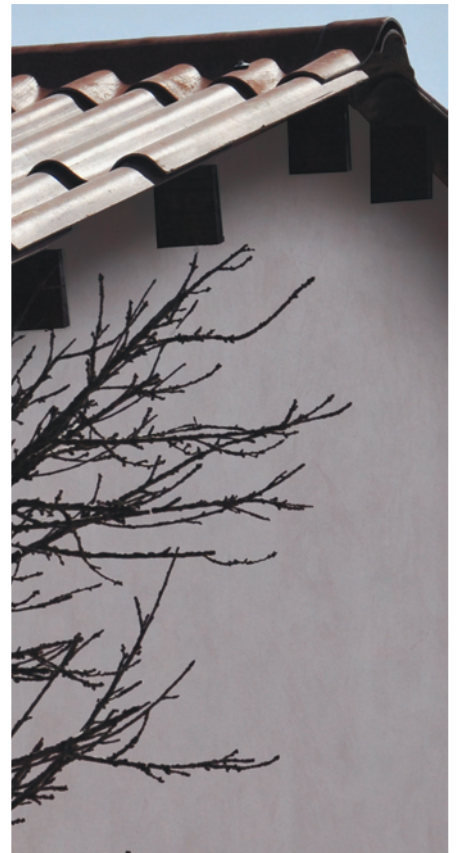


lasting strength  
with fibre-cement

**nutec**<sup>®</sup>  
ROOFING AND CLADDING SOLUTIONS

Manufactured by  
**EVERITE**  
Established in 1941

# BIGSIX TILE ROOFING





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### Catalogue Information

The information contained in this catalogue serves as a general guide only and should not be accepted as the standard for all construction. EVERITE can assist in designs of a special nature, however, architects, engineers and specifiers must finally approve the acceptability in terms of the design and construction criteria, as well as other implications.

### About Everite and Nutec

#### ■ Everite Building Products

Everite Building Products, wholly owned by JSE listed Group Five, has been associated with the South African building industry since 1941. Producing a wide range of materials that satisfy the needs of the commercial, industrial and residential market sectors, Everite is renowned for its comprehensive range of Nutec Roofing and Cladding Solutions and includes fibre-cement roofing, cladding, ceilings and building columns amongst others.

Nutec fibre-cement high performance properties and added benefits include: the use of safe renewable fibres; considerable tensile strength with enhanced dynamic load bearing properties; excellent thermal properties; water and wind resistance; hail resistance; fire resistance and resistance to fungus, rodents and acid.

A programme of quality assurance in accordance with the requirements of the International Standards Organisation (ISO 9001:2008) is entrenched in Everite's process and management systems. Quality of all products is continuously monitored as specified by the South African National Standards and recognised international bodies.

Everite's 54 hectare manufacturing facility near Johannesburg is well located and has immediate access to all major road and rail links to national destinations and major ports. The company has branches located at major centres throughout South Africa. Nutec products are distributed through leading stockists countrywide and an established export market further endorses the international acceptance of the Nutec Roofing and Cladding Solutions range of products.

#### ■ Nutec

Nutec is the registered name for products manufactured without asbestos as a raw material. Nutec fibre cement products are manufactured using a mixture of cellulose fibre, cement, silica and water.

Through ongoing research and development, Everite Building Products are committed to provide product of world-class quality.

Accordingly, the Nutec product range is continuously reviewed not only in the interests of the end-user and superior product performance, but also with respect to its impact on the environment. Everite Building Products has over the years established a reputation for producing a variety of outstanding quality products which have been used in a wide range of external and internal applications.

### Environmental benefits of Nutec Fibre Cement

- Environmental costs incurred by using fibre cement are measurably less than for other building materials. (Low embodied energy per m<sup>2</sup>).
- Requires less energy in assembly and construction than all other wall materials except timber.
- Low energy consumption in transportation and installation.
- Environmental costs relating to ozone layer depletion, carcinogenic substances and solid waste emissions are almost negligible.
- Low environmental impact in relation to ozone layer depletion, carcinogenic substances, and solid waste emissions.
- No pesticides are involved in the manufacture or use of fibre cement.

### The benefits of Nutec Fibre Cement

- The use of safe fibres.
- Considerable tensile strength with enhanced dynamic load bearing properties.
- Cost competitive.
- Excellent thermal properties.
- Water tight and wind resistant.
- Hail resistant.
- Fire-resistant.
- Fungus and rodent resistant.
- Acid resistant.
- Complies with SABS ISO 9933.
- ISO 9001 : 2008 Quality Management System.

### The environmental benefits in the manufacturing process of Nutec Fibre Cement

- Recycling the water used in production many times.
- Recycling solid wastes.
- Using sustainable raw materials in production.

### Embodied Energy – Definition

Embodied energy is the energy consumed by all of the processes associated with the production of a building, from the mining and processing of natural resources to manufacturing, transport and product delivery. Embodied energy does not include the operation and disposal of the building material. This would be considered in a life cycle approach. Embodied energy is the 'upstream' or 'front-end' component of the lifecycle impact of a home. Fibre cement is one of the most energy efficient materials on the market and it has one of the lowest embodied energy contents per square metre of cover of any building product.

# PRODUCT COMPOSITION AND QUALITY

## Nutec Bigsix Tiles

### ■ Composition

Nutec Bigsix Tiles consists of a hydraulic binder reinforced with natural and man-made organic fibres. Certain additives have been added to the binder to ensure long term durability and stability.

Nutec Bigsix Tiles are factory coated in a durable coating which not only improves the aesthetical finish of the product, but also further enhance product durability and stability.

### ■ Product Quality

Nutec Bigsix Tiles are manufactured according to ISO 9002 and carry an SABS Mark under specification SANS 9933. The product complies with many specifications. Some of these properties are summarised below:

- Non-combustibility in accordance with SANS 10177: Part V
- Class 1 Surface Spread of Flame Index in accordance with SANS 10177: Part III
- Water impermeability in accordance with SANS 865 and SANS 9933
- Rain Penetration Resistance in accordance with SANS 10400
- Hail Resistance in accordance with ASTM E822

## Installation Guide

### ■ Product sizes

Bigsix Tiles are available in two sizes: 1200 mm and 1000 mm

### ■ Support Structure

Structural timber or light weight gauge steel are suitable as support structures for Bigsix Tiles.

### ■ Light weight steel sections

Spanning capability will be influenced by the profile, thickness and steel grade.

According to “SANS 517: Light steel frame building” all designs needs to be approved by a professional structural engineer.

Commonly used in the industry is 40 mm Top Hat Sections with light weight steel trusses at 1200 mm centres.

**All light weight steel sections intended for use with Bigsix Tiles needs to be at least 0.8 mm thick.**

This minimum thickness ensures rigidity of the section during cladding installation and service life to prevent excessive deflection during installation and to prevent screw pull-out during service life.

■ **Timber supports**

Standard engineered gangnail trusses are used as the roof structure. Truss spacings will be determined by the manufacturer according to their design software, and manufactured according to their design drawings. This design is in turn signed off by a registered engineer. All bracing and fixing details for the trusses are specified by the manufacturer.

Typically 76 x 50 mm purlins are used for the Bigsix Tile, and spacing are specific to the 1200 mm and 1000 mm tile size as indicated in the table below.

Maximum purlin spacing and minimum roof pitch

Details	Unit	Specification	
<b>Product Size</b>	<b>mm</b>	<b>1200</b>	<b>1000</b>
Maximum purlin spacing	mm	1000	800
Minimum roof pitch	Degrees	12	12
Minimum overhang at gables (where no barge boards are used)	mm	150	150
Maximum roof overhang	mm	300	300
Minimum end laps	mm	225	225

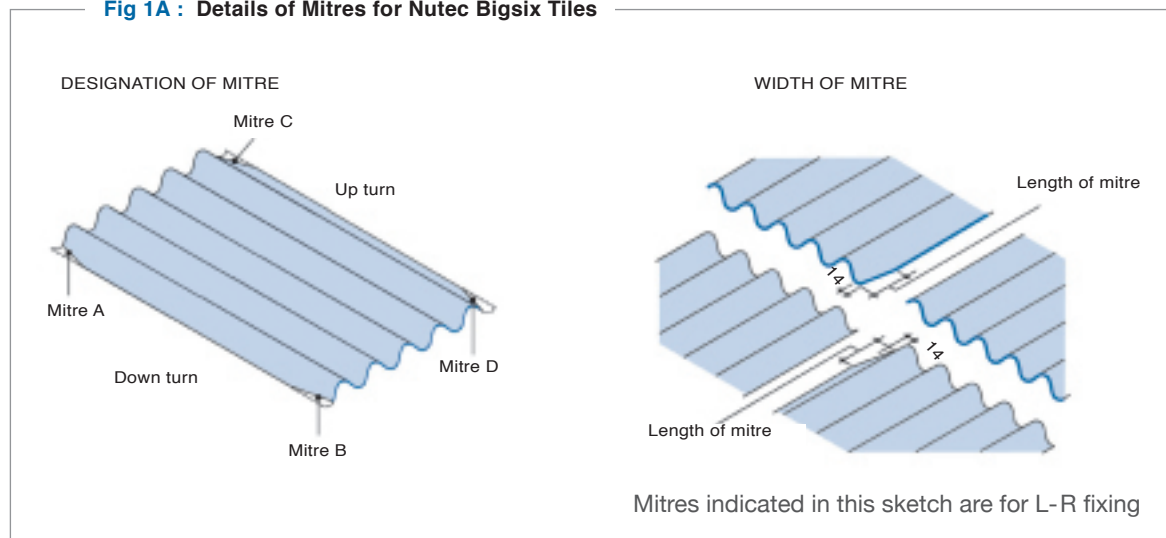
Loose purlins may be used as an alternative to gangnail trusses, but these also need to be designed and specified by the manufacturer, and have engineering sign off for the loading capacity of each member.

■ **Details of Mitre**

All Bigsix Tiles need to be mitred to ensure a good fit between tiles and to prevent water ingress.

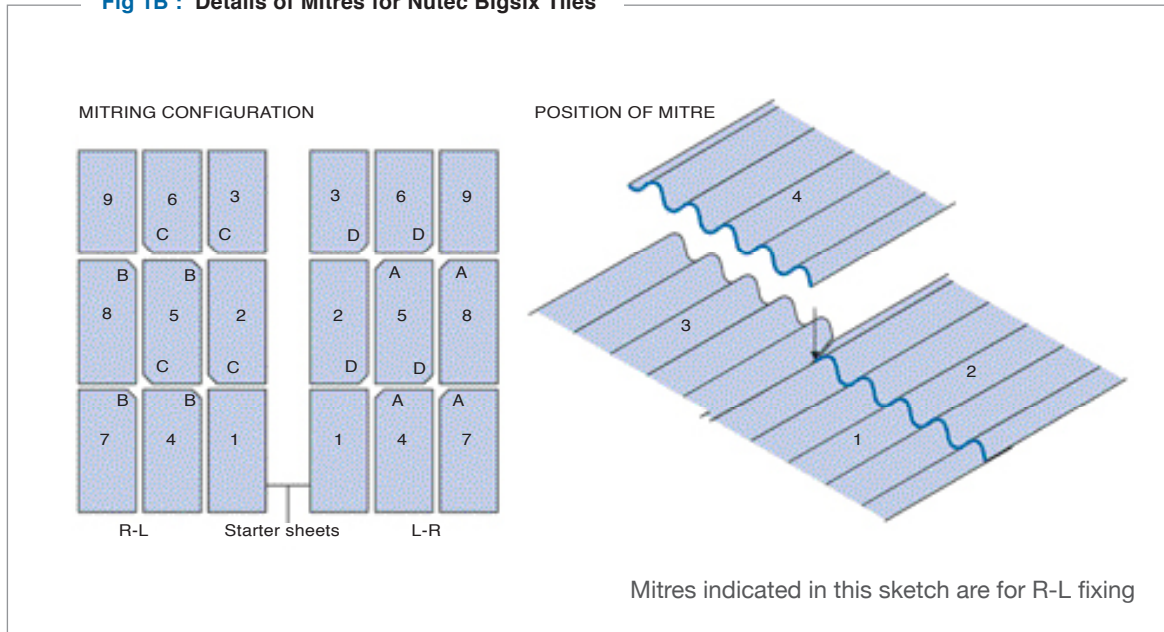
Refer Fig 1A and B

**Fig 1A : Details of Mitres for Nutec Bigsix Tiles**



# INSTALLATION GUIDE

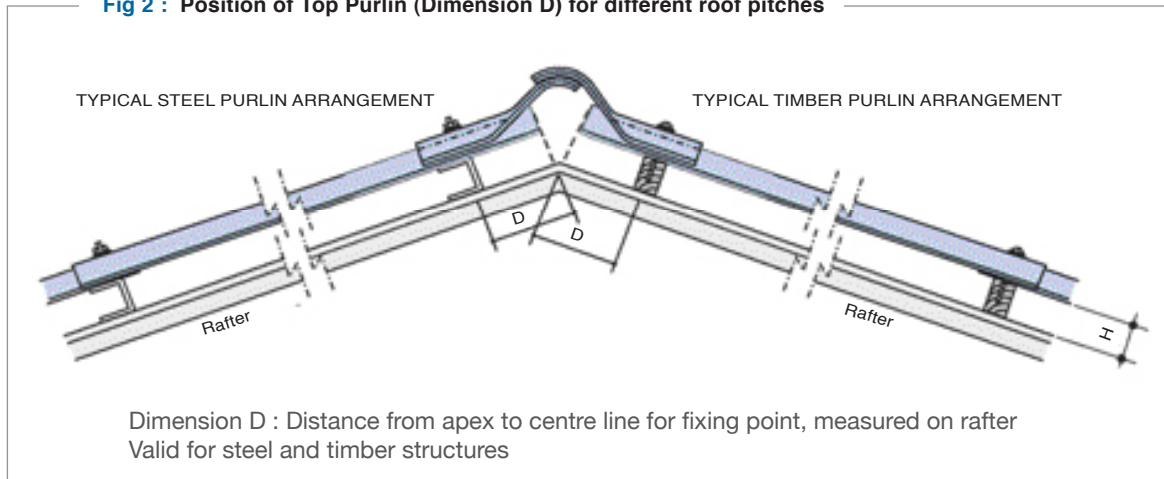
**Fig 1B : Details of Mitres for Nutec Bigsix Tiles**



**NB: Numbers indicate fixing sequence**

## ■ Purlin Positions

**Fig 2 : Position of Top Purlin (Dimension D) for different roof pitches**



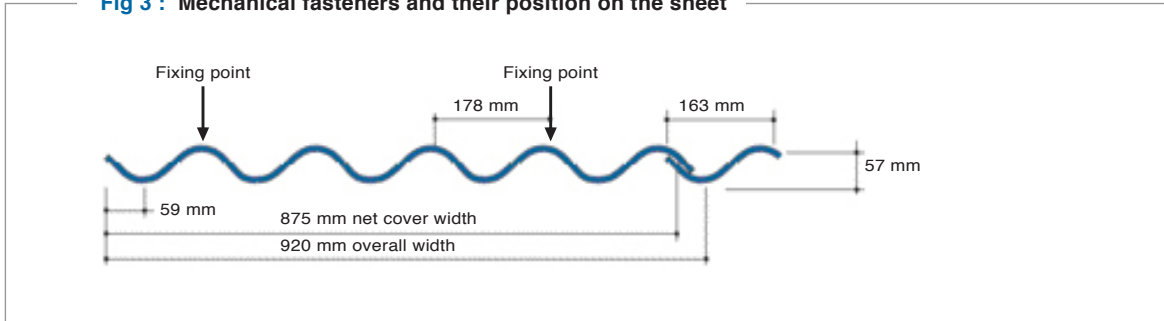
### 76 mm high Purlin

Pitch of roof	Dimension D in mm
12°	180
15°	170
20°	160
25°	150
30°	140



■ **Mechanical fastener positions**

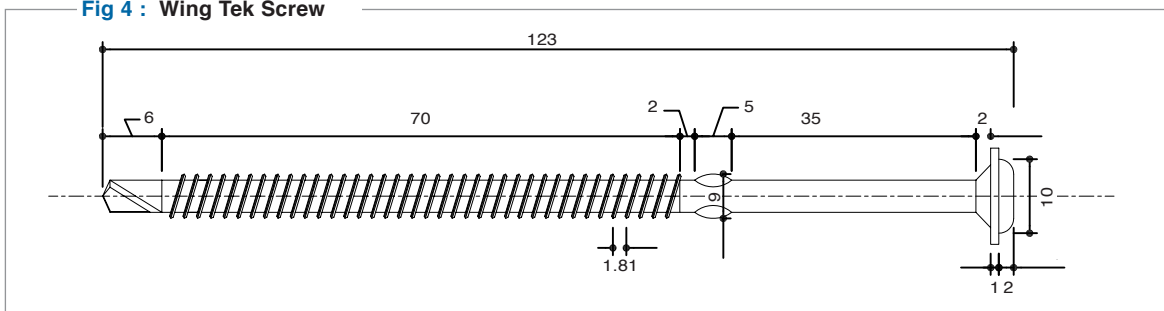
**Fig 3 : Mechanical fasteners and their position on the sheet**



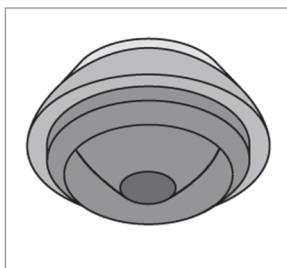
Care should be taken not to over-tighten mechanical fasteners as this will cause cracking of the Bigsix Tiles. To prevent over-tightening use industrial type screw guns with clutches (i.e. Hilti or Krest) and tighten so that the washer can just be turned by hand.

A wing Tek Screw with a wafer head is recommended as shown below. The wings ensure an oversize hole and eliminate the need for pre-drilling. Suitable screws are available from Everite Building Products.

**Fig 4 : Wing Tek Screw**



The screw is used in combination with a 16mm flat bonded washer to prevent over-tightening as it provides sufficient resistance for the screw gun clutch to kick in. The total height of the screw head and washer combined is 4 mm.



Bonded washer  
 – 16 mm diameter by 2mm  
 thickness with 6 mm diameter hole

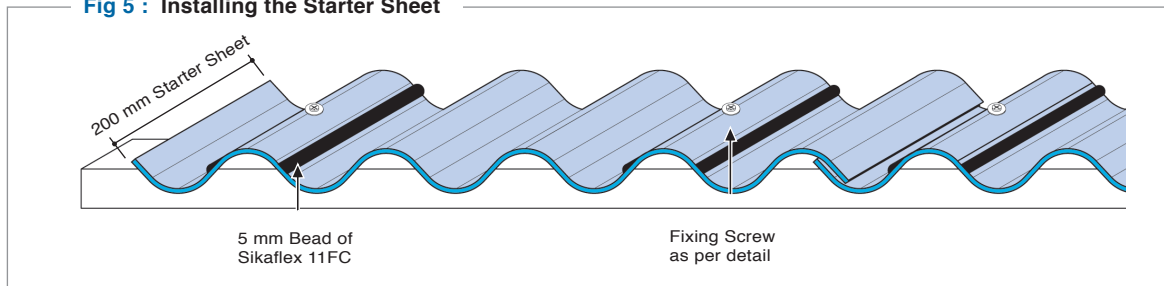
# INSTALLATION PROCEDURES

## Installation procedures

### ■ Step 1

Install the starter sheet onto the wall plate using mechanical fasteners. Add a bead of Sikaflex 11FC structural adhesive to the flat portions of the profile. The bead needs to be at least 150 mm in length and 5 mm in diameter.

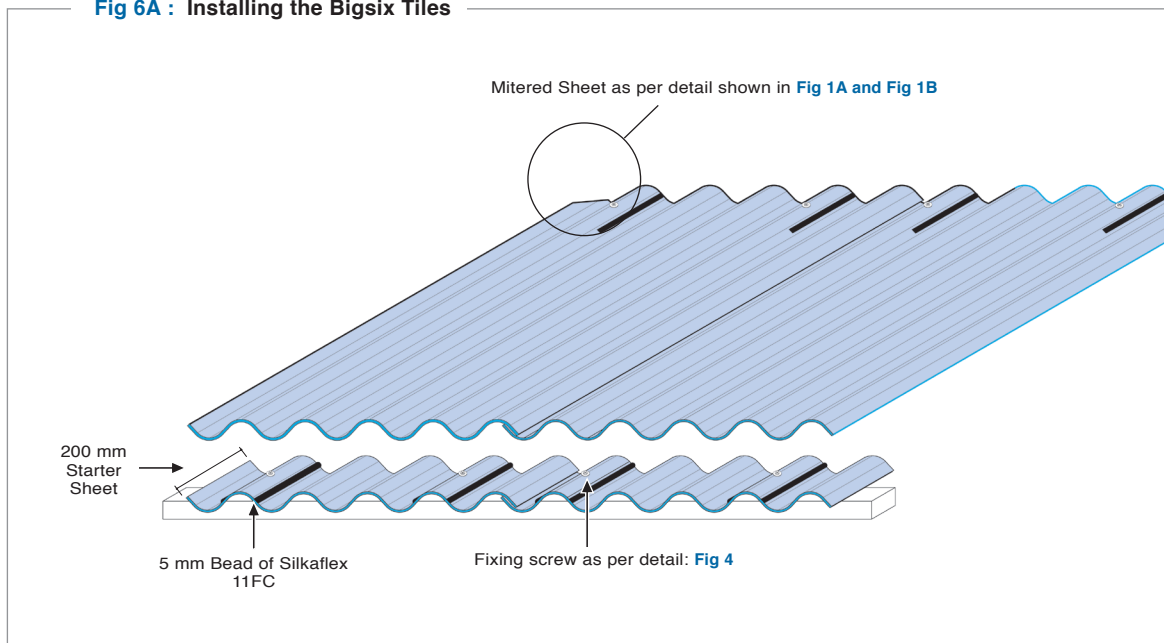
**Fig 5 : Installing the Starter Sheet**



### ■ Step 2

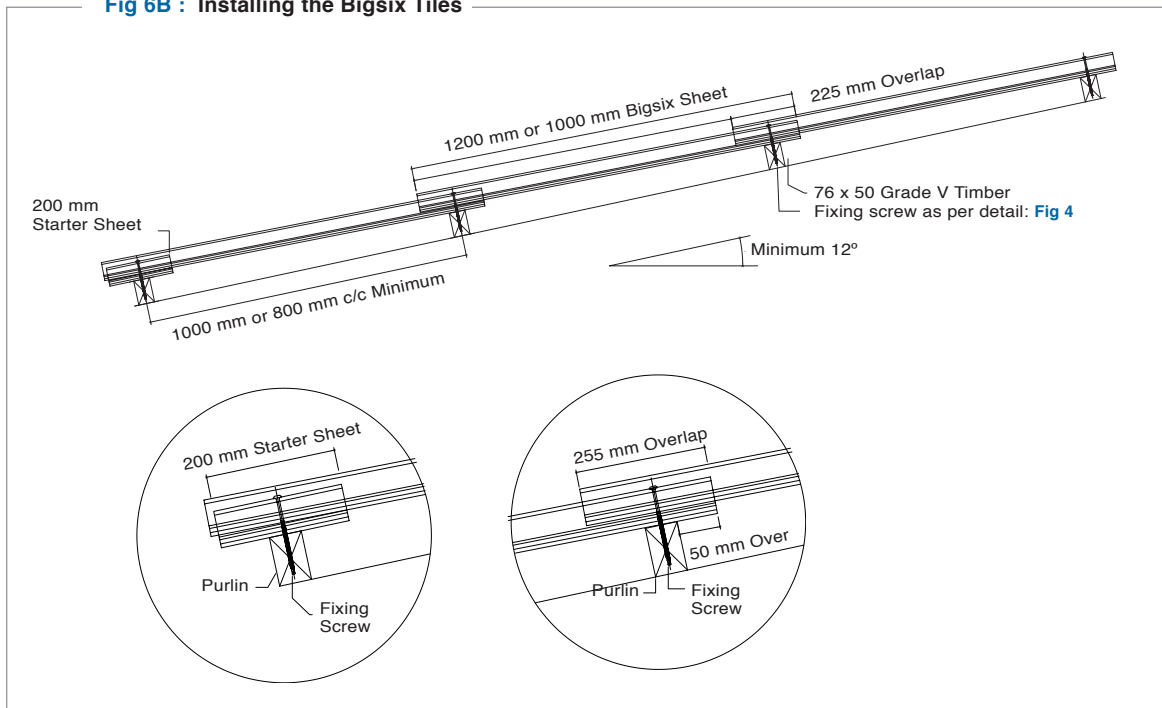
Place the bottom sheets on top of the starter sheet so that the roof overhang is 300 mm and the top end of the sheet extends 50 mm past the purlin.

**Fig 6A : Installing the Bigsix Tiles**



## INSTALLATION PROCEDURES

**Fig 6B : Installing the Bigsix Tiles**



### ■ Step 3

Repeat step two with Tiles mitred at both sides till the ridge. Apply the Sikaflex 11FC adhesive on the flat portions of the flat portions of the Bigsix Tile.

### ■ Step 4 Ridging

Position the ridge capping and pressed down so that the adhesive forms a bond between the top Bigsix Tile and the ridge capping. It is recommended that in high wind areas the mechanical fasteners be installed through the ridge capping through the top of top Bigsix Tile into the top purlin.

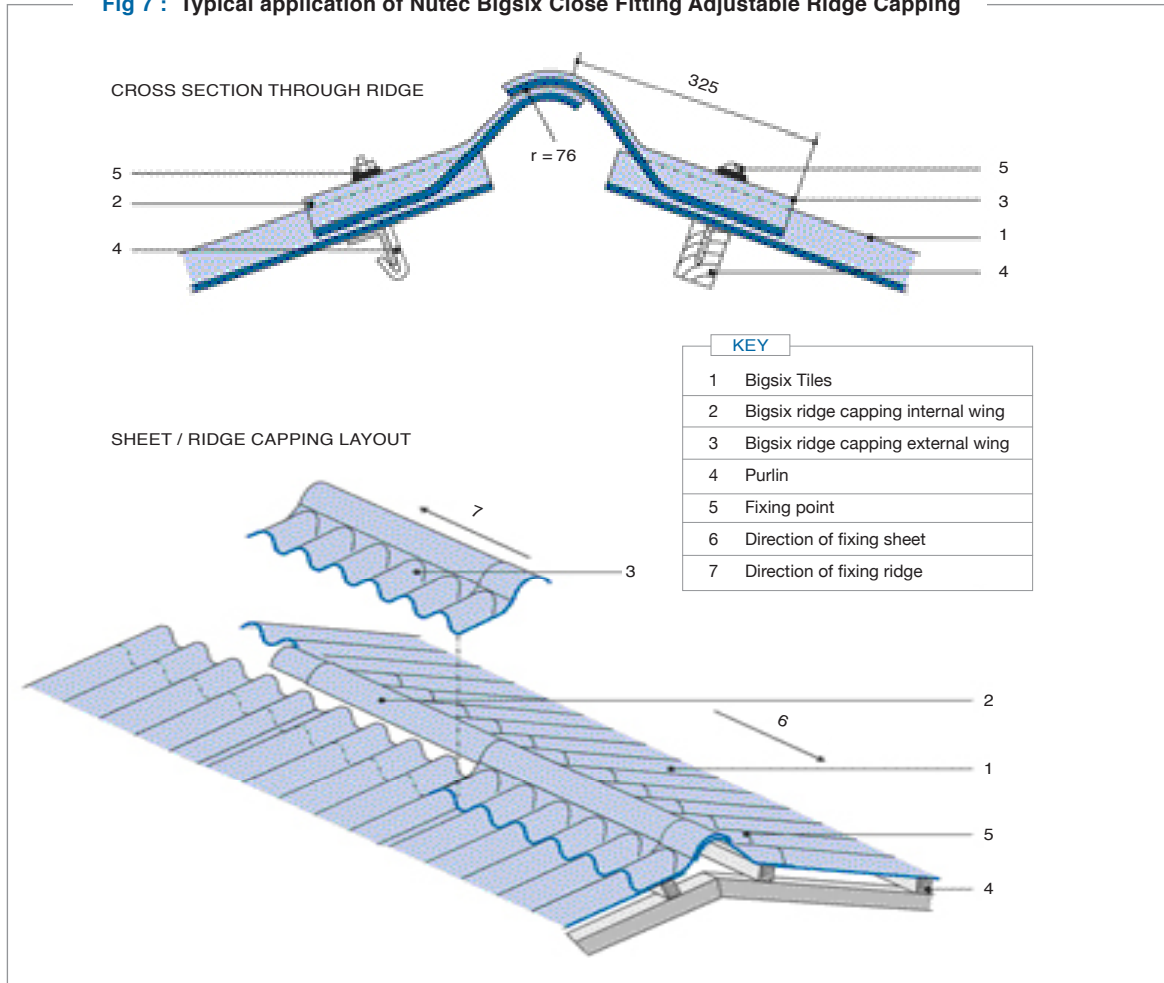
All the standard ridges used with Nutec Bigsix can be used with the Bigsix Tiles. The two more popular ridges with their fixing details. [Refer Fig 7.](#)

# INSTALLATION PROCEDURES

## ■ Adjustable Ridge Capping

The adjustable ridge capping can be used with roof pitches varying from 12° to 30°. The ridge capping should be installed in the opposite direction as the Bigsix Tiles. If this is not done, the capping will not fit snugly, leaving open gaps between the Bigsix Tiles and the ridge capping.

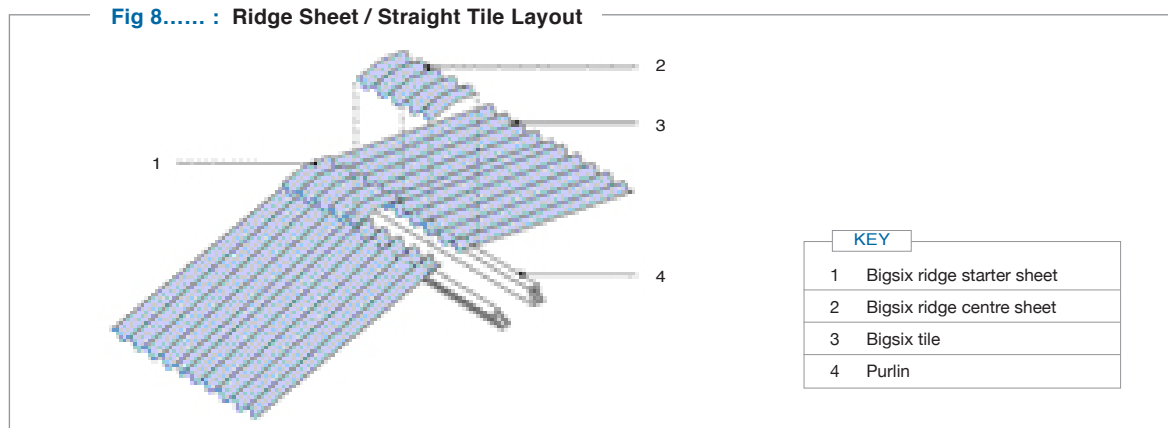
**Fig 7 : Typical application of Nutec Bigsix Close Fitting Adjustable Ridge Capping**



**NB: Ridge capping must be fixed in the opposite direction to that of the Bigsix sheets.**

■ **Fixed Angle Profile Ridge Sheet**

The Fixed Angle Profile Ridge sheets are available in 12, 15 and 18° angles. They are laid in the same direction as the Bigsix Tiles.



**NB. The Fixed Angle Wide Profile Ridge Sheet is laid in the same direction as the Roofing Sheets**

**Nutec Barge Boards**

Nutec Barge Boards provides a neat finish at the gables and prevents ingress of dust into the roof cavity. Consult the Everite Barge Board Catalogue for fixing details.

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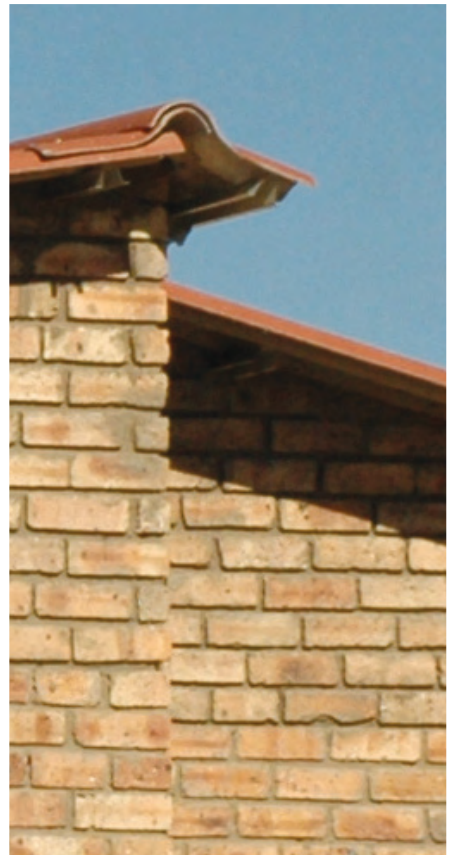
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