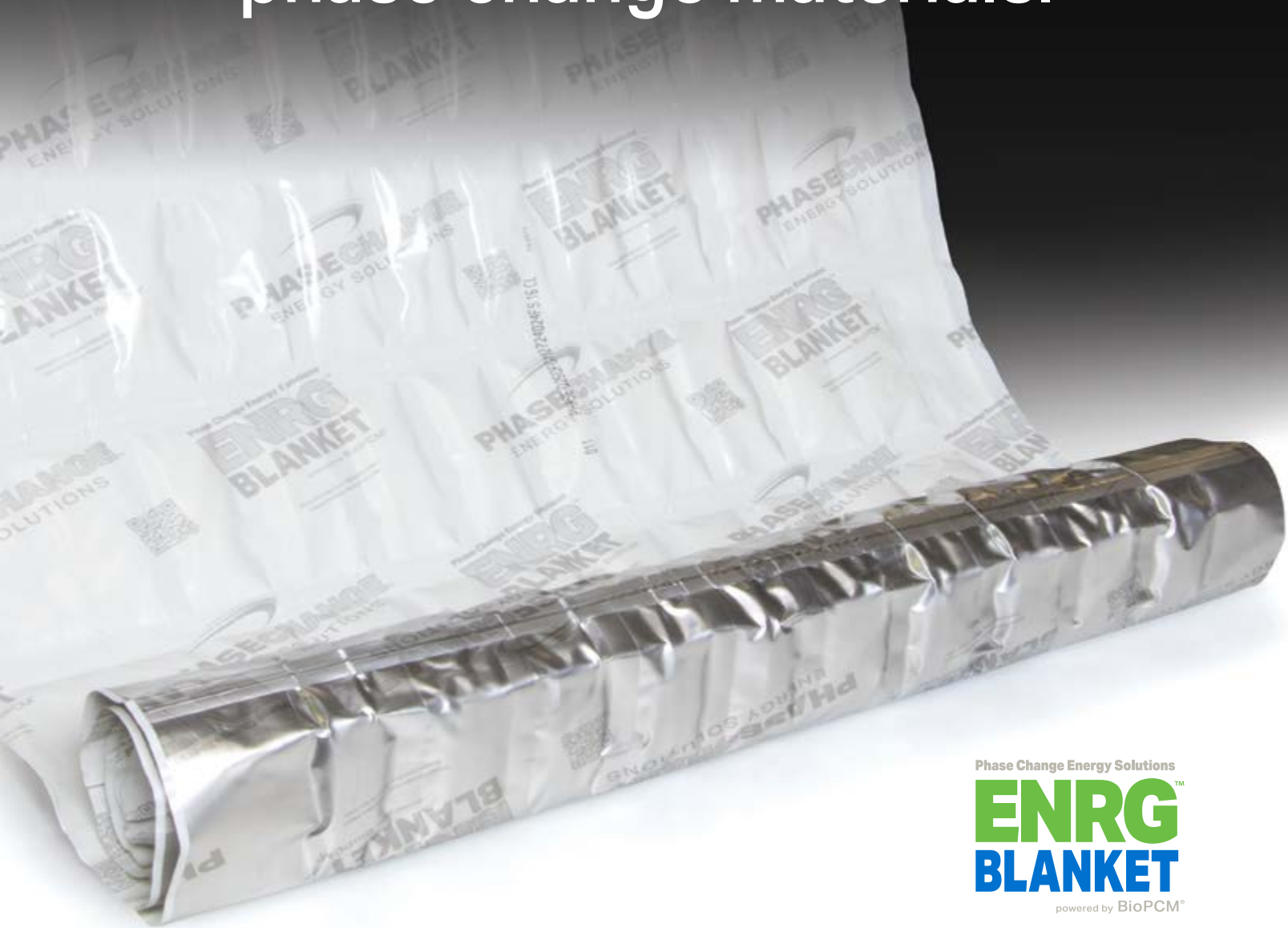


ENRG Blanket™

Install today. Save tomorrow.



The world leader in bio-based, solid-to-gel, phase change materials.



Phase Change Energy Solutions

**ENRG
BLANKET**

powered by BioPCM®



Helps reduce your
carbon footprint.



25-35%
HVAC Savings.



Bio-based, biodegradable,
renewable.

Proven results that speak for themselves.

ENRG Blanket™ works and we have the data to prove it.



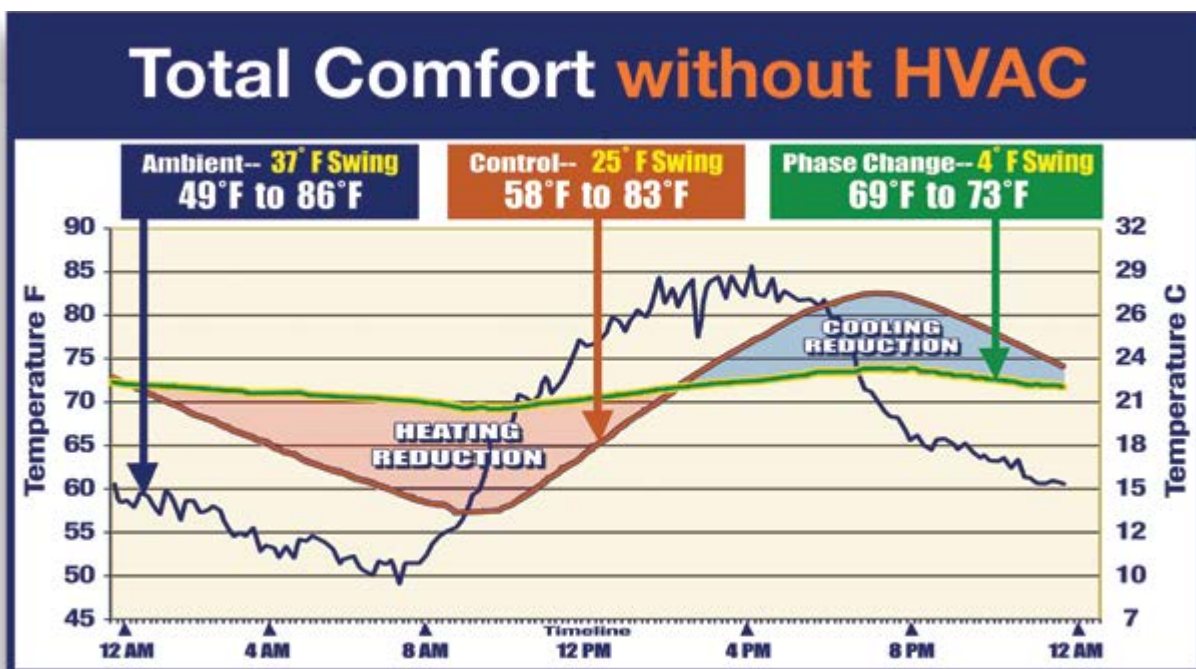
Retail Stores • Banks • Airports • K-12 Education • Modular Office/Classrooms
Pharmacy • Medical Clinics • Single Story Office • Retrofit and New Construction

A cost-effective solution for energy savings and comfort.

After years of testing and hundreds of installs around the world, we consistently experience energy reductions on HVAC expense in the 25-35% range. While we realize that every structure is unique, the simple payback (ROI) on most structures is 3 years or less. We have been able to replicate these results in old and new buildings alike and in various climate zones. The quick, easy installation process can be achieved using only four people with two step ladders at a rate of approx. 1000 sq ft per hour. Our installs cover a wide variety of applications from classrooms in one of America's largest school districts to single story retail and office space with one of the world's largest banks. We were also able to completely eliminate the need for air conditioning in the molecular engineering building of one of the country's most innovative universities and they are in the process of building a sister structure to the previous one using the same phase change material application.

25-35%

HVAC SAVINGS



The results above of two unconditioned structures using a side-by-side comparison of identically built structures with the exception of the addition of ENRG Blanket™ in one vs. none in the other. Over a 24

hour period, on a September day in North Carolina, the ENRG Blanket™ reduced the temperature swing inside the structure from 25 degrees to only 4 degrees on a day with an outside ambient swing of 37 degrees.

A simple example of phase change materials.

Water to ice. Ice to water.



Placing a nice cool soda on steaming hot pavement in the middle of a desert will get you a nice hot soda in just a matter of minutes. Without protection from the elements, the can will skyrocket in temperature until it equalizes with the surrounding environment.

To slow the transition time, we surround the cans with insulation or R Value in the form of a cooler, which will help, but in a relatively short timeframe, the cans again will become too warm to offer a nice refreshing drink in this climate.



To maintain a constant temperature for a long period of time, we add ice, which is a phase change material that will change phases at 32° F. When fully charged or frozen, this material will absorb any heat which is higher than 32° F and will store it at or near 32° F, keeping the surrounding environment at a constant temperature for several hours. This ability to store and release excess heat is referred to as "latent heat" which refers to energy being released or absorbed, by a thermodynamic substance, during a constant-tempera-



ture process over an extended period of time. This is exactly what happens within our product and we offer a huge range of products which transition at specific temperatures. Using products that transition at 73° F which absorb temps above 73° while holding at 73° will greatly reduce the amount of money you spend for heating and cooling your home, office or industrial property. The material works to cool during the day as well as heat during the nighttime hours at a constant 73° temperature.

Commercial • Industrial • Residential

New and retrofit applications.



ENRG Blanket™ offers an easy-to-install option for retrofit applications. By simply lifting the drop ceiling tiles and placing the ENRG Blanket™ material on top of each tile, buildings can see significant energy usage reductions from that day forward.

ENRG Blanket™

Engineered to meet your buildings unique requirements.



Class A

Q23- 23° C / 73° F

Q25- 25° C / 77° F

Both M27 and M51



Class A 25/50 (Plenum)

Q23- 23° C / 73° F

Q25- 25° C / 77° F

Both M27 and M51

BioPCM®: A critical difference

Years of study by independent laboratories has proven the energy savings effectiveness of utilizing phase change materials within buildings. However, most PCMs were petroleum-based which tended to create a fire risk. Our BioPCM® is a low-cost, bio-based material which achieves similar energy saving performance without the negative environmental impacts of petroleum based PCMs. Additionally, BioPCM® is both a LEED and a BEES (Building for Environmental and Economic Sustainability) friendly product.

Our ENRG Blanket™ is fire tested to ASTM E84 Standards. Testing to this strict industry accepted standard confirms that our product meets or exceeds the safety guidelines of the building products industry. Additionally, our product is sold in a melt-to-gel formulation so that even in its melted state the material does not turn into a low viscosity liquid. Laboratory life testing has shown that our material maintains its thermal performance through the equivalent of 85 years of life, ensuring a future of low-energy comfort!

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BLANKET
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The image below shows 24"x 48" ENRG Blanket™ sheets being installed above existing ceiling tiles.





Single-Story Banks

Single-story bank branches offer a great application of phase change materials to overcome the large swings in people traffic as well as electronics that emit heat and allow thermal gain to affect the internal heating and cooling loads.



Single-Story Retail

Throughout the day, the foot traffic in large retail stores can greatly effect the HVAC systems within the structure. Phase change materials absorb the sudden swings associated with huge influxes of people to reduce the load on the heating and cooling systems.



Retail Banking

Crowded commercial spaces are another area where phase change materials shine in their performance. Heat loads from human bodies, electronics and continuously opened doors can be challenging to HVAC contractors, but phase change materials allow the structure to absorb and release these fluxuations with lesser impact on the overall comfort levels of the occupants inside.

Educational / Theater



Classrooms and theaters are classic examples of spaces that are completely empty at one moment and completely full the next. Typically, these spaces require over-cooling or over-heating to deal with the drastic swings but phase change materials can be used to help maintain constant temperatures without huge deviations from the desired temperature.

Office Cubicles

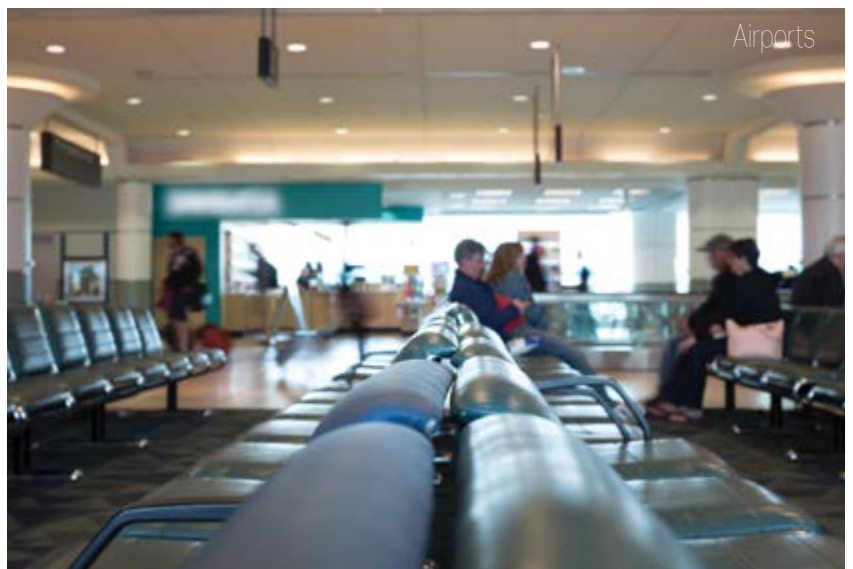


Office cubicles in customer service centers offer efficient use of space but also bring lots of employees together into one large space. Management of the resulting human heat loads along with large thermal gains from window walls are easier to control when using phase change materials.

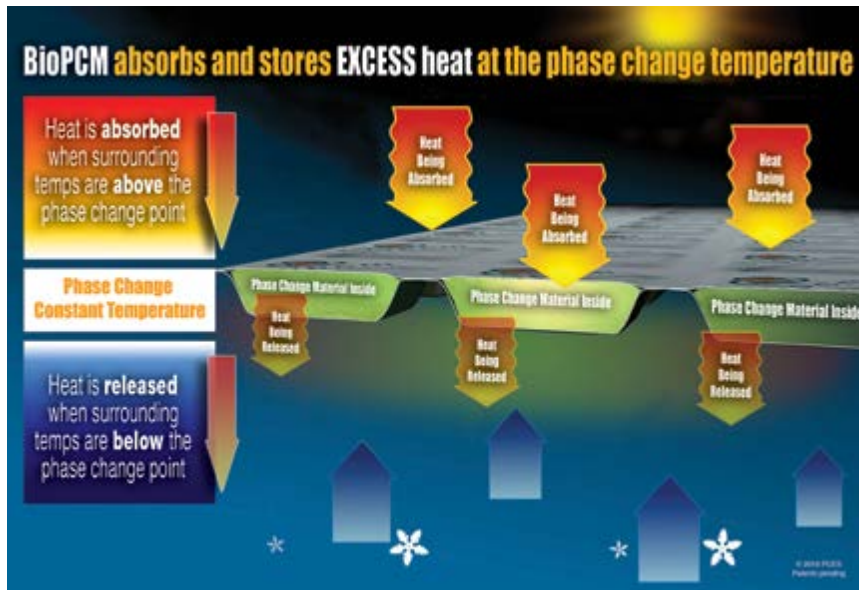
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Airports see drastic swings in people loads and are commonly designed with walls of continuous glass. Either of these problems alone can be a daunting task for an HVAC system designer, but when combined, this duo can be nearly impossible to control. Simply adding a phase change component into the mix can make this task very manageable.

Airports



Simple solutions for today's energy problems.



Install today.
Save money tomorrow.

To learn more about Phase Change Energy Solutions and our products visit our website at www.phasechange.com, email us at info@phasechange.com or call

800-283-2887

International customers call

336-629-3000

This brochure offers a broad overview of bioPCM™ applications. Please feel free to contact us to discuss your specific project. We offer a variety of customizable solutions designed for your specific needs.

Phase Change Energy Solutions

**ENRG
BLANKET**

powered by BioPCM®

BioPCM® phase change material

ENRG BLANKET™

Available in 12" (~350 mm), 16" (~410 mm) and 24" (~610 mm) widths

Melting Point * [°C/°F]	21°C / 70° F				23°C / 73° F				25°C / 77° F				27°C / 80° F				29°C / 84° F			
Heat Storage ** [J/g]	175-250				175-250				175-250				175-250				175-250			
M Value	27	51	75	91	27	51	75	91	27	51	75	91	27	51	75	91	27	51	75	91
Weight per Square Foot (lb)	0.51	0.71	0.86	1.27	0.51	0.71	0.86	1.27	0.51	0.71	0.86	1.27	0.51	0.71	0.86	1.27	0.51	0.71	0.86	1.27
Weight per Square Meter (Kg)	2.5	3.5	4.2	6.2	2.5	3.5	4.2	6.2	2.5	3.5	4.2	6.2	2.5	3.5	4.2	6.2	2.5	3.5	4.2	6.2
Total unit thickness (in)	.25	.5	.75	1	.25	.5	.75	1	.25	.5	.75	1	.25	.5	.75	1	.25	.5	.75	1
Total unit thickness (mm)	6.4	12.7	19.1	25.4	6.4	12.7	19.1	25.4	6.4	12.7	19.1	25.4	6.4	12.7	19.1	25.4	6.4	12.7	19.1	25.4

ENRG BLANKET™ is available with custom melt temperatures between (-50-150°C or -60-300°F) with M-Values ranging from 20-200

* The temperature shown in the products table are within close proximities of the "true" melting temperatures. Like all PCM, there is a small range within which the PCM melts. Product works best in an environment where the target temperature is 2 to 4 degrees F lower than the stated melt temperature. Please call or email if you have any questions, if your specifications require a different temperature, you need to know if the melting range covers your specifications or if you would like to discuss your potential application.

** Depending on formulation and application of product.

NOTE: All Phase Change Energy building products are tested to ASTM E84 standards

NOTE: Weights and dimensions can vary slightly

NOTE: Other widths and lengths available on request



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