

SECTION 07 31 13

ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes asphalt shingles for steep roofs.

1.2 SUBMITTALS

- A. Product Data: Provide for each type of product specified, including details of construction relative to materials, dimensions of individual components, profiles, textures, and colors.
- B. Samples: Submit for selection in the form of manufacturer's sample finishes showing the full range of colors and profiles available for each type of asphalt shingle indicated. Submit shingle nails to be used for approval.

1.3 QUALITY ASSURANCE

- A. Fire-Test-Response Classification: Where products with a fire-test-response classification are specified, provide asphalt shingles identical to those tested according to ASTM E 108 or UL 790 and listed by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify each bundle of asphalt shingles with appropriate markings indicating fire-test-response classification of applicable testing and inspecting agency.
- B. Wind-Resistance-Test Characteristics: Where wind-resistant asphalt shingles are indicated, provide products identical to those tested according to ASTM D 3161 or UL 997 and passed. Identify each bundle of asphalt shingles with appropriate markings of applicable testing and inspecting agency.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's unopened bundles or containers with labels intact.
- B. Handle and store materials at Project site to prevent water damage, staining, or other physical damage. Store roll goods on end. Comply with manufacturer's recommendations for job-site storage, handling, and protection.

1.5 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installing asphalt shingles only when existing and forecasted weather conditions will permit work to be performed according to manufacturers' recommendations and warranty requirements, and when substrate is completely dry.

1.6 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a written warranty signed by manufacturer agreeing to repair or replace asphalt shingles that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, deformation or deterioration of asphalt shingles beyond normal weathering.
 - 1. Warranty Period: Manufacturer's standard but not less than 30 years after date of Substantial Completion.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels clearly describing contents.
 - 1. Furnish 1 square (9.29 sq. m) coverage of asphalt shingles, identical to those to be installed, in unbroken bundles.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering asphalt shingles that may be incorporated in the Work include, but are not limited to, the following:
 - 1. Certainteed: XT 30.
 - 2. GAF: Marquis WeatherMax.
 - 3. IKO: Marathon Ultra AR.
- B. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
 - 1. Waterproof Underlayment:
 - a. Bituthene Ice and Water Shield; Grace: W.R. Grace & Co.

2.2 ASPHALT SHINGLES

- A. Colors, Blends, and Patterns: Where manufacturer's standard products are indicated, provide asphalt shingles with the following requirements:
 - 1. Match Architect's samples.

2. Match colors, textures, and patterns indicated by referencing manufacturer's standard designations for these characteristics.
 3. Provide Architect's selections from manufacturer's full range of colors, textures, and patterns for asphalt shingles of type indicated.
- B. Square-Tab, Fiberglass Strip Shingles: Mineral-surfaced, self-sealing, 3-tab, fiberglass-based, strip asphalt shingles, complying with both ASTM D 3018, Type I, and ASTM D 3462. Provide shingles with a Class A fire-test-response classification that pass the wind-resistance-test requirements of ASTM D 3161 at 90 mph.
1. Provide enhanced nailing, spot adhesion and edge securement to increase manufacturer's standard wind rating to that specified above.

2.3 METAL TRIM AND FLASHING

- A. Refer to Division 7 Section "Sheet Metal Flashing and Trim."
- B. Vent Pipe Flashing: Pipes penetrating shingled roofs shall be ARFCO self-sealing neoprene collar with copper flange.

2.4 ACCESSORIES

- A. Synthetic Underlayment: "Tri-Flex 30" by Grace Construction Products.
- B. Waterproof Underlayment: Minimum 40-mil- (1-mm-) thick, self-adhering, polymer-modified, bituminous sheet membrane, complying with ASTM D 1970. Provide primer when recommended by underlayment manufacturer.
 1. Provide "Bituthene Ice and Water Shield" by Grace Construction Products.
- C. Asphalt Plastic Cement: Nonasbestos fibrated asphalt cement, complying with ASTM D 4586.
- D. Nails: Aluminum or hot-dip galvanized steel, 0.120-inch- (3-mm-) diameter barbed shank, sharp-pointed, conventional roofing nails with a minimum 3/8-inch- (9.5-mm-) diameter head and of sufficient length to penetrate 3/4 inch (19 mm) into solid decking or at least 1/8 inch (3 mm) through plywood sheathing.
 1. Where nails are in contact with flashing, prevent galvanic action by providing nails made from the same metal as that of the flashing.
 2. Pneumatic nailing may be allowed, using 0.120" GA ring shank nails, 1 1/4" long, with 3/8" dia. heads.
 - a. Product: Maze Nails Item #CLWR102A, no substitutions.
 - b. Approvals: Provide nails meeting ASTM A-153 Hot Dip Galvanized and FFN105-B Federal Roof Nail Specifications.
- E. Staples: Not allowed.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrate for compliance with requirements for substrates, installation tolerances, and other conditions affecting performance of asphalt shingles. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application. Cover knotholes or other minor voids in substrate with sheet metal flashing secured with noncorrosive roofing nails.
- B. Coordinate installation with flashings and other adjoining work to ensure proper sequencing. Do not install roofing materials until all vent stacks and other penetrations through roof sheathing have been installed and are securely fastened against movement.

3.3 INSTALLATION

- A. General: Comply with manufacturer's instructions and recommendations but not less than those recommended by ARMA's "Residential Asphalt Roofing Manual" or "The NRCA Steep Roofing Manual."
 - 1. Fasten asphalt shingles, by hand only, to roof sheathing with nails.
- B. Synthetic Underlayment: Apply 1 layer of felt underlayment horizontally over entire surface to receive asphalt shingles, lapping succeeding courses a minimum of 2 inches (50 mm), end laps a minimum of 4 inches (100 mm), and hips and valleys a minimum of 6 inches (150 mm). Fasten felt with sufficient number of roofing nails or noncorrosive staples to hold underlayment in place until asphalt shingle installation.
 - 1. Omit felt underlayment at areas of waterproof underlayment. Lap felt underlayment over waterproof underlayment as recommended by manufacturer but not less than 3 inches (50 mm).
- C. Waterproof Underlayment: Apply waterproof underlayment at eaves. Cover deck from eaves to at least 24 inches (600 mm) inside exterior wall line.
 - 1. In addition to eaves, apply waterproof underlayment in place of felt underlayment at valleys.
 - 2. At vertical sidewalls, extend waterproof underlayment vertically up the face of the sidewall. Carefully bend existing counterflashing to accomplish this. Re-bend counterflashing and metal work to match existing.
- D. Boston Cut Valleys: Comply with ARMA and NRCA recommendations. Install shingles from one side of valley and extend across valley and up opposite side of valley 18" min. Install shingles on opposite side of valley and cut to centerline of valley.
 - 1. Provide continuous sealant adhesive at the cut line, 1" back from edge, for the full length of each valley.
- E. Flashing: Install metal flashing and trim as indicated and according to details and recommendations of the "Asphalt Roofing" section of "The NRCA Steep Roofing Manual" and ARMA's "Residential Asphalt Roofing Manual."
- F. Install asphalt shingles, beginning at roof's lower edge, with a starter strip of asphalt shingles with tabs removed (do not invert). Fasten asphalt shingles in the desired weather exposure

pattern; use six (6) fasteners per shingle (“Hurricane Nailing”). Provide manufacturer’s warranty for wind exposure. Use vertical and horizontal chalk lines to ensure straight coursing.

1. Cut and fit asphalt shingles at valleys, ridges, and edges to provide maximum weather protection. Provide same weather exposure at ridges as specified for roof. Lap asphalt shingles at ridges to shed water away from direction of prevailing wind.
2. Use fasteners at ridges of sufficient length to penetrate sheathing as specified.
3. Pattern: 1/2 shingle spacing offset at succeeding courses.

3.4 ADJUSTING

- A. Replace any damaged materials installed under this Section with new materials that meet specified requirements.

END OF SECTION 07 31 13