April 2025

PRODUCT TECHNICAL STATEMENT

EcoStar

EC - PTS - Version 1.0 - 2025

Product Description:

Viking EcoStar Majestic Slate is a synthetic slate roofing tile, designed to emulate the appearance and texture of natural slate. Ecostar offers enhanced durability and ease of installation compared with natural Slate.
Majestic Slate tiles are made of **Starloy**™; an 80% recycled rubber and plastic compound with appropriate colourants and UV stabilizers. These Tiles are installed over a plywood or Viking StrandSarking sarking substrate.
The unique formulation of EcoStar tiles renders several advantages over slate roofing whilst still offering natural slate's timeless look and longevity.
Being manufactured from recycled polymers, EcoStar tiles are flexible; won't crack, and have a high impact resistance.
The structural integrity of the EcoStar system is enhanced through the installation of a timber sarking substrate onto which it is securely fastened. The roof system (including substrate) is approximately half the weight of a natural slate roof, yet its durable and light-weight substrate braces the entire building, negating the need for extra structural requirements for heavy-weight roofing materials.

Other features:

Viking EcoStar is backed by a 50-year product warranty and for specific projects. These are over 45 colour and profile combination options. All Viking tiles have been assessed by the independent Underwriters Laboratory (U.L.), assessing their collective resistance to wind uplift; UV and impact (it demonstrates the highest impact rating a construction product can). It is formulated to resist extreme temperature variations and up to Extra High Wind zones.

Purpose and use

Viking EcoStar Roofing Tiles are suitable for use as a roof cladding for buildings within the following scope:

- The scope limitations of NZBC Acceptable E2/AS1, Paragraph 1.1, regarding floor plan area and building height; and floor plan area when subject to specific structural design.
- Constructed with timber roof framing and sheathing complying with the NZBC NZ3604; and,
- Where the roof slope is 14 degrees or greater; and,
- Situated in NZS 3604 Wind Zones up to and including 'Extra High'.
- With substrates of plywood or StrandSarking
- With the weathertightness design of junctions for each specific structure being the responsibility of the building designer

The system must be installed in accordance with the Technical Literature by a Viking Roofspec Trained and Approved Installer.

Compliance with the New Zealand Building Code

The product will, if employed in accordance with the supplier's installation and maintenance requirements, assist with meeting the following provisions of the building code:

B1 Structure:
This is demonstrated with the attached BRANZ 891 for StrandSarking & our Substrate checklist.
Alternatively, AS/NZS 2269 plywood, we refer to the Viking Pitched Roofing plywood substrate checklist & the Carter Holt Harvey Ecoply Specification & Instillation Guide Oct 2021, Table 15A – Roofing Sheathing, Non-trafficable above 2° pitch. Section 4.5 Roofing Design Considerations.

Underlay: Viking Peel & Stick underlay meets ASTM E96 Moisture Vapour Permeance of ≤ 0.1 (WinterGuard Technical and Grace Select Data Sheet)
Viking Synthetic Underlay meets ASTM E96 Moisture Vapour Permeance of 0.06 (RoofRunner Technical Data Sheet).

B2 Durability:
This is covered by the substrate materials i.e. Strandsarking & Plywood substrates complying with the requirements of treated wood-based products in addition to framing requirements. Table 1: Page 20 Durability Requirements of Nominated Building Elements
Flashings as per Table 1: Page 19. Not less than 15 Years or Not less than 50 years. EPDM Rubber, Powder Coated Alloy, Colorsteel & Copper flashings comply with these durability requirements based on their selected locations per specific detailing.

The EcoStar tiles are UV tested for Durability at 10,000 hours in accordance with ASTM G155: UV Durability Test Report (BRANZ typically tests to 7000 hrs, while international standards are 4500 hrs).

E2 External Moisture:
The instillation methodology of Viking EcoStar system follows that of Historical Genuine Slate Tiles or Cedar Shingles. This methodology consists of individual tiles being installed in an overlapping pattern to create positive watershed to external spouting in most cases. The system is a modern take on these historical methods, modern light weight Synthetic Slates are secured with stainless steel nails, driven into the substrate. All flashings, terminations & details follow the guidelines of E2/AS1 as far as minimum upstands & coverage. Flashings are to comply with the likes of Table 7 (E2/AS1) to ensure correct dimensions by wind zone.

- The full set of Viking EcoStar instillation details demonstrate compliance to E2, Objective

E2.1 The objective of this provision is to safeguard people from illness or injury that could result from external moisture entering the *building*.

- Functional requirement

E2.2 Buildings must be constructed to provide adequate resistance to penetration by, and the accumulation of, moisture from the outside.

- Performance

E2.3.1 Roofs must shed precipitated moisture. In locations subject to snowfalls, roofs must also shed melted snow.

- **E2.3.2** Roofs and exterior walls must prevent the penetration of water that could cause undue dampness, damage to building elements, or both.

F2 Hazards Building Materials:
Objective **F2.1** EcoStar Tiles are manufactured using virgin and recycled polyolefin polymers. These materials are inert & non-toxic in their manufactured state meeting the objective of F2. (Refer UL report attached)

Functional Requirement **F2.2** They are used in a way that causes no undue risk to people & are non-hazardous.

Performance **F2.3.1** There are no gas, liquid, radiation, or particles emitted by the EcoStar Tiles resulting in harmful concentrations where the material; is exposed or in the atmosphere.

Design, construction, and installation instructions

Product specification and incorporation of Viking EcoStar Roofing Tiles into the building design shall be carried out by a designer/architect /engineer or building professional who:

- Is qualified to design the buildings covered under the 'Scope' of use of this product.
- Has ready access to the technical specifications including installation details and standards referenced in the Masterspec Specification where the design limitations are outlined for the scope of this PTS.

EcoStar is a system that incorporates specific matching accessories including flashings, caps, vents and underlay.

- Installation shall be carried out by a Viking trained installer.
- Installation shall be undertaken in accordance with all relevant technical information related to the selected installation methods, including information contained within the Masterspec Specification

Maintenance requirements.

Little maintenance should be required apart from the removal of lichen, moss and organic growth that may become established. Annual inspections must be made to ensure that all aspects of the roof cladding, including the pre-finished coating, the flashings and any joints remain in a weatherproof condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress must be repaired immediately. Please refer to the maintenance and cleaning guide.

Quality assurance

Viking provides quality assurance documents that we recommend the installer, and builders follow and sign off at the conclusion of the project. These can be obtained from Viking Territory Managers or from the Viking Roofspec web site.

- Masterspec 4346VE VIKING EcoStar
- Viking EcoStar PTS
- Viking EcoStar PDS
- Viking EcoStar Details
- Substrate Checklists
- UL Testing

Warranty information

Viking EcoStar Roofing Tiles are backed by a 50-year product warranty. Viking Roofspec only supply Viking EcoStar to our Approved Applicator network of Viking Licensed Installers.

Environmental

Viking EcoStar tiles are composed of 80% post-industrial recycled rubber and plastics. They are 100% recyclable at the end of their usable life. Being half the weight of natural slate, less structural timber is required to brace and support the roof. Being lighter than natural slate, EcoStar will remove unnecessary weight off of old foundations, making it the ideal product for restoration projects.