

RECOMMENDED END USES

Yieh Phui (China) ColorCool pre-painted steel sheets are suitable for roofing and siding applications in light industrial, residential, suburban and agricultural areas. They can be used in the manufacture of the storerooms and garages that require thermal insulation.

As for heavy industrial or chemical industrial areas, Yieh Phui (China) ColorCool CCVF-20/CCVF-20F/CCVF-20L is recommended. For more information, please contact Yieh Phui (China) or Yieh Phui (China)'s distributor.

ADVERSE CONDITION

Generally speaking, reflection factors depend on the colors. Compared with dark colored steel sheets, lighter colored steel sheets reflect more heat and contribute more cool effects. If you have any further questions regarding Yieh Phui (China) ColorCool

such as specifications, installation location or color selection rather than Yieh Phui (China) ColorCool standard colors, please contact Yieh Phui (China) or Yieh Phui (China)'s distributor.

STANDARD SPECIFICATION

The selections of product specification are Yieh Phui (China) ColorCool CCPE-20/CCSP-20/CCVF-20, ColorCool CCPE-20F/CCSP-20F/CCVF-20F or ColorCool CCPE-20L/CCSP-20L/CCVF-20L; the selections of coating are Polyester PE, Silicone Modified Polyester SMP or Fluorocarbon PVDF, and substrates are hot-dip zinc, 5% Al-Zn alloy and 55% Al-Zn alloy coated steel sheets respectively. For more information about those above-mentioned paints, please refer to Yieh Phui (China)'s PE, SMP and PVDF product catalogues respectively.



Color	COUNTY RED 31U1	REED YELLOW 2326	MOSS GREEN 2414	LIGHT BLUE 35E4	BLUE 7500	CHARCOAL 29Q7	ASH GREY 390C	POLAR WHITE 28LO	LIGHT BEIGE 33H1
TSR(%)	≥ 30%	≥ 61%	≥ 41%	≥ 27%	≥ 28%	≥ 28%	≥ 45%	≥ 60%	≥ 58%
Cool effects	-3.6°C	-2.2°C	-3.0°C	-4.0°C	-3.8°C	-5.0°C	-2.5°C	-1.0°C	-1.5°C

Other colors are available subject to inquiry.



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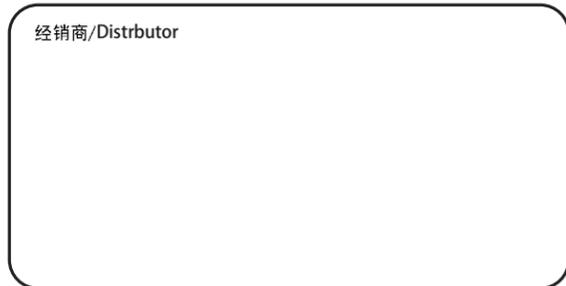
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经销商/Distributor



Yieh Phui (China) ColorCool
Pre-painted Steel Sheets

We Have Only One Earth



ColorCool CCPE-20/CCSP-20/CCVF-20

ColorCool CCPE-20F/CCSP-20F/CCVF-20F

ColorCool CCPE-20L/CCSP-20L/CCVF-20L

Yieh Phui (China) ColorCool Pre-painted Steel Sheets



ISO 9001
Registered Firm



QC 080000
IECQ HSPM
Registered Firm



ISO 14001
Registered Firm



OHSAS
18001
Registered Firm



DESCRIPTION

Yieh Phui ColorCool CCPE-20/CCSP-20/CCVF-20, CCPE-20F/CCSP-20F/CCVF-20F, CCPE-20L/CCSP-20L/CCVF-20L pre-painted steel sheets all use a 2 coat 2 bake system (2C2B) with solar reflective pigments infused into topcoats such as Polyester(PE), Silicone Modified Polyester (SP) and Fluorocarbon (VF) respectively. 20 means dry film thickness of topcoats mentioned above. As for the substrates, except for hot-dip zinc coated steel sheets, a letter suffix F or L following the number 20 refer to 5% Al-Zn alloy and 55% Al-Zn alloy coated steel sheets respectively. With high solar reflectance and high thermal emittance, Yieh Phui (China) ColorCool products can reduce the heat transfer to interior and lower air-conditioning expense.

Yieh Phui (China) ColorCool PERFORMANCE

Traditional roofing and siding absorb more solar energy (infrared and visible light) on steel surface, which increases interior temperature and reduces indoor comfort. In order to reduce interior temperature and improve comfort levels, energy demand raises resulting in soaring air-conditioning expense and greenhouse effect. The effects are move severe in the topics and subtropical zones. Due to continued high-energy price and increased demand for energy saving, Yieh Phui (China) developed ColorCool products with a surface coating infused

with inorganic solar reflective pigments. By reflecting infrared and visible light, Yieh Phui (China) ColorCool products achieve cool effects.

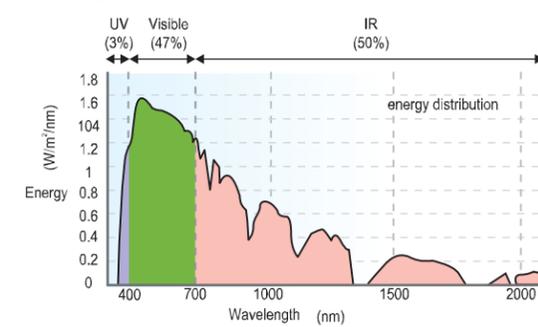
Yieh Phui (China) ColorCool EFFECT

- High TSR (TSR, total solar reflectance)- Yieh Phui (China) ColorCool products have an average total solar reflectance of 0.25 or more. Different colors have different TSR parameter. For more information, please see Yieh Phui (China) ColorCool standard colors on the back cover.
- Indoor temperature reduction (ΔT) - Cooling efficiency of Yieh Phui (China) ColorCool pre-painted steel sheets compared with conventional coated steel sheets are show below :

Item	Yieh Phui (China) ColorCool	Conventional PE/SMP/PVDF coatings
Cool effects (by colors)	Cool down (1-5°C)	No cool effects
TSR (%)	Initial reflectance	≥25%
	3 years later	≥20%

Remarks:
(a) Lighter color sheets will reflect more sunlight and contribute more cool effects.
(b) The compared results are evaluated on the model house under Lab-controlled-conditions.

Energy Distribution of Sun Radiation

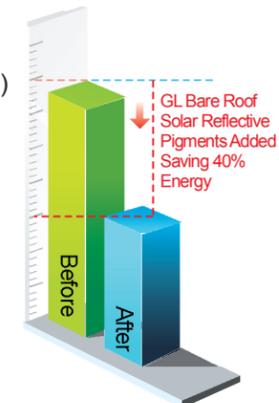


IR (Infrared, >700nm): 50% of energy
Visible (Visible Light, 400~700nm): 47% of energy
UV (Ultraviolet, <400nm): 3% of energy



Actual Achievement

Example1: Energy cost reduction
Roof Material : GL (hot-dip 55% Al-Zn coated steel sheet)
Size : 6,200m²
Coating : Polyurethane (solar reflective pigments added)
Air Conditioning : 5 → 3sets
Expected Result :
Electric Power Saving : 31,000Kw
Energy Costs Saving : ¥ 550,000
CO₂ Emission Reducing : 11 tons (From May to September)



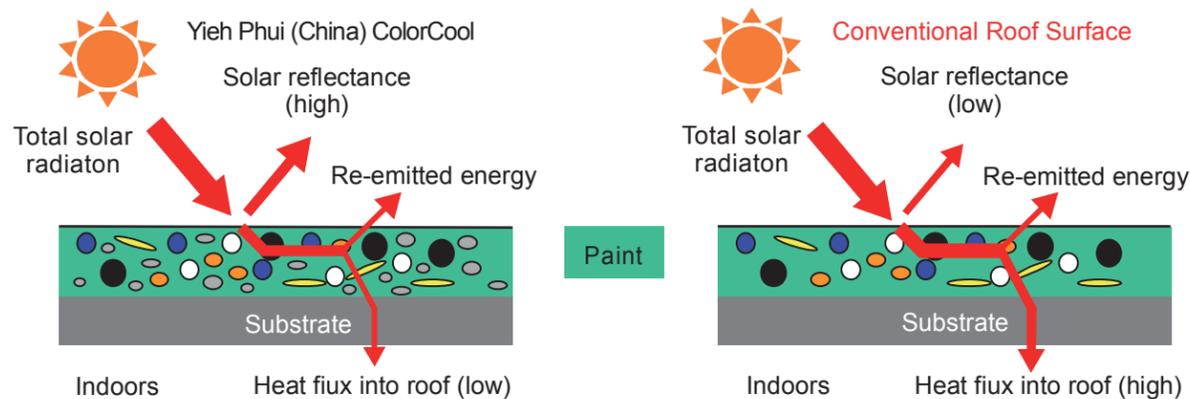
Example 2 :
Good thermal insulation results in energy savings. It saves about JP ¥ 16 million for a period of 10 years.

Temperature comparison:

Site / Measurement Spots	Without Solar Reflective Pigments		With Solar Reflective Pigments	
	2003Summer		2004Summer	
	Max. °C	Above 30°C	Max. °C	Above 30°C
Warehouse A --- Southeast	33.4 (°C)	48hrs	28.6 (°C)	0hrs
Warehouse A --- Southwest	32.7 (°C)	44hrs	28.2 (°C)	0hrs
Warehouse A --- Northeast	33.4 (°C)	52hrs	29.4 (°C)	0hrs
Warehouse A --- Northwest	32.8 (°C)	43hrs	29.4 (°C)	0hrs
Warehouse B --- North	34.1 (°C)	166hrs	30.2 (°C)	1hrs
Warehouse B --- South	30.6 (°C)	11hrs	29.5 (°C)	0hrs
Average	31.8 (°C)		29.2 (°C)	

(The data of actual achievements are provided by Nippon Paint)

FOUNCTION OF Yieh Phui (China) ColorCool



Thermal Insulation Experiment

Conditions: 1. Apparatus: 150W prefocus lamp
2. Initial Temperature: room temperature (25°C-30°C)
3. Test Period: 30 min



(Nippon Paint's Simulation Test)

Test Result

Anthracitic Black	Conventional	Thermal Insulation
Roof backside temperature(°C)	80 (°C)	76 (°C)
Indoor temperature (°C)	56 (°C)	53 (°C)

Moss Green	Conventional	Thermal Insulation
Roof backside temperature (°C)	84 (°C)	80 (°C)
Indoor temperature(°C)	58 (°C)	54 (°C)