



HIGH-PERFORMANCE PERMEABLE PAVEMENT

Porous Lane is driven by a future of healthy waterways, cooler cities and circular-economy led sustainability.



Healthier Cities.

Our primary goals are to:

- Create healthier cities by assisting public and private entities to meet their Water Sensitive Urban Design (WSUD) and sustainability goals.
- Provide cost-effective systems for increasing site permeability, stormwater management and on-site detention (OSD).
- Maintain better urban tree health and improve infrastructure longevity around urban trees.



Diverting Problematic Waste.

By using waste tyre material as one or the primary product components, Porous Lane takes a problematic waste stream and diverts it to a high-performance use.

Every year in Australia more than 58 million tyres reach their end of life with an overwhelming majority ending in landfills. To date Porous Lane has prevented thousands of waste tyres going into landfill.

The new standard for permeable pavement.

Porous Lane is a high-performance solution that addresses multiple issues key to the health of our cities in a setting of more frequent flash flooding and higher temperatures.

This multi-faceted performance means the product is effective in delivering multiple benefits in a variety of applications.



Water Sensitive Urban Design



Integrated Stormwater Management



Reduction and Treatment of Runoff



Crack-Resistant Surfaces



Trafficable



On-Site Detention



Passive Irrigation



Better Urban Tree Health



Cooler Urban Temperatures



Low Maintenance



Certified Circular Economy



25 Year Design Life

Use Cases



Integrated Stormwater Management

- Carparks
- Driveways
- Footpaths/bike paths/share paths
- Kerb and Channel



Increasing Site Permeability

- Driveways
- Private Carparks
- Walkways
- Other surfaced areas (courtyards, terraces, play areas etc).



Passive Irrigation & Urban Heat Island Reduction

- Carparks
- Tree Pits
- Footpaths/bike paths/share paths
- Kerb and Channel



Crack-resistant Infrastructure

- Tree pits
- Footpaths/bike paths/share paths near tree roots

Our Process



Identify site

Identify site and purpose of permeable area.

Design Documentation

Design documentation produced by Porous Lane that achieves project goals. Documentation signed off by client.



Installation

Installation by Porous Lane team or accredited civil contractor.

Project examples

Car parks



Client
Stonnington City Council

Location
Percy Treyvaud Memorial Park

Size
80sqm

Waste tyres recycled
240



Client
Yarra City Council

Location
Clifton Hill, VIC

Size
80sqm

Waste tyres recycled
240

 Footpaths



Client
Glen Eira City Council

Location
Bentleigh East, VIC

Size
160sqm

Waste tyres recycled
290

 Bike paths



Client
City of Melbourne

Location
Port Melbourne, VIC

Size
400sqm

Waste tyres recycled
1200

 Golf Cart Path



Client
Hobson Bay City Council

Location
Altona, VIC

Size
33sqm

Waste tyres recycled
90



Client
City of Boroondara

Location
Balwyn North, VIC

Size
800sqm

Waste tyres recycled
2400

 Driveways



Client
Yarra Ranges Council

Location
Milgrove Pavillion, VIC

Size
96sqm

Waste tyres recycled
280

 Tree pits



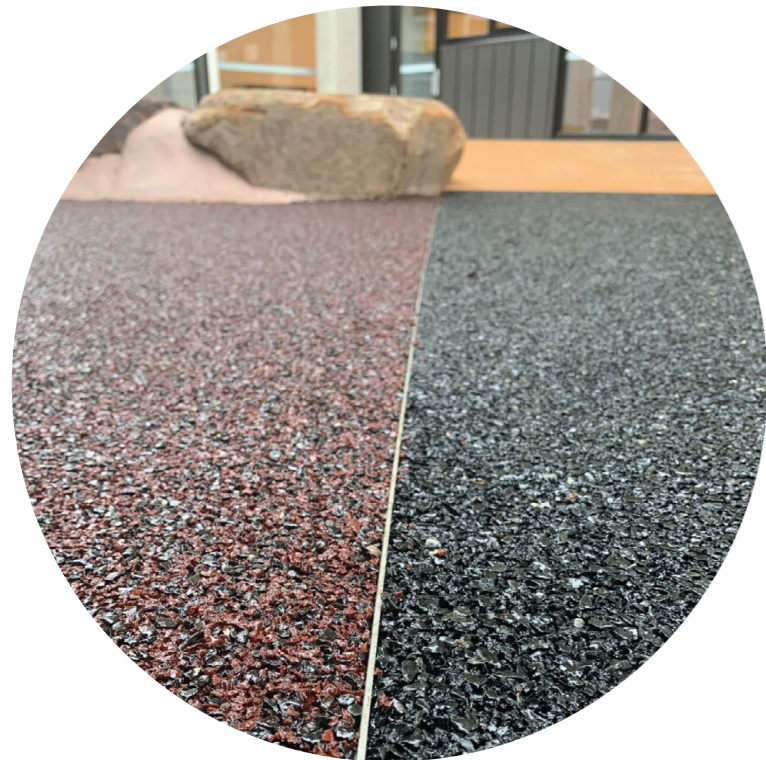
Client
Glen Eira City Council

Location
Caulfield North, VIC

Size
40sqm

Waste tyres recycled
90

 Decorative



Client
Mountain High Shopping Centre, VIC

Location
Bayswater, VIC

Size
86sqm

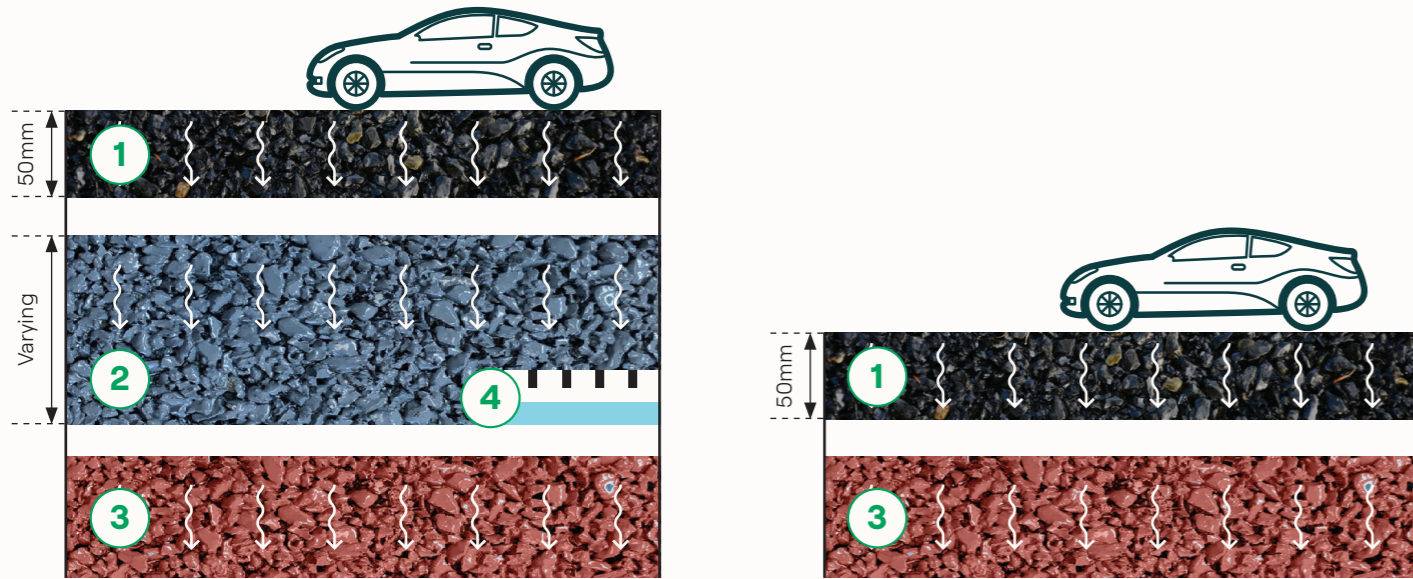
Waste tyres recycled
260

“This is an excellent science driven innovation changing the game for councils”

—City of Mitcham Mayor



Cross Section



1 Waste tyre permeable pavement

- Made of up to 60% recycled material (approx 3 waste tyres per sqm)
- Laid on-site

2 Screening structural soil layer (optional)

- Acting as a reservoir layer
- Thickness based on the amount of storage and subgrade
- Can be reinforced by geocells

3 Subgrade natural soil

- Determines the thickness of screening, etc.

4 Drainage pipe

- Depending on application, a drainage pipe can be used

Technical Details

Material top layer properties

Mean particle size (mm)	3.4	(ASTM D6913-17)
Tyre content (%)	30-60	depending on the application
Permeability (cm/s)	3.0-3.5	8 times higher than ASCE recommendations (ASTM D3385-18)
Unconfined Compressive Strength (MPa)	1.0-2.0	depending on the mixture (AS 5101.4-08)
Elasticity Modulus (MPa)	15-150	depending on the mixture (AS 5101.4-08)
Porosity (%)	40-50	depending on the mixture
Skid resistance	56	measured in wet condition, above recommendations (AS 4663-13)
Dynamic Modulus E _{vd} , from LWD test (MPa)	16-45	depending on the mixture and pavement design (ASTM E2835-11)

Tests carried out and certified at the University of Melbourne

Design Specifications

Layer	Property	Value	Notes
Top Layer	Thickness (mm)	40-50	depending on the application
	Mean particle size (mm)	Varies	Black - Grey - Black & White
	Weight per area (kg/m ²)	Around 50	depending on the mixture
Screening or Base Layer (optional)	Soil type	Crushed rock, gravel or structural soil	uniformly graded (ASTM D2487-17)
	Thickness (mm)	0-300	depending on design rainfall, catchment area and project design objectives
	Mean particle size (mm)	8-10	(ASTM D6913-17)
	Required permeability (cm/s)	> 3.5	higher than the top layer (ASTM D3385-18)
	California Bearing Ratio, CBR	> 10	should be well-compacted (ASTM D4429-09)
Subgrade Layer	Soil type	depends on the soil on-site	our design can cater for any soil type from sandy to clayey soil
	Permeability (cm/s)	depends on the soil on-site	our design can cater for any soil type from sandy to clayey soil
	California Bearing Ratio, CBR	> 3	if lower than 3, designed system will include reinforcements (ASTM D4429-09)



Colour Options



Auburn



Beige



Black



Cocoa



Dark Green



Egg Shell



Grey



Mid Green



Red



Rose



Terracotta



Yellow Sand



Dr. Amir Mehdizadeh

Managing Director

Dr. Mehdizadeh is the driving force behind Porous Lane.

With an MSc and PhD in Geotechnical Engineering, along with holding a research position at the University of Melbourne, he possesses extensive expertise in this field. Along with more than 20 peer-reviewed publications, Dr. Mehdizadeh's is a recipient of several awards and fellowships.

With more than 15 years of hands-on industry and research experience, Dr. Mehdizadeh is a force continuing to shape the future of the industry.



Associate Prof. Mahdi Disfani

Research & Development

A pioneer in pavement and geotechnical engineering, Dr. Disfani specialises in the development and application of new products using new and recycled materials like waste tyres, recycled glass, brick, and concrete.

His work has secured significant research grants and awards and has contributed to diverting substantial quantities of waste from landfill.

Dr. Disfani has published extensively in the area including over 30 peer-reviewed papers and the successful mentorship of three PhD students in the field of permeable pavement. He has also led the largest trial in Australia of tyre derived aggregate permeable pavements under live traffic conditions.



Bradley Camgoz Posselt

Client Engagement Director

With a passion for sustainability and the circular economy, Bradley brings over 10 years experience in working with clients to develop solutions in the built environment space.

Working across both public and private sectors, Bradley's skill at finding alignments between product uses and client needs drives growth at Porous Lane and better environmental outcomes for Australian cities.



Installation Team

The Porous Lane installation team, based out of our Campbellfield facility are experts in transporting and installing Porous Lane permeable pavement and the necessary screening and storage layers.

Selected Clients & Partners



Accreditation

Porous Lane has partnered with the Tyre Stewardship Australia to provide new applications for end-of-life tyres.



Licence

Porous Lane is the exclusive licensee of the permeable pavement technology developed by the University of Melbourne





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