

硅烷浸渍涂层

SILANE IMPREGNATING AGENT

混凝土结构防水透气防腐的“隐形防弹衣”



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Silane impregnating agent provide a strong guarantee for the long-term durability and normal sate use ot reinforced concretebuildings, while not producing any side effects on the efficacy and mechanical properties of the building materials themselves. Reinforcedconcrete buildings sprayed with silane impregnation agents do not change in appearance, like wearing an invisible, water-repellent anabreathable bulletproof vest, and can persistently and efectively inhibit the corrosion and damage caused by various harmful environmen.tal factors, Therefore, durable and efficient waterproofing is an important measure to improve the durability of concrete structures.

适用范围

Scope of application

Silane impregnating agent can be used for the protection of new concrete structures as well as for the reinforcement and repallof old concrete buildings, such as harbor wharves, cross-sea bridges, cross-river bridges, water conservancy project dams, urban elevated roads, high-grade highway bridges, railway bridges, tunnels, airport pavements, exposed concrete buildings, thermal power plants,nuclear power plants, sewage treatment plants, and so on. They are particularly suitable for the protection of various concrete structures that are subject to seawater corrosion, salt fog corrosion, deicing agent corrosion, and freeze-thaw damage.



性能指标

Performance metrics

JTS/T209 2020 "Code Construction of Corrosion Protection of Hydraulic Engineering Structures" JT/T 991-2015 "Silane Paste Materials for Surface Protection of Bridge Concrete"

TESTING ITEMS	T99 SILANE IMPREGNATING AGENT	T99A ISOBUTYL SILANE IMPREGNATING AGENT
MAIN COMPONENTS	N-BUTYLTRIETHOXYSILANE	ISOBUTYLTRIETHOXYSILANE
SILANE CONTENT(%)		≥98
SILOXANE CONTENT(%)		≤0.3
CHLORIDE ION CONTENT(%)		≤0.01
WATER ABSORPTION RATE (mm/min ^{1/2})		≤0.01
PENETRATION DEPTH (mm)	ORDINARY CONCRETE	≥3
	HIGH-PERFORMANCE CONCRETE	≥2
REDUCED EFFECT OF CHLORIDE ABSORPTION(%)		≥90

TESTING ITEMS	T80 ALKYL SILANE PASTE	T80A ISOCTYLSILANE PASTE
MAIN COMPONENTS	N-OCTYLTRIETHOXYSILANE	ISOCTYLTRIETHOXYSILANE
SILANE CONTENT(%)		≥80
SMELL		NO OBVIOUS IRRITATING ODOR
CHLORIDE ION CONTENT(g/m ³)		≤100
DENSITY (g/ml, 25°C)		0.9±0.1

CHLORIDE ION ABSORPTION REDUCTION RATE (%)	> 80	
PH VALUE	7±1	
DRYING COEFFICIENT (%)	> 30	
WATER ABSORPTION RATIO (%)	< 7.5	
ALKALI RESISTANCE (%)	WATER ABSORPTION RATIO AFTER ALKALI TREATMENT <10	
SALT-FREEZE RESISTANCE W/C=0.7 CONCRETE	AT LEAST 15 TIMES MORE THAN THE REFERENCE CONCRETE IN SALT SOLVENT	
PENETRATION DEPTH (MM)	≤C45 CONCRETE	3~5
	> C45 CONCRETE	2~3

施工工艺

Construction process

- To ensure the effect of Silane impregnating agent, new construction projects should be constructed after the concrete components have been cured for 2 to 4 weeks, and repair projects should be constructed after 1 to 2 weeks of curing. If the ambient temperature is lower than 5°C, or higher than 40°C, or the wind speed is greater than level 6, construction should be stopped to reduce material loss.
- Before construction, repair the concrete structure defects, use a wire brush, compressed air and fresh water to clean the surface dust, sewage, oil and other pollutants, and keep the surface dry for more than 3 days.
- Before large-scale Silane impregnating agent, a spray test must be conducted first, and then core sampling and testing of the test area must be performed according to the prescribed method. Only when the test results meet the judgment criteria can the Silane impregnating agent be sprayed on a large area of the structure.
- Usage and dosage of Silane impregnating agent: When spraying liquid, spray continuously to make the surface saturated and overflow. For horizontal surface construction, spray or brush until the surface of the substrate is wet or mirror-like. For vertical surface, spray from the bottom to the top, with a vertical flow length of 15-20cm, so that the surface remains wet for a few minutes. Spray the liquid waterproofing agent twice, with a spraying amount of 300g/m each time, and leave an interval of 10 minutes.
- Construction equipment: For large-area construction, it is recommended to use airless spray equipment, which has high construction efficiency and can reduce the loss of raw materials; for small-area construction, a brush or scraper can be used; if it rains suddenly during construction, stop construction immediately and carefully cover the constructed components to prevent the loss of silane active ingredients before curing due to rain, which will affect the construction effect.
- Maintenance: After silane application, ensure that it is not exposed to rain for at least 24 hours and dry naturally; to ensure the ideal treatment effect, the surface should be kept dry for at least 36 hours in summer and at least 72 hours in winter.
- The absorption process of the Silane impregnating agent solution will last for several hours. The absorption rate depends on environmental conditions, such as the relative temperature of the air, the concrete mix ratio, the moisture content of the concrete, the exposure of the treated surface, sunlight and wind speed, etc. The concrete surface may temporarily turn black and it will take a few days to restore its original appearance.

Note: Silane paste is a non-flammable, non-corrosive, water-based product. Wear a mask, goggles and gloves during construction. If it comes into contact with skin or eyes, rinse immediately with plenty of water. If the situation is particularly serious, seek medical attention in a timely manner.

包装贮存

Packaging and storage

It is packaged in barrels, with the net weight of Silane impregnating agent being 25kg/barrel; the net weight of silane paste being 10kg/barrel; under normal storage and transportation conditions, the storage period is 12 months.