

Tapered Panels

Overcoming Challenges for a successful project

I was first introduced to the Snyders by their insurance adjuster. The Snyders had an unusual copper roof on their house that the adjuster had never seen before and since I had consulted on several other metal roofs for him in the past, he asked me to go look at the roof and put a quote together for him so he would know how much to pay for the roof. I made arrangements to look at the roof, and it had a copper flat panel. This particular one was hand built interlocking pieces about 3 feet x 3 feet. Because the roof is shaped like the letter S, every piece had to be tapered. They told me it took the original roofers eight months to install the roof. The roof measured about 16,000 square feet and was going to cost about \$330,000 to replace if we went back with copper. Because of the value of the home, their deductible was higher than the cost of the roof so they would not have received any money from their insurance company. They had filed a claim because of hail damage.

When they found they would have to write a check for the cost of the roof, they asked if there was an alternative to the copper. I suggested they use steel to match the color of weathered copper and consider standing seam instead of the flat panel design. Because of the design of the house, every panel would have to be tapered. Because every section of the roof was longer than 10 feet, in the past, that would have involved making multiple panels to span from eave to ridge. Because we had invested in New Tech's tapered panel equipment, we were able to offer the ability to fabricate continuous panels from eave to ridge. The other contractors that were asked to submit bids on the project were unable to provide continuous panels and therefore Metal Master Roofing was asked to replace the roof.

At this point, we spent several weeks submitting color samples to help the homeowners decide what would look best with the limestone exterior. Eventually they decided on "copper brown" and we began the process of removing the copper panels, repairing rot-



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The roof measured about 16,000 square feet and was going to cost about \$330,000 to replace if copper was used.

ten plywood, and covering the deck with ice and water shield. Because the original roofers never sealed any of the interlocking pieces of the original roof, there was a lot of plywood damage. The pitch of the roof was only a 3/12 so sealing the seams should have been done.

Because most of my crew had never fabricated or installed tapered panels this long and had never used this type of equipment before, we spent the first day training the crew how to use New Tech's slitter and tapering equipment. The equipment was easy to use and the crew was ready to start fabbing panels after only a few experimental panels. The most difficult part of the roof was calculating the amount of taper each panel would need in order to have every panel the same size from first to last. Because every section of the roof was a different length, the math had to be done differently each time.

The center portion of the roof was flat with multiple pitch roof sections tying into it. Because of the layout of the house, that portion of the roof was not visible from the ground so we decided, with the homeowner's approval, to install an 80mil brown PVC membrane that matched the color of the standing seam on the center portion.

The original roof had electric power vents to ventilate the attic space, but we chose to use solar powered vents to save electricity. Because of the curved shape of the house, all the fascia and eave trim was installed in 16-inch pieces. Each piece was overlapped one inch.

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Most of the crew had never fabricated or installed tapered panels this long, so they were trained how to use New Tech's slitter and tapering equipment.

Because of the number of pieces required, and because each piece had to line up perfectly in order to appear to be continuous, it took two guys more than a week just to install the fascia cover and the eave trim. The gazebo used 12-inch pieces and took a day- and- a- half to install the fascia. Because the gazebo was designed like a seashell, the panels started out longer and as they went around the perimeter, they got shorter.

This presented a new challenge because each panel had to be the same width at the outside edge of the roof, and a different width at the point where it met the center wall. The panels started at 10 feet 6 inches in length and the last panel was only

about 3 feet 4 inches long. The entire project took about two months using a five-man crew. Because of the equipment we purchased from New Tech, we were able to complete a one-of-a-kind project with very few problems and very little effort operating the equipment. Had we not purchased the equipment to build tapered panels, we would not have been able to complete such a unique roof with the look that the homeowner desired.

As a footnote, the initial panels were run from a New Tech SSH with only the female leg. The SSH belongs to Mark Ruelas at North Texas Metal Roofing who runs all our standing seam panels. **MR**