

Energizing Nanotechnology

Turkish textile manufacturer saves \$460,000 on energy costs

When it comes to plants and plant maintenance many of the methods that are used for protecting and insulating equipment have been in use for quite a number of years.

And two problems that have been a constant is how to insulate equipment effectively while also protecting it from corrosion, and how to insulate equipment that can't be insulated by traditional methods.

One pioneering company looked to one of the newest sciences for a solution to their insulation, energy consumption and equipment protection issues. What they found was a brand new product created with the science of nanotechnology that challenges conventional thinking about insulation and how it works.

Henateks Boya ve Apre San Tic AS, a Turkish manufacturer of textile products, installed Nansulate® nanotechnology-

based thermal insulation coatings throughout their plant and saved over \$460,000 in energy costs in 2008, and reduced their carbon emissions and continue to enjoy 20 percent reduced energy consumption.

Henateks was introduced to Nansulate® by Dr. Vedat Bilgin of Kolorgen LTD, Turkish distributor for the coatings. After going through their 'Seeing and Believing' experience with Nansulate®, they now proudly display their pride in being a "NanoPioneer" on their Web site: (translation)

"Revolution in Heat Insulation with Nanotechnology. We are proud to be the first company in this revolution."

Henateks first decided to give this new insulation technology a try back in October of 2006. Their General Manager, Eyup Sozdinler, explains their

first perception, "At first, the idea of offering heat insulation via a thin layer was absurd. However, we decided to try. We observed a savings initially of





Mr. Sozdinler adds, "We applied Nansulate on our steam tank. After completing only 1/4 of the cure period we had spent the same amount of natural gas as when we had 10 centimeters (4 inches) of fiberglass insulation."

10 percent in natural gas consumption, and at the end of 2007 reached a recorded energy savings of 15 percent."

After their initial success applying Nansulate® Translucent High Heat to all their uninsulated surfaces, such as heat exchangers and dye machines, they decided to remove the fiberglass insulation on their steam boilers and piping and replace it with the nanotechnology-based coating.

10 centimeters (4 inches) of fiberglass insulation."

The technology works by changing the way we look at insulation. Instead of acting like a blanket, like fiberglass insulation, the material insulates by means of low thermal conduction, or more simply, it does not conduct heat well. The nanotechnology portion of the system is suspended in a high quality water-based acrylic latex system which allows it to

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be applied to a variety of surfaces easily for durable and long-term protection, that also happens to be clear - allowing visual inspection without removal. One other bonus that nanotechnology brings, is the hydrophobic nature of the nanomaterial, which allows the coating to provide excellent corrosion prevention, mold resistance, and also be highly moisture resistant.

In 2009, Henateks shared a chart of their energy savings for 2008, and they saved overall 20% on liquid natural gas costs, reduced consumption by 1,097,447 m³, and achieved a dollar savings of over \$460,000 USD. This is above and beyond their initial payback which was achieved after about 7 months.

Their story is very familiar to the company that patented and produces Nansulate®, Industrial Nanotech, Inc. The company is used to hearing initial disbelief that a technology like these coatings could exist

and in fact insulate effectively in a thin layer. Then once a client tries it and experiences the energy and cost savings for themselves, they become believers. Henateks, who at first doubted the technology, has now become one of its most vocal supporters — speaking in support of Nansulate® technology in at least four different industrial manufacturing magazines.

By changing the way they looked at insulation and being an early adopter of a new cutting-edge technology, Henateks not only saved thousands of dollars, but has also paved the way for others to significantly decrease energy consumption, and solve the age-old problems of corrosion and heat control. They are rightly proud to be one of the first companies in the nanotechnology revolution, and as the cost benefits are recognized, they are quickly being joined by others.

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