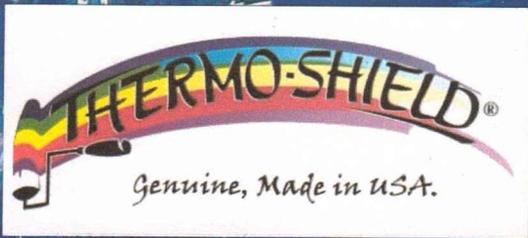


07500/COM
BuyLine 5314

THERMO-SHIELD®

Genuine, Made in USA.

**A different kind
of roof system
for a tougher kind
of environment.**



When installed properly, this product can help reduce energy costs. Actual savings will vary based on geographic location and individual building characteristics. Consult your product manufacturer, roofing contractor, or call EPA's ENERGY STAR® hotline at 1-888-STAR-YES (1-888-782-7937) for more information.

THERMO-SHIELD® FLUID APPLIED CERAMIC ROOF SYSTEM

Space shuttle technology offering...
Tough Seamless Membrane A Lightweight System Variable Permeability
Energy-Efficiency Cost-Effectiveness Long-Lasting Protection

PRODUCT PRESENTATION

An innovative roofing technology combining strength, lightweight protection and integral insulation.

The THERMO-SHIELD® Roof System consists of fluid-applied Acrylic elastometric coatings which contain Ceramic Microspheres.

Once in place, the THERMO-SHIELD Roof System becomes a seamless, continuous monolithic membrane impervious to adverse weather conditions, airborne contaminants, and extreme temperature fluctuations.

As shown by accelerated ageing tests, the THERMO-SHIELD system lasts longer than conventional roofs. It is cold-applied, so it's safer going on. It is non-toxic in liquid or cured form, environmentally cleaner, eliminating noxious fumes.

Other important THERMO-SHIELD Roof System benefits include:

Waterproofs roofs, even low sloped

A high degree of puncture-resistance due to its outstanding tensile strength

Exceptional elongation characteristics

Absolute bondability to a wide variety of substrates

Stability under an extreme range of temperature fluctuations

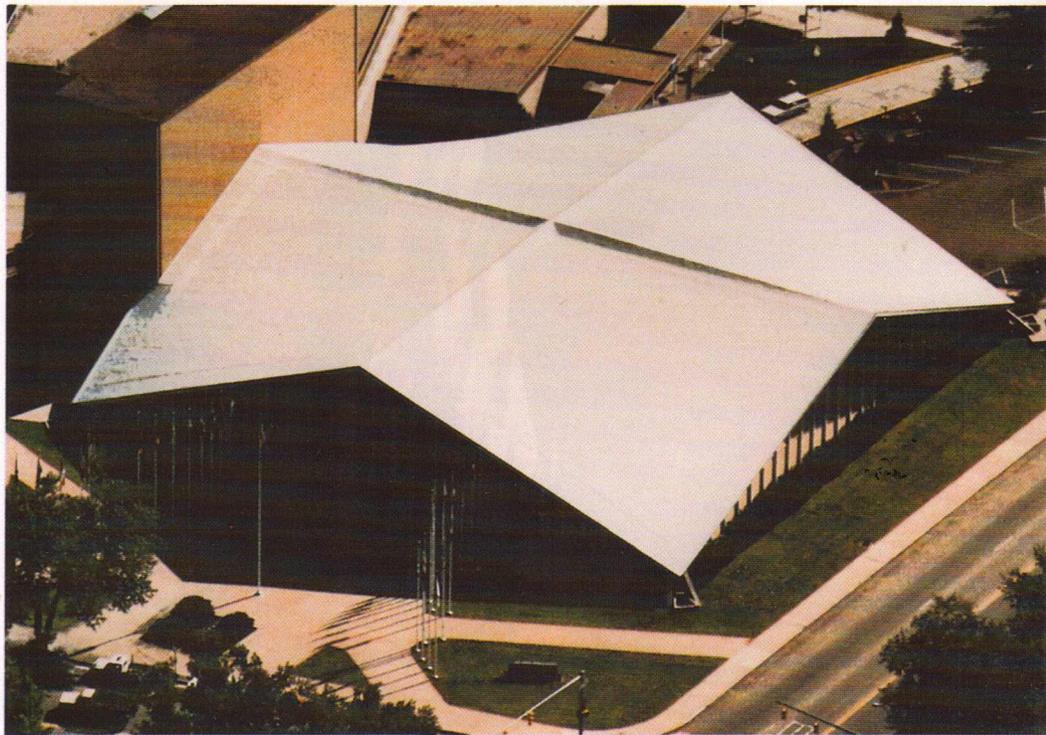
High resistance to atmospheric pollution

High resistance to UV degradation

Space Age technology that stays on top.

The THERMO-SHIELD Roof System offers an exclusive roofing formula featuring hollow ceramic borosilicate microspheres. These microspheres are similar to those used in the insulating and reflective ceramic tiles used on the NASA space shuttle.

These unique fluid applied ceramic coatings can be sprayed or rolled on to form a seamless monolithic seal over any



Broadmoor Convention Center, Colorado Springs, CO. Since 1986, THERMO-SHIELD Roofing System has cured the constant cracking and leaking problems due to lots of movement and thermal shock in this open-span, concrete roof, supported by cables.

size or shape roof. The THERMO-SHIELD Roof System effectively dissipates and reflects solar radiation back into the atmosphere, resulting in an impressive reduction of solar loading.

The THERMO-SHIELD Roof System can be applied directly to most clean, dry, sound substrates, including metal, concrete, wood, asphalt shingles, tile, asbestos, urethane foam, and EPDM.

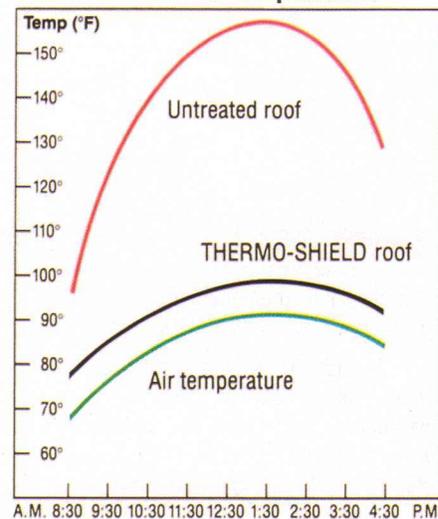
Variable permeability. The polymers used in the THERMO-SHIELD Roof System expand when wet, offering unexcelled protection against damaging moisture penetration. The polymers shrink when dry, allowing any trapped moisture buildup to safely escape to the atmosphere, this helps prevent blistering.

Temperatures on the roof stay within 4° C of ambient air. This lowers temperatures under the roof by as much as 25°C. Reports from customers of energy savings up to 40% are not unusual with an application of THERMO-SHIELD Roof System. A THERMO-SHIELD roof can pay for itself through energy savings by

drastically reducing solar loading, a critical factor in lowering air conditioning costs.

*A THERMO-SHIELD roofing expert can help you determine the best type of THERMO-SHIELD application for your particular project.

Effect of THERMO-SHIELD on surface temperature



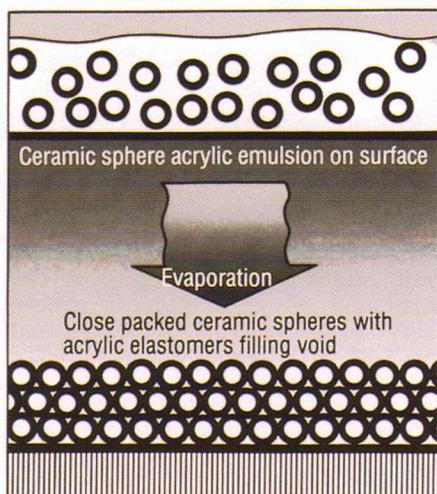
Testing at OAKRIDGE NATIONAL LABORATORIES, Tennessee, Thermo-Shield Roof Coating reduced average weekly heat flux through their APP Bitumen roofing system by 78 to 86% during summer days.

Hollow glass borosilicate microspheres: The secret behind THERMO-SHIELD INSULATION

The hollow glass microspheres in THERMO-SHIELD coatings are pure sodium borosilicate, and are less than 100 micron in diameter. Each closed cell acts as an efficient insulator.

Once applied, water evaporates from the THERMO-SHIELD aqueous acrylic emulsion and the hollow ceramic spheres approach each other, eventually touch, then fuse into a continuous membrane.

And since the microspheres are over sixty percent void, the entire THERMO-SHIELD Roof System weights about 0.75 kg per sq. meter.



Integral insulation: borosilicates at work

Ceramic is a poor conductor of heat and is a far more effective insulator than the bulky materials generally used for this purpose. The THERMO-SHIELD Roof System is unsurpassed in its ability to dissipate heat. It reflects most solar energy so it never gets into the structure to become a heat problem, there is no heat storage build up as with bulk insulation.

The high performance THERMO-SHIELD ceramic coatings also insulate against roof expansion and contraction. This drastically reduces the possibility of roof leaks caused by thermal shock and reduces maintenance costs accordingly.

USES, APPLICATIONS

THERMO-SHIELD can be used for virtually any roof application

The THERMO-SHIELD Roof System is an ideal choice for both new construction and retrofit applications. THERMO-SHIELD is easy to apply and can be used with confidence over most substrates.

THERMO-SHIELD has superb adhesion to concrete — unprimed or galvanized metal — wood — asphalt shingles — tile — urethane foam — EPDM — asbestos.

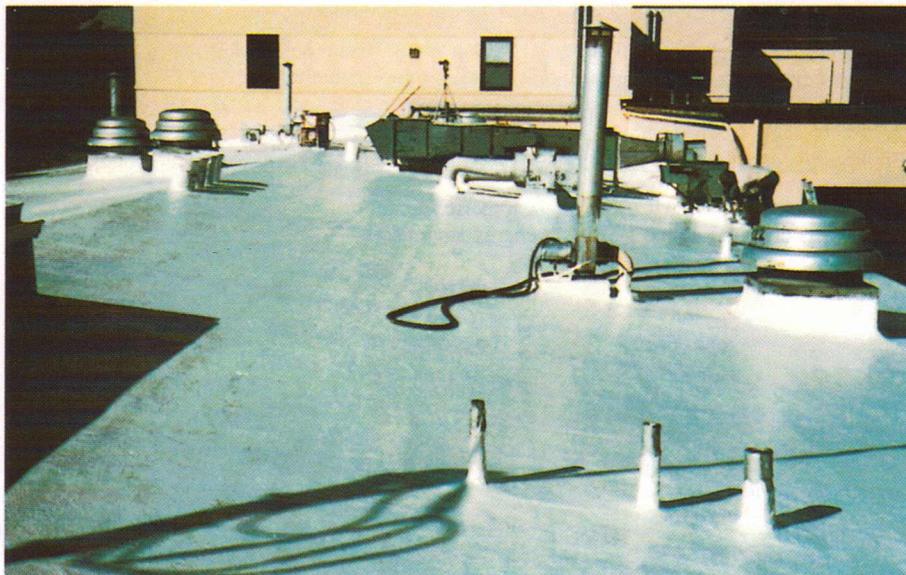
Bituminous/fiberglass felt roofs or asphalt composition roofs require the Flex Tac and polyester bonding coat.

Apply directly...no mechanical fasteners or heat needed.

The THERMO-SHIELD Roof System is fluid-applied, creating a seamless, leak-proof monolithic membrane. There are no mechanical fasteners that can come loose over time. This eliminates a major potential for roof failure.

More THERMO-SHIELD benefits ...

Labor savings. As advanced as the THERMO-SHIELD Roof System is, it is also one of the easiest and most cost-effective to apply. Only a three-man crew is needed for a typical THERMO-SHIELD application, as opposed to the nine to twelve man crew used for a conventional hot roof project. Time and labor savings can translate into the lowest cost per square meter applied.



The THERMO-SHIELD Roof System excels in creating a tight, weather-proof seal around all types of roof protrusions.

The THERMO-SHIELD Roof System develops a protective surface film within 45 minutes of application on average. Wind-blown dust will not adhere to the surface, nor will a light rain shower compromise the coating's integrity.

Noise Reduction The resins and ceramics make a noticeable reduction from outside noise, especially on metal buildings.

Lightweight The THERMO-SHIELD Roof System eliminates the need for ballast, reducing structural deflection, a major cause of ponding. At only 0.75 kg. per square meter, the weight factor on a new roof design is minimal.

Superior flexibility at extremely low temperatures. THERMO-SHIELD mastics retain their properties at temperatures below -40°C and as high as 150°C.

Excellent elongation and recovery properties. The THERMO-SHIELD Roof System creates a protective barrier with proven high resistance to hail and wind damage. The elastic coating moves with building movement, sealing hairline cracks and preventing new cracks.

Professional application by certified and trained THERMO-SHIELD experts.

THERMO-SHIELD trained and certified contractors are available to work on your roof...your assurance of a professional, THERMO-SHIELD approved job. Add the THERMO-SHIELD Warranty, and you have a water-tight case for using the best: THERMO-SHIELD.

Performance Data

Flexibility:	Will pass 180° bend at -37° after 6 months exposure	
ASTM Codes:	THERMO-SHIELD Roof Coat tested as follows:	
K-Value	K=0.054 at 127 micron thickness	ASTM 177 - C1045
Tensile Strength	4.33 kg/mm ² at break elongation 70% at break	ASTM 0-412
Water Vapor permeability	At 720 micron thickness	ASTM 1653
Water Absorption	50.6 grains per sq. meter per hour Long-term 5 week saturation Water absorbed 34%	ASTM D-570
Brittleness at -37°C	No damage from striking device	ASTM D-746
Surface Ozone Cracking	Time to failure ... none observed in duration of test	ASTM D-1149
Heat Aging Test	(21 days at 150°C) Maintained 80 to 85% of tensile strength and elasticity	ASTM D-865
Accelerated Weathering	No evidence of cracking, deterioration of loss of flexibility	ASTM G-53, Q-uv 3000+ hours
Resistance to Ultra Violet Light	Inherent in the acrylic polymeric resin used in THERMO-SHIELD strengthened by uv resistant titanium dioxide pigment and ceramic fillers.	
Resistance to Ponding	Excellent resistance to ponded water Passage of bulk water at 50 hours 40-55 mg / m ²	

(THERMO-SHIELD Top Coat displays variable permeability. When wet, polymers swell up and become water tight. When dry, pores open up and trapped water vapor can breath out, preventing blistering.)

Chemical Resistance	Resistant to very harsh and corrosive chemicals including battery acid, brake fluid, blood, diesel fuel, gasoline, anti-freeze, 35% hydrochloric acid, 10% nitric acid, 40% sodium chloride, and animal urine.	ASMT-1308
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Other Tests

Environmental Leaching	No volatile organics were detected Leachables are non-toxic.	Calcoast Test
REDUCTION OF HEAT TRANSFER TESTS		By Hauser Labs
Heat transfer of Galvanized steel vs Galvanized steel coated with 127 micron thickness of THERMO-SHIELD		
Results	THERMO-SHIELD sample had 64% less heat transfer.	
Comparison of asphalt coated fiberboard vs THERMO-SHIELD		
Results	THERMO-SHIELD sample had 84% less heat transfer.	

THERMO-SHIELD Top Coat roofing is also available in a Class A fire resistant rating as per UL Listing #12543 ASTM E-108

OTHER THERMO-SHIELD PRODUCTS AVAILABLE

THERMO-SHIELD LIQUID EXTERIOR WALL COATING: Water based, elastomeric, ceramic filled coatings, dry to beautiful, much longer lasting finish on all types of surfaces. Insulating properties pay for the application in energy savings.

THERMO-SHIELD INTERIOR WALL COATINGS: Water based elastomeric, ceramic filled coatings, dry to a satin finish that changes tones with change of light. Seals hairline cracks and helps prevent new ones. Reduces echoes and sound between rooms. Ceramics reduce heat loss, keeps temperatures more even ceiling to floor, and make a room more comfortable.

THERMO-SHIELD STUCCO: An elastomeric stucco that looks great, is easy to apply, and resists cracking, while providing energy savings.

All THERMO-SHIELD coatings are available in a wide range of colors.

ASSEMBLY, INSTALLATION

Four easy steps to a perfect THERMO-SHIELD roof.

Applying a THERMO-SHIELD roof is simplicity in itself. Here's all that needs to be done:

1. Make sure all flashings and/or fasteners are installed and properly secured.
2. Sweep, clean, and prepare surface.
3. Reinforce all cracks and joints with caulk and polyester fabric strips (brand name of Pol-E-Force), embedded in THERMO-SHIELD.
4. Apply the THERMO-SHIELD Roof Coating with an airless sprayer or roller at a rate of 1.22 liters / m² in two coats of 0.671 liter / m². Allow 24 hours between coats or until the first coat is completely dry to the touch. After first coat has cured, apply a second coat at the same rate of application.

TECHNICAL SUPPORT

Tests prove THERMO-SHIELD superior.

Independent lab tests and measurements show the effectiveness of THERMO-SHIELD in reducing interior temperatures. Copies are available on request.

DEVELOPMENT

The THERMO-SHIELD Roof System was the development of GENERAL INDUSTRIES CORP., Colorado Springs, CO, a chemical specialty company of over 25 years experience. They spent seven years developing THERMO-SHIELD into a roof coating that would solve ALL the problems common to roofing systems. Since 1984, THERMO-SHIELD ROOF COAT has been successfully solving our customer's roofing problems, on a long term basis, in all types of climate, all around the world.

Distributed by:

THERMO-SHIELD®
FLUID APPLIED CERAMIC ROOF AND WALL COATINGS

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