

# CeramaX

## Fluid Applied Ceramic Coating

**Now you can paint-on durable Ceramic protection from the heat of the sun.**

Space-Age technology developed by NASA and used in the Space Shuttle tiles to help control heat transfer is now available in **CeramaX**, a fluid applied waterproof ceramic coating.

Field tests, lab tests and most importantly, real-world use demonstrates that a 12-to-14 mil (only 12 to 14 thousands of an inch) coating of **CeramaX** blocks as much heat flow from a radiant heat source as 6 inches of bulky fiberglass insulation! This high percentage of radiant heat reflected is comparable to a rating of R-20. The pink fiberglass insulation used in the attics of most homes is R-19 and six inches thick and equals SIX THOUSAND MILS.

**CeramaX** is based on previously top secret technical information from the NASA Space Program. Created from that information is a unique Sealed Ceramic Micro-Bubble that we add to our coating in a special disperser to give **CeramaX** properties similar to the tiles on the Space Shuttle. These patented ceramic micro-bubbles act just like microscopic thermos bottles. There are over 100 BILLION of these ceramic “thermos bottles” in each gallon of **CeramaX**.

In the **CeramaX** used to coat the roof of an average 3-bedroom house there are enough special ceramic micro-bubbles to reach to the moon!  
That's 224,250 miles!

**CeramaX** reflects radiant heat. Radiant heat comes from sources such as the sun, a fire or a heat lamp. The ceramic micro-bubbles in **CeramaX** protect against radiant heat only. Insulation such as the fiberglass batts in the walls of your home works by protecting against conductive heat. Conductive heat is the heat you feel when you press your hands together. **CeramaX** has only a minimal affect on conductive heat. Its great virtue is its phenomenal ability to reflect radiant heat. It actually RE-RADIATES heat back into the atmosphere, preventing heat buildup that would need extra interior insulation to compensate!

**CeramaX** is intended for use in a wide variety of applications where radiant-heat reflection is needed and where a coating able to withstand wind, rain, sun, abrasion or impact is needed.

**CeramaX** has the unique properties to protect metal roofs, tile roofs, bermuda roofs, shingle roofs, modified bitumen, 90# roofing felts, fiberglass 3ply roofs, built-up roofs, bus tops, truck and van tops, shipping containers, tractor trailer bodies, ice storage buildings, cryogenic containers, stucco walls, metal walls, industrial equipment...and the list goes on and on. **CeramaX** will protect almost any substrate that needs to be protected from intense heat buildup from the sun.

By eliminating heat buildup, **CeramaX** keeps your living or workspace comfortable and saves money on roof repairs. Lowering the temperature of your roof by 10 degrees F as **CeramaX** can

do, may reduce cooling costs by up to one-third! Imagine cutting your cooling costs by 30% or more! You can with **CeramaX**.

As the mighty sun rises, its scorching rays cook the surface of your roof with radiant heat. Your roof gets hotter and hotter, transferring that uncomfortable heat to your living space. Your air conditioner works harder, requiring more maintenance, wearing out sooner and your monthly electric bill climbs. All the while, you're less and less comfortable. While your roof is being scorched, the seams, laps, flashings, fasteners and other components expand dramatically. The problem is that each component expands at a different rate and shear forces begin tearing at your roof. When the sun finally sets, the heat slowly bleeds off, some of the heat goes into the air and some into your living space. As this happens, the roof begins to contract, pulling and again shearing at the seams, laps, flashings and fasteners that all contract at different rates again.

**This shearing caused by daily expansion and contraction creates roof fatigue, which spells the untimely and expensive death of your roof!**

**CeramaX** keeps your roof cooler thus greatly lessening the shear caused by expansion that destroys your roof.

**The result is... Your roof lasts longer!**

**CeramaX** helps prevent thermal shock. A hot roof can experience thermal shock when a passing shower of cold rain hits the hot roof causing a rapid and tremendously violent contraction. These violent contractions can rip seams open, pop fasteners out of the roofs substrate, pull flashings out of the imbedding plies and generally destroy your roof. Keeping your roof cool prevents the radical contraction that leads to premature roof failure and costly replacement costs.

The 3 best reasons to use **CeramaX** are; 'It Saves Money, It Saves Money, It Saves Money!'

**CeramaX** provides SOLAR REFLECTANCE, which means it reflects most of the infrared and visible light striking the surface of the coating. Over 88% of the light striking **CeramaX** is reflected back into the atmosphere and away from your roof. THEN... **CeramaX** repels over 85% of the heat striking it. It bounces this heat back into the atmosphere. This synergistic effect means that **CeramaX** reflects the majority of radiant energy away from the structure while the micro-porous structure of the coating dissipates and blocks any radiation that is absorbed and reduces the energy transmitted to the substrate.

#### **How much does it cost?**

Well, considering reduced electric bills, extended roof life, increased comfort and the beauty supplied, it's just about FREE! If you're paying only ten cents per kilowatt-hour, **CeramaX** will pay for itself in no time, and if you're paying more, your return is bigger – faster.

## CeramaX

<u>Properties</u>	<u>Test Method</u>	<u>Test Result</u>
Flame Spread	ASTM E-84-87	10 or less
Smoke Developed	ASTM E-84-87	less than 5
Adhesion	ASTM D-3359	100%
Elongation	ASTM D-2370	200% +
Tensile Strength	ASTM D-412	255psi
Accelerated Aging	ASTM G-53	Passed 200 hours
Density	ASTM D-792	.98 @ 24C - dried film
Viscosity	Brookfield 10 rpm	25 – 35 Kcps
Wt Per Gallon	8.25 # per gal	
Insulation Value	Radiant heat on 13 mil thick coating = Effect of R-20 (0.040k)	

### OTHER:

Lead and chromate free: Yes

Resin Vehicle Type: Acrylic Styrene Polymer - Proprietary Blend

Cures by: Evaporation

Color: White and tintable to pastels if desired

Hiding: Excellent at 10 dry mils

Gloss: Low-sheen

VOC Emissions: ONLY 10.425 grams/liter (0.087 lb./gallon)

UV Resistance: Excellent

Fungus / Mildew Resistance: Very High

Film Thickness: 100 square feet per gallon = 16 wet mils, = 8 dry mils/coat

Dry Time: To Touch – 50 minutes @ 70% R.H. To Recoat – 3 hours To Fully Cured – 7 days

Shelf Life: 1 year

Open Pot Life: 6-8 hr. @ 70 degrees F.

Clean up: Soap and Water

Thinner: Water if needed

**INDEPENDENT STUDY:** An independent study was performed at the University of Nevada, Las Vegas under the direction of the Mechanical Engineering Department. The study was designed to test new technologies that help in saving on energy demand. The test facility was composed of two simulated houses, 9 ft. X 12 ft. X 8ft. in size. The wall construction consisted of two - ½ in. plywood boards with 6 inches of Styrofoam between them. The floor was made of the same construction giving an R-value 22. The attic was covered with 6 inches of fiberglass insulation with an R-value of 19. The rooms were equipped with several instruments; thermocouples, heat flux sensors, and two identical heating and cooling system units. The weather was monitored by a computer based data acquisition system monitoring the thermocouples, a pyrometer and a wind monitor to record different variables that help in assessing the performance of each of these technologies.

The results showed that a regular outdoor paint showed a 59.70% increase in energy usage compared to the chamber painted with our uniquely effective technology and containing the special micro-sphere ceramic compounds in **CeramaX**.

**CeramaX** does not trap moisture and it contains a blend of unique biocides to fight against the growth of mold, mildew, fungus and algae.

Irradiation: Asphalt/glass fiber shingle

Air Temperature	Uncoated	<b>CeramaX Coated</b>
3 in. from surface:	98 Degrees F	108 Degrees F *
Outside surface:	168 Degrees F	121 Degrees F
Inside surface:	159 Degrees F	114 Degrees F

\* This value is higher because heat is reflected into the air above the coated surface.

**CeramaX** contains proprietary solar-reflective ceramic compounds suspended in a hybrid terpolymer emulsion with urethane and acrylic modifiers. You get excellent adhesion to most substrates, high weather resistance, UV stability, elasticity, toughness and exceptionally long life on exterior applications.



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