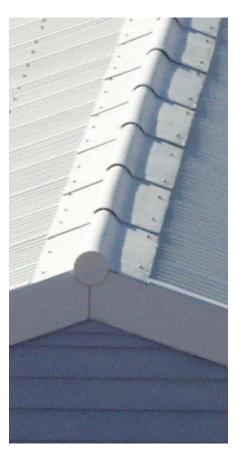
lasting strength with fibre-cement ROOFING AND CLADDING SOLUTIONS Wanufactured by EVERITE Established in 1941 VICTORIAN ROOFING













CONTENTS

About Everite and Nutec	2
Nutec Victorian Roofing Sheets : Features and Product Range	4
Accreditation	7
General Design Criteria	7
Safety, Handling and Storage	8
Installation Procedures	10
Substructure Recommendations for Nutec Victorian Roofing	19
Nutec Victorian Roofing Accessories	20
Nutec Victorian Roofing Fixing Accessories	23
Everite National Offices and Contact Details	24

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 m²).
- 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.

Victorian Roofing 2012 3

Nutec Victorian Roof Sheets

Nutec Victorian Roof Sheets form part of the Nutec roofing range which includes the Nutec Bigsix profile and Nutec Slate roofing. Favoured for more than seven decades in all sectors of the building industry, the range is renowned for years of trouble free roofing and offers designers and specifiers freedom and flexibility when functional, aesthetic and cost criteria need to be met.

The Victorian Roof Sheet is a popular choice from Everite's comprehensive range of profiled roofing and cladding products. It has been designed to recreate the appearance and character of a traditional Victorian style roof and with its optimal dimensions and mass, makes handling and installation relatively easy. It is particularly suitable for coastal areas where corrosive conditions prevent the use of many other products.

Features

Colour

Nutec Victorian Roof Sheets are supplied in their natural colour and for aesthetic reasons can be painted with a 100% acrylic PVA after erection.

Durability

Nutec Victorian Roof Sheets have been evaluated for durability by the SABS. The two tests used are Heat-Rain and Warm-Water. It complied fully with the requirements of both these tests. (SABS report No.7228/693/MT04).

Thermal Insulation

Nutec Victorian Roof Sheets have excellent thermal properties. The Thermal Conductivity (K-Value) of Nutec material is approximately 0.346 W/m.K or 0.346 W/m.°C.

(Test method ASTM C518; Ortech report no. 98-J53-M0207.)

Fire Resistant

Nutec Victorian Roof Sheets are Non-Combustible and have a Class 1 Spread of Flame Index when evaluated in accordance with SANS 10177: Parts V and III respectively. This means the product will not ignite in a case of fire and would also not contribute to the spread of flames. (SABS reports No. 5409/8338/98B and No. FPE/84501/04).

Nutec Victorian Roof Sheets will not explode under conditions of high temperature, unlike asbestos containing products. It can be used in applications with continuous temperature not exceeding 150°C.

Fungal Resistance

Nutec Victorian Roof Sheets are resistant to white rot and brown rot according to BS 1982: Parts 1 and 3. (SABS report No: 1159179/R4689).

Hail Resistance

Nutec Victorian Roof Sheets withstood impact by hailstones up to a diameter of 42 mm (22J) without any visible damage when evaluated according to the method ASTM E822. (SABS report no. 7228/713/MT04).

Water Tightness

Nutec Victorian Roof Sheets are non-permeable when tested according to SANS 9933. Darkening is normal because of moisture absorption, but sheets will not leak. (SABS reports no. 7228/693/M04).

Nutec Victorian Roof Sheets comply with the requirements for the Water Penetration Tests as described in sections L1b and c of SANS 10400: The Application of the National Building Regulations for areas with a maximum annual rainfall of more than 1000mm and a hourly mean wind speed of 30m/s. (SABS Report No. 7228/729/MT04).

Rodent Resistance

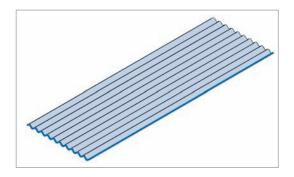
Nutec Victorian Roof Sheets have been evaluated by the SABS according to SANS 5419 for Rodent Resistance and have been awarded a rating of Class B1. (SABS report no. 1254985/S048).

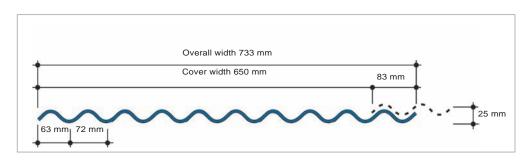
Victorian Roofing 2012 5

Nutec Victorian Product Range, Dimentions and Physical Properties

Nutec Victorian Standard Lengths (10 corrugations)

Product No.	Length	Mass per Unit (kg)
333-080	2 400 mm	16,0
333-100 333-120	3 000 mm 3 600 mm	20,17 23,0





Physical Properties and Dimensions		
Overall width	733	mm
Net cover width	650	mm
Maximum clear span (roof)	450	mm
Maximum clear span (side cladding)	600	mm
Maximum end cantilever	150	mm
Average mass of roof area laid	12.5	kg/m²
Corrugation height	25	mm
Minimum pitch	15	degrees
Nominal thickness	5.0	mm
Moment of inertia (approximately) per 1m	31,8	cm ⁴
Positive section modulus per m	25,1	cm ³

Accreditation: SABS, SANS & ISO

Nutec Victorian Roof Sheets carry the SABS Mark under specification SANS 9933: Products in fibre-reinforced cement – Long corrugated or asymmetrical section sheets and fittings for roofing and cladding. Everite is an accredited ISO 9001:2008 Quality Management System listed company.

General Design Criteria

High Wind Conditions

The information presented in this catalogue is a guide for wind loading conditions. A structural engineer should be used for design purposes to ensure that spans, fixing details and roof pitches meet the requirements for the particular conditions. Reference should be made to the Code of Practice for Fibre-cement Profiled Roofing and Wall Cladding, the structural code SANS 10237 and the structural code SANS 10160.

Purpose-Made Fittings

Non standard structural items are available on request, subject to price confirmation and manufacturing lead times of 8 - 12 weeks from date of order.

Fixing Accessories

A specially designed range of fixing accessories for Nutec Victorian Roof Sheets is obtainable from EVERITE. Full details are scheduled under Fixing Accessories.

Do not allow the use of non-approved, and often inferior, fixing accessories. EVERITE reserves its right to withdraw its guarantees if non approved fixing accessories are used.

Contact EVERITE sales office if in doubt.

Site Service

Service personnel are available on request to provide assistance on recommended storage, handling and erection of the EVERITE's products, before and during installation.

Victorian Roofing 2012 7

Safety, Handling and Storage Instructions

General

Manufactured from Nutec fibre-cement, Nutec Victorian Roof Sheets and fittings do not contain asbestos fibre and are therefore excluded from the following:

- Asbestos Regulations of 2001, which forms part of the Act No. 85: Occupational Health and Safety.
- South African Code SANS 10229: Packaging of dangerous goods for road and rail transportation in South Africa.

Nutec Victorian Roof Sheets do not pose any adverse effects on the environment. Off-cuts and dust created during site work may be disposed off on any non-hazardous waste landfill site.

Safety

Installation and maintenance

- Use duckboards as walking areas on the roof to avoid damage to sheets and injury to workers.
- Wear soft soled shoes for better grip.
- Do not carry heavy loads over completed areas of the roof or use these as staging posts for the next section.
- Do not exceed recommended purlin spacing.

Handling and Storage Instructions

General Handling

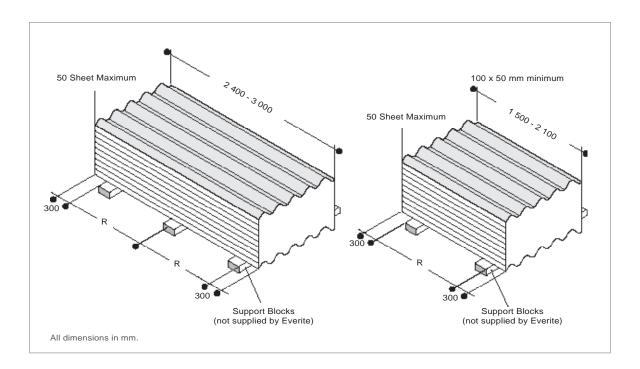
Nutec Victorian Roof Sheets are manufactured from a composite material containing cement and may be damaged under excessively high shock loads. Reasonable care should therefore be taken to ensure that the products are not dropped or subjected to rough handling.

Storage

- Prior to Installation Nutec Victorian Roof Sheets should remain on pallets and kept under cover until installed.
- Strict stock rotation should be adhered to.

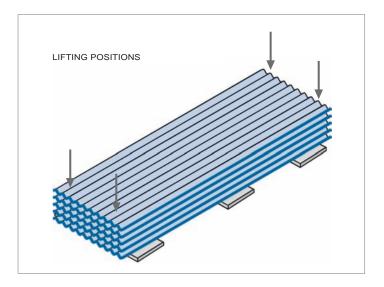
Storage On-site:

- A suitable level compacted area must be made available where sheets can be stored safely so that they cannot be damaged or soiled by passing traffic.
- PREPLANNING: ADEQUATE PREPLANNING OF DELIVERIES SHOULD BE MADE TO ENSURE THAT NUTEC PRODUCTS ARE NOT STORED ON SITE FOR EXCESSIVE PERIODS. IF THIS IS UNAVOIDABLE, THEY SHOULD BE KEPT UNDER COVER UNTIL INSTALLED.
- Stack sheets on 75 mm x 50 mm rough sawn timber bearers at maximum 450 mm centres and not more than 150 mm from the end of the sheet. Individual stacks should be limited to maximum 100 sheets per stack.



Handling

- Sheets up to 3.6 meters in length are handled manually by two persons one at each end.
- Sheets should be lifted at the crowns away from the extreme edges of the sheet as shown in diagram below.



Installation Procedures

Nutec Victorian Roof Sheets properly laid and fixed in accordance with recommendations will provide many years of trouble-free protection from the elements. Failure to follow these recommendations could however result in product failures and generally unsatisfactory product behaviour which might be difficult and costly to rectify.

Step 1

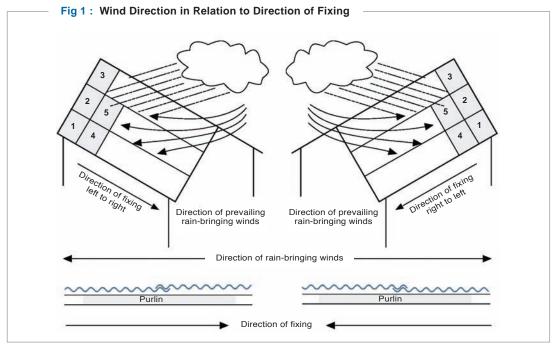
Check the roof or side cladding structure for:

- Readiness for sheeting.
- Purlin spacing
 - Roof: maximum 450 mm
- End cantilever: 150 mm maximum
- Lining up of tops of purlins or sheeting rails.
- Roof pitch: 15° Minimum. Refer Fig. 2,

In the event of observing any problems rectify or consult the main contractor.

Step 2

Determine the direction in which the sheets are to be laid, bearing in mind the direction of the prevailing winds and rain. Refer Fig. 1. Consult an Architect or Engineer if in doubt.



NB: The fixing is in the direction opposite to the direction of the prevailing rain-bringing winds.

Step 3

Check width of roof or cladding area against the cover width of sheets to determine correct starting point, and mark on purlin. *Refer Table 2*.

lo. of	Net Cover	No. of	Net Cover	No. of	Net Cover
sheets	m	sheets	m	sheets	m
1	0,733	11	7,234	21	13,734
2	1,383	12	7,884	22	14,384
3	2,033	13	8,534	23	15,034
4	2,683	14	9,184	24	15,684
5	3,333	15	9,834	25	16,334
6	3,983	16	10,484	26	16,984
7	4,633	17	11,134	27	17,634
8	5,283	18	11,784	28	18,284
9	5,934	19	12,434	29	18,934
10	6,584	20	13,084	30	19,584

Step 4

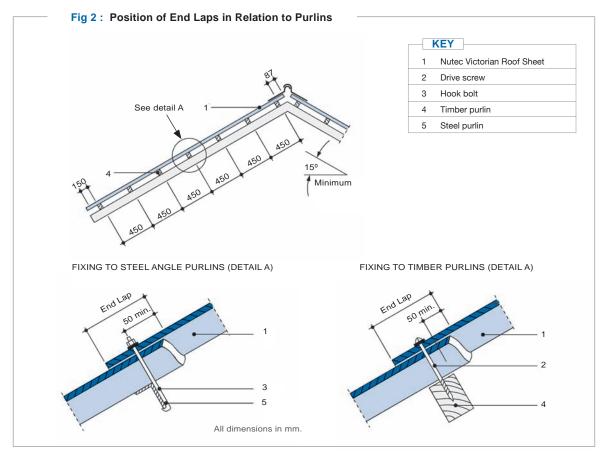
Square the roof by marking a line from eave to ridge running square with the ridge purlin through the starting point, previously identified and marked.

Step 5

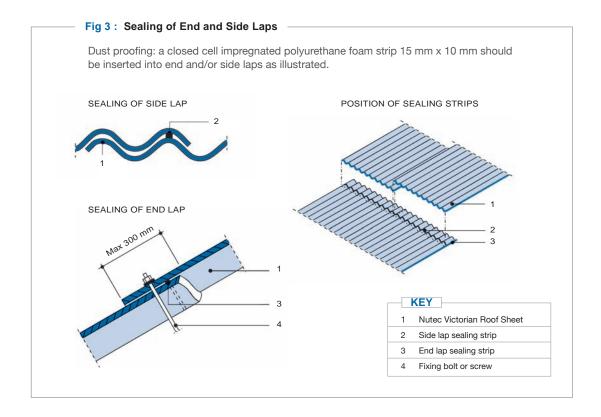
Determine correct end laps to suit roof pitch. *Refer Table 3*. Positioning of end laps in relation to purlins is illustrated in *Fig. 2*.

TABLE 3			
Minimum End Laps f	or varying Roof Pi	tches	
Roof Pitch	25° and over	20° to 25°	115° to 20°
Min. end lap	150 mm	200 mm	250 mm

NB: The information provided in this table is a guide for normal exposure. Where abnormal weather conditions, either wind or rain, are known to exsist, alternative solutions should be considered and Structural Engineer should be consulted for advice.



NB: Sheets must project a minimum 50 mm past the purlin as shown.



Step 6

Lay one row of sheets loose with smooth side up from eave to ridge along the starting line previously marked to determine exact length of overlap and mitre–maximum 300 mm.

Mark out mitres using side lap template and cut.

Mitring

To avoid point loads and potential leakages due to overlapping of four sheets at the intersection between end and side laps, the two centre sheets must be mitred. Certain fittings also require mitring.

Details of Mitre:

To determine the width of mitre, measure from the edge of the sheet 83 mm from the upturn of the corrugation or 83 mm from the downturn of the corrugation. The end lap determines the length of the mitre.

Step 7

Lay and fix the first row of sheets from eave to ridge along the starting line. For fixing points *Refer Fig.* 5 and *Fig* 6.

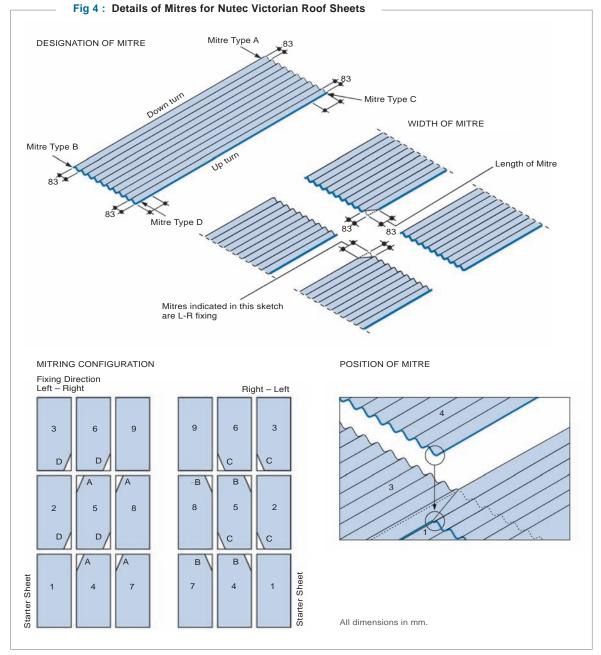
For the next row (eaves to ridge), measure the cover width of the sheet. *Refer Table 2* and mark top and bottom purlin, bearing in mind that the sheets are designed for a lap of one-and-a-half corrugations.

Secure a line between these two points and lay sheets to the line.

Sheets should now be laid in rows ensuring that the corrugations on both sides of the roof slope are in line.

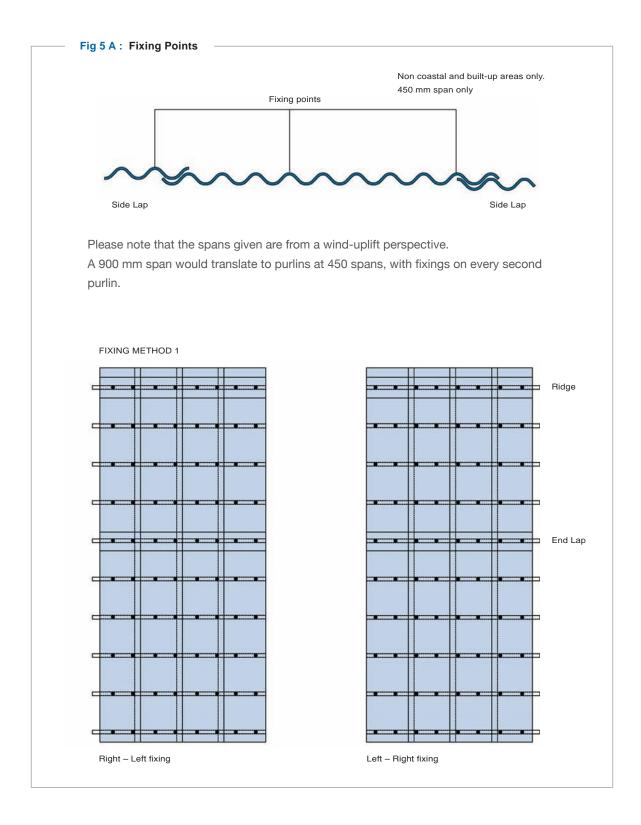
As an extra precaution check the net cover width after every five rows. Refer to Table 2.

Reflected sunlight shining directly onto the side lap area may be visible from the underside of the side lap corrugation. This is due to the sheet being designed with a slight gap at the side lap to allow for movement in the sheet or substructure. This will, however, not affect the water-tightness of the roof.

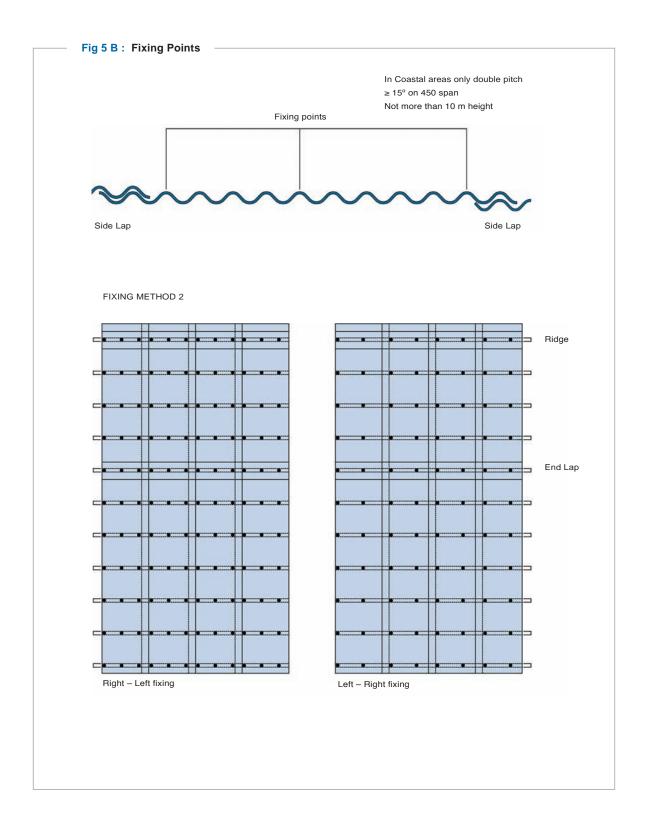


NB: Numbers indicate fixing sequence

■ Fixing Method for Normal Wind Conditions

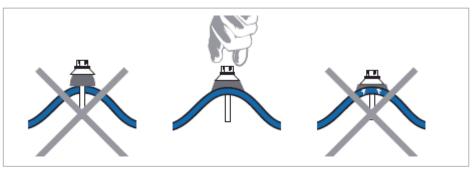


■ Fixing Method for Areas with High Wind Conditions



Fixing Points

- Fixing holes must be drilled and not punched as this may induce cracking of the sheet. An ordinary hand drill and drill bits specially sharpened to an angle of 20° are recommended. Use of these bits reduces the need for re-sharpening when compared with conventional drill bits. Do not use hammer drills and masonry drill bits.
- The drill bit diameter must be 2mm larger than the diameter of the fixing bolt or screw.
- Holes must always be drilled through the crown of the corrugation.



NB:

- Tighten fixing bolt nut sufficiently to seal the washer over the corrugation and to allow for slight movement in the substructure. Hook bolt nuts should be finger-tight plus one turn. Over tightening will damage the sheet.
- Fix at laps, eaves and ridge and only on every second purlin for purlins at 450 mm.

 Do not fix through the side laps. Fix at laps, eaves and ridge and only on every second purlin for purlins at 450 mm.
- Do not fix through the side laps.

Speed fixing systems

Speed fixing systems which meet the following requirements can also be used with Nutec Victorian Roof Sheets.

- When using timber purlins, the pull out force should be at least equivalent to that of a drive screw, i.e. not less than 1,75 KN.
- A washer system equivalent to the recommended Everseal washer system should be used to seal, distribute live load and to avoid the fixing pulling through the roof sheet.
- For recommendations with regard to the number and placing of fixings, refer to Fig. 5 A and 5 B
- Holes for fixings must be 2 mm larger in diameter than the fixing accessory and are predrilled.
- Fixings must not be over tightened.
- Correct length of fasteners must be used bearing in mind the extra overall depth of the sheets at laps.
- Length of fastener for fixing into timber purlins 115 mm.
- Length of fastener for fixing into steel purlins 90 mm.

General Guidelines for Building Heights

Roof Structure	Mono-pitch		Double-pitch	
	Method 1	Method 2	Method 1	Method 2
Inland Areas				
Exposed Terrain	Not suitable	Not suitable	Not suitable	20 m
Open Terrain	Not suitable	5 m	10 m	50 m
Developed Terrain (Suburbs)	15 m	20 m	50 m	100 m
Built-up Terrain (City Centres)	20 m	50 m	100 m	100 m
Coastal Areas				
Exposed Terrain	Not suitable	Not suitable	Not suitable	10 m
Open Terrain	Not suitable	Not suitable	5 m	20 m
Developed Terrain (Suburbs)	10 m	20 m	20 m	50 m
Built-up Terrain (City Centres)	20 m	50 m	50 m	100 m
Beauford West Areas				
Exposed Terrain	Not suitable	Not suitable	Not suitable	Not suitable
Open Terrain	Not suitable	Not suitable	Not suitable	Not suitable
Developed Terrain (Suburbs)	Not suitable	10 m	10 m	20 m
Built-up Terrain (City Centres)	20 m	20 m	20 m	50 m

Side Cladding Installation Procedures

The general rules for roofing also apply to side cladding. Important differences are:

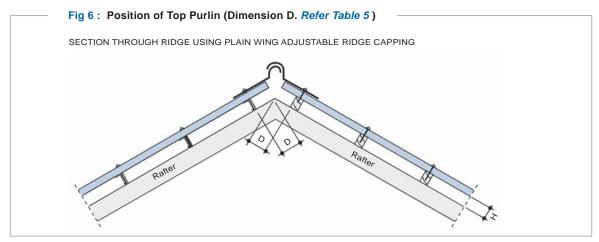
- Sheeting rails spacing can be increased to 600 mm.
- Two fasteners per sheet must be used on every sheeting rail.
- Anti-sag rods must be installed between sheeting rails.

Substructure Recommendations for Nutec Victorian Roof Sheets - All types of building in all areas

ABLE 4		
imber Requirements for Substru	ıcture	
Size of purlins	Purlin spacing	Rafter spacing
50 x 50 mm	450 mm	1 100 mm
76 x 50 mm	450 mm	1 400 mm

Purlin sizes

Table 4 gives an indication of purlin sizes required for varying purlin and rafter spacing. The services of a structural engineer should always be obtained to achieve maximum economy of material, especially on large scale projects.

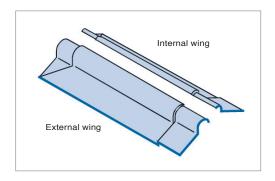


NB: Gap at the apex where straight sheets meet should be a minimum of 10 mm and a maximum of 20 mm.

Height of purlin mm	50	76
Pitch of roof	Dimensio	on D in mm
15°	80	70
20°	80	70
25°	70	60
30°	60	50
35°	50	30
40°	40	20
45°	30	0

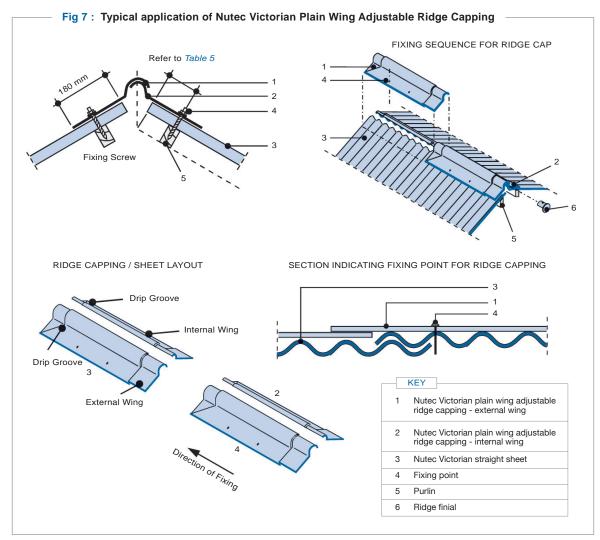
Nutec Victorian Plain Wing Adjustable Ridge Cap

Product No. (internal wing)	724-801
Product No. (external wing)	724-802
Overall length	1 100 mm
Net cover length	1 000 mm
Nominal thickness	6 mm
Average mass internal	5 kg
Average mass external	5 kg



Application

The plain wing adjustable ridge capping can be used as indicated in Fig.7.

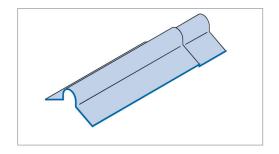


NB: When used as a hip capping, the fittings must be trimmed to form a neat fit where the hip intersects the ridge and suitable flashing such as lead must be used to waterproof the joint.

Purpose-Made Plain Wing Fixed Angle Ridge Capping

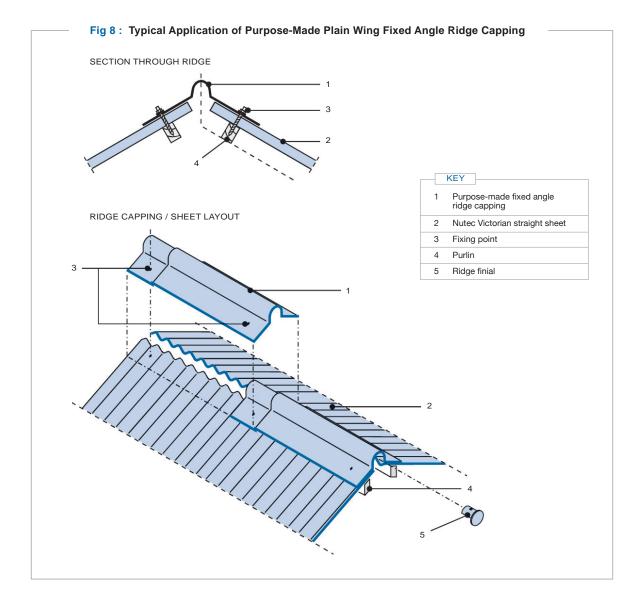
Overall length	2 030 mm
Net cover length	1 950 mm
Nominal thickness	6 mm
Average mass	6 kg

When ordering quote angle required.



Application

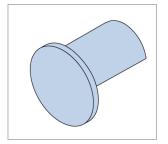
The plain wing fixed angle ridge capping is a purpose-made ridge capping and can be ordered to suit any pitch of roof. It is used as indicated in *Fig.8*.



Victorian Roofing 2012 21

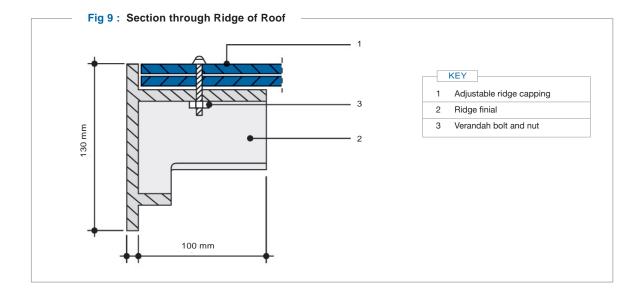
Nutec Victorian Ridge Finial

Product No.	721-010
Diameter	130 mm
Nominal thickness	6 mm
Average mass each	1 ka



Application

The Nutec Victorian profile finial is designed to close the ends of the ridge giving a neat appearance. The finial is inserted into the end of the ridge capping and fixed with a verandah bolt and nut.

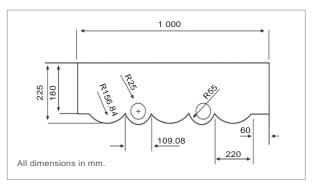


Nutec Fascia and Nutec Barge Boards

Standard sizes of Nutec Fascia and Barge Boards are available which will suit Nutec Victorian Roof Sheets. For further information refer to our Nutec Fascia and Barge Boards brochure.

Nutec Victorian Fascias

Product No.	Thickness mm	Size mm	Length mm	Average Mass kg
754-510	6	225	1 000	2,0



Nutec Victorian Fixing Accessories

Product No.	Description	Length mm	Diameter mm	Sketch of Article
600-321	Drive screw complete with washer	90	6	Length
600-320	Drive screw complete with washer	75	6	, ,
600-330	Pozigrip with galvanised hex head	80	6	
600 395	Pozigrip Coastal	120	6	
600-351	6 mm Everseal washer	n/a	25	

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24











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