MIRACOOL: HIGH REFLECTIVE COATING

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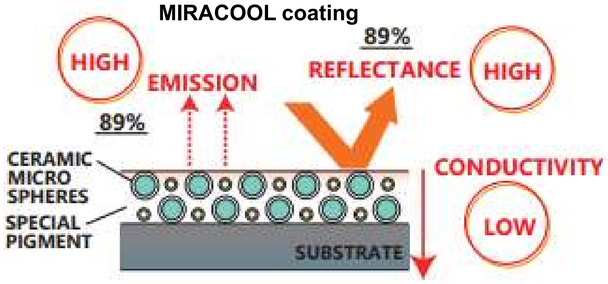
INTRODUCTION

Miracool is a silicon acrylic emulsion paint which can reduce surface temperature of buildings and facilities that are exposed to solar radiation. The paint has high thermal emissivity (89%) and high solar reflectance (89%) but low conductivity. It is ENERGY STAR qualified product which help to save money and reduce greenhouse gas emissions.

Sectional view of dry film of MIRACOOL coating



How does solar radiation affect the surface temperature and heat flow through the roof?

When the roof surface is exposed to the sunlight, part of the solar radiation is reflected away by the surface substrate and the rest is absorbed. The absorbed solar radiation heats the roof surface, and the heated surface partially emits radiation in the far infrared part of the spectrum. The rest of the absorbed energy passes through the roofing material into the room, which increases the room temperature consequently. **MIRACOOL is designed through the state-of-art technology to have very high reflectance and extremely high emission of solar radiation, and low heat conductivity in order to minimize the heat flow into the room.**

ENERGY STAR

CRRC COOL ROOF RATING COUNCIL

	Initial	Weathered
Solar Reflectance	0.89	0.83
Thermal Emittance	0.89	0.90
Rated Product ID Number	0001	
Licensed Seller ID Number	0020	
Classification	Production Line	

Benefits of MIRACOOL

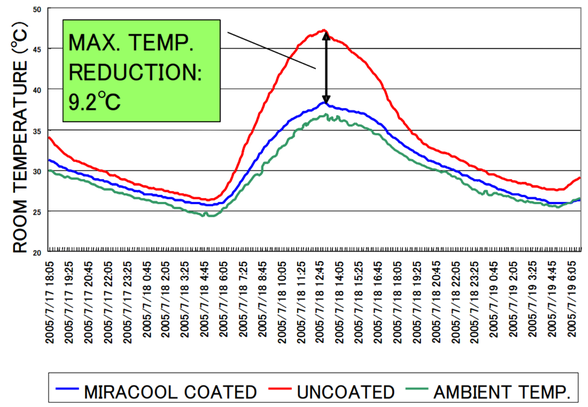
1. **Reduction of surface temperature:**
   Reduce cooling load and cost of air-conditioning systems up to 40 % in hot seasons. In a room without air-conditioning systems, the room temperature can be dropped by up to 10 degree C.
2. **Protection of surface material**
3. **Reduction of thermal shock**
4. **Extraordinary weathering resistance**
5. **Abundant color variation**

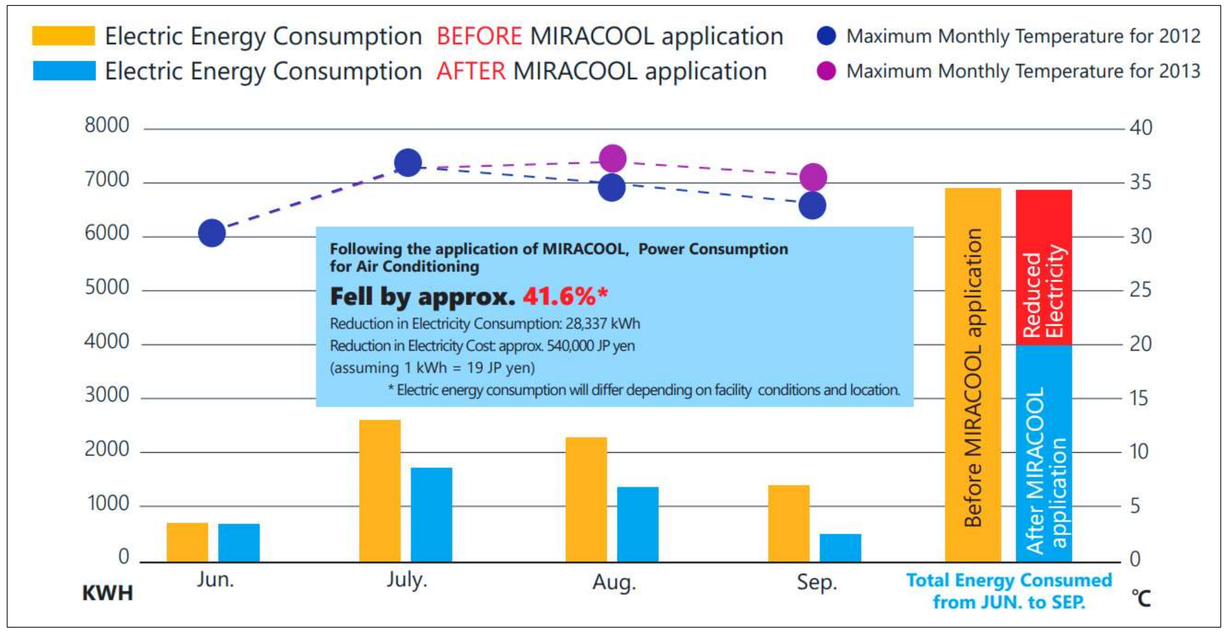
MIRACOOL REDUCES SURFACE TEMPERATURE OF BUILDINGS

Field records of room temperature in two warehouses (steel roof)

Among two steel roofed warehouses located next to each other, one coated with MIRACOOL and other uncoated. The room temperature of the coated room is only few degrees higher than the outside air temperature while the uncoated warehouse recorded over 45 degree C, which is hotter than the outside air temperature by 10℃ as shown in the graphs.

- **SOLAR REFLECTANCE: 92.2%**
- **EMISSIVITY: 99.1%**





Process	Product Name
Surface Preparation	Thoroughly remove efflorescence, stain, dust, dirt, debris, oil and all other foreign matters. Touch up by modified epoxy anti-rust primer (Epilux 610 Primer)
Primary coat	Miracool AQ Primer
First coat	Miracool AQ800 (1)
Second coat	Miracool AQ800 (2)
Top coat	Miracool AQ Clear

Surface Preparation

Epoxy anti-rustprimer

Miracool

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