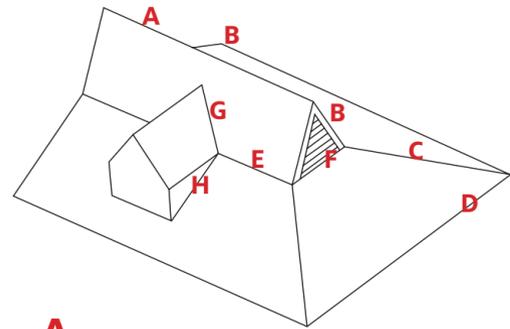
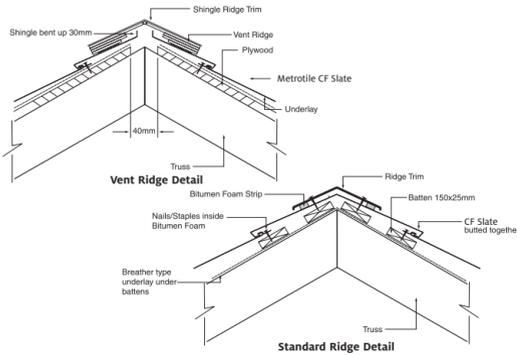


CF SLATE TECHNICAL DATA



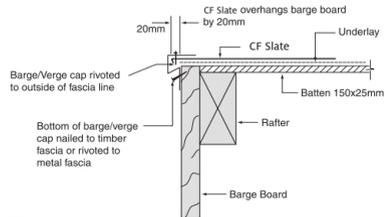
A RIDGE DETAIL

CF Slates are butted together at main ridge junction. Peel and Stick material applied and then ridge installed over the top.



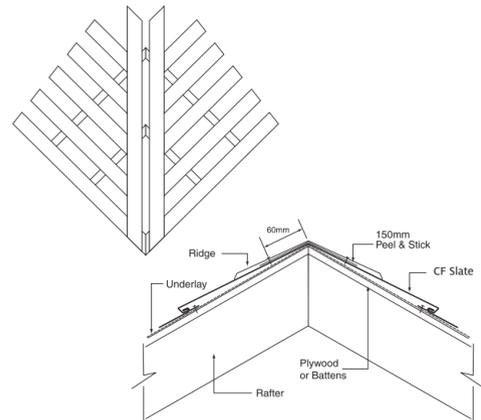
B BARGE BOARDS

The top of the barge board is to be finished flush with the top of the batten or plywood. Metrotile CF Slate to overhang the outside of barge board by 20mm bent down 10°.



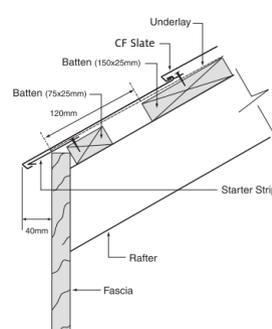
C HIP DETAIL

Rafters/hips to finish flush at hip intersection. CF Slates to be cut and laid so that they are butted together.



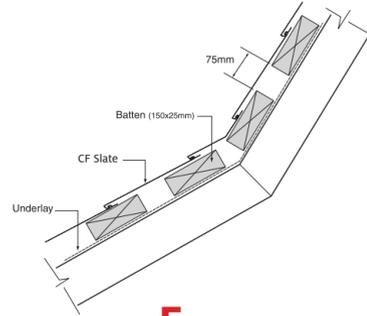
D FASCIA

The fascia must not project above the rafter more than the height of the batten/ plywood being used. When a rainwater collection system is required, the shingles will overhang the fascia by 40mm.



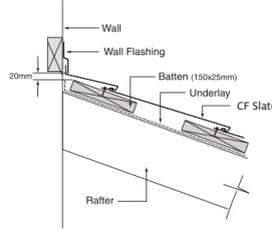
E CHANGE OF PITCH

This measurement will vary depending on the roof pitch. (check on site).



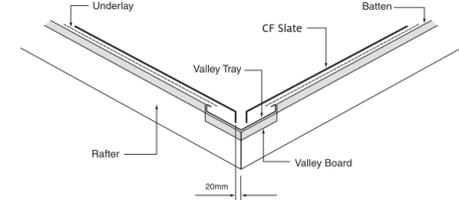
F DUTCH GABLES

When vertical junctions occur, the CF Slates are bent up and flattened to provide a turn-up under the dutch gable lining and side flashing, the height of the turn up should be 40mm.



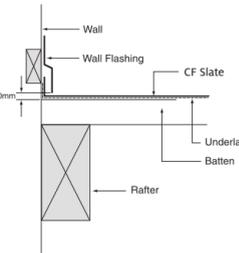
G VALLEYS

The accompanying detail suggests one way that valley gutters may be fitted. Local accepted practice, building regulations and site conditions will dictate the final method. The valley gutter size is determined in accordance with local conditions and regulations.

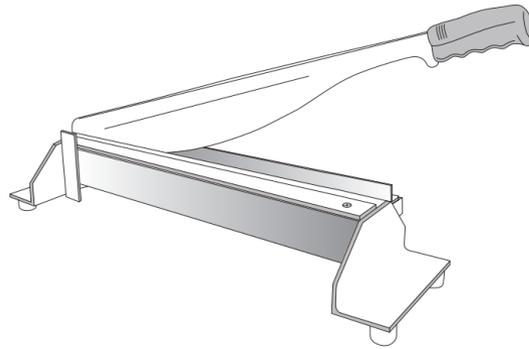


H JUNCTIONS WITH VERTICAL FACES

The bottom of the side flashing needs to be 20mm off the top of the batten /plywood. The shingle is bent up at 90°, 40mm behind the flashing.



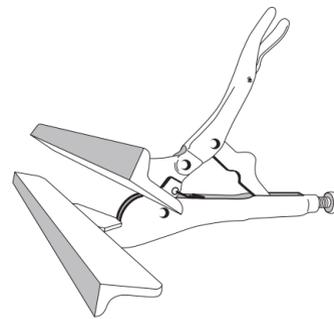
INSTALLATION EQUIPMENT



METROTILE GUILLOTINE

Metrotile Guillotine is designed to be used on the roof.

Length: 650mm
Height: 150mm
Weight: 12kg

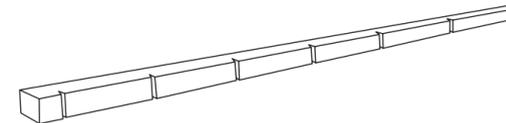


HAND BENDERS

Hand benders for bending tiles at 90° where required.

MEASURING ROD

Made from a 3m-5m (9'-15') length of 50x25mm (2"x1") timber, notched at exactly 255 mm (9 7/8") intervals.



A similarly notched aluminium extrusion can be made by the installer.

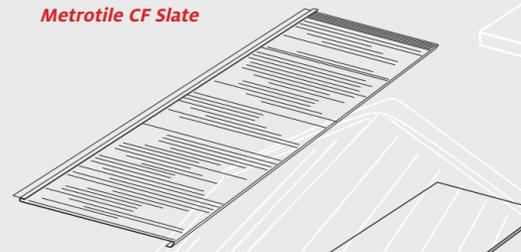
OTHER REQUIRED EQUIPMENT

- Metal Shears
- Carpenters Hammer
- Measuring Tape / Ruler
- String or Chalk Line
- Chalk or Marker (for marking tiles)
- Pencil, Handsaw
- Sealant gun, Silicone
- Battery Drill, Pop Rivet gun
- Nails, Staples, Rivets
- Flat, Soft Rubber Soled Shoes

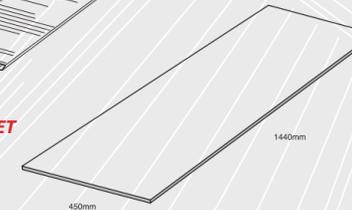
Metrotile ROOFING SYSTEMS CF SLATE

TECHNICAL DATA SHEET

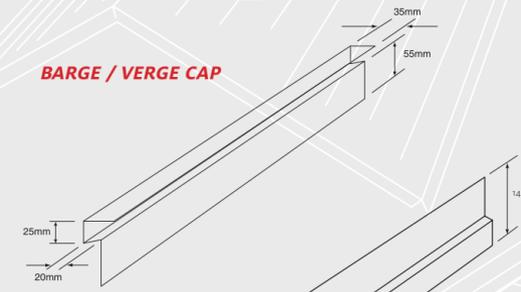
Metrotile CF Slate



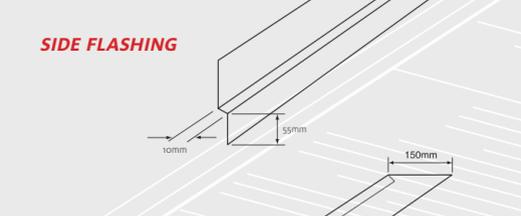
FLAT SHEET



BARGE / VERGE CAP



SIDE FLASHING



STARTER STRIP



RIDGE / HIP TRIM

METROTILE CF SLATE NOMINAL DIMENSIONS & WEIGHTS

Overall Length	1341 mm	(52 3/4")
Length of cover	1250 mm	(49 1/4")
Width of cover	255 mm	(10")
Roof Cover / Shingle	0.32	
Tiles / m2	3.2	
Weight / Tile	2.0 kgs	
Weight / m2	6.40 kgs	
Minimum Roof Pitch	20 deg	

BARGE / VERGE CAP

Overall Length	2000 mm (78w")	
Length of cover	1900 mm (74w")	
Weight / Unit	1.5 Kg	(3.3 lbs)

SIDE FLASHING

Overall Length	2000 mm (78 w")	
Length of cover	1900 mm (74 w")	
Weight / Unit	1.5 Kg	(3.3 lbs)

STARTER STRIP

Overall Length	2000 mm (78 w")	
Length of cover	1900 mm (74 w")	
Weight / Unit	1.5 Kg	(3.3 lbs)

RIDGE / HIP TRIM

Overall Length	270 mm (102")	
Length of cover	245 mm (92")	

PEEL & STICK MATERIAL



WEATHER SEAL MATERIALS FOR UNDER RIDGE/HIP TRIMS

PACKAGING

Tiles are stacked on wooden pallets to the below measurements.

Product	Standard pallet	Max weight	Size L x W x H	m ³ /ft ³
Metrotile CF Slate	500	750 Kg (1665 lbs)	1.4 x 1.1x 0.9 (4.6' x 3.6' x 3')	1.38 / 49.28

Export: 20 pallets plus sufficient roofing accessories can be packed into a standard 20ft container. Special packing can be offered on request to conform to the importing countries' requirements. This equates to 3003m² (32,290ft²) of roofing area.

STORAGE

If any products are stored outside a waterproof cover must be placed over them to keep them dry and prevent damage.

HANDLING

Care should be taken when handling product to avoid damage to surface coatings. Where minor damage does occur, the finishing kit should be used to repair the damage.



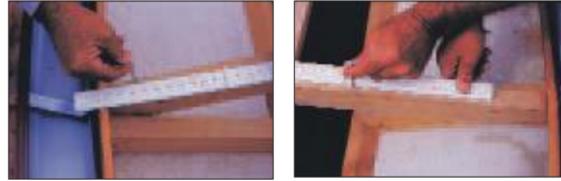
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CF SLATE INSTALLATION

1. Batten Spacing

A 75x25mm batten is placed directly behind the fascia around the entire roof, which is to support the Starter Strip (refer to #4 for Starter Strip installation).



Then the next batten is placed 140mm from the outside edge of the fascia material to the front edge of the batten. Battens are then placed every 255mm from the front edge of each batten continuing up the roof. The set out can be done using a setout rod, which is made from a 50x25mm batten or similar thickness material. Measure every 255mm up the setout rod and sawnotches in the material, making sure the notches are accurate and that the bottom of the notch is square to the rod. The rod is then placed on the rafter and nails are placed in every notch so that you have a series of nails at 255mm centres running up each rafter.

2. Batten Installation

Use 150x25mm timber battens with rafter centres no greater than 900mm. Place battens parallel on either side of all hip and ridgelines using the same 150x25mm battens. Place the battens on the setout nails mitring each batten into the hip/ridge and valley battens (paper laid under battens must be done before the battens are nailed). Make sure joining battens are centred on the rafter. Using 75x3.15mm steel nails, nail 2 nails in each batten over every rafter.



3. Plywood Construction (Alternative to batten use)

The plywood must be a minimum thickness of 9mm for 450mm rafter centres and 15mm for 900mm rafter centres. Place the Starter Strip as per below instructions.

4. Starter Strip Installation

Overhang each starter strip 40mm past the outside edge of the fascia ensuring that each valley and hip line join is mitered. The Starter strip must be lapped no less than 50mm over each other. Note - it is very important that the starter strips are overhanging the fascia evenly as this determines the line of each course. If these are not even the tiles will run out of line up the roof. Fix the starter Strips in place with either 30x2.8mm galvanised nails or 38mm stainless steel staples at 300mm centres. In very high wind zones starter strips must be screwed every 200mm.



5. Paper / Underlay Installation

Self-supporting breather type building paper must be used if it is being installed under battens. Standard breather type building paper can be used if the underlay is being laid on top of plywood. Starting at the bottom, roll out the underlay horizontally across the roof, ensuring that the outside edge of the underlay is flush with the outside edge of the starter strip. Paper the whole roof, horizontal to the fascia line ensuring that each lap is no less than 150mm. Underlay is to be lapped over each hip and ridge line at least 150mm and lapped 50mm into valleys. Where the roof meets a wall the underlay must be folded 50mm up all walls.



If the underlay is being placed over the plywood it is recommended that a hammer stapler be used to secure the paper before the tiles are laid.

6. CF Slate Installation

Starting at the bottom of the roof CF Slates are laid from right to left. Lay the first course of shingles lapping the tile over the Starter Strip making sure the shingles are pulled up hard so that they are secured and fixed tightly (see 6.1 for fixing instructions). Several courses can be laid at a time ensuring that every course is staggered differently so that a pattern is not seen in the roof. **Note:** Every CF Slate must be pushed up hard in place making sure that they are properly interlocked. If this is not done the shingles may lay out of line.

The starting and finishing shingle on each course should be cut and or bent as you go. i.e. when starting on a hip or valley, mark, cut and nail that CF Slate before the CF Slate above is secured. It is not possible to lay all the CF Slates and then cut the hip and valleys.



6.1 Metrotile CF Slate Fixing

CF Slates can be secured using either 30x2.8mm square twist hot dipped galvanized flat head nails or 38mm galvanized staples. In low to high wind zones as classified in NZ3604, 4 of the nails described above are required at 332mm centres and 5 staples at 266mm centres.

7. CF Slate Cutting

CF Slate cuts can either be measured or placed in position over the hip, valley or gable and marked. All CF Slate cutting and bending can be done on the roof using the purpose built CF Slate Guillotine & Bender sets. Scribe the angle or position of the cut on the CF Slate then proceed to cut along the scribed mark. Once the CF Slate has been cut it will be necessary to either adjust or cut the over and under-lap of the CF Slate as these will be squashed down from the guillotine, which will prevent the CF Slates from interlocking correctly.



7.1 Hip Cutting

Hip cut CF Slates must be marked and cut to the centre of the hip line so that the CF Slates on either side are butting together.

7.2 Valley Cutting

Valley cuts are to be marked, cut and bent down 25mm at 90 degrees when using 150x25mm Battens. Ensure that 25mm has been added to the cut line to allow for the amount of shingle to be bent. These should be spaced 20mm away from the centre of the valley tray and made accurate as possible so that there are neat clean lines running up the valley. Note: It is necessary to offset the cut line by 5mm at the top of the shingle. This allows for the height difference when shingle are sitting on one another. The cut edge of the shingles should be 10mm above the valley tray.

When using plywood the valley cuts should be marked, cut and spaced 10mm away from the centre of the valley. They do not need to be bent down.

7.3 Barge Cutting

CF Slates must overhang the outside edge of the barge 20mm and be bent down 10 degrees. This is to allow for the barge flashing to be placed over top.

7.4 Ridge Cutting

CF Slates closest to the ridge must be marked and cut to the centre of the ridgeline so that CF Slates on either side of the ridge are butting together. When roofing over a skillion type roof, the CF Slates must be cut 20mm before the ridgeline on either side so that there is a 40mm overall gap. This is to allow for air movement when using a vent ridge system (see details for Vent Ridge systems) Ensure the plywood base has adequate venting also.

7.5 Cutting – Wall CF Slates

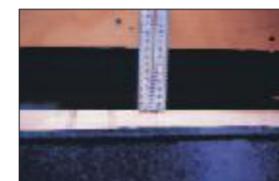
Where the roof meets a wall, the CF Slates must be marked, cut and bent up the wall no less than 40mm under the side flashing (see details for fitting Side Flashing).



8. Flashing Detail

8.1 Vertical and Side Flashings

Side flashings are positioned 20mm from the top of the roofing battens or plywood to the bottom of the side flashings. This will allow a 10mm gap to fit the shingles under the side flashing. All intersecting corners must be folded to ensure waterproofing. Side Flashings must be fixed at 500mm centres using 30x2.8mm nails. Overlap side flashings 50mm onto the flashing below. **Note:** Shingles must be folded up 40mm underneath all side and vertical flashings.



8.2 Barge Covers

Ensure shingles are overhanging the outside edge of the bargeboard by 20mm. Starting at the top fix Barges Covers every 500mm through the bargeboard. This allows any water that may flow into the Barge Cover to run down to the eave. Cut and fold the bottom Barge Cover to cover the open hole. The Barge Covers must then also be rivetted using aluminum rivets through the top edge into every other CF Slate below ensuring this is done outside the bargeboard line.



9. Hip / Ridge Trim

Either 20x20mm bitumen impregnated foam or a Peel & Stick waterproofing membrane must be used to cover all ridge and hip lines. As all shingles meeting the hip and ridge lines have been butted together either one of the above products will ensure waterproofing. Except when using a vent ridge system.

9.1 20x20mm Bitumen Impregnated Foam

The inside edge of the Tetral foam must be positioned 65mm away from the centre of each side of the hip/ridge line. This will ensure that the outside edge of the foam is as close to the outside edge of the ridge without being visible. These strips are not self-adhering so they will need to be held in place during fixing of the ridges.



9.2 Peel & Stick Membrane

The Peel & Stick Membrane is 150mm wide. This is positioned on the centre of each hip and ridgeline so that 75mm of the membrane is on either side. Where the membrane laps over a lip in the shingles (where one shingle is sitting on top of the other) it should be cut 10mm and pressed down to create a seal.



9.3 Hip / Ridge Fixing

It is recommended that a string or a chalk line be used to create a straight line for the Hip/Ridge Trim to follow. This is positioned down either side of the hip/ridge line 105mm from the centre.

Starting at the bottom of the hip, position the first trim hanging over the edge of the shingle and Starter Strip. The bottom of this trim is then cut and bent to a shape similar to the lap of a shingle so that it folds under the shingle and starter strip. It is held in place by rivetting the trim down through the below CF Slate ensuring this is done outside the roofline. Proceed to install all the trim up the hips using the same fasteners as used with the CF Slates. Fixings are positioned no more than 60mm out from the centre of the hip/ridge with only one fixing required on either side. Ensure that all fixings are either inside the bitumen foam or through the Peel & Stick membrane. Note: It is recommended to fit the trim up all hips before moving to the ridge. The starting and finishing trim on the ridge must be lapped over the hip trim with silicon applied under the lap to create a waterproof seal. The ridge trim can be fixed through the top of the trim using aluminum rivets however these must also be sealed with silicon. It is also recommended that the silicon spots be covered for cosmetic reasons using the 'Metro Touchup Kit'.



9.4 Vent Ridge Installation for Skillion Roofs

A Vent Ridge system is used on skillion type roofing systems to allow airflow through the cavity. Note - Kiln dried battens must also be used as wet air dried battens will dry naturally releasing water into the roof cavity.

The Vent Ridge is only used on the main-ridge. It is not necessary to place this under hip trim. Battens, Plywood and shingles must be spaced 20mm away from the centre of the ridge line on each side creating a 40mm overall gap for air movement. The CF Slates closest to the main-ridge must be cut and bent up 30mm, 20mm from the centre of the ridgeline. The Vent Ridge is rolled out and the Ridge trim placed on top and fixed using 30x2.8mm hot dipped galvanized nails, or 38mm galvanized staples. These go through the ridge trim, vent ridge and CF Slate into the plywood.

