

Just what the doctor ordered— Self-Sealing UNI-GASKET™ Fittings are Rx for Big Job in Small Area

There was no option for Doug Berndsen of Central Ohio Sheet Metal, January 2002. Self-sealing ductwork was specified for a hospital's three-story expansion. His company had never used it before, and he was concerned about installation and cost.

Berndsen quickly realized that the consistent quality achieved by gasketed duct is virtually impossible to match with hand-sealed duct. Now, more than a year later with all the duct installed in the 100,800-square-foot building, Berndsen knows first hand of the duct's labor- and time-saving benefits. He's now considering it for other jobs ... even those that don't specify it.

Berndsen has initially calculated a conservative 15-percent reduction in labor costs for this job. In total, the duct that he thought carried a premium price is a bargain. Quality is up. Accuracy is up. Labor is down. And, so are his headaches.

'Our Biggest Assets'

Berndsen faced several challenges with the Women's Center expansion at St. Ann's Hospital in Westerville, Ohio: "It was a big project with a lot of ductwork that takes a lot of time, and we were working in tight areas. We had to stay on schedule."

"McGill AirFlow's expertise and self-sealing duct were our biggest assets. They saved time and money, and

substantially reduced potential for errors. Installation is a coordinated effort. We work in tandem with electricians, pipe fitters and plumbers. McGill's color-coded drawings for the field crew to use during installation made the job run like clockwork. And with self-sealing duct, we knew that once installed, it was sealed, and that we wouldn't need to go back to seal it or fix leaks. It's a huge benefit."

Rx for Winning the Job

Berndsen is project manager for the 40-year-old HVAC contractor headquartered in Reynoldsburg, Ohio. He had worked with McGill AirFlow on previous projects, so when he saw that McGill's UNI-GASKET self-sealing ductwork wasn't the gasketed duct specified he encouraged McGill AirFlow salesman Bill Courson to get involved. Courson quickly obtained approval from the project engineer to use McGill's UNI-GASKET.

Courson says that most companies specify self-sealing duct because of environmental concerns. Consistent, quality seals are needed when toxic gases are involved or when air quality is an issue. Some companies want to avoid the use of potentially toxic mastics that are used when duct is hand sealed. However, today there are many non-toxic alternatives, including McGill's water-based United Duct Sealer.

McGill's self-sealing duct system usually consists of single-wall round UNI-GASKET fittings matched with



McGill AirFlow's expertise and self-sealing duct helped the HVAC contractor save time and money, and substantially reduced potential for errors on this 100,800-square-foot, four-floor building for St. Ann's Hospital of Westerville, Ohio.



UNI-GASKET™ is a trademark of
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single-wall round UNI-SEAL™ duct, as was the case at St. Ann's. Other round duct types are also available in both single-wall and double-wall designs (UNI-RIB®, Longitudinal seam, and ACOUSTI-k27®).

UNI-GASKET fittings feature a single-leg rubber gasket held in place by a 180-degree hemmed edge. They are secured to the duct with self-tapping screws located uniformly around the circumference, as per standards set by SMACNA, the Sheet Metal and Air Conditioning Contractors' National Association. UNI-GASKET is available in most McGill fitting types including elbows, tees, couplings, laterals, reducers, wyees, and taps.



McGill AirFlow's UNI-GASKET self-sealing ductwork was a "huge benefit" to HVAC contractor Central Ohio Sheet Metal: It is automatically sealed during the initial installation. There's no need to go back to seal it or fix leaks.

Courson says that tests show UNI-GASKET fittings meet or exceed SMACNA's Class 3 for leakage, -20 inches water gauge to +20 inches wg.

Rx for Redesign

The "trickiest part of the job" came immediately after Central Ohio Sheet Metal won the competitive bid to provide and install the ductwork, exhaust fans and the variable-volume-control boxes. The job had to be redrawn to make everything fit in the hospital's ceiling space, where in some areas it is only 18 inches high. "Bill was quick to provide pricing involved in every change," Berndsen says. "It helped tremendously."

Hospital ceilings are usually short on space, plus more goes into that space due to the use of medical gases and other industry-specific elements. To work with those constraints, they created a spider system of about 20 runs of duct from each of the two air handling units located in the building's basement leading to the different floors. There are multiple supply runs of smaller duct in the ceilings. In a few areas; they switched to flat oval duct and conventional matching fittings to accommodate the space constraints.

The project required 13,400 feet (43,000 pounds) of 3- to 22-inch diameter duct. Nearly 800 feet was McGill's ACOUSTI-k27 double-wall, insulated duct. Approximately 3,000 (18,000-plus pounds) UNI-GASKET fittings were used.

Rx for Installation

Once the design was approved, Berndsen forwarded finished shop drawings to Bill Courson. "Bill numbered the different-sized duct and fittings and color-coded the materials by floor -- right on the drawings," Berndsen recalls. "That drawing went to the field crew. When the material arrived, the crew just put the duct together in

numerical order. It was so easy. We had four to five semi-trucks full of fittings. If they were not numbered and packed correctly, five guys could have spent days sorting through everything."

Installing self-sealing ductwork is similar to other ductwork. The major difference is that when two pieces are joined, there's a rubber seal between them. Once joined, the assembler installs the appropriate number of self-tapping sheet metal screws. Assembly is then complete. No duct sealer is used.

"It does take some additional pressure and maybe a minute or two in fastening the screws, but all the time getting back on ladders and applying a sealer is eliminated," Berndsen says. The only problem, he recalls, was at the very beginning. The duct was a little tight, so Courson slightly increased its diameter. It made installation easier and still maintained the seal. "Bill came quickly and made the change seamlessly (pun intended). Bill Courson is McGill AirFlow's biggest asset. He's very user friendly. He does whatever it takes to make it easier on us."

Quality + Accuracy on a Budget

"The quality and accuracy of our seals dramatically increased with UNI-GASKET," Berndsen states. "It's especially an advantage in tight spaces. With regular duct, there is always going to be a chance of leakage. But in tight spaces, it's more likely because there will be beams or other obstructions to limit or possibly prevent access."

In that tight space, Berndsen says that it could take up to 30 minutes to actually seal a joint using a mastic-type sealer after the system has been installed, if it could be sealed. In wide-open spaces with no obstructions, it might take 10 minutes to seal a joint. All that labor time is eliminated.

When accounting for the slight increase in installation time, Berndsen still calculates a 15-percent savings in labor costs by using UNI-GASKET fittings.

Rx for the Future

While Berndsen was originally concerned that the self-sealing ductwork was his only option, now that this job is complete, he says that for future jobs it may well become his favorite option.

McGill AirFlow
Corporation

An enterprise of United McGill Corporation—
Founded in 1951

One Mission Park
Groveport, Ohio 43125-1149
614/836-9981, Fax: 614/836-9843
E-mail: marketing@mcgillairflow.com
Website: www.mcgillairflow.com

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