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## Scope

The scope of this handout will be limited to Residential Asphalt, Fiberglass and Metal Roofing Panels. For other materials or commercial roofing projects, please contact a member of the Building Department Staff.

## Permits and Licenses

A Building Permit is required for all roofing projects beyond simple repairs. Contact the Building Official with questions about what constitutes a repair. All contractors engaged in roofing work must have a state contractor's license and show proof to obtain the permit. Specific questions regarding contractor licenses should be directed to the Minnesota Department of Labor and Industry at (651) 284-5069

## Existing Roofs

Current Building Code does not allow multiple layers of roofing material. Consequently, all projects must begin by removing the existing roof system. Roof decks shall be made to accept the new layer of roofing in accordance with the chosen roofing manufacturer.

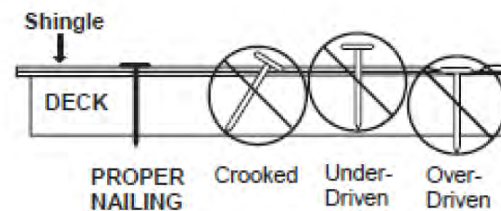
## Required Inspections

(Minimum 2 day notice required for inspections)

Two (2) separate inspections are required for each roofing permit. An underlayment/ ice barrier inspection is required prior to covering; a final inspection is required upon completion. Pictures will only be allowed with prior approval.

## Fasteners/ Wind rating

Fastener type and spacing shall be in conformance with manufacturer requirements. Wind rating and fastening schedule will be verified on site prior to final approval.



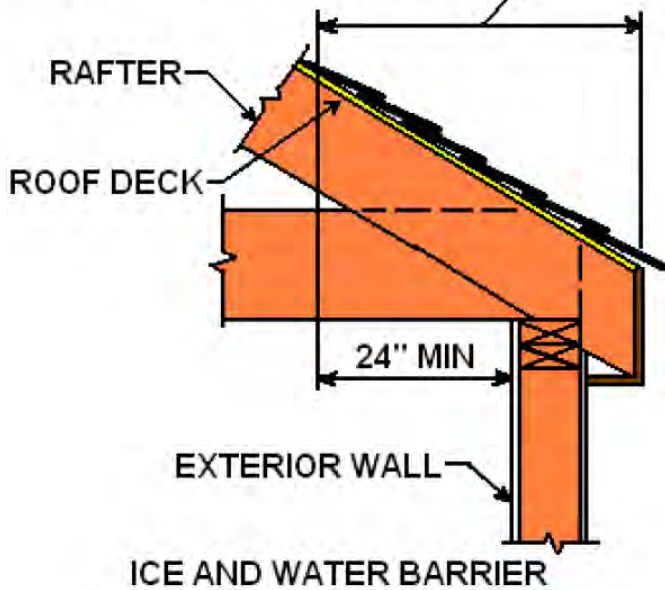
## Roof pitch

Asphalt shingles shall not be installed on roofs with less than a 2:12 pitch and require special application procedures for less than 4:12 pitch. Manufacture instructions supersede all other requirements.

## Ice and Water Barrier

An *Ice Barrier* in compliance with R905 is required on all roofs except unheated detached accessory buildings. The barrier may be two layers of underlayment cemented together or a self-adhering polymer modified bitumen sheet. There are several manufactures that make materials specifically for this requirement marketed under differing trade names. The Ice Barrier must extend from the edge of the eaves to a point 24 inches inside the exterior wall line of the building.

2 LAYERS OF UNDERLAYMENT  
CEMENTED TOGETHER OR  
WATERPROOFING MEMBRANE



ICE AND WATER BARRIER

Valley linings shall be installed per the manufacture's requirements and chapter 9 of the Minnesota State Residential Code.

## Valley Flashing

When existing flashing is no longer serviceable, it shall be replaced. Valley flashing shall consist of not less than 26-Gauge galvanized sheet metal or other code approved valley lining material. The flashing shall extend at least 12 inches from the center line each way. Sections of flashing shall have an end lap of not less than four inches. Alternately, the valley may consist of woven shingles or closed-cut style applied in accordance with the manufacturer's instructions.

## Ventilation

Ventilation of enclosed attics and enclosed rafter spaces is required. Ventilation openings must be provided with corrosion-resistant mesh with openings between 1/8" to 1/4". If necessary, additional roof and soffit vents must be installed so that for every 300 square feet of attic area there is at least 1 square foot of ventilation. At least 50 percent but not more than 80 percent, shall be in the upper portion of the roof.

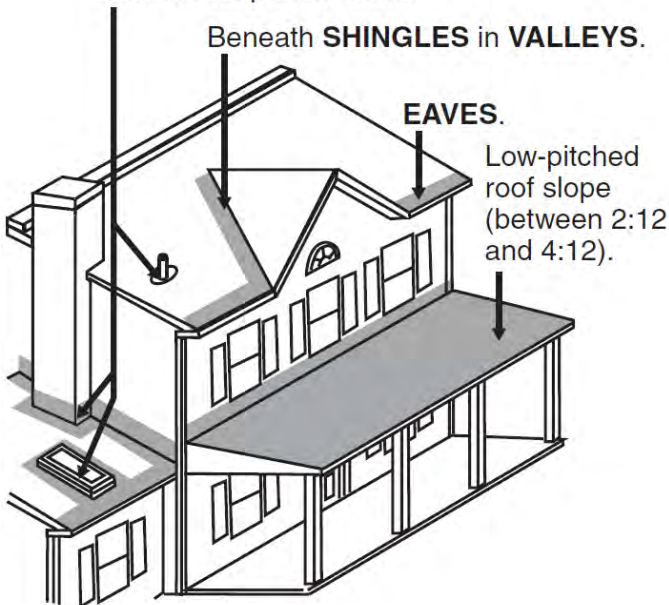
## Where to use ice protection

At concealed **FLASHING**  
around roof penetrations.

Beneath **SHINGLES** in **VALLEYS**.

**EAVES.**

Low-pitched  
roof slope  
(between 2:12  
and 4:12).



## Valley Underlayment

## Exhaust Vents

Care should be taken to ensure that kitchen and bathroom exhaust fan ducts are connected to the correct roof termination with no openings into the attic. The exhaust vents shall be installed the same as other attic vents and vent pipe flashings. When re-roofing around furnace flues, take care not to dislodge the joints of the flue pipe within the attic or within interior chases which the pipe may pass through. If in doubt, consult a licensed mechanical contractor.

## Roof Edging, Gutters, Drainage

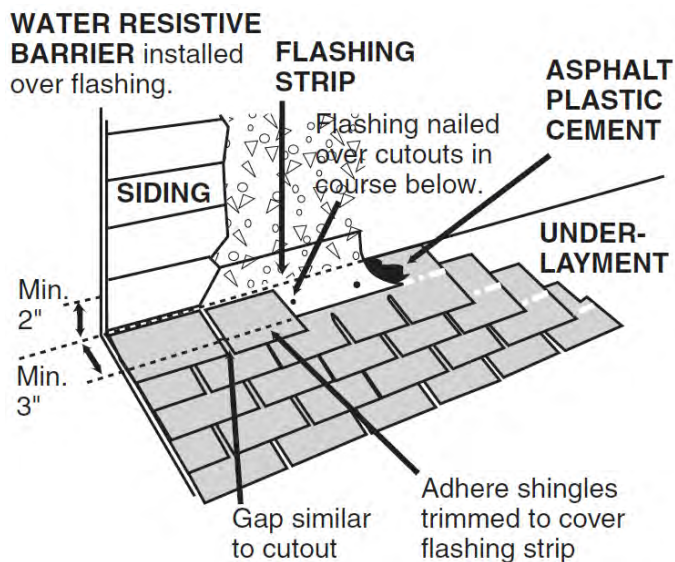
Roof edging and gutters are not mandated by Code. Application of roof edging must be in accordance with the shingle manufacturers written instructions. Gutters may be useful in directing water away from buildings reducing erosion, settlement and wet basements. Extensions on downspouts should extend far enough from the building to result in positive drainage.



## Vertical Wall Flashing

Apply shingles up the roof until a course must be trimmed to fit at the base of the vertical wall. Plan to adjust the exposure slightly (and evenly) in the previous courses, so that the last shingle is at least 8 inches wide (vertically). This allows a minimum 5 inch exposure of the top course and a 3 inch head lap.

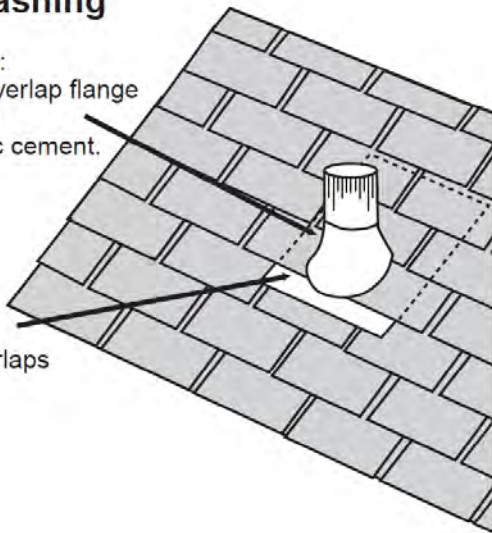
The flashing strip should be bent, using a metal brake, to extend at least 2 inches up the vertical wall and at least 3 inches onto the last shingle course, that is, to the top of the cutout. Water resistive barrier **MUST** extend over the top of the flashing.



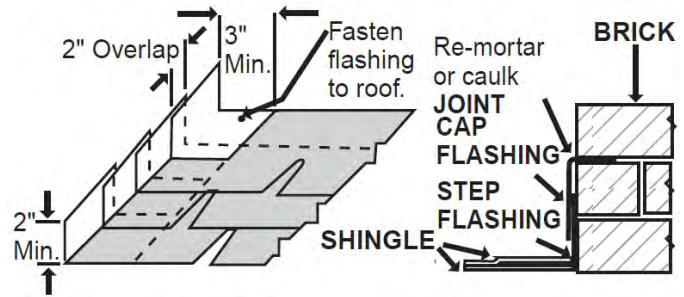
## Shingle application around flashing

Top and sides: **SHINGLES** overlap flange and are set in asphalt plastic cement.

Bottom: **FLANGE** overlaps shingles.

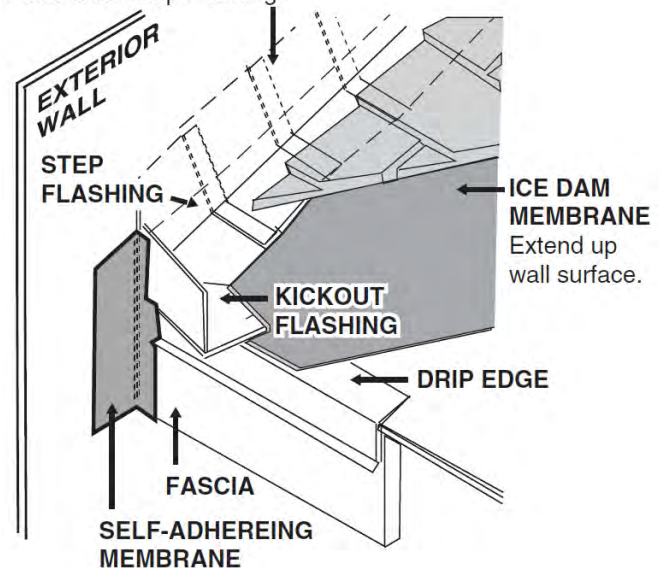


## Sidewall flashing (26-Gauge)



## Kick-out flashing

**WATER RESISTIVE BARRIER/HOUSEWRAP** Place over Step Flashing.



## Debris

Roofing projects often result in debris moving about the neighborhood on windy days. Shingle wrappers and other construction debris are nuisances to neighbors when they find this material in their yards. As you install a new roof on your home, we ask that you exercise courtesy towards your neighbors by regularly policing your yard and adjoining areas. Thank you.

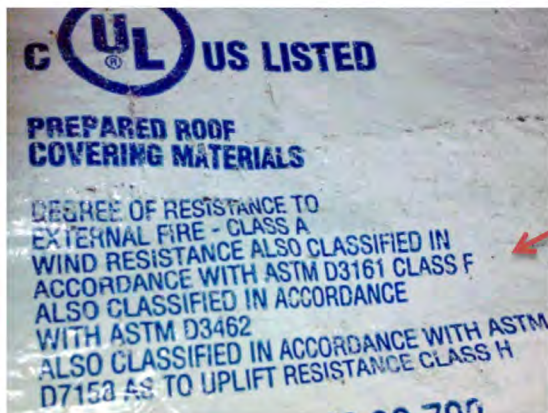
## Roof Material Notice

Minnesota State Building Code requires all buildings to meet a 90 MPH 3 second gust standard. Manufacturers may use one of any three standards to test their shingles. The chart below shows the classification ratings.

Wind Speed	UL 997 or ASTM D3161	ASTM D7158	
60MPH	CLASS A	----	Not code acceptable
90MPH	CLASS D	CLASS D	Code acceptable
110MPH	CLASS F	----	Code acceptable
120MPH	----	CLASS G	Code acceptable
150MPH	----	CLASS H	Code acceptable

It has come to the City's attention that there are shingles for sale locally that do not meet the Minnesota State Building Code (MSBC) for wind resistance.

To verify compliance with MSBC, check the wind resistance classification printed on the packaged bundle of roof covering material. See Below for an example.



As long as the wind resistance is a Class D, F, G or H or reads 90 MPH or higher than the shingles are code acceptable for wind.  
(This example is acceptable)