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## MAJESTIC SLATE™ ECOSTAR® GOLD STAR ROOF SYSTEM

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# MAJESTIC SLATE ECOSTAR GOLD STAR ROOF SYSTEM

## PART 1 – GENERAL

### 1.01 DESCRIPTION

- A. Furnish and install Majestic Slate tile roofing system as specified in the Contract Documents and roof plan.
- B. Furnish and install this Majestic Slate tile roof system in strict accordance with specifications and drawings approved by EcoStar.
- C. Related Work
  - 1. Metal flashing work is not covered in this specification since EcoStar does **NOT** warrant metal flashing. EcoStar advises that metal flashing and securement of metal should be to industry standards (SMACNA) to prevent the metal from pulling free or buckling. EcoStar also suggests that all flashing metal be copper or stainless steel.
  - 2. EcoStar EcoVent ridge ventilation product must be used on those projects that will be using a ridge ventilation system. If a ridge ventilation system is not to be used on the project, another form of ventilation may be used, but will not be covered by any EcoStar warranties. EcoStar advises that a ridge style venting system be utilized to insure the best possible air movement and to provide the best aesthetic appearance to the roofing system.

### 1.02 QUALITY ASSURANCE

- A. To qualify for an EcoStar Gold Star warranty, an authorized EcoStar Gold Star applicator must install system.
- B. There shall be no deviation made from this specification without written approval from EcoStar prior to the start of the roofing project.
- C. For an EcoStar Gold Star warranty, upon completion of the installation, an inspection must be conducted by a field service representative of EcoStar to ascertain that the roofing system has been installed according to EcoStar's published specifications and details at time of bid. This inspection is not intended to be a final inspection for the benefit of the owner, but for the benefit of EcoStar to determine whether a warranty shall be issued.
- D. It is the authorized Gold Star roofing applicator's responsibility to adhere to all applicable building codes (local and national) and to have or acquire the appropriate licenses and permits for the roofing system installation requirements and limitations in their local areas applicable at the time of the bid.
- E. Specific testing requirements:
  - 1. Class A and C Fire Resistance – UL 790 Test Standard
  - 2. Class 4 Impact Resistance – UL 2218 Test Standard
  - 3. 110 mph wind load – PA100-95 Test Standard
  - 4. Wind uplift – UL 1897 Test Standard

### 1.03 SUBMITTALS

- A. Submit an “EcoStar Gold Star Project Survey” to EcoStar technical department for approval **PRIOR** to the job start to enable the technical department to approve and assign a job number to the project.
  - 1. The “EcoStar Gold Star Project Survey Form” must be filled out completely and accurately to include any prior deviations approved from this specification, including a roof drawing showing all dimensions, all penetrations, and roof slope.
- B. When an EcoStar Gold Star warranty is desired, EcoStar must be contacted **PRIOR** to project bid and installation. Information may be required for wind design and slope requirements.

### 1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original unopened packages.
- B. Packages shall be labeled with manufacturer’s name, brand name and identification of various items.
- C. All tile materials must be stored between 45°F and 80°F. If exposed to lower temperatures, restore to 45°F minimum temperature before using.
- D. Store all materials in a dry protected area. Damaged materials must **NOT** be used. Installed materials found to be damaged shall be replaced at Gold Star Authorized Applicator’s expense.

### 1.05 JOB CONDITIONS (CAUTIONS AND WARNINGS)

- A. Contact EcoStar technical department for procedures when installing a Majestic Slate tile roof system during temperatures less than 45°F.
- B. Do not install the Majestic Slate tile roof system directly over existing asphalt shingles or existing tile roof systems. All existing roof materials **MUST** be removed prior to installation of the Majestic Slate tile system.
- C. Roofing surface must be free of ice, water, or snow prior to and during the roofing project.

### 1.06 WARRANTY

- A. EcoStar will provide the Gold Star warranty for those materials supplied by EcoStar when an authorized EcoStar Gold Star applicator completes the project and all required materials have been utilized within the roof system.
- B. Only when an EcoStar field service representative has inspected and approved the completed installation will an EcoStar Gold Star warranty be issued.
- C. The warranty is available for most types of buildings and structures.
- D. The warranty period is expressed on the warranty certificate, which reflects the inclusive dates of coverage.
- E. The warranty does **NOT** cover the aesthetic appearance of the EcoStar Majestic Slate roof installation. Care should be taken by the EcoStar authorized Gold Star applicator to insure that proper blending and bending of the tiles occurs. When improper blending occurs, the aesthetic appearance of the roof can be affected negatively. **All** materials required for project completion should be on site to blend from.

## PART 2 – PRODUCTS

### 2.01 GENERAL

- A. All Components of the Majestic Slate Gold Star roof system are to be products manufactured or supplied by EcoStar, a division of Carlisle SynTec Incorporated.

NOTE: Only products supplied by EcoStar, a division of Carlisle SynTec Incorporated are included in the warranty unless otherwise specified and approved in writing by EcoStar, a division of Carlisle SynTec Incorporated.

### 2.02 TILES

- A. Majestic Slate tiles made of **Starloy™** 80% recycled rubber and plastic compound with less than 10% filler content and no limestone, calcium carbonate or wood fiber, at 10” or 12” wide by 18” long with a tapered nominal thickness of 1/4”. Weight shall be determined by the following acceptable tile exposures:

12”		
<input type="checkbox"/> 7”	=	241 - 258 lbs per square
<input type="checkbox"/> 6-1/2”	=	259 - 278 lbs per square
<input type="checkbox"/> 6”	=	280 - 300 lbs per square
10”		
<input type="checkbox"/> 7”	=	212 lbs per square
<input type="checkbox"/> 6”	=	247 lbs per square

- B. Majestic Slate tile color selection shall be made prior to bid opening and shall conform to one of the following color blends:

<input type="checkbox"/> Black	<input type="checkbox"/> Midnight Gray	<input type="checkbox"/> Federal Gray	<input type="checkbox"/> Smoke Gray	<input type="checkbox"/> Earth Green
<input type="checkbox"/> Stone Red	<input type="checkbox"/> Mountain Plum	<input type="checkbox"/> Cedar Brown	<input type="checkbox"/> Chestnut Brown	

### 2.03 RELATED MATERIALS

- A. Underlayment

1. AquaGuard – a roofing underlayment recognized for use as an alternative to Type 30 roofing underlayment, consisting of spun bonded polypropylene coated with a layer of U.V. stabilized polypropylene on both sides, meeting requirements of ASTM D2626, referred to as 30 lb and without perforations.
2. Glacier Guard™ ice & water underlayment – Granular Surface 100 (55-mil), Smooth Surface 200 (55-mil), or Smooth Surface High Temperature 300 (40-mil) or Smooth Surface 400 (40-mil) a composite membrane consisting of fiberglass reinforced rubberized asphalt laminated to an impermeable polyethylene film layer (Smooth Surface & Smooth Surface High Temperature) or coated with a granular surface providing maximum skid resistance (Granular Surface).
3. ELK VersaShield® - ELK VersaShield underlayment must be used in conjunction with EcoStar UL Class A Majestic Tiles for those roof applications requiring UL Class A fire rating. ELK Versashield should be installed per manufacturer’s specifications.

- B. Fasteners

1. AquaGuard

- a. Roofing nails with one inch (1”) diameter round or square head, plastic or metal, and 3/4” long shank. Metal parts of fastener are to be corrosion resistant.

## 2. Tile Fasteners

- a. EcoStar ring shank roofing nail with a 3/8" diameter head and a minimum of 1-1/2" long shank made from stainless steel. Nails can be supplied either as a hand-drive style or in coils for use in pneumatic tools. The EcoStar ring shank roofing nail is required for fastening of all EcoStar roof tiles.

**NOTE:** EcoStar roofing nails when used in the Majestic Slate roof system are included in the EcoStar Warranty.

## PART 3 - EXECUTION

### 3.01 SUBSTRATE CRITERIA

- A. The building owner or owner's representative is responsible for providing and determining that the substrate is suitable to receive the Majestic Slate tile roof system and the authorized EcoStar Gold Star applicator should not proceed until all defects have been corrected.
- B. The Majestic Slate roof system may only be applied over:
  1. Minimum 1/2" plywood or 7/16" OSB decking.
  2. Minimum 1" tongue and groove wood decking with gaps not exceeding 1/4".
  3. Approved metal deck systems - (Metal deck systems will require the installation of appropriate thickness nail base insulation prior to attaching the EcoStar tiles). Contact EcoStar's technical department for specifics.
  4. Appropriate clearance on underside of decking or sheathing must be provided for proper penetration of EcoStar fastener.
- C. Minimum slope of substrate for installation of Majestic Slate roof system shall be a minimum of 3/12 for 6" exposure installation and a minimum of 6/12 for 7" exposure installation. Contact the EcoStar technical department for approval of applications on lower slopes or exceptions to this requirement.

### 3.02 SUBSTRATE PREPARATION

- A. The building owner or owner's representative is responsible for ensuring that all wet or damaged substrate has been removed in a re-roofing application.
- B. Existing roof material **MUST** be removed and a clean substrate free of foreign material be provided prior to the installation of the Majestic Slate tile roof system. Majestic Slate tiles may **NOT** be installed directly over any existing roof material or system.

### 3.03 INSTALLATION

- A. Flashing & Sheet Metal – Install sheet metal and flashing metal in all valleys and where required. EcoStar recommends a V-type metal valley flashing be used at all valleys.
- B. Where required, install metal edging at all eaves and roof edges.
- C. EcoStar suggests that all metal work be made from copper or stainless steel. Final choice of metal work is at the discretion of the building owner or their designate.

## D. Underlayment

### 1. Glacier Guard

- a. Lap end joints 6" and side joints 3.5".
- b. Apply continuous 36" wide sheet in valley centered over valley.
- c. Apply rows of 36" wide sheets along all eaves and rakes. Lap end joints 6" and side joints 3.5".
- d. Apply rows of 36" wide sheets along and around all dormers and roof projections. Lap end joints 6" and side joints 3.5".
- e. When applicable install as far as it can be installed on any head walls or vertical walls a minimum of 12" where possible.
- f. Do not leave Glacier Guard Granular Surface (100) exposed to weather more than 30 days after beginning of installation. Do not leave Glacier Guard Smooth Surface (200) exposed to weather more than 30 days after beginning of installation. Do not leave Glacier Guard Smooth Surface High Temp (300) exposed to the weather more than 60 days after the beginning of installation.
- g. Installation of Glacier Guard at temperatures below 40° F may require nailing or priming to hold membrane in place while adhesion develops.

### 2. AquaGuard

- a. Apply 41.5" wide sheet over complete deck, lapping the area covered with Glacier Guard. Lap end joints 6" and side joints 4" and double through valleys.
- b. Do not leave exposed to weather more than 90 days after beginning of installation without written approval of owner.
- c. Do not leave any fastener heads exposed. Nail only in areas to be covered by lapping of underlayment.

### 4. ELK VersaShield

- a. ELK VersaShield underlayment must be installed in conjunction with EcoStar Class A Majestic Tiles for those projects requiring a UL Class A fire rating. ELK VersaShield should be installed per manufacturer's specification.

## E. Majestic Slate Tile Installation

1. After installing underlayment and before installing the Majestic Slate tiles, clean the surface of debris and dirt.
2. Care must be taken to place tiles so color variations are evenly distributed over the entire roof area. Shade variation will occur differently from pallet to pallet and within individual pallets. Tiles between bundles and pallets **MUST** be blended to insure even distribution of color variations. Color "mapping" or "blotching" in appearance is not acceptable and the EcoStar authorized Gold Star applicator will be required to correct. It is recommended that work not begin until **all** EcoStar materials have been delivered to the job site so that **all** the material may be blended together. Periodic ground inspections should be

conducted to ensure a random color pattern to the installation. Please contact EcoStar's technical department for correct blending procedures.

3. Minimum Fastening – No less than 2 EcoStar ring shank fasteners per tile shall be used with a minimum length of 1-1/2". Fasteners should be installed at the designated "nail here" marks on the tile. Failure to fasten the tile at these locations may result in a "lifted" tile. CAUTION: When using a pneumatic nailer care should be taken to insure that nails are not over driven causing the tiles to curl upward. If tiles have been installed with over driven nails causing the ends of the tile to curve upward, tiles will never lay flat. Overdriven tiles must be removed and re-nailed properly. **Never** hold tiles from behind while nailing, as this will cause an upward curl of the tile.
4. Do not install tiles against each other. A minimum gap of 3/8" must be maintained between installed tiles. A minimum 3/8" gap must be maintained between installed tiles and any sidewalls or roof projection.
5. Beginning at the eave, install a starter row of Majestic Slate tiles gapped a minimum of 3/8" between tiles and any projections while achieving a 3/4" overhang with two EcoStar ring shank fasteners per tile (in location shown on tiles). This layer of tiles will become the starter row. The final tile at roof edges must be a minimum of 3" wide. This may involve cutting the EcoStar tile to fit. To cut the EcoStar tile to correct width simply score the back of the tile with a straight edge and utility knife and snap tile at that score. Install first course of tiles in the same manner as the starter row with the exception of the second layer having a 1/2 tile offset to the starter row. The first course of tiles should be installed flush with the starter row with no exposure.
6. After the initial starter and first row of tiles has been installed, it is recommended that a chalk line be placed parallel to the roof edge running perpendicular to the first row of tiles. This chalk line will insure that the tiles stay true and plumb to the roof edge throughout installation. **Never** use red chalk, as this will permanently stain the EcoStar roof tiles.
7. Continue installing tile courses up the roof slope now achieving the correct chosen exposure. It is recommended that chalk lines be placed horizontally up the roof slope for every tile course. This will ensure that each course is installed straight across the roof surface.
8. It is the responsibility of the Gold Star Authorized Applicator to insure that all Majestic tiles are bent in a downward curve prior to tile fastening. **Do not install tiles with an upward curve.**
9. Valley Areas – Either an open or closed valley design may be used.
  - a. With an open valley design leave a minimum of 2" on each side of the center of the valley exposed and uncovered by the roof tiles. A V-Style or W-Style valley metal should be used.
  - b. With a closed valley design cut the tiles in a straight line to fit no closer than 3/8" against tile of adjoining roof slope. Never penetrate valley metal with roof fastener.
10. Install EcoStar EcoVent ridge vent system per the manufacturer's application instructions and then place the Majestic Slate Universal Hip/Ridge tile over the ridge vent. A minimum 2.5" stainless steel, hand-driven EcoStar fastener should be used on a ventilated hip/ridge to fasten the hip/ridge tile to the deck. A minimum 2" stainless steel, hand-driven EcoStar fastener should be used on an unventilated hip/ridge to fasten the hip/ridge tile to the deck. Place fasteners in the location marked on the tile. Majestic Slate – Universal Hip/Ridge tile **must** be installed with **6"** exposure.

11. Majestic Slate tiles may not be installed if the tiles have been stored in temperatures lower than 45°F. If tiles have been stored in temperatures below 45°F, tiles must be brought back to an ambient material temperature of 45°F. As the temperature rises Majestic Slate will expand beyond the designed installation pattern if the product is installed while cold or frozen.
  12. Install Majestic Slate – Universal Hip & Ridge tiles at all hip locations. EcoStar recommends a chalk line be snapped up the hip line to ensure a straight application up the roof surface. Universal Hip & Ridge tiles are **always** installed at a **6"** exposure.
  13. Care must be taken to minimize foot traffic over completed areas of the roof. Majestic Slate tiles will show mud and dirt causing appearance problems. The removal of dirt and debris is the responsibility of the applicator. **Never** use chemical cleaning agents not approved by EcoStar to wash an EcoStar Majestic Slate roof assembly.
  14. Majestic Slate tiles can be slippery when wet; caution should be exhibited with early morning dew and after rain. EcoStar recommends the use of toe boards and OSHA approved harnesses and safety equipment at all times.
  15. Upon completion of the roof system installation, inspect and remove all debris from roof.
- F. Phased Roofing – The weathering process of the EcoStar tiles will begin immediately upon installation and exposure to the elements. Therefore, every effort should be made to ensure that the EcoStar roof assembly is installed at a continuous rate to completion. Lengthy delays in installation may result in appearance differences when installation is resumed and tiles that have not been exposed to the elements are installed adjacent to tiles that have been on the roof for an extended period of time.