

MasterBridge[®] 5000N

Polyurethane-based waterproofing system for bridge deck slab

DESCRIPTION

MasterSeal[®] Bridge 5000N is the polyurethane-based waterproofing system for highway road and bridge deck slab.

It consists of primer, a spray applied elastomeric polyurethane waterproofing membrane, adhesion promoter and polymer modified asphalt tack coat. The four layers hybrid waterproofing system design provide excellent pull off adhesion, great resistance to peel, and fantastic waterproofing function.

MasterSeal Bridge 5000N has been approved under Japan NEXCO Standard Design Specification Vol.2 Bridge Construction (Grade II).

RECOMMENDED USES

MasterSeal Bridge 5000N is intended for use on highway road and bridge deck waterproofing, suitable for both new and refurbishment projects.

FEATURES AND BENEFITS

- **Environment-friendly** – Solvent free, no heavy metal, safe to use
- **Fast setting deck system** – Suitable for both horizontal and vertical
- **Improved shear resistance with deck slab** – Reduced slippage destroy at interface of waterproofing and deck slab
- **Excellent adhesion with asphalt pavement laid at high (180°C) and low temperature (110°C)** – Tolerant to asphalt pavement installation temperature
- **Deck slab protection** – prevent water penetration thereby protecting deck slab from crack and prevent peeling off by hybrid waterproofing structure set-up
- **Improvement in life cycle cost (LCC)** – Pavement repairable without removing waterproofing layer

SYSTEM BUILD UP

MasterSeal Bridge 500N is multi-layered system and is composed of

1. Primer & Broadcast Sand
2. Waterproofing Membrane
3. Adhesion Promoter & Broadcast Sand
4. Tack Coat

Primer:

MasterSeal P 627 or MasterSeal P 2525 Two component, solvent free, fast setting epoxy primer

Membrane:

MasterSeal M 811 Two component solvent free, highly reactive waterproofing membrane that can only be applied by special two component spray equipment.

Adhesion Promoter:

MasterSeal P 628 is two component polyurethane based adhesion promoter that improves the adhesion between the waterproofing membrane and the tack coat **MasterSeal P 629**.

Tack coat

MasterSeal P 629 is one component tack coat based on specially formulated polymer modified asphalt for use with hot asphalt toppings to improve their adhesion to the polyurethane based bridge deck waterproofing system.

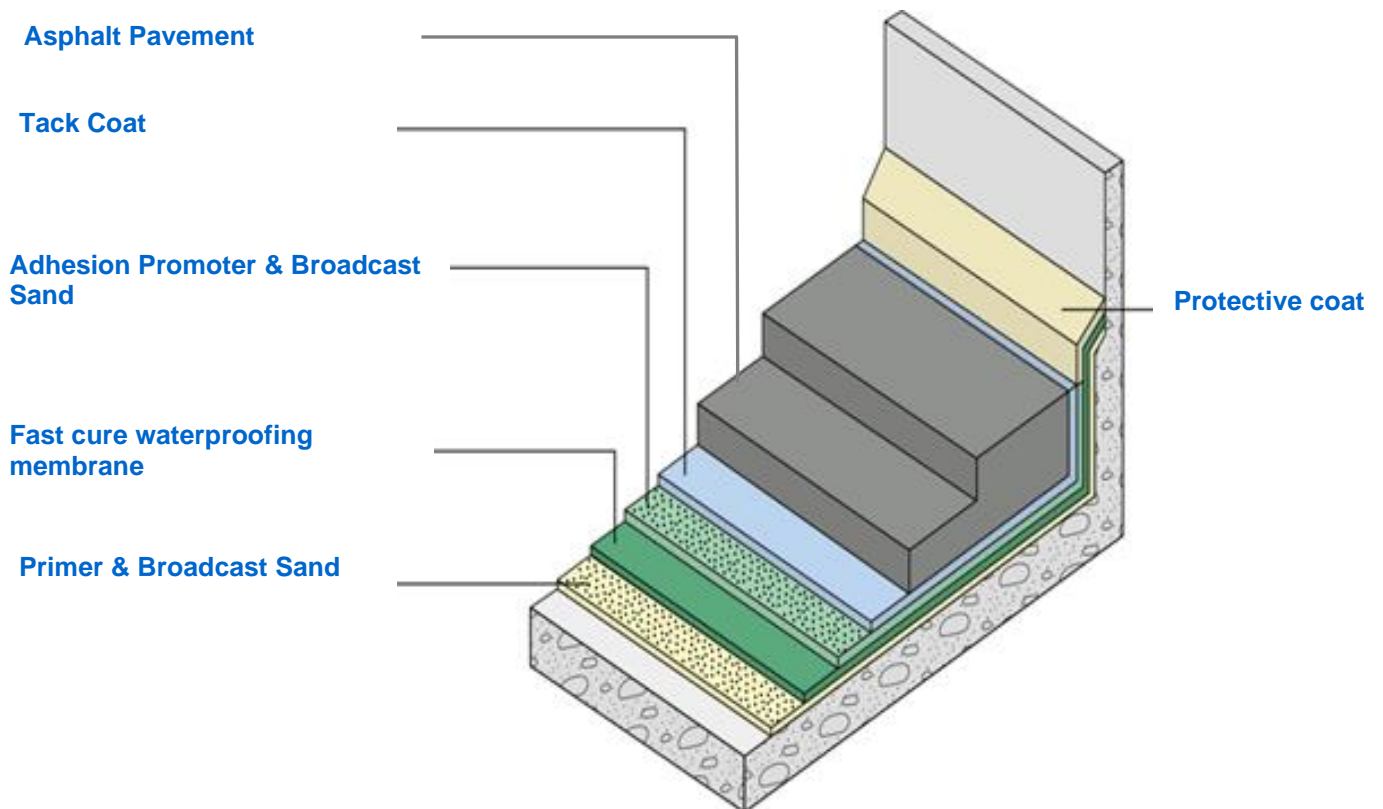
MasterSeal P 629 helps in making the complete built-up of waterproofing membrane and asphalt paving monolithic.

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The consumption rates for the individual components are as given below:

Layer	Description	Product	Consumption (Kg/m ²)
1	Primer	MasterSeal P 627 or MasterSeal P 2525	0.25
	Sand Brand cast	Oven dried Silica Sand (0.3 – 0.8mm)	1.0
2	WP Membrane	MasterSeal M 811	1.8
3	Adhesion Promoter	MasterSeal P 628	0.4
	Sand Broadcast	Oven dried Silica Sand (0.3 – 0.8mm)	1.0
4	Tack Coat	MasterSeal P 629	1.0
5	Protective coat (for exposed area)	MasterSeal TC 260	0.2 kg/m ²
		Or MasterSeal TC 268	0.5 kg/m ²

*: Consumption can vary based on site conditions and substrate conditions



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PERFORMANCE ACCORDING TO JAPAN NEXCO GRADE II SPEC

Pavement	Test Items		Test Temperature	Test Result, MPa	Specification
WP Film	Chemical Resistant	Ca(OH) 2 Saturated solutions	23°C	Pass	Steady
		3% NaCl	23°C	Pass	Steady
		3% CaCl ₂	23°C	Pass	Steady
	Swell resistant test		23°C - 60°C	Pass	Steady
	Peel resistant test		23°C - 60°C	Pass	Steady
	140°C Pavemenet resistant (aggregates)		23°C	Pass	Steady
180° C Asphalt concrete pavement	Waterproofing property		23°C	Pass	Steady
140° C Asphalt concrete pavement	Waterproofing property	-	23°C	Pass	Steady
		After durability	23°C	Pass	Steady
	Pull of strength N/mm ²	-	23°C	1.52 (pass)	>0.6
		After freeze-thaw 30 cycles	-30°C	1.63 (pass)	>1.2
			23°C	1.34 (pass)	>0.6
			50°C	0.225 (pass)	>0.07
	Shear Strength N/mm ²	-	23°C	0.649(pass)	>0.15
		After freeze-thaw 30 cycles	-30°C	2.25 (pass)	>0.8
			23°C	0.697 (pass)	>0.15
			50°C	0.228 (pass)	>0.01
	Waterproofing Property	After freeze-thaw, wheel track and crack bridging	23°C	Waterproofing no cracking	WP no crack
110° C Asphalt concrete pavement	Pull off strength, N/mm ²		23°C	0.99 (pass)	>0.6
	Pull off strength, N/mm ²		23°C	0.99 (pass)	>0.6

*Test result is extracted from Japan Nexco Grade II Test Report.

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PACKAGING

- **MasterSeal P 627** (16 kg/set)
- **MasterSeal P 2525** (5kg/set)
- **MasterSeal M 811**
Part A: 210kg/drum, Part B: 220kg/drum
- **MasterSeal P 628** (15 kg/set)
- **MasterSeal P 629** (10 kg bag)
- F5 Silica sand (30 kg bag)

APPLICATION

For detail product specific application instructions, see individual product technical data sheets.

MAINTENANCE

Regular cleaning and maintenance will prolong the life of all resin coatings, enhance the appearance, and reduce the tendency to pick up dirt. Specialized cleaning equipment and chemicals are available, and the suppliers are able, to offer advice on appropriate cleaning regimes.

PRECAUTIONS

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the Master Builders Solutions Material Safety Data Sheet (MSDS) from our office or our website.

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