

Installation of Asphalt Shingles on Lower Sloped Roofs

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Asphalt shingles may be used on lower sloped roofs, that is, those with slopes ranging from 2" per foot (2:12) to less than 4" per foot (4:12), but only if special procedures are followed. Never apply shingles on roofs with slopes lower than 2" per foot (2:12).

Use of asphalt shingles on lower slopes can lead to problems since water drains more slowly, creating a greater possibility of water backup and damage from ice dams. Asphalt shingles installed on lower slopes may also be more susceptible to water entry due to wind-driven rain in severe weather events. When applying shingles on lower slopes, the underlayment application methods described below will help ensure that the roof system will perform its intended water-shedding function. Where icing is anticipated at the eaves, refer to ARMA Technical Bulletin "Protecting Against Damage from Ice Dams" for steps to take in addition to those outlined in this bulletin.

There are two methods of applying underlayment for lower slope applications. The first method uses a double-layer underlayment installation of asphalt-saturated felt or synthetic underlayment, as described below.

Apply a strip of underlayment for the first course that is half the width of a full sheet parallel to and starting at the eaves. Starting at the eaves, apply a full-width sheet of underlayment for the second course. Apply the third course of underlayment, overlapping the second course by half the width of a full sheet plus a minimum of 2 inches (51 mm). Overlap all successive courses by half the width of a full sheet plus a minimum of 1 inch (25 mm). End laps shall be a minimum of 4 inches (102 mm) and shall be offset by a minimum of 6 feet (1.8m).

The second method addresses secondary protection of lower sloped roofs with a single layer of self-adhering underlayment, installed and lapped per the underlayment manufacturer's requirements. When an entire roof is covered with self-adhering underlayment, adequate ventilation of the attic space is required. Applying self-adhering underlayment over the entire deck creates a vapor barrier; therefore, the installer must ensure that the ventilation requirements prescribed by the building code are met. See also ARMA's Technical Bulletins entitled "Considerations in Attic Ventilation System Selection" and "Why Ventilation is Important."

Where a lower sloped roof area transitions to a steeper (4:12 or above) sloped roof area, the underlayment applications described above should extend at least 24 inches (610 mm) onto the

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steeper slope roof. Note: The transition between a lower (2:12 to < 4:12) and a steeper (4:12 or above) slope needs special attention due to the potential for water build-up. Consult the shingle and underlayment manufacturers' instructions for additional information.

See ARMA's *Residential Asphalt Roofing Manual* for additional information.

WARNING: Because it is dangerous to walk, climb or work on a roof, ARMA recommends that only trained professionals engage in such activity. If you choose to do so, exercise extreme care, comply with all government safety regulations, and follow all safety work practices, precautions and procedures, including but not limited to manufacturer's instructions, labels, and warnings.

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