Insulated ventilated roof system

Many older homes lack proper insulation and ventilation. In many cases these houses do not lend themselves to standard improvements in attic insulation and soffit ventilation.

Believe it or not, Dan Perkins, owner of Dan Perkins Construction in Ishpeming, Mich., has seen these homes in the Upper Peninsula of Michigan — where snow is measured in feet instead of inches. Perkins has developed a method to provide proper attic insulation and soffit ventilation to go with the metal roofing system.

"A cape cod (or story and a half) type home, for instance, has pitched ceilings on part of the upstairs bedrooms and

Any thoughts?

Do you see something you like or would do differently? Got a better way to prepare a roof deck for re-roofing with metal? Share it with the editors. Write to *Metal Roofing Magazine*, 700 East State St., Iola, WI, 54990-0001, or e-mail jim.austin@fwpubs.com.

these pitched ceilings are often only 4 inches from the roof plane with no room for additional insulation or ventilation," Perkins says. "Often overzealous insulators have already packed those rafters tight with insulation so there is no ventilation through them at all. Any pitched or cathedral type ceiling that is not built with scissor trusses may be constricted for proper insulation or ventilation, or both."

Perkins says this situation can cause excessive heat and moisture in the roof system in southern climates. "In northern climates, ice damming occurs on these types of roofs," he says. "My standard approach to handling these types of jobs is to insulate and ventilate over the existing roof deck. It is an application used only for buildings that do not have open attic spaces that can be easily insulated and vented."

After all existing roofing is removed, a perimeter of 2x4s is installed around the outside edge of the roof. The rest of the roof plane is then in-filled with 1-1/2-inch of sheet foam. Eave ventilation is introduced over the foam with perforated stock applied above the 2x4 at the eave.

"A second level of 2x4s is framed over the foam running eave to peak and plywood is applied over the frame," Perkins says. "A vented ridge completes the system, giving full eave to ridge venting over a solid layer of insulation. Two or three layers of foam can be added if additional insulation is desired. This type of upgrade to a roof is becoming more popular as energy costs continue to rise. Almost 70 percent of our roofing jobs now involve insulation and ventilation improvement."

That's a real bonus for the customer who may end up with multiple issues taken care of, including sags in the roof.

"Another advantage to framing a roof in this manner is all sags can be taken out of an old roof using string lines and shims," Perkins says. "This is a relatively expensive roofing upgrade (we charge roughly $5 per square foot for it) but our customers realize the value and it eliminates ice on our roofs." ■