

RESIDENTIAL ASPHALT SHINGLE INFORMATIONAL SHEET

Existing residential roofs

The State of Minnesota has been classified a "moderate exposure for hail damage". As such, the Code dictates that no overlay of asphalt shingle is allowed. The re-roofing of a structure having asphalt shingles, will be accomplished by completely removing the existing shingles, underlayment, valley tins, etc. (tear-off) and installing the roofing as if it was new construction.

Roof pitch

Asphalt shingles shall not be used on roofs with less than a 2:12 pitch and require special application procedure. Any pitch less than 4:12 will require roof application techniques that take into account a greater potential for ice dam water backup. Slopes of 4:12 and above can use standard asphalt roofing application.

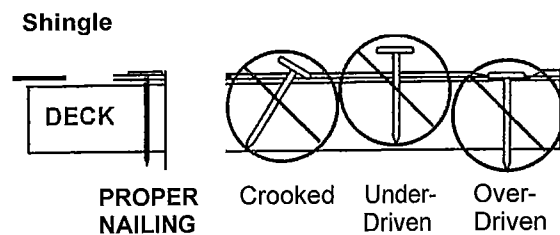
Sheathing

Roof sheathing (decking) must be checked prior to re-roofing and repaired if rotted or unsound. Replacement sheathing must conform to the requirements of the Code and the manufacturer of the product.

Fasteners

Fasteners for asphalt shingles shall be galvanized steel, stainless steel, aluminum or copper roofing nails. Asphalt shingles shall be fastened with not less than four (4) nails. Nails shall not be less than 12-gauge with 3/8-inch minimum diameter heads. Nail shall be of sufficient length to penetrate through roofing material and at least 3/4 inch into sheathing or through the thickness of the sheathing, whichever is less. Nail heads shall be driven so that it tightly bears against the shingle. Nails must be installed in the location on each shingle per manufacturer's instructions. **Any crooked nails should be removed and replaced.** (See illustration)

Note: Use of any other type of fasteners must be approved by the Building Inspection Department.



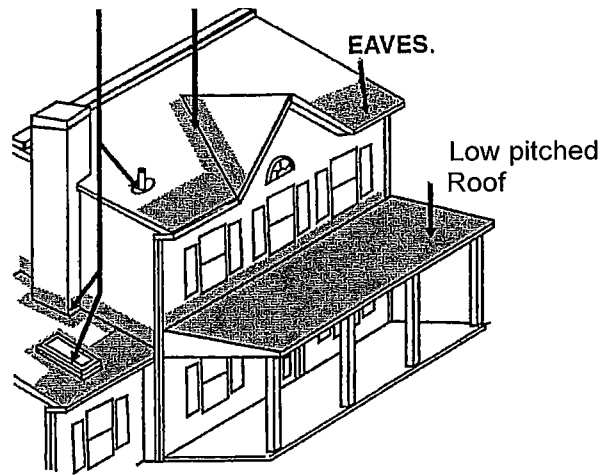
Ice and Water Barrier is required on all pitched roofs, except unheated detached garages.

The barrier must consist of two layers of *underlayment* cemented together or a self-adhering polymer modified bitumen sheet, according to manufacturer's installation instructions, from the roof edge to a point 24 inches vertically inside the exterior wall line. It is also required under all valley metal.

Where to use ice protection

At concealed **FLASHING**
around roof penetrations.

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



Valley Flashing

When existing flashing is no longer serviceable, it shall be replaced. Valley Flashing shall consist of not less than #26 gauge corrosion-resistant, galvanized sheet metal or other code approved, valley lining material. The metal shall extend at least 12 inches from the centerline each way. Sections of flashing shall have an end lap of not less than four (4) inches.

A 36 inch wide Ice Barrier, the entire length of the valley, is required as valley underlayment.

Exhaust Vents

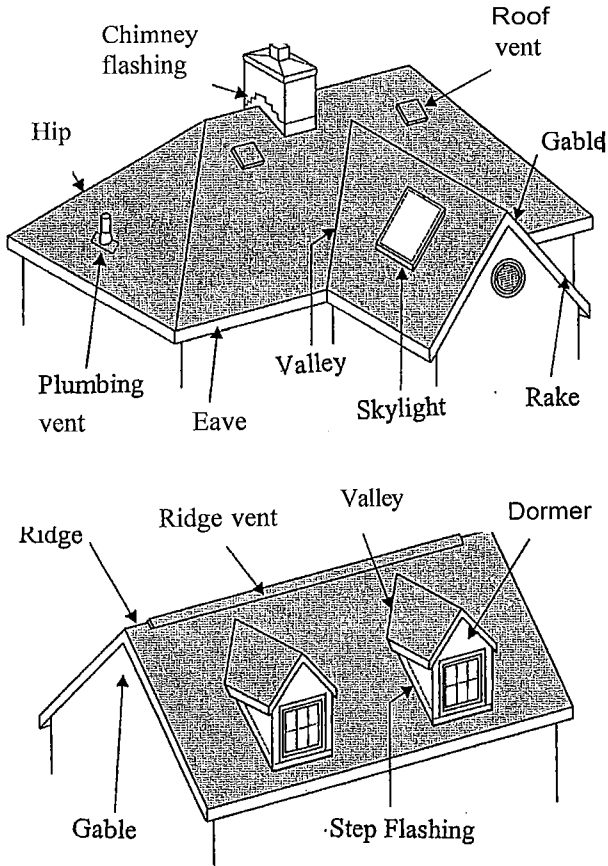
Care should be taken to insure that kitchen and bathroom exhaust fan pipes are connected to the appropriate *dampened* exhaust roof vent with no openings into the attic that would allow exhaust air back into the attic space.

When re-roofing around furnace flues, take care to not dislodge the joints of the flue pipe within the attic or within the interior chases this pipe might pass through. If in doubt, consult a licensed heating contractor.

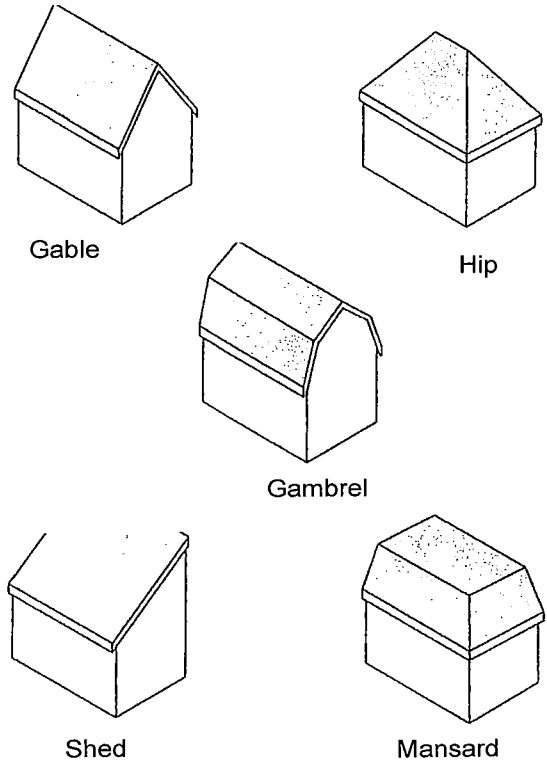
Other Flashing

All other flashing and roof vents shall be checked and if rusted or in bad condition shall be replaced. When replacing of metal, it shall be of not less than #26 gauge corrosion-resistant metal. Roof vents and other flashings must be installed according to manufacture's instructions. Any replacement of flashing at masonry chimneys must be properly cut in and re-tuck pointed or calked with an approved product.

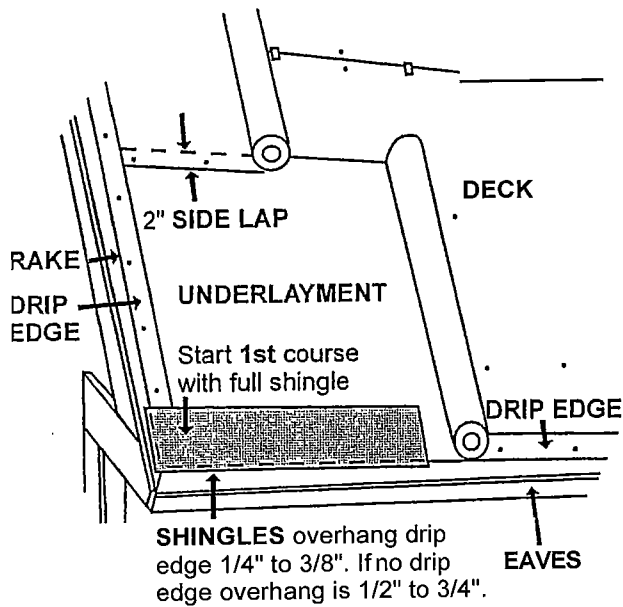
Roofing terms



Types of roofs

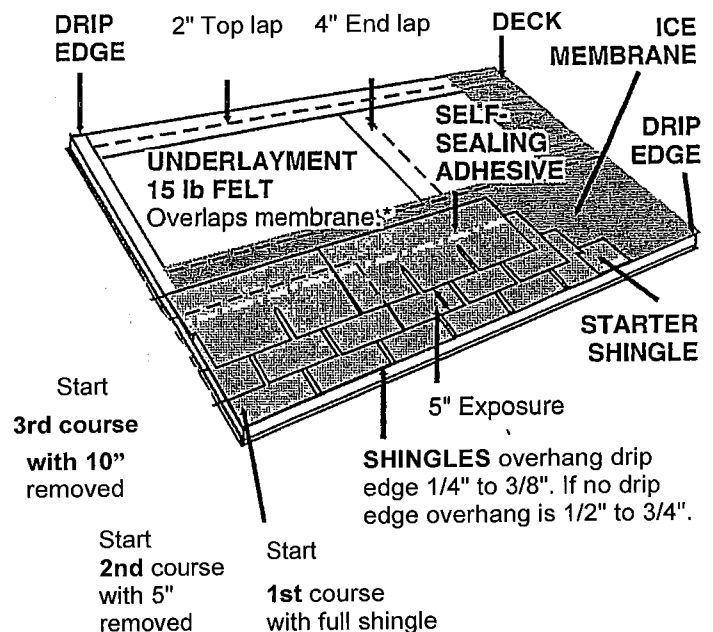


Ice protection underlayment



Installation: When applying underlayment, keep the product as wrinkle-free as possible. Unroll the underlayment parallel with the eaves. The underlayment should go over eaves' drip edge flashing, but go under the rake's drip edge flashing.

Shingle application using 5-inch method



***Felt underlayment must overlap the ice membrane a minimum of 2 inches.**

Vertical wall flashing (26-gauge)

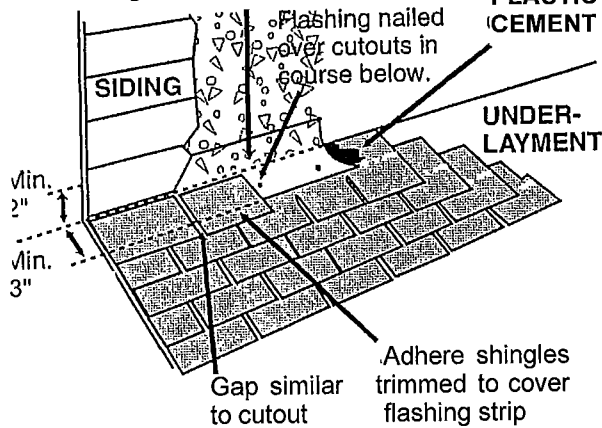
1. Apply shingles up the roof until a course must be trimmed to fit at the base of the vertical wall. Plan to adjust the exposure slightly (and evenly) in the previous courses, so that the last shingle is at least 8 inches wide (vertically). This allows a minimum 5-inch exposure of the top course and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

WATER RESISTIVE

BARRIER installed over flashing.

FLASHING STRIP

ASPHALT PLASTIC CEMENT

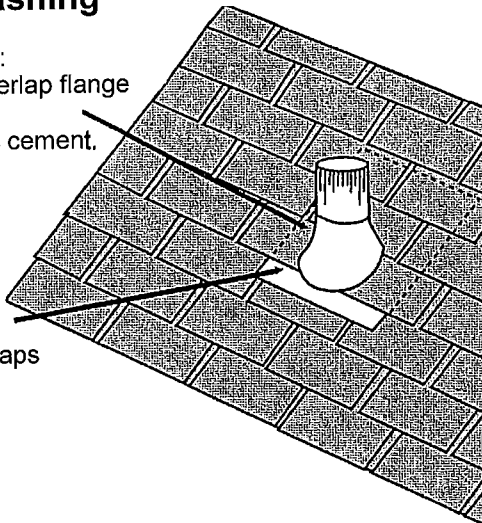


2. The flashing strip should be bent, using a metal brake, to extend at least 2 inches up the vertical wall and at least 3 inches onto the last shingle course; that is, to the top of the cutout.
3. Apply the flashing, 8 feet to 10 feet over the last course of shingles. Embed the flashing in asphalt plastic cement, or another appropriate adhesive, and nail it to the roof every 12 inches. Do not nail the strip to the wall.
4. If side laps are necessary, overlap the pieces at least 6 inches. Do not fasten in this joint area.

Shingle application around flashing

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

Bottom: **FLANGE** overlaps shingles.



Skylight: Basic sheet metal components

All dimensions approximate.

BACKER FLASHING under shingles minimum 3 courses. Where necessary (depending upon anticipated debris and/or snow accumulation) hold shingles up 1 course and nail high.

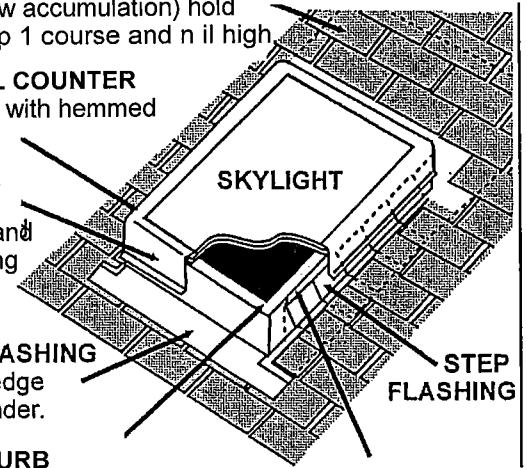
INTEGRAL COUNTER FLASHING with hemmed drip edge.

COUNTER FLASHING over base and step flashing approx. 2" min.

APRON FLASHING with lower edge hemmed under.

RAISED CURB (2" x 8" suggested as minimum to attain flashing clearance.)

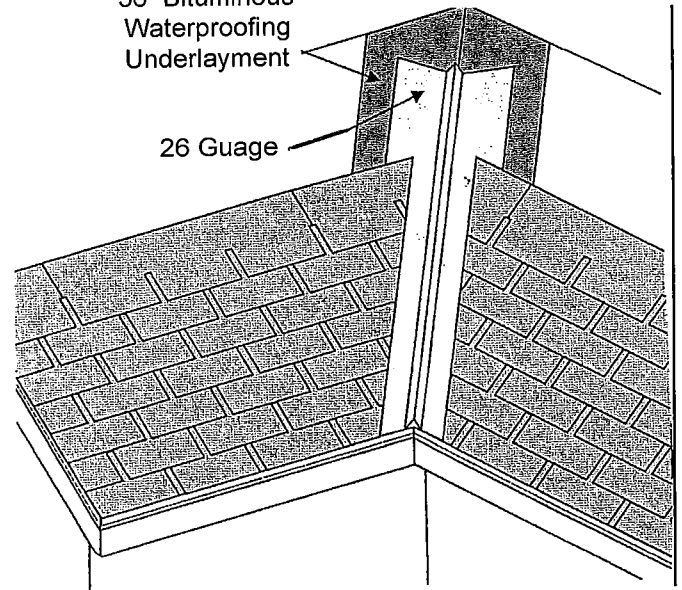
WATERPROOFING UNDERLAYMENT turned up under curb



Metal valley flashing

36" Bituminous Waterproofing Underlayment

26 Gauge



Sidewall flashing (26-Gauge)

