Chapter 9 - Roofing

Contents

Things to Consider

- To ensure a quality job, only experience crews should be used for roofing.
- Use blue chalk on the roof – red chalk will stain the shingles.
- Wear shoes with little tread to prevent damage to the shingles, especially on hot days. Work boots can dig into the shingles when kneeling.

Safety Issues

- When working on a roof, fall protection must be used, including harnesses and anchors.
- All fall protection must be inspected before each use.
- Use caution when working on the roof. If the weather or some other condition caused the surface to become slippery – get off immediately.
- A control zone must be set up around the area below the house when work is underway on the roof.
- Place a person or persons as “look-outs” on the ground when you’re throwing items down from the roof.

Timing & Prerequisites

- This phase of the project cannot begin until the roof trusses and sheeting work are complete.
- The roofing will be installed by contractors on case by case basis.
- The activities in this phase must be performed by contractors.

Setup

Set up the Ladder Access

Critical Issues

- **The shingles used cannot tolerate much foot traffic. Care must be taken when installing the shingles, but care must be taken as well as when working above the shingles for siding tasks. Plan work to completely eliminate or severely limit walking on the shingles.**

Safety Issues

- **Ladders must be placed on solid surfaces. Do not place blocking under the legs.**
- **Ladders must be securely anchored at the top. Tie the ladders in or block them so they cannot slide.**

- Before placing a ladder against the sub-fascia for access to the roof, install a temporary block onto the sub-fascia for the ladders to rest against.

Install Slide Guards

Critical Issues

- **Slide guards must be installed before starting.**
- **When slide guards must be removed for installing roofing, replace them as soon as possible.**

1. Secure the roof brackets to the trusses with 16d sinkers, two (2) nails in each bracket through the sheathing into the truss.
2. Anchor the 2x6 planks into the roof brackets with 16d sinkers, one nail in each bracket through the nail hole in the bracket into the 2x6.

Install Roof Anchors

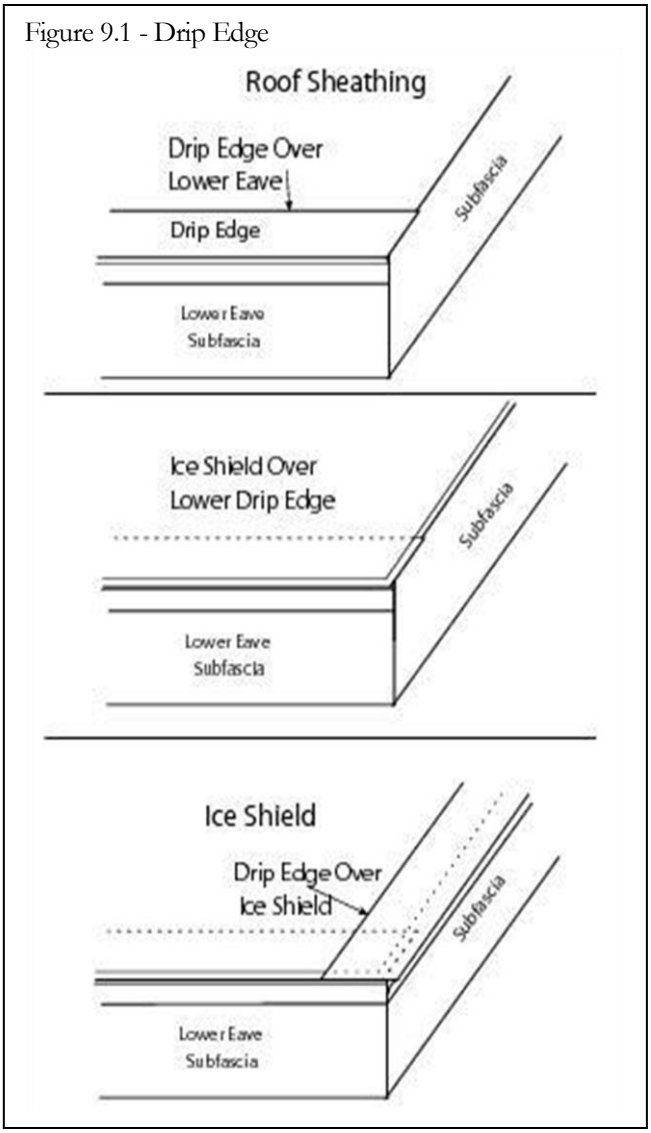
- Install one anchor for each person working on the roof.
- Install the anchors over the roof peak with 2 ½" – 12# screws, one screws in each hole in the middle row into the roof truss below.

Underlayment and Drip Edge

Apply Drip Edge along Lower Edge of the Roof

1. Note – the drip edge along the lower edge will go under the ice shield paper and the drip edge on the rake edge will go over the ice shield.
2. Position the drip edge along the lower edge of the roof. Cut the drip edge to extend ½" over the rake edge on both ends. (see Figure 9.1)
3. Nail the drip edge in place using 1 ½" roofing nails.
   - Use 4 nails per strip; 1 at each end and 2 in between. The nails from the starter strip which will be added later will help hold the strip in place.
   - Make sure you nail along the inside edge of the drip edge so that the nail goes through the sheeting.
4. Overlap the pieces of drip edge by 2".
5. Repeat this process on the other side of the roof.

Figure 9.1 - Drip Edge



Apply Ice and Water Shield

Across the lower edge of roof

1. Apply one or two 36” wide sheet of Ice and Water Shield over the lower drip edge and the bottom edge of each roof. If the first strip of Ice and Water Shield does not extend up the roof 2’ beyond the exterior wall below, add a second strip above the first strip. Overlap the 2 strips by 2”.
2. Make a chalk line 36” up the roof from the front edge of the drip edge.
3. Temporarily remove the roof jacks. Drive the nails flush into the roof.
4. Unroll the ice shield and flush it to the chalk line.
5. The shield is very sticky. Apply the shield from one end of the roof. Pull back the covering paper from the first two feet of the material. Install the ice shield with it aligned with the rake edge of the roof and flush to the chalk line.
6. Continue installation by pulling the covering paper while holding the ice shield flush to the chalk line. Smooth the shield onto the roof.
7. When joining two sections of Ice and Water Shield, overlap the 2 pieces by 6”.
8. Re-install the slide guards as soon as possible.
9. Add a second strip of Ice and Water Shield, if needed.

Up Roof Valleys

1. Apply a 36” wide sheet of Ice and Water Shield over the OSB seams where two intersecting roofs form a valley.
2. Start at the top of the valley. Uncover the first 2’ of ice shield and attach it; keeping the shield flush with the chalk line. Cover the entire seam and smooth the shield into place.
3. Continue installation by pulling the covering paper out and smoothing the shield to the roof.
4. Trim the bottom edge to overlap the drip edge by ½”.

Apply Building Felt

1. Make a chalk line 30” up the roof from the top of the ice shield.
2. Starting at one end of the roof; unroll 12’ of the paper and flush it to the chalk line. Insert a 1” cap nail 2” down from the top edge and 6” in from the outside edge. Continue across the roof pulling the paper tight; holding it to the chalk line; and inserting a cap nail every 36”. Insert cap nails across the bottom of the felt every 36”.
3. Continue installing felt up the roof. Overlap the rows by 4”. The overlap can be determined using either the white lines on the paper or by snapping additional chalk lines 32” above the previous sheet.
4. When joining two pieces of felt, overlap the two pieces by 6”.

5. Lap the felt over the top. The top vent will be cut out later.

Install Drip Edge on the Rake Edge

1. Position the drip edge on the rake edge flush to the drip edge previously installed on the eave. Force the drip edge over the nail fin of the eave drip edge.
2. Nail the drip edge with 1 ½" roofing nails.

   Use 4 nails per strip; 1 at each end and 2 in between. The nails from the starter strip which will be added later will help hold the strip in place.

   Make sure you nail along the inside edge of the drip edge so that the nail goes through the sheeting.
3. Overlap pieces of drip edge by 2". The higher piece should be on top of the lower piece.
4. Install drip edge up to the peak of the roof.

Shingles

Install the Shingles

1. Follow the GAF instructions below.
2. The first course of shingles will extend over the bottom and rake drip edges by ½".
3. Loosely butt the shingles together.
4. Cut the first shingle for each course to size specified by the manufacturer.
5. Walls above and along the sloped side of a roof will require step flashing. (See Figure 9.2).
6. Walls above the top edge of the roof will require apron flashing. (See Figure 9.3).
7. Ridges will require installation of ridge vents.
8. Use manufactured ridge shingles to cover ridges, hips, and ridge vents.

GAF Instructions for Timberline Dimensional Shingles

- These shingles have a special thermal sealant that firmly bonds the shingles together after application when exposed to sun and warm temperatures.
- Shingles installed in the Fall or Winter may not seal until the following Spring. If shingles are damaged by winds before sealing or are not exposed to adequate surface temperatures, or if the self-sealant gets dirty, the shingles may never seal. Failure to seal under these circumstances results from the nature of self-sealing shingles and is not a manufacturing defect. To insure immediate sealing, apply 4 quarter-sized dabs of shingle tab adhesive on the back of the shingle (25mm) up from bottom of the shingle. Press shingle firmly into the adhesive. For maximum wind resistance along rakes, install

GAF-Elk Starter Strip Shingles with GAF-Elk Dura-Grip® sealant or cement shingles to underlayment and each other in a 4" (102mm) width of asphalt plastic cement. Caution: Apply ONLY a thin uniform layer of asphalt plastic cement less than 1/8" (3mm) thick. Excess amounts can cause blistering of the shingles and may soften the asphalt in certain underlayments, including StormGuard®, Weather Watch® and other GAF-Elk Leak Barriers, resulting in the asphalt flowing, dripping and staining.

- RELEASE FILM: The film strips on the back of each shingle are to prevent sticking together of the shingles while in the bundle. Their removal is NOT required during application.
- EXPOSED METAL: All exposed metal surfaces (flashing, vents, etc.) should be painted with matching GAF-Elk roof accessory paint.
- Application of underlayment: Cover deck with one layer of underlayment installed without wrinkles. Use only enough nails to hold underlayment in place until covered by shingles. Application of eave flashing: Install eave flashing such as GAF-Elk Weather Watch®, StormGuard®, or other GAF-Elk Leak Barrier in localities where leaks may be caused by water backing up behind ice or debris dams. Eave flashing must not overhang the eave edge by more than 1/4" (6mm) and extend 24" (610mm) beyond the inside wall line.

Underlayment: Standard Slope–4/12 (333mm/m) or more

- Application of underlayment: Cover deck with one layer of underlayment installed without wrinkles. Overlap pieces at side edges by 4” and top edges by 2”. Use only enough nails to hold underlayment in place until covered by shingles. Application of eave flashing: Install eave flashing such as GAF-Elk Weather Watch®, StormGuard®, or other GAF-Elk Leak Barrier in localities where leaks may be caused by water backing up behind ice or debris dams. Eave flashing must not overhang the eave edge by more than 1/4" (6mm) and extend 24" (610mm) beyond the inside wall line.

Underlayment: Low Slope 2/12-4/12 (167mm-333mm/m)

- Application of underlayment and eave flashing: Completely cover the deck with two layers of underlayment. Use only enough nails to hold underlayment in place until covered by shingles. Use blind nailing for eave flashings. At eaves and where ice dams can be expected, use one layer of GAF Weather Watch®, StormGuard® or other GAF-Elk Leak Barrier. Eave flashing must not overhang the roof eave edge by more than 1/4" (6mm) and extend 24" (610mm) beyond the inside wall line. Where ice dams or debris dams are not expected, install 2 plies of Shingle-Mate® underlayment.

Starter Course

- For maximum wind resistance along rakes, install any GAF-Elk starter strip containing sealant or cement shingles to underlayment and each other in a 4" (102mm) width of asphalt plastic cement. Note: GAF-Elk starter strips with

sealant are recommended at the eaves and rakes for best performance and required for the best limited wind warranties on certain products (see limited warranty for details).

First Course

- Start and continue with full shingles laid flush with the starter course. Shingles may be laid from left to right or right to left. Place shingles close together but don't crowd. DO NOT lay shingles straight up the roof (racking) since this procedure can cause an incorrect color blend on the roof and may damage the shingles.

Second Course

- Trim 6" (152mm) from the end of the shingle. Position the shingles in the second and subsequent courses flush with the tops of the wide cut-outs. This results in a 5" (127mm) exposure. Continue with full width shingles across the roof.

Third Course

- Trim 11" (279mm) from the first shingle in the course; then continue with full shingles across the roof. Strike a chalk line about every 6 courses to check parallel alignment with eaves. NOTE: Shingles may be laid from either left or right-hand side.

Fourth Course and Remaining Courses

- Trim 17" (432mm) from first shingle in the course, and then continue with full shingles across the roof. Fifth and subsequent courses; repeat Steps 3 through 6.

Hip and Ridge

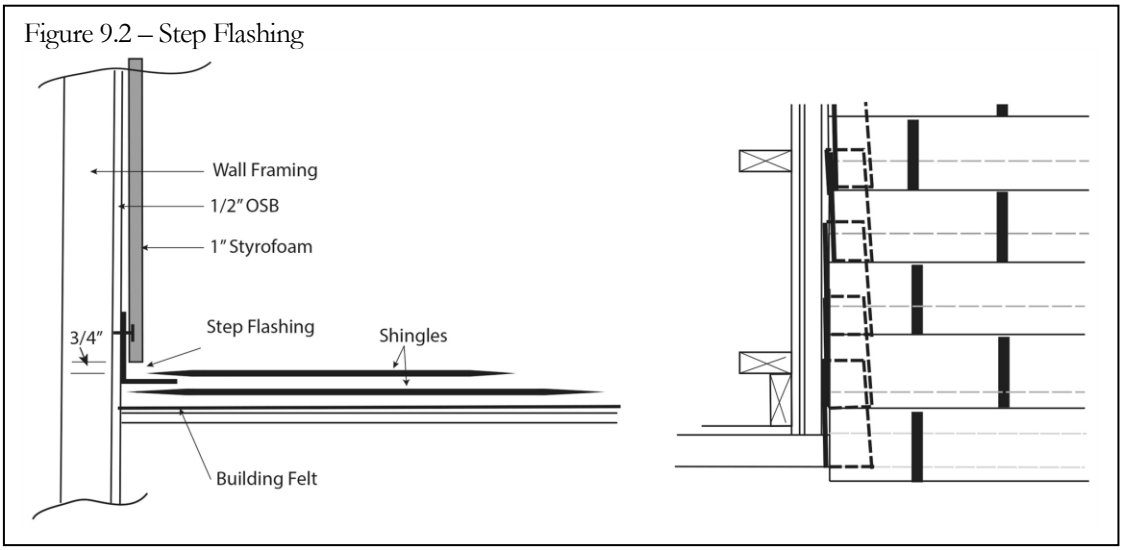
- Install GAF-Elk Timbertex®, Z®Ridge, Seal-A-Ridge®, or Ridglass® hip and ridge shingles (check regional availability).Follow the application instructions shown on the hip and ridge wrapper.

Flashing

Apply Step Flashing

Install a piece of step flashing above the last shingle in each row of shingles which terminate into a wall above the roof. (See Figure 9.2). Install the pieces before installing the next row of shingles, weaving the step flashing into the shingles.

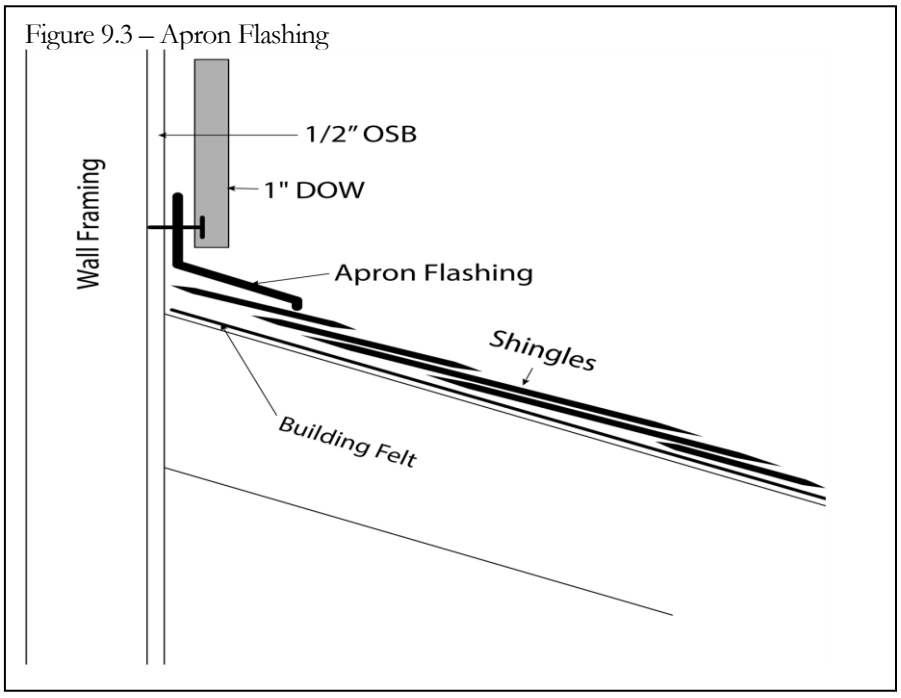
Figure 9.2 – Step Flashing



Install Apron Flashing

Apron flashing is installed along a vertical wall at the top of a roof. This flashing is installed after the shingles. (See Figure 9.3).

Figure 9.3 – Apron Flashing



Covering the Peak

1. If there is a peak at the top edge of the roof, continue installing rows until the top edge of the row being installed extends above the peak.
2. Cut the shingle off even with the peak (first 12” of the roof) or even with the ridge vent cutout (center portion of the roof).
3. After shingles have been installed on both sides of the roof, install one (1) more course of shingles to both sides. Install the shingles with the same 5’ reveal. The portion of the shingles which cover the first 12” of the peak at each end of the roof are bent over the peak. Trim the portion of the shingle which extend over the peak to 3”; attaching them with two (2) 2” roofing nails on each side. Trim the shingles which cover the ridge vent opening even with the opening and nail in place with 1 ¼” roofing nails along the edge; 1 nail every 24”.

Ridge Vent

Install Ridge Vents

To allow the attic to be vented at the ridge of the roof, cut back the singles 1 ½” on each side of the roof to allow for ventilation. The opening will be covered with a plastic ridge vent, and then the ridge vent will be covered with ridge cap shingles.

1. If it hasn’t been done already – the sheeting, underlayment, and shingles should be cut out about 1 ½” down from the peak on both sides of the peak to within 12” of each end of the roof.
2. Nail the ridge vent into place using 3” roofing nails every 24”.
3. Either butt the pieces of ridge vent or connect them as indicated in the manufacturer’s instructions.

Quality Assurance Checklist

- From the ground, double check the overhang of the shingles.
- Look for bumps in the shingles.