Builders can now use coatings to add mold prevention and thermal efficiency

APPLIED NANOTECHNOLOGY

Coatings for insulation and mold prevention

›› MARK BERNARD STECK

The science of nanotechnology is being taken out of the laboratories and being applied to residential homebuilding. One company, Industrial Nanotech Inc., is quickly emerging as a global nanoscience solutions and research leader, developing and commercializing new and innovative applications for nanotechnology.

Industrial Nanotech released a new nanotechnology-based coating designed to provide energy savings and mold protection for residential buildings. Nansulate HomeProtect Interior, a white, tintable interior coatings and Nansulate HomeProtect ClearCoat, a translucent, exterior coating, are the newest products added to the company's current line of insulation and corrosion protection coatings. Nansulate HomeProtect Coatings inhibit the growth of mold without the use of poisonous moldicides.

These coatings can be applied to the walls and attics in homes in order to reduce energy consumption and prevent the growth of mold. According to projections by the Energy Information Administration, heating a home with natural gas could cost an average of about $1,200 this winter, up from $1,000 last year. The most effective way to conserve energy used to heat a home is for consumers to add insulation, reducing heat loss and heating bills.

"Although the original Nansulate Translucent line was created for heavy industry, it also has proved to be popular in the home improvement and construction industries among homeowners, architects and other consumers," commented Francesca Crolley, vice president of operations and marketing for Industrial Nanotech. "Our HomeProtect products were specifically developed as a result of the numerous testimonials sent to us by customers around the world who had used our industrial products for residential applications. They possess the added benefit of mold prevention as well as insulation in an inexpensive, easy to use application. We decided that with rising energy costs, this was an ideal time for their introduction to the marketplace."

Here are some different nanotechnology applications:

HOME INSULATION APPLICATION:

ISSUE Homeowners in Connecticut were looking for an easy way to reduce their heating bills during the cold season and make their home more comfortable year-round.

SOLUTION They applied Nansulate HomeProtect ClearCoat to the interior walls, ceiling and other areas of their home to provide a barrier to the heat transfer, thus reducing the amount of energy used to heat and cool and providing a more consistent interior temperature year-round.

Before Nansulate
(4 YEAR AVERAGE)

620 gallons
(OF OIL PER YEAR)

$1,618.21
(OF OIL PER YEAR)*

After Nansulate
(1ST YEAR)

365 gallons
(PER YEAR)

$952.65
(PER YEAR)*

This equated to a savings of 41% in heating oil use, and a dollar savings of approximately $665.56 per year.

*Cost per year was calculated using the July 16, 2007 figure for the average Connecticut regional retail heating oil price ($2.61 per gallon).

SOURCE: STATE OF CONNECTICUT OFFICE OF POLICY AND MANAGEMENT

ATTIC APPLICATION:

ISSUE With a nationwide heat wave and rising energy costs, this homeowner was looking for an economical way to reduce the heat transfer into his attic, bring down the attic temperature and reduce the amount of energy consumption used for heating and cooling his home.

SOLUTION Nansulate Translucent GP was used to coat the ceiling of the attic. The house was 4,000 square feet with an extremely high pitch roofline. The area of the attic was a little over 3,000 square feet.

With the heat wave that has been experienced over the nation in the past month, the owner of the house put thermometers in the attic monitoring the heat throughout the day. During the late afternoons with the outside temperature at 104 degrees, the inside of the attic was 143 degrees. After coating, the temperature of the attic was 101 degrees, a 42 degree drop.

The team continued coating the ductwork, the A/C units which are in the attic, plus the ceiling of the attic, and expect even better heat reduction results.

HOME EFFICIENCY APPLICATION:

ISSUE The issues of energy consumption and Green building were important to this homeowner, who was looking for a way to insulate his home with an environmentally friendly product that would also save on energy use.

SOLUTION Nansulate Translucent GP and Top Coat were used to coat the home's interior walls and ceilings. The homeowner was very pleased with the results and is realizing a 40 percent savings in energy costs as well as reduced time for the home to cool off in the summer and heat up in the winter. The fact that Nansulate is water-based and environmentally friendly also made it an excellent addition to the Green building environment in New Mexico.

PHOTO COURTESY OF INDUSTRIAL NANOTECH