

## READERS WRITE:

"Apart from the additional cost, are there technical reasons why slate should not be installed over IWS? I understand about the role of felt for temporary covering during installation, but in chronic ice damming climate (where I work) where the usual design solutions cannot be used on old construction, we apply IWS. We do not use it as a "prophylactic" for bad craftsmanship!"  
*Grand Rapids, Michigan*

\* \* \*

"Regarding your article in Fall 2001 "Traditional Roofing," titled "Why Slate Roofs Don't Need Ice and Water Membrane", may I respectfully object? I lived for many years, until the mid-1980s, under a slate roof on a house in Philadelphia built in about 1901... it leaked in several places. We were able to trace the problems to some of the valleys. We had good slate roofers look at the roof, and they were of the opinion that the only way to completely stop the leaks would be to remove most of the roof slating, widening the flashing. This proved too costly, and we lived with the leaks.

I have always been concerned that the nature of the slate material creates relatively large open channels between the slates, with the potential to allow water to be driven up under windy storm conditions.

There is also the whole concern about ice damming at eaves, with which I am sure you're familiar. Over the years, use of such membranes has virtually eliminated leakage problems with roofs on buildings I've been involved with.

You seem to be in denial about people's experience with slate roofs. Unfortunately, I have heard too many people object to my proposal to use a slate roof on their house because their experi-

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ence of slate roofs is that they leak! If I want to put slate roofs on my buildings, I need to be able to assure my clients that they will not leak, because modern materials, like the membranes to which you object, will make such a thing possible." M.W.

\* \* \*

"My family has been in the slate roofing business since my great grandfather immigrated here from Ireland in the early 1880's. He was trained in England first as an apprentice and then a roofer. My grandfather started our slate roofing company in the 1920's, and we have been in operation ever since.

Ice and water shield under slate as well as other roofing material becomes brittle and can crack. We assume this happens due to the high temperatures slate roofs achieve or the expansion of different materials. Slate as well as roofing shingles stick to the ice and water and can be difficult to replace without breakage. Ask any of your asphalt shinglers what it is like to strip a roof totally covered with ice and water with the shingles installed directly to the ice and water. The same happens to slate and the slate can be destroyed or become unsalvagable.

Some of the places we have observed ice and water shield failures are at dormer/roof deck intersections and chimney/roof deck intersections. The materials expand and contract differently and can cause cracking of the ice & water at these areas. We install ice and water to our felt underlayments on shingle installations and not to the roof deck. So beware!

We only use two solutions when it comes to ice damming on a slate roof. First one is a copper ice belt. The second involves installing two layers of 30 pound felt with a layer of slaters mastic in between. We have never had a failure." K.S.

\* \* \*

Jenkins replies: *We also have heavy ice damming at times. When I investigate a leak caused by that ice damming, I have invariably found it to be caused by a hole or crack in the slate, not by penetration of water through the slate in general (if the slate's installed properly). I have actually never used a square inch of ice and water shield in 33 years of slate roofing and probably never will. Nor have I ever seen it on a slate roof, except those installed in the past decade or two by asphalt shingle roofers. My primary aversion to IWS is simply that the industry is trying to make it a required component of every roof, when, in fact, in many cases, if not most, it serves no useful purpose at all. It's main purpose is to protect plywood from delamination, and non-plywood roofs don't need it.*

*Although I do use 30 lb. felt when installing new roofs or flashings in case of rain during installation, I don't use IWS, or, for that matter, any underlayment under valleys or around chimneys when I'm installing or replacing the flashings. I know my work will not leak—and that's 100% guaranteed. If it leaks a drop, something was done wrong and it needs to be redone. If it isn't going to leak a drop, then what's the point of an underlayment—just in case it leaks? If it leaks I want to know it immediately and find the prob-*

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lem and fix it. I've had a couple of instances over the years when a chimney flashing job leaked. It took me a while to figure out the flashing (not underlayment) problem, but I did, and once I figured it out, repair was simple. A heavy underlayment would have hidden the problem. I'm very grateful when I can learn from my mistakes and I don't need to obscure my work with the false security of a temporary underlayment. **It's the slates and flashings that permanently keep out the water, not the underlayment.**

When a slate roof is installed properly, or flashed properly, not a single drop of water will penetrate the roof. This is a fact of roofing life that is taken for granted among experienced professionals. Knowing that, I marvel at the insistence that ice and water shield should be considered an essential part of any roof system.

As far as ice build-up along eaves causing roof leaks is concerned, think of it this way: If the leak is being caused by water penetration through the slates due to ice back-up, then the water penetration should occur along the entire length of the eaves. If that happens, more headlap may likely solve the problem (unless the problem is due to insufficient slope or other design flaw). In any case, water penetrating a slate roof anywhere, for any reason, means the roof was not installed properly.

What I have found during times of heavy ice build-up and leakage along eaves is the leakage does not occur along the length of the eaves at all. It occurs in one spot or two along the eaves, showing up inside the building in pin-pointed places. When I have examined the roof closely, I have found holes, nails, or cracks at those points on the roof. These minor roof flaws only leak under severe ice damming situations and once these points are repaired, the problem is solved.

Here's an ice dam tip: the roof is leaking at the eaves during ice damming, but you can't find where the water is penetrating.

Simply cut copper bib flashings about 6" wide and long enough so that when you slide them under the slots (where the roof slates abut at their sides) the top of the bibs hit the slate nails on the next row up. Curve the bibs slightly so they friction fit under the slates. Use a drop of lifetime clear silicon under the bibs if you feel the need for extra adhesion. Install the bibs along the affected area of the eaves. You can do this in a very short time and it will likely stop the leaking. It has never failed for me and is a lot easier and more permanent than removing the slates and installing new temporary underlayment.

The writer who mentioned leaking valleys that could not be effectively repaired was suffering from either roofing contractors who did not know what they were doing, or a faulty roof design (or both). Having replaced literally miles of valleys on slate roofs under all sorts of circumstances and never having a leak, using no underlayment ever, I know that the assertion that valleys will leak without ice and water shield is totally incorrect.

I was originally attracted to slate roofing systems because they're natural roofs — roofs of stone and wood, biodegradable roofs, recyclable roofs, ecological roofs, environmentally friendly roofs. They're simple, low-tech roofing systems that are fabulously successful when properly installed. Adding unnecessary asphalt materials to these roofing systems steers them away from the ecologically friendly roof systems that they now are and forces them toward the petrochemical toxic waste roofing systems so popular in America today. There's no excuse for that. Architectural and construction planners would do well to place a high priority on choosing building materials and methods that are environmentally friendly.

(CONTINUED ON PAGE 13)

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For over 150 years slate roofs have been used on all types of architecture in the United States. The roof on any structure is the most important part of the practical aspect of the design. It protects the contents and the occupants, as well as the materials used, from rain, sleet, snow, wind, heat and cold. A slate roof is fire proof and repairable—repairable being the most important feature. In 50 to 70 years, when the next generation has to assume responsibility for maintenance, it is nice to hear a roofer say, "I can repair the storm damage from the fallen tree branch (or the fire damage or whatever the unforeseen catastrophe). We do not have to replace the whole roof. You can be glad someone chose a real slate roof."

In years past, roofers started a proud tradition. Contractors who respect the natural, timeless beauty of slate and make the small extra effort to install it properly will take pride knowing they are operating at the top of their craft. They can be confident in saying the typical service life of a slate roof is in excess of 75 years, even a hundred years.

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## READERS WRITE

(CONTINUED FROM PAGE 9)

*Do I think it's wrong to put ice and water shield along the eaves of a slate roof? I think it's unnecessary in western PA, even though almost the entire state is categorized as benefiting from ice and water shield according to the NRCA. It may be a design improvement in Maine or other area of more severe weather. It may also simply be a way to extract more dollars from a roof owner. Some roofing contractors here in western PA advise homeowners to take off the slates along their eaves and install IWS and then re-install the slates. This is a costly approach compared to just finding a leak and fixing it.*

*Obviously, the IWS industry's marketing efforts are paying off.*

\* \* \*

*"I had 3000 sq.ft. of spanish slate [from Galicia region of Spain] shipped to my home in NJ. It is roughly 3/16" in thickness. When it arrived, I was surprised to see no holes in the tiles." G.M.*

\* \* \*

*Jenkins replies: They don't typically "hole" the slate in Spain during quarrying like they do here, as much of the Spanish slate is shipped to Europe where they tend to install the slate with hooks rather than nails, so no nail holes are needed. When slates are produced for the American market, they are holed before shipping (usually). Looks like you got a shipment that wasn't holed. You'll probably have to hole them by hand with a slate hammer.*

*Buying slates from a foreign source can be a huge gamble unless you're familiar with the quarry, the slate mill, and the*

*work ethic of the people who produce the slate. I have recently heard quite a few horror stories about large, new, slate roofs that are failing after only 10 years (or less) due to "bad" slates coming from foreign sources. Some of these failing jobs have become a huge liability for the installer or for the company that provided the slate — nightmare scenarios that you do not want to experience and don't need to if you educate yourself.*

*Not only are slates that are destined for a European market usually not holed, but they can also be very thin, maybe 1/8" thick. American slates are always holed and are usually 3/16" to 1/4" standard minimal thickness. Furthermore, all nail holes in roofing slate must be punched to allow for a counter-sinking effect on the front of the slate so the nail head can sit down into the slate. If the slate is drilled, the drilled holes must also be counter sunk. Many foreign slates are being shipped to the US without the counter sinking, and some domestic slates may also be lacking in the same manner. Slates that have nail holes without counter sinking will allow the nail heads to rub against the overlying slates eventually resulting in leaking holes popping up all over the roof — a disaster.*

*So anytime you're buying slates, make sure you're getting a) slates with nail holes; b) nail holes that are counter sunk; c) 3/16" to 1/4" minimum thickness; d) slates that are high quality with a proven longevity. Color should never be the first consideration when buying roofing slates; quality of the rock should be the first consideration. You can acquire good quality slates in many colors, but do your homework first. It will be either your money, your home, or your reputation at stake.*

*I have to add that some excellent slate comes from*

(CONTINUED ON PAGE 15)

## READERS WRITE

(CONTINUED FROM PAGE 13)

Spain, including from the Galicia and Leon regions, and from other foreign sources as well (look for an article on Spanish slate in a future TR). Take your time and shop around — your slate roof should last at least a century if the right slate is used and it's properly installed, so why rush into it? Buyer beware. ☒



## ROUNDTABLE

(CONTINUED FROM PAGE 2)

These groups were: 1) manufacturers (quarriers), 2) roofing contractors, and 3) owner/designers. Group one included John Conlin, John Hill, and Shawn Camara. Group two included Doug Cochran, Dave Leeland, Matt Millen, and Joe Jenkins. Group three included Bill Marcum, Pat Rudder, and Jim Constantine.

At the time of this writing, there were no additional developments to report. ☒

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