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| Please find below our current Masterspec Specification for Viking EcoStar Roofing Tiles.Our focus is to ensure that you have the right information and technical support required to make specifying our roofing and waterproofing solutions easy.If you require any of our CAD details you can find them on our website [www.vikingroofspec.co.nz](http://www.vikingroofspec.co.nz)For any further support please do not hesitate to contact us on 0800 729 799.Kind Regards,The team at Viking RoofspecVK_ROFS_4C_SL_TCD T: 0800 729 799 F: 0800 729 788info@vikingroofspec.co.nz[www.vikingroofspec.co.nz](http://www.vikingroofspec.co.nz) |

# 4373V VIKING ECOSTAR ROOFING TILES

## 1. GENERAL

 If you have pre-customised this work section using the "questions and answers" provided as part of the downloading process, it may be necessary to amend some clauses to suit the final project-specific version.

 The section must still be checked and customised to suit the project being specified, by removing any other irrelevant details and adding project-specific details and selections.

 This section relates to the supply and installation of **Viking EcoStar Roof Tiles** installed over a plywood or Superstrand substrate and roofing underlay to create a weather tight roofing system:

 - complete with all roof underlays, flashings, ventilation and accessories

 - where the roof slope is 15° or greater

 - available in four profile options and nine different colours

 Modify expand this clause to suit requirements of this specification section.

 EcoStar is a roofing shingle made from 80% recycled materials with the look of natural slate and is an alternative solution in terms of the New Zealand Building Code.

### 1.1 RELATED WORK

 Refer to 7411 RAINWATER SPOUTING SYSTEMS for rainwater disposal.

 Include cross references only to other work sections where they include directly related work.

 **Documents**

### 1.2 DOCUMENTS

 Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

 [NZBC B1](http://www.masterspec.co.nz/redirect.aspx?pl=222)/AS1 Structure

 [NZBC B2](http://www.masterspec.co.nz/redirect.aspx?pl=223)/AS1 Durability

 [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1 External moisture

 [AS/NZS 1170](http://www.masterspec.co.nz/redirect.aspx?pl=268) Structural design actions

 AS 1397 Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium

 [AS/NZS 2269.0](http://www.masterspec.co.nz/redirect.aspx?pl=1046) Plywood - Structural - Specifications

 [NZS 3603](http://www.masterspec.co.nz/redirect.aspx?pl=300) Timber structures standard

 [NZS 3604](http://www.masterspec.co.nz/redirect.aspx?pl=301) Timber-framed buildings

 [AS/NZS 4680](http://www.masterspec.co.nz/redirect.aspx?pl=1176) Hot-dip galvanized (zinc) coatings on fabricated ferrous articles

 Delete from the DOCUMENTS clause any document not cited. List any additional cited documents.

 The following are related documents and if referred to in the work section need to be added to the list of DOCUMENTS.

 [NZS 3602](http://www.masterspec.co.nz/redirect.aspx?pl=299) Timber and wood based products for use in building

 BRANZ BU 567 E2/AS1 Flashing Requirements

### 1.3 MANUFACTURER/SUPPLIER DOCUMENTS

 Manufacturer's and supplier's documents relating to this part of the work:

 Viking EcoStar Manual

 Carter Holt Harvey Ecoply Manual

 List documents relating to this part of the work, i.e. technical product/system specifications, test reports, appraisals, certification, etc. Normally they will be referred to in the text by the abbreviated title.

 Manufacturer/supplier contact details

 Company: Viking Roofspec

 Web: [www.vikingroofspec.co.nz](http://www.vikingroofspec.co.nz)

 Email: info@vikingroofspec.co.nz

 Telephone: 0800 729 799

 Facsimile: 0800 729 788

 It is important to ensure that all personnel on site have access to accurate, up to date technical information on the many products, materials and equipment used on a project. In most cases individual products are not used in isolation, but form part of a building process. Also a particular manufacturer's and/or supplier's requirements for handling, storage, preparation, installation, finishing and protection of their product can vary from what might be considered the norm. Access to technical information can help overcome this potential problem.

 **Warranties**

### 1.4 WARRANTY - MANUFACTURER/SUPPLIER

 Provide a material manufacturer/supplier warranty:

 50 years: For **Viking EcoStar Roof Tiles**

 - Provide this warranty on the Viking EcoStar LimitedInternational MaterialWarranty standard form. See Viking Roofspec for specific details which apply to this warranty.

 - Commence the warranty from the date of practical completion of the contract works.

 Refer to the general section 1237 WARRANTIES for additional requirements.

 Modify or expand the clause to suit project or manufacturer/supplier requirements, options include:

 EcoStar warrants to the original property owner/consumer that its rubber composite roofing tiles will be free from manufacturing defects for the length of time specified below.

### 1.5 WARRANTY - INSTALLER/APPLICATOR

 Provide an installer/applicator warranty:

 5 years: For installation of **Viking EcoStar Roof Tiles**

 - Provide this warranty on the Viking Approved Applicator standard form.

 - Commence the warranty from the date of practical completion of the contract works.

 Refer to the general section 1237 WARRANTIES for additional requirements.

### 1.6 WARRANTY - VIKING FULL SYSTEM WARRANTY

 Provide a Viking Full System Warranty for materials and installation:

 20 years: For **Viking EcoStar Tiles**

 - Apply for when the project consists of over 250m² of materials and the product is installed by a Viking Approved Applicator.

 - Provide this warranty on the Viking Full System Warranty job completion form.

 - Commence the warranty from the date of completion of fixing.

 Refer to the section 1237 WARRANTIES for additional requirements.

 Modify or expand the clause to suit project requirements.

 **Requirements**

### 1.7 QUALIFICATIONS

 Installation of all components and accessories supplied by Viking Roofspec to be carried out by Viking Approved Applicators.

 Installation of components and substrates supplied by the building contractor must be completed by tradespersons with an understanding of roofing installation and in accordance with instructions given in Viking Roofspec Technical Literature.

### 1.8 NO SUBSTITUTIONS

 Substitutions are not permitted to any of the specified Viking EcoStar Tile roofing components and associated products listed in this section.

 **Performance**

### 1.9 ROOF LOADING

 To [NZBC B1](http://www.masterspec.co.nz/redirect.aspx?pl=222)/AS1, Structure. Performance to meet the requirements for loads arising from self weight, gravity loads, temperature, snow, wind, impact and creep. The Viking EcoStar Tile Roof weighs 21 kg per m² (at 178mm (7 inch) exposure) using 15mm plywood. On applications below 25 degree pitch (at 152mm (6 inch) exposure) it will be 23.5 kg per m² using 15mm plywood.

 Note: Consult the latest Carter Holt Harvey Ecoply manual for any updates.

### 1.10 STRUCTURAL FIXINGS, EARTHQUAKE

 Use fixings and methods to comply with Viking Roofspec written installation instructions set up in the Viking EcoStar Manual.

### 1.11 CO-ORDINATE

 Co-ordinate to ensure substrate and preparatory work is complete and other work programmed in the order required for access and completion of the roof. Refer to Viking EcoStar Manual and Carter Holt Harvey Plywood manual for substrate requirements and specifications.

### 1.12 PERFORMANCE

 To [NZBC B2](http://www.masterspec.co.nz/redirect.aspx?pl=223)/AS1, Durability and to [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1, External moisture. Accept responsibility for the weather-tight performance of the completed roofing system, including all penetrations through the roof and junctions with walls and parapets.

 **Quality control and assurance**

### 1.13 MAINTENANCE

 No maintenance is required when installed according to Viking Roofspec technical literature for EcoStar Tiles.

 Viking Roofspecrecommend that any roof should be routinely inspected at least once a year and older roofs more frequently to ascertain whether maintenance needs to be carried out.

## 2. PRODUCTS

 **Materials**

### 2.1 TILES

 **Viking EcoStar Roof Tiles**, a rubber and plastic -based roof tile manufactured using recycled TPO and EPDM polymers.

 Polymeric slate tiles.

 **Components**

### 2.2 FELT UNDERLAY - STANDARD OR STEEP SLOPE

 **Viking 15w Saturated Felt Underlay**, an underlay of asphalt impregnated organic felt.

### 2.3 WATERPROOFING UNDERLAY - LOW SLOPE

 **Viking Peel and Stick Waterproofing Membrane**, a self-adhering waterproofing membrane composed of a tough reinforcement that is impregnated and coated with SBS-modified asphalt.

### 2.4 TILE STARTER STRIPS

 **Viking EcoStar Tiles** used as starter strips placed at 10mm apart.

 Tiles used as the starter strip.

### 2.5 RIDGE TILES

 **Viking EcoStar Ridge Tiles** and **Viking Hip Tiles**, pre-formed tiles to mould over hips and ridges made from the same polymeric material as the roofing tiles.

### 2.6 ROOFING SEALANT

 **Viking Roofing Sealant**, a black mastic type multipurpose sealant, for step flashings and other water tightness applications.

### 2.7 BUTYLCLAD STRIP FLASHING

 300 mm wide butyl strip used for apron and step flashings.

### 2.8 RIDGE VENTING

 **Viking Ecovent**, a continuous tile-over ridge vent that prevents moisture build-up in roof spaces.

 **Accessories - supplied by building contractor**

### 2.9 PLYWOOD SHEATHING

 Refer to 4337 PLYWOOD ROOFING AND DECKING for plywood substrate.

 Plywood minimum 15mm thick, DD grade or better, untreated or H3 treated. To [AS/NZS 2269.0](http://www.masterspec.co.nz/redirect.aspx?pl=1046). Refer to Carter Holt Harvey Ecoply manual.

### 2.10 PLYWOOD FIXINGS

 60mm x 2.8mm flat head hot dipped galvanized or stainless steel nails for 15mm and 17mm plywood. Hot dipped galvanizing to comply with [AS/NZS 4680](http://www.masterspec.co.nz/redirect.aspx?pl=1176). Stainless steel to be grade 316. Comply with plywood manufacturer's specifications.

 Screw fixing with 10 x 50mm stainless steel countersunk screws is an alternative option to nail fixing.

### 2.11 METAL FLASHINGS AND TRIM

 Folded aluminium/zinc-coated to AS 1397 and [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1, 4.0 **Flashings** or alternative corrosion resistant flashings and trim, minimum thickness 0.5 mm.

### 2.12 TILE NAILS

 Stainless steel, 11 or 12 gauge roofing nails with a minimum head diameter of 9 mm. Nail shanks must be long enough to penetrate the shingle and go 20 mm into the plywood sheathing or completely through the plywood, whichever is less. All nails must have a ring shank.

## 3. EXECUTION

 **Conditions**

### 3.1 STORAGE AND HANDLING PLYWOOD SHEETS

 Transport and handle with care to avoid damaging the pre finished surface. Store sheets in stacks clear of the ground, supported without sagging on evenly spaced horizontal bearers. Protect from damage and weather. Handle sheets carefully and reject those with damaged faces or edges. Comply with plywood manufacturer's specifications.

 The general section 1270 CONSTRUCTION describes how deliveries are to be managed and the goods stored.

### 3.2 BEFORE COMMENCING WORK

 Check framing is suitable for laying plywood substrate. Roof framing must comply with [NZS 3604](http://www.masterspec.co.nz/redirect.aspx?pl=301), or be to a specific design in accordance with [NZS 3603](http://www.masterspec.co.nz/redirect.aspx?pl=300) and [AS/NZS 1170](http://www.masterspec.co.nz/redirect.aspx?pl=268).

### 3.3 SPECIFIC NAILING DETAILS

 Installation to comply with Viking Roofspec written installation instructions set up in the Viking EcoStar Manual, current at the time of installation.

**Application - plywood sheathing**

### 3.4 FIXING PLYWOOD SHEETS - GENERAL

 Fix to [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1, 9.8 **Plywood sheet** and to the plywood manufacturer's requirements. Rafters or trusses to be maximum 900mm for 15mm and 17mm thick plywood. Lay sheets with staggered joints in a brick bond pattern, face-grain of sheet at right-angles to support with sheets in square, true alignment and plane. Fully support edges and joints on square edged sheets. Tongue and groove plywood edges must be but jointed with no gaps between the sheet edges. Square plywood edges must have a 3mm gap between the sheet edges. Fixings to be at 150mm centres at the edge and at 200mm centres on intermediate supports.

 Screw fixing with 10 x 50mm stainless steel countersunk screws is an alternative option to nail fixing.

### 3.5 FIT FLASHINGS

 Install flashings to [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1, 4.0 **Flashings**. Fit corrosion resistant metal flashing over plywood substrate to form drip edge at gutter. Fit metal barge flashing over underlay. Confirm roof penetrations are in place and flashed to the deck surface.

### 3.6 ROOF DECK REQUIREMENTS

 Apply shingles to minimum 15mm thick plywood or 25mm thick (nominal) wood decks. Or 16.3mm Superstrand Sarking.

### 3.7 LAY UNDERLAY - STANDARD OR STEEP SLOPE

 Tightly lay **Viking 15W Saturated Felt Underlay**, horizontally lapped, 50mm across the roof for roof slope over 25°. Only sufficient fasteners to temporarily hold the underlay in place need to be used. Install **Viking Peel and Stick Waterproofing Membrane** in valleys.

### 3.8 LAY UNDERLAY - LOW SLOPE

 Lay one layer of **Viking Peel and Stick Waterproofing Membrane** for roof slope between 15° and 24°, installed in accordance with manufacturer's specification. Alternatively, provide two layers of **15W Saturated Felt Underlay** lapped by half the width of the roll plus 25mm (resulting effectively in a double thickness of underlay). Only sufficient fasteners to temporarily hold the underlay in place need to be used. Do not install Ecostar tiles below 15° slope.

 Modify this clause to suit project specified. When roof slope is over 25° delete this clause and use the LAY UNDERLAY - STANDARD OR STEEP SLOPE clause above. For roofs with a pitch between 15° and 25°, for cold climate and for high wind zone areas an additional underlay and/or a greater overlap is recommended.

### 3.9 VALLEYS

 Apply a V-style or W-style metal valley liner over **Viking Peel and Stick Waterproofing Membrane** before installing **Viking EcoStar Tiles**.

### 3.10 PLAN LAYOUT

 Plan layout to ensure the required overlap is maintained. Use chalk lines at every 2nd row to maintain line. Adjust rows gradually to take account of out of parallel situations.

### 3.11 BLEND TILES

 Do not start the application until all material has been properly blended. Shade variation may occur differently between individual bundles and pallets. Emulate the look of natural slate by taking tiles from different pallets and bundles to guarantee consistency in application.

### 3.12 BENDING TILES

 To ensure that the tiles sit flat on the roof deck, each tile must be bent in a downward arch prior to installation. The tile will naturally hold the position that it is installed in.

### 3.13 INSTALL TILES

 Apply the **Viking EcoStar Tiles** using the Standard, Staggered or Offset installation method.

 For roofs with a pitch of 15º to 24º install tiles using the 152mm exposure. For roofs with a pitch of 25º or greater either the 152mm or the 178mm may be used.

### 3.14 LAY SEALANT

 Use **Viking Roofing Sealant** to seal gables, penetrations and under tiles at up stands where required.

### 3.15 FASTENING

 In all wind zones up to and including High, apply 2 ring shank nails per **Viking EcoStar Tile**, 11 or 12 gauge, stainless steel roofing nails with 9 mm heads. In a Very High and Extra High Wind zones apply 4 ring shank nails per **Viking EcoStar Tile** with nails being placed 12.5mm either side of nail fixing point**.** Ensure the fasteners are driven straight and are flush with the shingle surface. Nails to be of sufficient length to penetrate 20mm into the deck, or through the thickness of the decking, whichever is the less. Ensure that fasteners are not overdriven or driven in on an angle.

### 3.16 INSTALL FLASHING

 Install flashings to [NZBC E2](http://www.masterspec.co.nz/redirect.aspx?pl=347)/AS1, 4.0 **Flashings**. Use corrosion-resistant metal flashing.

### 3.17 INSTALL ATTIC GUARD

 Install the roll of **Viking EcoStar Attic Guard/ Ecovent** along the ridge as per installation instructions.

### 3.18 INSTALL RIDGE AND HIP CAP SHINGLES

 Install **Viking EcoStar Majestic Slate Ridge and Hip Tiles** with 152mm (6inch) exposure.

 **Completion**

### 3.19 COMPLETE

 Ensure the work is complete with all flashings, undercloaks, valleys, ridges and hips properly installed so the finished roof is completely weathertight.

### 3.20 CLEAR

 Clear trade rubbish and unused materials from the roof and surrounds regularly during the work and at completion. Sweep down the completed roof and flush out spouting, gutters and rainwater pipes. When cleaning the roof tiles use only mild detergent and water. Do not use chemicals of any kind.

### 3.21 REPLACE

 Replace damaged or marked elements. Remove unused materials from the site.

## 4. SELECTIONS

 For further details on selections go to [www.vikingroofspec.co.nz](http://www.vikingroofspec.co.nz)

 Substitutions are not permitted to the following, unless stated otherwise.

 **Materials**

 If substitutions are permitted modify the statement above, ensure the NO SUBSTITUTIONS clause from GENERAL is treated the same.

 Select the options to suit the project and delete options not specified.

### 4.1 TILES

 Substrate: ~

 Underlay: ~

 Type/Brand: **Viking EcoStar Roof Tiles**

 Design: ~

 Colour: ~

 Starter strips: **Viking EcoStar Tiles**

 Metal Flashings: ~