



WeatherBarrier

Chip seal curing accelerant
Product insights guide

June 2026

Road 
Science

Accelerate chip seal curing

Weather Barrier is an eco-friendly nano-material designed to speed up the curing of Road Science chip seal bitumen emulsions. By enhancing the coalescence of bitumen, it enables faster setting and improved performance.

Supported by our Zeus weather forecasting tool, Weather Barrier allows you to navigate unpredictable weather conditions, enhance productivity, and seal more hours of the year.

USED FOR



Chip Loss



Waterproofing

ENVIRONMENTS



Residential



Motorway



Rural



Roundabouts
& Intersections



Ports



Industrial



Airports

Increased sealing windows

New Zealand's increasingly unpredictable weather is tightening the window for road maintenance and reducing productivity across the chip sealing season.

Weather Barrier is engineered to integrate with Road Science's standard and polymer-modified emulsions, delivering fast, reliable curing even in challenging conditions.

Whether it's early trafficking requirements, cooler temperatures, high humidity, or night-time application, it provides the confidence to keep projects moving when weather would typically hold crews back.



Weather Barrier benefits

- Enhanced efficiency by accelerating chip sealing operations
- Extends sealable hours
- Minimises failure risk in challenging areas like shaded zones
- Greater operational confidence on mobile patching applications
- Lower traffic management costs by allowing sites to reopen quickly



Turangi | shoulder season works

– key project insights

Objective: Reseal four sites in Turangi despite falling outside of the ideal sealing window (April 2023).

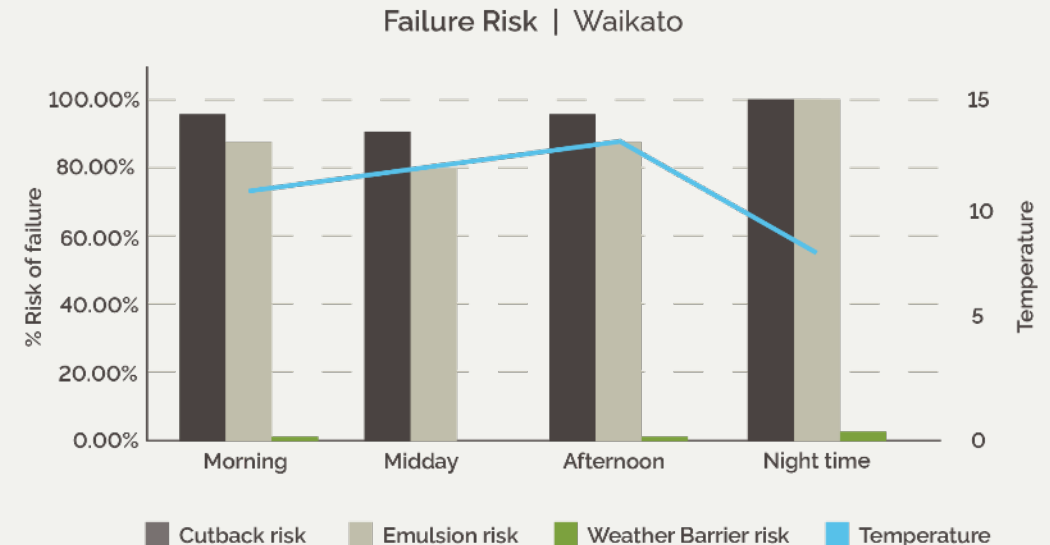
- Cooler temperatures and higher moisture levels meant the risk profile was already elevated
- Road Science assessed the estimated risk of stripping across the sites at over 80% using traditional approaches alone.

Trial sites:

Weather Barrier was incorporated into the sealing membrane on two of the four sites as part of a comparative trial.

Results over the following weeks:

- Sites without Weather Barrier experienced significant stripping and loss of surface integrity
- Sites treated with Weather Barrier showed no signs of stripping or chip loss



With Weather Barrier integration, the assessed risk of stripping on the treated sites dropped dramatically, from over 80% to less than 10%.

Christchurch | winter night works

– key project insights

Objective: Test whether Weather Barrer could provide enough early-life protection to allow a seal to cure successfully under conditions where failure would normally be expected.

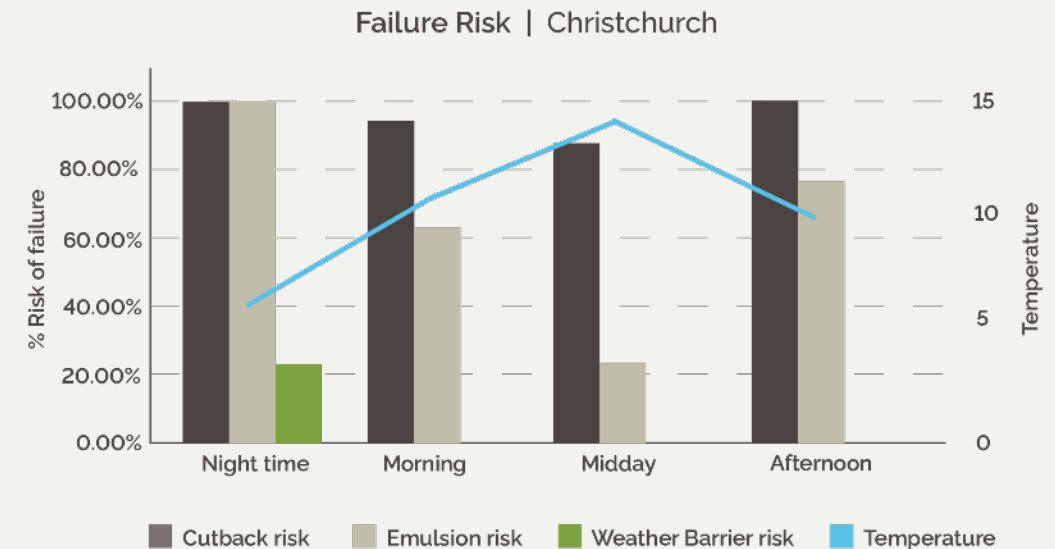
Two comparable sites were prepared:

- One seal included Weather Barrier in the membrane
- The other followed the same design without Weather Barrier

The seal itself was low risk, with a low emulsion application rate - but the environmental conditions alone posed a significant challenge (Night works during winter with overnight temperatures of 5°C).

Results the following morning:

- The untreated site had already begun to strip, with visible chip loss
- The Weather Barrier-treated site was fully cured before peak morning traffic reached it



From a risk assessment perspective, Road Science initially expected some level of failure (as shown in graph above). Even minor chip loss was considered likely once traffic returned the following morning, given the cold overnight temperatures and limited curing window. However, the outcomes told a different story.

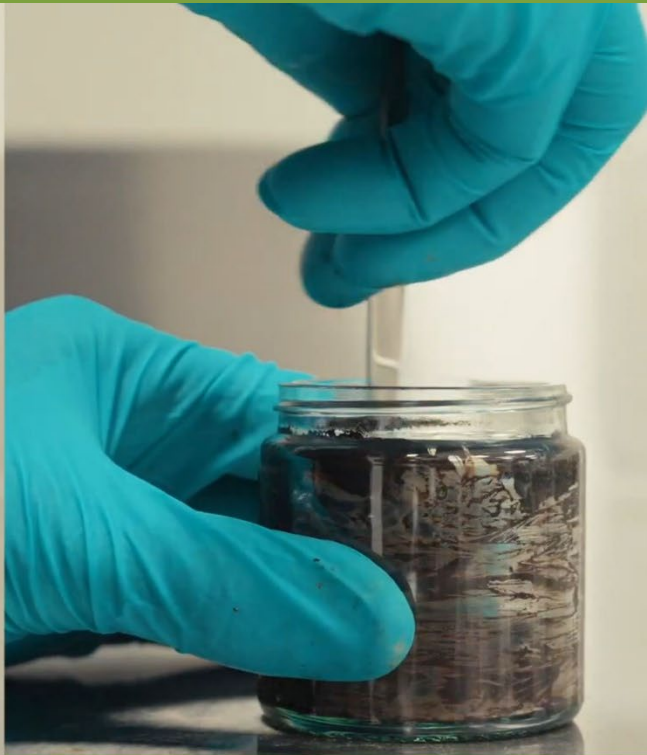
Full through curing – 45 minutes after application



When following code of practice, and guidance from [Zeus](#), Weather Barrier reduces risk of wash off.



Untreated



WeatherBarrier



WeatherBarrier

“ Weather Barrier is an outstanding and highly effective product. When applied directly after chip application, it has performed exceptionally well, including occasions where rainfall occurred immediately after completion with no runoff experienced.

The product has been crucial in maintaining sealing team productivity during adverse weather conditions, allowing works to continue with greater confidence. ”



Trevor Otton
National Pavement
Preservation + Sealing Manager



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