



SUPER THERM[®]

Insulation Coating

Cool Agriculture Energy Savings Kit[™]



Part 1: ROI Global Projects

Part 2: Testing & Certification



neotech
COATINGS AUSTRALIA
Future Proofing with Tough Protection[®]



Visit Supertherm.net.au or Neo.Cool
for more testing information



SUPER THERM[®]

Insulation Coating

In the Agriculture Industry

Passive profit-enhancing and sustainable benefits

- Reduces heat stress and increases livestock profitability by applying to all animal shelters, especially poultry, cattle, pigs, and horses
- Protects goods by insulating long haul trailers designed to carry perishables
- Reduces heat stress during animal transportation by applying to trailers
- Reduces energy costs and increases comfort by coating roofing and interior/exterior walls to keep heat out during the summer
- Reduces risk of disease from condensation on cold water pipes and watering tanks
- Provides a fire-resistant coating for substrates. Super Therm[®] has a "0" fire and smoke spread and will not contribute to flame spread
- Insulates freezers or refrigeration units to reduce costs and product loss
- Prevent bin feeders from condensation and moisture contamination of the feed, resulting in less feed waste and better nutrition



Visit Supertherm.net.au or NEOtechCoatings.com
for more information

SPICoatings.com USA Manufacturer. NEOtech Coatings - sole Australian Distributor



SUPER THERM[®] Insulation Coating

Super Therm[®] is guaranteed to make your life and the environment better with it's top 5 benefits!

1. Saves you thousands in energy costs with clients showing ROI within 3 years[^] and industry tested to show 20-50% energy use reduction
2. World's only insulation coating tested and reflects 95% of solar heat
3. Proven to last over 30 years with a 20 year Manufacturer's Guarantee*
4. Prevents thermal shock protecting your assets, reduces fuel consumption and motor running costs
5. Environmentally friendly, safe and easy water based application and USDA Approved

Key Features and Benefits of Super Therm include:

- Blocks 95% of Heat Load (blocks the absorption and transfer of heat) • Total Solar Reflectance 96.1
- 99% of Ultra Violet Radiation (UV)
- 92% of Visual Light (Short Wave Radiation)
- 99.7% of Infra Red (Long Wave Radiation)
- Blocks Flame Spread and Smoke - Class "A" Fire Rating; "0" Flame Spread and Smoke (tested by NASA and Australian laboratories).
- Blocks Water and Moisture Penetration - certified and tested water barrier
- Resists chemicals and provides both insulation and corrosion protection
- No off-gassing - no smells or odours are produced while under application or on the structure
- Safe and non-toxic low VOC • Prevents Mould and Mildew
- Water can still be potable from the roof
- Environmentally Friendly water based, non-toxic, energy efficient results as Energy Star rated
- Works when dirty • UV and weather resistant
- Tested to blocks 68% of Sound Waves - sound deadening
- High technology insulation - when applied is only a 0.254mm thick (same as a business card)
- Easy to apply and clean with airless (1 coat), roller or brush (2 coats)
- No maintenance costs - apply and walk away - reapply 10+ years later to keep coating efficient
- Adaptable - can be applied to virtually any surface
- Simple single use coating ready-to-use formula
- Reduced electricity costs - save money as the air conditioner don't work as hard
- Improves efficiency of solar investments
- Improved personal/animal comfort - significant benefits in ambient temperature
- Reduces surface temperatures for safety
- Use on interior and exterior
- Offers carbon offset with improved contributions to urban heat island effect reduction



Visit Supertherm.net.au or NEOtechCoatings.com for more information

SPICoatings.com USA Manufacturer. NEOtech Coatings - sole Australian Distributor
*Approved Applicator ^Results may vary

Super Therm: Leading global insulation coating that blocks Australian heat!



World's Leading **HEAT REFLECTIVE** Insulation Coating

UV • Visual • Infrared

95%
Heat
Blocked



High Performance >>>
SUPER THERM
Insulation Coating

• ECO FRIENDLY • BLOCKS HEAT • FIREPROOF • WATER BASED • EASY APPLICATION

For over 30 years Super Therm® has blocked 95%
of solar heat and saved 20-50% in energy use!*

*Industry & Department of Energy USA Tested • Results at neotechcoatings.com

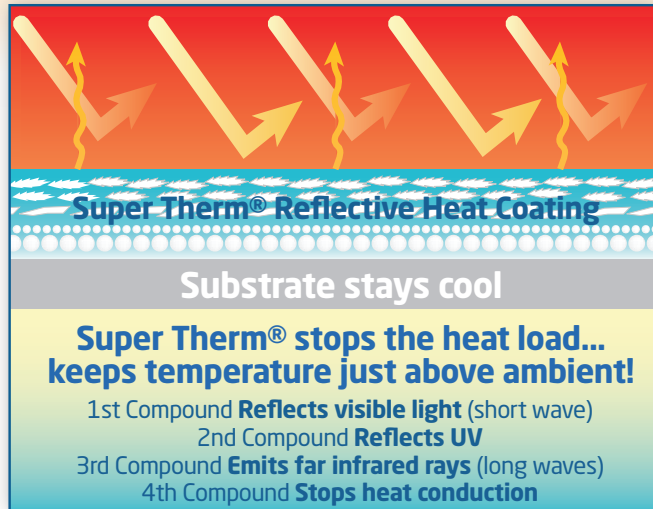


SUPER Proven the Hero for over 30 Years Globally

High Performance >>>
SUPER THERM
Insulation Coating

How Super Therm® Works

Formulated 4 ceramic insulation coating that have been tested globally to block 95% of Infrared, UV and Visible heat energy and stop heat load!



STOPS 99.5% Infrared Heat
ASTM E1461-92

Total Solar Reflectance 96.1 SRI 102

Super Therm®'s insulation leading technology

Super Therm® contains four natural ceramic compounds from over 7,000+ available. Three match each of the solar radiation waves of UV, IR and Visual to block their solar heat and the fourth ceramic has a density 50 times lighter than paper so the heat cannot physically load into the surface.

This creates high emissivity and reduces conduction...acting like sunscreen on the roof and walls therefore no heat load!

No other coating performs this function. Along with the unique urethane and acrylic binders, Super Therm® is highly durable and tough!

J.E. Pritchett, the President of SPI Coatings, USA is a ceramic researcher and formulator worked with NASA engineers and spoke at the NASA new technologies symposium in Chicago in 1995 as a ceramics specialist where he is leading in his field worldwide. **While many companies mention NASA, SPI Coatings and Super Therm® has been developed and tested by NASA since the 1980s!**

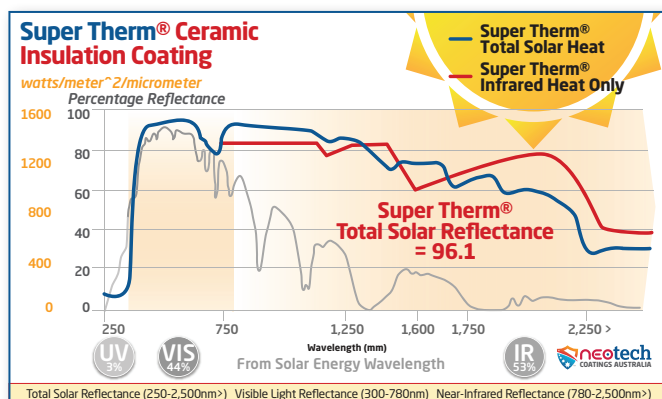
This is why the surface of Super Therm® is no more than a few degrees over ambient in any climate as it blocks 95% of the heat. There's no heat load, so no heat absorbed and transferred even when the surface is dirty. It passively keeps performing!

Super Therm® - The Overview

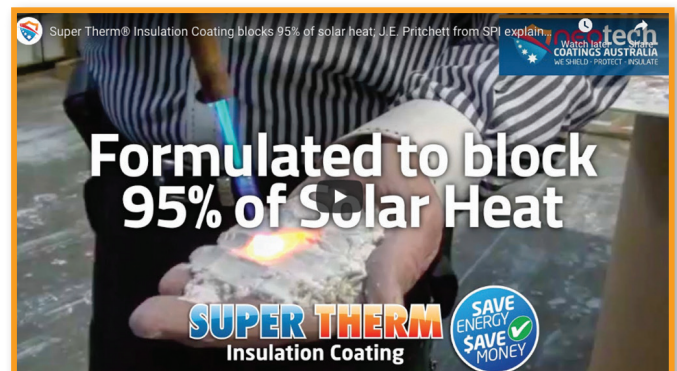
- For Commercial/Office, Industrial and Residential use where you want the best heat blocking solution on the market
- Water based combination of compounds
- Safe and non-toxic low VOC
- Approved for use around food and potable water
- Max. surface temp when applying is 65°C and min. 5°C
- Easy preparation with pressure cleaned of substrate to be free of any contaminants and corrosion.
- Application by airless sprayer, brush & roller (2 coats).
- Apply wet at 425 microns / 17 mil and dries to 230 microns / 10 mil (business card thickness). Generally 30-60 minutes to tack free.
- Overcoat in 2 hours at 21°C and fully cures in 21 days.
- See instructions for full and correct application



J.E. Pritchett, President of SPI demonstrates a 1090°C blow torch in his hand showing emissivity in the Super Therm® compounds. This actively demonstrates how Super Therm won't load heat.



Note: All claims made in this brochure are proven with laboratory testing world wide. Visit: <https://neotechcoatings.com/super-therm-testing-and-results/>



SUPER

The Hero that insulates and protects you!

High Performance >>>
SUPER THERM
Insulation Coating

**Commercial,
Industrial and
Government
Worldwide application**



Super Therm® **BLOCKS** the Australian heat!

The stakes are high and we know how it feels to struggle with rising power costs and CO₂ emissions. **NEOtech Coatings Australia are authorised distributors of innovative SPI Coatings (USA) who have successfully proven globally their advanced insulation solutions that block solar heat.** This ultimately gives you multiple benefits including a return on your investment while protecting you, your assets and the hip pocket. For over **30 years**, clients globally have **reduced their struggle with heat and energy costs as the high performance range of coatings** from SPI help them deal with many different and extreme environmental challenges.

How much energy use is really costing?

Constant efforts go into saving money on power bills, energy efficient appliances, switching off air-conditioning or finding the best solar options. Not too mention dealing with the pure discomfort of heat entering buildings and creating a hot box. There's also the unseen cost of thermal shock (expansion and contraction of your roof) causing long-term roof damage...**the blindspot in the insulation battle is keeping the heat out by blocking as much UV, Visual and Infrared heat energy at the envelope of the building or structure.**

**Nissan Japan saving 75%
energy consumption with
Super Therm®**

JAPAN



Sony Koda Factory, Aichi, Japan: 200,000m²

Application to Nissan Factory	May	June
Before Super Therm® applied	3,767 kW	5,647 kW
After Super Therm® applied	519 kW	1,896 kW
TOTAL KW SAVINGS	87%	67%

Source & Photo: Daiko Shokai, Japan Distributor



Super Therm® used on the Address Dubai Marina Hotel

DUBAI



Super Therm® used on the Arizona, USA - Tuscon Airport

USA



Hepburn Springs 12 Shipping Containers home, Australia

AUS

5 Core Benefits of Super Therm®

1. **World's only insulation coating tested internationally to block 95% of solar (radiational) heat; Infrared 99.5%, UV 99% & Visual 92% energy!**
2. **Saves you thousands in energy costs** over many years with clients showing ROI within 3 years ^
3. **Proven to last over 30 years with a 20 year Manufacturer's Guarantee***
4. **Prevents thermal shock** protecting your assets, **reduces fuel consumption, running engine costs, refrigeration and maintenance.**
5. **Environmentally friendly**, safe and simple water based application approved by the EPA. No fire spread or smoke.

Proven, tested outstanding success globally since 1989

*Warranty based on Approved NEOtech Coatings Applicator ^ Individual results may vary



SUPER Global Projects = Hero Solutions

High Performance >>>
SUPER THERM
Insulation Coating

Super Therm® is transforming the planet with its success!

Many national organisations and governments around the world apply and use Super Therm® and other SPI's coatings. Whether it's a house, factory, farm or truck...Super Therm® has you covered with cases studies all over the globe!

Global Savings

20-50% energy savings

Industry testing with the Florida Energy Conservation Assistance Program after applying Super Therm® records moisture block and air flow reduction as well as a **20-30% energy savings on homes** (hot humid climates) and in Denver (dry climates) as well as steel containers in Texas finding **46-52% energy savings!**

40% air conditioning savings

Super Therm® was applied to 34,800m² of the **Tucson International Airport**, it saw a **22% reduction in total energy usage** (lighting, elevators, food facilities, etc) and a **40% reduction in air conditioning costs.**^

55% energy savings

Cumming New Life Church, Cumming, GA, needed help with high electric bills coupled with cooling units running all the time and inside temperatures not going below 25°C (78°F). Atlas Air and Heat Inc. performed a CHVAC load calculation and found 22.8 tons of cooling were needed yet the existing system could only produce 15 tons. Super Therm® was applied on the existing metal roof.

The power bill from September previous year showed 11,320 kWh's used vs. September next year usage of 5,200 kWh's. **The cooling tonnage was re-tested at 16.97 tons from 22.8 tons. The church reduced their energy use by 55% and the amount of cooling needed by 26%.**

50-60% utility savings

Temperatures in **Las Vegas** average 43.3°C in July (summer). Adobe Homes coated the roof and walls with Super Therm® of a home and report up to 50-60% savings on the total utility bill. The house maintains temperatures not over 27°C without air conditioning.

Global Companies Using Super Therm®

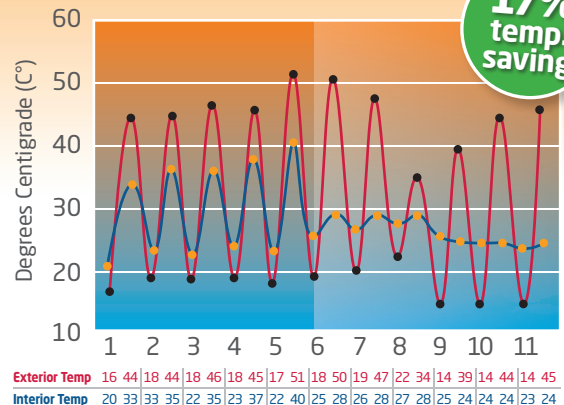
- Mitsubishi
- Nissan
- Sony
- Panasonic
- General Dynamics
- Hoover Dam
- HEB Grocery Company
- Major Oil Firms - Worldwide
- Trucking & Transportation
- Halliburton Company
- Vodafone Group PLC
- Home Builders
- U.S. Army
- U.S. Air Force
- U.S. Navy
- ...and many more



Super Therm® beats the heat in Spain

A metal roof in Sevilla, Spain had temperature readings taken 8am to 2pm to determine increase of heat load from the coolest point of the day to the hottest. Super Therm® was applied at the beginning of the 6th day. A noticeable change is recorded to the interior on subsequent readings, indicating a leveling of temperature between the morning

and afternoon compared to the consistent exterior temperature readings (private industry test data). Internal temperature dropped from 30°C to 25°C or 17% saving.



Trucks & Reefers using Super Therm® Denver to Phoenix, USA

Cool-down time was cut by **1.75 hours or 44%**
Extend the life of the refrigeration trailer units
20% less fuel on the outbound "hot" haul
29% less fuel on the return "cold" leg



Visit
neotechcoatings.com
for more savings
and case studies



*ARISTA Air Conditioning Corp: aristair.com/blog/15-tips-to-keep-your-energy-bills-from-skyrocketing-this-summer/
^ neotechcoatings.com/coating-products/super-therm-insulation-coating/super-therm-case-studies/

SUPER The Hero aims to protect our environment

High Performance >>>
SUPER THERM
Insulation Coating

Easily reduce your footprint!

Industries, government and residents globally rely on **Super Therm**® due to its unique and outstanding high performance and sustainability results and benefits. The core properties of **Super Therm**® continue to attract smart customers needing a genuine and long term eco-friendly insulation solution that yield passive energy efficiency, reduces CO₂ emissions and reduces costs. Super Therm stopping the BTUs entering buildings means less cooling needs!

Super Therm® the proven leader!

EPA Energy Star Program

Super Therm® is an approved and accepted Energy Star Partner

- ASTM E 903-96 Reflectivity=80%
- Only 1% loss in reflectivity over 3 Years (3% over 10 years)
- ASTM C 1371 and C 1549 Solar Reflectance and Thermal Emittance
- Tested to maintains thermal efficiency for 30 years

CRRC (Cool Roof Rating Council)

Rated Products Directory: Field-Applied Coating. CRRC Product ID# 0802-0001

LEED - Leadership in Energy & Environmental Design

Cradle to Cradle Silver Certification

Environmentally Safe and Eco-effective

SPI - Member U.S. Green Building Council

LOW CO₂ EMISSIONS



Super Therm® passively reduces CO₂ emissions

Certified and Tested



LEED LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN

Super Therm® has been proven for 30 years to save you energy by blocking heat. These savings reduce CO₂ & costs

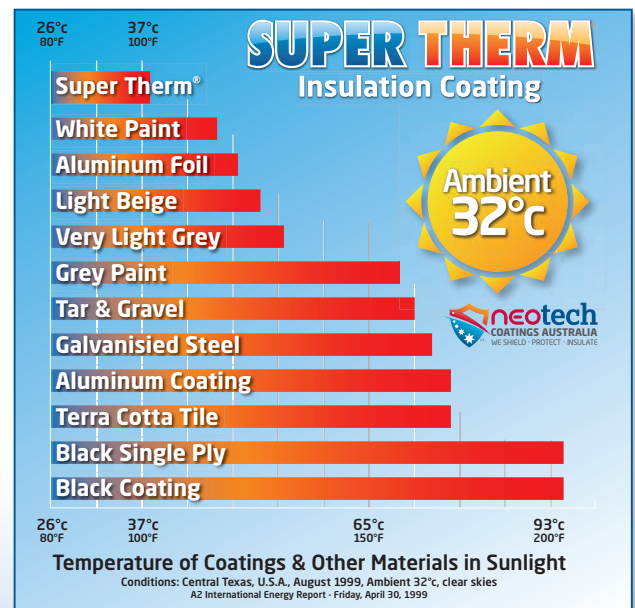
Why roof colours matter with heat

Dark roofs can attract 25% more heat than white roofs due to emissivity. While dark roofs may blend into the environment better, they **increase the temperature more in your building!**

As energy prices and temperatures rise you'll need to consume more energy to remain cool, therefore it costs you more. **Black or dark coloured surfaces absorb more heat energy and magnify the temperature more** than white roofs, sometimes **reaching 80°C+ on a hot day with no heat barrier.** This heat is transferred into the building where fibreglass insulation loads the heat and air conditioners work hard to keep up...eventually its all overloaded!

Solar panels are able to create more input credits with **Super Therm**® blocking heat and reducing need on air conditioning.

Super Therm® blocks 95% of that heat at the best place, the envelope, leaving near ambient temperatures. This creates a very energy efficient building that also has the roof protected from thermal shock and corrosion and reduces urban heat loading effects.



Save 39% more energy at 25°C

Con Edison, NY research stated "keep your thermostat set at 78°F (25.5°C) when your building is occupied...turning down the thermostat to 75°F (23.8°C) costs 18% more, and 72°F (22.2°C) costs 39% more!"*

Therefore BTU Reduction = Kw savings = a ctual dollar savings...keeping out as much heat load as possible saves money and energy use.

Super Therm blocks heat = less energy to cool!

Energy Savings Guide

High Performance >>>

SUPER THERM

Insulation Coating

1

IDENTIFY

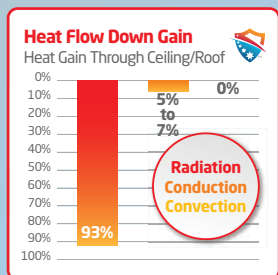
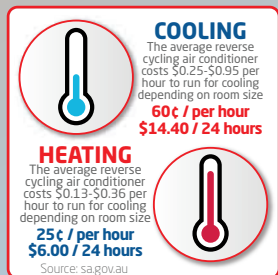
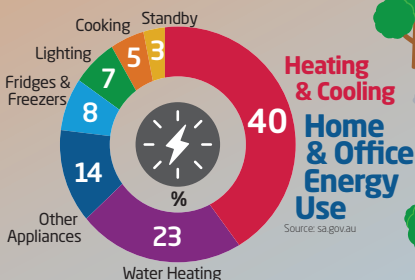
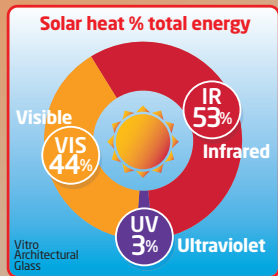
40% of energy used at home and office is cooling and heating. Rising power costs & hotter summers are inevitable! 93% of radiant heat comes through your roof. Consider stopping the heat!

Rising power costs & hotter summers are inevitable! 93% of radiant heat comes through your roof. Consider stopping the heat!



CHOOSE 2

Many insulation choices fall short of what **Super Therm®** Insulation Coating provides. Compare **20-50% saving in energy use (DOE)**, **99.5% BTU heat block**, lasts **30 years**, eco friendly, no maintenance!



PREPARE 3

Contact **NEOtech Coatings** for more information and we'll help you understand all the ins and outs. Quote, agreement, invoice and get ready to apply, **save energy and save money!**



4

APPLY

Qualified applicators pressure clean your roof and apply **Super Therm®** insulation coating that starts to work instantly to **passively block 95% of heat!**



A 3°C reduction in the thermostat produces a 39% reduction in utility costs.
Con Edison, NY.

REWARDS 5

Super Therm® brings years of passive insulation benefits. **It's also saving money, much cooler in summer and warmer in winter with less energy used!** Contact us today!
neotechcoatings.com



SUPER The Hero Tested; still the Best!

High Performance >>>
SUPER THERM
Insulation Coating

Super Therm® is a proven insulation coating solution

Super Therm® and other SPI coatings have been tested in labs across the world along with successful global field testing. From NASA, Japan, Russia, Saudi Arabia, Australia and much more, its proven consistently outstanding results for 30 years.



Super Therm® Application

Preparation

The surface must be clean from all dust, oil, tar, rust, grease, salts, films or any contaminants. Power wash minimum of 3000 psi. Surface must be completely dry before applying. Recommend drop sheets and caution as Super Therm® is difficult to clean up if spilt due to its bonding strength.

Mixing

Due to its thick ceramic compounds Super Therm® is best mechanically mixed or mixed by hand (boxing) thoroughly for a minimum of 4 minutes, then apply.

Application

Super Therm® can be applied by brush, roller or sprayed. The preferred method of application is by air or airless sprayer. Remove filters from the sprayer and apply on a day with no wind. See and search neotechcoatings.com for airless sprayer instructions.

Spread & Coverage Rates

Super Therm® should be applied at no less than 17 mil wet = (425um Microns) and dries down to 10 mil = (250um Microns) after each application.

The total Dry Film Thickness (DFT) is a quarter of a mm (business card thickness) at 250um Microns. Recommended coverage is 2.5m² per litre.

Note: Roofs with corrugations

2" corrugation = roof size x 135%

2.5" corrugation = roof size x 145%

3" corrugation = roof size x 160%

Application Temperature

Maximum Surface Temp. when applying: 65°C (150°F)

Minimum Surface Temp. when applying: 5°C (40°F)

Maximum Surface Temp. after curing: 149°C (300°F)

Drying and Cure Times

First coat: 30-60 minutes to tack free at 21°C

Overcoat: 2 hours later at 21°C at 40% relative humidity

Full Cure: 21 days

Note: If Super Therm® is wet or rained on during the curing process it may bubble. Do not puncture bubbles as the coating will settle down and retract to normal.

Clean Up

After completion tools should be cleaned with water; cleaned brushes and rollers can be reused.

Storage

Store between 5°C and 37°C and thoroughly close the container to air tight as Super Therm® will dry out.



Colours and Tinting

Super Therm® is a pearl white colour. It can tint to any earth-tone colours yet will lose its effectiveness. **Not medium to dark tones.** Never tint to grey-black as the tint will cover the ceramic particles first and block their effectiveness. Best approach is to apply Super Therm® in 2 coats, let dry, then paint a light coloured paint as your finishing coat. Anything darker than 40% grey should have HSC® Coating applied underneath.

Test and Certifications

- **UL** (Underwriters Laboratory) approved
- **Flame Spread Test** (ASTM E84; 0 smoke, 0 flame)
- **NASA:** NHB 8060.1B/C Test 1 **Flammability testing "0" Burn, Class "A" rating**, NHB 8060.1C, Test 7 Toxic Off gassing
- **UV & Salt Spray Resistance** (ASTM 5894) 5000 hours
- **USDA Approved**
- ASTM C236: **Fiberglass Batt insulation comparison**
- **Flexibility** (ASTM E1737): 180 deg. bend - passed
- **Perm Rating** (ASTM E96): 8.8 average
- **Abrasion Resistance** (ASTM D4060): 3,000 cycles
- **Resistance to Wind Driven Rain** (ASTM E514)
- **Department of Energy USA - ECAP-CUL-1-03 - Energy Conservation Assistance Program** - Standard Method for Comparing Utility Loads in Standard Constructed Buildings. Director, Alexander Othmer. **FEO Energy Conservation Assistance** / USF Tampa, Florida
- **ICC Approval** (International Code Council) Legacy Report #21-25. ICC consolidates approvals for:
BOCA (Building Officials Code Administrators)
- **EPA Energy Star Program:** Approved and accepted as an energy star partner for saving energy
 - ASTM E 903-96 Reflectivity=80%
 - Only 1% reduction in Reflectivity in 3 Years (3% 10 yrs)
 - ASTM C 1371 and C 1549 Solar Reflectance and Thermal Emittance
- **CRRC (Cool Roof Rating Council)**
Rated Products Directory: Field-Applied Coating, CRRC Product ID# 0802-0001
- **LEED - Leadership in Energy & Environmental Design**
- Qualifies Sustainable Sites Credit 7.2 Heat Island Effect
- **United States Department of Agriculture - USDA**
Environmentally safe and safe for use around animals



Visit: neotechcoatings.com - Search 'testing' for the full range of Super Therm® tests.

SUPER The genuine Hero 21st century Solution?

High Performance >>>
SUPER THERM
Insulation Coating

At NEotech Coatings we understand the struggle with the rising power costs, more energy use and rising environmental temperatures.

As summer's get hotter you can protect yourself with **Super Therm® high performance insulation coating** tested and proven to **stop 95% of heat**, including **Infrared**. This reduces your air conditioner running, power costs and saves money. **In fact the US Department of Energy ran three separate tests showing Super Therm® brought an energy saving of 20-50%*.**

Industries cannot rely on unsustainable energy efficiency when delivering their products and systems. That's why **NEotech Coatings with SPI Coatings** are working hard for you to have outstanding energy solutions. **Super Therm® has proven to reduce heat and last over 30 years!**

We bring peace of mind to combating high energy use and associated costs. Transformation across all industry sectors including Government, business, trucking and transport, cool and cold storage, homes, schools and much more! Contact us today to start blocking the heat!



**Superior Products International
Global Distributors and Product
Applications for 30 years**



Super Therm® Physical Data

- **Solids:** By w/w 70% / By v/v : 54% (+/-2%)
- 30-60 minutes to tack free at 21°C (70°F)
- **Overcoat:** 2 hours when 21°C (70°F) at 40% Relative Humidity
- **Full Cure by Evaporation:** 21 days
- Lead and chromate free
- USDA approved and permitted for use for potable water
- **Weight: 1.42kg/litre** (11.88 lbs./gallon)
- **Shelf Life:** Up to 5 years if unopened under appropriate storage conditions (See SDS).
- **Vehicle Type:** Urethane/Acrylic/Resin blend
- **VOC Level:** 67.2 grams/litre 0.561 gal/lbs
- **Acid resistance:** Will withstand mild acids
- **Viscosity:** 105 - 110 KU
- **pH:** 8.5 - 9.0
- **Apply:** 17 mils (425 microns) wet

Visit neotechcoatings.com for full Material and SDS pdfs

**KAPOW
THE HEAT!**

**STOPS
99.5%
Infrared
Heat**

TSR 96.1
Reflectivity 83%
Emissivity 90%
BTU 99.5%
ASTM E1461-92



NEotech Coatings Australia Pty Ltd are Authorised Australian Distributors of Superior Products International (SPI) USA

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sales@neotechcoatings.com



SUPERIOR PRODUCTS INTERNATIONAL II, INC.

SUPER THERM® AGRICULTURAL USES

Insulating Ceramic Coating

SUPER THERM® is a ceramic based, water-borne, insulation coating that is designed to block and reflect heat and that reduces energy and maintenance costs. As the only ceramic coating developed in cooperation with NASA, **SUPER THERM®** is the most effective, durable, and long lasting ceramic coating on the market.

Benefits:

- **Saves Energy Usage** of 20-70% for air-conditioned buildings during the warmer months with even greater savings in free standing coolers and freezers.
- **Reflects and Blocks** over 95% of the radiation from the sun.
- **Unique Ceramic Composition:**
 - Blend of four different ceramics that block all windows of heat transfer.
 - Other ceramic coatings only contain glass hollow spheres that reflect visual light when clean but absorb and transfer other windows of heat.
 - Only ceramic coating rated as an insulator by BOCA (U.S. Building Code).
 - Includes various resins, including urethanes, for durability and longevity.
- **Dampens Up To 68% of Sound Waves** in field applications and studies.
- **Class A fire rating.** In case of fire, SUPER THERM® will help to prevent transfer of fire and heat and will not contribute to flame spread.
- **Prevents Growth of Mold and Mildew.**
- **USDA Approved** for use in and around food preparation areas.
- **Eliminates Most Expansion and Contraction** of metal roofing and concrete.
- **Reduces Heat Stress** and improves performance and health of farm animals.
- **Long life** - 20 year life expectancy on roofing under normal conditions.
- White in color and rough in texture for maximum performance.

Agricultural Uses

- Reduces heat stress and increases livestock profitability by applying to all animal shelters, especially poultry, cattle, hogs, and horses.
- Reduces energy costs and increases comfort by coating roofing and interior/exterior walls to keep heat in during winter or heat out during the summer.
- Provides a fire-resistant coating for substrates. SUPER THERM® has a 0 fire and smoke spread and will not contribute to flame spread.



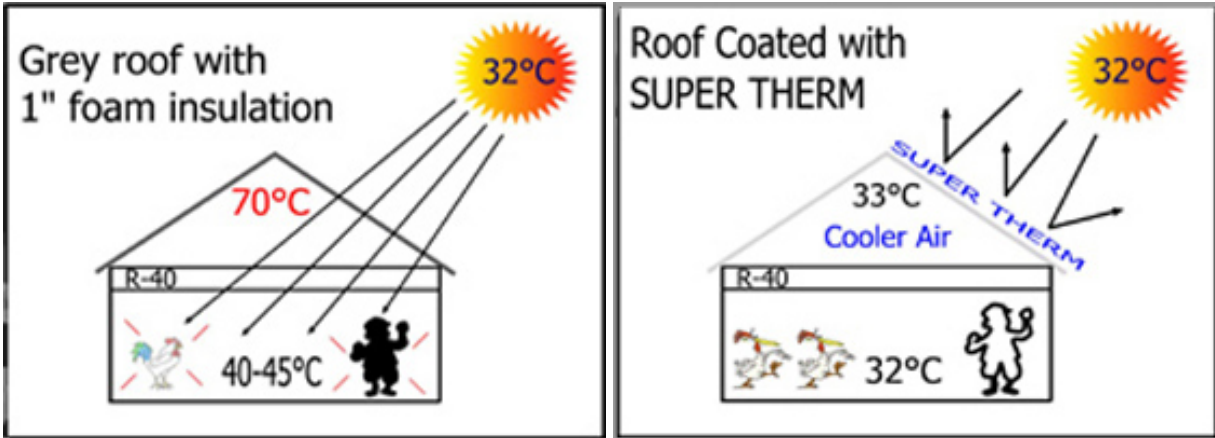
POULTRY HOUSE – Providence, Florida

SUPER THERM® applied to the roof of a 16,000 sq.ft. poultry house in Providence, Florida (outside of Lake City, Florida). **SUPER THERM®** coated house reduces interior temperature, eliminates condensation, and performs for 15 years without re-insulation.





SUPER THERM® reduces attic temperatures by 30 degrees, which helps to reduce the death rate of Birds by 75%. Birds are also an average of one pound heavier in the **SUPER THERM®** coated house at the end of the grow season.





SUPERIOR PRODUCTS INTERNATIONAL II, INC.

SUPER THERM over Poultry Barns

We did test with Gagle Foods which is a large Chicken farm.

We coated a test building and reduced the temperature inside the barn by 28 degrees F during the summer. So, during the summer, we could stabilize the heat and the chickens eat more and gained weight faster.

Then they checked the interior temperature during the winter months. What was found was that the body heat from the chickens was not lost through the seams of the metal roofing because the SUPER THERM had sealed it and as the metal warmed, the heat did not escape from the metal as fast.

Whereby, the body heat was captured inside the poultry barn to the point that the heat never was used through the winter months.

The statement that this reduces heat on the roof during the summer but never made a difference inside the house is $\frac{1}{2}$ true and $\frac{1}{2}$ wrong.

Here is what happens:

As the roof faces the radiation of the sun, it heats up – fact and no argument.

This heat then is able to “re-radiate” to the interior. Anyone can get on a ladder and as they near the roof, they feel the hot roof radiation to the interior. Again, a fact and no argument.

What is happening inside the room where the chickens are sitting is that the body heat from the chickens is increasing and rising as heat rises.

This body heat mixes with the re-radiation of the heat from the roof and this is the main problem inside the chicken house.

Combining both heat sources creates a tremendous amount of heat captured inside the barn.

“AS” these two heat sources mix, the intensity of the heat builds. As it builds, the heat level drops because the area next to the roof is saturated.

“IF” this heat level drops enough to the level of the chickens heads, all the chickens in the house will heat stroke and die.

Point—The heat level must be forced to be maintained well over the heads of the chickens to prevent this from happening.

Therefore, if you coat the roof with SUPER THERM, it will prevent the roof from heating to 150F or more and causing this re-radiation of heat inside the attic area. If you can prevent this “heat load” from happening, then you have reduced the “amount” of heat building up inside the barn.

Now, simply install a single exhaust fan in the apex of the roof at one end or both to pull the “body heat” out of the barn and the chickens are maintained at a comfortable temperature for growing.

As to winter, if you coat the roof / and if possible walls to seal and reduce the heat lost off of the roof, the body heat from the chickens can be used to help hold the heat inside the barn to reduce the heating needed.

I grew up on a farm. Caught chickens by hand placed in cages to ship out by truck. I Worked in the barns. I do understand how heat affects the chickens in both summer and winter.

J.E.

POULTRY HOUSE

Niagara Falls

SUPERTHERM® applied to the roof of a 20,000 sqft poultry house in Niagara Falls Canada, to help reduce the temperature. Current insulation materials (Cel Pak) being used in the houses become loaded with moisture from condensation and must be replaced every 5 years. **SUPERTHERM**® coated houses eliminate condensation and will perform for 20 years without concern for reinsulation. **SUPERTHERM**® provides the added environmental benefits of a reduced [HEAT ISLAND EFFECT](#).



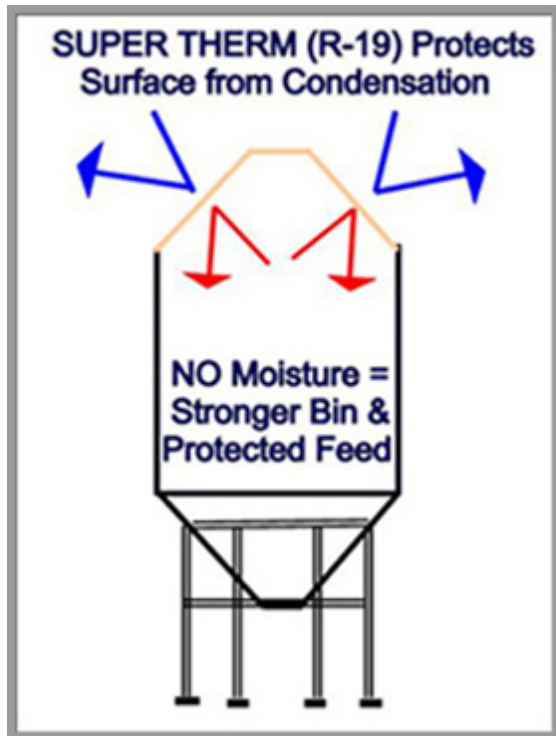
Heat stressed birds have reduced profitability in several different ways:

- 1. Increased mortalities - any direct loss is important as the cost of the chick is immediately lost, as well as any feed that has been ingested.**
- 2. Lower and less consistent weights - heat stressed birds will not eat during the day. When temps. drop during the evening, the birds rush for the feeders, fight for position, and then gorge. Binge eating reduces potential gains, and due to fighting, smaller birds have less of a chance to eat, resulting in inconsistent weights that irritate processors.**
- 3. Higher feed conversions - The greatest cost in poultry production is the feed cost. Due to energy losses of the birds trying to keep cool, as well as changes in feeding habits, poor feed conversions can strip a lot of profits from a flock.**

SUPERTHERM® Reduced attic temperatures by 30°, which helped reduce the death rate of Birds by 75%. Birds were also an average of one pound heavier in the **SUPERTHERM**® coated house at the end of the grow season, which results in more cash value per bird.

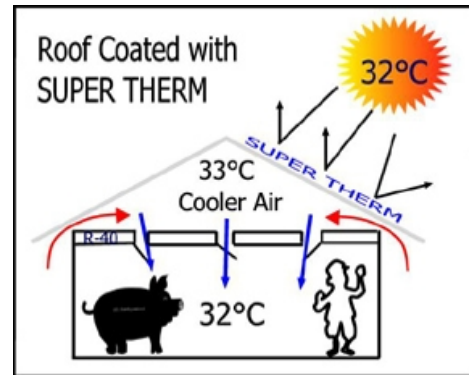
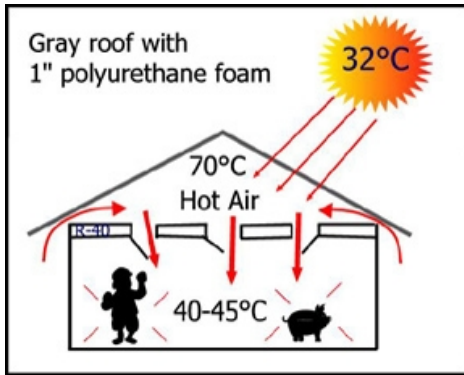


SUPER THERM® applied to Bin Feeder prevents condensation, protecting feed from moisture



SUPER THERM® used on Cold Water Pipes inside the poultry house. High heat and humidity inside the house can cause condensation to form on the outside of the pipes. This water drips onto the bedding and reduces litter quality. Wet litter can be a reservoir for disease. **SUPER THERM®** eliminates condensation, helping to prevent outbreaks of coccidiosis and enteritis.





CONTROL THE HEAT KEEP YOUR HORSES HEALTHY

The Problem:

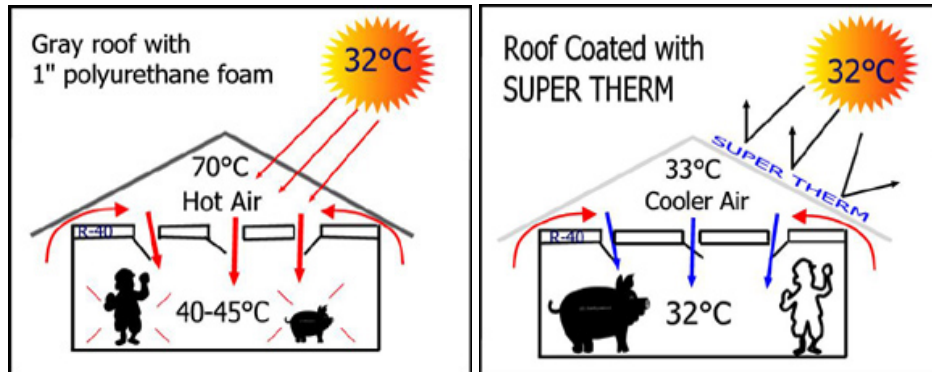
- Hot temperatures cause hot trailers that stress horses.
- In 24°C temperatures, horses cannot dissipate body heat quickly enough to maintain homeothermy.
- High heat causes a horse's respiration and sweating mechanisms to become less effective.
- Horses need to stay cool for highest performance.



The Solution: **SUPER THERM®**

- Super Therm is a certified insulator providing an R-19 equivalent.
- Coat your trailer roof to stop the heat, before it can penetrate inside and compromise your horse's health.
- Helps keep your horse within its thermal comfort range.
- Controls corrosion and thermal expansion for a longer service life for trailer roofs.
- Extremely weather resistant with excellent thermal shock resistance.
- Numerous farm, ranch and agricultural uses.





CONTROL THE HEAT ON HORSES

Problem:

- ♦ Hot temperatures = HOT horse trailers = Heat Stressed Horses
- ♦ In 24°C+ temperatures, horses cannot dissipate body heat quickly enough to maintain homeothermy (OMAF 2003)
- ♦ High heat causes a horse's respiration and sweating mechanisms to become less effective
- ♦ Horses need to stay COOL for highest performance



Solution:

SUPER THERM Insulating Ceramic Coating

- ♦ Coated on your trailer roof to reflect heat away
- ♦ Helps keep your horse within its thermal comfort range
- ♦ Extremely strong weathering and thermal shock resistance
- ♦ Reduces 68% of sound through the surface it is coated over
- ♦ Longer life for trailer roofs - controls corrosion and thermal expansion
- ♦ Easy application with many uses for your stables/barns



***SUPER THERM will COOL your TRAILER
= Healthier, more content and productive horses***

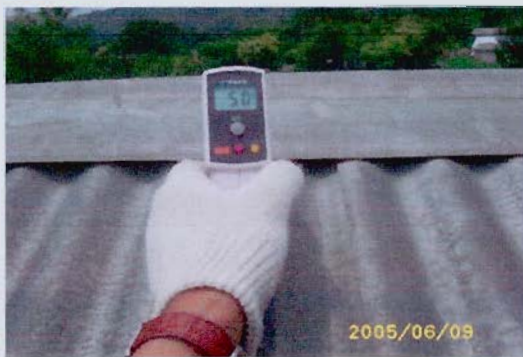
CASE 6

Date	Jun.13.2005~Jun.14.2005	Application place	Sam-Gam farm in Yang-San city
Application part	The roof of the poultry farm (868m ²) & Storage tank (7ton)		

1. Roof

Before: Jun.08th.2005 (1p.m) Outdoor temperature: 28℃

After: Jun.14th.2005 (1p.m) Outdoor temperature: 25℃



(Before application)

(After application)

	Before	After	Temperature gap
Slate	46℃	25℃	-21℃
Galvanized steel	50℃	32℃	-18℃
Average	-20℃		
Average			-20℃

2. FRP storage tank

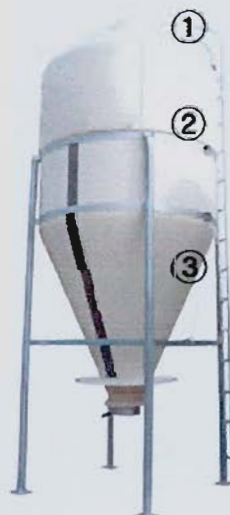
Before: Jun.08th.2005 (1p.m) Outdoor temperature: 28℃

After: Jun.14th.2005 (1p.m) Outdoor temperature: 25℃



(Before)

(After)



	Before	After	Gap
①	38℃	30℃	-8℃
②	36℃	28℃	-8℃
③	33℃	24℃	-9℃
Average			-8.3℃



United States
Department of
Agriculture

Food Safety
and Inspection
Service

Regulatory Programs
Building 306, BARC-East
Beltsville, MD 20705

June 01, 1990

Mr. J. E. Pritchett
Superior Products of Kan-Tex, Inc.
2361 Saxwood
Salina, KS 67401

Dear Mr. Pritchett:

This is in reply to your request for compound authorization received on April 19, 1990 for your product Super Therm.

This product is chemically acceptable as a coating for application to structural surfaces or surfaces where there is a possibility of incidental food contact in official establishments operating under the Federal meat and poultry products inspection program. This letter does not authorize use of the coating on any surface where there is direct or prolonged contact with food. Before food product may be placed in the area where the material is being used, the area should be sufficiently free of odor to prevent product contamination. As a safety precaution, smooth coatings should not be applied to walking or standing surfaces in processing areas.

The final granting of authorization to use coatings on structural surfaces such as walls or ceilings, or on equipment surfaces below the product zone, is the responsibility of the inspector in charge of the official plant. Before applying the coating to equipment which will subsequently be installed in an official plant, you must obtain clearance from the Equipment Standards and Review Branch, Meat and Poultry Inspection Technical Services in Washington, DC 20250. Technical advice will be provided by the Product Safety Branch upon request.

The above acceptance of this compound will not be indicated in the publication, "List of Proprietary Substances and Nonfood Compounds." This letter acts as continuing authorization for its use under the conditions stated above.

Acceptance of compounds by this Department is in no way to be construed as an endorsement of the compounds or of any claims made for them.

If any change is made in the labeling information or formulation, the authorization for use in official plants becomes void immediately.

Sincerely,

Charles R. Edwards/REN

Charles R. Edwards, Chief
Product Safety Branch
Food Ingredient Assessment Division

MAR 20 1995



SUPERIOR PRODUCTS INTERNATIONAL II, INC.

INSULATION COATINGS
CORROSION PROTECTION

May 4, 1995

RE: NASA Space Flight Center Testing of SUPER THERM

This is the first test report of a series of tests being performed by NASA on SUPER THERM.

In this report they tested and classified SUPER THERM as a Class "A" rated coating having -0- flame spread in the burn test. Flame spread is rated from "0" being the best to over "100" as being the worst as to contributing to flame or fire. SUPER THERM rated excellent in absolutely no contribution to flame or fire. This is an unusual rating for any paint product as most will score from a low of 15 up to 88. The "A" classification is the highest classification that can be achieved. This result definitely shows the quality of SUPER THERM.

NASA is currently so impressed with SUPER THERM that they are now establishing testing in additional areas of need for the space center. These needs involve not only their facilities but other classified areas.

As seen from the attached test memo from NASA, SUPER THERM was applied at 8 thousandths, 7.6 thousandths and 7.9 thousandths thickness for testing. This is our dry thickness as specified in our application instructions. All three samples were tested and received the same "0" result and "A" classification.

Regards,

J.E. Pritchett
President

National Aeronautics and
Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, AL 35812



Reply to Attn of. LA20

Mr. J. E. Pritchett
Superior Products Int'l II, Inc.
6459 Universal Avenue
Kansas, MO 64120

JUN 28 1995

Dear Mr. Pritchett:

Thank you for submitting the Technology Transfer Agreement entitled "Insulation and Corrosion" which was given the reference number 2617. As discussed in your recent phone conversation with our representative, this response will close our action on this inquiry.

In response to your inquiry, enclosed are test results on your product for flammability, outgassing, and liquid oxygen compatibility. Super Therm water-based paint passed the toxic outgassing test and received a K rating, which is the highest rating possible. A K rating means that over 100 lbs. of the material could be present in a man-rated situation without exceeding allowable values established by NASA. The chemicals outgassed, and their amounts are provided on page 2, of the Toxic Offgassing test result. For more information on maximum allowable concentrations of these compounds, consult the OSHA handbooks in your local library.

Your product failed the liquid oxygen compatibility test, which means that it should not come in contact with liquid oxygen. According to Marshall Center Materials and Processes Laboratory personnel, a failure of this test occurs when a flash and/or subsequent explosion occurs when the test specimen is impacted while in contact with liquid oxygen.

Super Therm water-based Paint received an A rating, the highest possible rating in the flammability tests. In fact, the samples did not burn under any of the test conditions. A copy of NHB 8060.1C is enclosed, which describes NASA flammability, odor, offgassing, and compatibility requirements.

Regarding your inquiry about the use of your product on the external tank, discussions have been held with the Marshall Center's Materials and Processes Laboratory. Your sales literature has been forwarded to them for review. You will be contacted for additional samples of your product if the laboratory determines that they are interested in pursuing the use of Super Therm on the external tank.

If you need any other information, please call Dinah Higgins at (205) 544-2632. Please let us know if we can be of additional assistance. We will contact you at a later time to determine if this information has solved your problem and benefited your company.

Sincerely,



Kenneth R. Fernandez
Manager
Technology Utilization Office

Enclosures

cc:

LA20/Dinah Higgins

MCTTC/Bret Cornwell

ASTA/Jim Benham

Superior Products/David Williams (w/enclosures)

Disclaimer

This information was assembled by the United States Government acting through the National Aeronautics and Space Administration. Neither the United States Government nor any agency or person acting on behalf of the United States Government assumes any liability resulting from the use of this information. In addition, the United States Government does not represent or warrant that use of the information will be free from privately owned rights.

National Aeronautics and
Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, Alabama
35812

Reply to Attn of EH42 (95-0152)

TO: EH43/D.Griffin

FROM: EH01/C. F. Key

SUBJECT: Toxic Offgassing of Super Therm Water Based Paint

MAY 16 1995

The subject material has been tested for toxic offgassed products by the procedures outlined in NHB 8060.1C, Test 7.

The material, parameters and results are as follows:

Material:	Super Therm Water Based Paint
Manufacturer:	Superior Products International II, Inc.
Cure:	First Coat: 2hrs. 75 F 14.7 psia Second Coat: 336hrs. 75 F 14.7 psia
Composition:	Acrylic and Polyurethane with Ceramic Filler
Material Code:	02181
Item Number:	103903
Project:	Space Station Study
Submitted by:	EH43/D. Griffin
Test Number:	M103903-D
Test Temperature:	120 F
Sum T100 Value:	.02196
Max. Limit Wt.:	2276.87 lbs.
Rating:	K

The subject material met the acceptance criteria of NHB 8060.1C for toxic offgassing. Please ensure that any subsequent cleaning or modification does not invalidate the test results and require retesting. An overall rating of K has been given to this material for toxicity.

A copy of the test analysis is enclosed.

A Material Safety Data Sheet and Product Data Sheet should be included with any materials submitted for testing.


C. F. Key
Deputy Director
Materials & Processes Laboratory

Enclosure

cc: see page 2



SUPER THERM[®] Insulation Coating

Registration and Certifications



- 1 Energy Star Program:** Approved Partner
Approved and accepted as an energy partner for saving energy.
 - Passed ASTM E903-96 Reflectivity = 80%
 - Only 1% Reduction in Reflectivity over 3 Years (3% over 10 years)
- 2 BOCA (Building Officials Code Administrators):** Approved
 - **ICC Approval (International Code Council):** Pending
 - Passed ASTM E 84 for Flame Spread
 - Passed ASTM C 411 for High Temperature for Surface Performance
 - Passed ASTM C 177 for Thermal Conductivity (*SUPER THERM Specific)
- 3 USDA (United States Department of Agriculture):** USDA Approved
 - Letter of Authorization from USDA Product Safety Branch
 - Letter of Written Certification as Accepted by USDA from Manufacturer
- 4 Marine Approvals for World-wide Salt Water and Maritime Use**

DNV (Det Norske Veritas)	DNV Certified
ABS (American Bureau of Shipping)	ABS Certified
IMO (International Marine Organization)	IMO Certified
US Coast Guard	Certified
- 5 Factory Mutual Approval**
 - Tested and Approved for Roofing and All Other Applications
- 6 GSA Approval for Federal US Government**
 - SUPER THERM Product ID# 6311
- 7 Underwriters Laboratories Approval (UL)**
 - Tested and Approved for Roofing (Metal and Foam Flat roof systems)
- 8 California Cool Roof Program**
 - Approved and listed

Continued next page

KAPOW HEAT!



Visit Supertherm.net.au or NEotechCoatings.com
for more information

SPICoatings.com USA Manufacturer. NEotech Coatings - sole Australian Distributor
*Approved Applicator ^Results may vary



SUPER THERM[®] Insulation Coating

Registration and Certifications cont.

9 State of California Bureau of Home Furnishings and Thermal Insulation

License Number TE 1392

10 State of Florida Energy Rebate Program

Percentage reduction from cost of coating

11 Florida ECAP (Energy Conservation Assistance Program)

ECAP-CUL-1-99 Field Test Results

Test Method for Comparing Utility Loads in Standard Constructed Buildings

12 IMO (International Maritime Organization)

IMO A. 653 (16) Flame spread for bulkhead, wall and ceiling linings

13 MSC (Marine Safety Counsel)

MSC.41 (64) Toxic Gas generation using Colorimetric Gas Detector

14 NASA (National Aeronautics and Space Administration)

NASA 8060.1B/C, Test 1 Flammability Test "O" Flame Spread

NASA 8060.1C, Test 7 Toxic Off-gassing "K" rating (no off gassing)

15 JIS (Japanese Institute of Standards)

JIS A 5759 Reflectivity Light and Radiation

Light Reflectivity Ratio 92.2% blocking light spectrum (Short wave)

Long Wave Radiation Ratio 99.5% blocking Infrared (Long wave)

16 China Center for Technical Testing

GB/T 1771-91 Resistance to Salt Fog (2000 hours)

GB/T 1866-88 Manual Aging (2000 hours)

GB/T 10834-88 Resistance to Salt Water (1000 hours)

GB/T 5219-85 Adhesion (pulling apart method) 4.07 pa

GB/T 1733-93 Boiling Water Immersion 8 hours



*Superior Products International II, Inc. (Super Therm Manufacturer) is an active member of the NRCA. National Roofing Contractors Association.

KAPOW HEAT!



Visit Supertherm.net.au or NEOtechCoatings.com
for more information

SPICoatings.com USA Manufacturer. NEOtech Coatings - sole Australian Distributor

*Approved Applicator ^Results may vary



SUPER THERM[®] Insulation Coating

Super Therm Insulation Qualifications

California's Title 24

Florida State Building Code 2007

International Energy Conservation Code (IECC)

ASHRAE Standards 90.1 and 90.2 To qualify:

Must have a minimum of 65% Reflectance (Super Therm 83%),
Emissivity of 75 (Super Therm 91) and SRI of 78 (Super Therm 103).

FTC (Federal Trade Commission) - requires a product is tested under and passes the ASTM C236 "Guarded Hot Box under Steady State Conditions" test to be considered an "insulation material". SUPER THERM tested and outperformed fiberglass in the entire scope of test.

Green Building Programs:

- ASHRAE Advanced Energy Design Guides
- USGBC's LEED 2009
- Green Globes
- Built It Green's Greenpoint Rated
- Collaborative For High Performance Schools



Rebate Programs: Florida: Florida Light and Power, Progress Energy, Gainesville Regional Utilities. Super Therm listed as rebate product.

ROI Results (specific testing by corporations and laboratories):

- **Sony/Japanese Government** testing on 40,000m² - Result: 1.5 year ROI.
- **Saudi Aramco Oil** testing result: 1.5 year ROI.
- **Russian Academy of Sciences testing result**
Super Therm outperformed polished aluminum mirrors (90% reflectivity across the spectrum) and Super Therm at 96%.
- **Mechanical engineer, construction physics, Belgium** - testing in winter months with Super Therm applied on walls - result 76% savings in heat loss.
- **Jamaica Defense Force, Engineer Regiment** - with use of Super Therm on roof, able to eliminate 50% of air conditioning units operating to cool roof.

KAPOW HEAT!



Visit Supertherm.net.au or NEOtechCoatings.com
for more information

SPICoatings.com USA Manufacturer. NEOtech Coatings - sole Australian Distributor
*Approved Applicator ^Results may vary



SPI COATINGS

PROVEN PERFORMANCE • REAL WORLD SOLUTIONS

SUPER THERM®

INSULATION
AND
CORROSION
SPECIALISTS

Technical Data Sheet (12/18/19)

DESCRIPTION

SUPER THERM® is a water-borne combination of high-performance aliphatic acrylics, urethanes and resin additives which produces a tough, yet flexible coating film. Designed for performance and durability, SUPER THERM® contains 4 unique ceramics to block heat gain into the surface upon which the coating film is applied. SUPER THERM® resists 95% of Solar heat blocking Visual Light, Ultra Violet (UV), and Infrared (IR). SUPER THERM® is a flexible membrane with low permeability that can greatly reduce expansion and contraction of a roof, and prevents corrosion and surface deterioration.

TYPICAL USES

- As a one-coat insulation system on exteriors to block the migration of Solar Heat gain (roofs and side walls).
- Exterior application to reduce or eliminate condensation on HVAC systems, tanks, spheres, storage systems, and concrete walls.
- As a system over metal, concrete, masonry, and wood to stop moisture penetration and corrosion.
- Ability to resist dirt, mold, mildew, and pollution to increase longevity, and reduce surface maintenance.
- As a topcoat over metal roofs, or an intermediate coat on flat roofs.
- Applied over tent fabrics to provide insulation & remain flexible.

APPLICATION METHODS

SUPER THERM® can be applied to metal, concrete, masonry and wood. The application can be spray, brush or roller. For specific instructions on surface preparation, mixing and application, please refer to the SPI's application instructions for SUPER THERM®. This coating should never be applied at less than 17 mils wet (425 microns), 10.0 mils dry (250 microns), each coat.

TESTS AND CERTIFICATIONS (partial list)

1. Exterior insulation against Solar Radiation
2. Blocks 99.5% of infrared / up to 68% sound blockage
3. UL (Underwriters Laboratory) approved
4. Flame Spread Test (ASTM E84; 0 smoke, 0 flame)
5. Class "A" Flame Spread
6. Marine Approvals: - American Bureau of Shipping; USCG
7. UV & Salt Spray Resistance (ASTM 5894) 5000 hours
8. USDA Approved
9. Flexibility (ASTM E1737): 180 degree bend – passed
10. Adhesion ASTM (D4541): 265 psi (1.8Mpa) @ 10 dry mils – did not pull off plate; only intercoat failure.
11. Perm Rating (ASTM d1653-13): 10 dry mils=8perms; 12 dry mils=4perms
12. Abrasion Resistance (ASTM D4060): 3,000 cycles
13. Resistance to Salt Spray: 2,000 hours
14. Resistance to Wind Driven Rain (ASTM D6904)
15. Airforce Canopy: MIL-PRF-6799

PHYSICAL DATA

- ◆ Solids: By weight 70% / By Volume: 60% (+/-2%)
- ◆ 30-60 minutes to tack free at 70°F (21°C)
- ◆ Overcoat: 2 hours when 70°F (21°C) at 40% Relative Humidity
- ◆ Full Cure: 21 days
- ◆ Lead-, chromate-, and asbestos-free
- ◆ Cures by evaporation
- ◆ Weight: 11.72 lbs. per gallon
- ◆ Vehicle Type: Urethane/Acrylic blend
- ◆ Shelf Life: Up to 5 years if unopened under appropriate storage conditions (See MSDS).
- ◆ VOC Level: 67.2 grams/liter, 0.561 gal/lbs.
- ◆ Viscosity: 105 – 110 KU; 25,000 Centipoise
- ◆ pH: 8.5 – 9.5
- ◆ 95 sq.ft./gallon (8sqm): 17 mils (425 microns) wet / 10.0 mils (250 microns) dry
- ◆ Maximum Surface Temperature when applying: 150° F (65°C)
- ◆ Minimum Surface Temperature when applying: 40°F (5°C)
- ◆ Maximum Surface Temperature after curing: 300°F (149°C)
- ◆ Do not apply over 18 mils wet per application. Allow to dry down before adding additional thickness.

MEETS MIL SPEC: MIL-PRF-6799L

SAFETY PRECAUTIONS

Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation; proper ventilation, use of proper lamps, wearing of protective clothing and masks, tenting, and proper separation of application areas. For more specific safety procedures, please refer to the SUPER THERM® Safety Data Sheet. **KEEP OUT OF REACH OF CHILDREN.**

LIMITATION OF LIABILITY: The information contained in this data sheet is based upon tests that we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the products made by SPI, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge is reliable. The products and information are designed for users having the requisite knowledge and industrial skills, and the end-user has the responsibility to determine the suitability of the product for its intended use.

SPI has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, SPI does not accept any liability arising from loss, injury, or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

Information contained in this data sheet is subject to modification as a result of experience and continuous product development. This data sheet replaces and previous issues and the user has the responsibility to ensure that this sheet is current and the product.



SPI COATINGS

PROVEN PERFORMANCE • REAL WORLD SOLUTIONS

SUPER THERM®

INSULATION
AND
CORROSION
SPECIALISTS

Application Instructions (2/28/19)

SUPER THERM® is a water-borne combination of high-performance aliphatic urethanes, elastomeric acrylics, and resin additives which produces a tough, yet flexible coating film. Designed for performance and durability, SUPER THERM® contains 4 unique ceramics to block up to 95% of Solar Heat entering a structure due to Visual Light, Ultra Violet (UV), and Infrared (IR). SUPER THERM® is a flexible membrane with low permeability that can greatly reduce expansion and contraction of a roof, and prevents corrosion and surface deterioration.

SURFACE PREPARATION

Surface must be clean from oil, tar, rust, grease, salts, and films.

- 1) Use general degreaser if needed.
- 2) Clean surface using TSP (tri-sodium-phosphate) or a citrus cleaner to release dirt and degreaser residue.
- 3) Pressure-wash if possible @ 3500 psi.
- 4) Salt contamination on a surface can come as a result of salt water, fertilizers, and car exhaust. Use Chlor-Rid or equivalent to decontaminate surface if salts are present. Acceptable levels: Nitrates: 5-10 mcg/cm², Sulfates: 5-10 mcg/cm², Chlorides: 3-5 mcg/cm²

Surface must be completely dry before applying.

- 1) SUPER THERM must be applied during proper temperatures (below) and the prescribed overcoat window of the coating over which it will be applied.
- 2) Maximum Surface Temperature when applying: 150°F (65°C)
- 3) Minimum Surface Temperature when applying: 40°F (5°C)
- 4) Maximum Surface Temperature after curing: 300°F (149°C)

NOTE: Use Rust Grip® as a primer when needed. Refer to Rust Grip technical data sheet for overcoat window.

NOTE: If pack rust or mill scale exist, it must be removed by grit blast, power tool or needle gun. Once removed, begin with Step 1 (power wash).

NOTE: Harsh environments where color is desired, or where pooling may occur: SUPER THERM® should be over coated with ENAMO GRIP (solvent based) over metal or concrete, and SP SEAL COAT over flexible surfaces (foam, tar, rubber and wood).

NOTE: Modified bitumen, asphalt roofing, PVC, TPO and single-ply membranes must be primed with the appropriate primer (i.e. Super Base/HS or SP Single-Ply Primer).

MIXING

SUPER THERM® should be mechanically mixed or mixed by hand (boxing) for three minutes, then applied.

APPLICATION

SUPER THERM® can be applied by brush, roller or spray; however, the preferred method is by air or airless sprayer. It should never be applied directly over rust, nor should it ever be diluted or thinned.

- 1) If application is by brush, use a soft bristle brush.
- 2) If application is by roller, use a 3/4 inch nap roller.
- 3) If application is by spray, use a standard airless sprayer (2 gallons/minute at 3,300 psi.) with a .029-.033 tip according to fan width spread of application and pump pressure. To achieve proper thickness, temperature and humidity must be considered by applicator.

- **NOTE:** The number of applications and the thickness of each should be in accordance with the job specifications.
- **NOTE:** All filters should be removed from both the gun handle and spray machine prior to application, as they will trap the ceramics.
- **NOTE:** Temperatures must always be a minimum of 5 degrees above the dew point during application.
- **NOTE:** If SUPER THERM® is applied during a period of extremely high humidity or if there is rain soon after the application, bubbles may appear on the surface. Do not puncture these bubbles. This is normal and the coating will continue to cure with no effect on the performance or appearance of the coating. Bubbles will dry down tight and disappear without a trace or imprint.
- **NOTE:** 2" corrugation = roof size x 135%; 2.5" corrugation = roof size x 145%; 3" corrugation = roof size x 160%

MINIMUM SPREAD RATES (mil thickness)

SUPER THERM® will be applied at no less than a total of 17 mils wet (425 microns)/10.1 mils dry (250 microns) for each application. Spread Rate is 95 sq ft per gallon. (8.8 sq meter per gallon)

CURE TIME

- 1) 30-60 minutes to tack free at 70°F (21°C)
- 2) Overcoat: 2 hours when 70°F (21°C) at 40% Relative Humidity
- 3) Full Cure: 21 days

TEMPERATURE

- 1) Apply between 40°F. and 150°F.
- 2) Store between 40°F. and 100°F.

CLEAN-UP EQUIPMENT

- 1) After completion, spray system should be cleaned with soap and water; cleaned brushes and rollers can be reused.

SAFETY DATA SHEET (ST/11/00)

pg 1 of 2

SECTION I - IDENTIFICATION OF THE PRODUCT AND THE COMPANY:

PRODUCT NAME: Super Therm (UPC#851207002003, SKU#768399, Part#0311)
GHS PRODUCT IDENTIFIED: Global Harmonized System #3209.10.000
CHEMICAL TYPE: Waterbased coating
MANUFACTURER: Superior Products International II, Inc.
ADDRESS: 10835 W. 78th St., Shawnee, KS 66214 USA
PRODUCT USE: Insulation coating to create thermal barrier on substrates
EMERGENCY TELEPHONE NUMBER: 800/424-9300; 202/483-7616

SECTION II - HAZARD IDENTIFICATION:

This product is water-based and not classified as dangerous for supply or conveyance. The ingredients are water-reduceable. This product has been analyzed for use in and around food manufacturing and found to be safe for use on non-contact surfaces. No toxics nor toxic off-gassing are present.

SECTION III - HAZARD INGREDIENTS:

<u>Hazardous Ingredients</u>	<u>%</u>	<u>CAS/PIN</u>	<u>LD-50 (species/route)</u>	<u>LC50 (species)</u>
texanol	0.5	25265-77-4	3200 mg/kg (oral, rat)	NAV
mica/additives	14.0	12001-26-2	NAV	NAV

This material does not pose a potential risk of inhalation in the solution mixture contained herein.
waterborne

polyurethane	10.0	58043-05-3	NAV	NAV
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SECTION IV - FIRST AID MEASURES:

EYES: Flush with water for at least 15 minutes; consult physician if irritation continues.
INGESTION: Do not induce vomiting. Drink 1-2 glasses milk/water. Seek medical attention according to amount of product ingested.
SKIN: Wash with mild soap and water.
INHALATION: Remove to fresh air.

SECTION V - FIRE FIGHTING MEASURES:

CONDITIONS OF FLAMMABILITY: Not flammable; water-based product
HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, methacrylate and other noxious gases
AUTOIGNITION TEMP.: NAP MINIMUM IGNITION ENERGY: NAV
FLAMMABLE LIMITS: (Lower) NAP% (Upper) NAP% FIRE POINT: NAV
FLASH POINT & METHOD: NAP SENSITIVITY TO MECHANICAL IMPACT? No
SENSITIVITY TO STATIC DISCHARGE? No
SPECIAL PROCEDURES: Firefighters should wear full-body protection & SCBA
MEANS OF EXTINCTION: Water, water fog, dry chemical, foam or CO2

SECTION VI - ACCIDENTAL RELEASE MEASURES:

Use kitty litter, sand or other to control spread and absorb liquid.

SECTION VII - HANDLING AND STORAGE:

STORAGE REQUIREMENTS: Keep from freezing. Store below 50C. degrees. Keep container closed tightly to prevent drying out.
HANDLING PROCEDURES/EQUIPMENT: Treat as paint product. Use ventilation and protective equipment to suit conditions of use. Use soap and water for clean-up.

NAP = Not Applicable

NAV = Not Available

SECTION VIII - EXPOSURE CONTROLS AND PERSONAL PROTECTION:

PERSONAL PROTECTIVE EQUIPMENT: Avoid inhalation of liquid when applying. Use particulate respirator.

ENGINEERING CONTROLS: Use mechanical ventilation to control aerosol or mist if product is sprayed.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL STATE: Liquid SOLUBILITY IN WATER: soluble/miscible
APPEARANCE AND ODOR: white color, mild acrylic odor
FREEZING POINT: 30F. degrees BOILING POINT: 192C degrees pH: 8
SPECIFIC GRAVITY: 1.4 ODOR THRESHOLD: 0.08-25ppm
COEFF. WATER/OIL: NAV VAPOUR PRESSURE: 17 mmHg @ 20C degrees
VAPOUR DENSITY (Air=1): 2.1
EVAPORATION RATE: slow% VOLATILES: less than 5

SECTION X - STABILITY AND REACTIVITY DATA:

CONDITIONS OF REACTIVITY: stable CONDITIONS OF INSTABILITY: stable
CHEMICAL INCOMPATIBILITY: strong acids or bases CORROSIVE BEHAVIOR? no
HAZARDOUS DECOMPOSITION PRODUCTS: none known, no hazardous polymerization

SECTION XI - TOXICOLOGICAL PROPERTIES:

ROUTES OF ENTRY: SKIN CONTACT ___ SKIN ABSORPTION ___ EYE CONTACT X
INHALATION ___ INGESTION X SYNERGISTIC PRODUCTS None Known
EXPOSURE LIMITS: mica 3 mg/m3 (ACGIH)
EFFECTS OF ACUTE EXPOSURE: liquid splash could result in eye or nose irritations and/or headache
EFFECTS OF CHRONIC EXPOSURE: excessive exposure to liquid product may result in minor irritations
MUTAGENICITY: NAP TERATOGENICITY: NAP
REPRODUCTIVE TOXICITY: NAP CARCINOGENICITY: ingredients not listed
SENSITIZATION: not expected
IRRITANCY: possible skin or eye irritation if not washed off

SECTION XII - ENVIRONMENTAL INFORMATION:

Air -this product is environmentally-friendly and poses no threat to the air.
Water -the resins will be diluted and dissipate when flushed with water.
Soil -the resin contents are biodegradable in ground acids over a period of time.
No ecological hazards are known to exist.

SECTION XIII - WASTE DISPOSAL:

Product spill should be contained by previously described absorption methods, and dried product disposed of as normal industrial waste according to all federal, state or governmental regulations.

SECTION XIV - TRANSPORT INFORMATION:

The only restriction to carriage is for protection against freezing. Contents are water-based.

SECTION XV - REGULATORY INFORMATION:

Regulatory agency controls and restrictions are minimal regarding conveyance or use of water-based products other than what has been specifically addressed.

SECTION XVI - OTHER INFORMATION: