



# Enviro Shield

Helps to resolve these problems:



## Surface Treatment Emulsion

**Enviro Shield** is a warm applied surface treatment which acts as a protective layer for aged asphalt and chip seal surfaces that are beginning to fret and ravel.

The low viscosity of **Enviro Shield** allows for greater penetration into the surface and upon curing, will reduce the effects of aging by offering additional waterproofing and locking aggregate into the existing surface (in both chip seal and asphalt).

This is accomplished using an extremely hard and durable bitumen specifically designed to cope with the abrasive stresses on the surfacing course while offering a low tack finish. This acts as a protective layer reducing the rate of both oxidation and degradation of the treated surface.

This is accomplished using Road Sciences' industry leading bitumen emulsion technology which allows this system to be applied quicker and more cost effectively than conventional surface treatments.

## Where to use Enviro Shield

- As a trackless tack coat in paving applications
- In all situations where the surface (both asphalt and chip seal) is beginning to fret and ravel
- Filling of hairline cracks in aged asphalt
- On sites that require a fast return to service without any tracking of binder

## Benefits:

- Fast curing
- Resistant to oxidation
- Extremely durable
- Low tack finish

## Habitat



## Specification

Typical properties of Enviro Seal

Property	Method	Specification
Binder Content	In-house	50%
Softening Point (Residual Binder)	ASTM D36	>70°C
Penetration (Residual Binder)	ASTM D5	15-25

Properties:



## Handling

Enviro Shield	
Maximum safe handling temperature	80°C
Normal spray temperature	80°C
Pumping temperature	80°C

If product is to be pumped or sprayed it must be at 80°C. 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.

Do not store product for over 24 hours without recirculation.

If hand-lancing the product, the line will need to be cleared after use to avoid blockages.

## Storage

Enviro Shield	
Medium term storage temperature (up to 5 days)	80°C
Long term storage temperature (beyond 5 days)	70°C - 80°C
Critical rate of heating	No more than 10°C per hour

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

Enviro Shield should not be stored for more than one week

## Sampling

Samples should be taken following transfer from storage or transport.

PPE as defined in the Safety Data Sheet should be worn during sampling of Enviro Shield, including a face shield as the product can be transferred at slightly elevated temperatures where splashes are always a risk.

Testing should be carried out by an IANZ accredited laboratory that is experienced in handling and testing of bitumen emulsion.

## Application

Surface must be free of lichen, excessive dust or any other detritus. Cracks larger than 2mm must be repaired prior to application with Ultra Mender. Application methodology for Ultra Mender can be found on the Road Science website: <https://roadscience.co.nz/vdb/document/93>

**Enviro Shield** can be sprayed using conventional spraying equipment at ~0.6-1L/m<sup>2</sup> of emulsion (on a flat surface). If higher application rates are required, consider applying in two coats to avoid run-off. **Enviro Shield** 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. Chipseal application rate is dependent on its Mean Profile Depth (MPD).

Recommended Spray Rates	
Asphalt	0.6 L/m <sup>2</sup>
Chipseal (Average MPD < 1.5mm)	0.8 L/m <sup>2</sup>
Chipseal (Average MPD > 1.5mm)	1.0 L/m <sup>2</sup>

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.

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## Flushing

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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.

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