

**SECTION 07 3113**  
**ASPHALT SHINGLES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

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

**1.02 REFERENCE STANDARDS**

- A. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2009.
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2015a.
- C. ASTM D3161/D3161M - Standard Test Method for Wind-Resistance of Steep Slope Roofing Products (Fan-Induced Method); 2014.
- D. ASTM D3462/D3642M - Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced With Mineral Granules; 2010a.
- E. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free; 2007 (Reapproved 2012)e1.
- F. ASTM D4869/D4869M - Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing; 2015.
- G. NRCA MS104 - The NRCA Steep Roofing Manual; National Roofing Contractors Association; 2001, Fifth Edition, with interim updates.
- H. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association; 2012.

**1.03 SUBMITTALS**

- A. Product Data: Provide data indicating material characteristics.
- B. Samples: Submit two samples of each shingle color indicating color range and finish texture/pattern; for color selection.
- C. Manufacturer's Installation Instructions: Indicate installation criteria and procedures.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.  
~~1. Extra Shingles: 50 sq ft (\_\_\_\_ sq m) of each type and color.~~

**1.04 QUALITY ASSURANCE**

- A. Perform Work in accordance with the recommendations of NRCA Steep Roofing Manual.

**1.05 FIELD CONDITIONS**

- A. Do not install shingles or eave protection membrane when surface temperatures are below 45 degrees F (7 degrees C).

**1.06 WARRANTY**

- A. Material Warranty: Provide shingle manufacturer's standard limited warranty agreeing to replace material that shows manufacturing defects within 25 after installation, (prorated after 5 years), 10 year replacement for algae cleaning period, 10 year discoloration period.
- B. System Warranty: Provide manufacturer's system warranty agreeing to repair or replace roofing that leaks or is damaged due to wind (60 MPH max) or other natural causes.
- C. Installation Warranty: Provide installer's warranty agreeing to repair or replace roofing that leaks or is damaged due to workmanship for a period of 5 years.

## **PART 2 PRODUCTS**

### **2.01 SHINGLES**

- A. Asphalt Shingles **MAXIMUM SPECIFICATION:** Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462/D3642M; Class A fire resistance.
  - 1. Basis of Design: GAF Timberline or Owens Corning Duration Series
  - 2. Wind Resistance: Class F, when tested in accordance with ASTM D3161/D3161M.
  - 3. Warranted Wind Speed: 130 mph (\_\_\_\_ km/h).
  - 4. Self-sealing type.
  - 5. Style: Square.
  - 6. Color: To be selected from Manufacturer's standard colors available.

### **2.02 SHEET MATERIALS**

- A. Eave Protection Membrane: Asphalt-saturated organic roofing felt, unperforated, complying with ASTM D226/D226M, Type II ("No.30").
- B. Underlayment: Asphalt-saturated organic felt underlayment, complying with ASTM D4869, minimum 13 lb/100 sq ft (635 g/sq m) (Type II).
- C. Flexible Flashing: Self-adhering polymer-modified asphalt sheet complying with ASTM D1970/D1970M; 40 mil (1 mm) total thickness; with strippable treated release paper and polyethylene sheet top surface.

### **2.03 ACCESSORIES**

- A. Nails: Standard round wire shingle type, of hot-dipped zinc coated steel, 10 wire gage, 0.1019 inch (2.59 mm) shank diameter, 3/8 inch (9.5 mm) head diameter, of sufficient length to penetrate through roof sheathing or 3/4 inch (19 mm) into roof sheathing or decking.
- B. Plastic Cement: ASTM D4586/D4568M, asphalt roof cement.
- C. Ridge Vents: Plastic, extruded with vent openings that do not permit direct water or weather entry; flanged to receive shingles; \_\_\_\_\_ manufactured by \_\_\_\_\_.

### **2.04 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.
  - 1. Form sections square and accurate to profile, in maximum possible lengths, free from distortion or defects detrimental to appearance or performance.
  - 2. Hem exposed edges of flashings minimum 1/4 inch (6 mm) on underside.
  - 3. Coat concealed surfaces of flashings with bituminous paint.
- B. Steel Sheet Metal: Prefinished and galvanized steel sheet, 26 gage, 0.0179 inch (0.45 mm) minimum thickness, G90/Z275 hot-dipped galvanized; PVC coated, \_\_\_\_\_ color.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions prior to beginning work.
- B. Verify that deck is of sufficient thickness to accept fasteners.
- C. Verify that roof penetrations and plumbing stacks are in place and flashed to deck surface.
- D. Verify roof openings are correctly framed.
- E. Verify deck surfaces are dry, free of ridges, warps, or voids.

### **3.02 PREPARATION**

- A. Ensure existing roofing is completely removed. Remove all existing roofing, shingles, underlayment, fasteners, and accessories from roof deck.
- B. Inspect existing roof decking for structural damages. Notify Owner of any structural defects or damaged decking. Replace as needed.
- C. Seal roof deck joints wider than 1/16 inch (1.5 mm) as recommended by shingle manufacturer.

- D. At areas where eave protection membrane is to be adhered to substrate, fill knot holes and surface cracks with latex filler.
- E. Broom clean deck surfaces before installing underlayment or eave protection.
- F. Install eave edge flashings tight with fascia boards. Weather lap joints 2 inches (50 mm) and seal with plastic cement. Secure flange with nails spaced \_\_\_\_ inches (\_\_\_\_ mm) on center.

### **3.03 INSTALLATION - EAVE PROTECTION MEMBRANE**

- A. Install eave protection membrane from eave edge to minimum 4 ft (1200 mm) up-slope beyond interior face of exterior wall.
- B. Install eave protection membrane in accordance with manufacturer's instructions.

### **3.04 INSTALLATION - UNDERLAYMENT**

- A. Underlayment At Roof Slopes Up to 4:12 (At Roof Slopes Up to 1:3): Install two layers of underlayment over area not protected by eave protection, with ends and edges weather lapped minimum 4 inches (100 mm). Stagger end laps of each consecutive layer. Nail in place.
- B. Underlayment At Roof Slopes Greater Than 4:12 (At Roof Slopes Greater Than 1:3): Install underlayment perpendicular to slope of roof, with ends and edges weather lapped minimum 4 inches (100 mm). Stagger end laps of each consecutive layer. Nail in place. Weather lap minimum 4 inches (100 mm) over eave protection.
- C. Items projecting through or mounted on roof: Weather lap and seal watertight with plastic cement.

### **3.05 INSTALLATION - VALLEY PROTECTION**

- A. Install valley protection in accordance with SMACNA (ASMM), Detail \_\_\_\_.
- B. Install flexible flashing in accordance with manufacturer's instructions.
- C. At Exposed Valleys: Install minimum 36 inches (900 mm) wide roll roofing with mineral surface side up over first layer of protection, centered. Apply a 4 inch (100 mm) wide band of lap cement along each edge of first, press roll roofing into cement, and nail in place minimum 18 inches (450 mm) on center, 1 inch (25 mm) from edges.

### **3.06 INSTALLATION - METAL FLASHING AND ACCESSORIES**

- A. Weather lap joints minimum 2 inches (50 mm) and seal weather tight with plastic cement.
- B. Secure in place with nails at \_\_\_\_ inches (\_\_\_\_ mm) on center. Conceal fastenings.
- C. Items Projecting Through or Mounted on Roofing: Flash and seal weather tight with plastic cement.

### **3.07 INSTALLATION - SHINGLES**

- A. Install shingles in accordance with manufacturer's instructions.
  - 1. Fasten individual shingles using 2 nails per shingle, or as required by code, whichever is greater.
  - 2. Fasten strip shingles using 4 nails per strip, or as required by code, whichever is greater.
- B. Place shingles in straight coursing pattern with 5 inch (125 mm) weather exposure to produce double thickness over full roof area. Provide double course of shingles at eaves.
- C. Project first course of shingles 3/4 inch (19 mm) beyond fascia boards.
- D. Extend shingles 1/2 inch (13 mm) beyond face of gable edge fascia boards.
- E. Extend shingles on both slopes across valley in a weave pattern and fasten. Extend shingles a minimum of 12 inches (300 mm) beyond valley center line to achieve woven valley, concealing the valley protection.
- F. Cap hips with individual shingles, maintaining 5 inch (125 mm) weather exposure. Place to avoid exposed nails.
- G. After installation, place one daub of plastic cement, one inch (25 mm) diameter under each individual shingle tab exposed to weather, to prevent lifting.

- H. Coordinate installation of roof mounted components or work projecting through roof with weather tight placement of counterflashings.
- I. Complete installation to provide weather tight service.

**END OF SECTION**