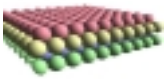
SUPER THERM

R20 INSULATION COATING

- 70% of Japan Marketshare
- NASA Technology 2000 program
- Resists Fire & Chemicals
- Blocks 99.5% infrared heat
- Spray - Roll - Brush
- Interior or Exterior Application



SUPER THERM MultiCeramics© technology provides corrosion protection and "plating" that reduces surfaces maintenance for 3 to 4 times the normal life span of any application, it saves energy, provides longer life to properties and surfaces. Unlike the alternative fiberglass or foams, it poses no health hazards and offers greater comfort by outperforming all others under all conditions. **SUPER THERM** is the ultimate insulation material.

LETTERS of RECOMMENDATIONS

"It is quite obvious that the paint is doing a great job in reducing the transfer of the sun's radian heat." "The statistics obtained by our tests should be the proof needed to persuade those of lesser faith"

Frank Hofstatter, Industrial Engineer
Sacramento Army Depot

"The metal surfaces went from 130 degrees to 90 degrees. We are stopping the heat at the source, not trying to exhaust an attic full of hot air."

Roger Kuntz
AG Enterprises.

"We've decided to use SUPER THERM exclusively in our Model Block Programs". "We're painting an additional 9 houses with Super Therm this year."

Walter Wright
President Chesney Park N.I.A.
Topeka, KS.

"This year we are going on our 4th year using Super Therm as a top coat for our urethane roofs." "We have not had any trouble with either product. In my opinion, these are the best coatings on the market."

Jack Ayers
Rainbow roofing Systems
Dodge City, KS

"The reduction in temperature due to Super Therm has eliminated produce losses which of course was my prime concern, the added fuel savings being a bonus."

Bob Fountain Transport
Brisbane, Australia

"Travelodge had our pool deck resurfaced with Super Therm coating." " If we were to be asked what my most positive experience with this product was, I would have to say that it would be the cool comfort to bare feet."

Bethany Willet, General Manager
Travelodge Lawrence, KS

	SUPER THERM	POLYSTYRENE FOAM	CERAMIC PAINTS	CELLULOSE FILLERS	FIBERGLASS
*R20 two10 mil coats (Interior App.)	✓	10"	8"	⊘	5.5"
**R19 one 10 mil coat (Exterior App.)	✓	⊘	⊘	⊘	⊘
68% Sound Blockage	✓	✓	✓	⊘	✓
MultiCeramics© Technology	✓	⊘	⊘	⊘	⊘
One of Energy Star Best overall	✓	⊘	⊘	⊘	⊘
California Cool Roof Program	✓	—	—	✓	—
NASA Approved	✓	—	—	⊘	—
Works on Interior/Exterior	✓	—	—	—	—
Class "A" Rated "0" Flame Spread	✓	⊘	⊘	✓	⊘
Passed 2000 hrs Salt spray	✓	⊘	⊘	⊘	⊘
USDA Approved	✓	—	—	—	—
Moisture resistant	✓	⊘	⊘	✓	⊘
Blocks 99.5% of Infrared	✓	—	—	—	—
Resists Mold & Mildew	✓	⊘	⊘	✓	⊘
K Factor (less is better)	0.10	0.29	0.31	⊘	0.28
25 Years residential life expectancy	✓	—	—	⊘	—
International Codes Council Approved	✓	✓	✓	⊘	✓
GSA - Listed US Government	✓	✓	✓	—	✓

✓ = Approved
— = Partial approval
⊘ = Not Possible

*R20 (Interior Application) supported by ASTM C236 Guarded Hot Box Test with two coats at 10 dry mils / 250 microns each.
**R19 (Exterior Application) supported by ASTM C-236 Guarded Hot Box Test, ASTM E-1461-92 Thermal Diffusivity & ASTM E-1269 Specific Heat tests, additional R9 comes from "reflectivity" factor of SUPER THERM (92% of sunlight and 99.5% of Infrared radiation).

SUPER THERM APPLICATION

TINT TO LIGHT COLORS ONLY
Use high quality Water Base Dye at a 150% Ratio.

Applied Rate	All kinds: 100 sq.ft./gal. / 2.5 sqm. litre
Film Thickness Wet Dry	 All kinds: 16 mils / 400 microns All kinds: 9-10 mils / 225-250 microns
Recommended Application Temperatures	Over 50F /10C degrees - Best -72F / 22C Not over 194F / 90C degrees
Application Required	10 mils, two coats if the surface is to be overcoated with another dark coating
Dry Times	1 hr to touch @ 22C. deg. 2 hrs to recoat
Curing Times	14-21 days
Remarks	More dry time required if in very damp climate. Be sure to remove all filters from spray equipment to prevent sifting of ceramic particles. Apply with side-to-side, up-and-down strokes for even coverage.

Outperformed fiberglass by 40% on ASTM C236 test.

K value of 0.10 results from ASTM 1269 / 1461-92

At 20 mils Outperforms 10 inches of fiberglass insulation.

SUPER THERM has 92% Sunshine Reflective Ratio.

SUPER THERM can reduce sound by 68%.

NASA "Class A" fire "0" smoke and flame spread.

Passed 2000 hour salt spray.

USDA approved and nontoxic.

UV weathering test. (UV stable).

B.O.C.A approved for interior and exterior insulation.

Wal-mart rated SUPER THERM #1.

DNV approval for IMO use on all world wide vessels.

Blocks 99.5 of infrared heat radiation as per JIS A 5759 test.

IMO - International Marine Organization.

Coast Guard Approved.

Energy Star rated SUPER THERM one of the best overall.

SUPER THERM saves Sony Corporation 80% of energy usage in 3 level building every year.

Power Correction Systems, Inc.
1800 S. Robertson Blvd., PMB 419
Los Angeles, CA 90035 (310) 247-4848
bsegal@activeharmonicfilters.com

SUPER THERM PASSED

ASTM G 53 - ASTM E 96 - ASTM D 522 - ASTM D 412
ASTM D1653 - ASTM E 84-89 - ASTM E 119 - ASTM C 177
ASTM C 411 - ASTM E 1269 - ASTM E 1461-92-
ASTME1269 - ASTM D 1654 - ASTM D 3274 - ASTM D 4060
ASTM E 903-96 - ASTM 1918 - ASTM C 236
BOCA Sections - 723.2 - 723.2 - 803.2
IMC Section 604.3
NASA NHB 8060.1B/C Test 1 - NHB 8060.1C Test 7
ENERGY STAR Program - JIS 5759 - USDA - CCTT

SUPER THERM K value (0.101) expressed in Lambda.

Lambda	K X 0.144 W/mK
Lambda	0.101 X 0.144
Lambda	0.015 W/mK

Based upon 0.0149" thickness.

European Lambda statistics on materials as tested for 1" (2.5cm) minimum thickness:.

Polyurethane Foam	0.028 W/mK	per 2.5cm
Polystyrene board	0.035 W/mK	"
Polystyrene expanded	0.040 W/mK	"
Mineral Wool/ Fiberglass	0.040 W/mK	"
Perlite	0.055 W/mK	"
SUPER THERM	0.015 W/mK	per 0.025 cm

LESS IS BETTER

65% SOLIDS
VOC 67Grams/Liter
pH: 8.5 - 9.0

OTHER AVAILABLE PRODUCTS

SP2001F	Three hours FIRE Proofing
HOT PIPE	Extreme Heat Insulation
SUPERTHERM	R19 Insulation
EPOXOTHERM	Under Water Insulation
RUSTGRIP	Bio Hazard Encapsulator
ENAMO GRIP	Anti Graffiti Coating
MOIST METAL GRIP	Under Water Encapsulator
TOTAL SEAL	Potable Water Concrete Sealant
NON SKID	Non Skid Surface Coating
INNER SEAL	Water & Chemical Concrete Sealant
LINING-KOTE 6000	Chemical Concrete Liner
SUPERBASE HS	Elastomeric Primer/Sealer
SUNSHIELD 2000	Reflective Ceramic Coating
ULTRACIDE	Water Base Insecticide
ULTRASECT	Latex Insecticide Coating

CERTIFICATE OF INSULATION

SUPER THERM

Contributing Certifications:

a. **BOCA** # 2125 (Building Officials Code Administrators)
Division 07, Thermal insulation and Moisture Protection
Section 07200 – Insulation
Signature: Engineering Staff

b. **Fuji Chimera Research Institute, Inc.// Daiko Shokai**
70% of "Insulation Paint" market
Signature: Research Staff

c. **Florida ECAP (Energy Conservation Assistance Program) Florida DOE**
Thermal Load Reduction under SUPER THERM for insulation.
Energy Conservation Assistance Programs and Test Method for
Comparing Utility Loads in Standard Constructed Buildings.
Using energy related products to displace conventional utility loads.
Signature: Alexander E. Othmer, CEA/CBA/NDEIII.
Mgr. Florida Department of Community Affairs Energy Office/
ECAP. University of South Florida / Small Business Development Center.

d. **Chicago General Contractor – Hartrich Construction, Engineering**
R equivalent value from BTU Omega Engineering measurements.
Wall readings and R-value rating given a 20 value from insulation measurements.

e. **California Cool Roof Program**
Qualifying Cool Roof Products List

f. **State of California Bureau of Home Furnishings and Thermal Insulation**
License Number TE 1392

g. **VTEC Laboratories, Inc. – New York.**
Certified Governmental Lab for insulation and fire protection.
Tested, analyzed and measured for Thermal Insulation value of RE 19.

h. **National Certified Testing Laboratories, Inc. – Pennsylvania**
Certified National Testing Laboratory for all ASTM (American Standards of Testing and Measurements).
ASTM C 236 Testing performed for Bombardier Transportation.
Thermal insulation testing proving Thermal Conductance.
Signature: Engineering Dept.

i. **Thermal Diffusivity / Conductivity by Flash Method** (ASTM E1461 (92) and ASTM E 1269). BTU conduction and thermal insulation resulted in BTU heat transfer reduced from 367.20 heat unit transfer down to 3.99 heat unit transfer with one coat of SUPER THERM applied over substrate surface.
Signature: Engineering Dept.

SUPER THERM is tested and certified for Thermal Insulation when applied over metal (ferrous and non-ferrous), fiberglass, concrete, wood, composite, plastic and glass surfaces.

Signed:

Notarized:

JULIANN PRITCHETT
NOTARY PUBLIC
STATE OF KANSAS
My Appt. Exp. _____

CERTIFIED

Special Front Porch Project

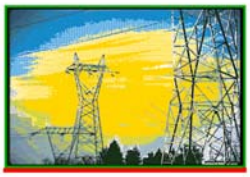
FLORIDA

ENERGY CONSERVATION ASSISTANCE PROGRAM

ECAP

REPORT

Prepared by
Alexander E. Othmer CEA








Saving Energy Saves Everything

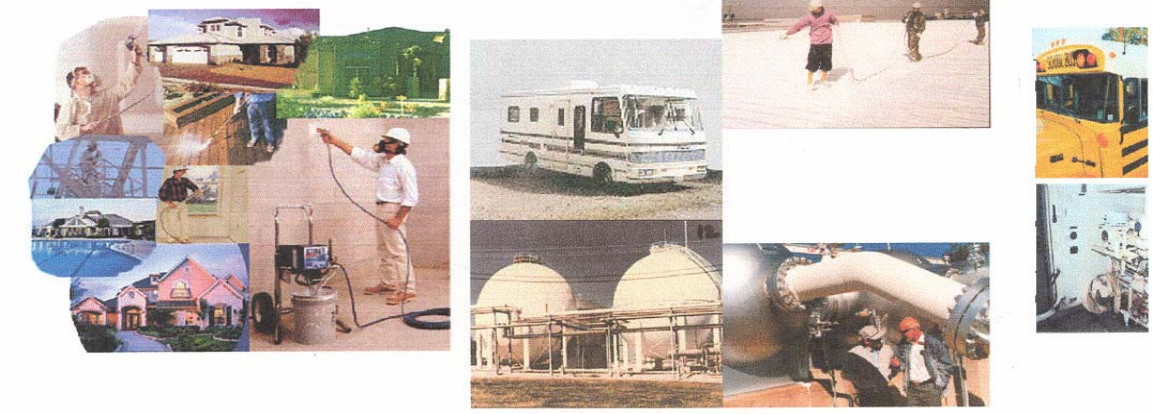
Funded by your

FLORIDA ENERGY OFFICE

Preserving the Past
Rebuild America
Protecting the Present
Preparing for the Future
OPERATION: OPEN FOR BUSINESS!
The State of Florida Department of Community Affairs / Energy Office
University of South Florida
USF
ENERGY CONSERVATION ASSISTANCE PROGRAM
A cost free service of the USF Small Business Develpoment Center
4202 East Fowler Avenue, Tampa, Florida USA 33620
Phone (813) 974-4378 / Fax (813) 974-5020
E-mail aothmer@coba.usf.edu

FIELD TEST RESULTS

SUPERTHERM



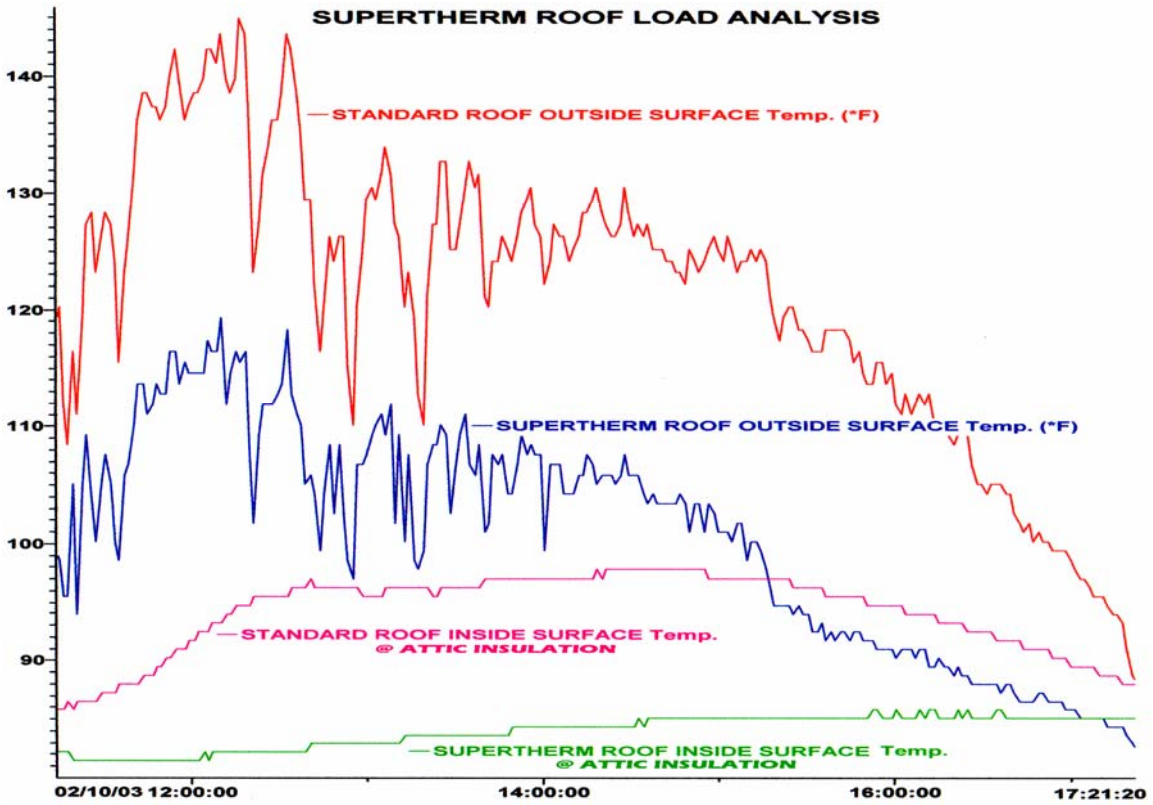
On February 10th & 11 th, 2003 a survey was conducted on the above product, applied to a residential home roofing system located in Dade County, Florida in accordance with the **S**tate of **F**lorida **E**nergy **O**ffice / **ENERGY CONSERVATION ASSISTANCE PROGRAMS Designation: ECAP-CUL-1-99**
Test Method for Comparing Utility Loads in Standard Constructed Buildings.

The objective of this procedure is to determine the ***actual impact on a facility, after the implementation of a Energy Conservation Retrofit*** and verify the reduced utility loads, if any, in occupied residential, commercial and government buildings. The focus of this procedure is to provide ***a comparison*** to known standards for all parties interested in using ***energy related products*** to ***displaced conventional utility loads***. This procedure addresses the energy consumption properties of the equipment and structural envelope tested and has no relationship to structural, electrical or fire code requirements.

- Our survey indicated that your application of ***SuperTherm*** reduced total Roof Solar Gain Loads by **20 to 30%.** This would qualify as an effective ***E***nergy ***C***onservation ***M***easure (***ECM***) fundable with Federal and State of Florida Energy Grant Dollars where applicable.

Survey Results

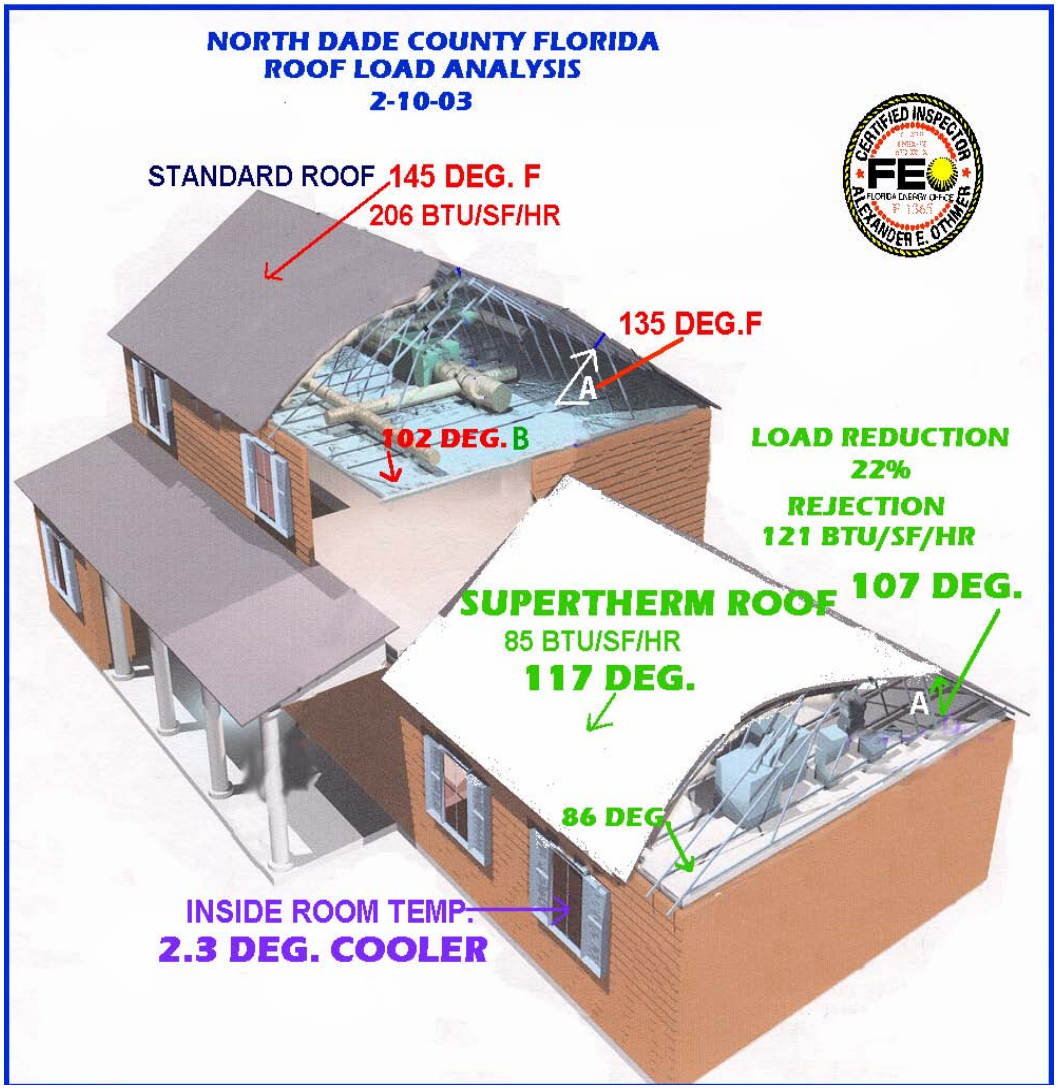
As can be seen in the Photo, Thermogram and chart below, significant load reductions were taking place ***on and under the section*** of roofing treated with the ***SuperTherm*** coatings.



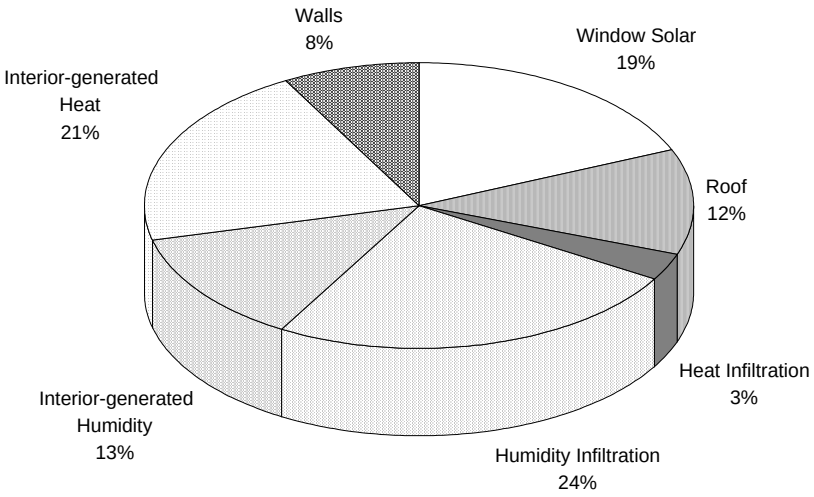
As aforementioned, the ***THERMAL LOAD REDUCTIONS in conduction, convection, and absorption were not restricted to the treated roofs outside surface.*** Over 5,780 data points were taken over a 24 hour period on a standard constructed concrete block home. Recordings were taken at;

- Outside roof surfaces.
- Inside roof surfaces.
- Inside attic insulation surfaces.
- And inside living area room temperatures.

The drawing below shows a synopsis of the data collected. Of particular interest was the effect on ***living area room temperatures*** during a period when we ***were not running either the heating or air conditioning system.***



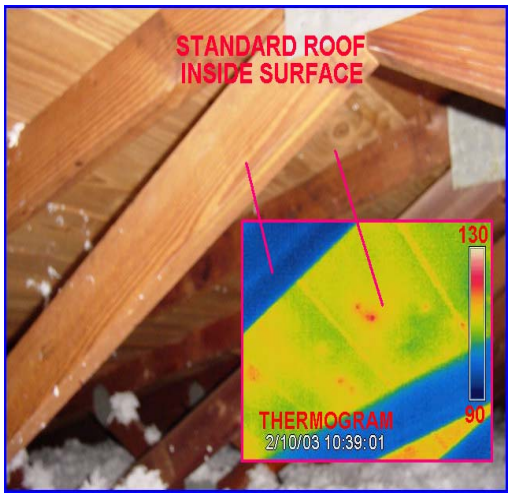
Predicated on historically accepted Florida Air Conditioning building component load data (chart below) and the square footage of the project surveyed, the estimated air conditioning load savings from the SuperTherm retrofit was approximately 11.09 tons of load per 24 hour period.

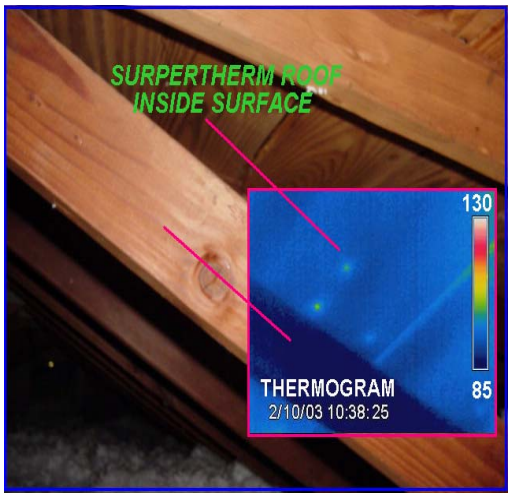


PERCENT OF COOLING DOLLARS WASTED

The ***THERMOGRAM (heat image)*** show some of the **LOADS** encountered during this survey.

INSIDE ROOF LOADS





WITHOUT SUPERTHERM **WITH SUPERTHERM**

Average Weather conditions during the test period were as follows:

High Temperature	85.5 Deg. F.
Low Temperature	58.8 Deg. F
Average Wind Speed	4 to 8 MPH
Average ***UV*** intensity	99 A+B
Outside Humidity	88 %

Mostly sunny conditions with light cloud activity (See chart below)

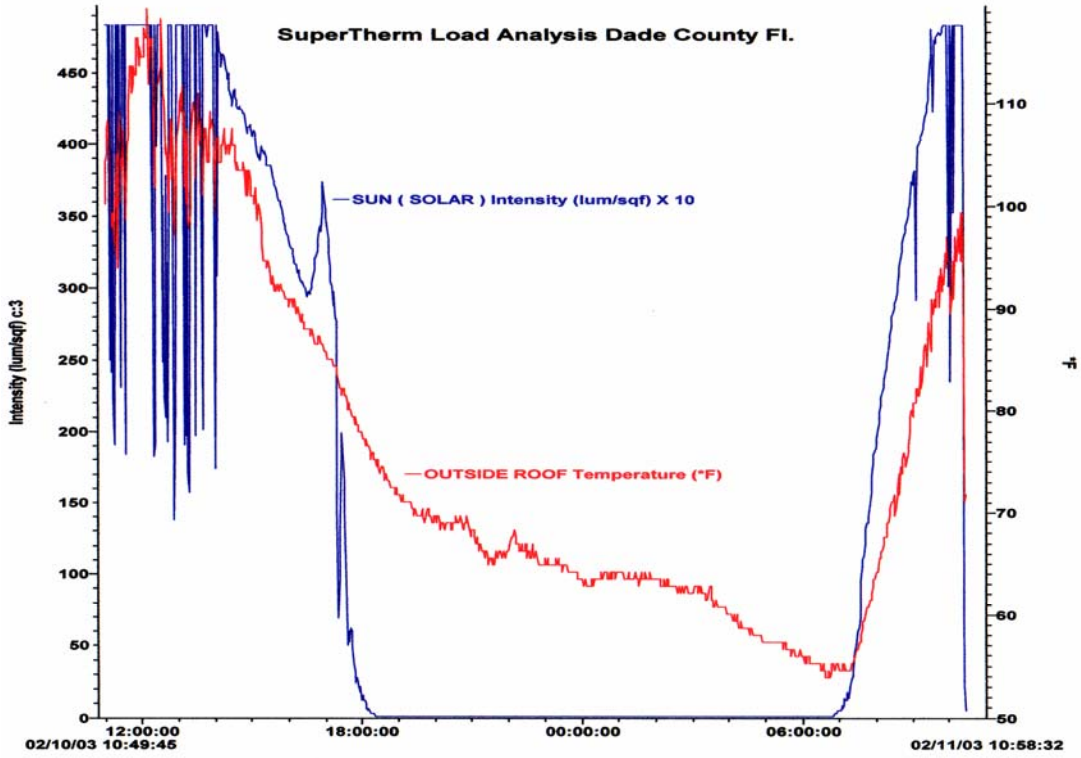
SYSTEMS TESTED *Table # 1*

The load producing components tested are as follows;

TYPE OF SYSTEM	BTU PER SQUARE FOOT PER HOUR SOLAR GAIN	INSIDE SURFACE TEMPERATURE RECORDED	APPROXIMATE R-VALUE	APPROXIMATE U-VALUE	TOTAL BTU / THERMAL LOAD & UV ABSORBTON
STANDARD ROOF	**206**	**145 Max.**	**22.0**	**0.045**	**206 / 145 98.0**
SuperTherm **ROOF**	**85**	**118 Max.**	**19.0 Reflectance Equivalent**	**0.270**	**85 / 118 03.0**

SYSTEM LOADS AS TESTED

TOTAL ROOF LOAD WITH NO RETROFIT	**226,600 BTU'S \ HOUR.**
RETROFITTED ROOF LOAD	**93,500 BTU'S \ HOUR.**
SAVINGS FROM RETROFIT	**133,100 BTU'S \ PER HOUR.**
REDUCED ENVIROMENTAL IMPACT	**66 POUNDS OF POWER PLANT EMMISIONS / HR.**



Closing Comments

As installed, at the time of this survey, the ***SuperTherm Roof Coating System*** proved to be an effective ***E***nergy ***C***onservation ***M***easure (***ECM)*** that produced a reasonable simple pay back of approximately 2.2 years on this particular project. This would indicate that it's application could be fundable with Federal and / or State of Florida Energy Grant Dollars where applicable.

On behalf of the United States Department of Energy, The State of Florida Energy Office and the United States Environmental Protection Agency, let me thank you for your efforts in developing an affordable product that obviously can be instrumental in Conserving Energy. We hope you will continue to consider ***Florida as a valuable market for your products*** .

Front Porch
FLORIDA

We would also like to thank Mr. J.R. Howell of Construction Services Group and South Beach Solar Solutions for their generosity and display of Corporate responsibility for donating this Roofing Retrofit to a Front Porch Florida, Low Income Family, giving us the opportunity to use their home as a field test site. **Superior Products International II, Inc. is the manufacturer of SUPER THERM and the entire line of insulation, high temperature, fire protection and corrosion control coatings**. The data collected is a valuable asset to our program in building a comprehensive profiling of ***actual energy related loads*** that occur in ***occupied / operational buildings***. This type of data is critical to other Engineers and Home Owners facing similar decision making tasks, where published measurement and verification data is not yet available **or inaccurate**.

This report is meant to be an educational guide to familiarize you ***with the performance profiles of your chosen E***nergy ***C***onservation ***M***easure, it ***should not be construed as an endorsement of any product or service by name or specific design.*** Please feel free to contact our offices if we can be of any assistance in helping you meet your future conservation goals.

Alexander E. Othmer ***CEA/CBA/NDEIII***

Mgr. Florida Department of Community Affairs Energy Office / E C A P
University Of South Florida / Small Business Development Center


CERTIFIED INSPECTOR
STATE
ENERGY
AUDITOR
FE
FLORIDA ENERGY OFFICE
E-1365
ALEXANDER E. OTHMER

THE FLORIDA ENERGY OFFICE

on behalf of

THE DEPARTMENT OF COMMUNITY AFFAIRS

awards this

FLORIDA ENERGY OFFICE

Front Porch FLORIDA

It's Our Neighborhood, It's Our Solution, It's Our Future

ECAP Rebuild America

energy certificate to

Construction Services Group

This award is earned for your participation in Reducing Energy Consumption and it's related Pollution in Your Neighborhood and the State of Florida.

Awarded October 10, 2002 by: Alexander E. Othmer Director **FEO Energy Conservation Assistance Program / USF Tampa , Florida**

CERTIFIED INSPECTOR FEO FLORIDA ENERGY OFFICE F-1365 ALEXANDER E. OTHMER

Special Front Porch FLORIDA Project

ENERGY CONSERVATION ASSISTANCE PROGRAM

ECAP

REPORT

Prepared by
Alexander E. Othmer CEA








Saving Energy Saves Everything

Funded by your

FLORIDA ENERGY OFFICE

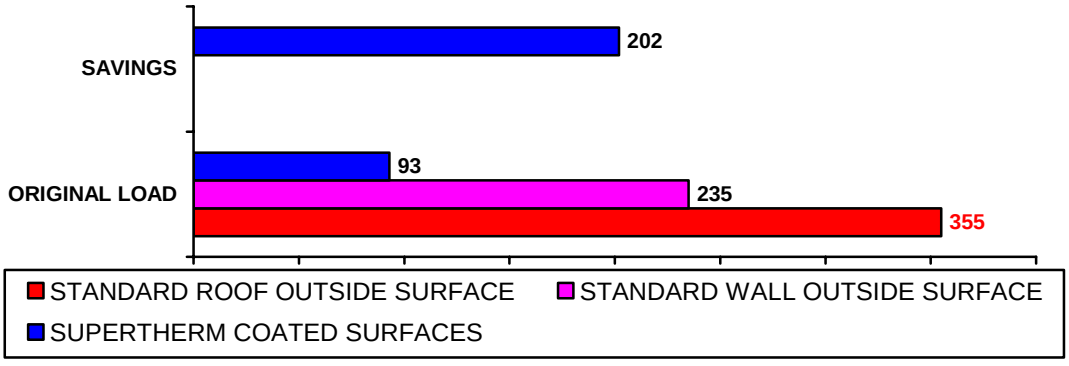
STATE OF FLORIDA ENERGY OFFICE
USF UNIVERSITY OF SOUTH FLORIDA ENERGY CONSERVATION ASSISTANCE PROGRAM
SMALL BUSINESS DEVELOPMENT CENTER
A cost free service provided by your
4202 East Fowler Avenue, BSN3403
Tampa, Florida 33620 U.S.A.
Phone (813) 974-4378 / Fax (813) 974-5020
E-mail aothmer@coba.usf.edu
Web: http://sbdc.usf.edu

Superior Products Mountain States Inc.
Denver, Colorado

On July 19th & 20th 2004 at the request of Mr. Tom Higgins, a Measurement and Verification Analysis was conducted at the above facility in accordance with the **S**tate of **F**lorida **E**nergy **O**ffice / **ENERGY CONSERVATION ASSISTANCE PROGRAMS Designation: ECAP-CUL-1-03 Method for Comparing Utility Loads in Standard Constructed Buildings.** The objective of this analysis is to determine the impact of the ***"As Built Conditions and As Installed Components / Equipment"*** on the utility loads in occupied residential, commercial and government buildings. The focus of this procedure is to provide ***a comparison*** to known standards for all parties interested in using ***alternative energy devices*** to ***displaced conventional utility loads***. This report reflects the performance characteristics of the ***SuperTherm Coatings*****,** as applied to the test facilities external surfaces, as a possible passive ***E***nergy ***C***onservation ***M***easure ***(ECM)*** to reduce internal Energy Loads and reduce the Heat Island Effects caused by roofing systems in urban areas.

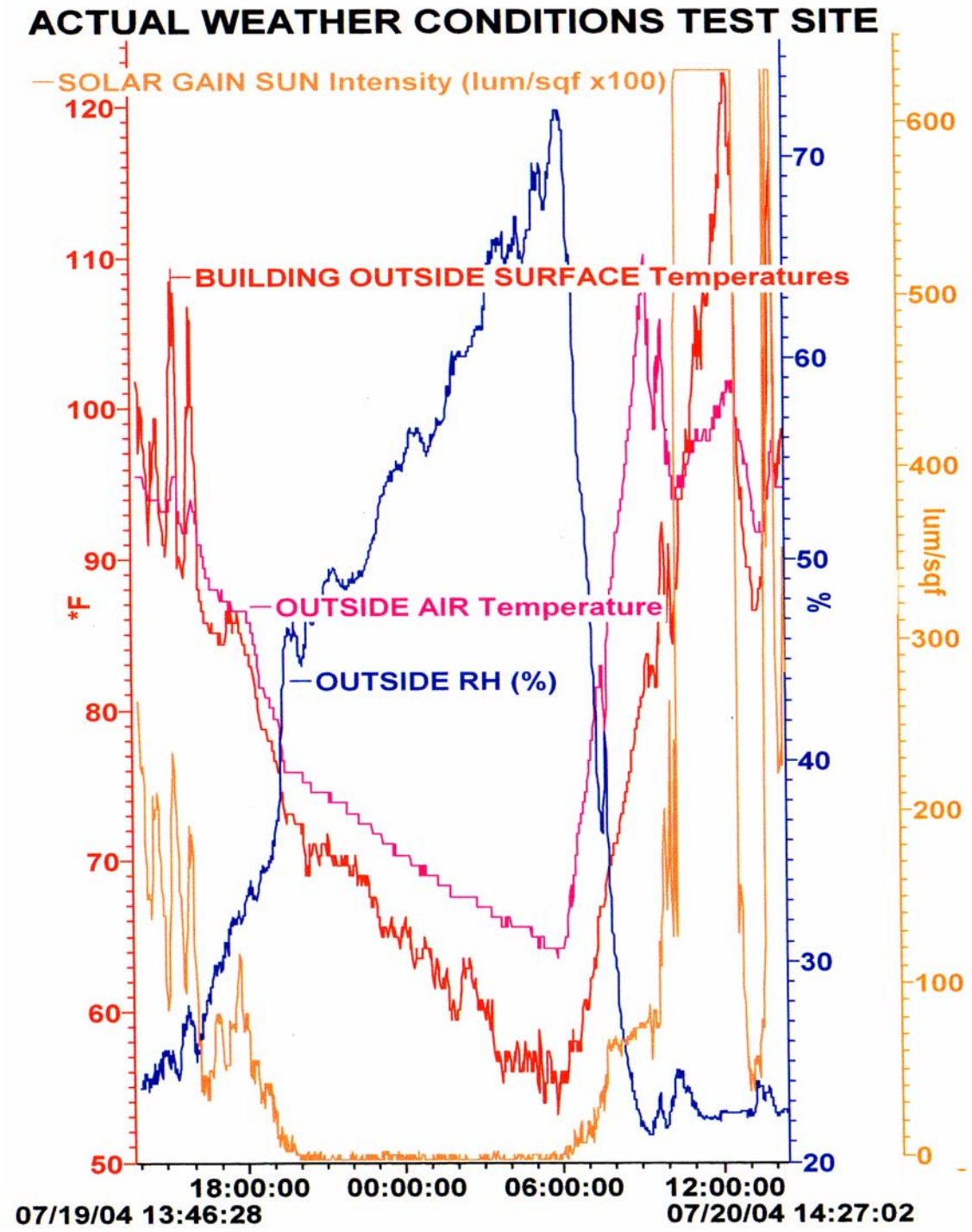
- Our survey indicated that the test specimen's building envelope related energy loads were reduced approximately **26 to 30%** by the use of this particular ***E***nergy ***C***onservation ***M***easure (***ECM ***). This was accomplished with no negative effect on the existing buildings Architectural Aesthetics.*** The chart below shows a synopsis of our findings**.**

AVERAGE THERMAL LOADS OF OUTSIDE BUILDING ENVELOPE SURFACES / BTU PER SQUARE FOOT PER HOUR



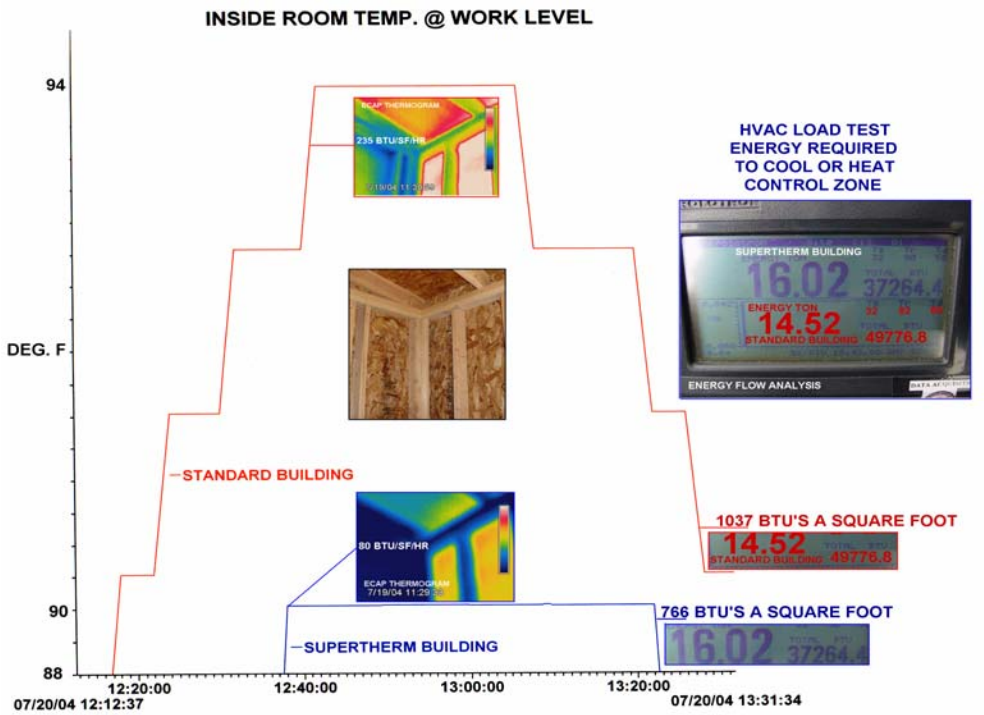
Average SITE Weather conditions during the analysis period were as follows:

High Temperature	110 Deg. F.
Low Temperature	65 Deg. F
Average Wind Speed	5.5 MPH
Average ***UV*** intensity	99 A+B
Average Outside Humidity	49.5%

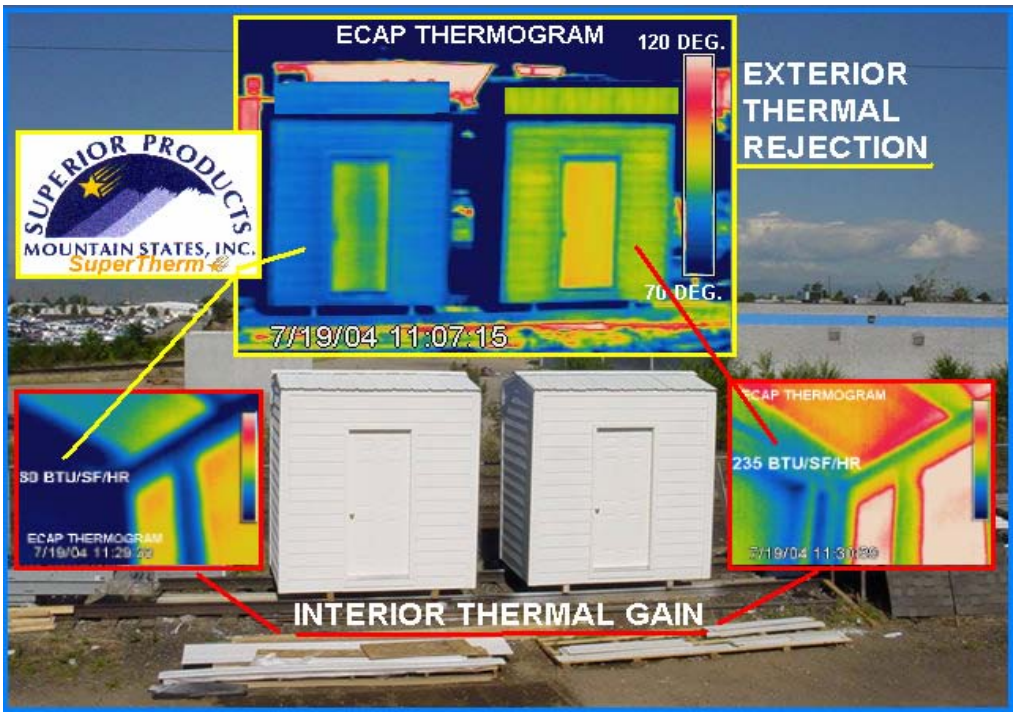


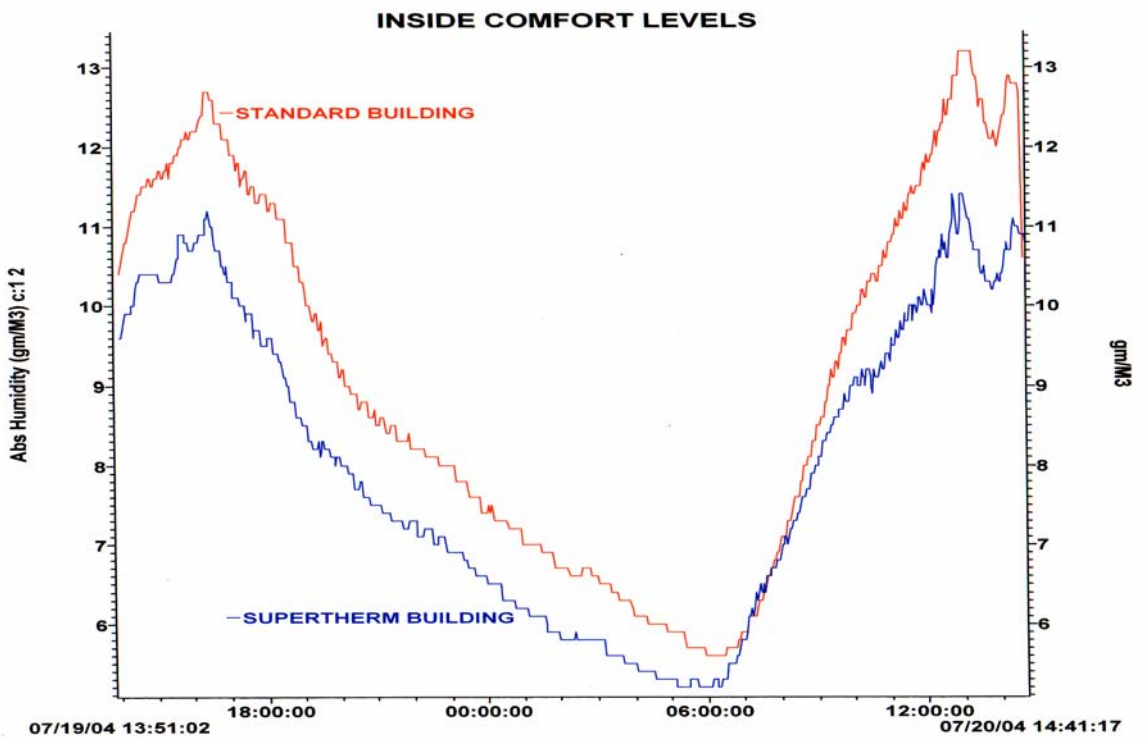
SYSTEMS TESTED

All load producing construction materials on both buildings were analyzed. 7,250 data points were recorded at 2 minute intervals for a 24 hour period with a synopsis of the findings as follows:

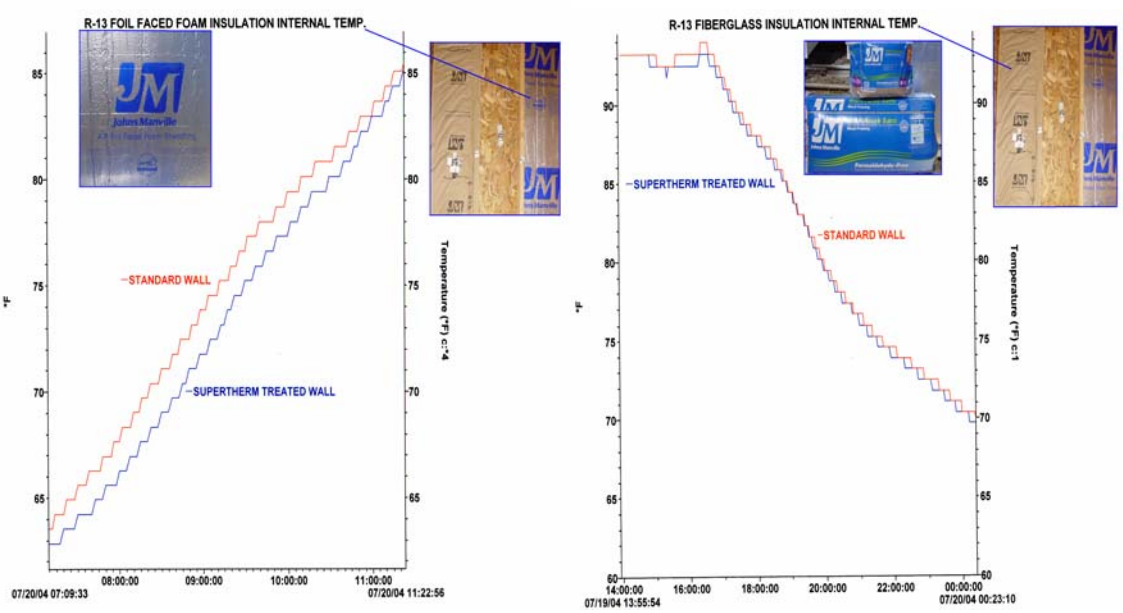


THE THERMAL ENERGY NECESSARY TO HEAT OR COOL THE BUILDING COATED WITH THE ***SUPERTHERM*** PRODUCT REQUIRED ***26% LESS ENERGY***.

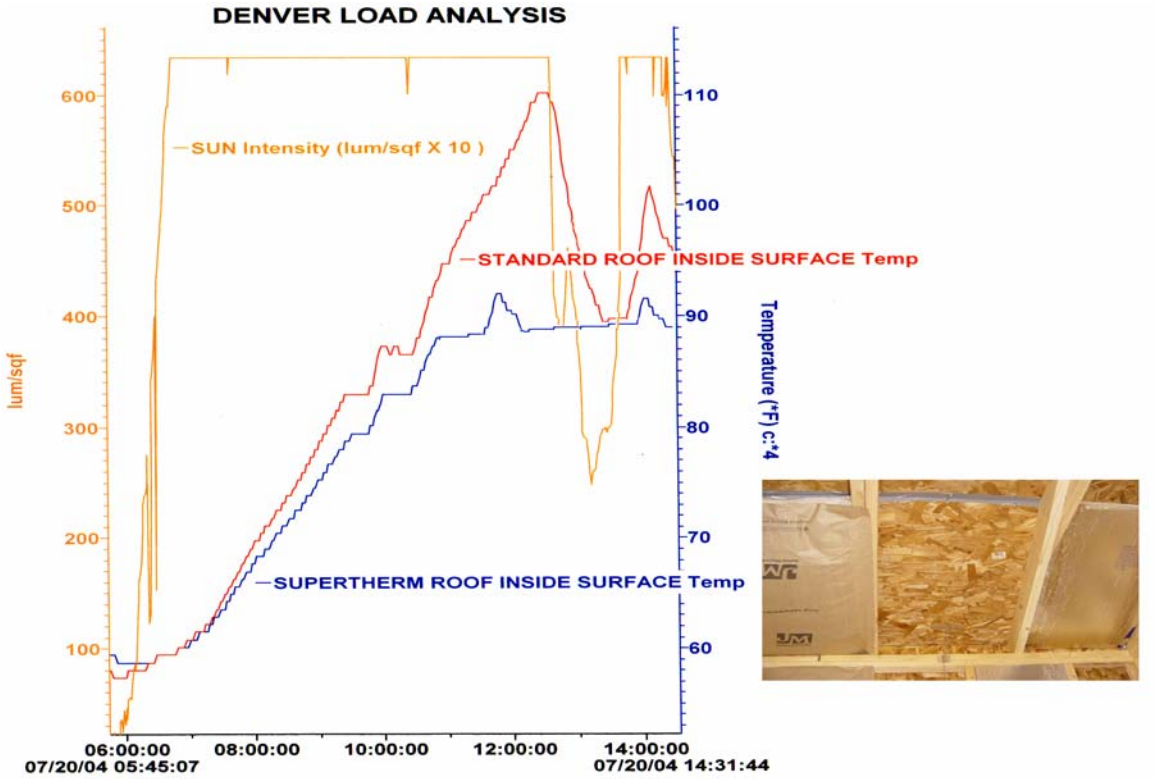




THE PERCENT OF MOISTURE INFILTRATION IN THE BUILDING COATED WITH THE ***SUPERTHERM*** PRODUCT WOULD REQUIRE ***LESS ENERGY*** TO MAINTAIN COMFORT LEVELS.



IN EVERY INSTANCE THE BUILDING COATED WITH THE ***SUPERTHERM*** PRODUCT ***ENHANCED THE PERFORMANCE*** OF STANDARD INSULATION PRODUCTS.



THESE PERFORMANCE ENHANCEMENT PROPERTIES WERE FOUND TO BE EQUALLY EFFECTIVE ON BOTH ROOF AND SIDE WALL APPLICATIONS.

Field Test Results

The location of the test specimens was adequate. Both buildings were of standard construction consisting of wood framing, standard OSB wall and roof sheeting's with a standard galvanized metal roof covering and James Hardey Board external wall coverings. The calculated R-Value of the uncoated existing materials was found to be approximately an R-2.45. The only difference between the two buildings consisting of approximately 48 square feet of control zone area was the external protective coatings.

One of the buildings was coated with a standard white latex paint while the other buildings roof and all external surfaces, including the front door had been coated with a white ***SUPERTHERM*** product. As noted and some of the test results on the prior pages of this report the differences created by the ***SUPERTHERM product*** concerning load reductions produced by thermal conduction, convection and absorption were significant. Additionally, significant reductions in moisture infiltration were also noted.

In every instance the Field test results concur with the manufacturers published data on the products anticipated performance curves obtained using in laboratory test methods.

Our Energy Flow analysis using a simulated water flow rate of approximately 6.5 gallons per minute indicated that the standard constructed building would require **a minimum of 1,037 BTU's of heating or cooling energy per square foot to maintain a minimal comfort level.**

In retrospect, the building coated with the ***SUPERTHERM product*** **reduce these loads to 766 BTU's of heating or cooling energy per square foot to maintain the same minimal comfort level.** This relates to a **26 to 30%** overall increase in energy efficiency depending on the percentage of direct solar gain.

The aforementioned Humidity infiltration reduction factors took place regardless of the amount of direct solar gain.

CLOSING COMMENTS

On behalf of the United States Department of Energy, The State of Florida Energy Office and the United States Environmental Protection Agency, let me thank you for your efforts to conserve Energy. We hope you will continue to promote ***ENERGY STAR BUILDINGS ALLY & REBUILD AMERICA BUSINESS PARTNER products*** to assist your clients reducing energy consumption and their related negative environmental impacts.

While on that subject, our office feels that particularly when addressing external building thermal loads, your product could significantly reduce the **Heat Island Effects** taking place in most urban areas. The photo and Thermogram below clearly show the benefits provided by your product in this arena.

This report is meant to be an educational guide to familiarize you ***with the historical performance curves of your chosen*** ***E***nergy ***C***onservation ***M***easures based on your supplied data and our field test results, it ***should not be construed as an endorsement of any product or service by name or specific design.***

Once again let me ***thank you*** for giving us the opportunity to use your facilities as a field test site. The data collected is a valuable asset to our program in building a comprehensive profiling of ***actual energy related loads*** that occur in ***occupied / operational buildings***. This type of data is critical to other Engineers facing decision making tasks, where published measurement and verification data is not yet available **or inaccurate**.

This is the second time we have had the pleasure to test your product, it is rare that a single product will show such Repeatable Results in two totally different environments, South Florida and Denver Colorado, a true testimonial to your products ***ENERGY STAR*** rating.

Please feel free to contact our offices if we can be of any assistance in helping you meet your future conservation / mitigation goals.

CEA/CBA/MDEIII

Dir. Florida Energy Office's / E C A P Program
University Of South Florida / Small Business Development Center

Power Correction Systems, Inc.
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- How can a coat of MULTICERAMIC COATING (250 microns dry) insulate as well as 6 inches (150 mm) of fiberglass? Fiberglass and other such materials (R) only resist heat. It was not made to stop heat conduction, only slow down the conduction. When the material resist but then fully loads with heat, now the heat is passing through the material and will dissipate through and be lost to the atmosphere around the unit it covers. Since the material is so thick and the heat is dissipating from all the surface areas and 150mm away from the hot surface, you cannot feel the lost of heat on the surface of the material. If you removed the fiberglass or rock wool and held your hand 150 mm away from the hot surface, you would not feel the heat. So, is this "insulation" –no, and never was. It must have thickness because it absorbs heat and the thickness only buys time before the heat transfers through it and into the space it covers.

- If you take MULTICERAMIC COATING and coat over a surface with MULTICERAMIC COATING, the ceramic blend of compounds will not allow heat to penetrate into it. The coating is not build on (R) resistance, it is built to repel heat from the surface and therefore not allowing heat to affect the surface it is covering. This is why the coating does not have to be 150mm thick. It does not absorb heat as the fiberglass type materials do. It repels the heat that would try to be absorbed and therefore only needs 250 microns to prevent the heat from being absorbed into the surface it covers.

This concept of preventing heat from being absorbed into a surface or into a building is new to the engineering and architectural communities. The standard established by the manufacturers of the fiberglass and like materials had the test requirements for "insulation" established long before ceramic compounds were found to actually "insulate" by repelling heat and not absorb heat over time. Therefore, all insulation testing was based on absorbing heat or conduction over time, thickness and area. It was given that heat would come through by conduction over time. It was never assumed that heat could be stopped and not transferred. In this area, when MULTICERAMIC COATING is compared to the test standards of fiberglass or such materials, it cannot effectively be compared. Fiberglass is only tested for conduction only. This is only one heat transfer method. Radiation and convection are the other two methods of heat transfer making a total of three methods. Since fiberglass cannot block or stop radiation or convection (it cannot reflect and it is 90% air so it cannot stop or block convection or air currents), it is very limited to it's ability to insulate. MULTICERAMIC COATING reflects heat waves and prevents surfaces from heating which is the very initial stage of insulation. It blocks convection because it has no lattice of materials to allow air movement. It has tested directly against fiberglass in the ASTM C 236 testing and outperformed the fiberglass in a test designed specifically for fiberglass. All three heat transfers are blocked.

TimesOne ™
The Energy Efficiency Company

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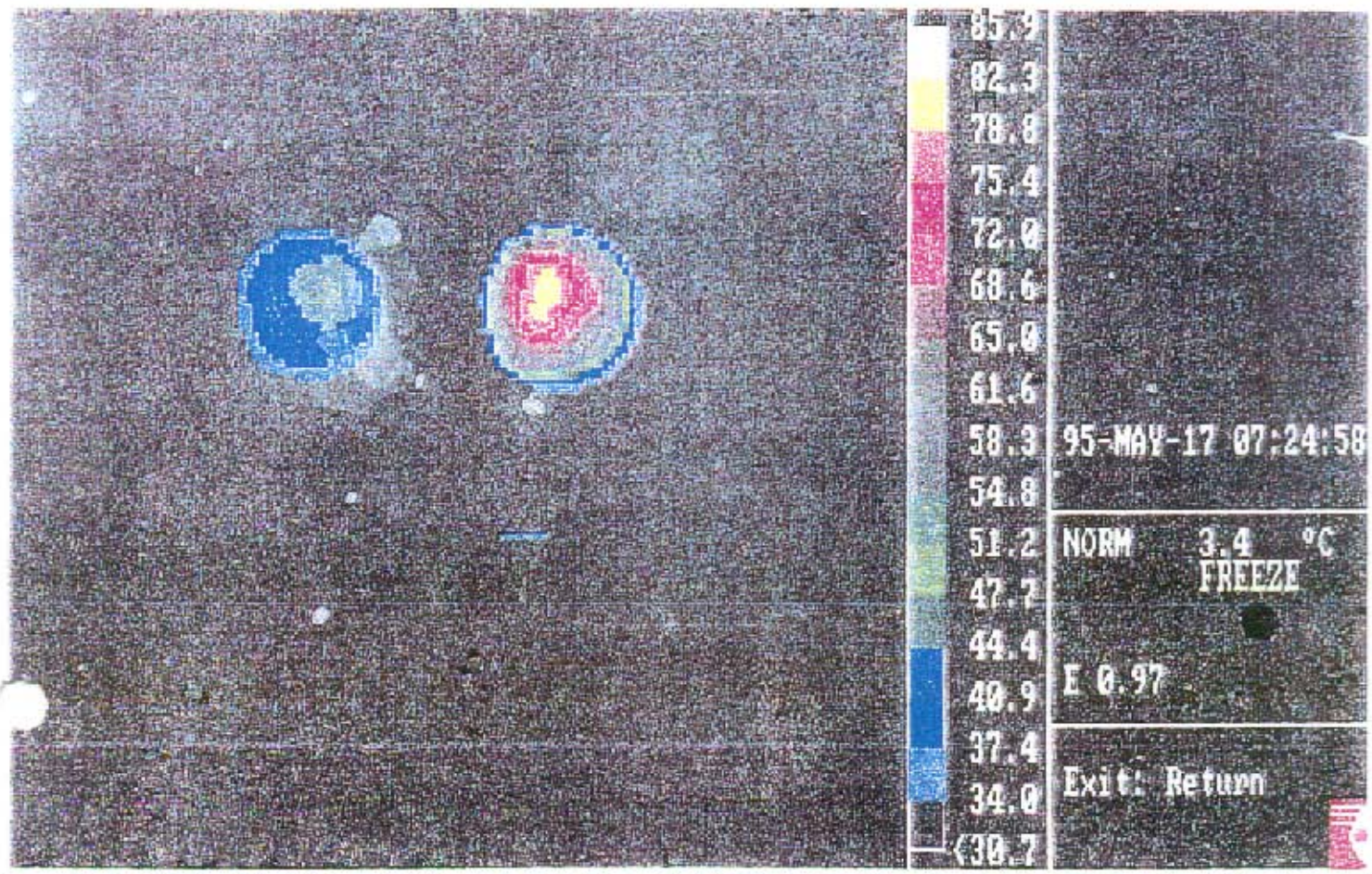
The above information in the attachment" multi ceramic insulation material "was defined by Robert Guerra a chemist with 20 years experience in Thermal Engineering.
The material is listed on energy star entry # 1080 Superior Products International Inc. Supertherm brand.
The benefits and features should be emphasized, not the brand name.
Please refer to the material a Multiceramic coating.
The characteristics published on the energy star web site are Solar reference .8 at year one and reduces to only .79 year 3 Metal changes from .78 to .58 in three years.
Multiceramic coating provides 3 characteristics 1; convection, 2; conduction, 3; radiant filtering.

Tests for r value on Fiberglass only provide ratings for conduction. It does not have the capability of complete isolation thermally by convection. It can not reflect radiant heat.
Plastics or polymers materials can reflect radiant heat but not insulate heat or cold.
Multiceramic coating is the only material that I am aware of that provides all 3 characteristics.

R factor defines "how long the delay of time for heat or cold temperature differential to begin to equalize across a body of material.
In simpler terms, how long does it take to transfer cold or heat through the material being tested? R19 means 19 hours

SUPER THERM



SUPER THERM THERMOGRAPHY TEST RESULT:

LEFT IMAGE 7.5" SUPER THERM COATED TARGET.

RIGHT IMAGE 7.5" ENAMEL COATED TARGET.

OBSERVATION OF TEST RESULTS AS NOTED BY SUPERIOR:

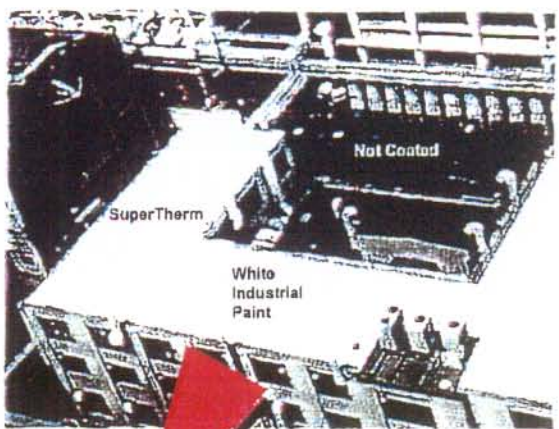
SUPER THERM's effectiveness in the large portion of the test ranges between a 60 to 80 degree F difference in its ability in stopping the conduction of heat through the plate versus a high quality industrial white enamel.

SuperTherm

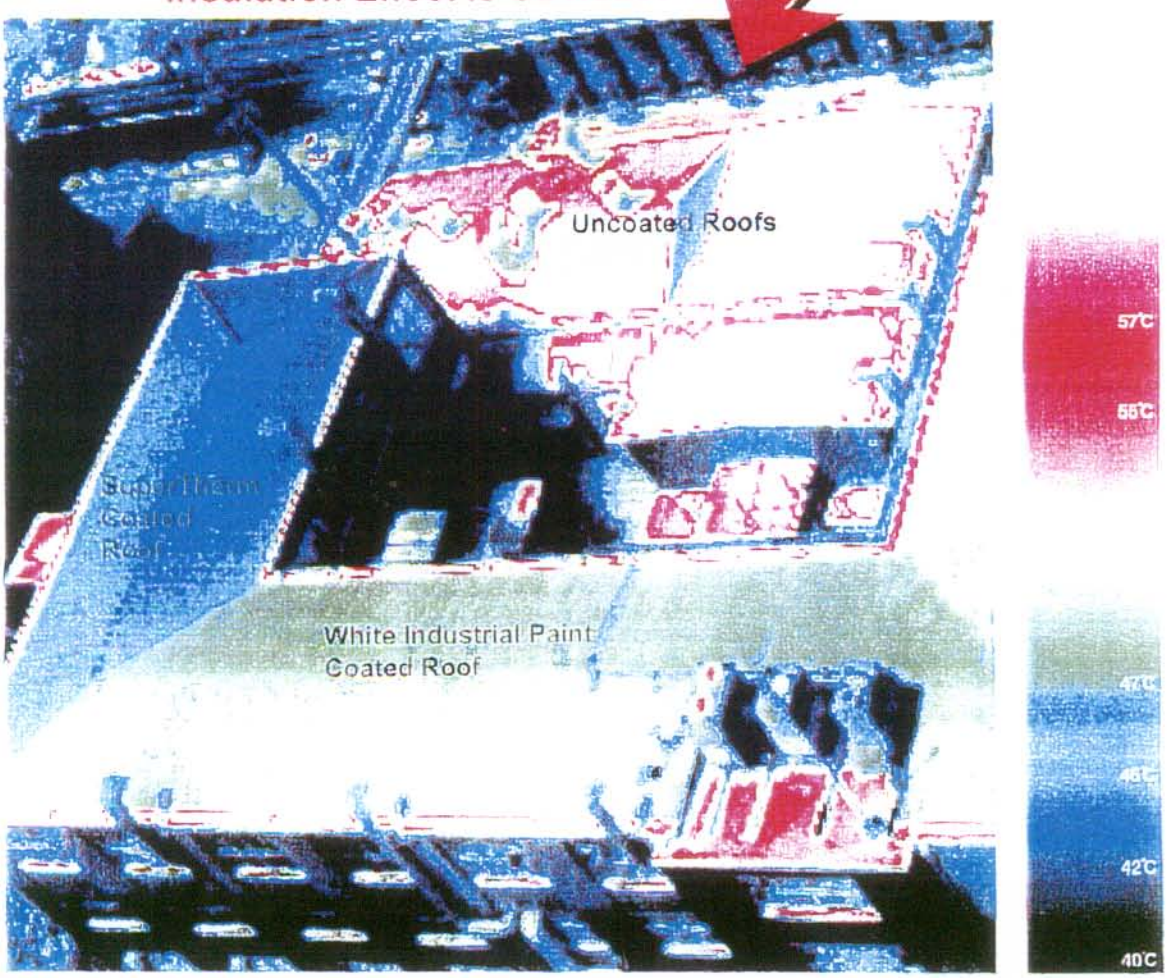
Environment-Friendly, Water-based, Insulation Coating
for All Roofing System to Cut Down
Air-Conditioning & Heating Costs

■ Characteristics ■

- o Reflects Sun Radiation
- o Retard Heat Conduction
- o Surface Remains Tough
- o Water-Proof
- o Mold-Resistant
- o Fire-Resistant
- o Long Life Span
- o Reduce Cost of Air-Conditioning

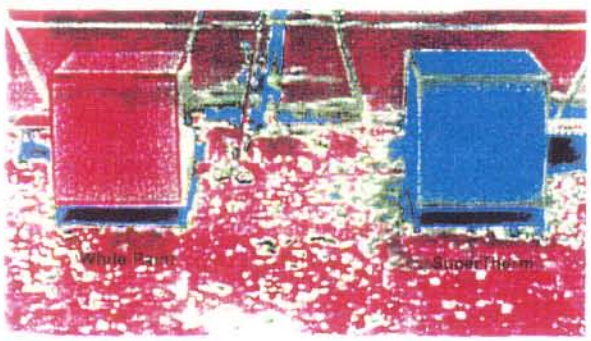


Insulation Effect is Obvious!

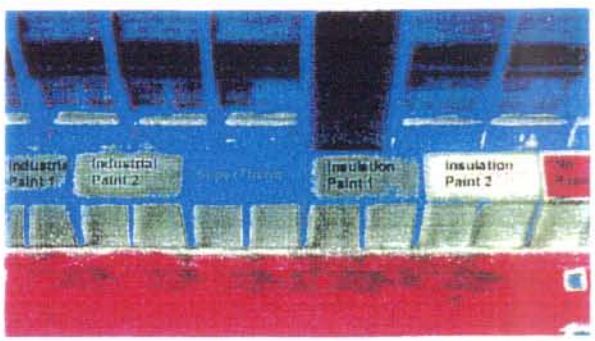


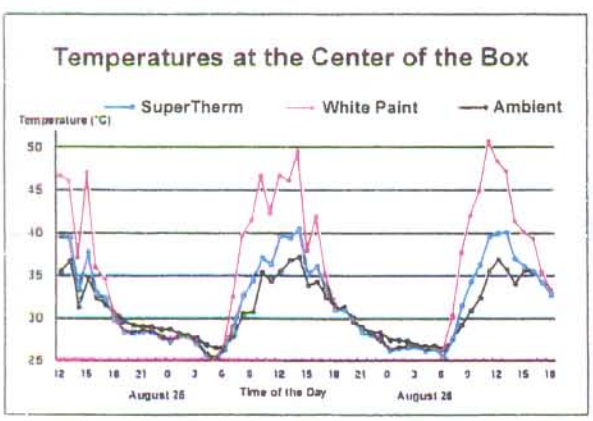
Heat Insulation Tests for SuperTherm

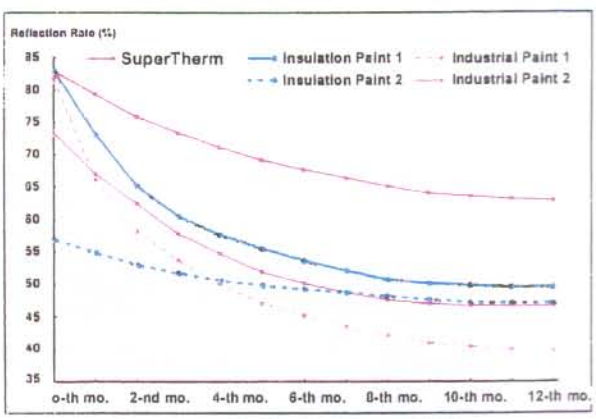
BOX TEST



Comparison of Heat Insulation of SuperTherm for Several Different Coatings on Metal Roofs

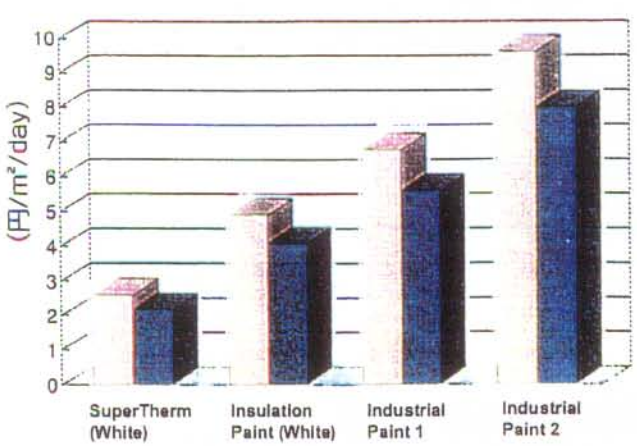






Decrease of Reflection Rate with Time

Cost Comparison for Air-Conditioning



Test Conditions
The test was conducted in Tokyo, Japan in August 15, 1999. The weather was clear. The indoor temperature was at 25 °C. The air-condition cost comparison was made for Yen per square meter per day.

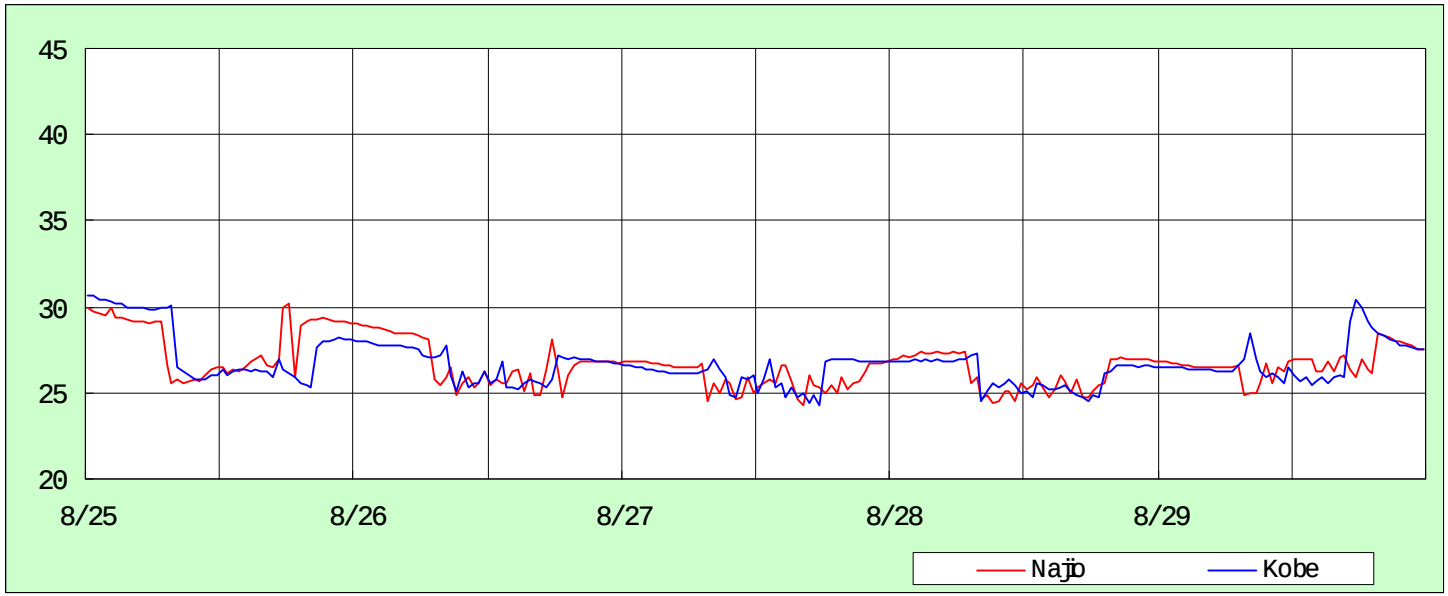
Air Cooling (Yen/m²/day)
Water Cooling (Yen/m²/day)

※Elec. Cost= 13 Yen/kW

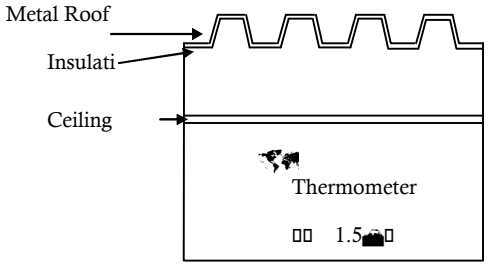
Temperature Survey

Land, Infrastructure and Transportation Ministry

Hansin Construction Division



August	25	26	27	28	29
Weather	Fine	Rain	Cloudy	Cloudy	cloudy
Max. Temp.	30.7	30.0	30.0	29.8	31.9



.... Kobe Air Conditioning was set at Cool Therm was applied in March 2003

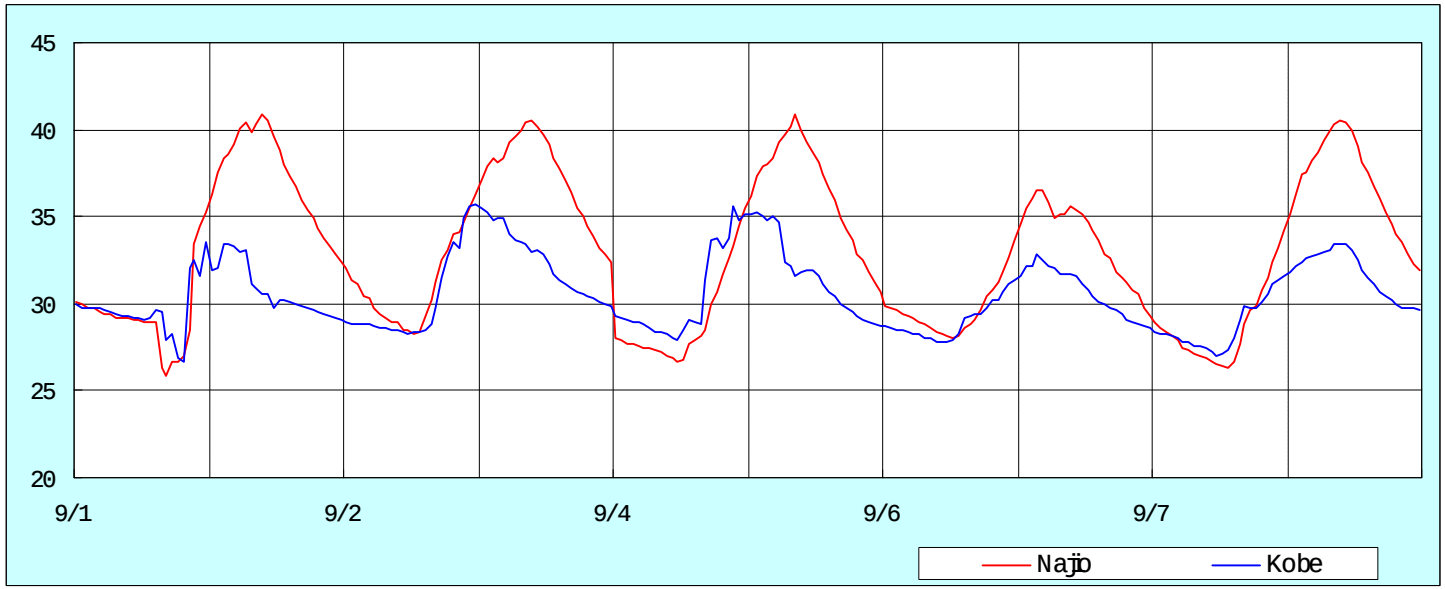
.... Najio Air Conditioning was set at

II In Kobe the air conditioning temperature was set 3 degrees C higher than Najio, but the room temperature was still almost the same as that in Najio.

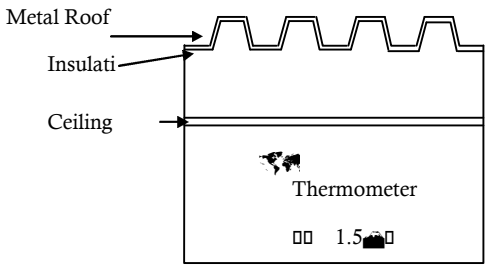
Temperature Survey

Land, Infrastructure and Transportation Ministry

Hansin Construction Division



September	1	2	4	6	7
Weather	Fine	Fine	Fine	Cloudy	fine
Max. Temp.	31.2	32.5	31.2	31.0	32.0



.... Kobe No Air Conditioning Cool Therm was applied in March 2003

.... Najio No Air Conditioning

II When there was no air conditioning, the temperature at Kobe was 30.9 C, which was 10 C lower than that at Najio, 40.9C.

Supertherm

- R19 Equivalent Ceramic Insulation coating.
- Resists fire & chemicals, provides insulation and corrosion protection.
- Reduces surface maintenance.
- USDA approved.
- One of Energy Star best overall rating.
- Use on interior, exterior.
- Moisture Resistant.
- Resists Mold/Mildew.
- 25 Years Residential life expectancy.
- 68% Sound Blockage.
- Out performs fiberglass, cellulose fillers and polystyrene foam.

Supertherm is a high performance, high tech coating that may be applied to wood, masonry, metal, and other porous surface substrates.

Supertherm may be applied by airless, air pot sprayer, roller, or brush at a coverage rate of 100 sq. ft. per gal.

Supertherm dries in one hour to touch, 2 hours re-coat, 14-21 days full cure.

Supertherm reduces energy costs by up to 40% when used as a roof coating.

Epoxytherm

- Similar ceramic compound as Superthrem in a tough two part solvent based Epoxy system.
- Insulation effectiveness same as 4 to 6 inches of bat insulation at 80 mils.
- Excellent chemical and solvent-resistance.
- Outstanding water and humidity resistance. Impervious to moisture.
- Good flexibility.
- Approved for potable water usage by AWWA.
- Can withstand 400 degrees.
- Salt spray corrosion test 450 hour evaluation.
- Epoxytherm adheres to wood carbon steel, and concrete.
- Epoxytherm is excellent for coating concrete structures (dams, canals, swimming pools) above or below waterline.
- Epoxytherm helps control thermal shock and controls the conduction of heat and cold to the surface of the concrete.
- Epoxytherm can control heat loss from conduction to ground from pools when used as a pool lining.
- Epoxytherm will stop condensation/icing on pipes
- May be applied with airless, pot sprayer, or roller to solvent cleaned surfaces. May be applied to moist surfaces at the rate of 20 sq. ft. per gallon for each coat.

SP2001F

- Unique blend of ceramics combined together creating a heat block (fire wall) against heat migration.
- SP2001F is a water based coating that dries tough and will insulate against extreme heat migration, or direct flame. Designed to withstand temperatures above 2000 degrees without failure.
- SP2001is corrosion, fungus/mildew resistant.
- Fire endurance UL tested 2 hour rating.
- Expands and contracts with substrate
- SP2001F may be applied to clean, dry interior surfaces free of wax, grease, and oil, such as metal, concrete, stucco, plasterboard, wood, plastic, and composites for fire retardance for walls and ceilings.
- Sp2001 best application if sprayed at the rate of 2.5 sq. ft per gallon. Dries in 8 hours to touch, 12 hours to overcoat, 21 days to cure.

Hot Pipe Coating

- Hot Pipe Coating is a combination of high performance specially designed high-temperature ceramics and resins in a water-borne non-flammable formula specifically designed to reduce surface heat on pipes carrying hot liquid, or gas.
- Hot Pipe coating may be applied directly to hot surfaces that have been power cleaned or sandblasted.
- Hot Pipe Coating may be applied by spraying at rates to achieve thickness needed to insulate effectively to control the lost or gain of heat.
- Hot Pipe Coating is applied while the surface is hot which allows the application without the normal shutdown and lost of production or time.
- Hot Pipe Coating can be applied over valves and elbows where wraps cannot be effectively applied.
- Hot Pipe Coating will prevent the normal lost of heat off the surface which then captures and holds the heat inside the vessel or pipe which will. in effect, increase the heat inside the unit.
- SP2001 may be applied to vehicle undercarriages, catalytic converters to reduce heat transfer into vehicle. When applied to manifolds or headers, this enables the gas to be burned efficiently to increase gas milage, reduce emissions and due to heat flow, will increase horsepower in an engine by reducing back pressure.

Rust Grip

- Rust Grip is a **one-part** polyurethane coating that encapsulates and stops the progression of rust and corrosion. Dries to at tensile strength of 6750 PSI.
- Rust Grip penetrates into the pores of the substrate and hardens into a surface that blocks the breathing of the pores to air, moistures and chemicals which blocks the development of corrosion over any metal surface or existing rusted surface.
- Rust Grip penetrates and locks in to encapsulate rust, lead-based paints, asbestos, and other hazardous materials.
- Rust Grip can penetrate up to 18 coats of oil based paint.
- USDA approved around foods.
- Salt Spray corrosion test: 2000 hours.
- Patented for encapsulation of Bio-hazardous materials, such as asbestos, existing lead-based paints and rust.
- Maintain a loaded brush or roller with the coating to achieve the penetration into the pores to encapsulate while allowing enough coating over the surface to prevent pin holes.
- Rust Grip May be applied to metal, concrete, or wood.
- Rust Grip will cover any rusted area to stop and control corrosion. Rust Grip will seal out any contact with moisture, air, and chemical pollutants.
- Apply to metal or concrete to protect from acid splash or pooling. Will not allow acids to penetrate to substrate.
- Used as the primer coating to coat the inside and outside of oil, acid, or solvent tanks. Pipes above or below ground before over coating with Lining Kote or Moist Metal Grip.
- Rust Grip may be applied by brush, spray, or roller. Coverage rate is 200 sq. ft. per gallon.
- Tested under the combined EPA and ASTM certifing test ASTM E 1795 for encapsulation.
- Extremely easy to use, fast and labor saving.

Moist Metal Grip

- Moist Metal Grip is a two part epoxy coating designed for application to condensating pipes, or metal surfaces where surface may not be dried before corrosion coating.
- Moist Metal Grip is flexible, solvent, water, and humidity resistant.
- Moist Metal Grip may be submerged under water.
- Moist Metal Grip can withstand temperatures up to 450 degrees.
- Moist Metal grip is approved for potable water usage by the AWWA.
- Moist Metal Grip tested to 450 hour salt spay exposure.
- Moist Metal Grip Adheres to Metal, Concrete, and Wood.
- Moist Metal Grip may be applied with brush, spray, or roller at a coverage rate of 200 sq. ft. per gallon on metal, 150 sq. ft. on concrete.
- Remove algae and residues off of wet surfaces before applying with the roller or brush. Brush or roll with pressure to force the coating into the rusted surface and pores to lock into the surface to prevent future corrosion.

Aqua Pox

- Aqua Pox is a two part “water based” epoxy designed to coat concrete floors.
- Aqua Pox develops a superior floor surface that will exhibit outstanding water and chemical resistance.
- Aqua Pox resists acids, solvents, oils, and gasoline.
- Aqua Pox is a tough scuff and abrasion resistant coating that dries to a full gloss that can be tented to any color.
- Aqua Pox covers 200 sq. ft. per gallon

Enamo Grip

- Enamo Grip is a super tough two component self leveling polyurethane enamel that can be tinted to any color to achieve high gloss results.
- Enamo Grip provides outstanding resistance to water, humidity stains, chemicals, solvents, and is tremendously scuff, mar and impact resistant. Use Enamo grip for any architectural situation.
- Use as a top coat with Rust Grip to provide any desired color finish coat and help protect substrates from rust for a minimum of 10 years.
- Apply Enamo Grip to any substrate that is clean and dry.
- Apply Enamo Grip with brush, roller, or spray at a coverage rate of 250 sq. ft. on metal, 100 -150 sq. ft. on wood
- Enamo grip is applied in Clear High gloss over painted surfaces to provide graffiti protection. Graffiti can be removed using a graffiti remover without harm to the coating surface. After removal, the surface appears new and fresh without shadows or residues. No more repainting. The surface must be coated with the Clear Enamo Grip first before graffiti is applied.
- Enamo Grip is currently being used to protect trains, buses and trams in Rome Italy for ease of graffiti removal without repainting and has been saving thousands of dollars annually on prevention.
- Very good swimming pool liner coating.

Enamo Grip W/B

- Enamo Grip W/B is a single component urethane polymer in water that may be tinted to any color or standard white.
- Enamo Grip W/B offers UV control and weathering characteristics far superior to standard acrylic coatings.
- Enamo Grip W/B contains UV blockers and anti-flash rust inhibitors offering increased protection against industrial pollutants and smog.
- Enamo Grip works well as a top coat over Supertherm to expand and contract without cracking.
- Enamo Grip was designed to cover over the top of Super Therm when applied over foam or rubber substrates to move with the roofing system without developing stress cracks that can deteriorate the system and provide water ponding protection.
- Apply Enamo Grip W/B to metal, wood, concrete, masonry, or any porous material at a coverage rate of 150 sq. ft. per gallon on metal, 100 sq. ft. per gallon on wood, masonry, or other porous material.

Super Base HS

- Super Base HS is a one part, water-based, high performance elastomeric acrylic coating designed for application on roofs, or wall structures to seal cracks and perform as an excellent base coating.
- Super Base HS adheres tenaciously, ponds water, resists UV and weathering, remains tough and flexible.
- Super Base HS can be used alone or with a top coat of Super Therm to create a long lasting highly insulated, water tight roofing system.
- Super Base HS can be applied to tar, wood, asphalt shingles, or concrete.
- Super Base HS may be applied with airless, or pot sprayer, brush, or roller. Coverage rate 30 sq. ft. to fill cracks, 100 sq. Ft. when sealing wood for Supertherm application.

Total Seal

- Total Seal is a tough two part Epoxy solvent based coating designed to coat concrete and masonry.
- Total seal provides excellent solvent and chemical resistance.
- Total seal provides and excellent coating for concrete floors or concrete block walls.
- Total Seal may be used below grade, performs as and excellent basement liner to block water leakage.
- Total Seal is scuff and impact resistant.
- Total Seal dries to a semi-gloss finish that can be tinted to any color.
- Total Seal may be applied with brush, roller, or spray, for a coverage rate of 100-250 sq. Ft. per gallon according to need.

Ultracide

- Ultracide is a water based acrylic insecticide formulation.
- Ultracide dries to a durable, washable finish that is odorless, non-flammable, and low in toxicity. Use in interior, or exterior.
- Insecticide is locked in the coating until released to the bottom of insects feet.
- Ultracide is available in clear.
- EPA registered and USDA approved. Safe to use.
- Lasts for 12 months and longer.
- Ultracide may be used to band windows, foundations, doors, walls ceilings, anywhere insects are a problem. Even in food service areas.
- Controls flies, mosquitoes, wasps, spiders, cockroaches, ants, moths, clover mite, and gnats.
- Ultracide may be applied by spray, brush, or roller to wood, metal, masonry, or other porous material.
- Ultracide covers 150 sq. Ft. per gallon