

Preventing Damage from Ice Dams

ARMA TECHNICAL BULLETIN

THE FORMATION OF ICE DAMS ON ROOFING STRUCTURES AT THE ROOF EAVES CAUSED BY SNOW or ice conditions is a common occurrence during frigid weather.

Ice dams are typically formed by the repeated thawing and freezing of melting snow or the backing-up of frozen slush in gutters. When they occur, water can be forced beneath the roof shingles and may cause leaks that can result in damage to a structure's ceilings, walls and insulation.

The installation of eaves flashing is the recommended method for preventing such leakage. In climates where icing along the eaves is anticipated (where the average January temperature is 25 degrees F or less), eaves flashing must be installed to ensure maximum protection against ice dam damage. The appropriate selection will depend upon the roof slope and the severity of icing conditions anticipated.

Proper Application Technique

New Construction

Low Slope (2" to 4" per foot): Up to a point at least 24" beyond the interior wall line, overlap each saturated felt underlayment by 19" and cement the horizontal joint over the entire length of each felt. Uniformly apply the asphalt plastic cement at the rate of two gallons per 100 square feet, so that there will be no contact between felts when the application is completed. Press the overlying sheet firmly into the cemented area. The double layer of cemented underlayment serves as the eave's flashing strip. The underlayment should overhang the metal drip edge by 1/4" to 3/8".

For severe icing conditions, follow the same application instructions stated above. Refer to *Figure A*.

Normal Slope (4" per foot or greater): Install a course of smooth, coated roll roofing, of not less than 50 pounds per square, parallel to the eaves. This course should overhang both the underlayment and the metal drip edge by 1/4" to 3/8". Apply the roll roofing flashing strip, ascending from the bottom of the roof, to a point at least 24" beyond the interior wall line. If a second flashing strip is required to reach that point, locate the lap in front of the exterior wall line. Overlap the flashings at least 2" and cement the horizontal joint over its entire length. Side laps should be 12" and cemented. See *Figure B*.

For severe icing conditions, extend the flashing strip to at least 36" beyond the interior wall line and cement it to the underlayment using two gallons per 100 sq. ft. Continue the application as stated above.

Reroofing and Repair

When repairing or reroofing over an existing roof, remove the old roofing to a point at least 24" beyond the interior wall line and follow the severe icing application instructions for the appropriate slope.

Alternative

For both new construction and reroofing, specialty eaves flashing membranes are available. Follow manufacturer's instructions for application of these products.

This article has been developed through the assistance and expertise of the Residential Roofing Committee and the Communications Committee of the Asphalt Roofing Manufacturers Association (ARMA). ARMA is the North American trade association representing the manufacturers and suppliers of bituminous-based asphalt shingle roofing products, roll roofing, built-up roofing (BUR) and modified bitumen roofing products and systems. For more information, phone 301-348-2002.

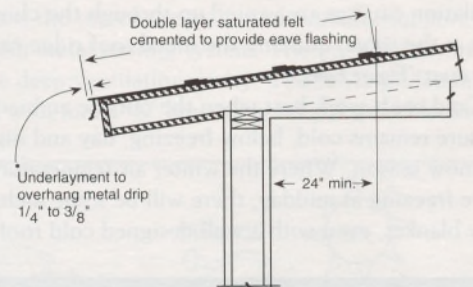


Figure A: Eaves flashing for low slope using asphalt saturated felt

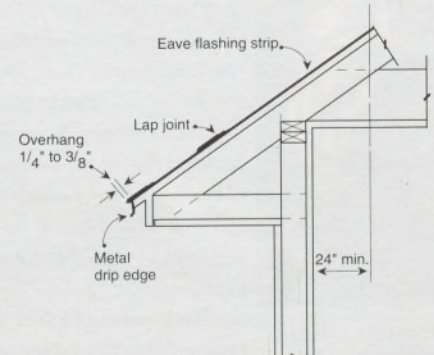


Figure B: Eaves flashing for normal slope using asphalt saturated felt