



ROOFING GUIDELINES FOR BILLINGS, MT

2018 IRC

2825 3rd Ave. N.
Billings, MT. 59101
P 406.657.8271

Jessica Iverson
Building Official

FOLLOW ALL MANUFACTURERS INSTALLATION INSTRUCTIONS on shingle packages for application of product. Follow all instructions from bottom to top of roof, including nailing patterns and depth of nails.

LOCAL BUILDING CODES also require the following for asphalt shingles: Roofs less than 2/12 pitch cannot use standard asphalt shingles; low slope roofing products must be used. Roofs between 2/12 to 4/12 pitch can use standard asphalt shingles but must have two layers of underlayment installed in the following manner: Apply a 19 inch strip of underlayment felt, on top of the ice barrier, parallel to and starting at the eaves fastened sufficiently to hold in place. On top of the 19 inch strip of underlayment felt, parallel and even with the roof edge, apply the standard 36-inch-wide roll of underlayment felt over the 19-inch strip. Successive courses of underlayment shall be overlapped 19 inches so that a double layer of underlayment felt is achieved — overlapped every 19 inches to the ridge. Underlayment shall comply with ASTM D 226 Type I, ASTM D 4869 Type I, or ASTM D 6757. Self-adhering polymer modified bitumen sheet (ice barrier) shall comply with ASTM D 1970. Ice barrier that shall extend from the lowest edges of all roof surfaces to a point at least 24 inches inside the exterior wall line of the building is required. See Illustrations.

DRIP EDGE shall be provided at eaves and gables and shall be fastened to the roof deck at a maximum of 12" on center. Underlayment shall be installed over the drip edge along eaves and under the drip edge up the rake/gable. Adjacent pieces of drip edge shall be lapped at least 2 inches.

VALLEYS shall be lined: Valley linings shall be installed in accordance with the manufacturer's installation instructions before applying shingles. For open valleys (valley lining exposed) lined with metal, the valley lining shall be at least 24 inches wide and corrosion resistant. For closed valleys (valleys covered with shingles) one layer of smooth roll roofing complying with ASTM D 6380, at least 36 inches wide or self-adhering polymer modified bitumen (ice barrier) the continuous length of the valley is allowed.

FLASHING against a vertical sidewall shall be continuous (stepped on the rakes, and continuous on the level plains) and shall be a minimum of 4 inches in height and 4 inches in width and shall direct water away from the vertical sidewall onto



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the roof and/or into a gutter. Where siding is provided on the vertical sidewall, the vertical leg of the flashing shall be continuous under the siding.

VENTALATION R806.2 Minimum vent area. The minimum net free ventilating area shall be 1 /150 of the area of the vented space. (For every 150 sq ft of ventilated space, 1 sq ft (144 sq in) of net free vented area is required.)

Exception: The minimum net free ventilation area shall be 1 /300 of the vented space provided both of the following conditions are met:

1. A Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.
2. Not less than 40 percent and not more than 50 percent of the required ventilating area is provided by ventilators located in the upper portion of the attic or rafter space. Upper ventilators shall be located not more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically. The balance of the required ventilation provided shall be located in the bottom one-third of the attic space. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.

How to meet ice and water requirements

IRC Section R905.2.7.1 requires an ice barrier be installed from the lowest edge of the roof surface to a point at least 24 inches inside the exterior wall line. The manufacturer's instructions require that the ice barrier be placed either directly on roof sheathing or over a previously laid ice barrier. The ice barrier may not be placed on tar paper, valley steel, or any other underlayment.

Drip Edge: Code also requires that this ice barrier be placed over the top of the drip edge along the eaves and the drip edge be placed over the underlayment on the gables.

Roof Sheathing for Residential Asphalt Roofs

Solid sheathing is required for asphalt shingles. Existing roofs with board sheathing (such as 1 x 6) may be used provided the boards are tight, thereby forming a solid surface. The sheathing must also meet the roofing manufacturer's installation instructions when those requirements are more restrictive. Additionally, any existing roof deck must be in good condition. Any deteriorated sheathing must be replaced. Roof sheathing must normally be 7/16 inch or greater. There is an allowance for 3/8 inch sheathing when the edges are blocked. Since this is not normal practice, 7/16 is the most common thickness. Space sheathing is permitted for wood shake and wood shingle roofs.



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Asphalt Shingles

Overlay – You may overlay one layer of asphalt shingles if the existing roof is not water soaked or deteriorated. When an overlay is not allowed the roof must be stripped of all layers.

Slope – 2/12 to 4/12 requires two layers of underlayment. 4/12 and over requires one layer of underlayment. Under 2/12 shingles are not allowed.

Ice Barrier – Required

Drip Edge – Required

Manufacturer's Installation Instructions – When the manufacturer's instructions require an installation in excess of the code requirements the manufacturer's instructions shall be followed.

International Residential Code – All other requirements as found in the IRC shall be followed. The details in the IRC take precedence over anything written or implied herein. The IRC is considered the minimum standard; the owner, applicant, and/or contractor should keep this in mind when making a roof installation.

Inspections

The Building Division requires inspections on all aspects of roofing installations. A Mid-Roof inspection is required and should be requested after ice barrier, underlayment, flashing, counter flashing, and drip edge have been installed, but not entirely covered by shingles. A few rows of shingles should be installed while still leaving other components exposed for inspection. Roofing inspections must be requested the day before by emailing inspections@billingsmt.gov to ensure an inspection can be scheduled.