

# THE ART OF SLATE ROOFING

## STAGGERED BUTT AND RAGGED BUTT SLATE ROOFING STYLES

by Joe Jenkins

Roof slating can be an art unto itself. Slate can be installed in many ways, some of which are highly creative. The most basic installation, a “standard” slate installation, is the most commonly used method of installing slate in the United States (Figures 1 and 2). Each slate is the same length and width. Each slate is fastened to the roof with two nails along a chalk line that marks the top edge of the slate. Each slate overlaps two courses below it. This overlap is called the “headlap” and is usually three inches. The headlap is one element of a slate roof that is essential. Slate sizes, widths, lengths, colors, shapes, and thicknesses can all vary, but the headlap is a constant that must be maintained. A minimum three-inch headlap is standard, but greater headlap is acceptable anytime, and is necessary

Photo by Dave Starke



Figure 3: Random width slate installation in the UK.

when the roof slope drops toward 4:12 (which is minimum slope for slate roofs). Insufficient headlap can lead to roof leakage (although a two-inch headlap is common on older roofs with adequate slope — 12:12 or greater).

A simple variation of the *standard* installation is the “random width” installation, which utilizes slates of various widths (Figure 3). In random width installations, the “side-laps,” as well as the headlaps, are critical. Sidelaps are the lateral spacing of the side-butts of each slate in relation to the course above or below (Figure 4). The sidelaps, like the headlaps, should be a minimum of three inches in most cases.

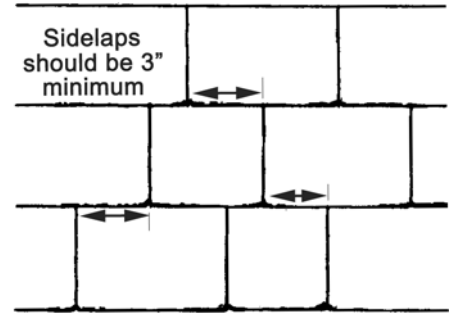


Figure 4: Sidelaps.

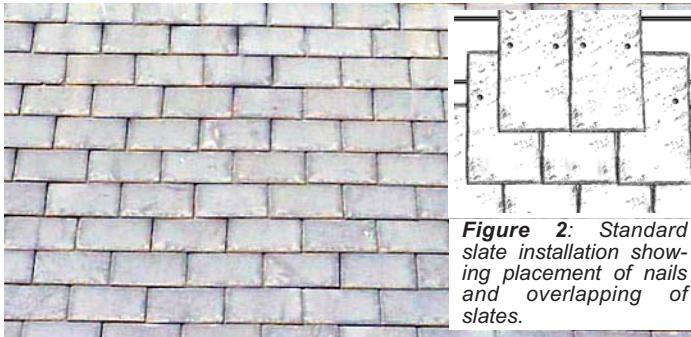


Figure 2: Standard slate installation showing placement of nails and overlapping of slates.

Figure 1: Standard slate installation. All slates are the same length and width. What you see is only the bottom part of each slate — most of the slate shingle is overlapped by the slates above. In fact, each slate is overlapped by the second row above it by three inches. This critical overlap is called the “headlap.”

### TRADITIONAL ROOFING

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Editor/Traditional Roofing  
Joseph Jenkins, Inc., 143 Forest Lane, Grove City, PA 16127 USA  
Ph: (814) 786-9085; [traditionalroofing.com](http://traditionalroofing.com)  
email: [joe@josephjenkins.com](mailto:joe@josephjenkins.com)  
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Slate roofs can utilize slates that vary in both width and length. One such style is called a “graduated” roof because the roof slates traditionally graduate from larger slates at the bottom of the roof to smaller slates at the top (Figure 5, p. 12). Again, proper sidelaps and headlaps must be maintained for the successful functioning of graduated slate roofs (discussed in greater detail in Traditional Roofing #2).

A random width installation can be modified into a “staggered butt” style (Figure 6, p. 12, and on back cover). The staggered butt style of slating can be further modified into a “ragged butt” style, which is simply done by cutting the exposed bottom edges of the slates randomly to create an inimitable roof (Figure 7, p. 12, and back cover).

There are two easy ways to create staggered butt slate roofs. The first is to use slates all of one length, say 20”. The roof is chalked for 20” slates *with added headlap* (4” instead of 3”), or chalk lines every 8 inches. Slates of various widths should be used for aesthetic purposes, and various color shades will add even more to the beauty of the finished job. Every other slate is nailed above the chalk line about an inch or so during the installation (Figure 8, p. 12). This reduces the headlap of the raised slates to 3”, which

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Photos by Joe Jenkins

**Figure 5:** Graduated slate roof at Grove City College, Grove City, Pennsylvania. Slates vary in both widths and lengths. This roof also blends several colors of slate.

## STAGGERED BUTT SLATING

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is acceptable. On steep slopes (greater than 12:12) even less headlap may be acceptable in some cases, allowing for a greater staggering effect. If more pronounced staggering of the slates is desired, then chalk the slates for a five inch headlap and nail every other slate two inches above the chalk line. The result is a beautiful roof. It requires a greater quantity of slates due to the extra headlap, but the artistic effect is worth it.

Another method of installing a staggered butt slate roof is to use slates of different lengths. For example, random width and preferably multi-colored slates that are 16", 18" and 20" long can be nailed so that the top edges of all of



**Figure 6:** Staggered butt slate roof on the shores of Lake Catherine, Vermont. Slates vary in widths, and lengths, and, in this case, colors and thicknesses. The tops of the slates are lined up but the bottoms are allowed to hang down.



**Figure 7:** Ragged butt slate roof in Lake Forest, Illinois. Slates vary in widths, lengths, colors and thicknesses. The top of the slates are lined up, but the bottom is allowed to hang down. The bottom edges are trimmed at random to create a unique look.

the slates line up with the chalk lines. The roof is chalked for the 16" slates with a 3" headlap (a line every 6.5"). The effect is that the bottoms of the 18" and 20" slates hang down two inches and four inches more than the 16" slates. Not only does this create a dramatic staggering effect on the roof, but it also allows for a "ragged" or "battered" butt style to also be utilized, if desired (Figure 9, page 13).

Ragged butt slate roofs require some, if not most, of the slates to be trimmed erratically along the bottom edge before nailing into place. The end result is clearly a work of art, not difficult to achieve, and a lot of fun. Again, this style of slating utilizes more slates and requires more installation time, but when you know the roof is going to be looked at for a century or two, a little extra installation time doesn't really mean that much when you're creating a work of art.

One of the most important elements of staggered and battered butt slate roof installations is the planning. The installer needs to know ahead of time how many slates of each width, length, and color are going to be used. For example, if you use 95% 16" slates and 5% 20" slates, the end result won't look very good — you need a greater mix of sizes. Decide ahead of time what sort of color and size blend might look good, then have the entire selection on the

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**Figure 8:** Same length slates, staggered above chalk line, in Sewickly, Pennsylvania (see also back cover).

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job site before you get started.

One of the most important workers on the installation crew is the ground man because he must blend the slates on the ground before they are sent up to the installers on the roof. For example, if you are using 1/3 14" wide slates, 1/3 12" wide slates, 1/6 11" wide slates and 1/6 10" wide slates, then the ground man must select four 14" slates, four 12" slates, two 11" slates and two 10" slates, and then send these up to the slaters. The ground man is responsible for blending the slates as they're sent up so that the slaters can simply install the slates without having to worry about whether the right ratio of sizes and colors is being nailed into place. A good ground man who knows how to blend the slates is critical to an efficient slate roof installation utilizing mixed sizes and colors.

One thing that separates slate roofs from all others, aside from beauty, longevity and natural origin, is the potential for creativity. When a stone roof can be varied according to the lengths, widths, thicknesses, colors, and shapes of the shingles, the possibilities seem endless. This is where a slater can depart from the mundane job of being a roofer and instead step into the realm of becoming an artist. ■



Photo by Joe Jenkins

**Figure 9:** Ragged butt style of slating on a bat house at Slippery Rock Univ., Slippery Rock, Pennsylvania (see back cover). In this case, three lengths of slates are being used (16", 18" and 20"). The tops of the slates are lined up with chalk lines spaced for 16" slates and allowing for a three inch headlap (a chalk line every 6.5"). The longer slates are allowed to hang down, but are trimmed off to leave a "battered" or "ragged" effect.

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