

ROOFING

RESIDENTIAL

BUILDING INSPECTIONS DEPARTMENT

www.ci.blaine.mn.us



This handout is intended only as a guide and is based in part on the 2015 Minnesota State Building Code, Blaine City ordinances, and good building practice. 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 applicable codes or contact the City of Blaine, Building Department.

PERMITS

Building permits are required for all roofing projects. Permits can be obtained from the Blaine City Hall, 10801 Town Square Dr. NE. Permits are issued at the time of application. See the Roofing, Siding, and Stucco Repair Application for details. E-permits are not available at this time.

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 Labor and Industry, (651) 284-5069 or 1-800-342-5354.

INSPECTIONS

Call for all required inspections as noted on the inspection card.

Sheathing, flashing, venting, ice and water protection, and roofing felt inspections are required; **Clear Digital Pictures** will be accepted in lieu of on-site inspection, under the following conditions:

- 1) All pictures must be in a clear **digital** format - no hard copies accepted. Hard copies must be converted to digital prior to submitting to the Building Department.
- 2) Pictures may be directly e-mailed to the City at inspectpix@ci.blaine.mn.us.
- 3) CD's or USB cards may be **dropped off** at the Building Inspection Department. No final inspection approvals shall be made prior to receiving and viewing the roofing pictures.
- 4) The pictures shall include 1 (one) photograph each of the roof decking, all ice and water protection, all flashing details, all vents, a finished roof detail and the front of the house with address.

Final inspections are completed by site visit only. Access to fenced yards shall be planned.

GENERAL

This handout mainly addresses the requirements for asphalt and mineral surfaced roll roofing. Wood shingles, wood shakes, and steel shingles (minimum 26 gauge) are also permitted. Installation of these types of roofing must also comply with the City Ordinance, MN State Residential Code, and Manufacturer's Installation requirements.

All building debris shall be contained

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

Roofing materials are to be installed in accordance with the manufacturers written installation instructions and 2015 Minnesota State Residential Code Chapter 9.

All asphalt shingles must be either self-sealing or interlocking.

Asphalt shingles may only be used on roof slopes of two units vertical in 12 units horizontal (2:12) or greater. 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 D 6757. 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 inches.

For normal application, strip shingles must be fastened with a **minimum of four nails**. For interlocking shingles, two nails are required. See the manufacturer's installation instructions.

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 inches 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 inches wide and the top layer at least 36 inches wide.
- For closed valleys (valleys covered with shingles), valley lining of one ply of smooth roll roofing complying with ASTM D 224 Type II or Type III and at least 36 inches wide or one of the two methods previously listed may be used.

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 decks that are rotted or unsound must be repaired prior to reroofing (Site inspection or digital pictures of repairs will be required). Reroofing only portions of a roof is permitted (including hail damage situations).

REROOFING, OVERLAYS, & PARTIAL ROOFING

Any sheathing that is replaced must be installed and fastened according to the code. Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, it shall be permitted to remain in place and covered with an additional layer of ice barrier membrane (for a maximum of two layers).

It is permitted to apply roofing over one existing layer of asphalt shingles (if considered a flat and adequate base). It is also permitted to replace independent sections/portions of roof covering without replacing the entire roof covering of the home. In addition to the MN Residential Building Code requirements, the manufacturer's installation requirements must be met.

ICE AND WATER BARRIER

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. The ice and water barrier must extend from the edge of the eaves to a point **24 inches** inside the exterior wall line of the building. Ice and water barriers are required full-length in valleys (see picture on page 4 of this handout).

The above noted ice and water protection requirements pertain to conditioned and unconditioned spaces. Ice and water protection is required on all attached garages. **EXCEPTION:** Detached accessory structures that contain no conditioned floor area.

UNDERLAYMENT

Underlayment shall be applied shingle fashion, parallel to and starting from the eave and lapped 2 inches (51mm), fastened sufficiently to hold in place. End laps shall be offset by 6 feet (1829mm).

VENTILATION

Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Any garage with an enclosed attic space shall be ventilated.

Ventilation Area - Ventilation of enclosed attics and enclosed rafter spaces is required. Ventilating openings must be provided with corrosion-resistant mesh with openings of $\frac{1}{16}$ " to $\frac{1}{4}$ " inch.

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 at least 50% but not more than 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.

Vent Clearance. Where eave or cornice vents are installed, insulation shall not block the free flow of air. A minimum of a 1-inch space shall be provided between the insulation and the roof sheathing at the location of the vent.

Ridge vents and gable louvered vents, installed per manufacturer's installation instructions, are acceptable alternatives.

FLASHING (see drawings on page 4 and 5 of this handout)

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 not less than 0.019 inch (No. 26 galvanized sheet) (R903.2.). When re-roofing missing, rusted or damaged flashing and counter-flashing, vent caps, and metal edging shall be installed or replaced with new materials. Flashing against vertical front walls, soil stacks, vent pipes, and chimney flashing must be in accordance with the asphalt shingle manufacturer's printed instructions. Sidewall flashing shall be by the step flashing method and is required whenever wall and roof intersections occur.

Kick-out flashing, when installed, is where the lower portion of a sloped roof stops within the plane of an intersecting wall cladding, in such a manner as to divert or kick out water away from the assembly. Kick-out flashing may be either factory made or field fabricated and a minimum of 2 $\frac{1}{2}$ " long & 26 gauge.

Crickets or saddles are required on the ridge side of any chimney greater than 30 inches wide. Cricket or saddle coverings must be of sheet metal or of the same material as the roof covering.

FASTENERS (see picture page 5 of this handout)

Fasteners shall be long enough to penetrate the sheathing $\frac{3}{4}$ " or through the thickness of the sheathing, whichever is less. Fasteners shall comply with the following; corrosion resistant nails, minimum 12 gauge $\frac{3}{8}$ " head, per ASTM F 1669. (galvanized steel, stainless steel, aluminum or copper).

Use the recommended number of fasteners and placement according to the manufacturers written installation instruction. Fasteners shall be installed perpendicular to the roof sheathing and not penetrate the shingle surface.

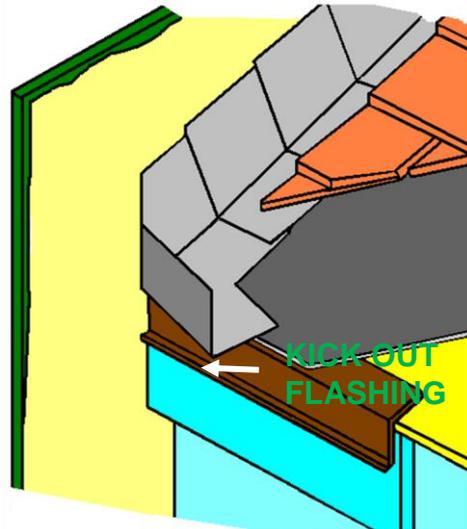
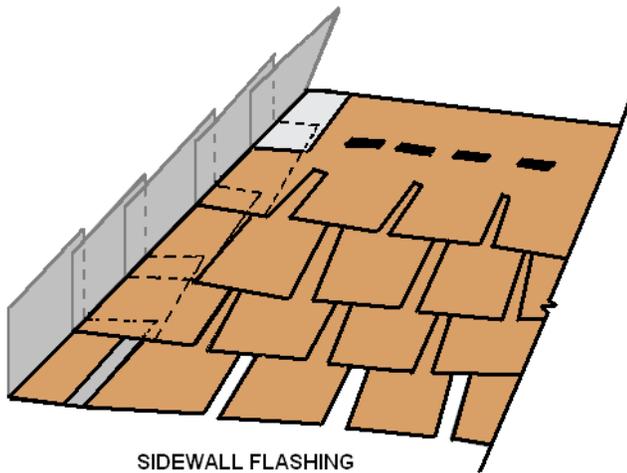
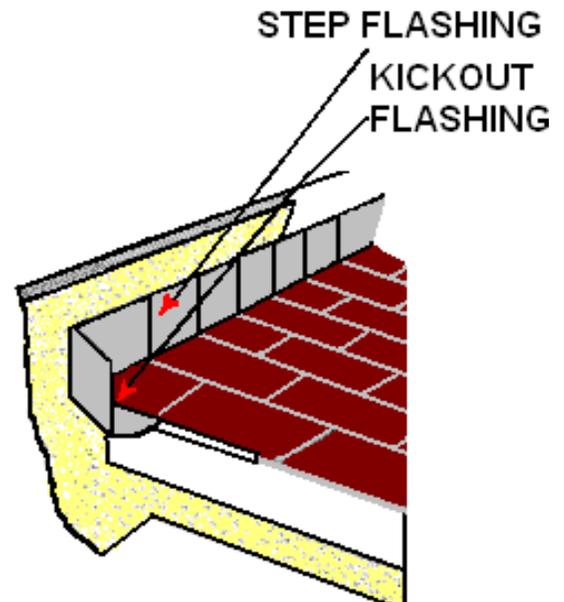
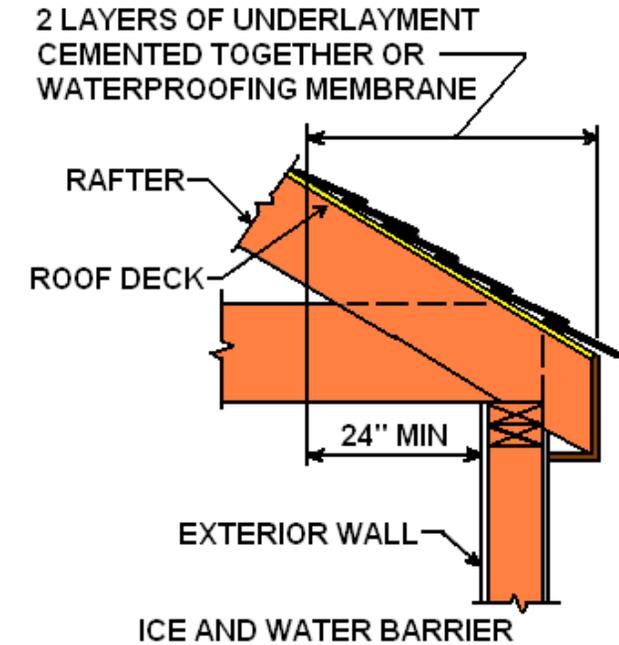
FASTENER SCHEDULE FOR ROOFING			
Asphalt Shingles	Mineral-surfaced Roll Roofing	Wood Shingles	Wood Shakes
Fasteners for asphalt shingles must be galvanized steel, stainless steel, aluminum, or copper roofing nails, minimum 12 gauge shank with a	Roll roofing must be installed in accordance with the	Fasteners for wood shingles must be corrosion-resistant with a minimum penetration of $\frac{1}{2}$ " into	Fasteners for wood shakes must be corrosion-resistant with a minimum penetration of $\frac{1}{2}$ " into

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.

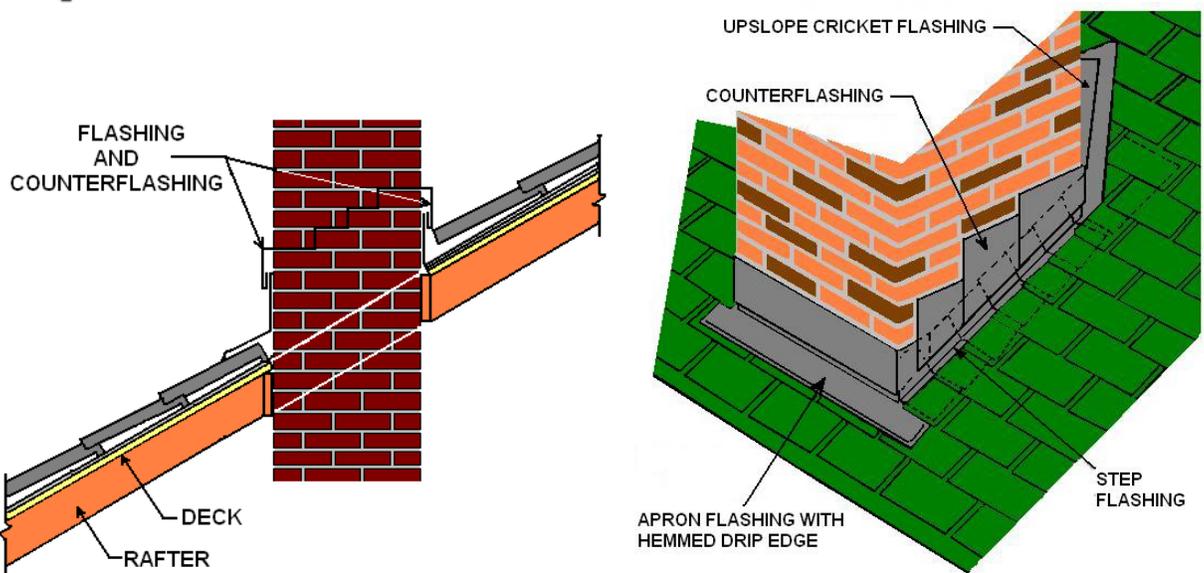
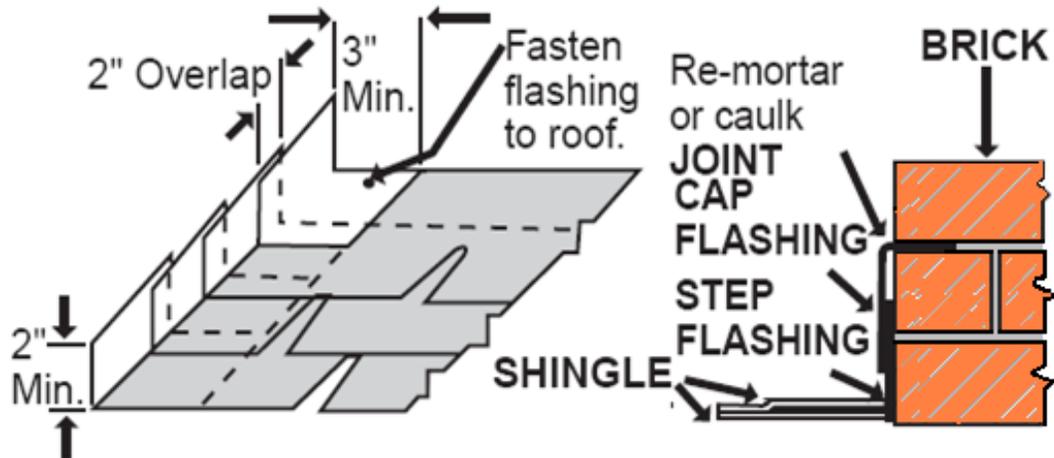
manufacturer's installation instructions.

the sheathing. For sheathing less than 1/2" in thickness, the fastener shall extend through the sheathing. A minimum of two fasteners per shingle are required.

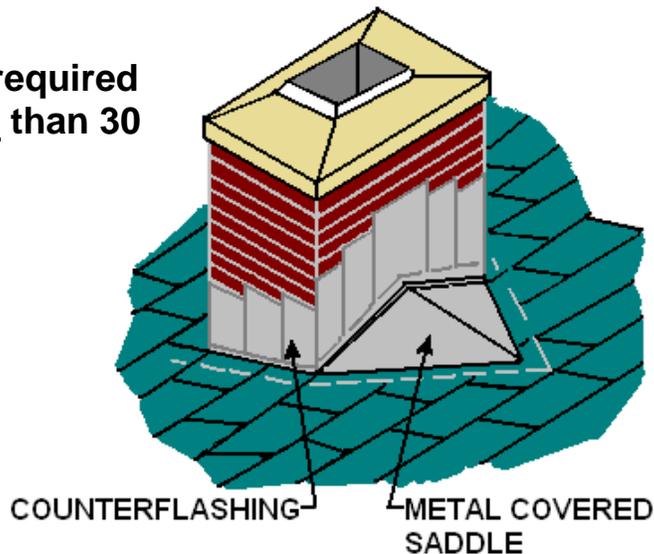
the sheathing. For sheathing less than 1/2" in thickness, the fastener shall extend through the sheathing. A minimum of two fasteners per shake are required.

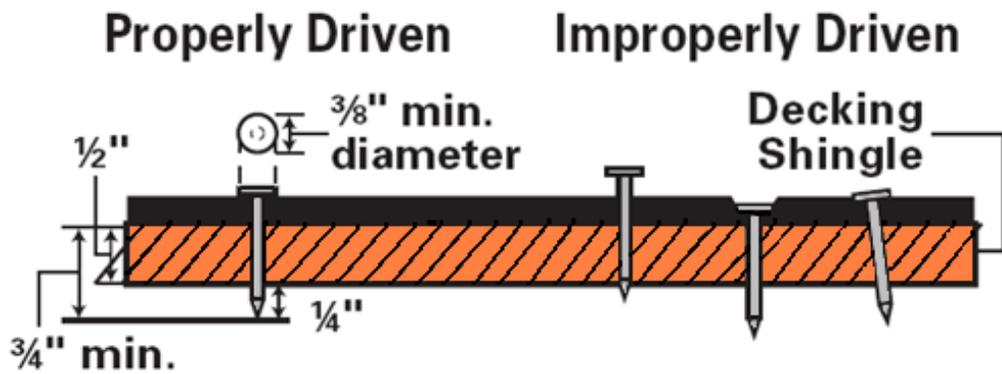


Sidewall flashing (26-Gauge)



Cricket or Saddle required if chimney is more than 30 inches wide





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 D 3909 or ASTM D 6380, Class M. Mineral surface roll roofing must be installed in accordance with the manufacturer's installation instructions.

