PASTECOOL™

Passive Cooling Paint System

PasteCool® Coolcoat Roof Elastic Acrylic Radiative Cooling Top Coat

Product Overview

PasteCool® Coolcoat Roof Elastic Acrylic Radiative Cooling Top coating is an innovativefunctional coating developed based on advanced materials science and thermal radiation principles. Without requiring additional electricity or refrigerants, its unique material structure and optical properties allow it to efficiently reflect sunlight while radiating surface heat as infrared energy into the cold outer space. This enables highly effective cooling and provides energy-saving, environmentally friendly temperature control solutions for buildings, industrial facilities, and cold chain transportation, among other applications.

Product Features

1. High Cooling Efficiency: Significantly reduces surface temperature, with surface temperatures 3~8 ℃ below ambient in summer.
2. Energy Saving and Environmentally Friendly: No electricity consumption, reduces greenhouse gas emissions, aligns with global low-carbon development.
3. Excellent Weather Resistance: UV-resistant, excellent anti-yellowing properties, maintains cooling effect for over 10 years outdoors.
4. Good Crack Resistance: Offers strong anti-cracking and crack-prevention properties.
5. Easy Application: Can be applied by brushing, spraying, or rolling.

Scope of Application

When used in combination with PasteCool® Coolcoat radiative cooling topcoat and PasteCool® Protector cooling topcoat varnish or water-based fluorosilicone waterproofing agent, it is widely applicable in energy-saving applications such as building energy efficiency, communication data centers, grain storage, petrochemical storage tanks, power equipment, cold chain logistics, and new energy sectors where cooling and energy efficiency are required. It is particularly suitable for building rooftop surfaces.

Technical Parameters

Parameter	**Standard Requirement**	**Product Performance**
Solar Reflectance	T/CECS 10378-2024 ≥0.92	~0.95
Atmospheric Window Emissivity	T/CECS 10378-2024 ≥0.92	~0.95
Net Radiative Cooling Power	QB/T 5970-2023 ≥ 20 W/m^2	97 W/m^2

Application Guidelines

1. Substrate Preparation: Remove surface dust, oil, and loose materials. Rinse with water and allow to dry naturally. Repair cracks and holes with cement mortar, then sand the surface to achieve a rough texture.
2. Application Methods: Application Methods: Rolling, brushing, or airless spraying. Stir thoroughly before application.
3. Coating System and Number of Coats

Coating Step	Coating Name	Number of Coats	Paint Consumption

			(m²/KG per coat)
Sealer (Optional)	PasteCool® SP-01	0/1 (Optional)	8-10
Primer	PasteCool® Coolguard Roof	2	6-8
Topcoat	PasteCool® Coolcoat Roof	1-2	5-7
Clear Coating (Optional)	PasteCool® Protector	0/1(Optional)	16-20

Note: The topcoat varnish can be chosen as either film-forming or non-film-forming. The film-forming type offers better anti-fouling properties, while the non-film-forming type provides better anti-yellowing performance.

4. Cleaning: Clean all tools with water immediately after pauses or completion of coating.
5. Application Conditions: Avoid application in humid or cold weather (temperature below 5 ℃ or above 35 ℃, relative humidity above 85%), as it may affect the coating performance.
6. Recoat Interval: The recoat interval must be strictly controlled. Apply the next coat only after the previous layer has reached the specified recoat time. Applying the next coat too early may lead to issues such as slow drying, wrinkling, blistering, poor water resistance, and weak adhesion.

Precautions

Wear protective gloves, masks, and goggles during application. Avoid skin and eye contact. In case of contact, rinse immediately with plenty of water and seek medical attention if necessary.

Packaging and Storage

Available in 10 L and 18 L containers. Store in a cool, dry, and well-ventilated place at 5~35 ℃, away from direct sunlight and freezing temperatures. Seal tightly to prevent moisture loss. Shelf life: 12 months from the production date.