



**BRIDGE DECK
WATERPROOFING
MATACRYL® WPM
SYSTEM**





Matacryl® Bridge Deck Waterproofing Systems are employed by partners, infrastructure owners and civil engineering experts across the globe to improve the durability, performance and service life of infrastructure assets.

The Matacryl® PUMA. formulation is a unique blend of MMA and polyurethane that results in a rapid setting but flexible and durable membrane. This state-of-the-art chemistry prevents the degradation of concrete and steel on both new structures and restoration projects in the bridge and tunnel segments.

In Australia, the exacting demands placed on the bridges by the unique weather and climate, means that very stringent attention has to be paid to ensure that the bridges perform as designated for their intended lifespan. The selection of Bridge Deck Waterproofing Systems thus necessitates total compliance with tight specifications and where the systems are installed only by nominated partner applicators with the relevant training and experience. It must be remembered that a 'prevention is better than cure' approach, is a far more cost effective solution than to repair and replace at a later stage.

With hundreds of global installations and decades of deck waterproofing experience, our technical experts can design a solution that is tailor made to suit your project specifications and requirements.

GLOBAL AND LOCAL TESTING

Testing and certification in accordance with internationally accepted standards, is the minimum 'benchmark standard' that is essential. However, it is imperative that appropriate localised testing also be implemented since the harsh Australian climate presents a number of challenges in this regard. For example, in the international arena, the major Bridge Deck Standards include the BBA HAPAS, A.S.T.M. & K.I.W.A., but local compliance as per the Australian B 343 (R.M.S./TfNSW) and the Victoria Department of Transport (Section 691), are equally important.

A case in point in Australia, is the use of thin section asphalt wearing layers which is fast becoming the norm. In such instances, the shear and tensile bond values of the waterproofing membranes to the asphalt wearing layers, are required to be significantly higher than elsewhere in the world where these wearing layers tend to be thicker.





MATACRYL WPM

The Matacryl WPM system bonds to the substrate and asphalt overlay to enhance and extend bridge service life. A second bitumen-based tack coat layer may be used when required by specification or when recommended by the manufacturer. Matacryl WPM can be used on new bridge construction, routine maintenance or bridge rehabilitation where uneven or irregular surface profiles exist.

Installation benefits:

- Cold applied – does not require heating equipment or conditioning irrespective of ambient conditions.
- Available in spray and manually applied grades to meet job site or environmental conditions.
- May be installed at ambient and substrate temperatures ranging from -20 °C to +35 °C to extend the construction season in all Australian regions including the Snowy Mountains to the tropical north to year round.
- Products installed in strict accordance with proprietary Australian Method Statement.
- Rapid set time reduces ‘possession’ and enables fast installation, lower labour costs and far quicker hand over times to subsequent construction phases.
- Weather resistant and ready for use 60 minutes after completion of application including rainfall.
- Chemically inert and environmentally friendly.
- No special requirements for HAZMAT disposal once cured.
- Solvent free – V.O.C. compliant.
- Matacryl WPM systems are only installed by authorised and approved Partner applicators.

Performance benefits:

- Seamless providing total envelope of protection against chlorides and other deleterious substances.
- Flexible membrane capable of bridging severe cracks.
- Elongation (> 300%) in excess of conventional resin-based systems.
- Tough and durable enough to resist indentation by rail ballast, backfill and construction equipment and traffic.
- Tensile bond well in excess of concrete cohesive and tensile strength.
- Shear bond of membrane to both concrete, and steel well in excess of international requirements.
- Shear and tensile bond of membrane to asphalt wearing layers exceeds international standards.
- Comprehensive International Certification Compliance (incl. BBA HAPAS, ASTM, Australian Standards).
- Exceptional global track record including Australia and neighbouring regions.
- Major performance contributor in line with ‘Austroads 100 Year Design Life Philosophy’.



COMPLIANT TO B343 & SECTION 691



Transport
Roads & Maritime
Services



Department
of Transport

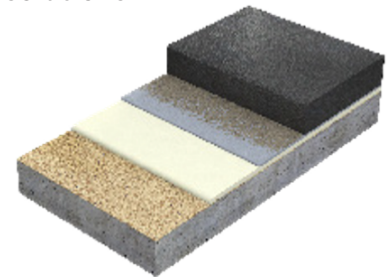
Bridges are continuously exposed to severe stresses and typical factors affecting their longevity, include inadequate protection specified at design phase, quality and handling of concrete and/or steel, physical and chemical exposure, climatic conditions, traffic types and frequency and regularity and quality of maintenance.

Matacryn Bridge Deck Waterproofing systems provide 100% effective seamless waterproofing thereby denying entry of water, chloride and de-icing salts from permeating into and percolating through the structural concrete deck and thus preventing the steel reinforcement corroding. This also includes corrosion inhibition of orthotropic steel decks etc. where these are the decks of choice.

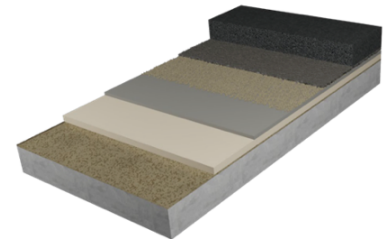
Matacryn® System use in Australia, typically comprise of three protection and service exposures, namely:

- a) Waterproofing to concrete decks where asphalt wearing layers are > 80mm thick
- b) Waterproofing of concrete decks where asphalt wearing layers are < 80mm thick
- c) Waterproofing of steel decks where asphalt will be at either of the above mentioned thicknesses.

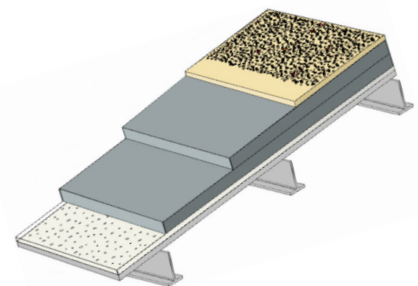
Typical Australian exposures and solutions:



Matacryn WPM >80mm asphalt



Matacryn WPM <80mm asphalt



Matacryn WPM onto steel deck



5 YEARS IN SERVICE USE:

CASE STUDY:

Westgate Bridge

Client: Department of Transport Victoria

Location: Melbourne

Section 691 Compliant

2015 - 2,200m²

2019 - 1,200m²

2020 - 3,500m²

2021* - 3,500m²

SOLUTION

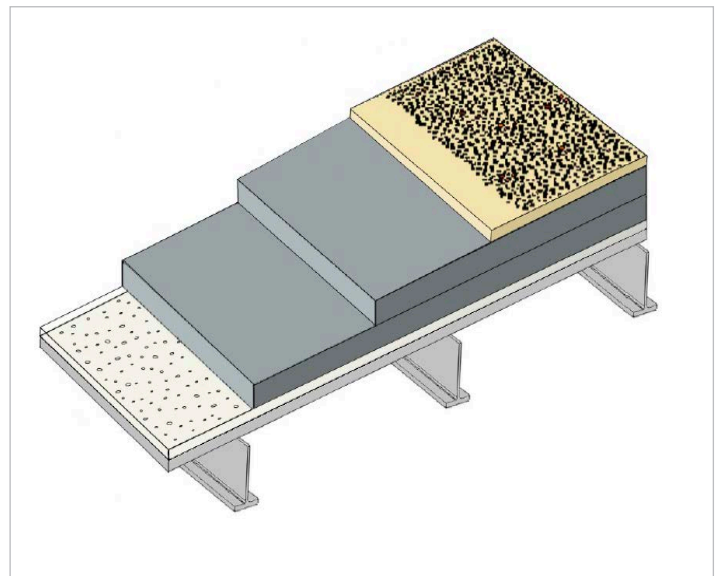
Matacryl® WPM employed to waterproof and provide effective corrosion inhibition to various bridge deck sections prior to the asphalt wearing layers being installed.

First section now in operation for over 5 Years.

MATACRYL® WPM SYSTEM BUILD UP

Steel deck

1. Matacryl® Primer CM on substrate
2. Matacryl® Membrane Layer one layer (two with high slopes)
3. Matacryl® STC Tack Coat Layer and Aggregate
4. Approved SAMI
5. Asphalt Wearing Course



The West Gate Bridge is a 10-lane dual-carriageway freeway bridge, carrying five lanes of motor vehicle traffic in each direction. The freeway corridor (including the bridge itself) carries a very high volume and occupancy of traffic: a total of between 180,000–200,000 cars, trucks, and motorcycles use it per day, according to VicRoads. This makes the West Gate Bridge and West Gate Freeway one of the busiest road corridors in Australia.



CASE STUDY:

Pacific Complete W2b (Woolgoolga to Ballina)

Client: TfNSW

Location: Northern New South Wales
TfNSW-B343 compliant

SOLUTION

49 x bridges measuring a total of 24,000m² beneath 60mm asphalt wearing layers
Matacryl® WPM was employed to waterproof and provide effective corrosion inhibition to the selected bridge decks.

MATACRYL® WPM <80MM SYSTEM BUILD UP

Figure:

1. Matacryl® Primer H on substrate
2. Matacryl® Membrane Layer
3. Matacryl® STC Tack Coat Layer
4. Matacryl Tack Coat No.1
5. 60mm Asphalt Wearing Course

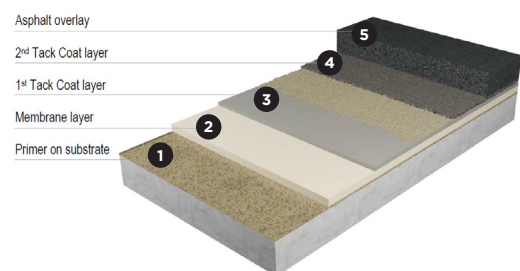
Waterproofing membrane layer under asphalt <80mm Double tack coat layer

Layer	Material	Application Rate	Thickness	
1	Primer on substrate ¹ Broadcast aggregate	Matacryl CM or H Primer Quartz 0.3 to 0.7 mm	0.3 to 0.5 kg/m ² 0.3 kg/m ²	0.3 to 0.5 mm
2	Membrane (1 Layer)	Matacryl Manual & Matacryl Thix	Minimum 2.8 kg/m ²	Minimum 2.0 mm
3	Tack Coat Broadcast aggregate	Matacryl STC Quartz 0.3 to 0.8 mm	0.3 to 0.5 kg/m ² Minimum 1.0 kg/m ²	0.3 to 0.5 mm
4	2 nd Tack Coat ²	Matacryl Tack Coat No. 1	0.6 to 1.0 kg/m ²	0.6 to 1.0 mm

¹ Porous or uneven substrates may require multiple primer coats

² Membrane application rate/thickness: min 2.8 kg/m² (80 mils) for single layer.

³ If the asphalt being placed on the Matacryl waterproofing system is less than 80mm total overall thickness or identified as thin section asphalt and/or the requirement for shear or tensile bond values are to be greater than specified in the BBA certificate / BD4799, an additional hot melt polymer-modified bitumen tack coat will be required.



Some key features of a Matacryl® System installation



45 MINUTES

**WEATHER RESISTANT AND
READY TO USE AFTER
COMPLETION
OF APPLICATION**



-20°C TO +35°C

**INSTALLED IN A WIDE RANGE
OF AMBIENT TEMPERATURES
TO EXTEND THE
CONSTRUCTION SEASON**



100%

**SOLID REACTIVE
RESIN CONTENT**



Matacryl® Systems are engineered solutions for infrastructure segments and highway sectors which include pedestrian wearing surfaces and rail bridges.



MATACRYL RB (RAIL BRIDGE)

Matacryl RB provides seamless waterproofing and extreme impact and indentation resistance under rail ballast. When required by specification, a proprietary ballast mat is placed in conjunction with RB Adhesive to seamlessly bond the mat and the waterproofing system. Matacryl RB can be used with new construction, restoration or replacement rail bridge and grade separation applications. The Matacryl RB membrane may also be used without protection board.

Key features:

- Available in spray and manually applied grades to meet job site conditions.
- Installs at a wide range of ambient and substrate temperatures -20 to +35°C (-4 to + 95°F) to extend the construction season to year round.
- Rapid set time promotes fast installation, lower labour costs and efficient handover to next construction phase.
- Weather resistant and ready for use 60 minutes after completion of application.
- V.O.C. compliant; contains no solvents.
- Chemically inert; does not require HAZMAT precautions for disposal once cured.
- No heating of resins or special application equipment required.
- Matacryl RB systems are only installed by authorised and approved contractors.



MATACRYL WS (PEDESTRIAN)

Safety and durability are key for pedestrian and cycle bridges. Matacryl WS (Pedestrian) bonds with the substrate and provides a sealed wear layer in combination with a flexible, crack-bridging barrier membrane and surface friction suited for walking and cycling.

MATACRYL WS provides a low density option (in lieu of asphalt) to provide a wear, impact and abrasion resistant surface that will offer corrosion resistance, slip resistance and limited maintenance requirements. It can be used on new bridge construction, routine maintenance or bridge restoration applications.

Matacryl WS (Pedestrian) systems are only installed by authorised and approved applicators

Installation benefits:

- Cold applied – does not require heating equipment or conditioning.
- Manual or spray applied – quick installation rates, no equipment for hand-applied grade.
- Chemically inert – no special requirements for disposal.
- Solvent free – V.O.C. compliant.
- Rain resistant within 30 minutes of installation.
- Rapid setting also enables any unanticipated repairs to be quickly and easily effected.