

ATTACHMENT A

Guide Specifications

Fiberglass-Based Asphalt Shingles & Accessories

SECTION 07 31 13 - FIBERGLASS-BASED ASPHALT SHINGLES & ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Roof shingles and accessories including the following:
 - 1. Fiberglass-based asphalt shingles.
 - 2. Ridge shingles.
 - 3. Starter shingles.
 - 4. Self-adhering ice and water barrier
 - 5. Shingle underlayment.
 - 6. Attic ventilation.
 - 7. Fasteners.
 - 8. Metal flashing and trim.

1.2 RELATED SECTIONS

- A. Section 061000 - Rough Carpentry.
- B. Section 076000 - Flashing and Sheet Metal; metal flashing and drip edges.

1.3 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM D228 - Standard Test Method for Sampling, Testing, and Analysis of Asphalt Roll Roofing, Cap Sheets, and Shingles Used in Roofing and Waterproofing.
 - 2. ASTM D1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
 - 3. ASTM D3018 - Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules.
 - 4. ASTM D3161 - Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).
 - 5. ASTM D3462 - Standard Specification for Asphalt Shingles Made from Glass felt and Surfaced with Mineral Granules.
 - 6. ASTM D7158 - Standard Test Method for Wind Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method).
 - 7. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings.
 - 8. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- B. Florida Building Commission (FBC):
 - 1. Florida Building Code.
 - 2. Florida Product Approvals.
- C. International Code Council (ICC):
 - 1. International Residential Code (IRC).
 - 2. International Building Code (IBC).
 - 3. ICC-ES Evaluation Reports.
 - 4. ICC-ES Acceptance Criteria.

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- D. Underwriters Laboratories (UL):
 - 1. UL 790 - Standard Test Methods for Fire Test of Roof Coverings.
 - 2. UL 997 – Wind Resistance of Prepared Roof Covering Materials.
- E. Miami-Dade County Building Code Compliance Office (BCCO), Product Control Division: Miami-Dade County Notice of Acceptance (NOA).
- F. Texas Department of Insurance (TDI): Product Listing.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets and detail drawings for each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Product literature.
 - 4. Installation methods.
- C. Selection Samples: Two complete sets of samples, representing manufacturer's full range of available products and colors.
- D. Verification Samples: For each product and finish specified, two samples representing actual products and colors.
- E. Copy of Warranty: For warranty specified in Par. 1.8 in this Section.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide all primary roofing products, including shingles, underlayment, leak barrier, and ventilation, by a single manufacturer.
- B. Installer Qualifications:
 - 1. Installer shall follow Roofing and Asphalt shingles manufacturer's published installation instructions.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's unopened bundles with labels intact and legible.
- B. Store all products in manufacturer's unopened, labeled packaging until they are ready for installation.
- C. Handle and store materials on site to prevent damage. Store products in a covered, ventilated area, at temperature not more than 110 degrees Fahrenheit (43 degrees Celsius); do not store near steam pipes, radiators, or in direct sunlight.
- D. Store bundles on a flat surface. Do not stack product more than 2 pallets high. If stacking 2 pallets high, use separator boards to protect the shingles below. Store all rolls on end.
- E. Do not install underlayment or shingles on wet surfaces.
- F. Store and dispose of solvent-based materials in accordance with all federal, state and local regulations.
- G. For rooftop loading, lay shingle bundles flat. Do not bend over the ridge.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install systems under environmental conditions outside manufacturer's recommended limits.
 - 1. Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with manufacturer's recommendations.

1.8 WARRANTY

- A. Manufacturer's Warranty: Provide to the Owner manufacturer's standard prorated warranty coverage for materials in the event of a material defect, including up to 10 years Tru Protection® coverage. Refer to actual warranty for complete details, limitations and requirements.

- B. Manufacturer's Extended Warranty: Provide to the Owner manufacturer's standard extended warranty coverage labor and materials in the event of a material defect. Refer to actual warranty for complete details, limitations and requirements.
1. System Protection Roofing Limited Warranty includes up to 50 years of Tru Protection® (non-prorated) coverage on installed Owens Corning Roofing System products and labor. The length of the Tru Protection® coverage is based upon the shingle product installed on the field of the roof. Coverage can only be provided by a designated Owens Corning Roofing Preferred or Platinum Preferred Contractor or equal warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Owens Corning Roofing and Asphalt, LLC **or equal**.

2.2 ROOF SHINGLES

- A. Duration® Premium (Algae Resistant) Shingles: As manufactured by Owens Corning Roofing and Asphalt, LLC.
1. Nominal Size: 13-1/4 in (337 mm) by 39-3/8 in (1000 mm).
 2. Exposure: 5-5/8 in (143 mm).
 3. Shingles per Square: 64.
 4. Bundles per Square: 4 bundles of 16 shingles.
 5. Coverage per Square: 98.4 sq ft (9.1 sq m).
 6. Color: As selected from manufacturer's full range.
 7. Standards/Qualifications: ASTM D228, ASTM D3018 (Type 1), ASTM D3161 (Class F Wind Resistance), ASTM D3462, ASTM D7158 (Class H Wind Resistance), ASTM E108/UL 790 (Class A Fire Resistance), ICC-ES AC438, and UL ER2453-01.

HIP AND RIDGE SHINGLES

Provide hip and ridge shingles color formulated to complement field of roof.

- A. High Ridge Hip and Ridge (Algae Resistant) Shingles with Sealant: As manufactured by Owens Corning Roofing and Asphalt, LLC.
1. Layered construction adds performance and dimension to the hip and ridge.
 2. Nominal Size: 12 in (305 mm) by 12 in (305 mm) with 8 in (203 mm) exposure.
 3. Standards/Qualifications: ASTM D228, ASTM D3018 (Type 1), ASTM D3161 (Class F Wind Resistance), ASTM D3462, ASTM E108/UL 790 (Class A Fire Resistance), ICC-ES AC438, UL ER2453-01, Florida Building Code Approval (FL10674), and Miami-Dade County Product Approval (10-0817.08).

2.3 STARTER SHINGLES

- A. Starter Shingle Roll: As manufactured by Owens Corning Roofing and Asphalt, LLC.
1. Self-adhering, starter course. Each strip measures 7-1/5 in (191 mm) tall by 33-2/5 ft (10.1 m) wide.
 2. Standards/Qualifications: CCMC 13403-R.

2.4 SELF-ADHERING ICE AND WATER BARRIER

- A. WeatherLock® G: As manufactured by Owens Corning Roofing and Asphalt, LLC.
1. Granule skid resistant surface, self-adhering, self sealing, bituminous ice and water barrier.
 2. Roll Width: 36 in (914 mm).
 3. Selvage: 3 in (76 mm).
 4. Standards/Qualifications: ASTM D1970, ASTM E108/UL 790 (Class A Fire Resistance), ICC-ESR 1783, CCMC 13403-R, Florida Product Approval (FL9777), and Miami-Dade County Approval (12-1114.01).

2.5 SHINGLE UNDERLAYMENT

- A. Deck Defense® High Performance Roof Underlayment.
1. Weather-shedding synthetic polyolefin barrier.
 2. Roll Width: 48 in (1219 mm).
 3. Roll Length: 125 ft (38.1 m) and 250 ft (76.2 m).
 4. Coverage Per Roll: 5 and 10 roof squares.
 5. Standards/Qualification: ASTM E108/UL 790 (Class A Fire Resistance), ICC-ESR 3229, CAN/CSA A220.1 Series-06, Florida Product Approval (FL14299), and Miami-Dade County Product Approval (11-0912.05).

2.6 ATTIC VENTILATION

- A. VentSure® 4 ft. (1.2 m) Strip Heat and Moisture Ridge Vent, 12 in width (305 mm).
 - 1. Shingle-over, polypropylene ridge ventilator designed to work with eave/soffit intake ventilation to maximize the flow of cool, fresh air through the roof and attic structure.
 - 2. Patent-pending corrugated ridge design and interlocking feature for additional flexibility and strength
 - 3. Provides 20 sq. in (12900 sq mm) NFVA per lineal foot.
 - 4. Optional filter provides added protection against wind-driven rain and snow infiltration.
 - 5. 4 ft (1.2 m) strip is 15 in (381 mm) wide and 1 in (25 mm) high, with a shingle-over width of 12 in (305 mm).
 - 6. Suitable on roofs with a pitch from 3:12 to 6:12.
 - 7. Standards/Qualifications: ICC-ESR 3007, Passes Wind-Driven Rain with 8-4/5 in (224 mm) of rain at 110 mph (177 km/h), Florida Product Approval (FL10758), Miami-Dade County Product Approval (09-1019.03), and TDI listed for usage in Texas Coastal Regions (RV-47).

2.7 FASTENERS

- A. Fasteners: Galvanized steel, stainless steel, or aluminum nails complying with ASTM F1667, minimum 12 gauge, 0.0808 in (2.05 mm) shank with 3/8 in (9.5 mm) diameter head.
- B. All fasteners must be driven flush with the shingle surface and penetrate at least 3/4 in (19.1 mm) into the wood deck. Where the deck is less than 3/4 in (19.1 mm) thick, the fastener should be long enough to penetrate fully and extend through roof sheathing.

2.8 METAL FLASHING

- A. Flashing: Provide flashing as specified by Section 07600 - Metal Flashing and Sheet Metal.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Prior to starting work, examine all roof decks on which work is to be applied for defects in materials and workmanship which may be detrimental to the proper installation or long-term performance of the shingles.
- B. Underlayment and shingles installed directly over roof insulation or similar type decks is not approved.
 - 1. Roof deck must be dry, minimum 25/32 in (19.8 mm) thick, minimum 6 in (152 mm) wide boards with maximum 1/4 in (6.4 mm) spaces, or APA rated sheathing (exposure 1): minimum 3/8 in (9.5 mm) plywood, minimum 7/16 in (11.1 mm) oriented strand board. Consult your manufacturer for other approved constructions.
 - 2. Ventilation under the roof deck must meet local code requirements.
- C. Do not begin installation until the roof deck has been properly prepared.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding. Commencement of installation constitutes acceptance of conditions.

3.2 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- B. Remove all existing roofing down to the roof deck.
- C. Verify installed roof deck is acceptable to receive shingles. Acceptable roof decks include the following:
 - 1. Lumber sheathing: 6 in (152 mm) minimum width, 25/32 in (19.8 mm) minimum thickness.
 - 2. Plywood sheathing: 3/8 in (9.5 mm) minimum thickness Exposure 1 grade plywood sheathing as recommended by APA and in compliance with applicable Codes.
 - 3. OSB panels: 7/16 in (11.1 mm) minimum thickness non-veneer structural panels as recommended by APA and in compliance with applicable Codes.
 - 4. Spacing between boards or panels shall not exceed 1/4 in (6.4 mm) between roof boards or between plywood or OSB sheathing panels.
- D. Verify that the deck is dry, structurally sound, clean and smooth. It shall be free of any depressions, waves, and projections. Cover with minimum 28 gauge; 0.0187 in (0.475 mm) galvanized steel, 0.0156 in (0.396 mm) stainless steel, or 0.0126 in (0.320 mm) aluminum sheet metal all holes 1 in (25 mm) or less in diameter, cracks over 1/2 in (13 mm) in width, loose knots and excessively resinous areas. **Decking or deck boards with holes greater than 1 in (25 mm) in diameter shall be replaced.**
- E. Verify that the deck is structurally sound and free of deteriorated decking. **All deteriorated and damaged decking shall be removed and replaced with new materials.**

- F. Clean deck surfaces thoroughly prior to installation of underlayment
- G. Verify that the existing shingles are dry, sound, clean and smooth. All curled, buckled or loose tabs shall be nailed down or removed.

3.3 UNDERLAYMENT APPLICATION

- A. Install in accordance with manufacturer's instructions.
 - 1. Install using methods recommended by shingle manufacturer and in accordance with local building codes. When local codes and application instructions are in conflict, the local code requirements shall take precedence.
 - 2. Install self-adhering ice and water barrier from the eaves edge of roof up the slope a full 36 in (914 mm) but not less than 24 in (610 mm) beyond the interior edge of the exterior wall. Lap ends 6 in (152 mm) on roof decks sloped 5:12 and greater. On roofs with pitch from 2:12 up to 4:12, see application instructions printed on each package.
- B. Drip Edge
 - 1. Drip edge shall be installed on all roof edges.
 - 2. Install drip edge on eaves first with underlayment installed over the drip edge.
 - 3. Install drip edge on rakes after underlayment is installed, with the drip edge fastened over the underlayment.
 - 4. Joints in drip edge shall be lapped minimum 2 in (51 mm) with the upslope piece lapped over the down slope piece.
 - 5. Install fastener 8 in to 10 in (203 mm to 254 mm) on center, approximately 1-3/4 in (44 mm) from the outside edge of the drip edge.
- C. Roof Deck
 - 1. On roofs with pitch greater than 4:12, lap horizontal edges at least 2 inches (51 mm) and at least 2 inches (51 mm) over self-adhering ice and water barrier. Lap ends at least 4 inches (102 mm). End laps in succeeding course should be located at least 6 ft (1.8 m) from end laps in the preceding course.
 - 2. On roofs with pitch between 2:12 to less than 4:12, see application instructions printed on each shingle wrapper, or follow local code requirements.
 - 3. Lap underlayment over valley protection at least 6 inches (152 mm).
- D. Penetrations
 - 1. Vent pipes: Install a 24 in (610 mm) square piece of self-adhering ice and water barrier lapping over roof deck underlayment; seal tightly to pipe.
 - 2. Vertical walls: Install self-adhering ice and water barrier extending at least 3 in to 4 in (76 mm to 102 mm) up the wall and 12 in (305 mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
 - 3. Chimneys: Install self-adhering ice and water barrier around entire chimney extending at least 6 in (152 mm) up the wall and 12 in (305 mm) on to the roof surface. Lap the membrane over the roof deck underlayment.

3.4 SHINGLE INSTALLATION

- A. Install shingles in accordance with manufacturer's printed installation instructions.
- B. Install starter course at lowest roof edge and along rake with edge of shingles extending 1/4 in (6.4 mm) over edge of roof.
- C. Install first and successive courses of shingles stepping diagonally up and across roof deck with manufacturer's recommended offset at each succeeding course. Maintain uniform exposure of shingles at each succeeding course.
- D. Fasten shingles to deck with manufacturer's recommended number of roofing nails per shingle, or in accordance with local codes.
- E. Install ridge vents and shingles at valleys, hips and ridges in accordance with manufacturer's recommendations and local code requirements.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION