

What's In a HOLE?

The Size, Type and Placement of Nail Holes in Roofing Slates Do Matter — by Joseph Jenkins

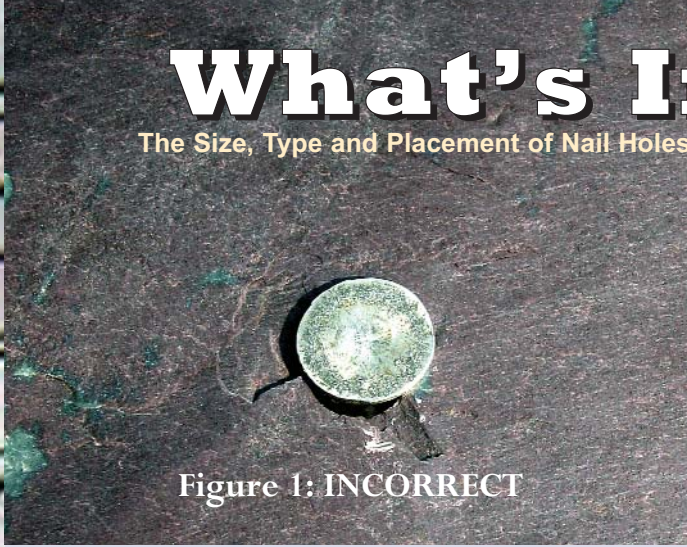


Figure 1: INCORRECT

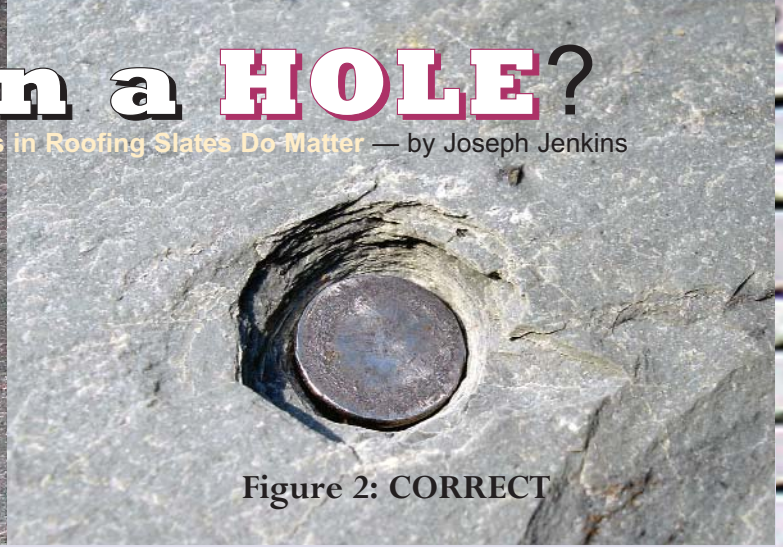


Figure 2: CORRECT



THE SLATE ON THE LEFT (FIGURE 1) SHOWS THREE MISTAKES.

1) The hole on this standard-thickness (i.e. 3/16" to 1/4") slate has been drilled rather than punched. This forces the nail head to sit above the slate and rub against the overlapping slate, eventually wearing a hole in it. 2) The hole has been drilled too close to the center of the slate (2.5" from the outer edge). Correct placement is 1.25" to 1.5" from the edge. 3) The hole is too big. Note the diameter of the nail in relation to the diameter of the hole.

The slate on the right (Figure 2) shows a correctly manufactured slate. 1) The hole has been punched, which leaves a cratered hole that allows the nail head to hide down inside the slate. 2) The hole is about 1.5" from the outer edge. 3) The hole is the right diameter for roofing nails.

Why 1.25" to 1.5" from the outer edge? The slates in Figure 1 came in a load of random-width slates. The most narrow width was 8". With the nail holes being 2.5" from the outer edges, that only left 3" in the center of the slate between the nail holes. When the next slate course is installed over this slate, even if the overlapping slates butt right in the center of the slate, there is only 1.5" of lateral overlap to the nail hole — an insufficient distance which will make a good slater real nervous when installing a roof with this caliber of slate due to the possibility of capillary attraction drawing

Figure 3: This is what happens to a standard-thickness slate over time if an underlying nail head rubs against it — the nail head eventually wears a hole through the overlying slate!



water to the nail hole and creating a hidden leak.

What about the diameter of the hole? A precise slater nails his slate along chalk lines that mark the top edge of the slate. When the holes are twice the diameter of the nail, the slates drop slightly away from the line after nailing. Although this may seem like an trivial complaint, it is an unnecessary annoyance on the job site.

Some say that the nail heads protruding above the drilled slate are not really a problem. In the short run, they aren't, but in the long run, they will wear a hole in overlying standard-thickness slates (Figure 3). Furthermore, when standard-thickness slates are drilled, the quality control can take a nose-dive. For example, any knob on a roof slate must be left on the exposed face so it won't interfere with the laying of the slate. Same with thick ends — they must be on the bottom of the slate. When slates are stacked like pancakes and drilled all at once, these nuances of roofing slate manufacturing tend to be overlooked. As an example, the slates on the left generated a full pallet of unusable slates on a 30 square slate roof installation; many had the holes drilled at the wrong end. The slates on the right yielded only a handful of reject slates in a 30 square job. It pays to buy slates from a manufacturer who knows what they're doing and cares about the details.

If you're buying standard thickness slates directly from the quarry, make sure the manufacturer knows you want slates that are punched rather than drilled. [Thicker slates, however, may need to be drilled and are less likely to be damaged by underlying nailheads.] The traditional punching of the nail holes will automatically create the crater effect in the hole as well as make a hole of the correct diameter. Make sure the holes are located 1.25" to 1.5" from the outer edge. These specifications should also be spelled out in your contract documents.

Footnote: The distance of the holes from the bottom of the slate should allow the slates to be installed with either a 3" or 4" headlap. This would place the holes the distance of the vertical exposure (as calculated for a 4" headlap) plus about 4.5" from the bottom of the slate. For example, on a 20" slate with a 4" headlap, the exposure would be 8" and the nail hole placement would then be 12.5" from the bottom of the slate. This placement would also allow the slate to be installed with a 3" headlap. 📐

All Photos by Joe Jenkins