

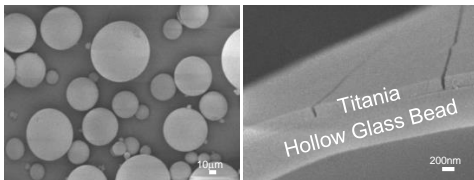
## NIPO THERMOSHIELD+ Thermal Silica Coating

### DESCRIPTION

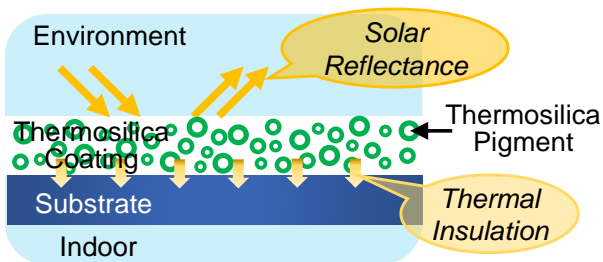
*Nipo ThermoShield+* is designed through the state-of-the-art technology for excellent solar reflectance, thermal insulation and waterproofing properties.

### Solar Reflectance

Unlike the common Hollow Glass or Ceramic Bead technology, the unique technology incorporates the synergetic effect of solar reflectance and thermal insulation of the pigment.



This brings with it, excellent results in Total Solar Reflectance (TSR) Index in order to reduce surface temperature of buildings.



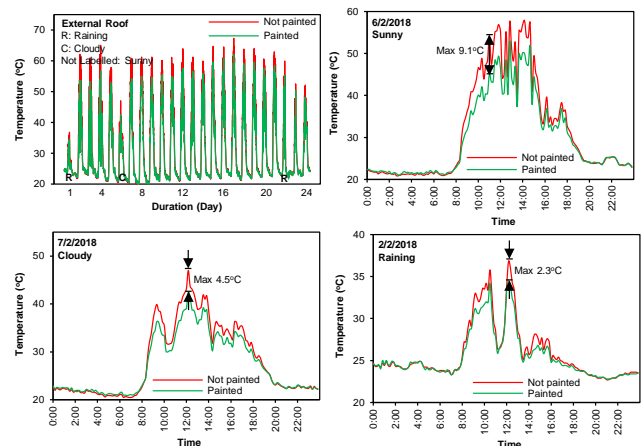
### RECOMMENDED USES

- Old and new concrete or metal roofs
- Refurbishment of old roofs
- Roof tiles
- Vertical (concrete/brick) wall

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### 24-DAY ACTUAL DATA LOGGED



These charts above showed actual temperature variation over a 24- day period :

- On a sunny day, it is observed that the temperature between a *Nipo ThermoShield+* coated and non-Nipo coated external roof experiences a 5°C to up to 12°C variance

An actual Field Record at beta-site showed 13.1°C difference

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Dated July 2020

The higher the exterior temperature, the better the effect

Please refer observations below

- The effect is most significant on hotter days
- It may increase the life guarantee of roof system
- Potentially, it reduces electricity consumption

As a waterproofing coating, *Nipo ThermoShield+* offers :

- UV resistance and good waterproofing properties
- Excellent adhesive strength to prevent peeling
- Excellent elongation to conceal hairline cracks
- A good sealant to fill building cracks

## APPLICATION

### Surface Preparation

Ensure surface is clean from dust, oil, rust, grease, loose materials, moss etc. Surface should be dry for homogeneous material quality.

New concrete must be cured for at least 28 days.

Where required, treat all expansion joints, pipe joints and down pipes with *NipoClad Putty*.

Protect the *NipoClad Putty* from rain and water when wet.

*Nipo ThermoShield+* can be applied using brush, roller or sprayed.

POLYURETHANE MATERIALS ARE **NOT** COMPATIBLE WITH THIS PRODUCT.

### Priming

Prime the surface with *NipoClad Primer*.

Where substrate is old and porous, prime twice.

### Coating

Once the priming coat is dry, apply the 3 neat coats of *Nipo ThermoShield+*; each coat at right angle to the previous coat.

Allow *Nipo ThermoShield+* to dry for 1 to 2 hours in between coats.

Protect from rain and frost until cured. Materials will be washed off when not fully cured.

### COVERAGE

- For vertical surface, the coverage is about 0.3 to 0.5kg/m<sup>2</sup> per coat
- For roof (metal/concrete/tile), the coverage is about 0.5 to 0.8kg/m<sup>2</sup> per coat
- For best result, a minimum of 3 coats will be required

### PACKING

*Nipo ThermoShield+* comes in approx. 19kg (20L) pail.

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## NOTES

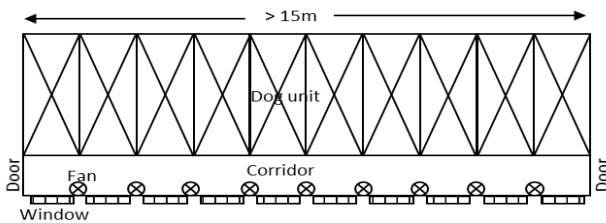
Actual Measurement may vary due to the condition of the substrate. This information is only a guide.

Special *PASTEL* Colours are available on demand.

## 1 DAY OBSERVATION ACTUAL FIELD RESULTS AT A SINGAPORE TRIAL SITE

### Schematic illustration of building structure and the weather conditions for that day :

- Size: L>15m, W~4m, H~3m (rough estimate)
- Flat metal roof coated with cool paint
- Open space: 2 doors & many windows (all open)
- Many electric fans
- Temperature testing site: External roof
- Date: Nov 9, 2017 & Time: 10am-12pm
  - Address: Dog Unit, Singapore
  - Temperature: 32 °C (Sunny)
  - Feel like: 38 °C
  - UV Index: 10
  - Wind: NW 3 km/hr
  - Humidity: 66%



## TYPICAL PROPERTIES

Appearance	White
Thermosilica Pigment	55µm particle size, averages
Titania Content	Approx 20% by weight
Total Solar Reflectance	Approx 85%
Elongation	Approx 500%
Total Solid Content	Approx 55%
UV Exposure	Good
Water Penetration, Average	Zero mm. No water penetration
Drying Time	Approx 1 hour to dry Approx 24 hours to cure
Feel : By Touch	Slightly Tacky when cured

Other Paint	ThermoShield PLUS Coated	Cooling Performance (°C)
64.9 ± 1.7	51.8 ± 1.3	<b>Δ 13.1</b>

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