



# Product Evaluation

RC420 | 1114

Engineering Services Program

*The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).*

*This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.*

*This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.*

*For more information, contact TDI Engineering Services Program at (800) 248-6032.*

**Evaluation ID:** RC-420

**Effective Date:** November 1, 2014

**Re-evaluation Date:** November 2018

**Product Name:** EcoStar Roofing Products

**Manufacturer:** EcoStar, LLC  
42 Edgewood Drive  
Holland, NY 14080  
(800) 211-7107

## General Description:

- **EcoStar Empire Slate Products:** The EcoStar Empire Slate roof tiles/shingles are manufactured from recycled and virgin polyolefin-based materials. The tiles/shingles are available in Traditional, Beaver Tail, Chisel Point, and Beveled Edge styles. The finished product measure 10" or 12" wide x 18" long x 1/4" thick at the butt end. The Empire products are approximately 3 pounds per square feet when installed.
- **EcoStar Empire Shake and Plus Shake:** The EcoStar Empire Shake roof tiles/shingles are manufactured from recycled and virgin polyolefin-based materials. The tiles are available in three mixed sizes: 6", 9", and 12" wide by 19" long. Empire Shake is 3/8" thick and Empire Plus is 3/4" thick at the butt end. The weight of the Shake is approximately 3 pounds per square foot when installed and the weight of the Shake Plus is approximately 6 pounds per square foot when installed.

## Limitations:

**Roof Slope:** Do not install the products on roof slopes less than 3:12.

**Maximum Exposure:** For roof slopes less than 6:12, install Empire Slate products with a maximum exposure of 6" and install Empire Shake products with a maximum exposure of 7". For installation on roof slopes equal to or greater than 6:12, install empire slate products with 6", 6-1/2", or 7" exposure. Install Empire shake products with 7", 7-1/2", or 8" exposure.

**Temperature:** The EcoStar shingles should be at least 45 degrees Fahrenheit prior to installation.

**Installation (Continued):**

System		
1	Product	Empire Slate
	Design Pressure	-120.0 psf
	Sheathing	Minimum nominal 5/8" plywood
	Sheathing-Attachment	Sheathing secured using 8d ring shank nails, spaced 6" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. Install the remaining roof deck with a minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using two (2), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nail through the marked nailing locations. Install tiles with a maximum exposure of 7" in relation to the previous course.
2	Product	Empire Slate
	Design Pressure	-165.0 psf
	Sheathing	Minimum nominal 5/8" plywood
	Sheathing-Attachment	Secure sheathing using 8d ring shank nails, spaced 6" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, #30 asphalt felt install with minimum 2" sidelaps in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using two (2), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nail through the marked nailing locations. Install tiles with a maximum exposure of 7" in relation to the previous course.
3	Product	Empire Slate
	Type of Installation	-93.75 psf
	Wall Framing	Minimum nominal 1/2" plywood
	Fasteners	Sheathing secured using 8d ring shank nails, spaced 6" on center at the perimeter, seams, and joists.
	Fastener Location/Spacing	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck a minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2 inch sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
	Fastener Penetration	Secure each roof tile using two (2), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nail through the marked nailing locations. Install tiles with a maximum exposure of 7" in relation to the previous course.

**Installation (Continued):**

System		
4	Product	Empire Slate
	Design Pressure	-127.5 psf
	Sheathing	Minimum nominal 1/2" plywood
	Sheathing-Attachment	Secure sheathing using 8d ring shank nails, spaced 4" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, install #30 asphalt felt with minimum 2" sidelaps in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using four (4), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nails through the marked nailing locations. Install tiles with a maximum exposure of 7" relation to the previous course.
5	Product	Empire Shake
	Design Pressure	-97.5 psf
	Sheathing	Minimum nominal 1/2" thick plywood
	Sheathing-Attachment	Sheathing secured using 8d coated ring shank nails, spaced 6" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, install #30 asphalt felt with minimum 2" sidelaps in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using two (2), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nails through the marked nailing locations (two nails per shingle). Install tiles with a maximum exposure of 8" in relation to previous course.
6	Product	Empire Shake
	Design Pressure	-157.5 psf
	Sheathing	Minimum nominal 1/2" thick plywood
	Sheathing-Attachment	Sheathing secured using 8d ring shank nails, spaced 4" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, install #30 asphalt felt with minimum 2" sidelaps in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using four (4), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nails through the marked nailing locations (four nails per shingle). Install tiles with a maximum exposure of 8" relation to previous course.

**Installation (Continued):**

System		
7	Product	Empire Shake
	Design Pressure	-105.0 psf
	Sheathing	Minimum nominal 7/16" thick (OSB)
	Sheathing-Attachment	The OSB sheathing is secured using 8d coated ring shank nails, spaced 6" on center at the perimeter, seams, and joists.
	Underlayment	Glacier Guard must be installed in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck a minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using two (2), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nails through the marked nailing locations (two nails per shingle). Install tiles with a maximum exposure of 8" in relation to previous course. ..
8	Product	Empire Shake
	Design Pressure	-112.5 psf
	Sheathing	Minimum nominal 7/16" thick (OSB)
	Sheathing-Attachment	Secure the OSB sheathing using 8d coated ring shank nails, spaced 4" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using four (4), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nails through the marked nailing locations (four nails per shingle). Install tiles with a maximum exposure of 8" in relation to previous course.
9	Product	Empire Shake
	Design Pressure	-123.75 psf
	Sheathing	Minimum Nominal 5/8" thick plywood
	Sheathing-Attachment	The plywood sheathing is secured using 8d coated ring shank nails, spaced 6" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using two (2), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nail through the marked nailing locations (two nails per shingle). Install tiles with 8" exposure in relation to previous course.

**Installation (Continued):**

System		
10	Product	Empire Shake
	Design Pressure	-142.5 psf
	Sheathing	Minimum nominal 5/8" thick plywood
	Sheathing-Attachment	The plywood sheathing is secured using 8d coated ring shank nails, spaced 4" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using four (4), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nails through the marked nailing locations (four nails per shingle). Install tiles with a maximum exposure of 8" in relation to previous course.
11	Product	Empire Plus Shake
	Design Pressure	-108.75 psf
	Sheathing	Minimum nominal 1/2" thick plywood
	Sheathing-Attachment	Secure the plywood sheathing using 8d coated ring shank nails, spaced 9" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using two (2), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nail through the marked nailing locations (two nails per shingle). Install tiles with a maximum exposure of 8" in relation to previous course.
12	Product	Empire Plus Shake
	Design Pressure	-165.0 psf
	Sheathing	Minimum nominal 1/2" thick plywood
	Sheathing-Attachment	Secure the plywood sheathing using 8d coated ring shank nails, spaced 4" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using four (4), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nail through the marked nailing locations (two nails per shingle). Install tiles with a maximum exposure of 8" in relation to previous course.

**Installation (Continued):**

System		
13	Product	Empire Plus Shake
	Design Pressure	-138.75 psf
	Sheathing	Minimum nominal 5/8" thick plywood
	Sheathing-Attachment	Secure the plywood sheathing using 8d coated ring shank nails, spaced 6" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using two (2), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nail through the marked nailing locations (two nails per shingle). Install tiles with a maximum exposure of 8" in relation to previous course.
14	Product	Empire Plus Shake
	Design Pressure	-187.5 psf
	Sheathing	Minimum nominal 5/8" thick plywood
	Sheathing-Attachment	Secure the plywood sheathing using 8d coated ring shank nails, spaced 4" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using four (4), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nail through the marked nailing locations (four nails per shingle). Install tiles with a maximum exposure of 8" in relation to previous course.
15	Product	Empire Plus Shake
	Design Pressure	-105.0 psf
	Sheathing	Minimum nominal 7/16" thick plywood
	Sheathing-Attachment	Secure the plywood sheathing using 8d coated ring shank nails, spaced 6" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
	Roof Tiles Fastener Location/Spacing	Secure each roof tile using two (2), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nail through the marked nailing locations (two nails per shingle). Install tiles with a maximum exposure of 8" in relation to previous course.

**Installation (Continued):**

System		
16	Product	Empire Plus Shake
	Design Pressure	-112.5.0 psf
	Sheathing	Minimum nominal 7/16" thick plywood
	Sheathing-Attachment	The plywood sheathing is secured using 8d coated ring shank nails, spaced 4" on center at the perimeter, seams, and joists.
	Underlayment	Install Glacier Guard in all valleys, eaves, rakes, hips, ridges, and projections. The remaining roof deck a minimum of one layer of ASTM D 226, Type II, #30 asphalt felt with minimum 2" sidelaps must be installed in accordance with the manufacturer's normal installation instructions.
Roof Tiles Fastener Location/Spacing	Secure each roof tile using four (4), 1-1/2" long by 0.12" diameter EcoStar brand ring shank roofing nail through the marked nailing locations (four nails per shingle). Install tiles with a maximum exposure of 8" in relation to previous course.	

**Note:** The manufacturer's installation instructions must be available on the job site during installation. Use corrosion resistant fasteners as specified in the IRC, IBC, and the Texas Revisions.