

# SUPERTHERM<sup>®</sup>

Protecting industries with premium coatings



Achieve optimum cooling with a coating that blocks and repels radiational heat.



# Super Therm®

Experience Innovative Insulation



**W**hen it comes to extreme temperatures, Super Therm® redefines the science behind insulation and weatherization. Super Therm® features a blend of ceramic compounds that will reflect radiational heat away from protected areas when applied to a surface. By allowing only 5% heat

load on the surface facing the radiational heat source, Super Therm® achieves innovative heat reflection. These core properties of Super Therm® continue to attract industries needing premium insulation solutions that yield cost-saving, long-term energy efficiencies. From marine

and aviation to oil and gas, transportation, and residential, Super Therm® is being accepted and applied by the most competitive industries in the world. This widespread use is just one more way that SPI Coatings remain an obvious and trusted choice for real world coating solutions.

## Heat Blocking, Not Reflection

*The measurement of how fast heat loads or is absorbed and then the speed at which it transfers through the material is called the "R" value. This resistance factor slows but does not prevent the heat load and transfer. This is why these materials "must have more thickness" to provide any benefit.*



- 99% Infrared
- Visual Light
- Ultra Violet

*Super Therm® does not absorb solar heat and does not require thickness — effectively eliminating a measurement of (R) value.*

*Super Therm® has four (4) ceramic compounds. Three of these compounds match the wave size of each of the solar radiation waves to block the heat load. The fourth ceramic has such low density that the heat cannot load into the surface of Super Therm® and therefore cannot be absorbed and transferred. This is why the surface of Super Therm® is not likely to be more than 2-10 degrees F over ambient air temperature in any climate. If heat load is blocked, there is no heat to be absorbed and transferred even when the surface becomes dirty. Field documentation shows no change in the performance of Super Therm® after 10 years, and only an 8% drop in blocking heat load after 15 years.*

## SUPER THERM® VS. TRADITIONAL INSULATION



### Super Therm®

Super Therm® has a blend of four unique low-density ceramics that repel solar radiational heat by matching/blocking heat waves. Super Therm® resists the loading of surface heat over the envelope of a building to stop heat load before it starts. Traditional insulation ignores heat transfer through radiation and convection and does not repel heat produced by the full spectrum of sunlight. With Super Therm®, you can combat visual, ultraviolet and infrared light to block 95% of radiational heat load.

#### Super Therm® advantages over traditional insulation:

- Combats convection, conduction and radiation
- Repels heat through reflection
- More than 20 years of life expectancy
- Designed and tested under extreme temperatures (minus 60° to plus 140° F ambient air temperature)

- Ease of installation
- Blocks humidity and wind-driven rain
- Blocks wind and air infiltration

### Traditional Insulation

Insulations such as cellulose, fiberglass, rock wool and polystyrene foam have remained unchanged for 50 years. These types of insulations allow 100% heat load and absorption and only slow conduction or heat transfer with small pockets of air. All are affected by moisture absorption which kills effective resistance. These inefficiencies are where Super Therm® presents innovative solutions for industries.

#### Disadvantages of traditional insulation:

- Combats only conductive heat
- No capability to repel heat
- Affected by moisture and air infiltration
- Designed and tested only for 75° F for the "R" value
- Loses thickness when compacted into space upon installation
- Positioned between building studs
- Causes corrosion under insulation

Super Therm® passed NASA testing with Best Test Result.



### A Comparison of Popular Insulation Options

	95% Sound Blockage	One of Energy Star's Best Overall California Cool Roof Approved	NASA Tested	Interior & Exterior Proven	Class "A" Fire Rated "0" Flame Spread	Passed 2,000 hrs. Salt Spray Testing	More than 20 Years Life Expectancy	Moisture Resistant	Blocks 95% of Infrared Rays	Resists Mold and Mildew	USDA Approved
Super Therm®	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved
Fiberglass	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible
Cellulose Filler	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible
Ceramic Paint	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible
Polystyrene Foam	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible

Approved
  Partially Approved
  Not Possible

## Temperature of coatings and other materials in sunlight

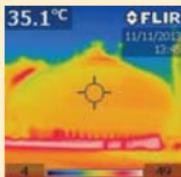


## THERMAL STUDY JUAYMAH NGL SPHEROID TANKS



*Super Therm®  
NG Tank Spheroid 203A*

*Existing Tank  
NG Tank Spheroid 203B*



*Saudi Aramco – November 2013*

## SUPER THERM® IN USE TODAY

### Airavation

Tucson International Airport  
Arizona, U.S.



*22% overall energy reduction  
with 40% HVAC savings*

### Oil and Gas

Mitsubishi Oil Terminal  
Osaka, Japan



*Reduced evaporation of finished  
petrochemicals*

### Marine

Blue Chip Casino Ship  
Indiana, U.S.

### Offshore

GDF Suez  
North Sea, U.K.

### Residential

Residential Neighborhood  
Arizona, U.S.



*Super Therm® provides sound  
dampening and color options*

### Transportation

Pacific Shipping  
and Trucking

### Telecommunications

Vodafone Group PLC

### Tourism

Address Hotel  
Dubai, U.A.E.



*52°C roof temperature before  
application, 42°C after completion*

## PROVEN ENERGY EFFICIENCY

### Surface Temperature Performance

U.S. Department of Energy

- Surface conduction related to energy loads was reduced 46-52%
- Exterior surface temperature 47 F degrees cooler

### Interior Temperature Performance

U.S. Department of Energy

- Super Therm® out-performed white paint
- 26% - 30% increase in energy efficiency

## INDUSTRY COMPLIANT AND TRUSTED

- U.S. Green Building Certified
- MASDAR certification in UAE
- VOC compliant
- Class "A" Fire Rating
- DNV and ABS Approved
- USDA Approved

## PROTECTING INDUSTRIES WITH PREMIUM COATINGS

Industries cannot rely on temporary efficiencies when delivering their products and systems. That's why SPI Coatings have been selected by numerous corporations and individuals. Our coatings are designed to save you money

because of their innovative performance and long-term durability. With an international presence in a wide diversity of markets, SPI continues to bring industries peace of mind when it comes to combating high energy costs and corrosion.

As operational problems become more complex, SPI keeps pushing the boundaries of effectiveness. It's a system of products refined from remarkably conclusive data and forged under the most rigorous conditions.



*40 to 60% of total building energy costs directly relate to air conditioning expense. Beat the heat build-up with Super Therm®.*

### TIME TESTED SOLAR REFLECTIVITY

Super Therm® has the ability to endure severe conditions for extended time periods making it an efficient solution for a wide variety of industries. The results below reveal the tested effectiveness of Super Therm® after 15 years of performance.

Super Therm® Solar Energy Reflectance Chart



*In this study, the solar reflectance of Super Therm® after 15 years stood at 84%. By comparison, university testing in Japan was performed on 21 insulation coatings in the market. Their average beginning reflectivity was 80% and after 1.5 years their reflectivity was reduced to 58%. This sampling represents the clear advantage Super Therm® brings to the market for industries needing consistent and cost-effective thermal protection.*

### TOP COMPANIES USING SUPER THERM®

- Mitsubishi
- Nissan
- Panasonic
- General Dynamics
- Hoover Dam
- HEB Grocery Company
- Trucking - Refrigeration Trailers
- Major Oil Firms - Worldwide
- Halliburton Company
- Drydocks World
- Vodafone Group PLC
- Home Builders
- U.S. Army
- U.S. Air Force
- U.S. Navy

*Certified Environmentally Safe and Eco-Effective - Cradle to Cradle Certified Product™ (Silver Certificate)*



## SUPERIOR PRODUCTS INTERNATIONAL PRESENCE

Asia	Europe	Middle East	South America	Central America	Africa	Australasia	North America
China	Azerbaijan	Oman	Argentina	Dominican Republic	Angola	Australia	Canada
India	Belgium	Saudi Arabia	Brazil	Honduras	Egypt	New Zealand	Mexico
Indonesia	France	UAE	Chile	Panama	Nigeria		U.S.A.
Japan	Germany		Colombia	Puerto Rico	South Africa		
Korea	Greece		Trinidad & Tobago		Tanzania		
Malaysia	Italy		Venezuela				
Singapore	Netherlands						
Taiwan	Poland						
Thailand	Russia						
The Philippines	Spain						
Vietnam	Turkey						
	Ukraine						

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