



BREAKTHROUGH PRODUCTS BASED ON BETTER TECHNOLOGY.

NANSULATE® ADVANCED INDUSTRIAL PRODUCTS

CASE STUDY

Nansulate® GP

Industrial Nanotech Sales Rep:

Chad Smith
Quebec, Canada

Customer:

Edward Moore Design, Inc.



Location:

Canada

Product:

Nansulate Translucent GP



Nonfood Compounds
Program Listed R2

ISSUE:

Edward Moore Design, Inc. a Canadian Government recognized research and development laboratory since 1985, was developing a cooling and heating system to be utilized in three unique medical devices. They needed the unit to be as energy efficient as possible, and also use insulation which was acceptable for the hospital environment.

SOLUTION:

Nansulate GP was specified into the heating and cooling unit for the three new medical devices.

The first device is an air conditioned / heated massaging mattress cover, which can be used for bed ridden patients, controlling the temperature of the mattress, providing comfort and preventing bed sores. It is scheduled for clinical testing in November 2008 and offshoots of this successful technology are now destined to target the general consumer market.

Edward Moore, President, describes the projects further, "Nansulate has been specified into the main cooling and heating system for this design. Nansulate added to the mattress cover system was found to reduce cooling temperature at a rate of 1.8 degrees per minute, as compared to the foam insulation alone which reduced temperature at a rate of 1.1 degrees per minute. All test were performed under identical conditions cooling one gallon of fluid.

By speeding up the cooling process, substantial energy savings were achieved. In addition, Nansulate prevented sweating during the cooling process and also prevents growth of unwanted substances on the surface of the system.

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The same carefully researched cooling and heating system specifying NANSULATE will be incorporated into a new machine to form x-ray invisible casts with perfectly even pressure over the entire area of a broken limb. The casts can be worn while swimming or bathing and re-formed, again with perfectly even pressure, when swelling reduces. Thanks to Nansulate the time to form a perfectly even pressure cast will be approximately three minutes.

An additional portable machine specifying Nansulate in the unique heating and cooling system, is to heat and or cool with adjustable massage any area of the body for sports medicine and general physiotherapy needs. This machine will free up the doctor or technician to perform other tasks. The portability of the battery operated machine is due in large part to the energy savings realized with Nansulate insulating coatings.”

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August 7, 2008

Attention: Chad Smith

Dear Mr. Smith

I would like to thank you for your help and guidance specifically relating to your NANSULATE insulating paint.

We are a research and development laboratory established since 1972. In our main business, we work with many corporations such as Lockheed Martin, Sikorsky, various militaries around the world as well as commercial aircraft manufacturers in the development of tools and systems for the repair and maintenance of both military and commercial aircraft. Snap on Tool Corporation is one of our aviation tools and systems distributors.


We also develop a number of specialized products for other markets each year and one of our current projects is an air conditioned and/or heated massage mattress cover. Developing the system to generate and control the temperatures to within .1 degree Celsius proved to be a particular challenge as relates to insulation in very confined areas. We originally utilized blue construction insulating foam and documented all test results over a series of 50 half hour test cycles. Temperature fluctuations were noted every 60 seconds as were power consumption levels.

In our tests, the foam was removed and four coats of NANSULATE were applied to both sides of cast and machined aluminum plates containing a conditioned glycol mixture. The NANSULATE was allowed to cure for 30 days, the foam was re-installed and the identical tests were re-performed.

The difference in the performance of our system was substantial with the NANSULATE insulated system providing slightly less than double the original performance. To be more specific, the NANSULATE coated plates allowed our system to reduce temperature at a rate of 1.8 degrees per minute. With the foam insulation alone we reduced temperature at a rate of 1.1 degrees per minute. All tests were performed under identical conditions cooling one gallon of fluid. By speeding up the cooling process we save substantial energy.

Another major benefit for us is the fact that the product will be used in a hospital environment and the NANSULATE will prevent the growth of unwanted substances on the surfaces of our system. During our final tests it was also noted that the NANSULATE prevented sweating during the cooling process. This had previously been a problem.

Thank you again for your valued assistance and introduction to NANSULATE. It truly is a remarkable product.

Yours truly,


Edward Moore
BA design, PRESIDENT

ted@edwardmoore.com