

HIGH POLYMER MODIFIED BITUMEN WATERPROOFING MEMBRANE



PRODUCT DESCRIPTION

Joaboa Tech 4.5mm polymer modified bitumen waterproofing membrane for railway & bridge is developed in order to satisfy the high strength and dynamic loading environment, with filament polyester as the reinforcement material, SBS as main modifier, supplemented by various auxiliary modifier which is combined with the function of increase bonding performance, improve the anti-fatigue performance and shear resistance. The waterproofing membrane for railway and bridge was made by modified bitumen as cover materials, both sides covered with fine sand as isolation materials.



PRODUCT FEATURE

- With the design of double side fine sand, the bonding problem between different layers of pavement is well solved;
- Can be strongly bonding with concrete, no bubble caused, good water impermeability;
- The membrane has a strong tensile strength in vertical or horizontal direction, high elongation rate, good shear resistance under high temperature, anti-smash ability to withstand repeated rolling from equipment, puncture from pellets and car rolling in the early construction period;
- Acid, alkali and salt resistant, not affected by the freeze-thaw cycle, anti-aging, strong resistance to crack fatigue and other features;
- Good application performance, using hot melt method for application. The operation is convenient and save time, which can effectively ensure the normal service life of railway and bridge.

PRODUCTS SIZE

ITEM	DISCRIPTION
WIDTH (m)	1.0
LENGTH (M)	32.2 (or customized)
THICKNESS (MM)	4.5
UPPER AND LOWER ISOLATION MATERIAL	FINE SAND

Note: Fine sand is mineral particle with particle size less than 0.6mm.

MAIN APPLICATION ADVANTAGES

- Mainly used for high-speed railways, highways and other projects;
- Good resistance to high temperature and endurable at cold environment, resistance to acid, alkali and salt.
- Good application performance, the operation is convenient.

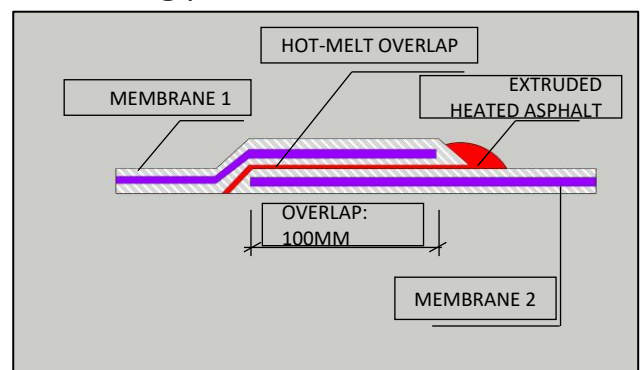
APPLICATION METHOD: TORCH ON APPLICATION

Substrate preparation

The substrate must be strong, tight, smooth, clean and flat without flaws like bulge, looseness, sands, pitted face and rebar. The joints as internal & external corner, pipe root, etc., should be plastered to be arc by cement mortar. The substrate must be dry.

Steps

- Coating primer: the coating should be smooth and even. Do not repeat painting. Pave the membrane immediately after primer to prevent dust contaminated. For the dusting substrate, it needs to be coated the primer. Apply the inner and outer joints with a short handle brush evenly without any omission. After coating and drying (the film is not sticky), the membrane can be paved.
- Reinforced waterproofing layer: before large area paving membrane, apply the reinforced layer on the joints according to the relevant regulation and design requirement. Generally, the reinforced membrane is 500 mm in width with fully bonded to the substrate;
- Paving membrane over large area: snap the line on the substrate, and leave 100 mm width overlap for both long and short sides according to the width of the membrane. The paving should be even and straight. The size of the overlapping should be correctly measured and no distorting;
- Using torch-on applied full bonding method. Firstly bond the initial edge strongly, then execute the reciprocation heating by flame heater with nozzle 0.3-0.5m away from the membrane and the substrate heated position. Do not keep the flame at the same place for long time, otherwise it will cause exposed or peeling. The heating should be evenly. Avoid overheating and burning the membrane. Roll the membrane as paving till the membrane surface is black glossy and tiny bubble (not big amounts of bubbles). Arrange one person to implement the venting and firming procedures.
- Overlap treatment: use a blowtorch to heat the top of the file and bottom membrane surface. Make sure the tight bonding of the asphalt between membrane. The melting asphalt will be extruded from the edge, forming 2-5 mm width uniform asphalt strip.



Implement standard of Polymer Modified Bitumen waterproofing membrane

No.	Test Items			CRCC Standard TB/T2965-2011
1	Appearance			Flat, no missing edge, crack, hole
2	Thickness			4.5~5.0mm
3	Soluble Content(g/m ²)			≥3100
4	Heat Resistance (115°C, 2h, No flowing, dripping)			No flowing, dripping
5	Tensile Strength	Maximum Tension (N/cm)	Longitudinal Direction	≥210
			Horizontal Direction	
6	Elongation	Elongation at Maximum Tension(%)	Longitudinal Direction	≥50
			Horizontal Direction	
7	Tear Strength		Longitudinal Direction	≥450 N
			Horizontal Direction	
8	Low Temperature Flexibility(-30°C, 1h)			No cracking
9	Watertightness(0.4MPa, 2h)			Impermeable
10	Anti Puncture			Impermeable
11	Adhesion after cut (N/mm)			≥10.0 or broken
12	Dimension change rate after heat treatment(80°C, 168h)			-0.5%~0.5%
13	Thermal Aging Test (80°C, 168h)	Change Rate at Max Tensile Strength(%)	Longitudinal Direction	-20~+20
			Horizontal Direction	
		Change Rate at Broken Elongation(%)	Longitudinal Direction	-20~+20
			Horizontal Direction	
Low Temperature Flexibility(-25°C, 2h)			No crack	
Appearance			No Bubble, Crack, Hole	
14	Chemical Resistance (5%H ₂ SO ₄ Solution 28d)	Change Rate at Max Tensile Strength(%)	Longitudinal Direction	-20~+20
			Horizontal Direction	
		Change Rate at Broken Elongation(%)	Longitudinal Direction	-20~+20
	Horizontal Direction			
	Low Temperature Flexibility(-25°C, 2h)			No crack
	Chemical Resistance (Saturation Ca(OH) ₂ Solution 28d)	Change Rate at Max Tensile Strength(%)	Longitudinal Direction	-20~+20
Horizontal Direction				
Change Rate at Broken Elongation(%)		Longitudinal Direction	-20~+20	
	Horizontal Direction			
Low Temperature Flexibility(-25°C, 2h)			No crack	
Chemical Resistance (10% NaCl Solution 28d)	Change Rate at Max Tensile Strength(%)	Longitudinal Direction	-20~+20	
		Horizontal Direction		
	Change Rate at Broken Elongation(%)	Longitudinal Direction	-20~+20	
Horizontal Direction				
Low Temperature Flexibility(-25°C, 2h)			No crack	
15	Artificial climate for accelerating aging(720h)	Change Rate at Max Tensile Strength(%)	Longitudinal Direction	-20~+20
			Horizontal Direction	
		Low Temperature Flexibility(-25°C, 2h)		