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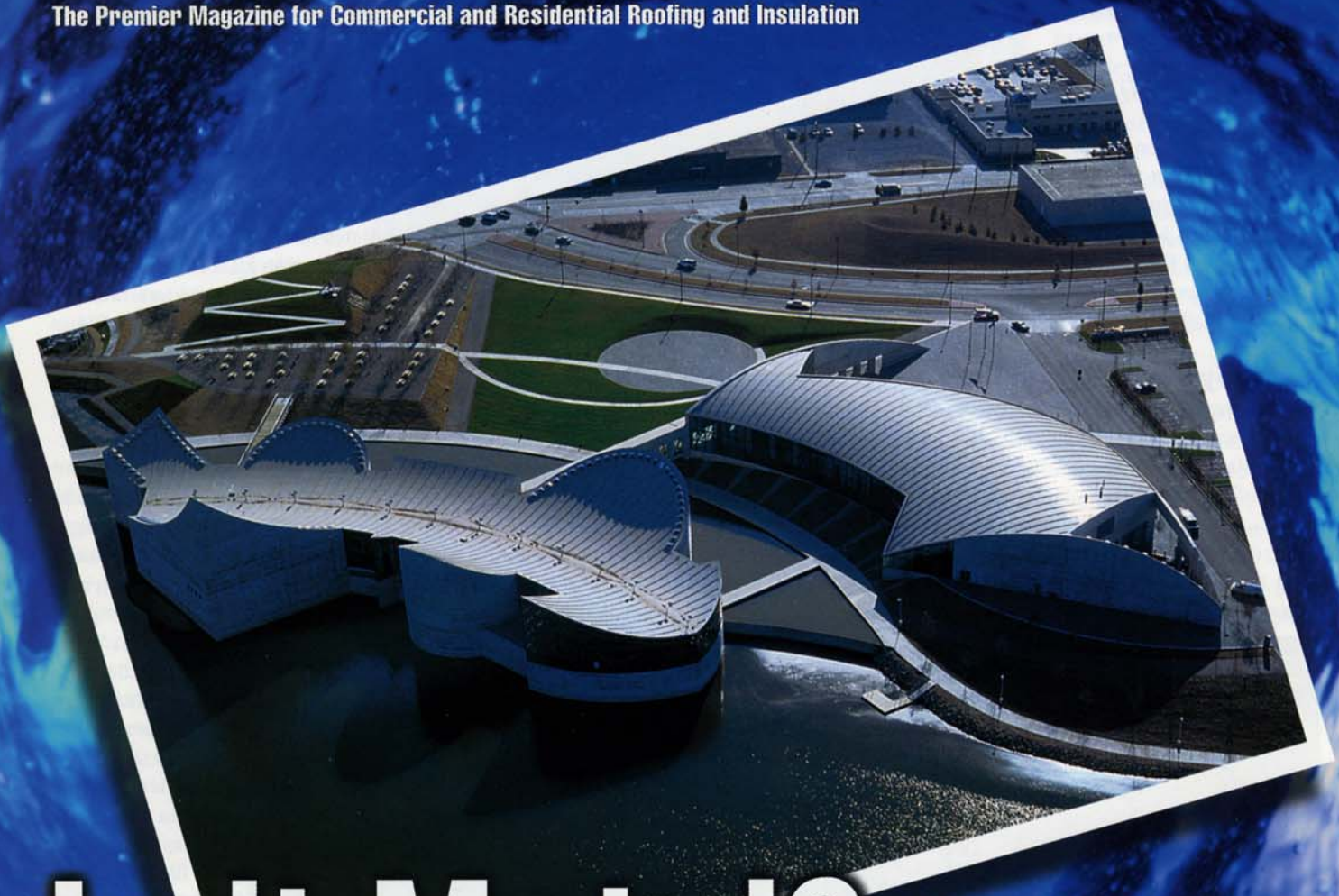

Is it Metal? Or Single-Ply?

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You Won't Believe Your Eyes

That Metal Roof May Not Be What You Think

by Josephine A. DeLorenzo

If you happen to fly through the US Air terminal at the Philadelphia International Airport next year, be sure to notice the beautiful new metal roof installed by Hamada Inc. of Philadelphia. We'll let you in on a little secret though: It's not really metal. It's single-ply.

The System

If your customers have a taste for metal on a single-ply budget, you might want to investigate the Décor system, recently brought to the United States by Sarnafil Inc., Canton, Mass. Originally introduced by the company's Scandinavian division in the mid-1990s, the product has been successful in Europe.

Two systems are available. The first patent-pending Décor Profile consists of extruded sections welded to the finished Sarnafil PVC roof membrane. This system is designed to replicate the appearance of a metal rib. Made from the same formula as the company's membrane, the profiles come in 10-foot lengths and are connected with dowels. The second Décor Profile system utilizes a post and rib system. The post is designed with a pre-welded base plate that supports a base rail and a cover piece of Sarnaclad metal. The post and rib system gives designers and building owners more flexibility. Both systems allow varied spacing of the profiles.

According to Brian Whelan, vice president, sales and marketing, Sarnafil waited to introduce the Décor product in the Unites States until it developed its patent-pending conversion kit for the Sarnamatic 641/641 MC automatic welders. The kit allows crews to weld the Décor Profile to the finished membrane. "It's a tremendous labor-saving device," says Whelan.

The company originally thought that the Décor Profile would be an architecturally driven product, but it turns out that roofing contractors are bringing in more business. "Contractors are using it to convert metal roofing specs," explains Whelan, "At a 20 to 25 percent savings over metal, the owner gets the look of metal with the watertight benefits of single-ply." Whelan notes that everyone today is looking for an angle to sell a particular system. Décor is a good fit on a building that has flat and sloped-metal sections, "Then the building owner only has to deal with one manufacturer and one warranty."

Capeway Roofing Systems, Westport, Mass., reroofed the Apponequet Regional High School in Lakeville, Mass. On the low-slope deck areas, Sarnafil's white G410 EnergySmart membrane was adhered to insulation panels with a low-odor, low-VOC, water-based adhesive. On the steep-sloped portion over the gymnasium roof, Capeway installed the Décor profile over the G410 membrane, both in azure blue.

The Airport

An example of how the Décor system can be used is underway at the Philadelphia International Airport where US Air is

building a new terminal. Taking up the challenge of the 5,000-square, multilevel, multisloped roof is Hamada Inc., Philadelphia. Incorporated in 1960, the company performs all types of commercial and industrial work — built-up, modifieds, single-ply and metal. At peak, there are 100 employees.

Hamada Inc. began stocking the job in late December 2000, not the ideal time to be up on the roof. "I was told by my foreman to stay away from the site because every time I showed up, it snowed," remembers Zachary Hamada, president of Hamada Inc. Hamada says he's been in the roofing business "since birth," working summers at the company, started by his father, until going full time in 1975. "The airport job was a competitive bid situation, but there weren't too many who bid against us, due to the size and complexity," Hamada explains. "I think there were several factors that played a role in us getting the job: We've done work at the airport before, we're familiar with it, and we have a relationship with Turner Construction (the general contractor on the job)."

The level of complexity on this job is high. "About half the roofs on the terminal are a 5:12 slope, about 25 percent are a 10:12 slope – almost a saw tooth. The balance is flat," explains Joe Bruski, estimator for Hamada and the project manager for the airport job. The system installed from the metal deck up included Sarnafil's Sanravap vapor retarder with taped seams; iso board insulation that was either 3 1/2 inches flat or tapered, depending on the area; and 1/2-inch Dens Deck gypsum board. All of these layers are mechanically attached. The top layer is Sarnafil's 60-mil G410 Feltback, fully adhered with Sarnacol adhesive. The membrane is PVC manufactured with a spread coating process and an integral fiberglass mat reinforcement.

The historic Best Western Roundhouse in Boston needed a new roof, but the budget did not allow for a standing-seam copper roof.

At press time, according to Hamada, about 80 to 85 percent of the membrane is down and about 60 percent is flashed. This is as much as can be done until the rest of the construction is complete. None of the Décor has been installed. The entire project should be finished by the end of this year or early 2002.

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"When the roof is done, we'll add the Décor post with metal batten spaced every so often to make the roof look like metal. In the saw-tooth area, we'll use the (other) Décor profile, a small PVC extrusion that is welded on to look like standing seam. It gives the roof texture and makes it look like metal," explains Bruski. "To do the installation, there are fasteners that look like golf tees welded to the roof and then screwed down. With that goes a galvanized channel and then the PVC-coated metal is snapped on. The golf tees are 24 inches on center and the battens are spaced 10 feet on center."

To give an understanding of the scope of the work, Bruski adds that there are 24,000 lineal feet of metal cap and 17,000 feet of Décor. He describes the process as "tedious work," and points out that the membrane has to be cleaned before the Décor can be applied. But the plus is it looks great and is "cheaper than metal."

But Wait, There's More!

Hamada Inc.'s $6.5 million contract also includes several other items. To begin with, the company is installing a permanent safety system consisting of steel stanchions welded to the structural steel. Then stainless steel cable is run through. This will be used later for maintenance personnel because the roof will be slippery.

Hamada Inc. is installing the gutters, lined with Sarnafil membrane and a double-pipe system snow guard from Alpine SnowGuards. The snow guards will be put in at the eaves when crews are installing the post and batten. Finally, Hamada Inc. will do all of the carpentry work on the roof, as well as the sheet metal, cappings, copings, flashing and counterflashing.

Challenges

The US Air terminal job is proving to be a challenge, mostly because of its size and complexity. Hamada points out that starting the project in the winter, an initially aggressive schedule, and gearing up for the labor needs were the first hurdle. Bruski adds that other challenges included:

"the way the building is shaped, the different slopes, multiple levels and 19 different roof areas."

Working at an airport that is open 24 hours a day always has a special set of circumstances. "There are the security concerns (all employees had to have background checks), a busy schedule, keeping track of material and debris, and the storing and disposing of the same," Hamada explains. "We have to make sure that nothing blows out onto the runway and interferes with the planes. On some parts of the job, the runway is just 500 yards away." There is a construction fence around the project, but crews must still be diligent.

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Getting material in often proves difficult. There are severe height restrictions for the trailers because of the underpasses leading to the airport — so trucks can't carry full loads. In addition, the terminal is new construction from the ground up, so there are several other trades to work with. "Everything is crane-loaded and has to be scheduled with the construction manager," Bruski explains. "This job takes about 150 tractor trailer loads, and we can do about five loads in a day. We schedule as we go because we have to work around the other trades."

"For this job, from our perspective, we're on budget and everything is going well," says Hamada.

Safety

With such a big and complex job, extra safety precautions were required. As Bruski explains, "Every contractor on the job has to have a designated safety representative whose sole responsibility is safety. The person must attend project-wide safety meetings once a week, as well as toolbox safety meetings with the crew." There was also a requirement for a superintendent to be onsite at all times, as well as a general foreman and foreman. This is not a typical procedure for Hamada Inc. — usually the safety person would be working as well — but Bruski says having these people on the job is helping deal with the size of the job and the logistics of all of the trades working together.

The Home Stretch

For the bulk of the work on the terminal, Hamada Inc. was running two crews for a total of 22 to 25 people on the roof. At press time, there are only skeleton crews onsite, working on flashing and tightening up the 80 to 85 percent of the membrane that has been put down. Next will come the Décor system. The rest of the roofing will have to wait — there are some buildings that aren't up yet, and some roofs to connect buildings need to be added. Sarnafil has been making the required inspections, and when the job is complete, the roof will have a 15-year warranty. "For this job, from our perspective, we're on budget and everything is going well," says Hamada.

Another Perspective

Though Hamada Inc. has yet to install the Décor system on the US Air terminal, there are words of encouragement from another successful project. "Working with the system was easier than we thought it would be," says Stephen Ryan, estimator for Gilbert & Becker Co. Inc., Dorchester, Mass. A company that does mostly slate and copper work, Gilbert & Becker recently completed a Décor job on the historic Best Western Roundhouse in Boston. The owner needed to renovate, but the budget did not allow for a standing seam copper roof.

Just as with the US Air terminal project, Gilbert & Becker used the G410 Felt-back membrane on the Roundhouse. The aged-copper-colored membrane was adhered over a newly poured concrete dome. The membrane had to be tapered into 54 even pie-shaped pieces. In addition, the sheets were 40 feet long and had to be hand-cut off site. The crews rigged a rope system to manage the Sarnamatic up and down the slope. The Décor profile was added with the adapted Sarnamatic. According to Ryan, "In the end, the owner had a highly visible roof that maintains its historical appearance at a fraction of the cost of copper."

Josephine A. DeLorenzo is editor of Roofing Contractor. RC