

SECTION 07 31 13
ASPHALT SHINGLES

(BB-3)

PART 1 GENERAL

1.1 STIPULATIONS

- A. The specifications sections "General Conditions to the Construction Contract", "Special Conditions" and "Division 01 - General Requirements" form a part of this Section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

1.2 SECTION INCLUDES

- A. Asphalt shingle roofing.
- B. Flexible sheet membranes for eave protection, underlayment, and valley protection.
- C. Associated metal flashings and accessories.

1.3 RELATED REQUIREMENTS

- A. Section 07 62 00 - Sheet Metal Flashing and Trim: Edge and cap flashings.
- B. Section 07 71 23 - Manufactured Gutters and Downspouts.

1.4 REFERENCE STANDARDS

- A. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing 2017.
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection 2021.
- C. ASTM D3462/D3462M - Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules 2019.
- D. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free 2007 (Reapproved 2018).
- E. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings 2020a.
- F. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples 2021.
- G. NRCA (RM) - The NRCA Roofing Manual 2022.
- H. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

1.5 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents.
 - 1. Furnish not less than 1 SQUARE of each type, color, pattern, class, wearing surface, and size of shingles installed.

2. Deliver extra materials to Client Agency.

1.6 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating material characteristics.
- C. Samples: Submit two samples of each shingle color indicating color range and finish texture/pattern ; for color selection.
- D. Manufacturer's Installation Instructions: Indicate installation criteria and procedures.
- E. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Client Agency's name and registered with manufacturer.

1.7 FIELD CONDITIONS

- A. Do not install shingles or eave protection membrane when surface temperatures are below 45 degrees F.

1.8 WARRANTY

- A. Materials: 30-year manufacturer's warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Asphalt Shingles:
 1. Atlas Roofing Corporation: www.atlasroofing.com/#sle.
 2. GAF; Timberline HD Reflector Series: www.gaf.com/#sle.
 3. Owens Corning Corp; Oakridge Architectural series: www.owenscorning.com/#sle.
 4. Substitutions: See Section 01 25 00 - Substitution Procedures.

2.2 ASPHALT SHINGLES

- A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462/D3462M.
 1. Fire Resistance: Class A, complying with ASTM E108.
 2. Style: Square.
 3. Color: As selected by Architect.

2.3 SHEET MATERIALS

- A. Eave Protection Membrane:
 1. Eave Protection Membrane: Self-adhering polymer-modified asphalt sheet complying with ASTM D1970/D1970M; 40 mil total thickness; with strippable treated release paper and polyethylene sheet top surface.

- B. Underlayment: Asphalt-saturated organic roofing felt, unperforated, complying with ASTM D226/D226M, Type I ("No.15").
- C. Underlayment: Synthetic Roofing Underlayment
 - 1. Manufacturer: InterWrap (1818-1177 West Hastings Street; Vancouver BC, Canada V6E 2K3; Toll free: 1-800-567-9727; www.interwrap.com); or approved equal
 - 2. Product: Titanium® UDL30
 - 3. Description: Professional grade 25 mil synthetic roofing underlayment for use under all metal, tile, slate, synthetic, ceramic, and shingle roofing. Up to 6 months UV exposure rating. Meets and exceeds ASTM D226 Types I & II. Class A Fire ASTM E108. Not recommended for roof slopes less than 2:12.
 - 4. Warranty: Manufacturer's Lifetime Limited Warranty that the underlayment is free of manufacturing defects and will retain its ability to shed water and not deteriorate or decompose under the primary roofing material.

2.4 ACCESSORIES

- A. Roofing Nails: Standard round wire shingle type, galvanized steel, stainless steel, aluminum roofing nails, or copper roofing nails, minimum 3/8 inch head diameter, 12 gauge, 0.109 inch nail shank diameter, 1-1/2 inch long and complying with ASTM F1667.
- B. Staples: Standard wire shingle type, of hot dipped zinc coated steel, 16 wire gauge, 0.0508 inch diameter, 15/16 inch crown width, of sufficient length to penetrate through roof sheathing or 3/4 inch into roof sheathing or decking.
- C. Plastic Cement: ASTM D4586/D4586M, asphalt roof cement.
- D. Ridge Vent: GAF Cobra Exhaust Vent

2.5 METAL FLASHINGS

- A. Metal Flashings: Provide sheet metal eave edge, gable edge, ridge, ridge vents, open valley flashing, chimney flashing, dormer flashing, and other flashing indicated.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions prior to beginning work.
- B. Verify deck surfaces are dry, free of ridges, warps, or voids.

3.2 PREPARATION

- A. Broom clean deck surfaces before installing underlayment or eave protection.

3.3 INSTALLATION - EAVE PROTECTION MEMBRANE

- A. Install eave protection membrane from eave edge to minimum 2 ft up-slope beyond interior face of exterior wall.

3.4 INSTALLATION - UNDERLAYMENT

- A. Underlayment At Roof Slopes Up to 4:12: Install two layers of underlayment over area not protected by eave protection, with ends and edges weather lapped minimum 4 inches, stagger end laps of each consecutive layer, and nail in place.
- B. Underlayment At Roof Slopes Greater Than 4:12: Install underlayment perpendicular to slope of roof, with ends and edges weather lapped minimum 4 inches, stagger end laps of each consecutive layer, nail in place, and weather lap minimum 4 inches over eave protection.
- C. Weather lap and seal watertight with plastic cement any items projecting through or mounted on roof.

3.5 INSTALLATION - VALLEY PROTECTION

- A. Install valley protection in accordance with SMACNA (ASMM).

3.6 INSTALLATION - METAL FLASHING AND ACCESSORIES

- A. Weather lap joints minimum 2 inches and seal weather tight with plastic cement.
- B. Secure in place with nails and conceal fastenings.
- C. Items Projecting Through or Mounted on Roofing: Flash and seal weather tight with plastic cement.

3.7 INSTALLATION - SHINGLES

- A. Install shingles in accordance with manufacturer's instructions manufacturer's instructions and NRCA (RM) applicable requirements.
 - 1. Fasten individual shingles using two nails per shingle, or as required by manufacturer and local building code, whichever is greater.
 - 2. Fasten strip shingles using four nails per strip, or as required by manufacturer and local building code, whichever is greater.
- B. Place shingles in straight coursing pattern with 5 inch weather exposure to produce double thickness over full roof area, and provide double course of shingles at eaves.
- C. Project first course of shingles 3/4 inch beyond fascia boards.
- D. Extend shingles 1/2 inch beyond face of gable edge fascia boards.
- E. Complete installation to provide weather tight service.

3.8 PROTECTION

- A. Do not permit traffic over finished roof surface.

END OF SECTION