



INNOVATIONS FOR LIVING™

VaporWick® Pipe Insulation Drafted for Service at Fort Campbell



Fort Campbell, KY





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Case Study

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An army unit that takes pride in freshly pressed uniforms and highly polished boots doesn't want barracks with puddles on the floor and stained ceiling tiles. But that's what can happen when warm humid air finds a chilled water piping system.

At Fort Campbell, Ky., home of the 101st Airborne Division (Screaming Eagles air assault), Caddell Construction is preventing that problem by installing VaporWick® pipe insulation from Owens Corning.

VaporWick pipe insulation is designed specifically for below-ambient-temperature applications in hot and humid environments. The product keeps insulation dry by using a specially designed wicking material that absorbs condensed water from the pipe surface and wicks it to the outside surface of the insulation where it then evaporates to the ambient air.

Caddell Construction, the general contractor for the project, is expecting to see benefits from the minute they turn on the air conditioning in a new three-story, 336-bed barracks building. According to Joe Peek, mechanical quality control inspector for Caddell, projects in the past have experienced dripping water at start-up.

"When we first start the air conditioning we will be close to being buttoned up but I don't think we will 100 percent," says Peek. "We're going to have people who will open windows with the outside temperature 90+ degrees and we'll be trying to condition the building at 70 degrees.

"They had problems on phase two (when they turned the air on)," he continues. "Wherever the chilled water lines were, they had water underneath them. It wet the whole hallway.

"In the past, we didn't put any ceiling tile in until we got past that initial start-up period. We just put the grid up because we knew we were going to get water. With VaporWick pipe insulation, we don't need to worry about that. We're hanging the

ceiling tile."

Peek says he is also impressed with another feature of VaporWick pipe insulation – its appearance. "It's a neat looking product," he says. "We are very well satisfied with the appearance."

David Carver of Breeding Insulation, the distributor providing VaporWick pipe insulation for the Fort Campbell barracks project, says it is not unusual for the product to surprise people and win their loyalty.

"We had a lot of skeptical people in the beginning, but in the end everybody seems to like the product," says Carver. "We've got customers who are using it now by their own choice, not just because it is specified for a project."

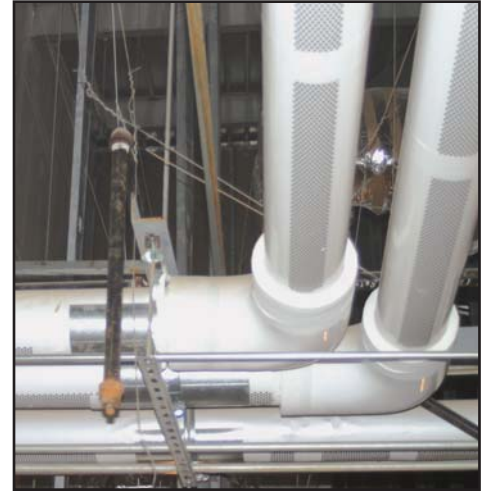
Carver says he expects to sell a lot more VaporWick pipe insulation in the summer when contractors are asked to insulate systems they can't turn off.

"If they can't turn the system off it's going to be dripping," he explains. "We've put VaporWick pipe insulation on a dripping system at MTSU (Middle Tennessee State University) and it worked perfectly.

"At a lot of schools, that's just the nature of the job. They are removing wet insulation because of mold problems and this (VaporWick insulation) is something that takes care of the mold, too. If the school is in session and the chilled water system is running they can put it on wet.

"A person at MTSU was my most critical customer," admits Carver. "Every time he saw the sample he would just laugh and say, 'That stuff ain't gonna work.' Then he used it and became the first to buy it by choice where it wasn't specified. He told us everything they do from now on will be VaporWick pipe insulation."

Glen Embry, owner of Bluegrass Insulating Services, the insulation contractor for the Fort Campbell barracks project, also had previous positive experience with the product.



Fort Campbell Facts

- Fort Campbell lies on the Kentucky-Tennessee border about 60 miles northwest of Nashville.
- Opened in 1942, the Fort is named for William B. Campbell, a Tennessee statesman and Brigadier General of the U.S. Volunteers during the Civil War. Although nearly two-thirds of the post's 105,000 acres are in Tennessee, the post office is in Kentucky and the identification lies with that state.
- The 101st Airborne Screaming Eagles are the only air assault Division in the world. Helicopters are their primary means of transportation.
- Fort Campbell supports the third largest military population in the Army and the seventh largest in the Department of Defense.
- At 164 square miles, the installation is one of the largest in the world. Approximately 12,000 acres have facilities while the remaining 93,000+ acres are training and firing ranges.

"I've done a couple of installations myself – hands-on – at a local hospital," explains Embry. "The project was on a system that was in service and the pipe was wet. They couldn't shut down because it is a hospital. The VaporWick insulation worked out great.

"The hospital was really impressed," he continues. "We had a meeting with Infectious Control, the Maintenance supervisors and Housekeeping, and we showed them the product. Once they saw the tapes that Owens Corning made showing how the product is made and how it works, they understood the theory behind the product. They could see why the wicking material is there and what it's going to do. It made complete sense to them.

"They really liked the fact that they didn't have to worry about any shut down and when we put the product on wet pipe it showed them immediately that the product will stop the problems associated with condensation. We haven't had any call-backs at all on it and we like that."

Embry says the hospital replaced the old insulation because the pipes were dripping and also supporting mold growth.

"We killed two birds with one stone," he says. "We stopped the condensation and got rid of the mold. The hospital also liked the appearance of it. VaporWick pipe insulation looked better than the original product did, even when it the original product was new. It's just a neater looking product.

"We're satisfied with using it," continues Embry. "We just had to get used to the little bit of difference in the installation between what I now call the 'old fashioned' product with the ASJ jacketing, and the VaporWick insulation. Once you and your men learn how to handle it, cut fittings and things like that, production picks up. For new installations with straight runs, it actually goes on a little faster than standard pipe insulation, especially on copper pipe."

What's the most important benefit of VaporWick insulation? Embry thinks it will

eventually be 'customer satisfaction.' But he says customers need to understand the value before they will spend the additional money for the product.

"Right now, we're on the borderline of trying to meet our production goals because it is a little bit slower," explains Embry. "Work is slow right now so our competitors are bidding cheaper than they would with a normal workload, so that has made it hard to get a job using VaporWick pipe insulation. People are really cost-conscious.

"But if they look at the longevity of it, they will see where they can save some money," he continues. "But I just feel the customer is going to be happier with the (VaporWick pipe insulation) product. Customers seem to appreciate more the jobs we're doing with this new product."

Embry says he expects the twin problems of moisture and mold to continue driving the use of VaporWick pipe insulation.

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"Mold is a big issue now, especially in hospitals and schools," he says. "The schools around this area in the bigger communities, such as Louisville, are going to VaporWick insulation because a lot of their existing piping is in crawl space areas with a lot of moisture and humidity.

"VaporWick insulation won't stop the humidity coming from a leaking drain or something like that, but it won't promote any more condensation in the trenches and it won't

Product Information

VaporWick® insulation is for piping systems that operate below ambient temperatures, which present special considerations due to the possibility of water vapor migration to the cold pipe surface. VaporWick insulation incorporates a patented concept that uses a wicking material to remove condensed water from the system, keeping the insulation dry. When the ambient conditions are such that the vapor drive is toward the cold pipe, any water vapor that enters the system and condenses on the cold pipe surface is removed to the outer surface by capillary action, where it then evaporates to the ambient air.

“We had a lot of skeptical people in the beginning but in the end everybody seems to like the product. We've got customers who are using it now by their own choice, not just because it is specified for a project.”

David Carver, Breeding Insulation, Nashville

Features and Benefits

VaporWick pipe insulation is designed specifically for severe hot and humid operating environments.

- Keeps insulation dry by using a specially designed wicking material that absorbs condensed water from the pipe surface and wicks it to the outside.
- Ideal for dual temperature installations because it is rated for operating temperatures which range from 32 degrees F to 220 degrees F.
- Meets model code fire requirements with a flame spread rating of 25 or less and a smoke development rating of 50 or less; this means the product will be granted building code approval for use in air plenums and other critical locations.
- Excellent thermal value, which contributes to a lower operating costs at a favorable installed cost/performance ratio.
- Can be installed directly over wet piping so systems don't need to be shut down during the product's installation.
- Has a self-sealing lap seal with no need for staples or mastic.
- Provides no sustenance for mold to propagate and meets the standard ASTM test for fungi resistance.



VaporWick® Pipe Insulation Passes Four Exams

There aren't many three year olds who can pass university-level exams but VaporWick pipe insulation did it four times.

After nearly three years of service in a hot and humid environment at Old Dominion University, Norfolk, Virginia, VaporWick pipe insulation was checked at the site and found dry to the touch. There were no telltale stains on the insulation or the floor that would indicate dripping since the product was installed.

Samples were removed and taken to a laboratory for microscopic examination by a veteran university professor of microbiology. After checking the samples with a 40-400x binocular microscope using fiber optic illumination for improved visibility, the professor declared the samples free of mold growth.

"The VaporWick pipe insulation installed at Old Dominion University is free of fungal contamination at this time. No characteristic patterns of fungal growth...were observed."

The professor also tested fresh samples of VaporWick insulation to see if mold growth would take place. For this test he placed samples in an environmental chamber for three months with 90 percent relative humidity and a temperature of 90°F. The result: Still no mold. His report stated, "Even under conditions normally conducive to mold growth, none of the pipe insulation samples supported growth of fungi."

In a final exam, the professor subjected all the individual components of VaporWick pipe insulation to the 28-day ASTM C1338 Mold Resistance Test. Once again, VaporWick insulation passed with high marks.

"This study verifies that all components of VaporWick will not support the growth of mold even in the presence of added nutrient."

Project

Barracks building for the
Screaming Eagles
101st Airborne Division (Air Assault)
Fort Campbell, KY
(270) 798-1110

Product Used:

VaporWick® pipe insulation
1" thick for chilled and dual-purpose
lines ranging from 5/8" to 6" in
diameter.

Customer

U.S. Army Corps of Engineers
Louisville District
Louisville, KY
(502) 315-6115

General Contractor

Caddell Construction Co., Inc.
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Montgomery, AL 36109
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J.E. Campbell, Inc.
1412 Broadway
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(731) 479-3395

Insulation Distributor

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Mechanical Insulation Contractor

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Photos by Mike Blair, The Bear's Den



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