



Crest concrete interlocking roof tile collection

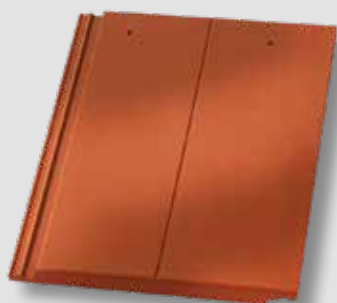


FINISH
TOP ONE

High-quality **micro concrete** roof tiles for every type of project.



*Planum Concrete



*Planum Duo Concrete



Double Pantile



Double Roman

Why choose Crest Nelskamp concrete roofing tiles?



An energy conscious production process as well as a recycling concept, enhances our contribution towards a clean environment. Nelskamp concrete tiles are produced according to DIN EN 490/491 and DIN18338. The deep side-interlock provides optimal protection against wind-driven rain, snow and dust particles.



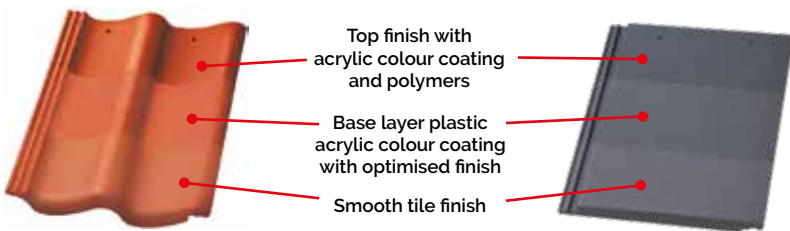
One of three large concrete roof tile factories in Germany



Crest Nelskamp high-quality concrete roof tiles provide brilliant durability and longevity.

Their popularity is not simply due to their quality and "pore free" edges, but also the variety of colours and profiles available when choosing a concrete roof tile. They are the preferred choice for the discerning specifier, with use on a considerable amount of properties across the UK. Our range of concrete roof tiles are specially crafted and engineered by Nelskamp, a leading German manufacturer with six modern production facilities strategically positioned across the country. Crest Nelskamp roof tiles are recognised for their use of high-quality robust materials and proven manufacturing techniques. With the most modern production facilities and special preparation treatments, they ensure consistency and long lasting quality.

ECO friendly protective finish



As part of the continuous development and production process, we have developed the Top One Finish. Crest Nelskamp Eco-friendly Top-One surface finish comes as standard on the full concrete tile range. It offers a roof tile with micro concrete surface technology giving clean, ultra-smooth finish, acrylic colour coating and polymers sealing the tile giving "pore free" edges. Its high-quality and workmanship set new standards for concrete roof tiles. All our concrete roof tiles are guaranteed for 30 years, so whatever style and finish you choose, you have complete peace of mind.

Whether looking to replace your existing roof tiles or in search of a beautiful option for a new build, our range is certain to offer you the perfect solution, with each tile carefully crafted to match various building types and environments.

Manufacturing Standards

Crest European manufacturing partners Nelskamp fully comply with the requirements of BS EN 1304; the European Standard for concrete tiles & fittings and are manufactured under a Quality Management system certified to comply with ISO 9001.

30 Year Guarantee

Nelskamp roof tiles are covered by a comprehensive 30-year guarantee of durability provided that they have been installed in accordance with BS 5534 & BS 8000-6.



Every effort has been made to ensure reasonable accuracy of all products shown in this brochure. The product colours shown in this publication can vary due to the limitations of the production process. With this in mind, we advise all customers to view a sample of the actual product. Crest and its manufacturer's is continually innovating and improving their products and services. Therefore, we reserve the right to change product specifications without notice. All products are subject to availability and the company's standard conditions of sale. **July 2023**

The *Planum concrete interlocking flat tile

A high-quality micro concrete tile for every type of project.

Our *Planum Concrete tiles work extremely well with both modern and traditional architecture.

At first glance, some customers think that our Crest Nelskamp *Planum concrete tiles are part of our clay roof tile collection, as the surface and edges are so smooth and well finished! Available in six different colours and with a wide range of fittings. Laid broken bonded, featuring a thin leading edge and covering capacity of 9.8 tiles per m² with a minimum roof pitch of 15°. Nelskamp's micro concrete technology makes them a robust roof tile with minimal breakage. The ultra smooth finish and clean 'pore free' edges ensures all completed roofs look superb, making them the perfect choice for a very cost effective roof.

The *Planum Concrete range available in 6 colours

Cayenne Red (401)



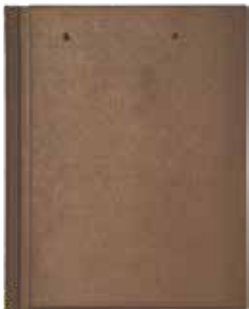
Rustic (85)



Anthracite Grey (433)



Dark Brown (404)



Onyx Black (402)



Slate Grey (425)



- ▶ Eco Friendly Top One Finish ▶ Ultra Smooth finish ▶ Min. roof pitch 15°
- ▶ Only 9.8 tiles per m² ▶ Clean, Smooth 'Pore Free' Edges

Manufactured to comply with the performance standards of EN490/491 and DIN Plus.

*As per European trademark Nr.7287956, filed on 2nd October 2008, the Trademark PLANUM belongs to La Escandella. It is Dachziegelwerke Nelskamp as authorized licensee of the owner allowed to use the mark PLANUM for its concrete product.



EN-490/491



*Planum Concrete flat tile technical details

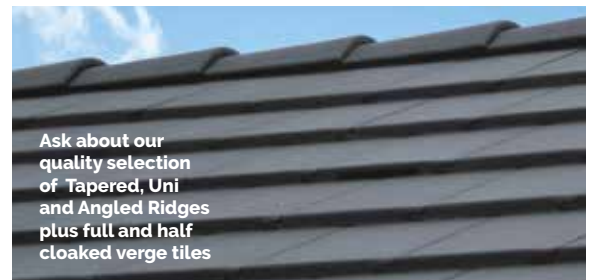
Length:	420mm
Width:	332mm
Gauge:	310 - 340mm
Headlap (min):	80mm (22.5° +), 100mm (17.5°+), 110mm (15°+)
Cover width (mm):	300mm ± 2.0
Minimum roof pitch*:	15°
Number of tiles per m ² (min):	9.8
Weight per tile:	5.0 kg
Weight per m ² (min):	50 kg
Battens per m ² (min):	3 - 3.2
Batten size (mm):	50 x 25
Fixings clips:	Eaves and tile clips
Nails - ring shank aluminium alloy:	45 x 3.35mm

Please Note: Fixing specs may vary due to roof pitch and location

Low Pitch Roof Specification 17° - 15°

- Lay Planum tiles broken bond.
- Headlap minimum 110mm.
- Use appropriate air and vapour permeable underlay, which does not require secondary roof ventilation.
- Lay the roof underlay to the manufacturer's instructions.
- Maximum rafter length 7.5m.
- All tiles to be clipped with Crest purpose made tile clips, reference 409/202. Do not nail the tiles at 17° and below.
- Roof perimeters including, abutments and around roof windows must be securely fixed to BS 5534.

*Planum special roof tiles & accessories see page 7



Ask about our quality selection of Tapered, Uni and Angled Ridges plus full and half cloaked verge tiles

The *Planum Duo concrete interlocking flat tile

A high-quality micro concrete tile for every type of project.



The *Planum Duo Concrete with its mock bond feature.

Our *Planum Duo Concrete tiles like the *Planum concrete, are also available in six different colours and with a wide range of fittings. Its thin leading edge and a covering capacity of just 9.8 tiles per m² with a minimum roof pitch of 15° makes installation easy and economical. Laid broken bonded the Duo gives a realistic appearance of a smaller format roof tile while providing all the advantages of a large format concrete tile. The *Planum Duo concrete establishes a new standard for flat tiles, which everyone from architects to roofers will appreciate. It has an ultra smooth flat finish and clean 'pore free' edges make the finished roof look stunning.

The *Planum Duo Concrete range available in 6 colours



- ▶ Eco Friendly Top One Finish ▶ Ultra Smooth finish ▶ Min. roof pitch 15°
- ▶ Only 9.8 tiles per m² ▶ Clean, Smooth 'Pore Free' Edges

Manufactured to comply with the performance standards of EN490/491 and DIN Plus.

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*Planum Duo Concrete flat tile technical details

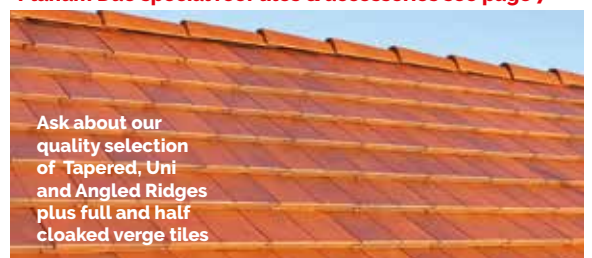
Length:	420mm
Width:	332mm
Gauge:	320 - 340mm
Headlap (min):	80mm (22.5° +), 100mm (17.5°+), 110mm (15°+)
Cover width (mm):	300mm ± 2.0
Minimum roof pitch*:	15°
Number of tiles per m ² (min):	9.8
Weight per tile:	5.0 kg
Weight per m ² (min):	50 kg
Battens per m ² (min):	3 - 3.2
Batten size (mm):	50 x 25
Fixings clips:	Eaves and tile clips
Nails - ring shank aluminium alloy:	45 x 3.35mm

Please Note: Fixing specs may vary due to roof pitch and location

Low Pitch Roof Specification 17° - 15°

- Lay Planum Duo tiles broken bond.
- Headlap minimum 110mm.
- Use appropriate air and vapour permeable underlay, which does not require secondary roof ventilation.
- Lay the roof underlay to the manufacturer's instructions.
- Maximum rafter length 7.5m.
- All tiles to be clipped with Crest purpose made tile clips, reference 409/202 Do not nail the tiles at 17° and below.
- Roof perimeters including, abutments and around roof windows must be securely fixed to BS 5534.

*Planum Duo special roof tiles & accessories see page 7



Ask about our quality selection of Tapered, Uni and Angled Ridges plus full and half cloaked verge tiles

The Double Pantile concrete tile

A high-quality concrete tile that recreates the flowing lines of a traditional pantile with an inherent strength in its 'S' shape design.



The Double Pantile is a large format tile with a double 'S' shaped profile.

An interlocking double pantile is one of the most popular and economical roof coverings. Available in six colours, with its flowing 'S' shape design, perfectly enhanced by the rounded trimmed edge to complement the finished roof. With a covering capacity of just 9.7 tiles per m² and a large selection of fittings and accessories, it can perform down to pitches as low as 15°. The Crest Nelskamp Double Pantile is the perfect choice for a very economical and attractive roof.



The Double Pantile range available in 6 colours



- ▶ Superior Quality Double Pantile ▶ Micro Concrete Surface Technology
- ▶ Eco Friendly Top One Finish ▶ Cleaner, Smooth Round Trimmed Edges
- ▶ Only 9.7 tiles per m² ▶ Range of Colours & Quality Fittings

Manufactured to comply with the performance standards of EN490/491 and DIN Plus



Double Pantile technical details

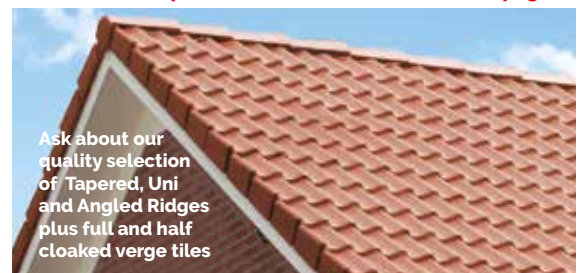
Length:	420mm
Width:	332mm
Gauge:	310 - 345mm
Headlap (min):	75mm (22.5°+), 100mm (17.5°+), 110mm (15°+)
Cover width (mm):	300mm ± 2.0
Minimum roof pitch*:	15° @100mm headlap
Number of tiles per m ² (min):	9.7
Weight per tile:	4.4 kg
Weight per m ² (min):	44 kg
Battens per m ² (min):	3 - 3.2
Batten size (mm):	50 x 25 - 600mm centres
Fixings clips:	Eaves and tile clips
Nails - ring shank aluminium alloy:	45 x 3.35mm

Please Note: Fixing specs may vary due to roof pitch and location

Low Pitch Roof Specification 17° - 15°

- Lay Double Pantile straight bond.
- Headlap minimum 110mm.
- Use appropriate air and vapour permeable underlay, which does not require secondary roof ventilation.
- Lay the roof underlay to the manufacturer's instructions.
- Maximum rafter length 7.5m.
- All tiles to be clipped with Crest purpose made tile clips, reference 409/002. Do not nail the tiles at 17° and below.
- Roof perimeters including, abutments and around roof windows must be securely fixed to BS 5534.

Double Pantile special roof tiles & accessories see page 7



Ask about our quality selection of Tapered, Uni and Angled Ridges plus full and half cloaked verge tiles

The Double Roman concrete tile

A long established Roman design popular in most regions, ideal for any type of project.

These Double Roman tiles are engineered to the highest of standards.

The Double Roman is superbly crafted with its classic, timeless shape, and the design is perfectly enhanced by the rounded trimmed edge to complement the finished roof. With a covering capacity of just 9.7 tiles per m², it makes the Double Roman the perfect choice for a very economical and attractive roof. These tiles are a popular choice, being an attractive stylish roof tile offering fantastic protection against the elements, as well as long lasting and cost effective.



FINISH TOP ONE

The Double Roman range available in 6 colours



- ▶ Superior Quality Double Roman ▶ Micro Concrete Surface Technology
- ▶ Eco Friendly Top One Finish ▶ Cleaner, Smooth Round Trimmed Edges
- ▶ Only 9.7 tiles per m² ▶ Range of Colours & Quality Fittings

Double Roman technical details

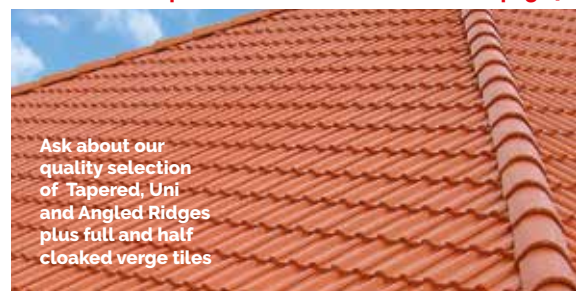
Length:	420mm
Width:	332mm
Gauge:	310 - 345mm
Headlap (min):	75mm (22.5° +), 100mm (17.5°+), 110mm (15°+)
Cover width (mm):	300mm ± 2.0
Minimum roof pitch*:	15° @100mm headlap
Number of tiles per m ² (min):	9.7
Weight per tile:	4.4 kg
Weight per m ² (min):	44 kg
Battens per m ² (min):	3 - 3.2
Batten size (mm):	50 x 25 - 600mm centres
Fixings clips:	Eaves and tile clips
Nails - ring shank aluminium alloy:	45 x 3.35mm

Please Note: Fixing specs may vary due to roof pitch and location

Low Pitch Roof Specification 17° - 15°

- Lay Double Roman straight bond.
- Headlap minimum 110mm.
- Use appropriate air and vapour permeable underlay, which does not require secondary roof ventilation.
- Lay the roof underlay to the manufacturer's instructions.
- Maximum rafter length 7.5m.
- All tiles to be clipped with Crest purpose made tile clips, reference 409/001. Do not nail the tiles at 17° and below.
- Roof perimeters including, abutments and around roof windows must be securely fixed to BS 5534.

Double Roman special roof tiles & accessories see page 7



Ask about our quality selection of Tapered, Uni and Angled Ridges plus full and half cloaked verge tiles

Manufactured to comply with the performance standards of EN490/491 and DIN Plus



Roof fittings & accessories

See our bespoke fittings and special tiles for **Planum Concrete, Double Pantile & Double Roman, (Please note Mansard tiles are made to order) for further details please call us on 01430 432 667

**Planum Concrete & Duo (Mansard tiles are made to order)

	Standard Tile Length: ~ 420 mm Variable Gauge: ~ 312 - 340 mm* Width: ~ 332 mm Covering Width: ~ 300 mm Weight: ~ 5 kg Coverage: ~ 9.8 per m ²
	Double Roll (left hand verge finishing tile) Length: ~ 420 mm Variable Gauge: ~ 312 - 340 mm* Width: ~ 300 mm Covering Width: ~ 300 mm Weight: ~ 5.7 kg
	Half Double Roll (left hand verge finishing 1/2 tile) Length: ~ 420 mm Variable Gauge: ~ 312 - 340 mm* Width: ~ 150 mm Covering Width: ~ 150 mm Weight: ~ 3 kg
	Half tile (right hand only) Length: ~ 420 mm Variable Gauge: ~ 312 - 340 mm* Width: ~ 182 mm Covering Width: ~ 150 mm Weight: ~ 2.5 kg
	Left Hand Cloaked Verge Length: ~ 420 mm Head Lap: ~ 90 to 110 mm Width: ~ 332 mm Covering Width: ~ 302 mm Weight: ~ 7.0 kg
	Right Hand Cloaked Verge Length: ~ 420 mm Head Lap: ~ 90 to 110 mm Width: ~ 332 mm Covering Width: ~ 302 mm Weight: ~ 7.1 kg
	Half Left Hand Cloaked Verge Length: ~ 420 mm Head Lap: ~ 90 to 110 mm Width: ~ 182 mm Covering Width: ~ 152 mm Weight: ~ 4.4 kg
	Half Right Hand Cloaked Verge Length: ~ 420 mm Head Lap: ~ 90 to 110 mm Width: ~ 182 mm Covering Width: ~ 120 mm Weight: ~ 4.4 kg
	External Mansard Tile Width ~ 332 mm. Covering Width ~ 300 mm Lengths / covering length> is custom made.
	Half External Mansard Tile Width ~ 182 mm. Covering Width ~ 150 mm Lengths / covering length> is custom made.
	External Mansard Tile Left Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 332 mm. Covering Width ~ 302 mm Lengths / covering length> is made to measure.
	External Mansard Tile Right Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 332 mm. Covering Width ~ 270 mm Lengths / covering length> is made to measure.
	Internal Mansard Tile Width ~ 332 mm. Covering Width ~ 300 mm Lengths / covering length> is custom made.
	Half Internal Mansard Tile Width ~ 182 mm. Covering Width ~ 150 mm Lengths / covering length> is custom made.
	Internal Mansard Tile Left Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 332 mm. Covering Width ~ 302 mm Lengths / covering length> is made to measure.
	Internal Mansard Tile Right Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 332 mm. Covering Width ~ 270 mm Lengths / covering length> is made to measure.






Ridge, Tile Clips and Fixings

	Tapered Ridge Clip Type 470/77. Available for Tapered Ridge Tile
	Universal Eave Clip **Planum Concrete and Duo Double Roman & Double Pantile Ref:436a
	Crest Tile Fixing Clip **Planum Concrete and Duo Ref: 409/202 Double Roman Ref: 409/001. Double Pantile Ref: 409/002
	Angled Ridge Fixing Screw Stainless Steel Screw 4.5 x 60mm with a neoprene washer
	Tile Fixing Screw Stainless Steel Screw 4.5 x 45mm with a neoprene washer











Double Pantile (Mansard tiles are made to order)

	Standard Tile Length: ~ 420 mm Variable Gauge: ~ 314 - 345 mm* Width: ~ 332 mm Covering Width: ~ 300 mm Weight: ~ 4.4 kg Coverage: ~ 9.7 per m ²
	Double Roll (left hand verge finishing tile) Length: ~ 420 mm Variable Gauge: ~ 314 - 345 mm* Width: ~ 332 mm Covering Width: ~ 332 mm Weight: ~ 4.8 kg
	Half tile (right hand only) Length: ~ 420 mm Variable Gauge: ~ 314 - 345 mm* Width: ~ 182 mm Covering Width: ~ 150 mm Weight: ~ 2.7 kg
	Left Hand Cloaked Verge Length: ~ 420 mm Head Lap: ~ 90 to 110 mm Width: ~ 332 mm Covering Width: ~ 302 mm Weight: ~ 7.3 kg
	Right Hand Cloaked Verge Length: ~ 420 mm Head Lap: ~ 90 to 110 mm Width: ~ 332 mm Covering Width: ~ 270 mm Weight: ~ 7.3 kg
	External Mansard Tile Width ~ 332 mm. Covering Width ~ 300 mm. Lengths / covering length> is made to measure.
	Half External Mansard Tile Width ~ 182 mm. Covering Width ~ 150 mm. Lengths / covering length> is made to measure.
	External Mansard Tile Left Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 332 mm. Covering Width ~ 302 mm. Lengths / covering length> is made to measure.
	External Mansard Tile Right Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 332 mm. Covering Width ~ 270 mm. Lengths / covering length> is made to measure.
	Internal Mansard Tile Width ~ 332 mm. Covering Width ~ 300 mm. Lengths / covering length> is custom made.
	Half Internal Mansard Tile Width ~ 182 mm. Covering Width ~ 150 mm. Lengths / covering length> is custom made.
	Internal Mansard Tile Left Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 332 mm. Covering Width ~ 302 mm Lengths / covering length> is made to measure.
	Internal Mansard Tile Right Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 332 mm. Covering Width ~ 270 mm. Lengths / covering length> is made to measure.

Double Roman (Mansard tiles are made to order)

	Standard Tile Length: ~ 420 mm Variable Gauge: ~ 314 - 345 mm* Width: ~ 340 mm Covering Width: ~ 300 mm Weight: ~ 4.4 kg Coverage: ~ 9.7 per m ²
	Double Roll (left hand verge finishing tile) Length: ~ 420 mm Variable Gauge: ~ 314 - 345 mm* Width: ~ 340 mm Covering Width: ~ 340 mm Weight: ~ 4.8 kg
	Half tile (right hand only) Length: ~ 420 mm Variable Gauge: ~ 314 - 345 mm* Width: ~ 190 mm Covering Width: ~ 150 mm Weight: ~ 2.7 kg
	Left Hand Cloaked Verge Length: ~ 420 mm Head Lap: ~ 90 to 110 mm Width: ~ 340 mm Covering Width: ~ 310 mm Weight: ~ 7.0 kg
	Right Hand Cloaked Verge Length: ~ 420 mm Head Lap: ~ 90 to 110 mm Width: ~ 340 mm Covering Width: ~ 270 mm Weight: ~ 7.0 kg
	External Mansard Tile Width ~ 340 mm. Covering Width ~ 300 mm. Lengths / covering length> is made to measure.
	Half External Mansard Tile Width ~ 190 mm. Covering Width ~ 150 mm. Lengths / covering length> is made to measure.
	External Mansard Tile Left Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 340 mm. Covering Width ~ 310 mm. Lengths / covering length> is made to measure.
	External Mansard Tile Right Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 340 mm. Covering Width ~ 270 mm. Lengths / covering length> is made to measure.
	Internal Mansard Tile Width ~ 340 mm. Covering Width ~ 300 mm. Lengths / covering length> is made to measure.
	Half Internal Mansard Tile Width ~ 190 mm. Covering Width ~ 150 mm. Lengths / covering length> is made to measure.
	Internal Mansard Tile Left Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 340 mm. Covering Width ~ 310 mm. Lengths / covering length> is made to measure.
	Internal Mansard Tile Right Hand Cloaked Verge Head lap 90 to 110 mm. Width ~ 340 mm. Covering Width ~ 270 mm. Lengths / covering length> is made to measure.

Ridge Tiles and Components

	Uni Ridge Length: ~ 450 mm Covering Length: ~ 450 mm Width: ~ 250 mm Covering Width: ~ 210 mm Weight: ~ 4.2 kg Coverage: ~ 2.2 per lin.m
	Uni Block End Length: ~ 450 mm Covering Length: ~ 430 mm Width: ~ 250 mm Covering Width: ~ 210 mm Weight: ~ 5.5 kg
	Uni Hip Starter Length: ~ 375 mm Covering Length: ~ 340 mm Width: ~ 250 mm Covering Width: ~ 210 mm Weight: ~ 4.5 kg
	Angled Ridge Length: ~ 450 mm Covering Length: ~ 450 mm Width: ~ 250 mm Covering Width: ~ 210 mm Weight: ~ 4.3 kg Coverage: ~ 2.2 per lin.m
	Angled Block End Length: ~ 450 mm Covering Length: ~ 430 mm Width: ~ 250 mm Covering Width: ~ 210 mm Weight: ~ 5.6 kg
	Tapered Ridge Length: ~ 450 mm Covering Length: ~ 400 mm Width: ~ 250 mm Covering Width: ~ 190 mm Weight: ~ 4.8 kg Coverage: ~ 2.5 per lin.m
	Tapered Starter Ridge Covering Length: ~ 380 mm Weight: ~ 6.6 kg Covering Width: ~ 190 mm
	Tapered End Ridge Covering Length: ~ 430 mm Weight: ~ 6.6 kg Covering Width: ~ 190 mm
	Tapered Hip Starter Ridge Length: ~ 450 mm Covering Length: ~ 400 mm Weight: ~ 4.7 kg Covering Width: ~ 185 mm
	3 Way Hip Junction Weight: ~ 4.8 kg
	Roof Vent Tile (6,500 mm²) Available in all profiles and colours. Roof space ventilation or mechanical extraction. Weight: As per tile profile

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*All sizes and weights are approx. Tolerances according to DIN EN 1304. Covering sizes are to be determined on site. Subject to technical changes.

*Planum PV Aesthetic Energy System

A seamless and attractive finish to your completed roof.



A quick and easy to fit system that works seamlessly with the Crest Planum flat concrete roof tiles offering a state of the art solution on the completed roof



*Crest *Planum PV Solar Tile Panel, with black frame - black cells and black backsheet*

Also available in a shortened version for fittings of 2 tiles



*Planum PV

The Aesthetic Energy System

Nelskamp is one of Europe's market leaders in clay and concrete technology with over 85 years in quality manufacturing standards.

They have designed a fully integrated Photovoltaic system for the roofing industry using standard roof battens. The Planum PV modules are simple to install with only 3 screws and are aesthetically included in the tiled roof.

The innovative Crest Nelskamp Planum PV modules have been designed specially to meet the multiple demands of the housing sector, with its smooth appearance ensuring that kerbside appeal is not compromised, and satisfies the requirements of the Code for Sustainable Homes.

The solution that is offered to generate electricity in a simple and aesthetic way is now available with the integrated PV modules that are processed in the horizontal tile row instead of 5 Planum flat roof tiles. These can be placed just as easily as the roof tiles themselves, and are installed at a distance from the roof boarding for optimum ventilation. This system is both watertight and stormproof.



Swift and easy installation with 3 screws.

Advantages of the Planum PV module:

- > Modules interlock with the Planum roof tile
- > Delivered as a ready to install unit
- > Hanging nib and side interlock for swift, easy and secure laying
- > Only 3 screws per module
- > 15mm variable cover length
- > ca. 5.3 m² per kWp
- > ca. 188 Wp/m²
- > Product guarantee: 10 years
- > Performance guarantee:
 - 10 years 90 % of rated performance
 - 25 years 80 % of rated performance

Technical data

Planum PV

Module performance	93 Wp
Rated working current (I _{mp})	9.17 A
No-load working voltage (V _{oc})	12.25 V
Short circuit current (I _{sc})	9.63 A
Maximum voltage (V _{mp})	10.14 V
Maximum tested system voltage	1000 V
Recommended system voltage	up to ca. 600 V
Temperature coefficient (V _{oc})	- 0.30 %/°C
Temperature coefficient (I _{sc})	+0.06 %/°C
Temperature coefficient (P _{mpp})	- 0.39 %/°C
Hail resistance	according to IEC 61215 + IEC 61730
Cell efficiency	22.1%
Module weight	8.5 kg
Module measures	cover width 5 tiles ca. 1500mm cover length 325 mm - 340 mm
Min. roof pitch	≥ 25° (20 – 24° on request, half bond tiling recommended)
Plugs	MC4
Module cable	2 x 4.0 mm ² je 550 mm long
Min. counter batten height/rear ventilation	25 mm

STC: Intensity of radiation 1.000 W/m², module temperature 25 °C, air masses = 1.5
January 2023 · technical information subject to change.

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Crest Roof Tile Fixing Spec

In accordance
with BS 5534:2014.



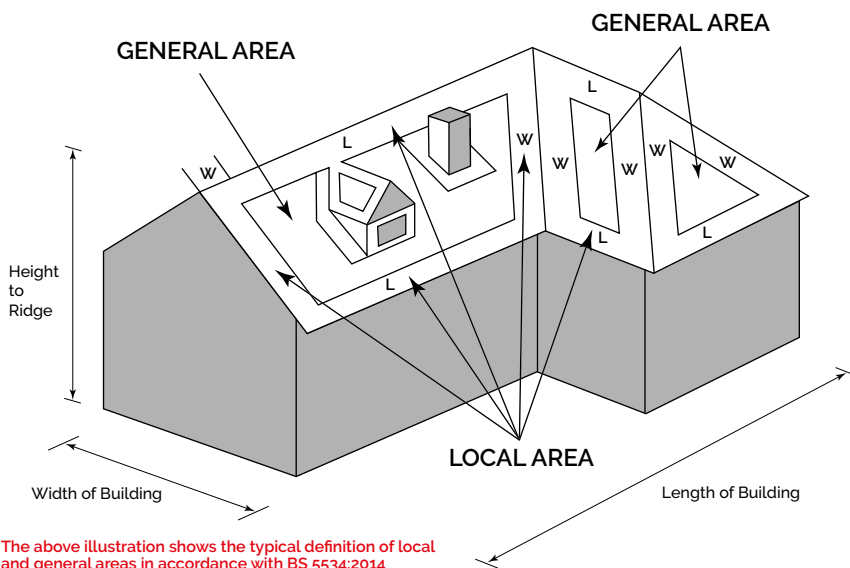
BS5534:2014 states "For simplicity, on-site specifiers may choose to fix the whole roof according to the specification for the local areas."

Crest Roof Tile Fixing Specification Guide

The Crest roofing team have put together a typical roofing tile specification to help you understand the terminology and process. The drawing (below) shows the typical definition of local and general areas in accordance with BS 5534:2014.

Since 2014, it has been a requirement of BS 5534: the British Standard Code of practice for slating and tiling, that all single lap roof tiles are mechanically fixed; It is no longer acceptable to have un-fixed tiles on any roof.

All tiles must be fixed. As a minimum, this means that all tiles must be nailed. In addition, a fixing calculation should be run to determine if any extra fixings, such as clips, are required. This will depend on the shape, size, exposure and location of the building. For further information on roof tile fixing specifications contact your area sales manager.



The above illustration shows the typical definition of local and general areas in accordance with BS 5534:2014

L = 0.1x Length or 0.2 x Building Height whichever is the smaller
W = 0.1x Width or 0.2 x Building Height whichever is the smaller

Building Height	9.20m
Building Width	9.00m
Building Length	19.00m
W	0.90m - 3 tiles wide
L	1.84m - 3 tiles high

Notes:
Nails for fixing tiles must be either: Aluminium, copper or stainless steel in accordance with BS5534:2014 - 4.12.1.1. Galvanised tile nails are not acceptable
Air Permeable underlays are defined as having not less than 20 m³/m².h air permeability, measured at 50 Pa.

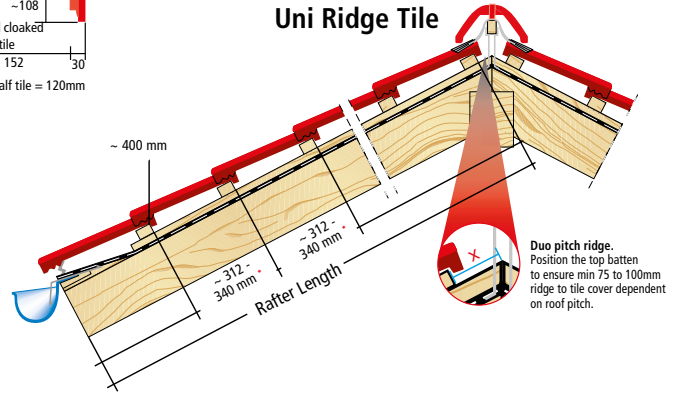
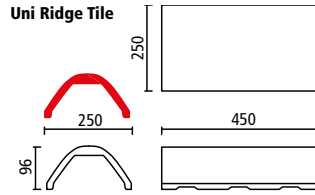
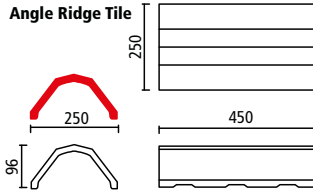
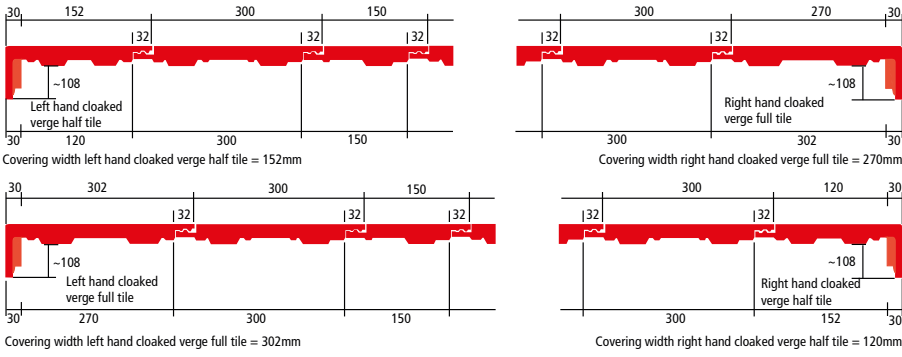
Fixing Requirements

- > **Local area of roof - Every tile clipped**
(see illustration for roof area definition opposite)
- > **General area of roof - Each tile nailed once**
(right hand nail hole - see illustration for roof area definition opposite)
- > **Perimeter requirements**
BS5534:2014+A2:2018 Clause 5.3.6.3
All tiles in the eave course, top course, verges, tiles adjacent to hips, valleys and abutments.
Must be fixed twice on all roofs.
All cut tiles at hips and valleys should be secured with cut tile clip.
- > **Site altitude - 18.9m/s**
- > **Basic wind velocity**
Using the latest VelVenti Software. wind speeds are calculated according to BS 6399-2. EN 1991-1-4 with UK and Irish national annexes and ASCE 7-10.
- > **V_b = V_{bmap} x C_{alt} x C_{dir} x C_{season} x C_{prob} - 22.7m/s**
- > **Wind speed (V_{bmap}) - 22.2m/s**
- > **Altitude factor (C_{alt}) - 1.02**
- > **Direction factor (C_{dir}) - 1.00**
- > **Seasonal factor (C_{season}) - 1.00**
- > **Probability factor (C_{prob}) - 1.00**
- > **Basic velocity pressure**
q_b = 0.613 x V_b² - 0.32kN/m²
- > **Orography factor C_{o(z)} - 1.00**
- > **Exposure factor C_{e(z)} - 2.27**
- > **Correction factor C_{e,T} - 1.00**
- > **Site Exposure**
National Annex Method - Effective gust dynamic pressures for: TA 26452 03862
- > **Distance to sea, worst gust speed - 279.3Km**
- > **Distance in town - 0.0Km**
- > **Peak velocity pressure - q_p 0.72kN/m²**
- > **Wind loads (Duo pitched roof) - Pitch 40 degrees**
- > **Tile type - Crest Planum**
- > **Roof substrate**
Air-impermeable underlay over rafters or Air-Permeable Underlay Air
Permeable underlays are defined as having not less than 20 m³/m².h air permeability, measured at 50 Pa.

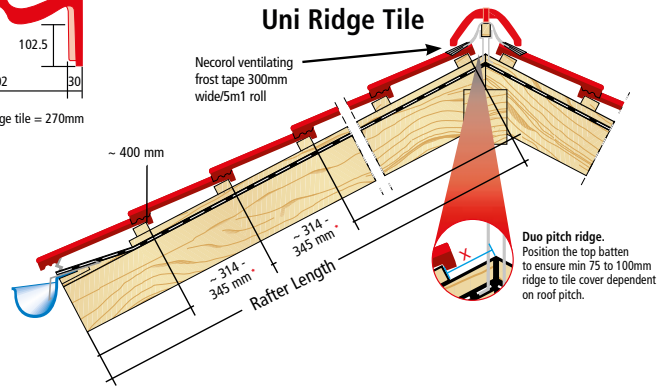
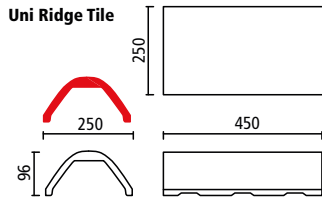
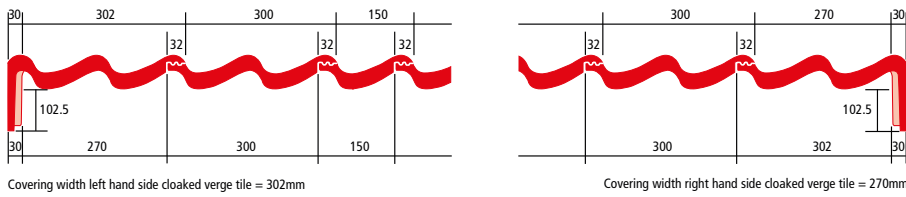
	Local area	General area
Pressure difference coefficient C _{pt,net}	-0.78	-0.3
Wind uplift force F _t (N)	-77.0	-29.6

These calculations have been carried out in accordance with the requirements of NA to BS EN 1991-1-7:2006+A1:2014 Eurocode 1. Actions on structures Part 1-4: and BS 5534 Slating and tiling for pitched roofs and vertical cladding - Code of practice. Please note the information on this fixing specification page is a guide only. Crest Building Products are not responsible for the laying and fixing of roof tiles on roofing projects.

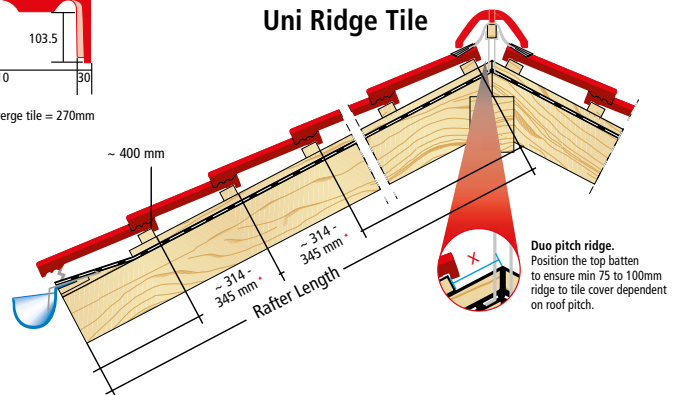
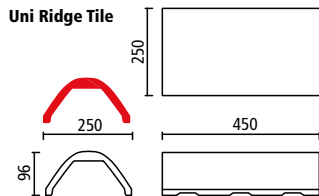
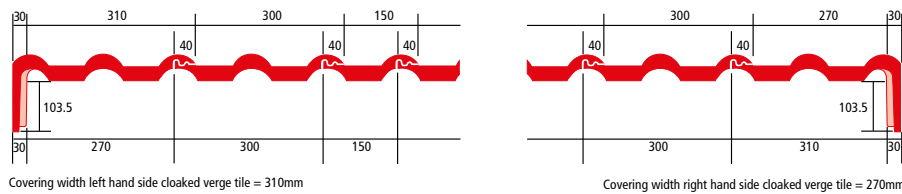
****Planum and Planum Duo Covering Width Sizes**



Double Pantile Covering Width Sizes



Double Roman Covering Width Sizes



*These dimensions are a guide only and it is the customers responsibility to ensure that all the information is correct.

**As per European trademark Nr.7287956, filed on 2.October 2008, the Trademark PLANUM belongs to La Escandella. It is Dachziegelwerke Nelskamp as authorized licensee of the owner allowed to use the mark PLANUM for its concrete product.

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