

# ***GAF-ELK TruSlate™ System Specification***

## **PART 1 GENERAL SECTION INCLUDES**

- A. Slate roofing system.
- B. Leak barrier and Roof Deck Protection.
- C. Metal flashing associated with slate roofing system.
- D. Attic Ventilation.

### **1.02 RELATED SECTIONS**

- A. Section 06100 - Rough Carpentry: Framing, wood decking, and roof sheathing.
- B. Section 07620 - Flashing and Sheet Metal: Sheet metal flashing not associated with shingle roofing; gutters and downspouts.
- C. Section 08630 - Unit Skylights: Skylights.

### **1.03 REFERENCES**

- A. ASTM C 406 - Specification for Slate Roofing
- B. ASTM C 120-90 - Standard Test Method of Flexure Testing of Slate
- C. ASTM C 121-90 - Standard Test Method for Water Absorption of Slate
- D. FM 4473 – Class 4 – Test for Ice Ball Resistance
- E. UL 790 - Tests for Fire Resistance of Roof Covering Materials.
- F. FL5429 - Florida Building Code Approved
- G. RC-101 - Texas Department of Insurance
- H. National Roofing Contractors Association (NRCA)

### **1.04 SUBMITTALS**

- A. Submit copies of GAF-Elk's product data sheets, detail drawings and samples for each type of roofing product.

### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Provide all primary roofing products, including the slate system roof deck protection, leak barrier, and ventilation, by a single manufacturer.
- B. Installer Qualifications:

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1. Installer must be approved for installation of all roofing products to be installed under this section.
  2. Installer must have a SlateCrafter™ Specialist Certification and be a part of one of the GAF-Elk Certified Contractor programs including Master Elite Contractor, Certified Contractor or Authorized Installers.
- C. Installers are encouraged to review the installation video/DVD, website video, and all printed installation instructions. The GAF-Elk Technical Services Dept. is always available to assist with technical questions (1-800-ROOF-411, 1-800-766-3411).

### **1.06 REGULATORY REQUIREMENTS**

- A. Provide a roofing system achieving an Underwriters Laboratories (UL) Class B fire classification.
- B. Install all roofing products in accordance with all federal, state and local building codes.
- C. All work shall be performed in a manner consistent with current OSHA guidelines.

### **1.07 PREINSTALLATION MEETING**

- A. General: For all projects in excess of 250 squares of roofing, a pre-installation meeting is strongly recommended.
- B. Timing: The meeting shall take place at the start of the roofing installation, no more than 2 weeks into the roofing project.
- C. Attendees: Meeting to be called for by manufacturer's certified contractor. Meeting's mandatory attendees shall include the certified contractor and the manufacturer's representative. Non-mandatory attendees shall include the owner's representative, architect or engineer's representative, and the general contractor's representative.
- D. Topics: Certified contractor and manufacturer's representative shall review all pertinent requirements for the project, including but not limited to, scheduling, weather considerations, project duration, and requirements for the specified warranty.

### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Store all products in manufacturer's unopened, labeled packaging until they are ready for installation. Slates should remain in their crates until ready for installation.
- B. Store products in a covered, ventilated area, at temperature not more than 110° F (43° C); do not store near steam pipes, radiators, or in direct sunlight.
- C. Store crates on a flat surface. Maximum stacking height shall not exceed GAF-ELK's recommendations. Store all rolls (UnderBlock™ UV & Moisture Barrier, leak barrier, or roof deck protection products) on end.
- D. Store and dispose of solvent-based materials in accordance with all federal, state and local regulations.

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### **1.09 WEATHER CONDITIONS**

- A. Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with GAF-Elk's recommendations

### **1.10 WARRANTY**

- A. Provide to the owner a GAF-Elk, Elk Slate Product, Inc. TruSlate™ Premium Roofing System Limited Warranty.
- B. Provide to the owner a GAF-Elk TruSlate™ Ultimate Pledge™ Limited Warranty.

## **PART 2 PRODUCTS**

### **2.01 DISTRIBUTOR**

- A. Acceptable Distributor: GAF Materials Corporation, 1361 Alps Rd. Wayne NJ 07470. Tel: 1-973-628-3000.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

### **2.02 SLATE SYSTEM**

- A. Dense, tough, durable, natural rock or stone sorted to eliminate any that have been cracked or broken, having a porosity of approximately 0.15 to 0.40 percent making this material practically nonabsorbent. 1/4" to 3/8" thick, 12 inch by 12 inch size with a 10 inch (254 mm) exposure. Meets; ASTM C 120-90 and ASTM C 121-90, FM 4473 Class 4, UL 790 Class B rated, UL 580 Class 90, UL 1897. Florida Building Code, Texas Department of Insurance (TDI), and has a pending ICC Report Approval and pending Miami Dade Approval. **TruSlate™** Premium Roofing System by GAF-Elk.
- B. Color: As selected from manufacturers' full range.
  - 1. Color: Onyx Black
  - 2. Color: Greystone
  - 3. Color: Mystic Grey
  - 4. Color: Sunset
  - 5. Color: Echo Green
- C. Accent Color
  - 1. Jade Green
  - 2. Rustic Red
  - 3. Smoke Grey
  - 4. Vintage Plum

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- D. High density polyethylene (HDPE) Interlayment (07315-4) protects against UV, moisture and weather infiltration. Approximately 250 sq. ft. of coverage (2.5 squares (23.23 sq meters)). **UnderBlock™ UV & Moisture Barrier** provided by GAF-Elk.
- E. Stainless steel 4 foot batten strips preassembled with spring tempered stainless steel hangers available in short or long lengths. Hangers and Battens assembly covers approximately 250 sq feet (2.5 squares (23.23 sq.m.)). **TruGrip™ Batten & Hanger System** provided by GAF-Elk.
- F. Layout tape used as a guide for installing the battens and hangers system on the roof. Each roll contains approximately 180 linear feet (6 squares coverage) **Lay-Straight™ Alignment Tape** provide by GAF-Elk

### **2.03 HIP AND RIDGE SLATES**

- A. Dense, tough, durable, quarried slate approximately 16" x 7" (406mm x 178mm). Each crate covers approx. 100 lineal feet. TruSlate™ **Trim Slate**, by GAF-Elk.
- B. Corrugated plastic pieces used as a base for installing Trim Slates. Sized at ½" x 8" x 48" (13 mm x 203 mm x 1.22 m) each box covers approximately 100 lineal feet (30.5 m). **Hip & Ridge Spacer** provided by GAF-Elk

### **2.04 LEAK BARRIER**

- A. Self-adhering, self sealing, bituminous leak barrier surfaced with fine, skid-resistant granules. Each Roll contains approx. 150 sq ft, 65 lbs (29.9 kg), 36" X 50' or 200 sq ft, 85 lbs (38.6 kg), 36" X 66.7'. 58 mils thick. **Weather Watch®** Leak Barrier, by GAF-Elk.
- B. Self-adhering, self sealing, bituminous leak barrier surfaced with a smooth polyethylene film. Each Roll contains approx. 200 sq ft, 85 lbs (38.6 kg), 36" X 66.7'. 60 mils thick. **StormGuard®** Leak Barrier, by GAF-Elk.
- C. Self-adhering, flexible SBS-modified compound and reinforced with a fiberglass-reinforced polyester core. Flexible design conforms to irregular surfaces. Each roll contains approx. 222.5 sq ft, 39.4" X 67.8'. **UnderRoof 2™** Leak Barrier by GAF-Elk.

### **2.05 ROOF DECK PROTECTION**

- A. Premium, water repellant, breather type non-asphaltic underlayment. UV stabilized polypropylene construction. Meets or exceeds ASTM D226 and D4869. Approved by Dade County, Florida Building Code, and has ICC Report ESR-2438 Approval. **Deck-Armor™** Roof Deck Protection, by GAF-ELK.
- B. Non-Asphaltic water and fire resistant slip sheet. Meets or exceeds ASTM D226, ASTM D4869 and ASTM D6757 type I & II. Approved by Underwriters Laboratory, Miami Dade county, Florida building code and ICC report ESR-2053. **VersaShield® Underlayment**, by GAF-Elk.

### **2.06 RIDGE VENTILATION SYSTEM**

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- A. Rigid plastic ridge ventilator designed to allow the passage of hot air out of attics. For use in conjunction with eave/ soffit intake ventilation products. Provides 20.0 sq inches in NFVA per lineal foot. Each package contains 10 - 4 foot pieces covering 40 lineal feet (12.19 m) of vent. **TruSlate™ Ridge Vent**, by GAF-ELK

### **2.07 ROOFING CEMENT**

- A. General purpose asphalt roofing cement meeting the requirements of ASTM D 4586, Type I or II. **Leak Buster™ Matrix™ 203** Plastic Roof Cement, by GAF.
- B. General purpose asphalt roofing cement meeting the requirements of ASTM D 4586, Type I or II. **Leak Buster™ Matrix™ Standard Wet/Dry Roof Cement #204**, by GAF.
- C. Asphalt Plastic Roofing Cement meeting the requirements of ASTM D 4586, Type I or II.

### **2.08 NAILS & FASTENERS**

- A. 2 ½" (64 mm) copper slating nails.
- B. 2 ½" (64 mm) stainless steel nails.
- C. 2 ½" (64 mm) #8 coated decking screws.
- D. 2" (64 mm) copper slating nails (when not using ridge ventilation).
- E. 2" (64 mm) stainless steel nails (when not using ridge ventilation).
- F. 2" (64 mm) #8 coated decking screws (when not using ridge ventilation).
- G. 1 ¾" (44 mm) roofing nails (fastening ridge vent).
- H. 1 ½" (38 mm) roofing nails (fastening Hip & Ridge Spacer).
- I. 1 1/4" (32 mm) 0.120 stainless steel coil roofing nails. (For Battens)
- J. 1 ¼" (64 mm) copper slating nails (fastening flashings).

### **2.09 METAL FLASHING**

- A. 16-oz/sq ft (0.66 mm) copper sheet, complying with ASTM B 370.
- B. 26 gauge stainless steel
- C. 4 lb. (1.81kg) [.062 inch (1,75mm)] thick lead

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin installation until the roof deck has been properly prepared.

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B. If roof deck preparation is the responsibility of another installer, notify the architect or building owner of unsatisfactory preparation before proceeding.

C. Minimum roof deck slope must be 4:12

### **3.02 PREPARATION**

A. Remove all existing roofing down to the roof deck. Note: roof deck should be a minimum 7/16" OSB or 15/32" plywood.

B. Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections. Cover with sheet metal, all holes over 1 inch (25 mm) in diameter, cracks over 1/2 inch (12 mm) in width, loose knots and excessively resinous areas.

C. Replace damaged deck with new materials.

D. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.

### **3.03 PREPARATION**

A. Roof deck should be a minimum 3/8" (10 mm) APA-The Engineered Wood Association rated exterior grade plywood or 7/16" (11 mm) APA - The Engineered Wood Association rated exterior grade oriented strand board, commonly known as "OSB"

B. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.

C. At areas that receive eaves protection membrane, fill knotholes and cracks with latex filler.

D. Install crickets on the upslope side of all chimneys in the north, any chimney wider than 24", and on all roofs steeper than 6/12.

### **3.04 UNDERLAYMENT APPLICATION**

A. General:

1. Install using methods recommended by GAF-Elk, in accordance with local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.

B. Leak Barrier

1. Install a full deck of leak barrier protection on roofs with a minimum slope of 4:12 up to and including 5:12

C. Eaves:

1. Install eaves edge metal flashing tight with fascia boards; lap joints 2 inches (50 mm) and seal with plastic cement; nail at the top of the flange.
2. Install leak barrier membrane up the slope over the drip edge metal up to 1/4" (6mm)
3. Install eave protection membrane at least 24 inches (610 mm) beyond the interior "warm wall". Lap ends 6 inches (150 mm) and bond.

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4. For roof slopes greater than 5/12, apply self adhering underlayment over the deck extending from the eave edge to a point at least 24" beyond the inside wall of the living space below to meet ASTM D1970 standard.

### **D. Valleys – Metal**

1. Install eaves protection membrane at least 36 inches (914mm) wide and centered on the valley. Overlap all side laps with minimum 6 inches (150 mm) and head lap with minimum 2 inches seal.
2. Install valley metal on top valley underlayment. Nail 1" (25mm) from edge of metal 16" (406mm) on center.
3. Install 10" (254mm) wide strips of self-adhering membrane over valley metal edges 3" (76mm) from valley center. Make sure underlayment covers all fasteners.

### **E. Roof Deck:**

1. Install one layer of roof deck underlayment (2 layers if using #30 asphalt felt) over the entire area not protected by eaves or valley membrane. Install sheets horizontally so water sheds and nail in place with minimum 2" head lap and 6" side lap. (4" head lap in wet or snow areas)
2. Nail underlayment 12" on center at the head lap and 36" on center at the center of roll.

### **F. Penetrations:**

1. Vent pipes: Install a 24 inch (610 mm) square piece of eave protection membrane lapping over roof deck underlayment; seal tightly to pipe.
2. Vertical walls: Install eave protection membrane extending at least 6 inches (150 mm) up the wall and 12 inches (305 mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
3. Skylights and roof hatches: Install eaves protection membrane from under the built-in counterflashing and 12 inches (305 mm) on to the roof surface lapping over roof deck underlayment.
4. Chimneys: Install eaves protection membrane around entire chimney extending at least 6 inches (150 mm) up the wall and 12 inches (305 mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
5. Rake Edges: Install metal edge flashing over eaves protection membrane and roof deck underlayment; set tight to rake boards; lap joints at least 2 inches (50 mm) and seal with plastic cement; secure with nails.
6. Hips and Ridges: Install leak barrier along entire lengths. If ridge vents are to be installed, position the leak barrier so that the ridge slots will not be covered.

## **3.05 INSTALLATION OF SLATES**

### **A. General:**

1. Install in accordance with GAF-Elk's instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Minimize breakage of slates by avoiding dropping crates or individual slates.

### **B. Battens Placement:**

1. Start bottom batten row at drip edge, 5" (127mm) from eave edge. Hangers along bottom batten should extend to drip edge.

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2. Chalk a line every 10" (254 mm) up the roof to the ridge spacer or ridge vent.
3. Install battens every 10" (254 mm) four courses at a time starting from the ridge spacer or ridge vent. (Do NOT install all battens at once)
4. Batten spacing may be increased or decreased to accommodate fraction spacing.
5. Stop battens ½" (13 mm) from hip spacers or gable/rake edge metal.

### **C. Hanger Placement:**

1. Hangers can be relocated on the batten as needed by squeezing the top wires together, placing where needed and releasing. The hangers should snap securely in place.
2. Each Slate will have a minimum of two hangers supporting the top and 2 hangers supporting the bottom.
3. Position each batten so hangers are aligned vertically to ensure a uniform slate pattern and provide the necessary support.
4. Hangers for field slates should maintain a 6" spacing (or three empty slots).

### **D. High Wind Installation Requirements: Hanger Placement:**

1. Every piece of slate requires two hangers and each hanger must have a ring shank nail put so that the lip of the nail is over the edge of the hanger wire where it is attached to the batten.

### **E. UnderBlock™ UV & Moisture Barrier**

1. Install UnderBlock™ UV & Moisture Barrier dull finish up and shiny side down.
2. Install along rows of battens not exceeding 12 ft long lengths with side laps overlapping a minimum 12" (305 mm)
3. Do not nail through UnderBlock™ UV & Moisture Barrier when installing field slate.

### **F. Slate Installation**

1. Begin installation at hips and valley leaving the field clear to walk.
2. Place slates on hangers being careful to keep hangers centered on slates and evenly spaced from each side. On full slates, hangers should be approximately 3" (76 mm) from each side edge.
3. Start every other course with a half slate for staggering appearance. Minimize traffic over finished roof surface. If necessary, wear soft-soled shoes and walk on the "butt" of the slates in order to avoid breakage.
4. Slate pieces should not be smaller than 4" (102mm) wide.

### **G. High Wind Installation Requirements: Slate Installation:**

1. Slates must not overhang the eave edge. The bottom edge of the slates must be flush to the eave edge.

### **H. Valleys**

1. Prepare the valley with approved metal flashings.
2. Prior to Hanging the last horizontal batten for the field slate, chalk a line parallel to the valley center line at least 1" (25 mm) out from the valley center line. The chalk line will mark where the field slates should be cut to form the valley.



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3. Measure 5" (127 mm) out on to the roof plane (parallel to the valley center line), from the previously chalked line and chalk a second line.
4. Apply a row of battens vertically with the top of the batten on the second chalk line. The hangers on the vertical batten should extend into the valley to the first chalk line.
5. Continue installing the horizontal field battens during the installation of the slope, extending them over the vertical valley battens. They should be just short of the first chalked line near the centerline of the valley. Slates will have two hangers on both the bottom edge and side edge.

### **I. Penetrations**

1. All Penetrations are to be flashed according to GAF-ELK, ARMA and NRCA application instructions and construction details.

### **J. Skylights and Roof Hatches**

1. Consult the manufacturer of the skylight or roof hatch for specific installation recommendations.
2. Skylights and roof hatches shall be installed with pre-fabricated metal flashings specifically designed for the application of the unit.

## **3.06 VENTILATION**

### **A. General**

1. Ventilation must meet or exceed current F.H.A., H.U.D. and local code requirements.

### **B. Ridge / Soffit ventilation**

1. Calculate the total length of TruSlate™ Ridge Vent needed. This will determine the necessary slot opening required.
2. Roofs without a ridge board...cut a 7/8" opening along the ridge on each side.
3. Roofs with a ridge board...cut a 1-5/8" opening along the ridge on each side.  
Note: The total maximum slot opening is 3-1/4" wide.
4. Mark off and cut the slot opening... Ensure that...
  - The ends of the opening stop at least 6" from end walls.
  - The ends of the opening stop at least 12" from hip and ridge intersections or chimneys.
5. Where short ridges (dormers, ridge intersections) are used mark and cut the slot and ensure that the end of the opening stops at least 12" from the ridge intersection
6. Install ridge vent material along the entire length of ridges , including uncut areas. Note: cover exposed fastener heads with exterior grade caulk.
7. Butt ends of ridge vent material together and cover joints with 6" strip of self-adhering leak barrier. Note: Leave a 1/8" gap between ridge vent sections for installations in cold climates.
8. Install under eave vents with sufficient quantity of Net Free Area (NFA) to equal or exceed the ridge vent Net Free Area (NFA).
9. Install hip and ridge slates over ridge vent material; use nails of specified length; do not drive nails home, leaving 3/4 inch (19 mm) space open between hip and ridge and roof slates.

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### **C. Roof Louvers:**

1. Cut vent hole through sheathing as specified by the manufacturer for the type of vent to be installed.
2. Install a 36 inch (914 mm) square of leak barrier, centered around the hole
3. Install according to manufacturers instructions for flashing vent penetrations
4. Install eave vents in sufficient quantity of Net Free Area (NFA) to equal or exceed the exhaust vent Net Free Area (NFA), calculated as specified by manufacturer.

### **D. Powered Ventilators:**

1. Cut vent hole through sheathing as specified by the manufacturer for the type of vent to be installed.
2. On rooftop applications, install a 36 inch (914 mm) square of leak barrier, centered around the hole
3. Install according to manufacturers instructions for flashing vent penetrations
4. Install eave vents in sufficient quantity to equal or exceed the exhaust vent area, calculated as specified by manufacturer.

### **3.07 PROTECTION**

- A. Protect installed products from foot traffic until completion of the project.
- B. Any roof areas that are not completed by the end of the workday are to be protected from moisture and contaminants.

END OF SECTION