



**CITY OF DES MOINES
PERMIT & DEVELOPMENT CENTER**

602 ROBERT D RAY DRIVE
DES MOINES, IA 50309
PHONE: 515-283-4200
WWW.DSM.CITY

Residential Asphalt Shingle Requirements

Residential (one & two family dwellings) installations shall comply with Chapter 9 of the 2021 edition of the IRC.

Commercial installations shall comply with Chapter 15 of the 2021 edition of the IBC.

REROOFING DOES NOT REQUIRE A BUILDING PERMIT.

If Sheathing or rafters are repaired or replaced a building permit is required.

R908.3.1.1 Roof recover not allowed. A roof recover shall not be permitted where any of the following conditions occur:

1. Where the existing roof or roof covering is water-soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as base additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement, or asbestos cement tile.
3. Where the existing roof has two (2) or more applications of any type of roof covering.
4. Where manufacturer's installation instructions prohibit roofrecover.

IRC Section R905.2 ASPHALT SHINGLE APPLICATION

COMPONENT

INSTALLATION REQUIREMENT

1. Roof slope:

Asphalt shingles shall only be used on roof slopes of two units vertical in 12 units horizontal (2:12) or greater. For roof slopes from two units vertical in 12 units horizontal (2:12) up to four units vertical in 12 units horizontal (4:12) double underlayment application is required.

2. Deck or Sheathing requirements:

Asphalt shingles shall be fastened to solidly sheathed roof decks. Solidly sheathed decks are those of wood deck boards, minimum 3/8 inch plywood, minimum 7/16 OSB, sheathing spaced a maximum of 1/4 inch.

3. Underlayment:

Underlayment shall conform with ASTM D226, D1970, D4869. And D6757

For roof slopes from two units vertical in 12 units horizontal (2:12), up to four units vertical in 12 units horizontal (4:12):

Underlayment shall be two layers applied in the following manner. apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eave, apply 36-inchwide sheets of underlayment, overlapping successive sheets 19 inches. Distortions in the underlayment shall not interfere with the ability of the shingles to seal. End laps shall be 4 inches and shall be offset by 6 feet.

For roof slopes from four units vertical in 12 units horizontal (4:12) or greater:

Underlayment shall be applied shingle fashion, parallel to and starting from the eave and lapped 2 inches, Distortions in the underlayment shall not interfere with the ability of the shingles to seal. End laps shall be 4 inches and shall be offset by 6 feet.

Required Ice Barrier:

An ice barrier shall be installed for asphalt shingles, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles and wood shakes. The ice barrier shall consist of not fewer than two layers of *underlayment* cemented together, or a self-adhering polymer-modified bitumen sheet shall be used in place of normal *underlayment* and extend from the lowest edges of all roof surfaces to a point not less than 24 inches (610 mm) inside the exterior wall line of the building.

On roofs with slope equal to or greater than eight units vertical in 12 units horizontal (67-percent slope), the ice barrier shall also be applied not less than 36 inches (914 mm) measured along the roof slope from the eave edge of the building.

Exception: Ice barrier shall not be required for detached accessory structures not containing conditioned floor area.

4. Application:
Attachment

Asphalt shingles shall have the minimum number of fasteners required by the manufacturer and Section R905.2.6. Asphalt shingles shall be secured to the roof with not less than four fasteners per strip shingle or two fasteners per individual shingle. Where the roof slope exceeds 21 units vertical in 12 units horizontal (20:12), fasteners shall be installed in accordance with manufacturer's installation instructions.

Fasteners

Galvanized, stainless steel, aluminum or cooper roofing nail, minimum 12-gage (0.015 inch) shank with a minimum 3/8 inch diameter head. Fasteners shall be long enough to penetrate the sheathing ¼ inch or through the thickness of the sheathing.

Flashing

Base and cap flashing. Base flashing shall be of either corrosion-resistant metal of minimum nominal 0.019-inch thickness of mineral surface roll roofing weighing a minimum of 77 pounds per 100 square feet. Cap flashing shall be corrosion-resistant metal minimum nominal 0.019-inch thickness.

Valleys

Valley linings of the following types shall be permitted:

1. For open valley (valley lining exposed) lined with metal, the valley lining shall be at least 24 inches wide and of an approved corrosion resistant metal.
2. For open valley, valley lining of two plies of mineral surfaced roll roofing, complying with ASTM D3909 or ASTM D6380 Class M, shall be permitted. The bottom layer shall be 18 inches and the top layer a minimum of 36 inches wide.
3. For closed valleys (valley covered with shingles), valley lining of one ply of smooth roll roofing complying with ASTM D 6380 Class S Type III, Class M Type II, or ASTM D 3909 and at least 36 inches wide or valley lining as described in Items 1 and 2 shall be permitted.

Specialty underlayment complying with ASTM D 1970 may be used in lieu of the lining material.

Crickets and Saddles

A cricket or saddle shall be installed on the ridge side of any chimney or penetration more than 30 inches (862mm) wide as measured perpendicular to the slope. Cricket or saddle coverings shall be sheet metal or of the same material as the roof covering and / or shall be installed in accordance with manufacturer's installation instructions.

Sidewall flashing

Flashing against a vertical sidewall shall be by the continuous or step-flashing method and shall be not less than 4 inches in height and 4 inches in width.

Other flashing

Flashing against a vertical front wall, soil stack, vent pipe, or chimney flashing, shall be applied according to the asphalt shingle manufacturer's printed instructions.

