MANTA

Technical Data Sheet

Version: 1.0

Manta HS140

High-Solids Silicone Waterproofing Roof Coating

Description

Manta HS140 is a single-component, moisture-curing silicone waterproofing coating. Formulated with silicone rubber nano-composite technology, inorganic fillers and functional additives, it cures to form a highly flexible, seamless, and durable elastomeric membrane.

To accommodate various application slopes and detailing needs, HS140 is available in three rheological grades:

Type I: Low Viscosity / Self-Leveling (Ideal for flat horizontal surfaces)

Type II: Medium Viscosity (Standard general-purpose roll/spray grade)

Type III: Thixotropic / Non-Sag (Ideal for vertical walls and complex detailing)

Typical Physical Properties

No.	Inspection Item	Product Type			Testing Basis
		I type	II type	III type	
1	Appearance	Uniform and delicate paste, without bubbles, impurities, crust, lumps, gel, or precipitates that are difficult to disperse.	Uniform and delicate paste, without bubbles, impurities, crust, lumps, gel, or precipitates that are difficult to disperse.	Uniform and delicate paste, without bubbles, impurities, crust, lumps, gel, or precipitates that are difficult to disperse.	GB/T 14683-2017(6.2)
2	Color	Black, white, grey, etc			ISO 4660:2011
3	Surface Drying Time(min), 25°C	30～45	15～45	30～40	GB/T 13477.5-2002
4	Viscosity mPa·s	4000～7000	12000±1000	——	GB/T 2794-2022(7.1)
5	Curing Speed (mm/24h), 25°C	≥2.5	≥2.2	≥2.5	GB/T 29595-2013(5.8)
6	Density(g/ml)	1.20±0.05	1.1±0.1	1.4±0.05	GB/T 13477.2-2018
7	Hardness(Shore A)	30-45	30-45	30-40	GB/T 531.1-2008
8	Tensile Strength(MPa)	≥1.2	≥1.5	≥1.7	GB/T 528-2009 Dumbbell type I sample
9	Tear Strength (N/mm)	≥3.5	≥3.5	≥4.0	GB/T 529-2008

10	Elongation at Break(%)		≥150	≥120	≥400	GB/T 528-2009 Dumbbell type I sample
11	VOC(%)		≤5	≤5	≤5	GB/T 33372-2020
12	Volume Shrinkage(%)		≤5	≤5	≤5	GB/T 13477.19-2017
13	Solar Reflectivity		0.8±0.1	0.8±0.1	0.8±0.1	JG/T 235-2014(6.4)
14	Solar Reflectance after Accelerated Aging(5000h)		≥0.75	≥0.75	≥0.75	JG/T 235-2014(6.7)
15	Initial Thermal Emissivity		0.90±0.05	0.90±0.05	0.90±0.05	JG/T 235-2014(appendix C)
16	Initial SRI Value		95±5	95±5	95±5	ASTM E1980-11(2019)
17	Water Vapour Transmission, g/(m²·d)		≤25.0	≤25.0	≤25.0	ASTM E96/E96M-16 (desiccant method)
18	Peel Adhesion, N/mm	Polyurethane foam	≥2.0	≥2.0	≥2.0	ASTM D903-98(2017)
		Acrylic coating				
		Galvanized metal				
		EPDM (Ethylene Propylene Diene Monomer)				
		Polyvinyl chloride				
19	Low-Temperature Flexibility -50°C, round bar 6mm		No cracking, delamination, or bonding damage	No cracking, delamination, or bonding damage	No cracking, delamination, or bonding damage	GB/T 16777-2008(13)

Application

Manta HS140 is a versatile coating designed for universal compatibility and extreme environmental protection:

1. Roofing & Infrastructure: Ideal for waterproofing and thermal barrier/heat reflection on new and existing roofs, concrete floors, exterior walls, bridges, highways, subways and tunnels.
2. Public & Heritage Structures: Suitable for sensitive projects such as libraries, archives, technical rooms and historical buildings.
3. Industrial & Utility: External waterproofing and protection for warehouses and water tanks. Provides excellent anti-corrosion and thermal shielding for corrugated steel roofs and storage tanks.
4. Detailing & Repair: Exhibits good adhesion to metal, concrete, wood, ceramics, and glass. Highly recommended for repairing basements, bathrooms, swimming pools, exterior facades, and providing UV/waterproofing protection for aluminum balconies and window awnings.
5. Adhesive Use: Can be used as an adhesive for bonding permanent decorative wall panels.

Feature

- Formulation: 100% pure silicone, high-solids elastomeric coating.
- Energy Efficient (Cool Roof): The bright white finish provides excellent waterproofing while significantly reducing cooling costs through high solar reflectivity.
- Superior Mechanical Properties: Exhibits exceptional elongation, peel adhesion, and tensile strength to easily accommodate structural movement.
- Extreme Weatherability: High resistance to UV degradation, salt spray, and ozone. Withstands temperatures from -40 °C to +200 °C.
- Life Extension: Rejuvenates, protects, and significantly extends the service life of existing roofs on suitable substrates.
- Eco-Friendly & User-Friendly: Low VOC formulation; easily applied via airless spray, heavy-duty roller, or brush. Available in customizable colors for highly aesthetic finishes.

Application Guidelines (Standard Operating Procedure)

1. Surface Preparation (CRITICAL)

The substrate must be completely clean, dry, and structurally sound. It must be strictly free from laitance (sanding), oil stains, grease, dust, and any loose particles. It must be free of standing water and condensation, and the substrate temperature must be at least 3 °C above the dew point; residual moisture can lift the cured membrane.

2. Crack & Joint Treatment

Cracks and gaps ≥ 3mm must be properly routed and filled with a compatible silicone sealant prior to the main coating application.

3. Coating Application

Apply the coating using an airless sprayer, roller, or squeegee. It is typically applied in two intersecting coats (cross-hatch method). Ensure the total dry film thickness is ≥ 1.0mm. Important: The second coat must only be applied after the first coat has fully cured.

4. Fabric Reinforcement System (For enhanced tensile strength and longevity)

- Step A (Base Coat): After surface preparation, apply a generous and even base coat longitudinally. Ensure complete coverage without missing spots, allowing the coating to penetrate gaps.
- Step B (Embedment): Immediately embed a layer of non-woven reinforcing fabric directly into the wet base coat. Press and roll firmly to remove air bubbles and ensure full saturation.
- Step C (Top Coat): Once the base coat and fabric layer have cured, apply the top coat evenly in a transverse (cross) direction, ensuring complete encapsulation with no missed areas.

5. Limitations

Not recommended on bituminous membranes (APP/SBS, BUR), where the coating can delaminate, or for areas under permanent ponding water.

Packaging & Storage

Packaging: Available in 5kg (5L / 1-gallon) plastic pails, 20kg (20L / 5-gallon) plastic pails, and 190kg (190L) metal drums.

Transportation: Transported as non-hazardous goods. Protect from direct sunlight, rain, severe impact, and crushing during transit.

Storage & Shelf Life: Store in a cool, dry, and well-ventilated area at temperatures below 27°C. Shelf life is 12 months in original, unopened packaging. (Note: Product exceeding the shelf life may still be utilized if it successfully passes standard quality assurance testing).

Contact Information

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