USED FOR

Cracking | Ravelling | Waterproofing | Chip Loss | Oxidation Resistance

ENVIRONMENTS

Residential | Rural | Airports

EnviroShield

Extend pavement life.

EnviroShield is a high-performance surface treatment designed to extend the life of aging asphalt and chip seal surfaces that are beginning to fret and ravel.

Applied warm via spraying, EnviroShield creates a durable protective layer that slows deterioration and enhances surface integrity.

With its low viscosity, EnviroShield penetrates deep into the surface, curing to form a waterproof barrier that locks in aggregate and reduces oxidation. This advanced formulation features an ultra-hard, abrasion-resistant bitumen, engineered to withstand the stresses of heavy use while maintaining a low-tack finish.

Powered by Road Science's industry-leading bitumen emulsion technology, EnviroShield offers a faster, more cost-effective alternative to conventional resurfacing methods — delivering long-lasting protection without the hefty price tag.

Where to use EnviroShield:

- As a trackless tack coat in paving applications
- Surface restoration (asphalt or chip seal) when there are signs of fretting or ravelling
- Hairline crack filling
- Fast return to service without binder tracking

Benefits:

- Rapid curing
- Resistant to oxidation
- Extremely durable
- Low-tack finish
- Looks like asphalt for a fraction of the cost

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EnviroShield

Specification

Typical properties of EnviroShield

Property	Method	Specification
Binder content	In-house	50% min
Viscosity mPa.s	In-house	5-100 (temp 25˚C)
Softening point (Residual binder)	ASTM D36	70˚C min
Penetration (Residual binder)	ASTM D5	15-25

Properties

Handling

For safe handling of bituminous materials, please refer to the Best practice guideline: Safe Handling of bituminous materials used for roading (BPG01)

EnviroShield	
Normal handling temperature	60˚C
Maximum safe handling temperature	80˚C
Normal spray temperature	80˚C
Normal pumping temperature	80˚C
Mixing binder temperature	60˚C min

Circulation + Equipment

Product can be sprayed from standard emulsion sprayers. However, product is susceptible to sedimentation, therefore recirculating the product for at least 30 minutes before spraying is advised.

Gentle stirring/circulation of the emulsion is required to prevent long term settlement of the binder phase. Never allow EnviroShield to freeze, as due to the presence of water in the emulsion, the emulsion will break.

Do not store product for over 24 hours without recirculation.

Flush spray bar, hand lance and pump thoroughly with kerosene or diesel at the end of the day to ensure equipment doesn't have any blockages. Do not allow product to go cold in the tank of the sprayer or trailer. If hand-lancing the product, the line will need to be cleared after use to avoid blockages.

Heating

If you do need to reheat EnviroShield, then this needs to be undertaken slowly with the rate of heating not exceeding 10˚C per hour. Never heat beyond 90˚C.

Storage

EnviroShield	
Short term storage temperature (up to 2 days)	60˚C
Medium term storage temperature (3 to 5 days)	80˚C
Long term storage temperature (beyond 5 days)	70˚C - 80˚C

EnviroShield should not be stored for more than one week.

Treatment Selection + Mix Design

If you're unsure which treatment solution is best suited for your project — considering factors such as traffic volumes and asset management — consult a member of the Road Science Product Development Team. They can assist in determining the appropriate treatment selection and guide you through the mix design process.

Application

Surface must be free of lichen, excessive dust, or any other detritus. Cracks larger than 2mm must be repaired prior to application with Road Science's UltraMender.

EnviroShield can be sprayed using conventional spraying equipment at ~0.6-1L/m^2 of emulsion (on a flat surface). If higher application rates are required, consider applying in two coats to avoid run-off. EnviroShield cannot be cold sprayed.

Sufficient surface texture must be available to accommodate the desired application rate of the material.

To ensure surface has been adequately covered, follow the recommended application rates. Chip seals application rate is dependent on its Mean Profile Depth (MPD).

EnviroShield Application Rates	
Asphalt	0.6 l/m^2
Chip seal (Average MPD < 1.5mm)	0.8 l/m^2
Chip seal (Average MPD > 1.5mm)	1.0 l/m^2

EnviroShield

Light application of black sand after spraying is recommended to reduce time before treatment can be trafficked and to provide a temporary wearing course. The sand can be swept off once emulsion has cured.

Care should be taken to ensure the site does not possess any steep gradients that could cause excessive run-off of the emulsion. If this is the case the emulsion may need to be applied in multiple coats (as deemed achievable by the applicator)

Application is not recommended at temperatures below 8˚C or humidity above 85% as this can lead to extended curing times.

Sampling

For managing bitumen quality, please refer to the Waka Kotahi NZ Transport Agency Q05 specification for managing bitumen quality report

Need more information?

At Road Science, we're committed to providing innovative solutions backed by engineering expertise. If you have any questions about this product, need technical guidance, or want to discuss how it fits your specific project needs, our team is here to help. Contact us today for expert advice and tailored support. Contact us via **0800 180 200** or visit our website at **roadscience.co.nz** to learn more.