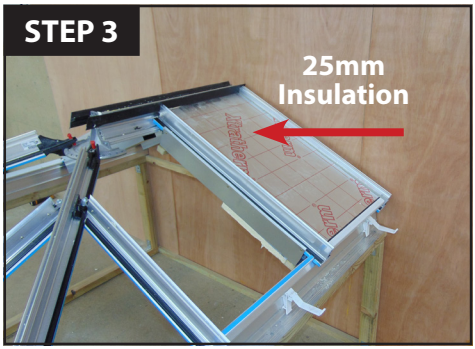
365 WARM ROOF
ASSEMBLY INSTRUCTIONS

TCR
SYSTEMS LTD

365 WARM ROOF

Assemble the conservatory roof as usual. Refer to Classic Installation Guide.

Fit any braces that are required.



On the end of the 25mm insulation push on poly end closure. Glaze the conservatory with 25mm insulation as shown above.

Place 25mm insulation in each section around the roof.

Once you have glazed each section knock on the top caps.

Screw onto the end of the bars with 1 inch screws, which are provided. Screw on 25 X 75 aluminium angle, see image to the right.

Go to **Page 6** when installing Topco tiles

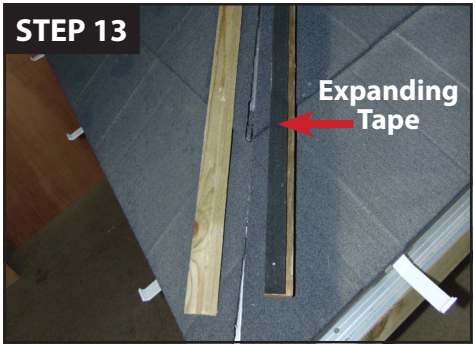
On the underside of the timber batten apply silicone to the 25mm side.

Place timber battens (silicone side down) on the centre of every panel.

Fix tiles to central of the bars and battens a show : **DO NOT SCREW** all the way through the battens into the insulation. Tiles start Right to Left on each section.

All tiles are cut to size and numbered.

Install the first section of the Cornice which screws into the Eaves Beam then install the gutter. To finish the Cornice refer to Installation Guide which is provided.

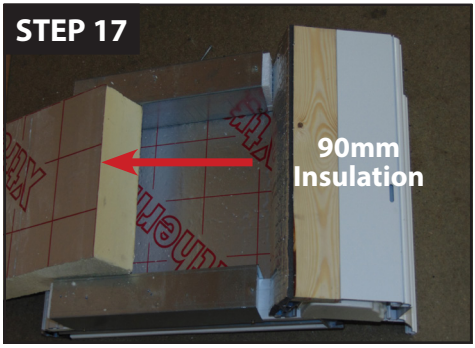


Apply the expanding tape to the underside of the batten.

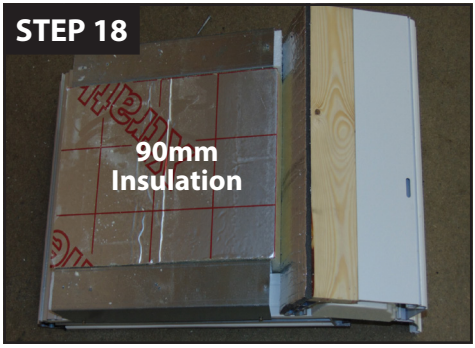
Place the Ridge cap over the battens to set the width of the battens at the bottom, mark each side of the batten.

Use the three way cap to set the top, then mark each side of the battens

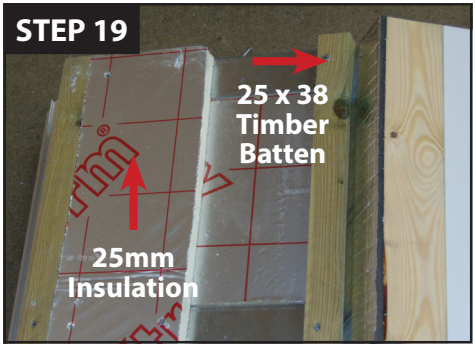
Screw battens down along hip and the ridge to the marks.



Install the 90mm insulation inbetween the bars inside.

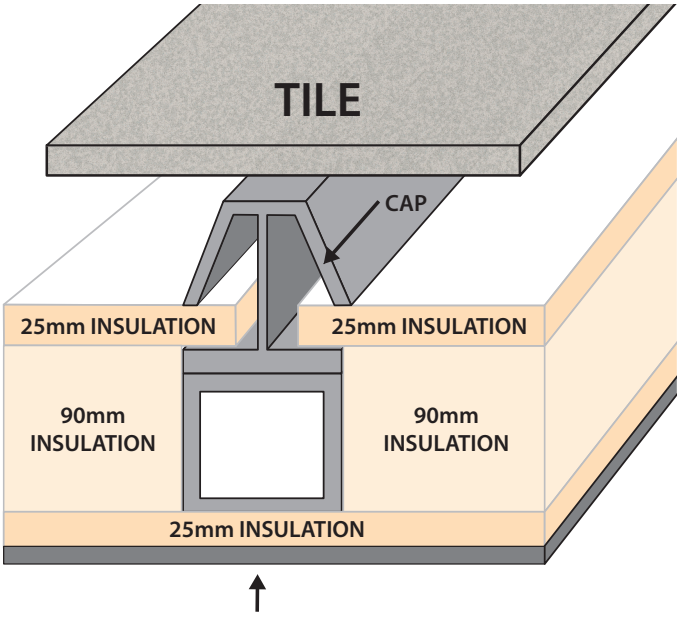


90mm Insulation installed.



Screw on timber batten at the top ridge and eaves bottom of the bars around the roof edge. Screw through the insulation into the steel bars. Install 25mm insulation to cover the roof.

Then Plasterboard over the insulation with 12.5 Foiled back plasterboard.

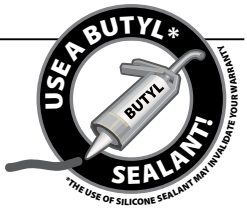


When the conservatory roof is assembled, cover the area with plywood

Cover the plywood with a breathable membrane

– Product Information –

No Special Tools Required

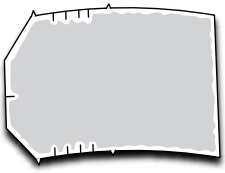


- Hand fastened (hammered or screwed) or fastened with a nail/screw gun.
- Sharp utility blade or a standard circular saw.
- Tape measure, pry bar, tin snips.
- Chalk line with blue chalk (do not use red chalk as this can stain the product).

Storing the Product

For proper installation, the slates need to be stored on the original pallet on a flat surface. Proper storage of the product at the job site is important. Classic slates are cambered to ensure that maximum pressure is transferred to the leading edge of the slate during installation and should be stacked face down (as originally delivered). **Do not double stack pallets**.

Conditions: Perform work when existing and forecasted weather permits. Work should be performed in a safe and professional manner and when ambient weather conditions are within the limits established by Tapco Roofing Products.



Storage: TapcoSlates should not be stored on roof decks in such a manner as to over-stress and/or damage the deck and supporting structure.

Cold Weather Installation: TapcoSlates should be stored in original packaging in a storage facility where the temperature meets or exceeds 7°C. Use protective coverage over all pallets while being temporarily stored on-site. TapcoSlates must be conditioned at a temperature no lower than 7°C for twenty-four (24) hours prior to use. TapcoSlates may be installed at temperatures as low as 0°C but must be hand fastened, the use of a pneumatic gun below 7°C will result in cracking and webbing in the fastened area. Be sure to follow the manufacturer's installation requirements for all underlay or membrane and any other applications. Comply with any and all local building regulations. **Note of Caution:** The slates can be slippery under certain conditions and job site safety procedures should be enforced.

Product Description

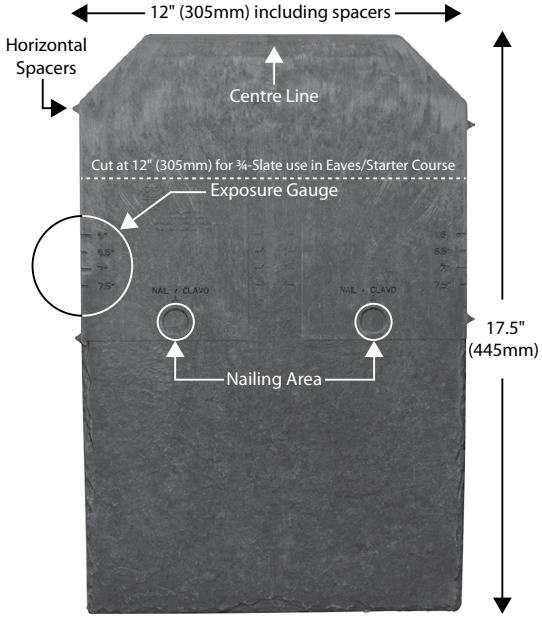
TapcoSlates are manufactured from a blend of limestone and virgin polypropylene, and are made from multiple natural patterns. TapcoSlate is not made from recycled materials but can be recycled at the end of its long lifespan.

WARRANTY:	40 Years	**ROOFING BOARD:**	0.7" (18mm) OSB.
WEIGHT (CLASSIC SLATE):	0.7 kg	**MINIMUM PITCH:**	14° (Felt & Batten and Fully Boarded).
WEIGHT (CLASSIC RIDGE):	0.7 kg	**MAXIMUM PITCH:**	90° (Felt & Batten and Fully Boarded).
DRILLING:	No drilling required	**SORTING:**	No sorting required.
PACKAGING (CLASSIC 12"):	Pallet: 1600 slates (1.04 tonnes), Bundle: 25 slates (16.25 kg).	**BATTEN SIZE:**	2" x 1" (50mm x 25mm) treated battens (minimum).
ROOFING MEMBRANE:	Recommended use of impermeable (non-breathable) Type HR roofing membrane.	**CUTTING:**	Fine-toothed handsaw, jigsaw, circular saw, or sharp utility blade (score and break).
FIXING:	Large 10mm diameter head, galvanised 1.2" (30mm) by 0.1" (2.5mm) steel nails or 1.2" (30mm) by 0.14" (3.5mm) outdoor Phillips bugle screws (using hammer/screwdriver or nail/screw-gun). Longer 2" (50mm) nail or outdoor Phillips bugle screw required for fixing ridges and hips. Corrosion resistant fasteners are always recommended, especially in coastal areas. In Scotland we recommend the use of Stainless Steel nails for fixing. 7.1mm diameter nail heads are recommended when using a nail gun.		

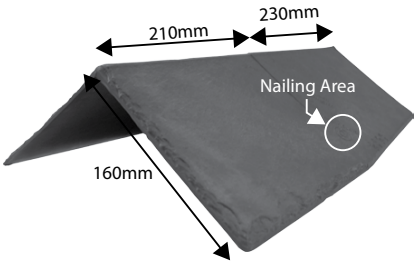
Please note: the diagrams in this guide are for illustration purposes only, actual sizes/placement may vary from those shown. If in doubt, please contact your local area manager for advice, or contact our technical department: +44 (0)1482 880478.

IMPORTANT: **Advice from our technical department should be sought when installing on high buildings and/or in exceptionally windy areas. Telephone: +44 (0)1482 880478.**

TapcoSlate Information (all measurements are appoximate)



Classic Slate



Classic Ridge

Pitch, Gauge, and Coverage

TapcoSlate Classic

ROOF PITCH	GAUGE	SLATES PER M²
14* to 25 degrees (fully boarded or felt & battens)	6" (152mm)	22
25 to 27.5 degrees (fully boarded or felt & battens)	6.5" (165mm)	20
27.5 to 30 degrees (fully boarded or felt & battens)	7" (178mm)	19
above 30 degrees (fully boarded or felt & battens)	7.5" (191mm)	18

RIDGE & HIP CAPS	1 METRE LENGTH
Ridge Cap	6 Units
Hip Cap	6 Units

* The minimum recommended pitch and lap may be influenced by special circumstances, please contact our technical department for advice.

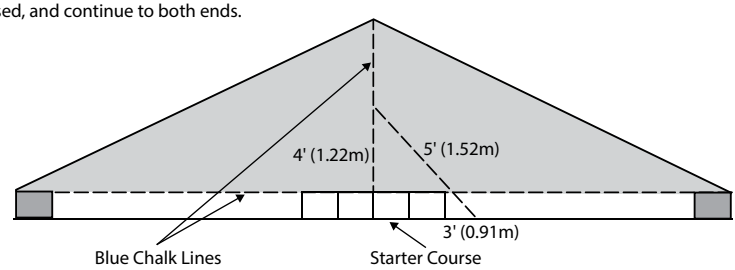
Recycling

TapcoSlate is 100% recyclable, but is not marked with a recycling symbol/logo and so the contractor should contact a local recycler to make the necessary arrangements, stating that the product is "mineral-filled Polypropylene" plastic. If there is any difficulty in locating a recycling facility, please contact us. Note that skip companies will send the product to the correct recycler.

Fastener Recommendations

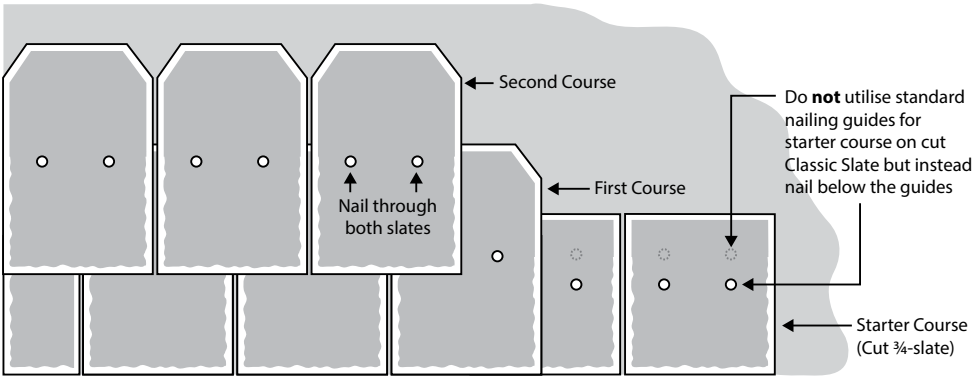
Slates should be applied using two (2) large 10mm diameter head, galvanised 1.2" (30mm) by 0.1" (2.5mm) steel nails or 1.2" (30mm) by 0.14" (3.5mm) outdoor Phillips bugle screws (using hammer/screwdriver or nail/screw-gun). Corrosion resistant fasteners are always recommended, especially in coastal areas. In Scotland we recommend the use of Stainless Steel nails for fixing. 7.1mm diameter nail heads are recommended when using a nail gun. All slates will be attached with two fasteners, as per these instructions.

3. One method of starting on a hip roof is to locate the centre of the roof area to be covered. From both ends, position starter pieces and snap a horizontal line from the tops of the starters between these two points. Next, snap a vertical perpendicular line. This can be done easily by marking 3ft (0.91m) along the eve, then where 4ft (1.22m) and 5ft (1.52m) intersect will form a perpendicular line. As long as the ratio 3:4:5 stays the same this will hold true, for example, 21:28:35. More horizontal and vertical lines may be snapped to ensure the roof slates will stay true and plumb throughout installation. Begin by placing an eaves slate on the right and left side of the vertical line maintaining a 0.25" (6mm) or 0.5" (13mm) spacing, depending on slate type used, and continue to both ends.



4. The eaves and first course should overhang a maximum of 1½" (38mm) at the eaves for the gutter oversail.

5. Begin the first course. With a full slate, align centre locator line of the slate directly over the vertical blue chalk line. Continue to both ends, maintaining the 0.25" (6mm) spacing, depending on slate type used, between slates. (See diagram above.)

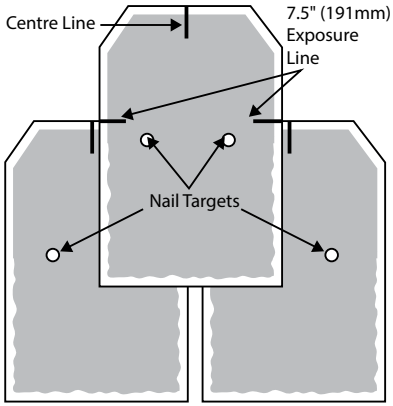


6. After installing the underlay or membrane and before installing the TapcoSlate, clean the surface of debris and dirt. Foreign particles shall be cleaned and removed from interlocking areas to ensure proper seating of the product and to prevent moisture intrusion and ice damming. All roof penetrations shall be properly flashed and secured into position with deck and underlay or membrane fasteners properly driven and not protruding prior to installing TapcoSlate Classic.

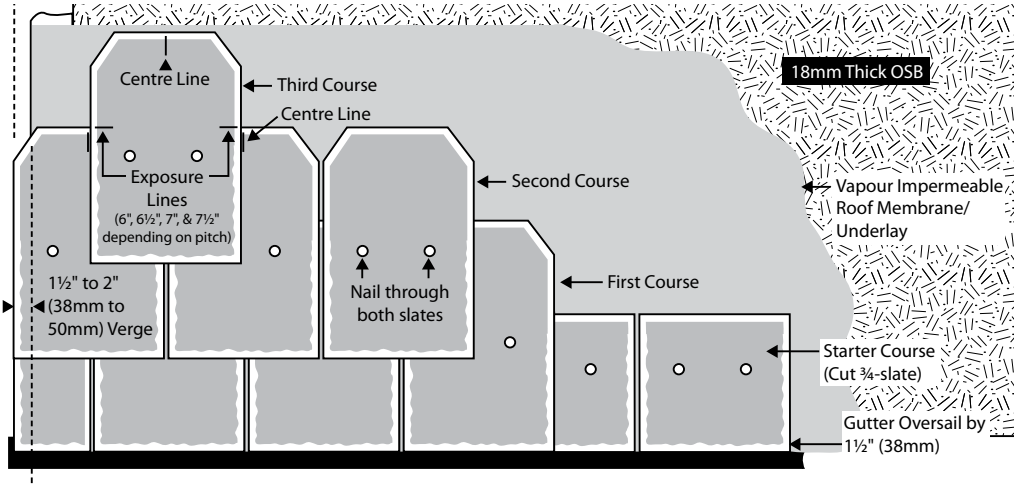
   a) The eaves or starter slates will be used as the first row at the eaves of the roof.

   c) To create the offset from course-to-course, use the centre mark provided on each slate and cut the slate lengthwise. This ensures that the nail holes are covered with the next course of slates and no through-joints are exposed to the deck.

   d) Strike the chalk lines horizontally, at the exposure level desired, to ensure that the slates are installed straight and uniform. Vertical chalk lines will help maintain consistency in the key-ways.



Layout of a Fully Boarded Roof Using Vapour Impermeable Membrane/Underlay

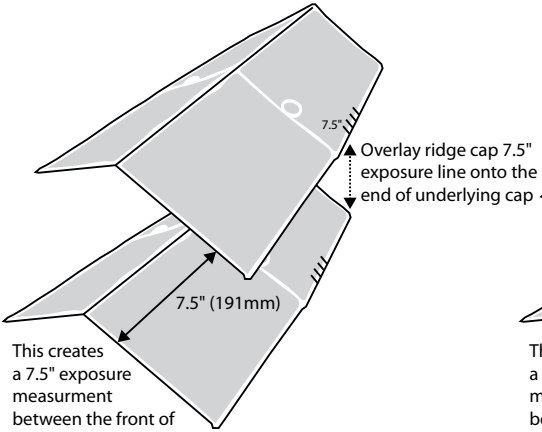


As can be seen by the above diagram, TapcoSlates can be nailed or screwed directly onto the OSB when using a **vapour impermeable** roof membrane/underlay. This is the **most cost-effective method** of fixing TapcoSlate onto a fully-boarded roof.

Fixing TapcoSlate Ridge/Hip Caps

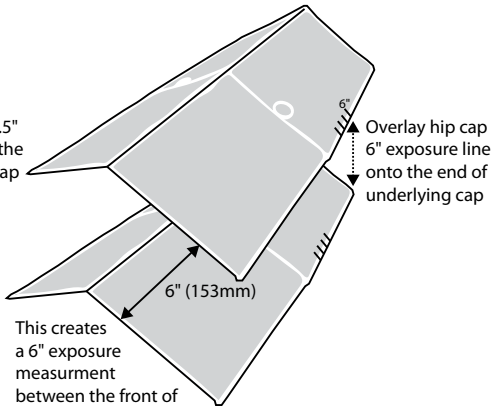
Just like our slate tiles, our ridge and hip caps have an exposure guide embossed onto them. Caps on the ridge must be fitted at a maximum of 7.5" exposure, we recommend the minimum exposure of 6" for high-wind/driving rain exposed areas. Caps on the hips **must** be fitted at a 6" exposure. All caps should be nailed/screwed through the one below, similar to the tile layout, and must be secured in the indicated spaces provided using two fixings – once completed this gives four fixing points on all but the last end cap. Do not over-expose the caps. The minimum number of caps per linear meter is 5.5 (at a 7.5" exposure). The maximum number of caps per linear meter is 6 (at a 6" exposure).

Maximum Classic Ridge Cap Exposure (7.5")



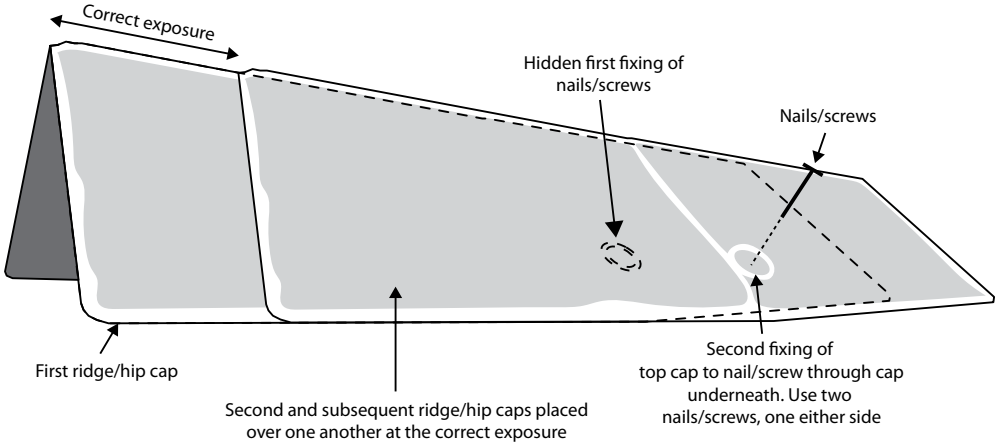
This creates a 7.5" exposure measurment between the front of the bottom ridge to the front of the top ridge creating a tight seal against the elements: 5.5 per linear metre

Minimum Classic Ridge Cap Exposure and Definitive Classic Hip Cap Exposure (6")



This creates a 6" exposure measurment between the front of the bottom hip to the front of the top hip creating a tight seal against the elements: 6 per linear metre

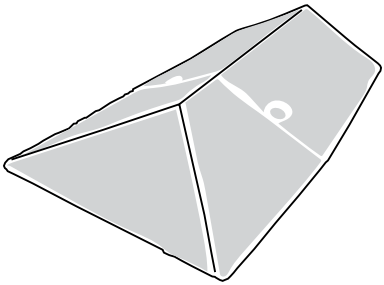
Ridge and Hip Cap Fixing



Ridge/Hip Cap Finishing

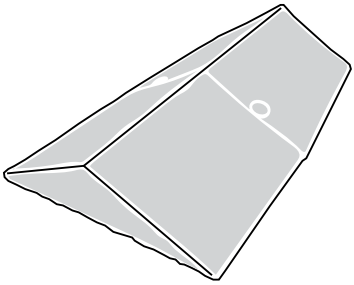
Tapco Roofing Products produces pre-formed TapcoSlate Classic Angled Ridge-to-Hip Junctions and TapcoSlate Classic Ridge 90° End Caps for the following roof pitches:

Classic Angled Ridge-to-Hip Junction



Available in:
14 to 17°
18 to 23°
24 to 30°
Roof Pitches

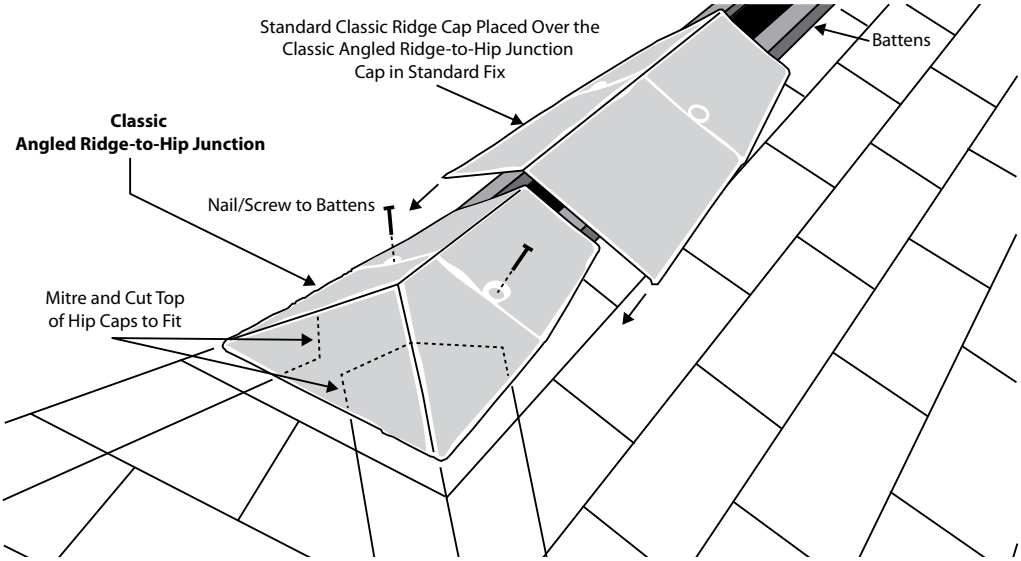
Classic Ridge 90° End Cap



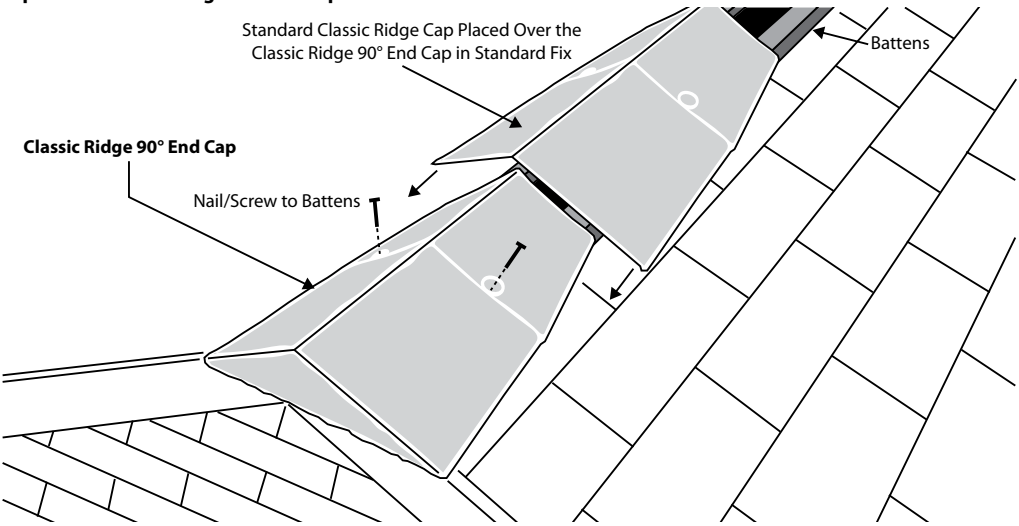
Available in:
25 to 29°
30 to 34°
35 to 40°
Roof Pitches

The TapcoSlate Classic Angled Ridge-to-Hip Junctions and TapcoSlate Classic Ridge 90° End Caps are fixed in place the same way as standard hip and ridge caps, two 3" (76mm) galvanised or stainless steel clout nails or outdoor Phillips Bugle screws. Care should be taken to store and transport these units safely. If a unit is to be used at both ends, the last unit can be cut in half and sculpted using a sharp craft knife to mimic the notched look of a cut slate: nails and screws in the top surface can be disguised by painting the heads in bitumen, or alternatively a colour-matched screw cap can be used or black tacks.

TapcoSlate Classic Angled Ridge-to-Hip Junction (Also 3-Way for Edwardian Conservatories)



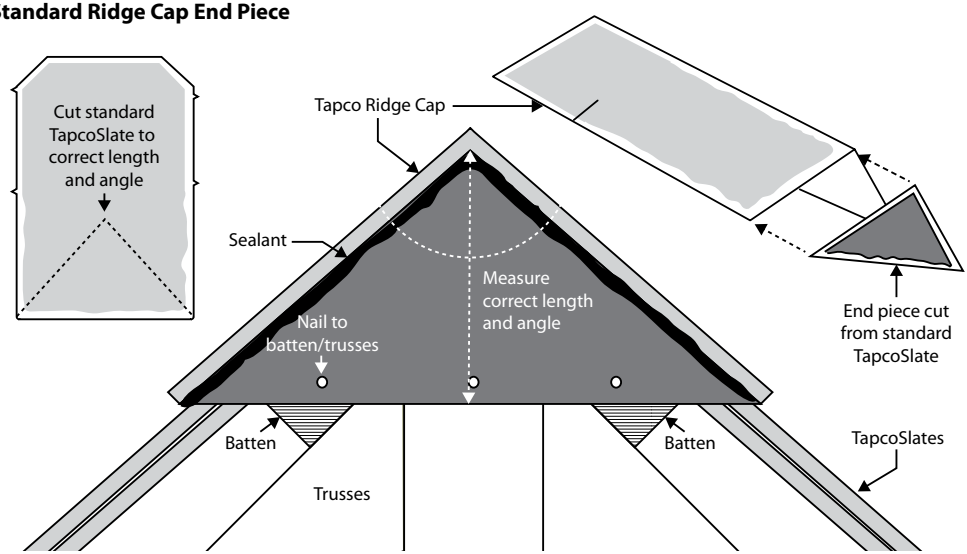
TapcoSlate Classic Ridge 90° End Cap



Alternate Ridge/Hip Cap Finishing

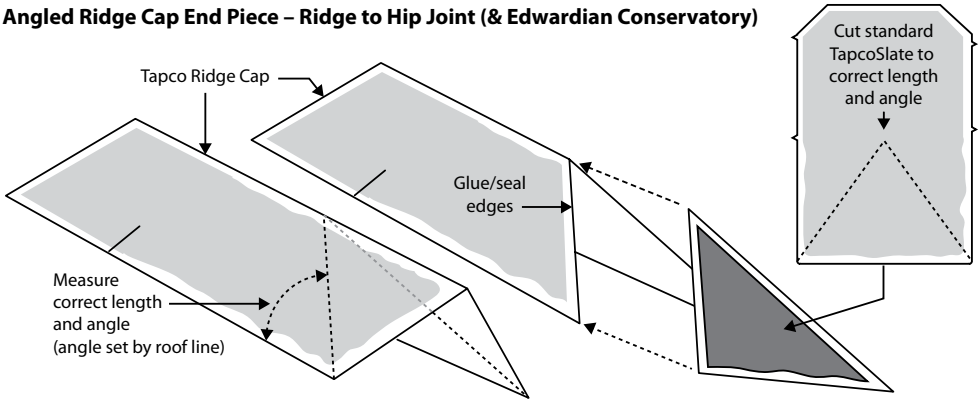
If you cannot use the pre-formed accessories mentioned due to pitch fitment or if you prefer to make your own the following is a guide on how to make similar finishes. Tapco Ridge Caps can be finished by cutting a standard TapcoSlate at the end of the ridge into a triangle or diamond shape of the right size to cover the end gap. The resulting material should then be nailed in place into the end-battens and/or truss. The material can be sealed by using a good quality butyl or bitumen sealant (do not use silicone as this will not adhere and may invalidate your warranty). Alternatively, the material can be joined to the Ridge Cap by using a strong epoxy glue (adhering to the manufacturers instructions). Nail heads should be disguised with coloured sealant or paint.

Standard Ridge Cap End Piece



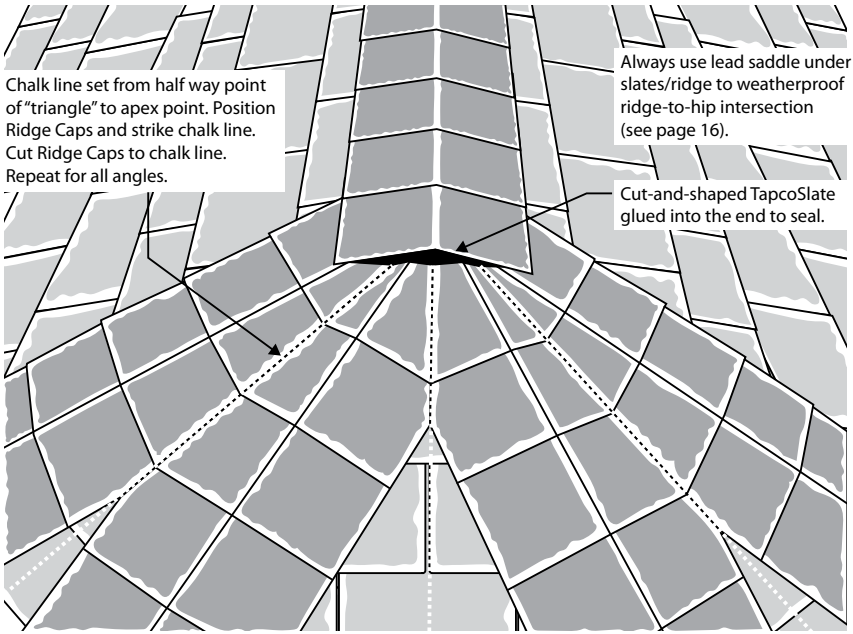
The same principle for finishing Tapco Ridge Caps can be applied to an angular finish roof by measuring the roof angle and cutting a Tapco Ridge Cap to suit. A similar measurement can be applied to a standard TapcoSlate to cut the right size and angle to cover the end hole in the Ridge Cap. Note that with an angular finish the material may have to be joined by using a strong epoxy glue (adhering to the manufacturer's instructions), unless there is enough batten/truss material to nail to.

Angled Ridge Cap End Piece – Ridge to Hip Joint (& Edwardian Conservatory)



The 5-way ridge-to-hip intersection can be formed by setting chalk lines from the centre point of the three, flat triangular shapes created to the point (apex) of the roof. By placing TapcoSlate ridge caps under these lines and then striking the chalk line onto the caps, the Hip Caps can be cut to form the shapes similar to the above diagram. The Ridge Caps should be set as normal (no cutting necessary) and a cut-and-formed piece of TapcoSlate can be glued in place to fill the front edge. Please note, it is recommended to use a lead saddle at the ridge/hip joint to add another layer of weatherproofing (see page 16).

5-way Ridge to Hip Joint (Victorian Conservatory)

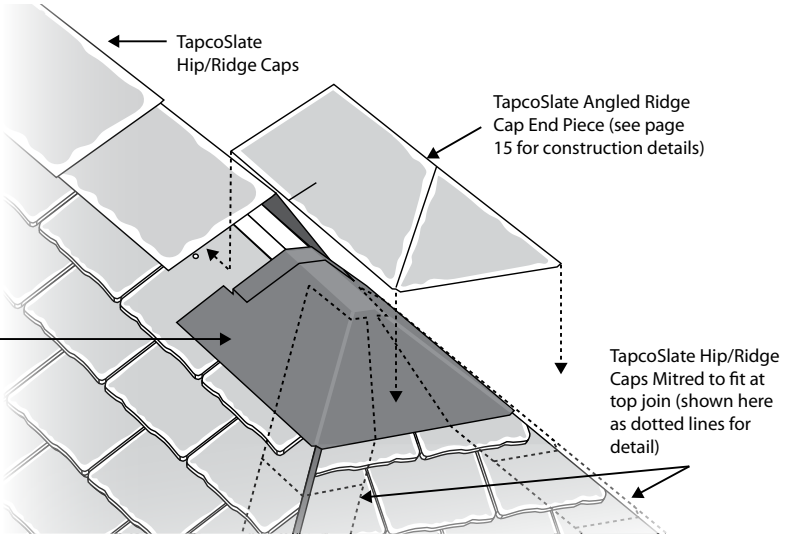


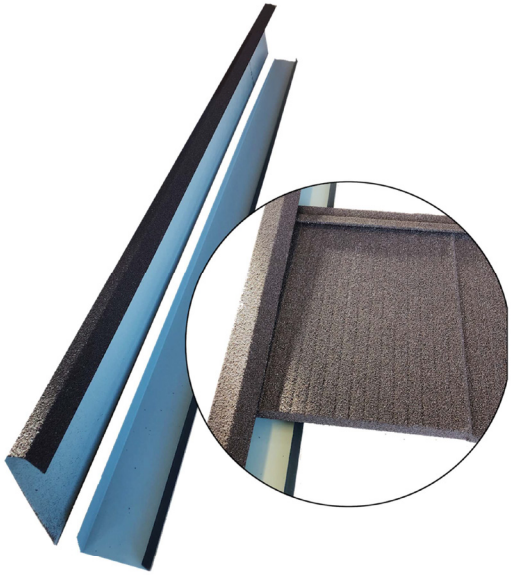
Weatherproofing the Ridge-to-Hip Intersection

When making your own ridge-to-hip intersections and/or ridge end caps it will be necessary to weatherproof this intersection (not needed when using TapcoSlate pre-formed accessories). A lead saddle should be fitted to cover the intersection between the ridge tile and the mitred hip tiles. TapcoSlate hip tiles cut easily without splintering or cracking to effect a tidy mitred joint.

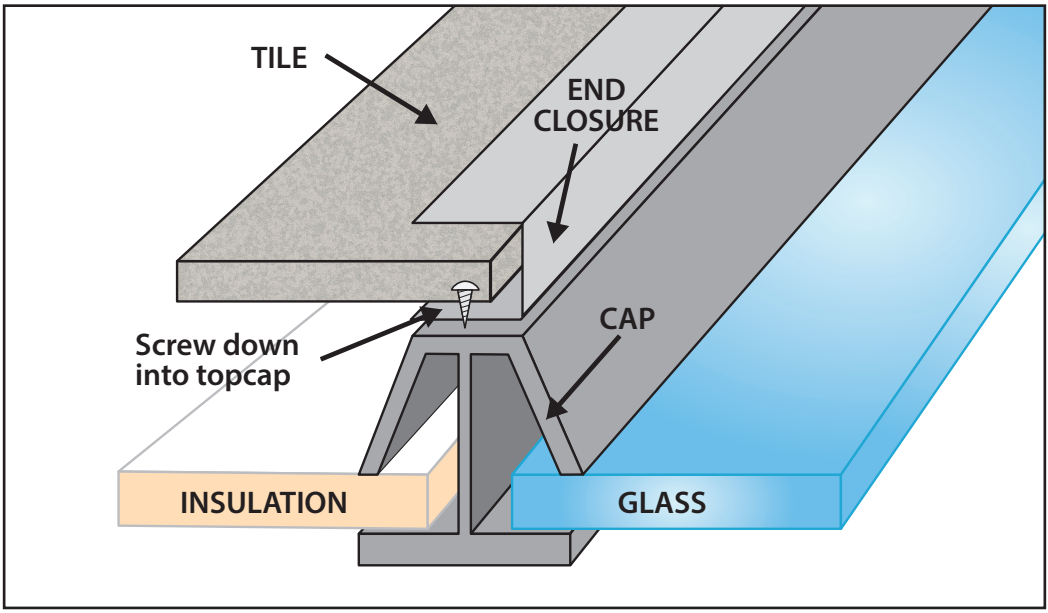
This principal can be utilised for any sized or shaped intersection.

Lead Saddle Used to Weatherproof Ridge-to-Hip Intersection

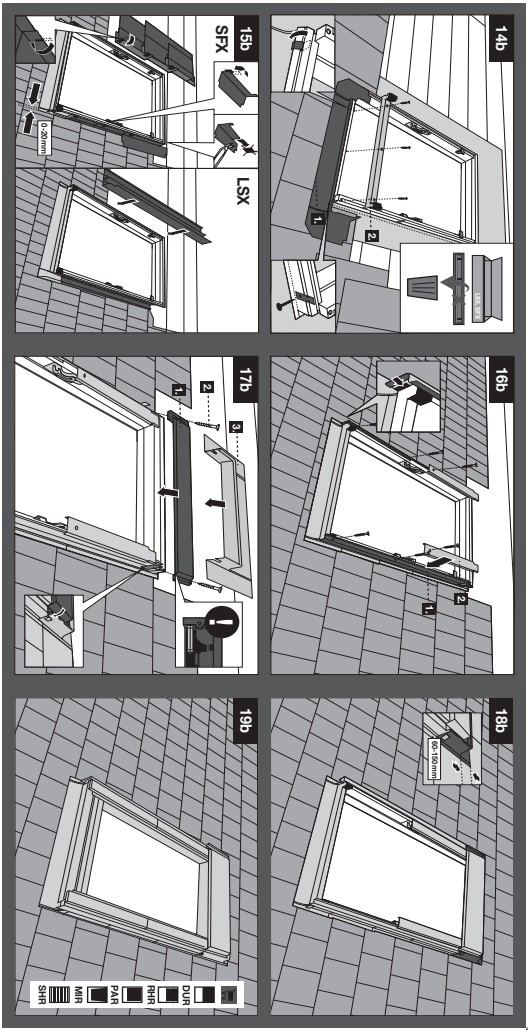


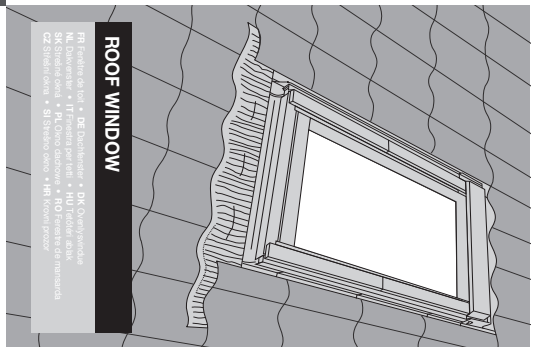


Installing Glazing



AAY B1500
APY B1500
TFX, SFX,
UFX, UCX,
SFF, TFF,
UBX, SCX,
LSX, SSX
RUC
AAY B1500
APY B1500
IFC
AAY B1500
APY B1500
01
02
03
TFP
SFF
UBX
UCX
SSX
SCX
05
≥ 90 cm
06
IFC
07
M8A 1400 mm
S8A 1140 mm
08/1
08/2
09/1
09/2
10
11
S8A 1140 mm
M8A 1400 mm
TFX, UFX
04a
a +40-60 mm
b +5 mm
80 mm
100 mm
250 mm
20 mm
b -45 mm
20-30 mm
a
SFX, LSX
04b
105 mm
a +0-60 mm
b +5 mm
12a
12b
RUC
13
3%





*DK - KSS 25-90°

SFX 15-90°
TFX 15-90°
UFX 15-90°
LSX 15-90°
SFF 20-90°
TFP 25-90°
SSX 15*-90°
UBX 15-90°

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