

# Roofing

## An Overview of Permit and Code Requirements

### City of Hopkins Inspections Division

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*Notice: This handout is intended only as a guide to the subject matter covered herein and is based in part on the 2015 Minnesota State Building Code. While every attempt has been made to insure the correctness of this handout, no guarantees are made to its accuracy or completeness. Responsibility for compliance with applicable codes and ordinances falls on the owner or contractor. For specific questions regarding code requirements, refer to the Minnesota Building Code or contact us.*

## Getting Started: Permits & Inspections

**Building permits are required for all roofing projects.** Permits can be obtained from the Inspections Division on the main floor of City Hall at 1010 1st Street South. Permits are generally issued at the time of application.

**An inspection during the course of the work and a final inspection are required.** You will be given an inspection record card with your permit that includes the inspections you need to arrange and a phone number for the Inspections Division.

**All contractors** engaged in roofing work must have a state contractor's license and show proof of the license to obtain a permit. Specific questions regarding contractor licenses should be directed to the Minnesota Department of Commerce, 1-800-342-5354 or 651-284-5069.

The scope of this handout will be limited to the installation of four types of roofing materials:

- **Asphalt Shingles**
- **Mineral-Surfaced Roll Roofing**
- **Wood Shingles**
- **Wood Shakes**

## Re-Roofing

- New roofing may be installed over an existing roof but is **limited to a total of two layers**. Existing flashing in good condition can be reinstalled. Any sheathing that is replaced must be installed per code.
- In all cases, the roof structure must be capable of supporting the roof covering system and any loads that will be encountered during the installation of the new roof.

## General Requirements

### Approved Packaging

All roof covering materials must be delivered in packages bearing the manufacturers identifying marks and approved testing agency labels when required.

### Sheathing

- Roof decks must be solidly sheathed for asphalt shingles or mineral-surfaced roll roofing. Solid sheathing may be plywood, OSB, or 1-inch nominal boards.
- Wood shingles and shakes may be applied over solid or spaced sheathing.

### Roof Edging

Roof edging is not required by the code. Some manufacturers may require it.

### Ventilation

Enclosed attics must be provided with ventilation as follows:

- For attics without ceiling vapor barriers, 1 square foot of net free ventilating area should be provided for each 150 square feet of attic area.
- For attics with vapor barriers or without ceiling vapor barriers and having 50–80% of the ventilating area provided by ventilators located in the upper portion of the space to be ventilated and at least 3 feet above the eave vents and the balance of the ventilation provided in the eave vents, ventilation may be 1 square foot of net free ventilating area for each 300 square feet of attic area.
- Ventilation openings must be provided with corrosion resistant mesh with openings of  $\frac{1}{8}$ " to  $\frac{1}{4}$ ".



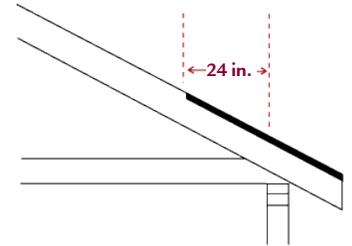
### Ice And Water Barriers

An ice and water barrier is required on all roofs except for detached accessory buildings (garages).

The barrier may be at least two layers of underlayment cemented together or a self-adhering polymer modified bitumen sheet. There are several manufacturers who make materials specifically for this requirement that are marketed under differing trade names.

Existing ice barrier membrane may remain if it is adhered to the roof deck.

The ice and water barrier must extend from the edge of the eaves to a point 24 inches inside the warm side of exterior wall line of the building. (See illustration at right.)



Ice and water barrier is not required in valleys.

### Flashing

Flashing is required at all wall and roof intersections, wherever there is a change in roof slope or direction, and around roof openings.

When flashing is metal, it must be corrosion resistant metal with a thickness of 0.019" or more (No. 26 galvanized sheet).

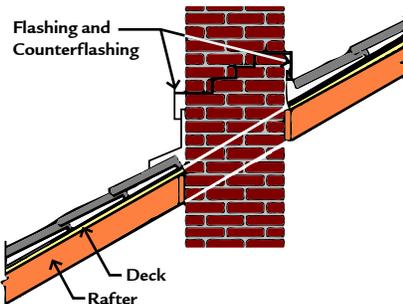
### Valley Lining

Valleys must be lined in accordance with the shingle manufacturers written instructions. In addition, valleys may be of any of the following:

- For open valleys lined with metal, the valley lining must be at least 24" wide and of galvanized steel of at least 26 gage or other approved materials.
- For open valleys, two plies of roll roofing may be permitted. The bottom layer must be at least 18" wide and the top layer at least 36" wide.
- For closed valleys (valleys 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" wide or one of the two methods previously listed may be used.

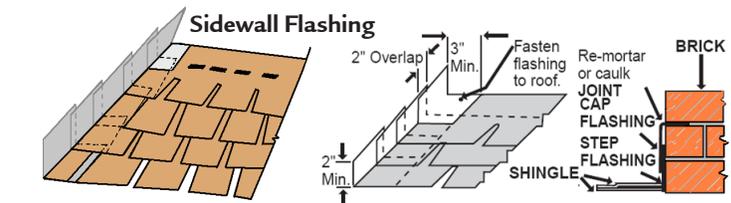
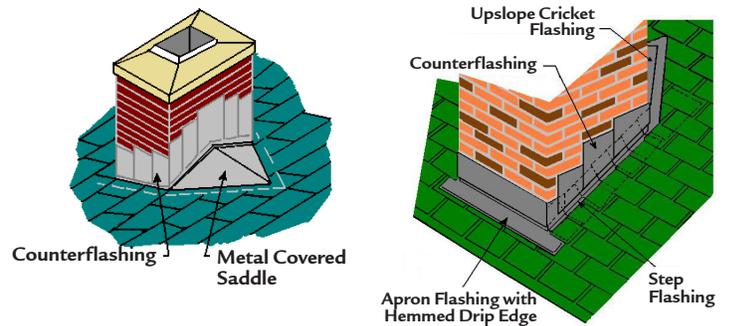
### Crickets or Saddles

Crickets or saddles are required on the ridge side of any chimney or penetration greater than 30 inches wide.



Cricket or saddle required if chimney is more than 30" wide

Cricket or saddle coverings must be of sheet metal or of the same material as the roof covering.

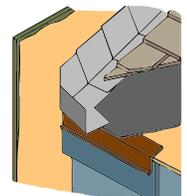


Flashing against a vertical sidewall must be by the step-flashing method.

Flashing against vertical front walls, soil stacks, vent pipes, and chimney flashing must be in accordance with the asphalt shingle manufacturer's printed instructions.

### Kick-out Flashing R903.2

Kick-out flashing/diverters must be installed to divert the water away from where the eve of a sloped roof intersects a vertical sidewall.



The kick-out flashing must be a minimum of 2 1/2" long. If using metal flashing, it must be corrosion resistant with a thickness of not less than 0.019 inch (No. 26 galvanized sheet).

Existing buildings: If you are simultaneously re-roofing and re-siding existing buildings and structures, kick-out flashings are required. However, if you are only re-roofing, kick-out flashings are not required.



# Requirements for Specific Roofing Materials

## Asphalt Shingles R905.2

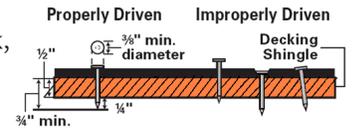
Asphalt shingles may only be used on roof slopes of two units vertical in 12 units horizontal (2:12) or greater. All asphalt shingles must be either self-sealing or interlocking.

### Underlayment

- For roof slopes from 2:12 to 4:12, double underlayment is required. Underlayment must conform to ASTM D 226 Type I, ASTM D 4869 Type I, or ASTM 6757.
- For roof slopes of less than 4:12, two layers of underlayment are required and must be applied in the following manner.
- For slopes of 4:12 and greater, underlayment must be applied shingle fashion. Laps must be a minimum of

2 inches. End laps must be offset by at least 6 feet.

**Fasteners** for asphalt shingles must be galvanized steel, stainless steel, aluminum, or copper roofing nails, minimum 12 gauge shank with a minimum 3/8" diameter head and of a length to penetrate through the roofing materials and a minimum of 3/4" inch into roof sheathing or when roof sheathing is less than 3/4" thick, the fastener shall penetrate through the sheathing.



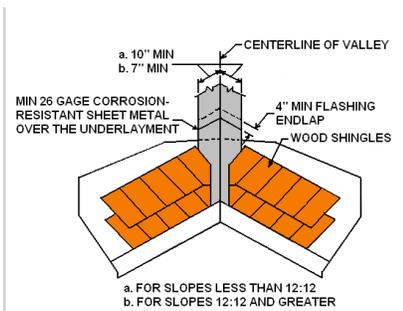
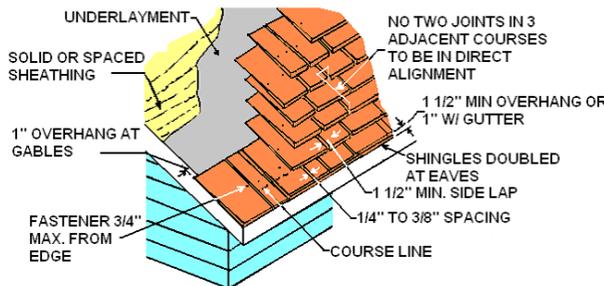
For normal application, strip shingles must be fastened with a minimum of four nails.

For interlocking shingles, two nails are required.

## Wood Shingles R905.7

Wood shingles must be:

- installed on slopes that are at least 3:12 or greater
- made of a naturally durable wood of grades 1, 2, or 3 approved by the Cedar Shake and Shingle Bureau. A label of an approved grading or inspection bureau or agency must identify each bundle of shingles.
- installed in accordance with the manufacturer's instructions and the following:
  - Wood shingles must be laid with a side lap of not less than 1 1/2" between joints in courses and no two joints in any three adjacent courses shall be in direct alignment.
  - Spacing between shingles may not be less than 1/4" nor more than 3/8".



### Weather exposure and roof slope

Weather exposure may not exceed the following:

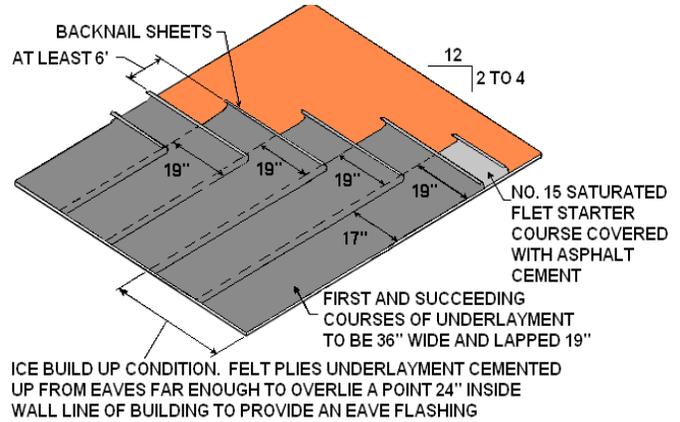
Material	Length	Grade	Exposure (inches)	
			3:12 pitch to < 4:12	4:12 pitch or steeper
Shingles of naturally durable wood	16"	No. 1	3 3/4	5
		No. 2	3 1/2	4
		No. 3	3	3 1/2
Shingles of naturally durable wood	18"	No. 1	4 1/4	5 1/2
		No. 2	4	4 1/2
		No. 3	3 1/2	4
Shingles of naturally durable wood	24"	No. 1	5 3/4	7 1/2
		No. 2	5 1/2	6 1/2
		No. 3	5	5 1/2



### Mineral Surfaced Roll Roofing *R905.5*

Mineral surfaced roll roofing may only be applied on roofs with a slope of 1:12 or greater. Mineral surface roll roofing must conform to ASTM D6380 Class M, or D 3909.

Mineral surface roll roofing must be installed in accordance with the manufacturer's installation instructions.



### Wood Shakes *R905.8*

Wood shakes must be installed on roof slopes of 3:12 or greater and must be installed in accordance with the manufacturer's installation instructions and the code.

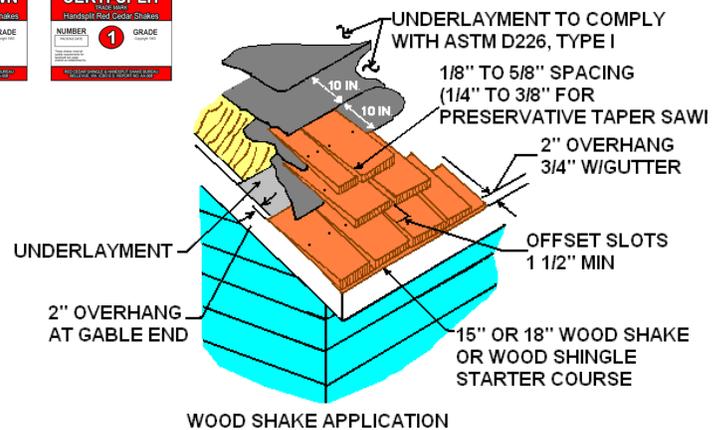
Wood shakes must be laid with a side lap of not less than 1½ inches between joints in adjacent courses.

Spacing between shakes in the same course must be between ⅛ inch and ⅝ inch for shakes and taper sawn shakes of naturally durable wood and ¼ inch and ⅜ inch for preservative taper sawn shakes.

The starter course at the eaves must be doubled and the bottom layer may be 15-inch, 18-inch, or 24-inch wood shakes or shingles. Fifteen-inch or 18-inch wood shakes may be used for the final course at the ridge.

Shakes must be interlaid with 18-inch-wide strips of No. 30 felt shingled between each course in such a manner that no felt is exposed to the weather by positioning the lower edge of each felt strip above the butt end of the shake it covers a distance equal to twice the weather exposure. Underlayment must comply with ASTM D 226, Type I.

**Fasteners** for wood shakes must be corrosion-resistant with a minimum penetration of ½" into the sheathing. For sheathing less than ½" in thickness, the fastener shall extend through the sheathing. A minimum of two fasteners per shake are required. Fasteners must be positioned not more than 1 inch from each edge and not more than 2 inches above the exposure line.



### Weather exposure and roof slope

Weather exposure may not exceed the following:

Material	Length	Grade	Exposure 4:12 pitch or steeper
Shakes of naturally durable wood	18"	No. 1	7 ½"
	24"	No. 1	10"
Preservative-treated taper sawn shakes of naturally durable wood	18"	No. 1	7 ½"
	24"	No. 1	10"
	18"	No. 2	5 ½"
	24"	No. 2	7 ½"
Taper-sawn shakes of naturally durable southern yellow pine	18"	No. 1	7 ½"
	24"	No. 1	10"
	18"	No. 2	5 ½"
	24"	No. 2	7 ½"

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