

# ICE PAINT<sup>®</sup>

Heat Reflecting Insulation Paint

Nano Technology

# Reduce costs with heat insulation paint!

## Paint yourself a more comfortable living space.

Can you imagine the world in the year 2050 that is no longer dependent on oil or fossil fuels for our energy needs ? A reduction of national energy use by a factor of over 50% ? Homes and businesses that have little to no carbon footprint ?

It is estimated that in the next 15 years the building and retrofitting of residential , industrial and commercial construction in a sustainable way will be significant .

One of the key elements in all aspects of sustainability using the whole systems approach to construction and renovation is the use of many different forms of insulation .

It is ever more vital that your living environment respond to changes in the natural world that surrounds it.

Using our new technology, we have created heat insulation paint that keeps you cool in the summer and warm in the winter, making it perfect for customers who want to keep their living arrangements comfortable, or simply want to reduce their Energy costs.

**SAVE THE EARTH  
GO GREEN**



**Let us help you create your ideal living environment.**

# Heat Insulation Mechanism

We are proud of our heat insulation, which demonstrated superior performance when tested and proved effective in Indoor exposure testing (simulated) as well .

## ■ Reduced Energy Consumption

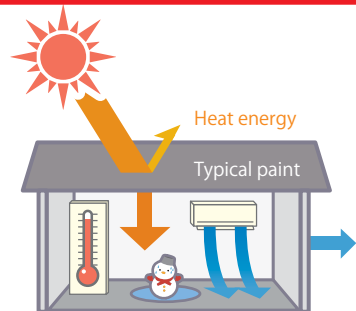
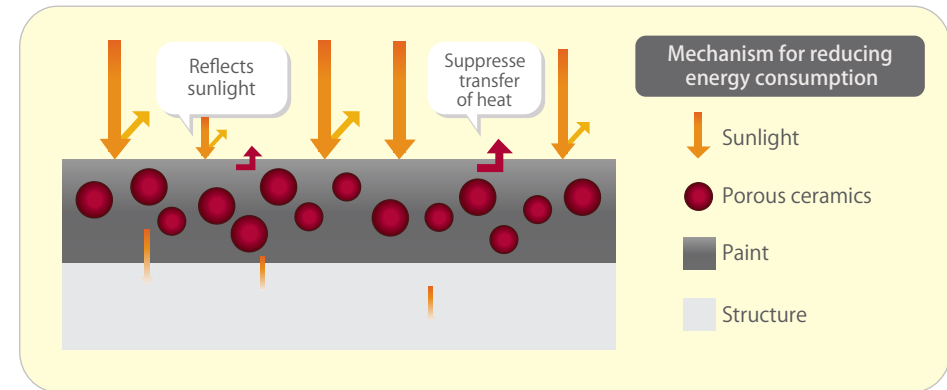
### Special porous ceramics effect #1

Heat insulation effectively reflects sunlight

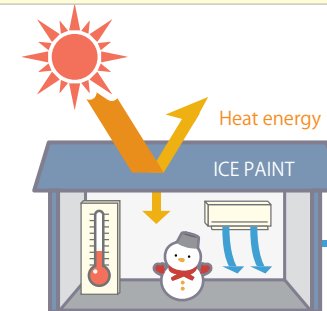
### Special porous ceramics effect #2

Heat insulation suppresses heat transfer between inside and outside

Increases cooling efficiency in summer and heating efficiency in winter



Heat is transmitted inside and cool air from air-conditioning escapes outside



Suppresses increases in temperature while keeping cool air-conditioned air inside

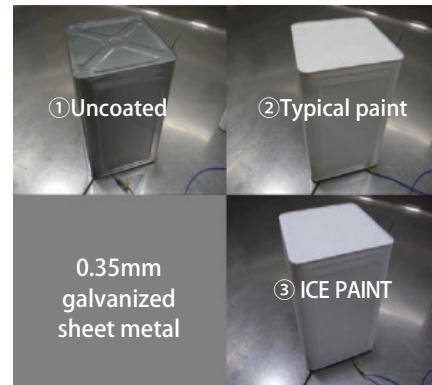
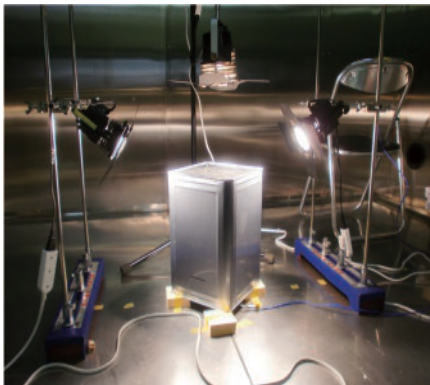
### Key Point

The paint acts as a barrier that keeps pressure from being applied to the special porous ceramics, making them durable despite their porosity.

# Heat Insulation Performance Test

## ■ Lighting Radiation Heat Test

Framework: 18 L steel can, temperature rise measured in the center of the base of the framework  
Heat source: 2 to 3 500W floodlights



Average temperature difference of the center of the test piece vs uncoated test piece

Test environment (set)	Floodlights	Temperature difference vs uncoated test piece (°C)		
		Uncoated	Typical paint	ICE PAINT
Ambient temperature 35°C	2	0.0	- 2.2	- 5.0
	3	0.0	- 2.6	- 5.9
Ambient temperature 10°C	3	0.0	- 3.0	- 5.8

Performance is comparable to competitors thermal insulation paint.

### Conclusion

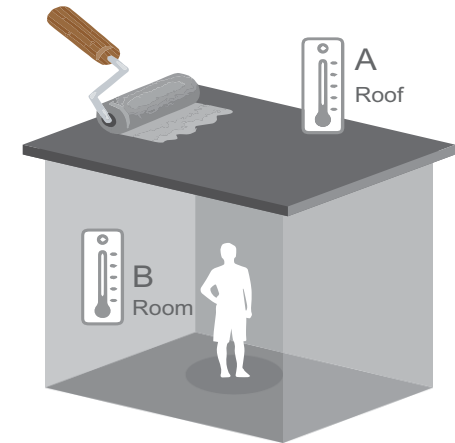
Thermal shielding was proportional to rise in temperature increase was suppressed compared to both the uncoated test piece and the test piece painted with typical paint.

# Sun Light Test

Pictures during painting work



Perform the test of temperature change situation by general residence before painting and after painting



Temperature measurement position

Painted



Point A < Roof outside >

Before temperature



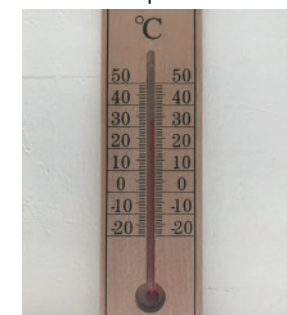
After temperature



56.8°C  $\xrightarrow{-17.2^{\circ}\text{C}}$  39.6°C

Point B < Room >

After temperature



36  $\xrightarrow{-4.6^{\circ}\text{C}}$  31.4°C

# Performance and Application

This water-based paint provides heat and thermal insulation, prevents condensation and mold, and also blocks UV rays.

## Environmentally friendly water-based paint

Heat insulation is composed of special inorganic acrylic and emulsion polymer fillers.

This formaldehyde-free, environmentally friendly water-based paint poses absolutely no danger to the human body.

## Impact resistance

This strong, flexible coating resists fine cracks and structural breakage caused by physical impact.

## Storage stability

Easy for anyone to work with and apply—can be sprayed on or smoothly coated using a roller or brush.

May be stored for up to six months from date of manufacture (indoors, 5 to 35°C).

## Light-reflective and incombustible material

Reliably reflects UV rays and energy emitted by the sun.

This water-based paint is comprised of incombustible, heat-resistant and highly dependable materials.

## Applications

Anywhere where thermal resistance is needed, Interior and Exterior walls and roofs in residential apartments and schools, factories, warehouses, governmental and companies offices, railway and refrigerated transport.

Perfect for all kinds industrial facilities, water and Fuel Tank and Reservoirs and even ships.

# Surface Treatment

## Surface Treatment

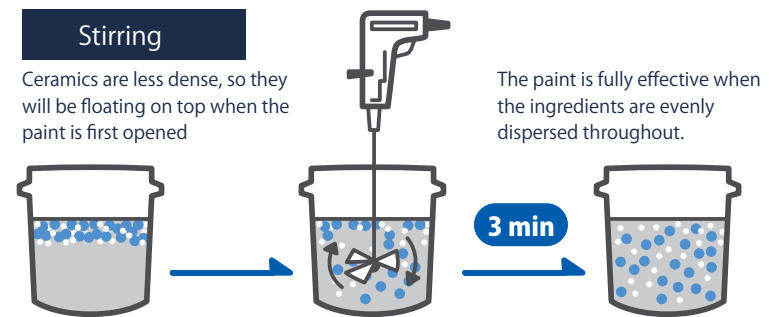
Remove foreign matter, oil, rust and other contaminants on the surface to be painted. Surface treatment is performed depending on the material as follows.

<b>Concrete</b>	<ol style="list-style-type: none"> <li>1. New concrete surfaces must be fully cured. Remove laitance with a wire brush or polisher. Once the surface to be painted is ready, first coat with a water-based acrylic binder (primer).</li> <li>2. If you are repainting, in addition to foreign matter, make sure that any mold has been completely removed</li> </ol>
<b>Slate</b>	<ol style="list-style-type: none"> <li>1. Use a high-pressure washer to remove all contaminates, then allow to dry for 24 hours. Repair any deteriorated material before applying paint.</li> <li>2. Affixing pins are recommended to ensure breathability and durability when reapplying paint to level slate roofing.</li> </ol>
<b>Iron</b>	<ol style="list-style-type: none"> <li>1. Use a power tool or scraper to remove any rust.</li> <li>2. Apply a first coat of rust-proof epoxy binder (primer) and allow it to cure completely before painting.</li> </ol>
<b>Galvanized sheet metal</b>	<ol style="list-style-type: none"> <li>1. Applying a coat of metal pretreatment (etching primer) or acid treatment is effective for new sheet metal.</li> <li>2. Old sheet metal must be washed with water, sanded and dried before paint is applied.</li> </ol> <p>*Galvanized sheet metal exposed to outdoor conditions may exhibit varying adhesive performance depending on deterioration.</p>

# Applying Paint

## Dilution and Stirring

1. Before applying paint, use an electric mixer to stir thoroughly for at least three minutes. Next, dilute with tap water as required by the application method to improve application efficiency. For brushes and rollers: 1.5L/barrel, for spray: no more than 3L.
2. Dilute the paint little by little to ensure that too much water is not added. Winged stirring rods are recommended for mixing—do not use wooden rods, etc.



### Dilution Reference

Brush

0 to 10%

Roller

0 to 10%

Spray gun

10 to 20%

## Application

1. Apply paint in several single, thin layers (at least 2 to 3 times). Multiple layers improve insulation performance. See the ICE PAINT technical data and specifications for details.
2. Remove all filters before application with an air-less spray gun, as filters will interfere with paint particles. Make sure to fully rinse the gun before use to ensure any remaining particles are removed.
3. When using a roller, short brushes are recommended. Recessed areas, seams, etc., should be first painted by hand.
4. Avoid application in rainy weather or on humid (85% humidity or more) or cold (5 degrees or less) days, as these environments may impair the paint's original effectiveness.
5. Use paint immediately after opening, as paint may deteriorate due to external contaminants once opened.



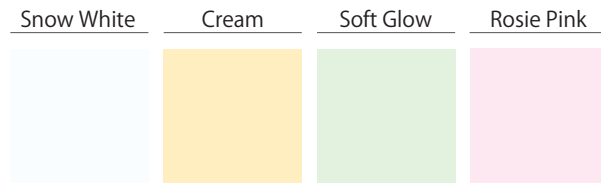
# Test Report

Falling-weight(Dupon method)	No abnormality.
Cupping	No cracking and peeling at depth of indentation 8.0mm
Adhesion(Cross cut)	Classification 0
Alkali resistance No abnormality. 24hours	No abnormality.
Acid resistance No abnormality. 24hours	No abnormality.
The effect of heat 1 hour	Temperature:150°C
	Color difference : (Rating 2) *1 No cracking, blister. peeling and loss decrease.
	Temperature:200°C
	Color difference : (Rating 2) *1 No cracking, blister. peeling and loss decrease.
Resistance to neutral spray 96hours	No abnormality.
Accelerated weathering 1000 hours	No abnormality.
Accelerated weathering 2000 hours	No abnormality.
Reflectance solar at 0hour, 1000 hours (The near-infrared region)	0hour : 90
	1000 hours : 88.5
Reflectance solar at 2000 hours (The near-infrared region)	87.4
Low temperature flexibility (-20 °C )	No abnormality.
Permeability test	0.3ml
Elongation at max. stress	180%

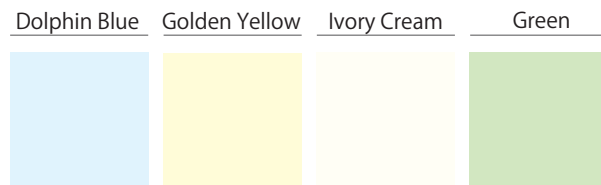
\*1 JIS K 5600-4-3:1999 Visual comparison of the color of paints Annex B (normative) Color difference rating scheme  
Table B. 1 Rating scheme for components of color difference by visual assessment

# Specifications

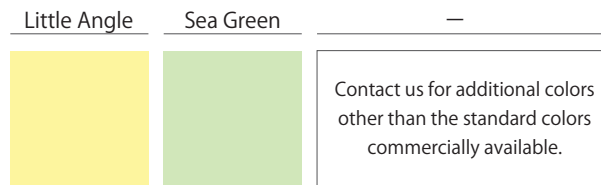
## COLOUR CHART FOR COOL WRAP™



Solar Reflectivity :  
 90%      82.1%      80%      80%



Solar Reflectivity :  
 80%      80%      80%      80%



Solar Reflectivity :  
 80%      80%

## Technical Data

Information	<b>Base color</b>	White and light color (order)			
	<b>Painted surface</b>	matte			
	<b>Mixing ratio</b>	—			
	<b>Theoretical coverage</b>	~0.50 kg/m <sup>2</sup> ( 2 coats of paint )			
	<b>Flash point</b>	—			
	<b>Drying time</b>	5°C	10°C	20°C	30°C
	— Surface dry	1hr	45mins	30mins	20mins
	— Hard dry	6hrs	4.5hrs	3hrs	2hrs
	<b>Overcoat interval</b>				
	— Min	6hrs	4hrs	3hrs	1hrs
Application	<b>Precending coats</b>	Depending on the material.			
	<b>Number of coats</b>	2 or more times			
	<b>Method of dilution</b>	Water			
	<b>Method of dilution ratio</b>	Airless spray - max.15% by volume , Roller or Brush - max.10% by volume			
	<b>Method of application</b>	Airless spray Roller Brush			
	<b>Application condition</b>				
	— Relative humidity	Max.85%			
	— Substrate temperature	Min.5°C (at least 3°C above the dew point )			
	— Atmosphere temperature	5~35°C			
	<b>Airless spray</b>				
— Nozzle orifice	0.023 ~ 0.030 inch				
— Nozzle pressure	2,000 ~ 3,500 psi				
Packaging &Storage	<b>Packaging</b>	16.2 Liter			
	<b>Shelf lif</b>	12 months at 5 to 35°C			
		Store in dry,shaded conditions away from source of heat and ignition.			

# Save Money

Save Energy

Save the Planet





[www.dasco.co](http://www.dasco.co)

Version.2023