

Product Name

产品名称

SMT -MF01 Passive Radiative Cooling Coating
SMT- MF01 无电制冷涂料

Description

描述

SMT-MF01 Passive Radiative Cooling Coating is a functional coating that achieves cooling through a triple mechanism of "reflection + radiation + barrier." The main raw material is silane-modified polyether resin. By using highly visible and near-infrared reflective pigments, the coating achieves >90% reflectivity for solar radiation in the 300-2500 nm band, and rapidly radiates heat through the 8-13 μm "atmospheric window" band, reducing the substrate surface temperature by 15-30°C. After curing, the surface can be painted or coated.

This product is indicated for:

- Exterior walls and roofs of new, expanded, and renovated public buildings, residential buildings, and industrial buildings;
- Suitable for substrates such as concrete, cement mortar, external insulation protective layers, and metal profiled sheets;
- Energy-saving renovation projects in hot summer & cold winter, hot-summer & warm-winter, and mild climate zones.

SMT-MF01无电制冷涂料是一种以“反射+辐射+阻隔”三重机制实现降温的功能性涂料。主要原料为硅烷改性聚醚树脂，它通过选用高可见光与近红外反射颜填料。涂层可对300-2500 nm 波段太阳辐射实现 > 90 %反射率，并通过8-13 μm “大气窗口”波段快速辐射散热，降低基层表面温度15-30°C,固化后表面具有可涂饰性。

本品适用于：

- 新建、扩建、改建的公共建筑、居住建筑、工业建筑外墙及屋面；
- 适用于混凝土、水泥砂浆、外保温防护层、金属压型板等基层；
- 夏热冬冷、夏热冬暖及温和地区节能改造工程。

Properties

产品特点

- High reflectivity: solar reflectance ≥ 0.9 ;
- Excellent weather resistance: no chalking or peeling after 2745 hours of artificial aging, suitable for long-term outdoor exposure;
- Low VOC: silane-modified polyether system, VOC ≤ 50 g/L;
- Recoatability: the cured surface is receptive to topcoats and allows further painting.
- 高反射: 太阳反射比 ≥ 0.9 ;
- 强耐候: 人工老化 2745h无粉化、无剥落, 可长期暴露在户外环境;
- 低VOC: 硅烷改性聚醚体系, VOC ≤ 50 g/L;
- 可涂饰性: 固化后表面具有可涂饰性, 可以在表面刷漆。

Applications

产品应用

Before application:

- Compatibility tests between the coating and adjacent materials, as well as adhesion tests to the substrate to be bonded, shall be conducted prior to construction.

Construction Method:

- Clean the substrate surface to ensure it is solid, free of looseness, dust, sand, grease and other contaminants.
- The product shall be applied as received in its finished state; dilution with solvents is not recommended. If sedimentation occurs in the package, stir gently before use.
- Before curing, the material may be cleaned by alternating wiping with solvent and dry rags. Once cured, it can be removed by scraping with a blade, or scrubbed with steel wool, synthetic abrasive pads and solvent.
- To minimize overspray, avoid spraying in windy conditions to prevent material drift. Take care not to overspray onto adjacent building materials, vehicles, vegetation and other objects. Non-applied surfaces shall be masked or covered.
- The coating is recommended to be applied by spraying or rolling to ensure uniform film formation and complete coverage; both application methods may be used within the same coat. If applied in multiple coats, allow sufficient time between coats for curing before applying additional layers. The final cured film shall be free of voids, pinholes, cracks or air bubbles.

施工前:

- 施工前应进行涂料与所接触材料的相容性试验和与待粘结基材的粘结性试验。

施工方法:

- 清理基材表面, 确保坚实无松动、无浮尘、无砂灰、无油污以及其他异物;
- 应以收货时成品状态进行施涂, 不建议用溶剂稀释。如果包装中出现沉淀, 在使用前轻轻搅拌;
- 在固化前可以用溶剂和干抹布交替擦拭进行清理。固化后的材料可以用刀片从表面刮除, 或者用钢丝绒、合成材料研磨垫和溶剂擦洗清除;
- 为了减少过度喷涂, 尽可能避免在有风环境喷涂以免出现涂料位移。应注意避免过度喷涂到邻近的建筑材料、车辆、植物等物体上面。非施涂表面应进行遮盖或覆盖;
- 涂料建议采用喷涂或辊涂, 以确保均匀成膜和彻底覆盖, 两种施涂方式可在同一层中使用。如果分多层涂覆, 在涂覆额外涂层之前, 每层之间应留出足够的时间使涂层固化。最终固化的膜层必须没有空隙、针孔、裂缝或气泡。

Storage

存储要求

This product is non-hazardous. Store in cool and dry place below 10-27°C. Shelf life: 12 months. Use as soon as possible.

本产品属于非危险品，储存于温度在10-27℃以下的阴凉干燥处，有效期为12个月，建议尽早使用。

Note

注意事项

- Use the product within shelf life; expired goods are prohibited.
- Construct strictly in accordance with adhesion test procedures.
- Avoid direct contact with skin and eyes. Do not ingest.
- Keep away from children and store out of their reach.
- Not suitable for poorly ventilated areas, as the sealant cures by absorbing moisture from the air.
- Application is not recommended when the substrate surface temperature is below 5°C or above 40°C.
- Not suitable for surfaces covered with frost or standing water.
- When bonding to cement or concrete substrates, ensure the substrate is fully dry and cured for 7 days before application; otherwise, adhesion performance will be affected.
- Not suitable for materials that may exude oils, plasticizers or solvents, such as oil-impregnated wood.
- 应在产品保质期内使用，过期产品不得使用。
- 应严格按照粘结性试验的流程施工。
- 避免皮肤和眼睛直接接触，请勿吞食。
- 避免小孩接触。请放置于儿童接触不到的地方。
- 不宜用于密不通风的场所，因为密封胶需吸收空气中的水分固化。
- 材料表面温度低于5℃或超过40℃时，不宜施工。
- 不宜用于结霜或有明水的表面。
- 粘接水泥、混凝土基材时必须待基材完全干燥并养护7天后方可施工，否则会影响粘接性能。
- 不宜用于所有会渗出油脂、增塑剂或溶剂的材料，如浸油木材的。

Shelf life & Instruction

使用寿命和说明

Shelf life: 12 months

保质期：12 个月

These instructions are only recommendations, which are based on our experience. We advise preliminary testing before use.

这些说明只是基于我们的经验的建议。我们建议在使用前进行初步测试。

Packaging Specification

包装规格

This product is conventionally available in white. Custom colors are available. The product is packaged in 6L pails or according to customer requirements.

本产品常规颜色为白色，可调制，产品采用 6L 桶包装或根据客户实际需求。

Technical Data Sheet (Condition: 23°C, 55%RH)

技术参数表 (条件: 23°C, 55%RH)

Test Item	Technical Requirement	Typical data	Test Method
Appearance	Uniform semi-fluid paste	Uniform semi-fluid paste	Visual inspection
Density, g/cm ³	1.56±0.03	1.56	GB/T 13477.2
Viscosity, mPa·s	10000-20000	15000	GB/T 22235-2008
Operating Temperature, °C	—	-40~90	Company Standards
Skin-over time, min	30-60	40	GB/T 13477.5
Tensile strength, MPa	≥1.2	1.2	GB/T 528-2009
Elongation at break, %	≥200	210	GB/T 528-2009
Solar direct reflectance, %	≥90	90	T/CBMF 190-2022
Near-infrared emissivity, %	≥95	95	T/CBMF 190-2022
Application rate, kg/(m ² ·mm)	1.5-1.7	1.56	Company Standards

检测项目	技术指标	典型数据	检测标准
外观	均匀半流糊状	均匀半流糊状	目测
密度, g/cm ³	1.56±0.03	1.56	GB/T 13477.2
粘度, mpa.s	10000-20000	15000	GB/T 22235-2008
使用温度, °C	—	-40~90	企标
表干时间, min	30-60	40	GB/T 13477.5
拉伸强度, MPa	≥1.2	1.2	GB/T 528-2009
断裂伸长率, %	≥200	210	GB/T 528-2009
太阳光直接反射比, %	≥90	90	T/CBMF 190-2022
近红外辐射率, %	≥95	95	T/CBMF 190-2022
涂布量, kg/m ² *mm	1.5-1.7	1.56	企标