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### 073113 - Asphalt Shingles

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## SECTION 07 3113 - ASPHALT SHINGLES

### 1.1 SUMMARY

#### A. Section Includes:

1. Asphalt shingles.
2. Underlayment.
3. Ice and Watershield.

### 1.2 DEFINITION

- #### A. Roofing Terminology:
- See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

### 1.3 PROJECT CONDITIONS

- #### A. Environmental Limitations:
- Do not deliver or install asphalt shingles until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by GAF Deck Armor.

### 1.4 ORGANIC-FELT-REINFORCED ASPHALT SHINGLES

- #### A. Multitab-Strip or Architectural Asphalt Shingles:
- ASTM D 225, organic-felt reinforced, mineral-granule surfaced, and self-sealing; complying with requirements in ASTM D 3161 for wind resistance.

#### 1. Manufacturers:

- #### a. Submittals will be considered from the following manufacturers:
- (Fiberglass shingles may be used only with permission of owner and permission must be applied for in writing.)

- 1) Bird.
- 2) BP.
- 3) CertainTeed Corporation.
- 4) GAF Materials Corporation.
- 5) Georgia Pacific.
- 6) IKO.

2. Tab Arrangement: Three tabs, regularly spaced.
3. Strip Size: Manufacturer's standard.

4. Algae and Fungus Resistance: Granules treated to remain free of algae and fungus growth and discoloration for a period of no less than 5 years.
5. Color and Blends: As selected by the University from manufacturer's full range.

B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

#### 1.5 UNDERLAYMENT MATERIALS

A. Felt: ASTM D 226 or ASTM D 4869, Type I, asphalt-saturated organic felts, nonperforated.

B. Self-Adhering Sheet Underlayment, Polyethylene Faced: ASTM D 1970, minimum of 40-mil- (1.0-mm-) thick, slip-resisting, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; cold applied.

1. Manufacturers:

- a. Carlisle Coatings & Waterproofing, Inc.
- b. Grace, W. R. & Co. - Conn.
- c. Henry Company.
- d. Johns Manville.
- e. Owens Corning.
- f. Polyguard Products, Inc.
- g. Protecto Wrap Company.

#### 1.6 ACCESSORIES

A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- (3-mm-) diameter, barbed shank, sharp-pointed, with a minimum 3/8-inch- (9.5-mm-) diameter flat head and of sufficient length to penetrate 3/4 inch (19 mm) into solid wood decking or extend at least 1/8 inch (3 mm) through OSB or plywood sheathing.

1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

C. Felt Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel wire with low-profile capped heads or disc caps, 1-inch (25-mm) minimum diameter.

#### 1.7 METAL FLASHING AND TRIM

A. General: Comply with requirements in Chapter 5, Division 07, Section 076200.

1. Sheet Metal: Copper.

## 1.8 UNDERLAYMENT INSTALLATION

- A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.
- B. Self-Adhering Sheet Underlayment: Install, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated, lapped in direction to shed water. Lap sides not less than 3-1/2 inches (89 mm). Lap ends not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Roll laps with roller. Cover underlayment within seven days.
- C. Metal-Flashed, Open-Valley Underlayment: Install two layers of 36-inch- (914-mm-) wide felt underlayment centered in valley. Stagger end laps between layers at least 72 inches (1830 mm). Lap ends of each layer at least 12 inches (300 mm) in direction to shed water, and seal with asphalt roofing cement. Fasten each layer to roof deck with roofing nails.
  - 1. Lap roof-deck felt underlayment over first layer of valley felt underlayment at least 6 inches (150 mm).

## 1.9 SNOW GUARDS

- A. Install snow guards in strict compliance with the manufacturer's installation and attachment techniques
- B. Space brackets to position fasteners over structural members in accordance with manufacturer's instructions.
- C. Bracket Spacing:
  - 1. Shingle roof: 24" OC secure into structural roof truss with manufacturers approved fasteners) OMG #14 extra heavy duty fastener XHD installed (4) per bracket)

## 1.10 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Chapter 5, Division 07, Section 076200.
  - 1. Install metal flashings according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. Apron Flashings: Extend lower flange over and beyond each side of downslope asphalt shingles and up the vertical surface.
- C. Step Flashings: Install with a headlap of 2 inches (50 mm) and extend over the underlying asphalt shingle and up the vertical surface. Fasten to roof deck only.

- D. Open-Valley Flashings: Install centered in valleys, lapping ends at least 8 inches (200 mm) in direction to shed water. Fasten upper end of each length to roof deck beneath overlap.
- E. Rake Drip Edges: Install rake drip edge flashings over underlayment and fasten to roof deck.
- F. Eave Drip Edges: Along all eaves and rakes drip edges to be minimum 0.024" mill finish aluminum sheet, brake formed to provide 5" roof rack flange, and 1 1/2" fascia flange with 3/8" drip at lower edge. Furnish in 8' or 10' lengths.
  - 1. Install eave drip edge flashings below underlayment and fasten to roof sheathing.
- G. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

#### 1.11 ASPHALT SHINGLE INSTALLATION

- A. General: Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. All shingles must be installed with (6) six nails per shingle, no closer than 1" from the edge of the shingles, and must be in compliance with the manufacturer's guidelines.
- C. Pneumatic nailing may be used, provided a regulated air distribution system to regulate and provide consistent air pressure to all pneumatic nail guns is used. Air pressure and/or depth gauge must be monitored, and adjusted to meet roofing manufacturer's requirements and to provide nailing consistency throughout the project.
- D. Nails shall not be over driven, under driven, or installed at an angle. Any shingle installed with any single or combination of these issues shall be removed and a new shingle shall be installed properly in its place.
- E. Any shingle that is installed with any deviation will be deemed unacceptable and shall be removed and a new shingle shall be installed properly in its place.
- F. Any damaged shingles ie: scuffed shingles in travel areas shall be removed and a new shingle shall be installed properly in its place.
- G. Staples are not allowed.
- H. All removed/replaced shingles must be removed from site.
- ~~B. Only hand nailing permitted. Compressor nailing or stapling may be used only with permission of owner and permission must be applied for in writing.~~
- ~~C. Final Adjustment: Replace any damaged shingles (especially scuffed fiberglass shingles in travel areas) and remove debris from site.~~

