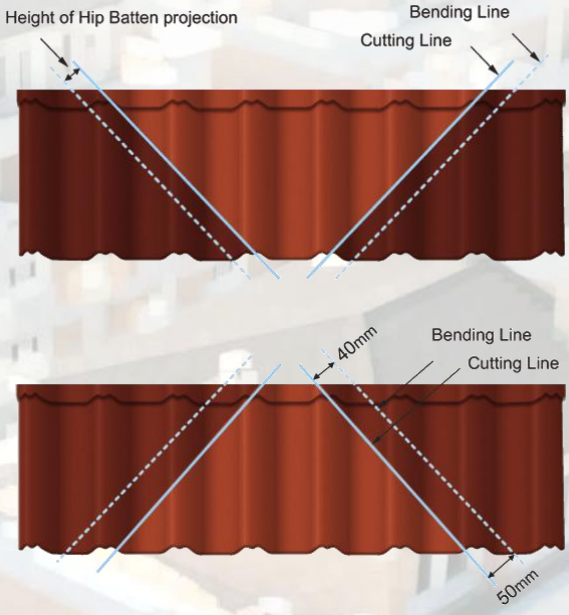
3)Nailing

Each DIVINE panel is fastened with a minimum of 4 fasteners.



4)Cutting and bending panel

Take all the lengths up onto the roof and begin laying, working from the top to bottom. Each panel should supply two cut pieces leaving a minimum of wastage.



5)Valley

Valley metal should be a minimum 200mm wide. Otherwise the width is determined in accordance with local conditions. Use valley metal made of aluminum, galvalume steel or aluminum-zinc alloy coated steel, or bend KD's flat sheet to make one. Valley should not be covered with stone granules.

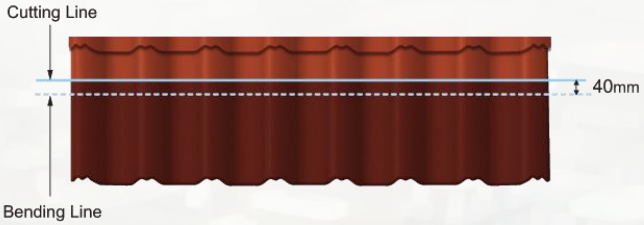
Open valley or closed valley method is acceptable.

After valley flashing has been fit and secured into the valley area and full panels have been positioned, measure to cut panels. Panels are cut and bent down into valleys leaving either opened or completely covered.

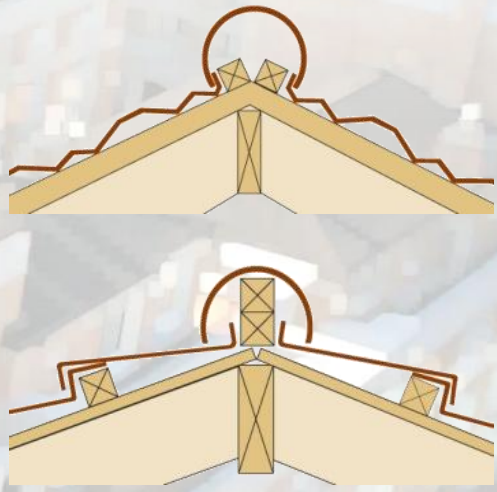
Make sure the ends of the valley metal extended beyond the fascia or onto a lower roof area.

6)Hip & Ridge

Measure the length of the last panel at the ridge and bend full panels before cutting.



Install Ridge trim, Angle rim or Barrel trim along hips or ridges. Ridge trims, Angle rims or Barrel trims are overlapped and fastened on both sides along the ridges.



Bend and fold exposed ends of hips and ridges neatly and finish with an end cap or a piece of similar material. At the hip and ridge intersection, miter into place.

7)Rake & side flashing

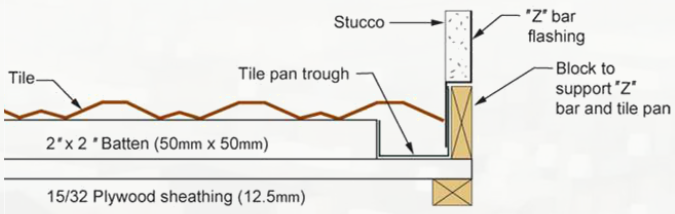
If barge board flashing or a similar material is available, bend up the end of panel to meet installed batten at the barge board and then place a barge board flashing over the batten with the end of panel to avoid leaking

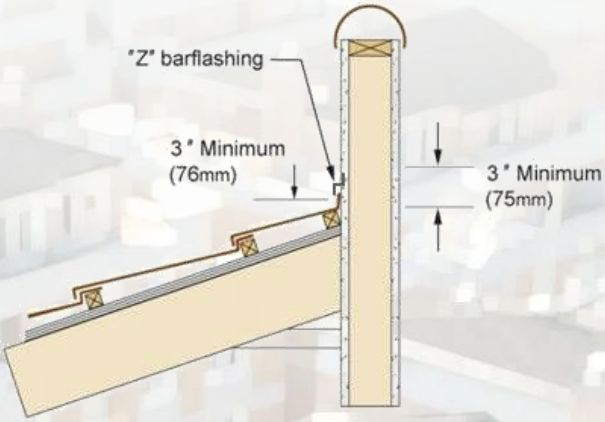
If fascia flashing or a similar material is available, place fascia flashing over 1”*4”batten, bend down the end of panel enough to cover fascia flashing to prevent leaking.

8)Side wall & chimney & skylight

If gutter system is needed around the chimney, insert j-channel between the chimney and previously installed batten and bend the panel down into j-channel. Install side flashing with proper sealant.

If gutter system is not needed, bend the panel up and seal up with proper sealant to chimney. Install side flashing with sealant to overlap the bent panel.

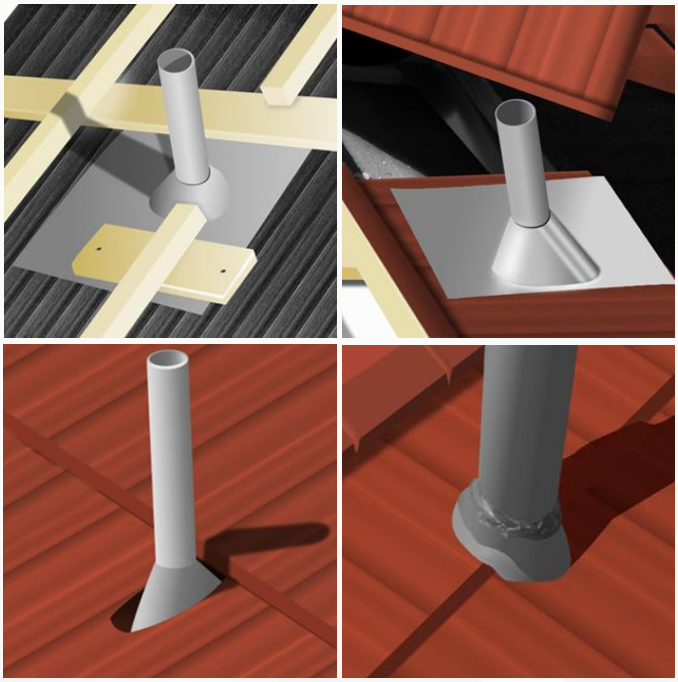




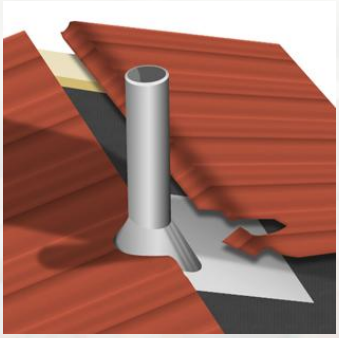
9)Pipe flashing

Pipes (roof penetrations) are to be flashed with aluminum, galvanized, or aluminum-zinc alloy coated steel, and standard roof jacks and flashings are required by local building code. Do not use copper or lead with DIVINE roofing system.

Paint pipes and flashings prior to installing panels.



For larger flashings, an underpan is not required.



Care should be taken to adequately weatherproof the flashi ngs and to support them with additional blocking or roof fra ming as necessary.

Ⅶ. Finishing

1) Finishing Kit

Minor scuffing of panels can be repaired with a Finishing kit from KD One. Unfinished flashing materials can be painted with durable acrylic aerosol paints. Colored aerosol paints should not be sprayed on panels.

2)Sealants

Polyurethane based sealant is recommended for use with roofing system. Where possible, the sealant should be covered by the roofing system or with matching stone granule. Sealant should not be used to refinish damaged panel surface.

3)Cleaning

After installation is completed be sure to clean off all debris of the roof.

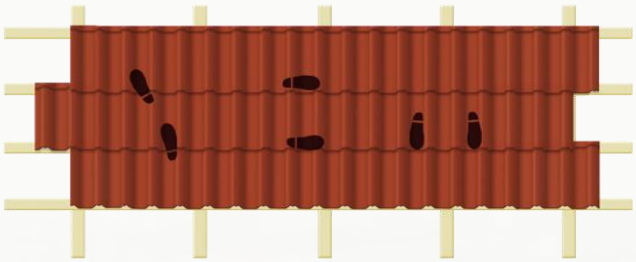
Ⅷ. Other Tips

1)Dissimilar Metals

To avoid adverse corrosion effects caused by dissimilar metals, COPPER and LEAD flashings should not be used with DIVINE panels and accessories.

2)Footwear

It is recommended to wear rubber soled athletic shoes or similar soft soled footwear to provide greater traction for safety and surface damage.



3)Roof traffic

Avoid buckling the tiles when moving around the roof, by placing weight on the balls of the feet, directly over the batten, in the pans of tiles. Traffic on the roof should be kept to a minimum to avoid possible damage to the tiles.

In order to prevent denting damage of the panels from frequent traffic, it is recommended to install a 1”*4” batten between regular batten rows where excessive traffic may occur.

4)Pressure Treated battens

Pressure treated lumber should NOT be used when installing DIVINE panels.

Ⅸ. Responsibility

It is the responsibility of architects, builders and roof installers to ensure that local standards, by-laws and requirements are satisfied.

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