Campus Energy

District Heating & Cooling - The Changing Trenchscape

University of Georgia

"Recently, a section of steam and condensate piping along Lumpkin St was reworked to fix a condensate leak and reinsulated both pipes. The leaking pipe was discovered during work related to the Tate Center Addition. Physical Plant crews excavated the line to expose the leak and after installing new piping for the condensate, re-insulated both lines. The insulation utilized a powder called Gilsulate which is resistant to water damage. After the lines were excavated, it was discovered that ground water had totally rendered the old insulation useless. The addition of the ***new insulation will save $9,500 per year and 475 MMBTU's for a payback of under 2 years." The 100 foot repair will reduce CO_2 emissions by 25 tons per year.*** (courtesy UGA website)

University staff performed repair

BYU Idaho

"Steam and condensate lines have been upgraded with new insulation (Gilsulate 500XR), this retrofit has proven to save thousands of dollars in energy savings. Heating Loads at Central Plant in 1997 were at approximately 47,000 lbs. of steam per hour during peak winter loads, with the addition of over 1 million square feet to campus winter peak loads during the winter of 2009-2010, peak loads were at approximately 47,000 lbs. per hour. The ***insulation retrofit along with higher student loads has allowed the campus to increase in size, yet maintain steam production at the same level."***

(courtesy BYU Idaho website)

University of Texas - Austin Dell Medical School

This Dell Medical School project initiated a mindset for "rethinking everything," including its district energy distribution. The University's Utilities and Energy Management team pride themselves on cost effective measures of sustainability, efficiency and reliability.

The University has high performance standards and strives to have the most efficient system. The expansion of their campus district energy distribution system needed to be evaluated; an extension of their steam tunnel system was determined not cost effective. A 3rd party comprehensive review and evaluation was conducted of various pre-insulated and field applied direct buried systems.

Gilsulate500XR® was ultimately chosen for UT Austin's new ***direct-buried heating hot water distribution system***. Gilsulate's performance is unlike any other direct buried piping system and we are happy to be the clear reliable and energy efficient choice for UT Austin.

Only Gilsulate's unique patented formula enables heavy equipment loads

Texas A&M University

Texas A&M University in College Station is quickly becoming nationally recognized for its energy-management program. Utilities & Energy Services focuses on the use of materials which have been ***proven to be cost-efficient and effective***. Their HDPE ***chilled and hot water distribution piping*** system specification calls for "Mineral powder (GILSULATE®500) to meet insulative qualities, density and compaction requirements." A 3rd party analysis assisted Texas A&M University in their decision to use Gilsulate 500XR®. Using a heat transfer analysis and their cost per MMBTU to generate chilled water, the ***ROI will beat their expectations by 27%***.

Only mechanical compaction provides insulation stability

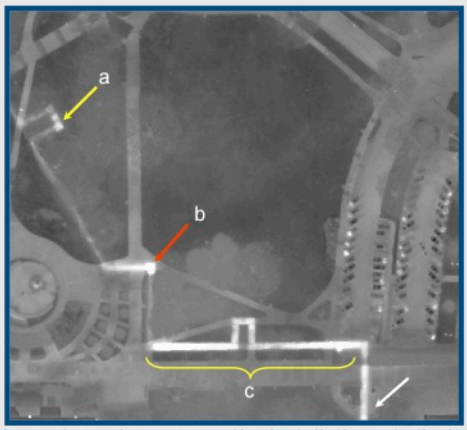
The initial upfront cost of HDPE pipe and Gilsulate 500XR® can provide a substantial and invaluable cost savings of reduced energy demand throughout the life of the system. Gilsulate is proud to be instrumental in assisting A&M with their continued drop in energy costs which they attribute to the efficiencies instituted by the Utilities & Energy Services.

Kent State University

A unique circumstance presented itself where Kent State had a new system consisting of straight run pre-insulated piping with Gilsulate500XR® around the raw carrier pipes of the loops. The pre-insulated pipe was visible during a subsequent thermal flyover yet the loops in Gilsulate were undetectable. For nearly a decade, Kent State has been replacing their pre-insulated system with Gilsulate based on its reliability and proven superior efficiency. Following is from a published Kent State project bid: at the main distribution steam line feeding DeWeese Health Center, 780 LF of pre-insulated duct insulation will be removed due to failure and Gilsulate 500 pipe insulation will be installed as its replacement. Site restoration and replacement of concrete walks will be included as part of this project. This project must be done in order to ***avoid corrosion to the Kent Campus' main distribution steam line***; steam line failure could result in outrages to the student health center complex and ***possible damage to the campus infrastructure***.

Gilsulate loop was not visible in infrared scan

Georgia Institute of Technology



Thermal Imaging BEFORE the installation of Gilsulate

The University had a capped concrete trench with pre-insulated steam & condensate piping that was leaking and inefficient; see photo above. As part of a major beautification project the system needed re-insulation and protection of the piping system.

Based on a decade of experience Gilsulate 500XR® was chosen to insulate and protect the piping system from corrosion and water intrusion. Don Alexander PE, Manager of Facilities Engineering felt it was imperative that the insulation material have the ability to be mechanically compacted and support the pipe; so that the there would be no pipe deflection and the material would not settle over time or with use. Mr. Alexander commented that he was able to place a load on the insulation without it sinking and that is exactly what he wanted to assure no volume loss or have any settlement in the sodded areas. Gilsulate500XR® is the only product that meets these physical performance property requirements.

After the project was completed Georgia Tech had thermal imaging conducted on the new Gilsulate lines to see what type of heat loss would show up on the scan. Mr. Alexander stated ***"Gilsulate 500XR® showed no visible heat loss; the images were black"***. He also stated that ***"Gilsulate® worked as expected, it performed well"***.