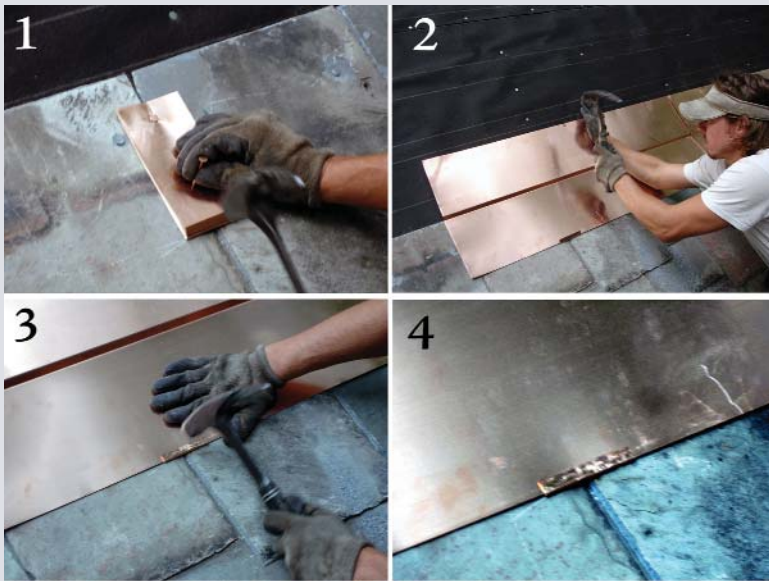


APRONS AND CLEATS



▲ A slope transition on a roof plane often requires a transition flashing, sometimes called an "apron." The flashing is folded with a Z bend to compensate for the angle of the slate on the upper half (making a cant strip unnecessary), and is nailed along the top edge, then held down along the lower edge with cleats, as shown. Dimensions vary, but 16", 20 ounce copper stock is shown used above.
 ▼ Unique slate siding and copper roofing installed by SRCA member Ron Kugel of Evans City, PA.

Top photos by Joseph Jenkins, bottom photo by Ron Kugel



SNOW RAILS

Snow rails are used along the perimeter of slate roofs for the prevention of sudden and unexpected ice and snow avalanches, which can damage people, cars, shrubbery and other property underneath. The rail system can also include stainless steel expanded metal to prevent slates and other debris from sliding off the roof under the rails and creating a fall hazard. Also, a standard field array of snow guards can be included on the field of the roof above the snow rail for maximum protection.

Snow rail fence brackets are installed parallel to, and approximately 24" to 36" from the eaves. The brackets should be spaced from 18-24" to no more than 42" - 48" apart, depending on the pitch of the roof and the expected snow load. It is recommended to use through bolts with a backer plate on the underside of the roof deck. Bronze, brass or stainless steel pipe is recommended, (copper water pipe should not be used). High snow load areas should use a three pipe system such as the Mullane 500. If a smaller system is used, then it should be supplemented with an additional snow guard array in the field of the roof above the snow rail.

The Mullane Model 500 three-pipe system includes a bracket of solid cast bronze riveted to a 1/8" brass plate. The bracket includes three 1.125" holes to allow the rails to pass through. The plate is custom sized to equal the size of a slate on the roof, and is installed in place of a slate, as if it were a slate. The piping is brass, 3/4" inside diameter (1.05" OD) and includes couplings and end caps as needed. The red brass pipes can be bought in 12' lengths. All the parts are sold separately, allowing for custom installations.

Snow rail bracket systems are permanent and sturdy, providing lifetime durability. Independent testing has shown that the Mullane 500 snow rail assembly will withstand almost 4,000 pounds of direct mechanical force; the rivets will not pull out or shear and the brass bolts will remain intact. Furthermore, bronze castings will not crack due to water or age. They aren't cheap, but you get what you pay for. You can roughly expect to pay about \$100.00 per running foot for a 3-rail Mullane 500 system, plus shipping and installation costs. Add another \$9.00 per foot for stainless steel expanded wire mesh (2007 prices — subject to change), used to keep smaller objects, such as slates, from falling through the rails. These and other snow retention systems are available at slateroofcentral.com (814-786-9085).



See also the snowguard article on page 31.

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