

SUPER THERM[®]

Protecting industries with premium coatings



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



Super Therm®

Experience Innovative Insulation



When 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

	90% Speed Recharge	Dept. of Energy Star® Best Overall	California Cool Roof Approval	NASA Tested	Interior & Exterior Proven	Class A Fire Retardant Thermal Barrier	Proven 1200 hrs. Salt Spray Testing	More than 20 Years Old Experience	Moisture Resistant	Blocks 95% of UV and Rays	Health Mold and Mildew	ULGA Approved
Super Therm®	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved	Approved
Fiberglass	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved
Cellulose Filler	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved
Ceramic Paint	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible	Not Possible
Polystyrene Foam	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved	Partially Approved

Approved

Partially Approved

Not Possible

Temperature of coatings and other materials in sunlight

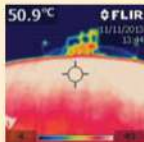


THERMAL STUDY JUAYMAH NGL SPHEROID TANKS



*Super Therm®
NG Tank Spheroid 203A*

*Existing Tank
NG Tank Spheroid 203B*



Saudi Aramco – November 2013

SUPER THERM® IN USE TODAY

Aviation

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

GDP 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.

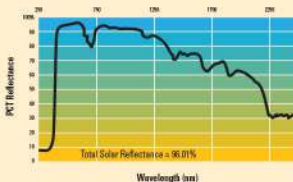


40 to 60% of total building energy costs directly relate to air conditioning expense. Beat the heat build-up with Super Therm®.

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)

