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## Slating Nail Selection

### There is More Than One Option

Solid copper slating nails are frequently selected for securing slate shingles to the roof deck. And rightly so. Copper nails are extremely durable and should remain serviceable for as long as the slate itself. They are also readily cut by a slate ripper, making slate repair easy, with little or no disruption to adjacent slates. Simply put, copper nails are ideally suited for laying new slate roofs.

In fact, the National Roofing Contractors Association's *Roofing and Waterproofing Manual – Fifth Edition* states "NRCA suggests the use of copper slating nails for slate roofs." It seems pretty cut and dry. There are circumstances, however, when it may be appropriate to consider alternatives to copper, such as galvanized and stainless steel slating nails. Such circumstances include the repair of an existing roof, a relatively dense roof deck, and a harsh chemical environment at the building on which the slate is to be installed.

When repairing an older slate roof with, say, thirty or forty years of remaining service life, copper nails can certainly be used for securing individual replacement slates. But if the goal is to match the service life of the repairs to the service life of the existing roof and to make the repairs in as economical a manner as possible, then hot-dipped or double hot-dipped galvanized nails will perform just as well. Electroplated nails (labeled EG on the box for electrogalvanized) have too thin a coating of zinc to protect the underlying steel from corrosion over the long term and should not be used on a slate roof, except for temporary and short-term repairs.

Copper is a relatively malleable material. And while solid copper nails can be readily driven

into a wide variety of roof deck materials, certain decks are dense or hard enough to cause copper nails to bend when being driven. Such substrates include old concrete and lightweight concrete decks; some old wood decks that have become harder with time; and new or existing hardwood decks, such as red or white oak, whose interior faces might be exposed to view. Predrilling for each nail is an option, albeit an expensive one. Stainless steel nails—being less malleable than copper and, therefore, less likely to bend when driven—are a better option. The downside of using stainless steel slating nails arises when slate repair is needed. Stainless steel nails are difficult to cut with a slate ripper. The extra effort required to cut or remove the stainless steel nails securing a broken slate can sometimes cause adjacent slates to break or become dislodged.

Certain harsh chemical environments, such as those associated with industrial, science, or research facilities, can affect the durability of a slate roof via corrosion of the nails used to secure the slates. In such environments, Type 304 or even Type 316 stainless steel nails may hold up best over the long term. The National Slate Association's *Slate Roofs*, published in 1926, mentions "Cimet,"

## Slating Nail Selection (CONTINUED)

“Everdur,” and “similar chrome-iron alloy nails” (i.e., stainless steel nails) as being “particularly suited to resist atmospheric corrosion” and, despite their high cost, more economical than copper nails “for certain buildings with excessive or unusual acid fumes under and surrounding the slate roofs.” Fire-retardant treated lumber might also fall under the heading of a harsh chemical environment. If installing slate shingles over a fire-retardant treated wood deck, check with the deck manufacturer for the type of nail recommended, and if in doubt, use a material that is not susceptible to chemical corrosion, such as Type 316 stainless steel.

In addition to the material, the style of nail is an important consideration. Common nails should never be used for securing slate shingles due to their heavy gauge and small head size. The robust shank of common nails makes slate removal and repair extremely difficult, and their small heads are too close to the size of the nail holes in the slates to adequately safeguard against pull-through over the long term. The same factors recommend against the use of masonry cut nails. Only slating and roofing nails are suitable for use with slate. They are appropriately strong and have large heads capable of holding the slates securely in place.

Double hot-dipped galvanized nails are available from Maze Nails, a Division of W.H. Maze Company, Peru, IL, 800.435.5949, [www.mazenails.com](http://www.mazenails.com). Stainless steel nails are available from W.H. Maze Company; Clendenin Brothers, Inc., Baltimore, MD, 410.327.4500, [www.clendeninbrothers.com](http://www.clendeninbrothers.com); and Manasquan Premium Fasteners, Brick, NJ, 800.542.1979, [www.manasquanfasteners.com](http://www.manasquanfasteners.com).

And what about ring-shank versus smooth-shank nails? We’ll have to save that topic for another day.