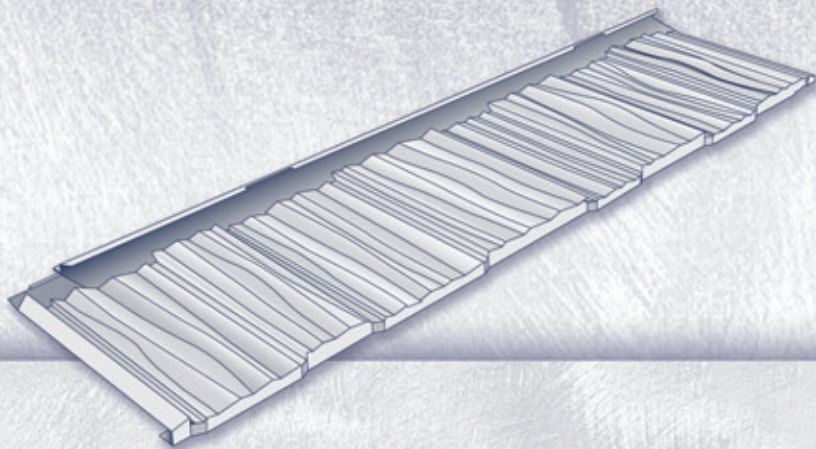


A grayscale photograph of a worker on a roof, viewed from behind, standing on a metal walkway and installing large, rectangular roofing panels. The roof is covered with these panels, which have a textured, stone-like surface. The worker is wearing a light-colored t-shirt and dark pants, and has a tool belt. A wooden ladder is leaning against the roof structure.

# **Shake XD™** installation guide



**DECRA®**  
Stone Coated **Steel Roofing** Systems





# Table of Contents

<b>Introduction</b> .....	<b>2</b>	<b>Panel Installation</b> .....	<b>12</b>
<b>Safety</b> .....	<b>2</b>	<i>Panels at Rake/Gable, Hips and Valley</i> .....	12
<b>Tools</b> .....	<b>2</b>	<i>Panels at Rake/Gable</i> .....	12
<b>Codes &amp; Requirements</b> .....	<b>3</b>	<i>Panels at Hips</i> .....	12
<b>Roof Slope</b> .....	<b>3</b>	<i>Panels at Valley</i> .....	13
<b>Underlayment</b> .....	<b>3</b>	<i>Installing Small Cut Panels</i> .....	13
<b>Deck Preparation</b> .....	<b>3</b>	<b>Ridge</b> .....	<b>14</b>
<i>New Construction</i> .....	3	<b>Ridge Venting</b> .....	<b>14</b>
<i>Roof-Tear-off (Solid Deck)</i> .....	3	<b>Hip &amp; Ridge Installation at Hips and Ridges</b> ..	<b>15</b>
<i>Re-Roof-Tear-off (Skip/Space Sheathing)</i> .....	3	<i>Hip</i> .....	15
<i>Re-Roof Over Asphalt Shingles</i> .....	3	<i>Ridge</i> .....	15
<b>Measuring and Cutting Panels</b> .....	<b>4</b>	<i>Ridge with Venting</i> .....	15
<i>Panels</i> .....	4	<i>Running Hips into a Ridge</i> .....	15
<i>DECRA Shake XD Panel</i> .....	4	<b>Short Course</b> .....	<b>16</b>
<b>DECRA Shake XD Roof Overview</b> .....	<b>5</b>	<b>High Wind</b> .....	<b>16</b>
<b>Preparation for Panel Installation</b> .....	<b>6</b>	<b>Freeze/Thaw</b> .....	<b>16</b>
<i>XD Starter Clip with Drip Edge</i> .....	6	<b>Foot Traffic</b> .....	<b>16</b>
<i>XD Rake/Gable Channel</i> .....	6	<b>Sealants</b> .....	<b>16</b>
<i>XD Valley</i> .....	7	<b>Roof Jacks/Steep Pitch Roof</b> .....	<b>16</b>
<i>XD Channel (Hips)</i> .....	7	<b>Cleaning &amp; Repairs</b> .....	<b>16</b>
<i>Roof to Side Wall w /Side Flashing</i> .....	8		
<i>Roof to Head Wall</i> .....	8		
<b>Roof Penetration - Pipes &amp; Vents</b> .....	<b>9</b>		
<b>Chimneys, Skylights and Dormers</b> .....	<b>10</b>		
<b>Panel Layout, Panel Overlap &amp; Fastening</b> . . .	<b>11</b>		
<i>Panel Layout</i> .....	11		
<i>Panel Overlap</i> .....	11		
<i>Panel Fastening</i> .....	12		

## Introduction:

The instructions and drawings included here are intended only as a guide for the installation of DECRA Roofing Systems' Shake XD profile. The materials and methods specified help maintain the overall integrity of the roofing system. These instructions are not intended to address all aspects of roofing installation; a quality installation is ultimately dependent upon the workmanship of the roofing contractor. Information regarding alternative situations not covered in these instructions can be obtained by contacting DECRA Roofing Systems.

## Safety:

Adhere to recommended safe roofing practices. Wear appropriate clothing and use safety equipment, such as protective eyewear. Light, soft-soled shoes are recommended. Use proper tools and keep the roof clear of debris as you work.

## Tools:

DECRA panels may be cut using a circular saw or table saw with a concrete-cutting blade, metal-cutting blade or tin/aviation snips. Safety equipment should be worn during the installation process.



Cordless Drill



Circular Saw



Table Saw



Aviation or  
Tin Snips



Hand Bender

## Codes & Requirements:

Refer to local codes and/or ICC Reports. A link to DECRA ICC reports is available at [www.decra.com](http://www.decra.com).

### Roof Slope:

Roof slopes less than 3:12 are considered decorative and panels must be applied over a roof system complying with local codes.

### Underlayment:

It is required that a layer of underlayment be used before applying the Shake XD Panels. Underlayment should consist of one layer of Type 15 or one layer of Type 30 felt, or greater if required by local code. In cold climates, ice and water shield is recommended for valleys, overhangs and at the perimeter, or as required by local codes.

### Deck Preparation:

The deck must be flat for proper installation. If it is not, please shim to make any adjustments.

### New Construction:

Panels are to be installed over solid decking. Acceptable substrates include exterior grade plywood (min. 3/8") conforming to specifications of the American Plywood Association and/or 7/16" oriented strandboard or chipboard. Fire retardant plywood is NOT an approved decking substrate. Prepare roof deck to meet local building codes.

### Re-Roof-Tear-off (Solid Deck):

If tearing off old roof, clean and prepare deck to meet local building codes.

### Re-Roof-Tear-off (Skip/Spaced Sheathing):

Panels may be installed over existing spaced sheathing provided the space between the boards is filled as necessary to provide a base for fastening. Fill as necessary to create solid surface for panel support and a base for fastening.

### Re-Roof Over Asphalt Shingles:

Panels may be installed over existing asphalt shingles. Cut asphalt shingles back from the eaves and rake/gable edges approximately 8" or enough to allow for the XD Starter Edge Clip w/Drip Edge and XD Rake/Gable Channel to be installed properly. Remove existing hip and ridge material.

***Do not use LEAD or COPPER with this steel roofing system because they are dissimilar metals and are not compatible.***

## Measuring and Cutting Panels:

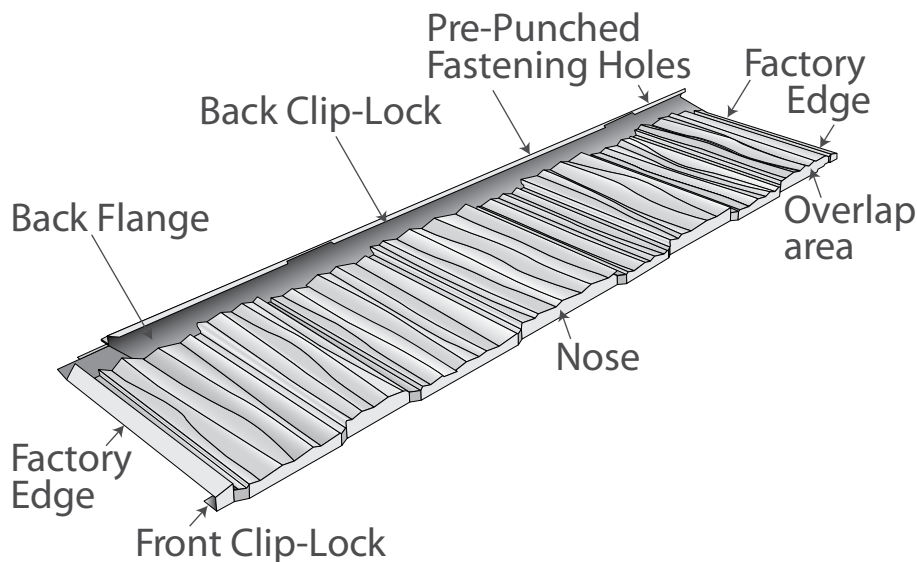
Measurements are made on the roof, however, the panels are normally marked and cut on the ground. Panels may be cut with a table saw or circular saw with concrete or (non Ferrous) metal cutting blade or tin snips. **If panels are cut on the roof, all residue and shavings must be completely removed.**

### Panels:

The DECRA panels are formed from corrosion resistant aluminum-zinc alloy coated steel with a protective coating of ceramic coated stone granules that provide an attractive appearance. The Shake Hip & Ridge, End Cap, Valley Cap, XD Rake/Gable Channel and Flat Sheet are produced in a similar manner. The XD Starter Clip with Drip Edge, XD Underpan, XD Channel, XD Short Course Clip and XD Valley are also produced in the same manner but are not stone coated.

---

### DECRA Shake XD Panel



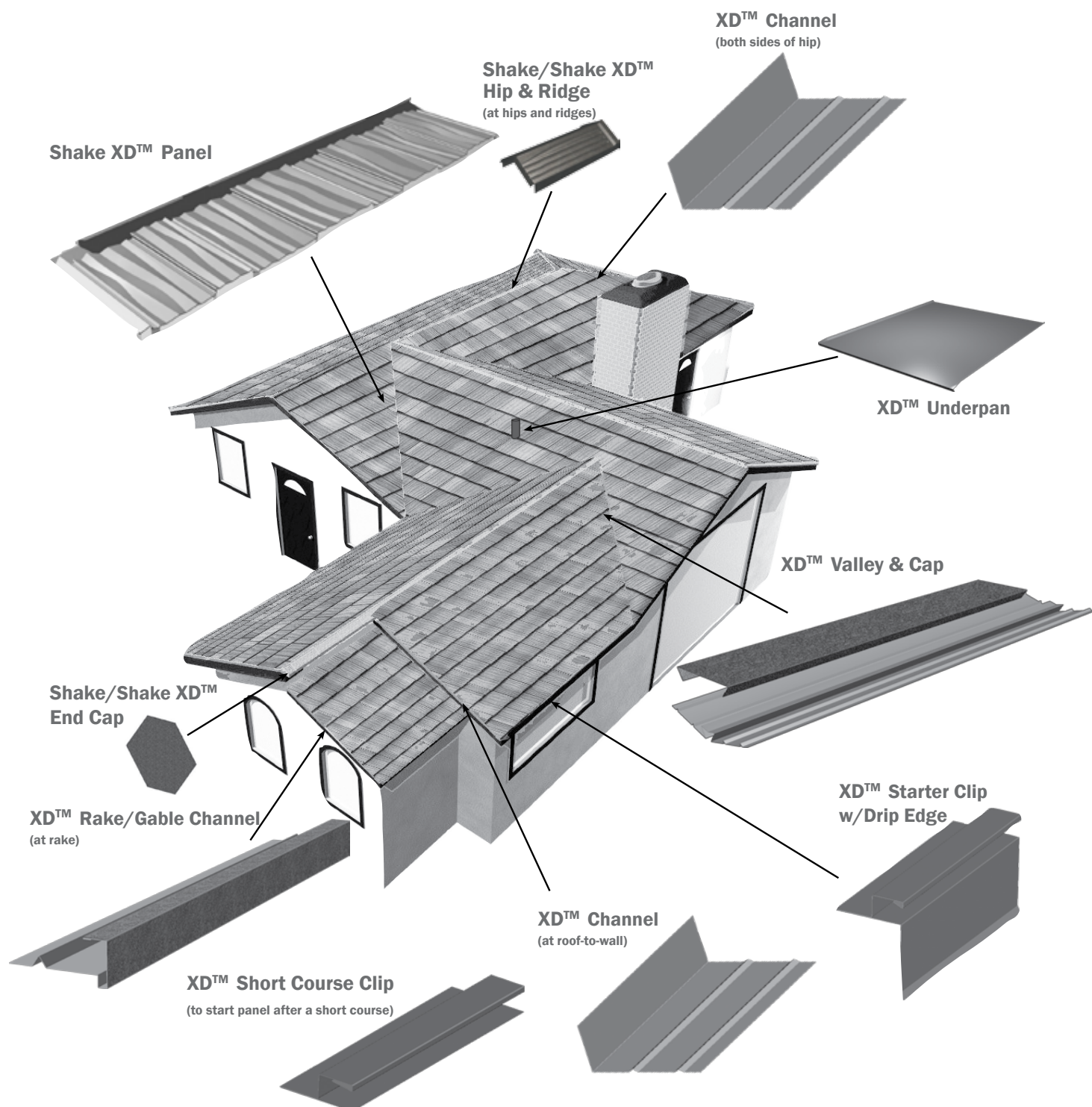
**Installed Exposure:** 12-3/8" x 49-7/8"

**Panels per Square:** 23.4

**Installed Weight:** 150 lbs./sq.

**Do not rack panels.**  
**Avoid creating a pattern with the light or dark color patches unless it is aesthetically pleasing.**  
**Do not create a pattern.**

# DECRA Shake XD Direct to Deck:



*One 2 x 2 and one 1 x 2 used at hips with roof pitch below 12:12.  
Two 2 x 2s used at hips with roof pitch above 12:12.  
1 x 2s used at ridge to attach Shake/Shake XD Hip & Ridge piece.*

# Preparation for Panel Installation:

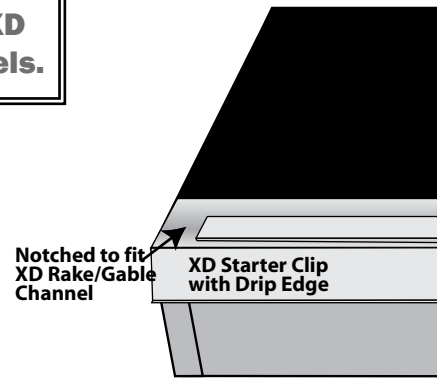
**Pre-paint vertical/exposed portion of XD Channel & XD Rake/Gable Channel as needed prior to installing panels.**

## XD Starter Clip with Drip Edge:

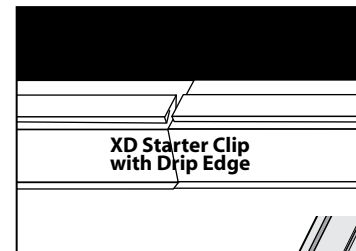
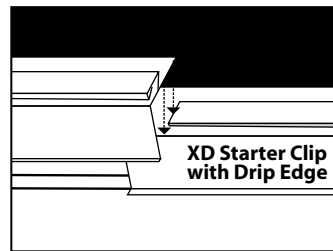
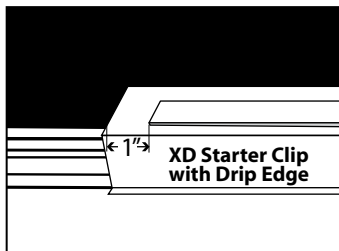
Use the XD Starter Clip with Drip Edge along the eaves. Paint along drip edge area of Starter Clip with Drip Edge to match fascia.

Prior to fastening the XD Starter, cut the top clip where it meets the rake/gable, valley, roof-to-wall and hips to allow for installation of the channels and valley. Cut back the top clip approximately 4" for XD Rake/Gable Channel, 6-1/2" for XD Channel at roof-to-wall and hips and cut back clip enough to accommodate XD Valley. All channels and valleys must be installed over the XD Starter Clip and extend 1" over fascia or onto the panel below.

Notch and overlap Starter pieces 1" when joining two pieces together. Fasteners should be spaced 6" on center. Do not screw through overlap (*See diagrams below*).



**XD Starter Clip Notching,  
Cut Back Top Clip at:**  
**Rake/gable**  
**Valley**  
**Roof-to-wall and hips**



## XD Rake/Gable Channel:

Standard metal drip edge should be installed along all rake/gable edges. Position and fasten the Shake XD Rake/Gable Channel directly over the existing drip edge.

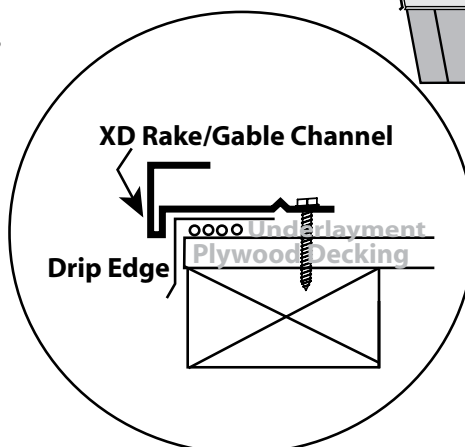
Cut the Shake XD Rake/Gable Channel so that it installs over the XD Starter Clip with Drip Edge and hangs 1" past the eave.

Notch and overlap XD Rake/Gable Channel pieces 1" when joining two pieces together. Notch the top channel to allow it to slide into the lower channel. The top channel should lay on top of the lower channel. Fasteners should be spaced 6" on center. Do not screw through overlap (*See diagram*).

XD Rake/ Gable  
Channel

Drip Edge

XD Starter Clip  
with Drip Edge

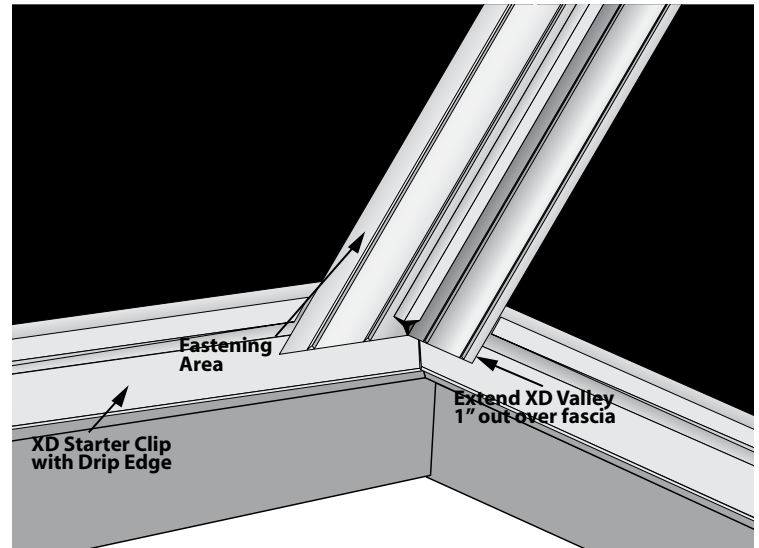
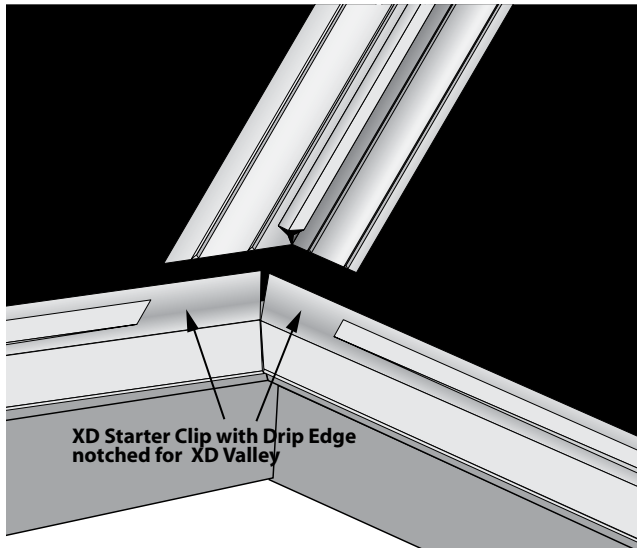




## XD Valley:

The XD Valley must be positioned along the center line of each valley area. XD Valley Cap (stone coated) can be installed by snapping or sliding into place after the valley pieces have been installed. Fasten Cap with stitch screw to XD Valley as needed. Place the valley so that a minimum 1" runs past the edge of the eave.

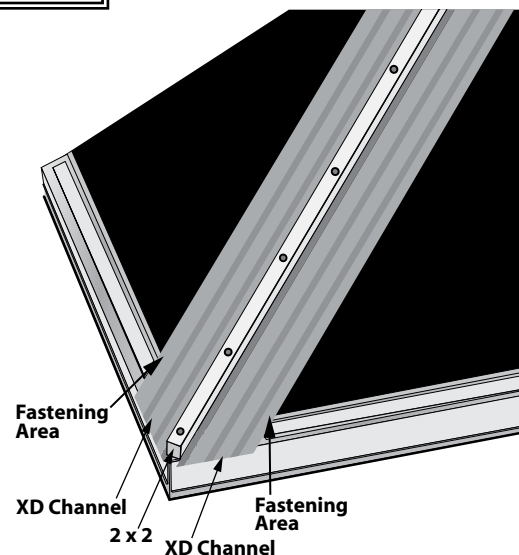
Continue to install the valley metal overlapping the pieces a minimum of 6". Fasteners should be positioned outside the last turn-up on each side. Finish with XD Valley Cap.



## XD Channel (Along Both Sides of Hips):

Install one 2 x 2 along the center of the hip line. Attach the XD channel on either side of the 2 x 2's. Fasten the XD Channel on the outside of the bump with fasteners every 6". Make sure the end of the XD Channel extends a minimum of 1" past the eave line. The top of the XD Starter Clip will also need to be cut back to allow the XD Channel to lay flat onto the deck.

**Below 12:12 pitch use one 1 x 2 stacked on one 2 x 2**  
**Above 12:12 pitch use two 2 x 2s**

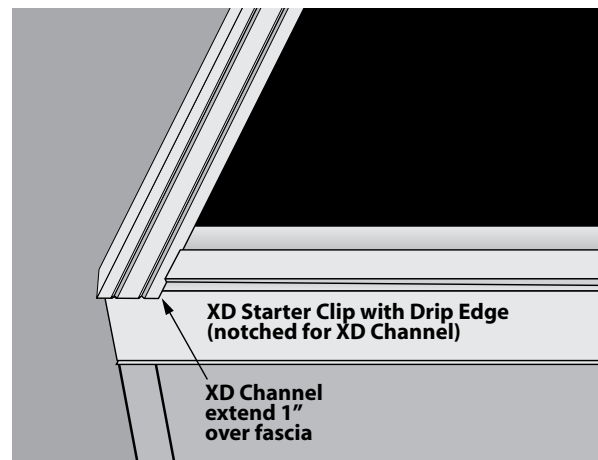
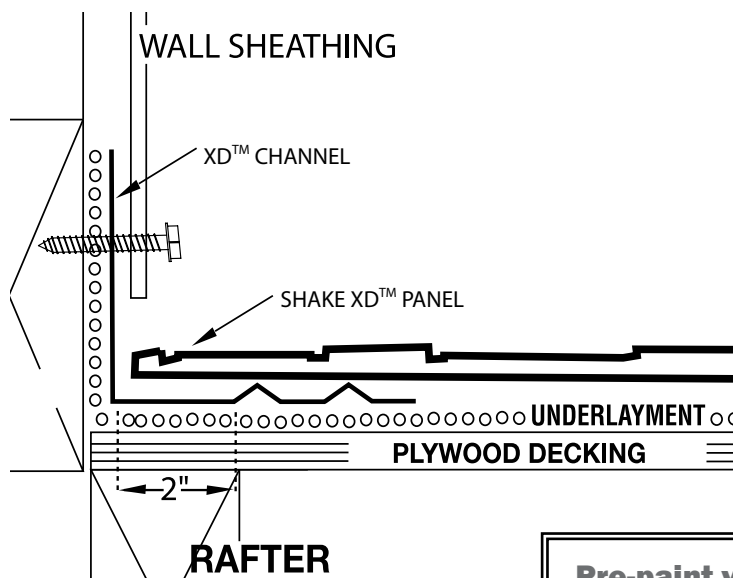


## Roof to Side Wall w/Side Flashing:

Starting at the eave, extend the XD Channel 1" past the eave over the Starter Clip. Work the XD Channel behind stucco or wood siding whenever possible or surface mount to the wall for surfaces like brick and seal with wall flashing. Stone coated counter flashing can also be used. Overlap the XD Channel at least 4" working up the roof. Screws should be spaced every 6" and outside the last turn-up on each side.

If standard wall flashing is present, tuck XD Channel behind existing flashing. If no existing flashing is present, counter flash with Side Flashing. Seal XD Channel to the wall with polyurethane sealant. Apply sealant to the Side Flashing before attaching to the wall.

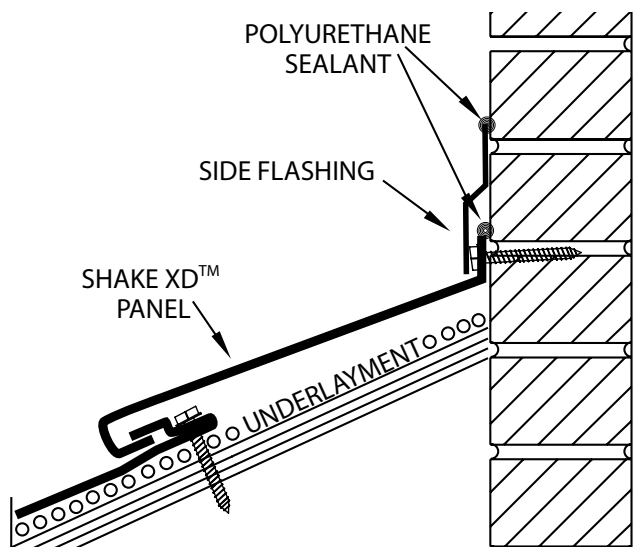
Cut the Shake XD panel to length and fit into the XD Channel flashing at the roof-to-wall. Make a 2" notch at the front and back Clip-Locks where the panel fits into the XD Channel. Lock the panel into place and screw down outside the second water channel.



**Pre-paint vertical/exposed portion of XD Channel as needed prior to installing panels.**

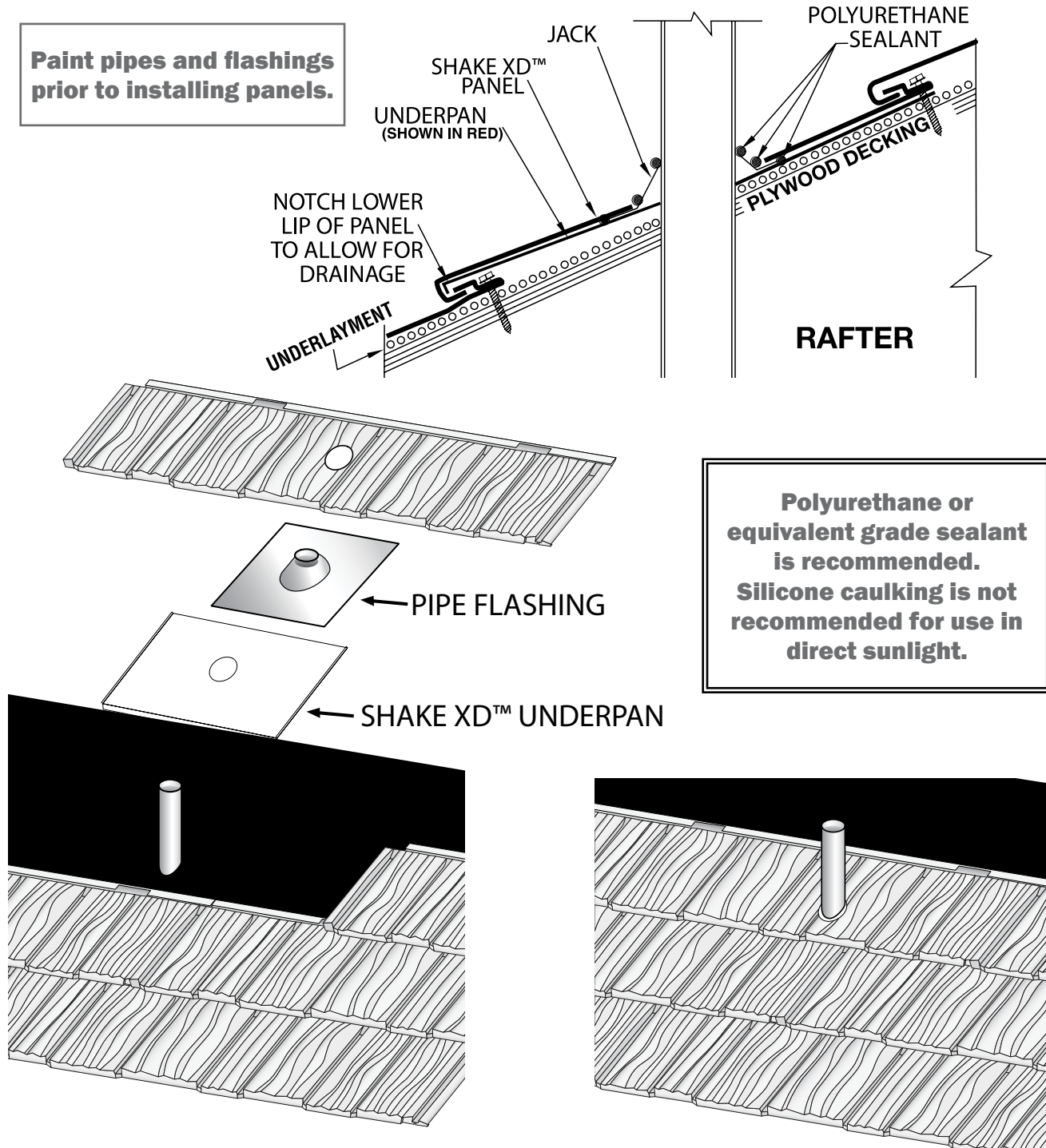
## Roof to Head Wall:

Start by measuring from the full panel below the wall. Cut panels to fit this area allowing for a minimum of a 1" bend up at the top. Using a hand bender, bend each panel up against the head wall and fasten the panel to the head wall. For brick and stucco, counter flash and seal across the head wall. For siding, tuck the panel metal underneath the siding and seal with polyurethane sealant.



## Roof Penetration - Pipes & Vents:

Roof penetrations should be finished by installing standard roof jacks over a corrosion resistant Underpan which drains over the panel immediately below. Cut a Shake XD/Shingle Underpan to fit tight – fit the pipe-flashing apron to the Underpan. Cut the Shake XD panel to fit – Make a 2” wide notch along the front Clip-Lock of the Shake XD panel covering the jack. Fit the Shake XD panel in tight over the underpan and jack – seal around base and use Touch-Up Kit (*See diagrams below*).



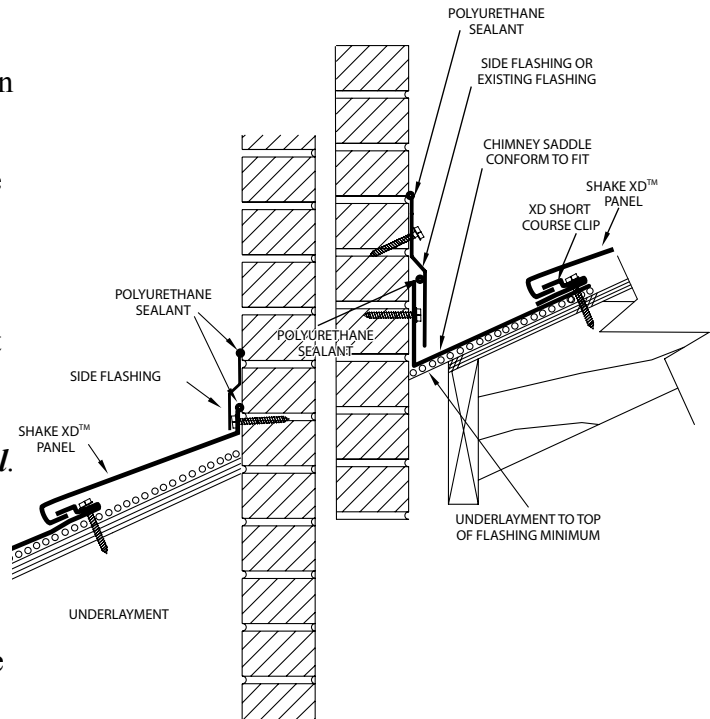
# Chimneys, Skylights & Dormers:

The following steps detail the procedure for installation around a chimney, skylight or dormer. Run full panels up to the bottom of the chimney as noted in the Chimney Illustration below. All the open areas will be filled in with cut panels.

**1** Start by measuring from the full panel below the chimney. Cut panels to fit this area and install like at roof to head wall. *See Roof to Head Wall.*

**2 3** Use the XD Channel along the left and right of the chimney and counter flash with Side Flashing. Extend the XD Channel 4-6" out over the top of the first panel below the chimney. *See Roof to Side Wall.*

Panels to fit the left and right sides of the chimney will be measured, cut and fit into the Shake XD Channel, similar to the roof to side wall. Be sure to notch out the top and bottom clip as was done for the Roof-to-Wall detail. *See Roof to Side Wall.*

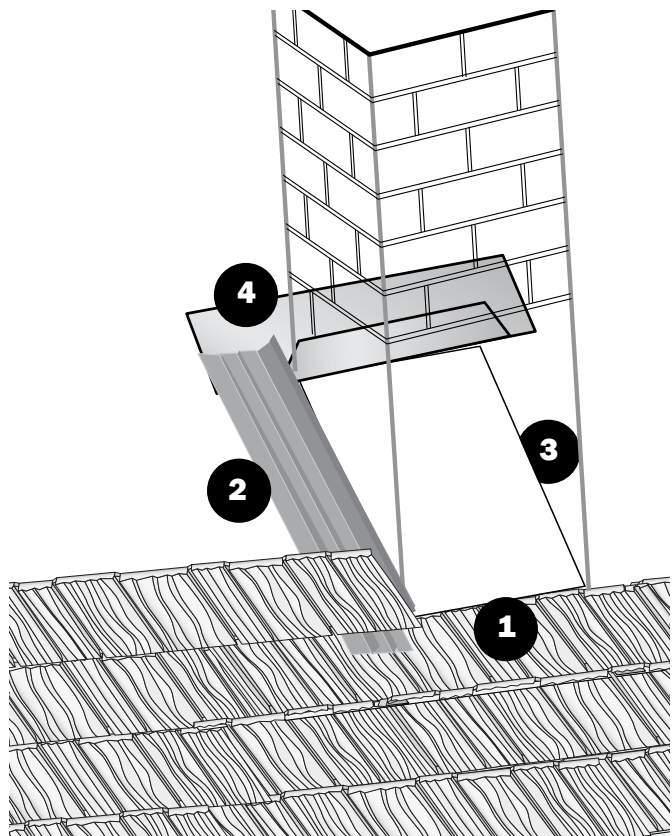


**4** The area directly above the chimney must be flashed and counter flashed. Measure the width of the chimney. Use a chimney saddle (**Do not use lead or copper**) or a piece of flat metal can be cut and bent to fit around the chimney. Cut, conform and install the chimney saddle to fit above the chimney.

In the case of a cricket above the chimney, finish like valley. *See Valley.*

Next, cut a piece of the XD Short Course Clip to fit the length of the top of the chimney with an added 6" on either side. Attach the XD Short Course Clip on either side of the top of the chimney so the clip will allow the Shake XD panel to engage into the clip as close to the top of the chimney as possible.

Brick and stucco - counter flash and seal around all of the chimney faces. Siding - tuck the metals on all faces underneath the siding, counter flash and seal.





# Panel Layout, Panel Overlap & Fastening:

## Panel Layout:

DECRA Shake XD Panels install left to right. For **First Course**, start with a full panel at the left side rake edge, valley or hip and continue with full panels locking them into the XD Starter Edge Clip. The first course of panels locks into the XD Starter Edge Clip with Drip Edge.

For **Second & Subsequent Courses**, randomly install panels. Do not create a pattern. All subsequent courses of panels simply lock into place by sliding the nose of each panel onto the clip that is formed at the top back edge of each panel in the row below.

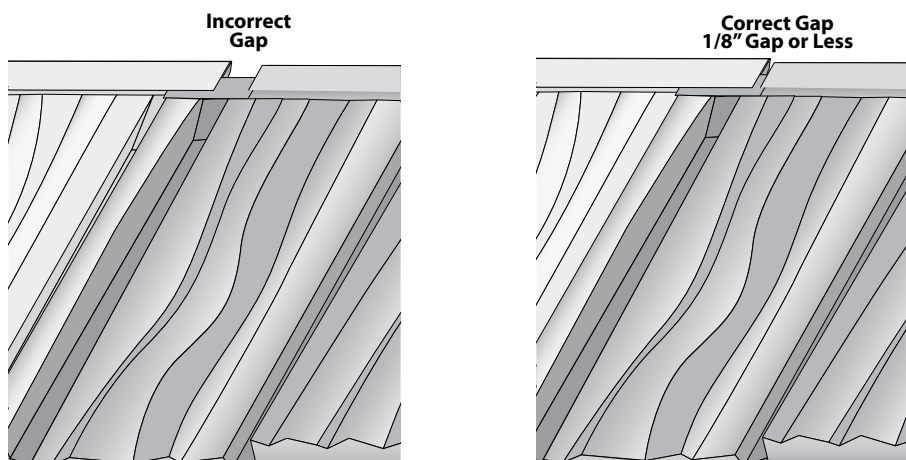
The right side of each panel must be pushed into position to engage the Side-Lap locking mechanism.

## Panel Overlap:

The top clip on right side of the left panel may have to be bent open in order to allow the next panel to be inserted and overlapped correctly. This will secure the right Side-Lap and provide a clean appearance. The gap between panels should be no more than 1/8". Install the 4 screws into the predrilled fastening positions on the left of the panel leaving the 5th fastening position, on the far right of the panel, without a fastener. Properly lap the next panel to the right of the panel and insert at least one fastener. Now go back and insert the fifth fastener in the panel to the left.

### IMPORTANT NOTES:

The gap between panels should be no more than 1/8". Do not install the last screw on the far right until the next panel has been properly lapped and at least one screw attached.



**DECRA Shake XD Panels install from LEFT to RIGHT.**

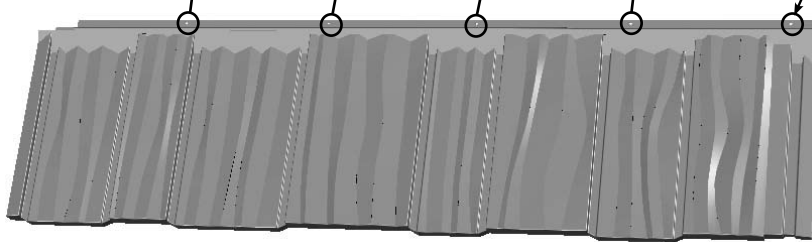
**Install panels randomly, staggering sidelaps.**

**Avoid creating a pattern with the light or dark color patches unless it is aesthetically pleasing.**

## Panel Fastening:

Install the four screws on the left side of the panel first, then lay the next panel to the right overlapping the panel to the left. Install at least one screw into the panel on the left prior to installing the fifth screw into the right side of the panel (*See diagrams below*).

**Install these four screws first**



**Install this fifth screw after the next panel is inserted to the right and at least one screw is placed into that panel.**

### FASTENERS:

**Panels - Minimum No. 8 Screws**

**Hip & Ridge - Minimum No. 8 Corrosion Resistant Screws (color coordinated)**

## Panel Installation:

### Panels at Rake/Gable, Hips and Valley:

Where DECRA Shake XD panels fit into the XD Rake/Gable Channel, XD Channel or XD Valley, proper drainage will be attained by removing a portion of the front and back Clip-Locks on each XD Panel as noted below.

Lay panels starting at left at the XD Rake/Gable Channel, XD Valley or XD Channel. Cut and fit panels into Rake/Gable Channel, XD Valley or XD Channel as needed to create random stagger.

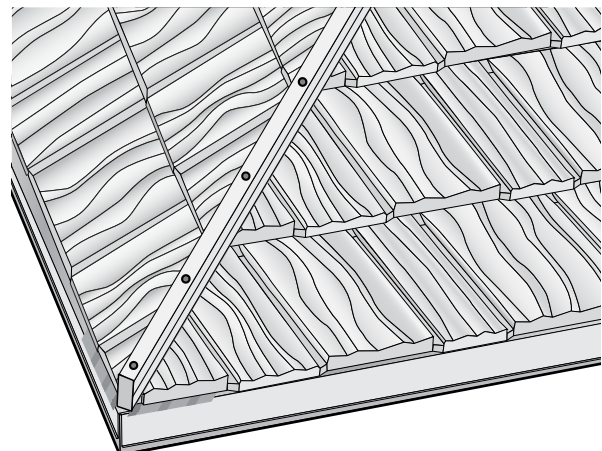
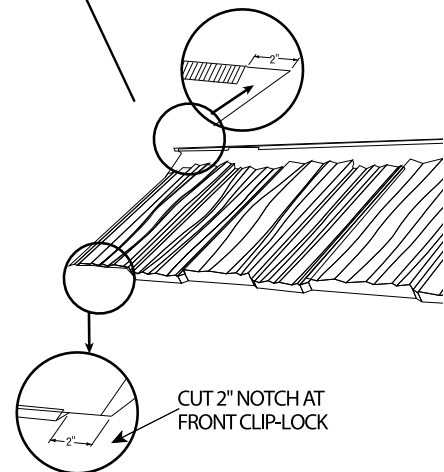
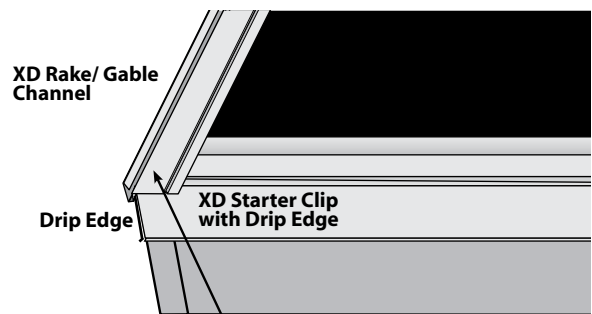
### Panels at Rake/Gable:

Where DECRA Shake XD panels fit into the XD Rake/Gable Channel, proper drainage will be attained by removing 2" from the front and back Clip-Locks on each panel. Make a 2" notch at the front and back Clip Locks where the panel fits into the XD Channel. Lock the panel into place and screw down.

**Do not fasten panels into the inter-water channel on the XD Rake/Gable Channel, XD Channel or XD Valley.**

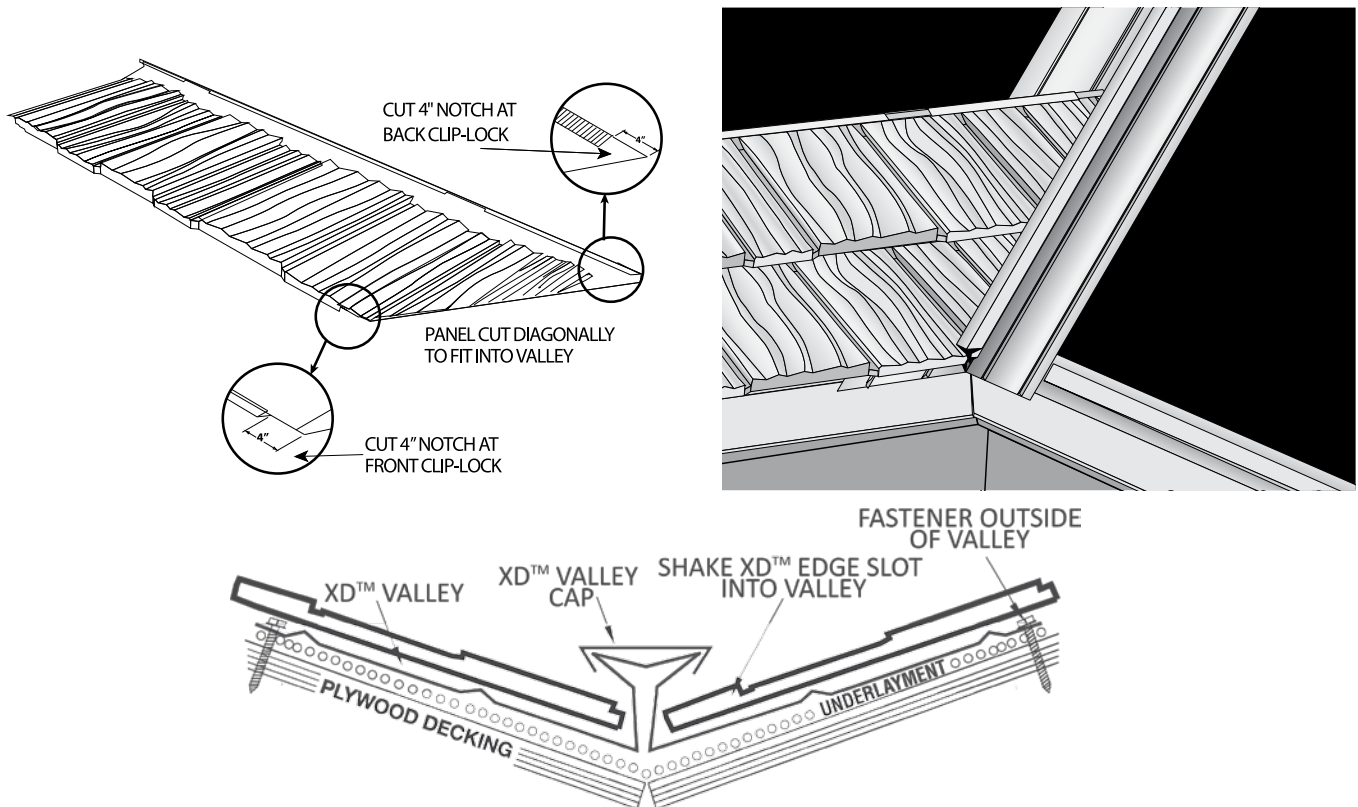
### Panels at Hips:

Along both sides of the hips, cut XD Panels to fit into XD Channel. Make a 2" notch at the front and back Clip Locks where the panel fits into the XD Channel. Lock the panel into place and screw down.



## Panels at Valley:

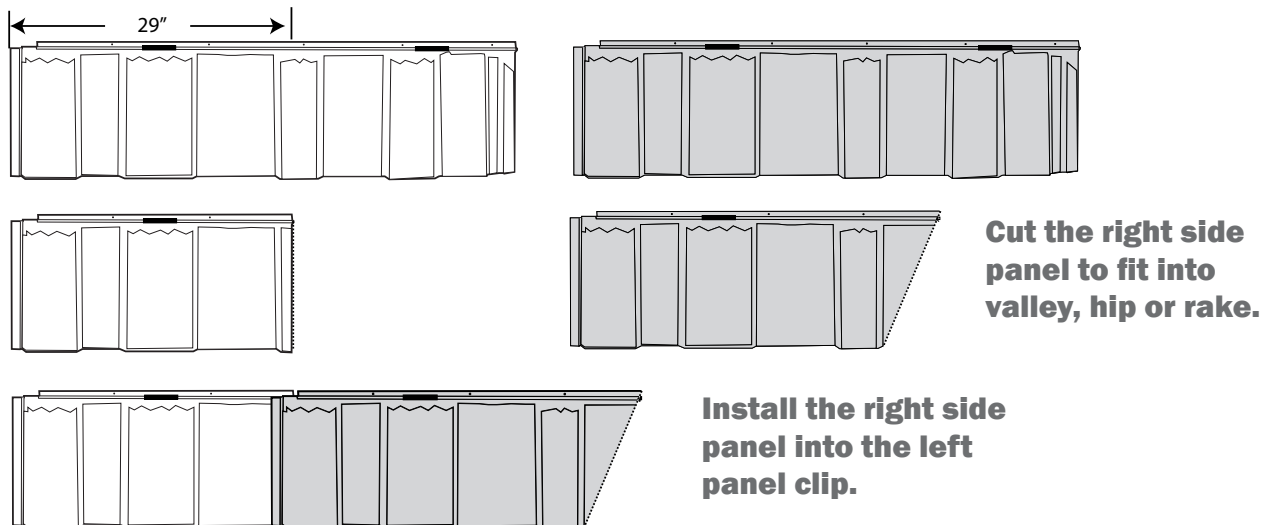
At the XD Valley, cut panels to length and make a 4" notch at the front and back Clip-Locks where the panels fit into the XD Valley piece.



## Installing Small Cut Panels:

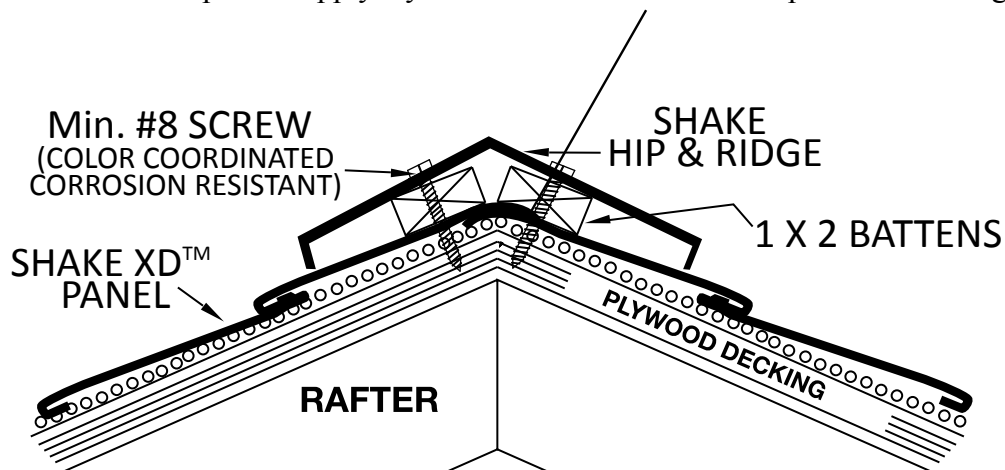
There will be times when a very small section of panel is needed to fit into a rake, hip or valley on the right-hand side.

In these cases cut left panel small, 29" to allow for a larger panel on the right. You must use the left side of the panel with the factory edge, not the right side. On the left panel that has just been shortened, cut out the right side bottom clip 2-1/2". Install the right side panel into the left panel clip as is normally done.



## Ridge:

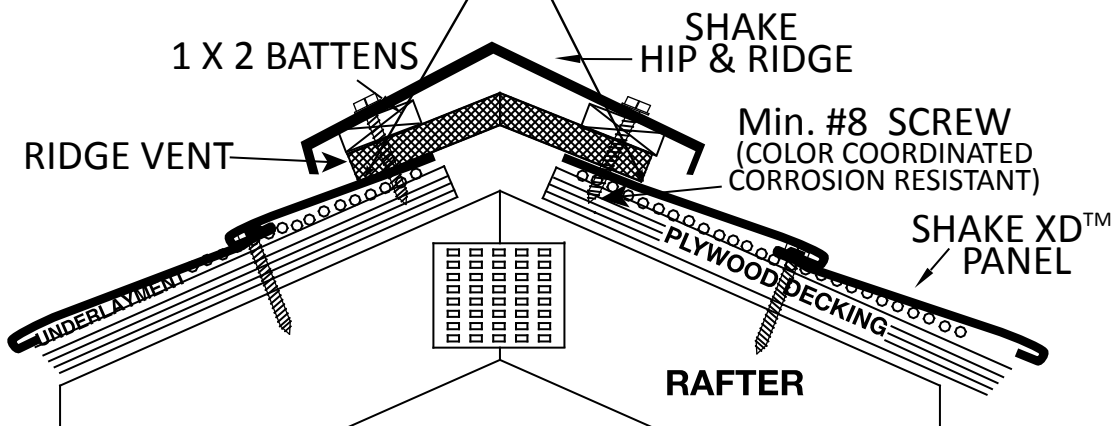
Install Shake XD panels up to the top of the ridge, cutting off excess panel that extends higher than the ridge. Use fasteners to attach panels 1" below the ridge line. On the other side of the ridge, run the top Shake XD panel 2" past the top of the ridge line. Attach the Shake XD panel with fasteners 1" below the ridge line. Use a heavy hammer or mallet to fold and overlap the extra 2" down over the top of the ridge onto the opposite Shake XD panel. Apply layer of sealant to seal both the panels at the ridge together.



## Ridge Venting:

Install Shake XD panels up the ridge to the edge of the opening that has been cut for the ridge vent. Run a bead of polyurethane sealant along the panels at the ridge vent opening. Place the ridge vent material along both sides of the vent opening on top of the polyurethane sealant. Install a 1 x 2 batten on top of the ridge vent material along both sides of the ridge opening. Cut off the excess panel that extends higher than the vent opening. Use fasteners, long enough to sufficiently penetrate the roof deck, to attach panels 1" below the vent opening. Do not over compress the ridge venting material. (See **Hip & Ridge Install at Hips & Ridges** for Shake/Shake XD Hip & Ridge Installation).

**Apply a continuous bead of sealant along both sides of ridge before placing the ridge vent.**



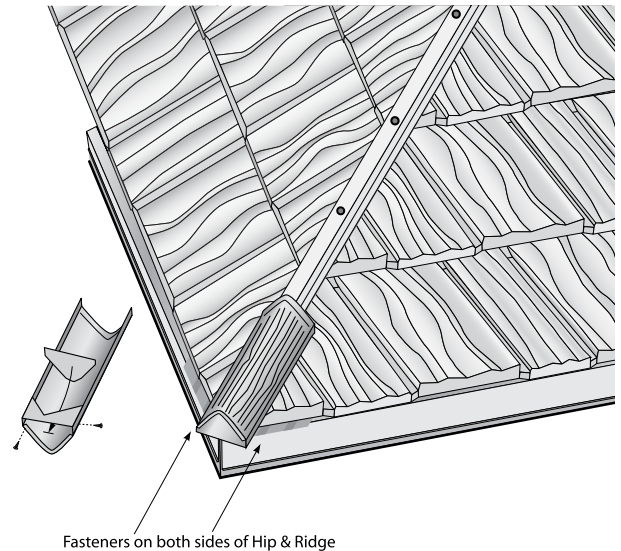


## Hip & Ridge Installation at Hips & Ridges:

The Shake XD Hip/Ridge piece should be attached directly into the 2 x 2 batten. Hip/Ridge pieces are overlapped and fastened through the sloped side. Ensure that the fastener is long enough to penetrate into the 2 x 2. Finish the end of the hip or ridge with an XD End Cap.

### Hip:

Hip & Ridge pieces are overlapped and fastened through the sloped side of the cap. Ensure fasteners are long enough to penetrate into the 2 x 2 using minimum #8 color coordinated corrosion resistant screws. Finish the end of the hip with an XD End Cap.

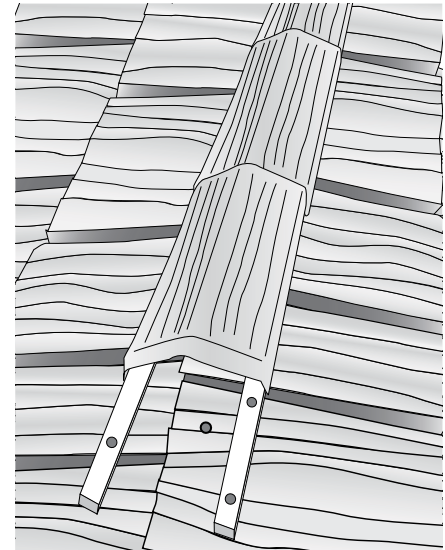


### Ridge:

Install a 1 x 2 wood batten directly over the Shake XD Panel on both sides of the ridge using fasteners sufficient to penetrate the roof deck. Apply sealant in-between the wood battens and the Shake XD panels. Note, do not use copper based pressure treated wood with any DECRA roofing system. However, composite deck board can be used as alternative for the wood batten once cut down to the needed size.

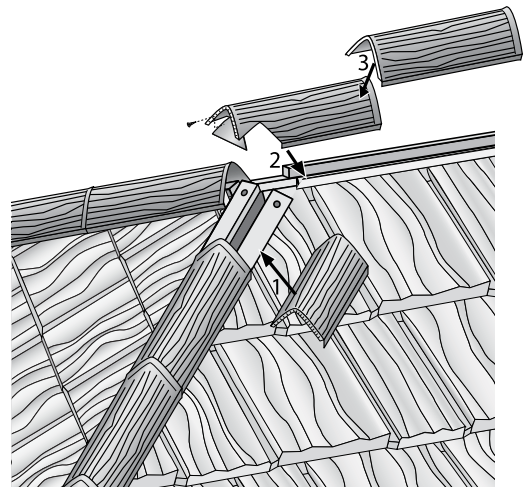
### Ridge with Venting:

Attach a 1 x 2 wood batten on top of the ridge vent on both sides. Place the batten 1/8" to 1/4" back from each edge of the ridge vent; use a #8 screw that is long enough to penetrate through the vent and into the deck.



### Running Hips into a Ridge:

Add the top pieces of Hip & Ridge at the hip and the first piece at the ridge. Trim the last pieces of Hip & Ridge where they meet the ridge. Add a piece of Hip & Ridge at the ridge and cut to fit over the hips. Add a piece of Hip & Ridge at the ridge and cut it to fit into the Hip & Ridge at the hips. Finish with Touch-Up Kit as needed. Continue on with the ridge installation. Finish the end of the hip or ridge with an XD End Cap.



**Install Hip & Ridge up the hips to where it meets the ridge. Trim and notch the first piece of Hip & Ridge where it meets on top of the hips. Finish with End Cap and Touch-Up Kit.**

## Short Course:

In some instances, a short course will be necessary. A short course is needed when a section of the fascia steps out and is not an even panel width difference from the main fascia. A short course is inserted by fastening the XD Short Course Clip over the panel in the course below at the point where the next full panel above will align with the panels to the right and left in the course above. Once the XD Short Course Clip is secured into the panel below, clip the next course of full panels into it.

## High Wind:

In areas prone to hurricanes and high winds, installation must meet local standards and codes.

## Freeze Thaw:

Ice and water shield is recommended in all areas susceptible to freeze/thaw conditions.

## Foot Traffic:

Avoid walking on side laps. See walking instructions at [www.decra.com](http://www.decra.com).

## Sealants:

Polyurethane based sealant is recommended for use with this roofing system. Where possible, the sealant should be covered by the roofing system or with matching stone granules. Sealant should not be used to refinish damaged panel surfaces. Touch-Up Kits are available in colors matching the various stone coated panel finishes.

## Roof Jacks / Steep Pitch Roof:

Cut out top and bottom Clip-Locks. Place padding between jack and panel to avoid scuffing.

## Cleaning & Repairs:

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

In cases where it is necessary to touch up or repair a panel, DECRA Touch-Up Kits are available in all of the colors matching the stone coated panel finishes.

For answers to questions or more details not covered in this guide, call **800-258-9740** or visit [www.decra.com](http://www.decra.com). Architectural Details and Product Specs are available at [www.decra.com](http://www.decra.com).