

Just coat it and save energy!

**MIRACOOOL™**

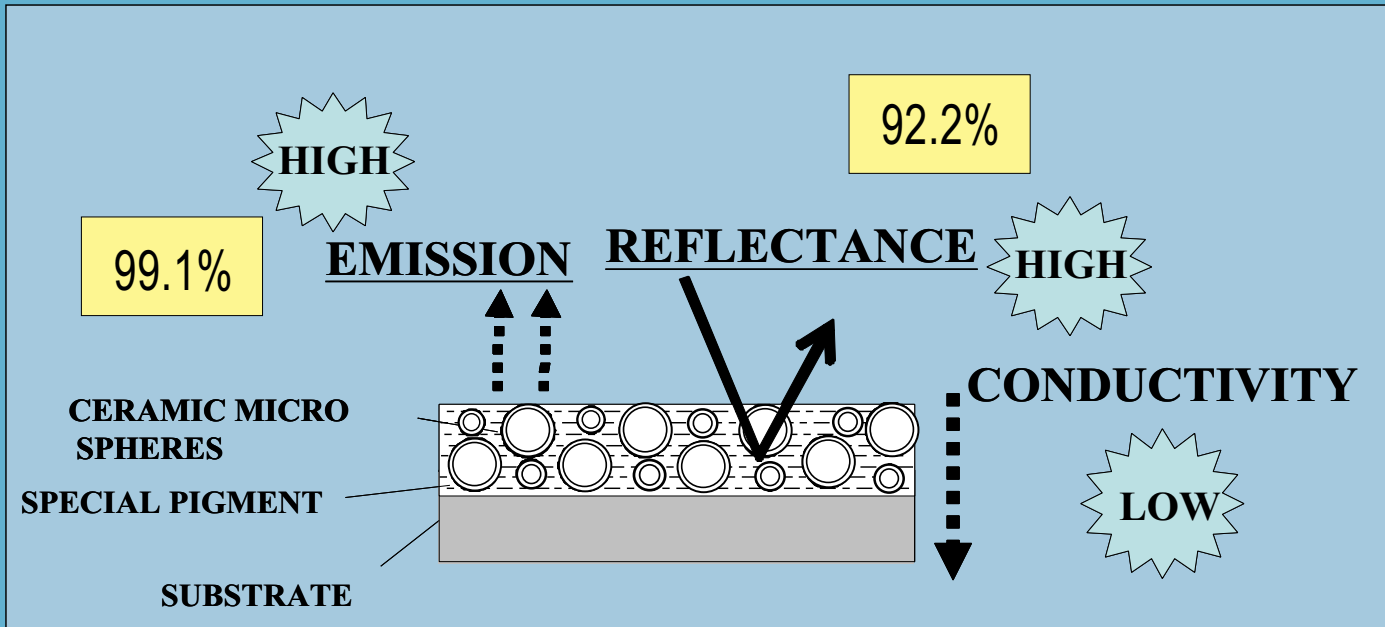
**High Reflective Coating**

MIRACOOOL CO., LTD.

TOKYO, JAPAN

URL <http://www.miracool.jp>

**MIRACOOOL CAN REDUCE SURFACE TEMPERATURE OF BUILDINGS AND FACILITIES THAT ARE EXPOSED TO SOLAR RADIATION.**



**Sectional view of dry film of MIRACOOOL 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. MIRACOOOL 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.

We have a vast of experiences and job records with regard to High Reflective Coating i.e. MIRACOOOL Series in Japan. Now, we are very pleased to introduce MIRACOOOL to other countries.

**BENEFITS**

**Reduction of surface temperature**

Reduce cooling load and cost of air-conditioning system up to 40 % in hot seasons. In a room without air-conditioning system, the room temperature can be dropped up to 10 degree C. That helps working environment and quality control of goods stored.

**Protection of surface material**

Extend the life of existing roofing materials.

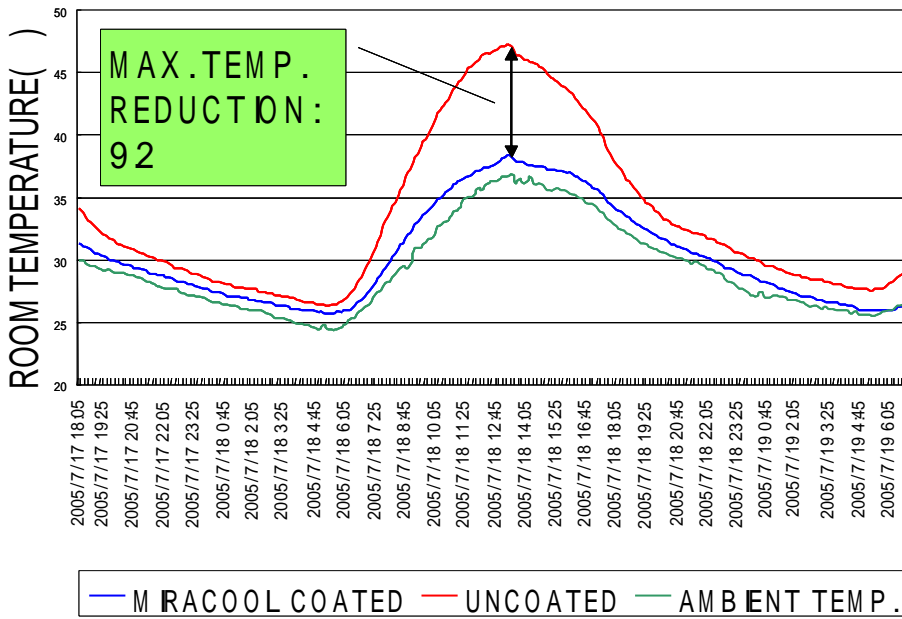
**Reduction of thermal shock**

Reduce heat expansion of roofing materials that may cause loud sound.

**Extraordinary weathering resistance**

Reduce the maintenance cost of the buildings.

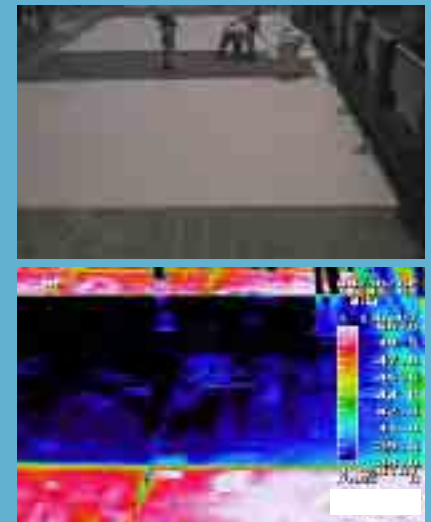
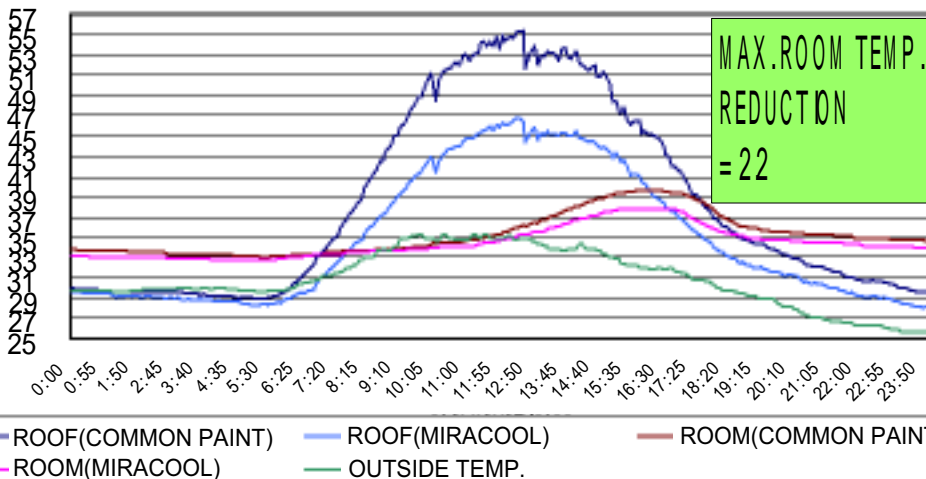
## FIELD RECORD OF ROOM TEMPERATURE IN TWO WAREHOUSES. (STEEL ROOF)



There are two steel roofed warehouses located nearby. One is coated with MIRACOOOL on the roof and the other is uncoated. Room temperature of coated one is only a few degrees higher than the outside air temperature. On the other hand, uncoated warehouse records over 45 , which is hotter than the outside air temperature by 10 as shown in the graph.

MIRACOOOL (COOL WHITE) HAS EXCELLENT CHARACTERISTICS.  
 SOLAR REFLECTANCE: 92.2% EMISSIVITY: 99.1% (JIS R 3106-1998)

## FIELD RECORD OF ROOM TEMPERATURE IN TWO SCHOOL ROOMS. (CONCRETE ROOF)



(JIS R 3106)	SOLAR REFLECTANCE(%)		
	TOTAL SOLAR (300-2500nm)	VISIBLE (300-780nm)	INFRARED (780-2500nm)
MIRACOOOL (GRAY:N6)	58.7	31.6	77.9
COMMON PAINT (GRAY:N6)	26.8	32.0	23.1
SOLAR REFLECTANCE MIRACOOOL AND COMMON PAINT(N6)			

Concrete roof of school rooms are coated with MIRACOOOL and normal paint respectively in the same color, N6 grey color. There are suspended ceiling above the rooms that are a kind of thermal barrier from the concrete roof, but 2.2 temperature difference is recorded between the two rooms in the afternoon time.

# VAST OF JOB RECORDS IN JAPAN AND ASIAN COUNTRIES

## BUILDING ROOFS AND FACILITIES



## OTHER USAGE LIKE PAVEMENTS AND ATHLETIC FIELDS



For the purpose of mitigation of urban heat island phenomena and human thermal comfort, advanced technology of MIRACOOOL is applied on pavements, parks, pedestrians, athletic fields and others in Japan.

DISTRIBUTOR IN A REGION