SECTION 07 31 13 - ASPHALT SHINGLES

1.1 SECTION INCLUDES

A. Qualitative requirements for roof shingles, underlayment, and fastening products and methods.

1.2 QUALITY ASSURANCE

A. All products used must be approved by shingle manufacturer prior to use.

B. Exterior Fire-Text Exposure: Class A; ASTM E108 or UL 790, for application and roof slopes indicated.

1.3 WARRANTY

A. Special Warranty

1. Material Warranty Period: 40 years from date of contract completion, prorated, with first 5 years nonprorated.
2. Wind-Speed Warranty Period: Resist blow-off or damage caused by wind speeds up to 80 m.p.h. for a minimum 5 years from date of contract completion.

1.4 SHINGLES

A. Laminated-Strip Asphalt Shingles: ASTM D3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.

B. Hip roofs require special consideration.

1.5 ROOFING ACCESSORIES

A. Felt Underlayment.

B. Self-Adhering Sheet Underlayment.

1.6 METAL TRIM AND FLASHING

A. Perimeter Edge Metal: Provide one of the following metal types and thickness:

1. 26 gauge (0.019 inch thick), prefinished galvanized steel
2. 0.032 inch thick, prefinished aluminum

B. Penetration Flashings: Provide one of the following metal types and thickness:

1. 26 gauge (0.019 inch thick), prefinished galvanized steel or stainless steel.
2. 0.032 inch thick, prefinished aluminum.
3. 16 ounce (0.022 inch thick), copper.

C. Valley Construction (Open Valleys): Provide one of the following metal types and thickness:

1. 26 gauge (0.019 inch thick), prefinished galvanized steel or stainless steel.
2. 0.032 inch thick, prefinished aluminum.
3. 16 ounce (0.022 inch thick), copper.

D. Apron, Step, Cricket, or Backer Flashings: Provide one of the following:

1. 26 gauge (0.019 inch thick), prefinished galvanized steel or stainless steel.
2. 0.032 inch thick, prefinished aluminum.
3. 16 ounce (0.022 inch thick), copper

1.7 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 to roof sheathing with galvanized roofing nails.

LESSONS LEARNED

3.1 The emergence of structural insulated roofing panels and the use of rigid insulation laminated to wood-based sheathing panels as structural roof deck have highlighted ventilation needs. For maintaining warranties, asphalt shingle manufacturers require an unobstructed air space immediately below the roof-deck sheathing. To permit air movement under the roof-deck sheathing, a number of proprietary products

have been developed that use battens as spacers and an added sheathing layer as the asphalt shingle substrate. This air space can be vented with continuous soffit or eave intake vents combined with continuous ridge exhaust vents.

A. Proper ventilation extends the life of shingled roofs by minimizing the temperature differential between the attic air and outside air. It keeps the roof system cool during the hot summer months, preventing premature deterioration and less shingle replacement.

B. Proper ventilation prevents ice damming caused when the heat from inside the building and the sun melts the snow at the ridge. This causes water to run to the eaves and refreeze and the repetition of this process causes ice dams.

C. Proper ventilation provides energy savings in the summertime by cooling the roof sheathing, preventing premature roof deterioration, premature roof replacement, and increased servicing of cooling units due to their excessive use. It prevents heat build-up in unvented systems which radiates downward and increased the demand on cooling systems.

D. Proper ventilation provides energy savings in the wintertime by preventing hot and cold air to interact and cause moisture from condensation that causes soaked insulation, corrosion, and water infiltration.

END OF SECTION