

Correct Fastening

8

YOUR OBJECTIVE:

To learn CertainTeed's recommended methods for fastening shingles.

GENERAL FASTENING GUIDELINES

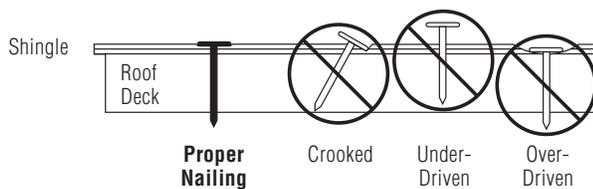


Figure 8-1: Fastening three-tab, strip-type shingles.

- ◆ Proper placement of fasteners is important for shingle performance and warranty protection. Ideally, placement of fasteners should be as specified according to the precise locations shown for each shingle. However, in practice some variation (dimensional tolerance) is acceptable.
- ◆ When fastening a typical three-tab, strip-type shingle, CertainTeed requires that at least four fasteners be used.
- ◆ Nails are strongly recommended instead of staples. (**Nails MUST be used with Hatteras, LandMark TL, Presidential TL, Carriage House and Grand Manor shingles.**)
- ◆ Nailing locations vary by shingle style and by roof slope. It is critical to fasten the shingles in the proper locations in order to achieve designed performance. Improperly fastened shingles may blow off or slip out of place. The use of asphalt roofing cement in small quarter-size dabs to hold the shingle down is required on most shingles when applied to steep slopes exceeding 21/12 (60 degrees). Consult individual shingle application instructions for details on the above, including fastening points.
- ◆ When fastening a heavier and thicker premium product, like Carriage House Shingle™ or Grand Manor Shingle®, CertainTeed requires longer nails.
- ◆ Nails with a barbed or rough shank are recommended. Smooth pneumatic nails are also acceptable.
- ◆ Nail shanks must be either 11- or 12-gauge.
- ◆ Nail head diameter must be at least 3/8".
- ◆ Nail shanks must be long enough to penetrate the roofing and then go 3/4" into solid wood, plywood or non-veneer wood decking, or through the thickness of the decking, whichever is less.
- ◆ Be sure fasteners are driven straight, with nail heads flush with the shingle surface and never cutting into the shingle (Figure 8-1).
- ◆ All nails must be corrosion resistant; for example, double-dipped galvanized steel, aluminum, copper, or stainless steel.
- ◆ To prevent shingle distortion, do not attempt to realign a shingle by shifting the free end after two fasteners are in place.
- ◆ Fasteners should not go into, above, or between the self-sealing strips (except for Hatteras and Highland Slate). If they do, the shingles may not seal properly and will be more likely to blow off.
- ◆ If a nail is underdriven, be sure that it is hammered down **flush**.
- ◆ Seal overdriven nails with asphalt roofing cement and install another nail nearby.
- ◆ Fasteners must not be exposed; i.e., visible on the finished roof.

ARE STAPLES ACCEPTABLE?

Both ARMA and CertainTeed **strongly recommend** that properly driven and applied roofing nails be used as the fastening system for asphalt shingles. Staples can perform acceptably if properly applied, but proper alignment and application is more difficult with staples than with nails, making shingle damage and blow-offs more likely. (**Nails MUST be used for Hatteras®, Landmark™ TL, Presidential T/L, Carriage House and Grand Manor shingles, plus in high-wind areas and to qualify for an increased wind warranty if available.**)

Caution: Check your local Building Code for applicable fastener requirements.

Here's a Tip... To keep air compressor hoses neat and un-tangled, use a regular garden hose reel. Attach all the hoses together when winding them up. You can take them off one at a time, for however many you need.

— Renee Velzka, Massillon, Ohio

USING PNEUMATIC GUNS

Pneumatic nail guns are widely used. However, in cold weather it can be difficult to keep the pressure properly regulated to drive the nail correctly (flush with the shingle surface). With improper pressure, nails can be driven completely through shingles or underdriven. For this reason, many roofers switch to hand-nailing during cold weather. In addition to cold weather, numerous factors can affect the air pressure of pneumatic guns; such as temperature changes throughout the day, the number of guns per air compressor, the length of the air hose, etc. It is advisable for installers to periodically check the air pressure and adjust it as necessary for these factors, as well as for the thickness of the roof deck and the particular shingles being installed.

APPLYING SHINGLES IN HIGH-WIND AREAS

The term “storm nailing,” refers to the fastening procedure that employs six nails per shingle instead of the usual four. CertainTeed produces a large variety of shingle products designed to withstand high-winds using standard fastening methods. Nails must be used as fasteners and staples are not allowed.

Although not required, in areas where wind frequently exceeds 60 mph, you may want to apply a quarter-size (1" diameter) spot of cement, sealant or caulk under each shingle tab corner, or as specified in the shingle application instructions. Acceptable caulks and sealants should meet the performance requirements of ASTM D4586 Type I or II.

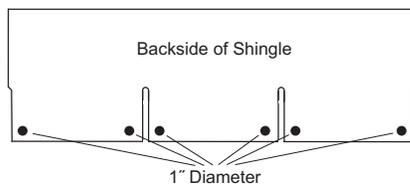


Figure 8-2: Applying roofing cement under a tab corner.

HAND SEALING

The following hand sealing procedure is based on Asphalt Roofing Manufacturers' Association (ARMA) recommendations:

1. Choose a sunny day because warm shingles are more easily raised enough to apply the cement without damaging the shingles. In cool weather, the cement should be stored in a heated area so it can easily be applied. The cement may be applied with a caulking gun if tubes are used, or with a small trowel or putty knife if used from a pail.
2. The amount and position of the cement are typically the most important features for a good seal. Seal the tabs by carefully lifting the tab just high enough to apply two spots of cement, each about the size of a quarter (twenty-five cent piece), near the corner of each tab. The spots should be located so that when the tab is pressed into place, the cement reaches the tab edge but is not exposed.

CAUTION: Avoid excessive use of cement so as to prevent the formation of blisters or a lumpy appearance on the roof.

3. To make certain that all tabs are sealed, decide upon a predetermined pattern of sealing before starting the job. A recommended pattern to follow in sealing three-tab shingles is to start at one rake or hip of the roof, and beginning at the eaves, seal three tabs. Then seal the three tabs of the course above it, and continue in this manner until the ridge or hip is reached. Repeat this procedure starting at the eaves with three tabs adjacent to the ones just sealed. Continue until all tabs are sealed.

Here Are Some Tips...

*After applying the last cap on a ridge, put a tab of asphalt roofing cement on the nail heads and sprinkle some loose granules over the cement. When done, you can't see the spots where you face-nailed.
(Thanks to John McAvoy Jr. from Troy, NY.)*

Avoid driving nails through metal flashing that covers two sides of adjoining underlaying materials, such as different pieces of roof decking or between vertical and horizontal planes. It is very difficult to permanently seal the punctures in these situations and, over time, expansion and contraction of the flashing can cause the holes to enlarge and/or the flashing to buckle.

OPEN SOFFITS

When installing CertainTeed shingles on roof decking that spans an open overhanging soffit area and fasteners protruding through the underside of the deck would be aesthetically objectionable, CertainTeed allows the use of shorter fasteners that do not penetrate through the deck. This exception to the CertainTeed fastener requirements applies only in the CertainTeed North West and South West regions (ID, OR, WA, NM, WY, CA, AK, HI, UT, AZ, NV, CO).

The CertainTeed Limited Warranty covering its shingles will remain in force if the shingles have been installed on an acceptable deck with appropriate fasteners, even if they do not penetrate to the full depth specified in the shingle's application instructions, if the following conditions are met:

Important: Two extra fasteners per full shingle are required and the fasteners must penetrate into the roof deck at least $\frac{3}{8}$ " and seat firmly against the shingle surface. Refer to the steep slope application instructions for nail placement (no asphalt roofing cement is required). This exception applies **only** to those areas of the roof deck that spans an open overhanging soffit.

Fasteners used in all other areas of the roof deck must be applied according to CertainTeed application instructions and fastener requirements. In addition, CertainTeed shall not have any liability or responsibility for (a) Damage to the shingles caused by fasteners that back out of the roof deck or are not applied properly, or (b) Nail-pops or blow-offs resulting from fasteners that are under-driven (standing up).

Caution: Check your local Building Code for applicable fastener requirements.

Note: Conduct a "field test" to assure that the minimum penetration is met or exceeded. The best fastening performance results when fastener points just barely splinter the underside of the deck.

FASTENING RIDGES AND HIPS

- ◆ When capping ridges and hips, be sure fasteners are long enough to penetrate and hold the deck properly. Installing caps requires longer fasteners than those used to apply field shingles.
- ◆ When installing the last cap in a row of hip or ridge shingles, face-nail this piece and protect the nail heads with nickel-size spots of asphalt roofing cement.

FASTENING STARTER SHINGLES

When installing starter shingles it is important to position fasteners at the lowest possible location along the eave and ensure that they penetrate into the roof deck.