EverGreen®

REAL WORLD RESULTS

# Central Maine Medical Center Wraps Up Energy Savings With New Ever Green™ Cut 'n Wrap™ Insulation Kits

Hospitals are among the nation's most complex, diverse, and energy-intensive facilities. Unlike most other commercial buildings, they must be fully operational 24 hours a day, seven days a week, and be able to maintain energy reliability and provide round-the-clock critical care, even during the most extreme emergencies. Hospitals, like the 250-bed Central Maine Medical Center (CMMC) in Lewiston, ME, are facing challenges shared by healthcare facilities nationwide — rising energy costs and increased utilization of its facilities.

## Reducing Energy Consumption Means More Dollars for Patient Care

"In order for us to stay competitive, it is imperative that we reduce our energy costs," said Daniel Bickford, Regional Director of Engineering and Facilities at CMMC. "By reducing our energy consumption we can put more dollars back into direct patient care activities." Always interested in technologies to maximize energy performance, Bickford welcomed the offer to participate in a demonstration project to test a new insulation product designed to help reduce the cost of wasted energy. "Auburn Manufacturing (AMI) approached us and said they were testing their new Ever Green™ Cut 'n Wrap™ insulation product in several facilities in the area," said Bickford. "They offered their services to demonstrate the product and we agreed to have them install it on fittings in one of our mechanical rooms." AMI has a 30-year history as a maker of textiles used in custom-made removable flange and valve insulation pads.

## Reducing Heat Load Was Problematic

In the Summer of 2009, Skip Mattox of AMI along with Mike Martin from CMMC maintenance installed the new Cut 'n Wrap removable/reusable insulation blankets, cut from insulation kits, on nine valves and one steam trap. The work was done in the mechanical room of the hospital's Stewart Wing, which serves as a distribution center for steam piping in different areas of the hospital. "The mechanical room was problematic in that it was a fairly small space and the temperature in there was very high," explained Bickford. " If somebody had to go in there to work, it was a very uncomfortable area to be in. To try and solve the problem, we had previously introduced exhaust into the area to try and pull out some of the heat but it was still problematic. So, the opportunity to do something that would help to bring the temperature down in that room was very appealing."

The uninsulated or partially insulated valves and steam trap were the source of the considerable heat load. "Some of the fittings were never wrapped to begin with," said Bickford. "Others had preexisting wraps that were very difficult to install and uninstall when maintenance was required. And, once a cover is uninstalled it has a tendency to remain uninstalled. The bottom line when it comes to installing insulation covers is 'If it's not easy, it doesn't get done.'"

*Central Maine Medical Center is a 250-bed tertiary medical center serving some 400,000 residents of central, western and coastal Maine. CMMC recently embarked on a two-year, $45 million expansion and renovation project.*

*Many times custom made insulation wraps never get re-installed after maintenance work has been performed.*

## AMI Develops Easy-To-Use Insulating Blanket Product

The lack of an easy-to-use, cost-effective insulating blanket product, as experienced by Bickford and other facility managers, was the impetus for AMI developing its patent-pending Ever Green Cut 'n Wrap insulation kit. Designed to be a more effective way to insulate valves, flanges, pipe fittings and other hard-to-get-to components, the kit contains a 4 ft. x 8 ft. modularized insulation cover and rolls of double sided hook and loop fastener. "You simply measure and cut the insulated material to size, wrap the exposed valve or fitting and secure with the supplied self-sealing hook and loop attachment systems," explained Kathie Leonard, President and CEO of AMI. "Installation takes only minutes per valve or fitting. And, since they are reusable, Cut 'n Wrap blankets are ideal for those valves and fittings that require periodic maintenance or inspection. Independent testing has shown

that heat loss can be reduced by at least 85% and emissions by up to 1000 lbs/sq.ft/yr by using the kits."

## Installation Was Quick and Easy

The installation of the Cut 'n Wrap insulation was performed by in-house personnel and completed in 2 hours and 45 minutes, representing an average installation time of 16.5 minutes per component. According to Bickford "The main difference between the Cut 'n Wrap insulation cover and standard insulation blanket systems was the ease of installation. It was a very simple product to work with. And, as a result it was easy to install. This means that when somebody has to take it off for servicing purposes, it certainly will be much easier to re-install. While there is no guarantee that it's going to be put back on — that's up to the individual — the fact that it's easy to re-install means it's more likely to get put back in place." The Cut 'n Wrap insulation covers are fabricated from industrial-grade, coated fabric insulation media. Both materials are rated for at least 500°F continuous service and were developed to provide many years of effective thermal insulation.

## Estimated Savings and Reductions

The primary goal of the demonstration project was to reduce heat loss by insulating the fittings. With the Cut 'n Wrap covers in place, Bickford estimated the temperature in the mechanical room is now 15° lower than before the fittings were insulated. "This is a significant improvement," he said. "Especially considering that the mechanical room is a fairly small space measuring only about 12 ft. x 12 ft. Anytime you are dumping excess heat to an area that doesn't need it and you can send it downstream where it belongs, you realize a considerable savings."

AMI used a computer program that incorporated ASTM C1129 to estimate the annual heat loss savings and convert those savings to both dollars of energy saved and tons of CO2 emissions saved. At an assumed energy cost of $10 per million BTUs, and an assumed 24/7 operation, the Cut 'n Wrap insulation was estimated to save CMMC about $4,000 per year and reduce $CO_2$ emissions by 23 tons per year. If CMMC had purchased the Cut 'n Wrap materials, the cost would have been approximately $2,674, not including installation labor. At that material cost, the estimated payback would be 8.2 months.


*A pressure relief valve in CMMC's mechanical room insulated with a new Ever Green™ Cut 'n Wrap™ blanket.*

*Another valve insulated with Ever Green™ Cut 'n Wrap™ insulation in the mechanical room at CMMC.*

**REAL WORLD SAVINGS**

**Project Scope:** One Mechanical Room
**Annual Heat Loss Savings:** $4,000
**Annual $CO_2$ Emission Reductions:** 23 Tons
**Estimated Payback:** 8.2 Months
**Average Installation Time:** 16.5 minutes per fitting
**Reduction in Room Temperature:** 15 Degrees

## Cut 'n Wrap Scheduled For Other Projects

"Payback is always a major consideration when considering any energy saving project," said Bickford. "Any payback of less than 2 years is good, so an 8-month payback is great," he said. "A project with less than a year payback can be completed out of the operating budget." The low payback was a "quick win" for energy savings according to Bickford. "While it's always a benefit to reduce our carbon footprint, it's the energy savings that Cut 'n Wrap can provide that we are looking for right now," he said. He is committed to installing the Cut 'n Wrap insulation covers in nine more mechanical rooms in the hospital complex, at the rate of about 2 a year for the next five years.

## Demonstration Project Funded by Seed Grant

Early in 2009, Auburn Manufacturing was awarded a Seed Grant from the Maine Technology Institute (MTI) to develop and fund demonstration projects in steam and hot water distribution systems including hospitals, universities and public buildings. MTI is a state-funded nonprofit corporation that offers early- stage capital and commercialization assistance for the research and development of innovative technology-based projects that create new products, processes and services, generating high- quality jobs across Maine. AMI used its two most recent MTI grants to validate the technology behind Ever Green Cut 'n Wrap with independent testing and to conduct several demonstration projects resulting in a patent application and initial commercialization of the product.

AMI® Auburn Manufacturing, Inc.
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