



Severely flushed road



AntiFlush Seal

Sealing emulsion treatment
Product insights guide

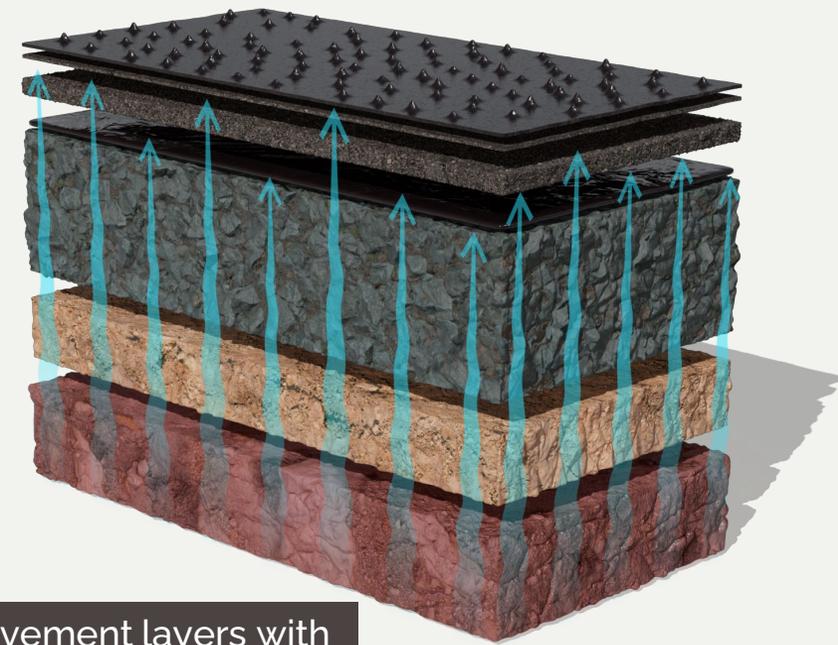
February 2026

Road 
Science

What is flushing?

Driven by frequent temperature fluctuations, it is largely the phenomenon where trapped moisture creates pressure beneath the road layers and forces bitumen to migrate to the surface.

Flushing is most commonly recognised as the 'black shiny patches' on a road and the small volcano bubbles.



Pavement layers with bitumen migration



Flushed road – volcano bubbles

Stop flushing roads

AntiFlush Seal is a high-performance bitumen emulsion designed to combat flushing by sealing off water vapour venting through chip seal layers.

Reinforced with premium polymers and binders, it forms a strong, flexible, and waterproof membrane that prevents bitumen migration and surface bleeding, to support safer roads with better grip.

PROPERTIES



Polymer Modified



Emulsion

USED FOR



Chip Loss



Flushing



Life Extension



Cracking



Waterproofing

ENVIRONMENTS



Residential



Motorway



Rural

AntiFlush Seal benefits

- Prevents flushing + increases road safety
- Practical solution
- Extends seal lifespan
- Safe application
- Standard sprayer compatibility
- Stops binder rise
- Retention of macrotexture and skid resistance



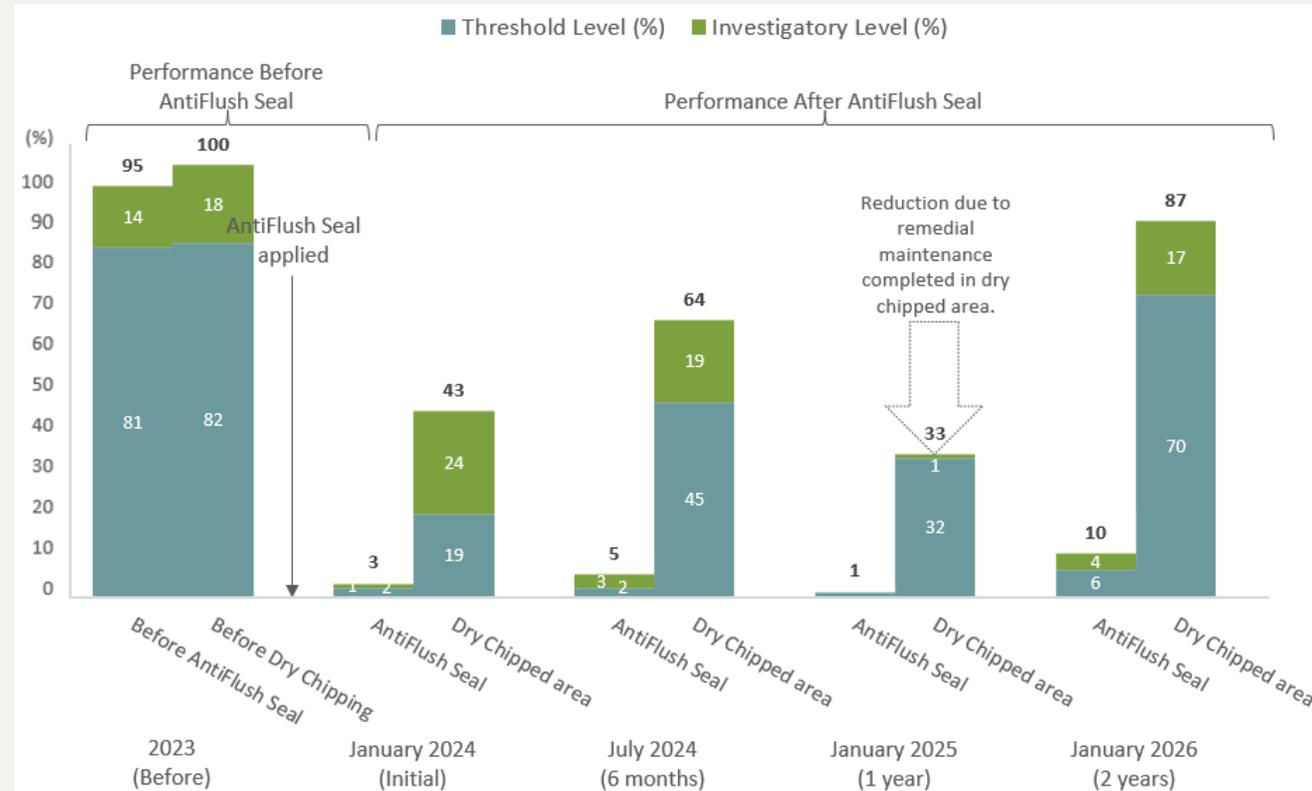
Porangahau Road

- key project insights

- Overbuilt surface (5+ seals, weak pavement base) → recurring flushing and 2021 reseal failure
- Dec 2023 Hawkeye data: heavy flushing across both trial and control zones
- Jan 2024: AntiFlush Seal applied – resetting the surface from mostly failing to predominantly passing
- A dry-chipped section acted as the informal control, giving only a short-term texture lift
- **6-month review:** AntiFlush Seal remained stable and performing strongly; control section deteriorated rapidly
- **1-year review:** AntiFlush Seal still in excellent condition; control section continues degrading. Minor texture lift in control section was due to remedial maintenance, not treatment performance
- **2-year review:** AntiFlush Seal continues to perform very well; control section fully flushed in wheel paths.



Hawkeye Macrotexture Comparison



Macrotexture performance of the AntiFlush Seal on Porangahau Road. Macrotexture comparisons show that while dry-chipping offered short-term relief - deteriorating rapidly until a maintenance intervention was required - AntiFlush Seal effectively reset the surface and consistently maintained improved macrotexture without the need for additional treatment.

Porangahau Road – AntiFlush Seal treated site



Performance highlights



Seal lifespan expansion

Flushing sites sealed with conventional treatments typically fail within 2 years.

Data modelling indicates AntiFlush Seal delivers a significantly longer performance life of 6+ years.

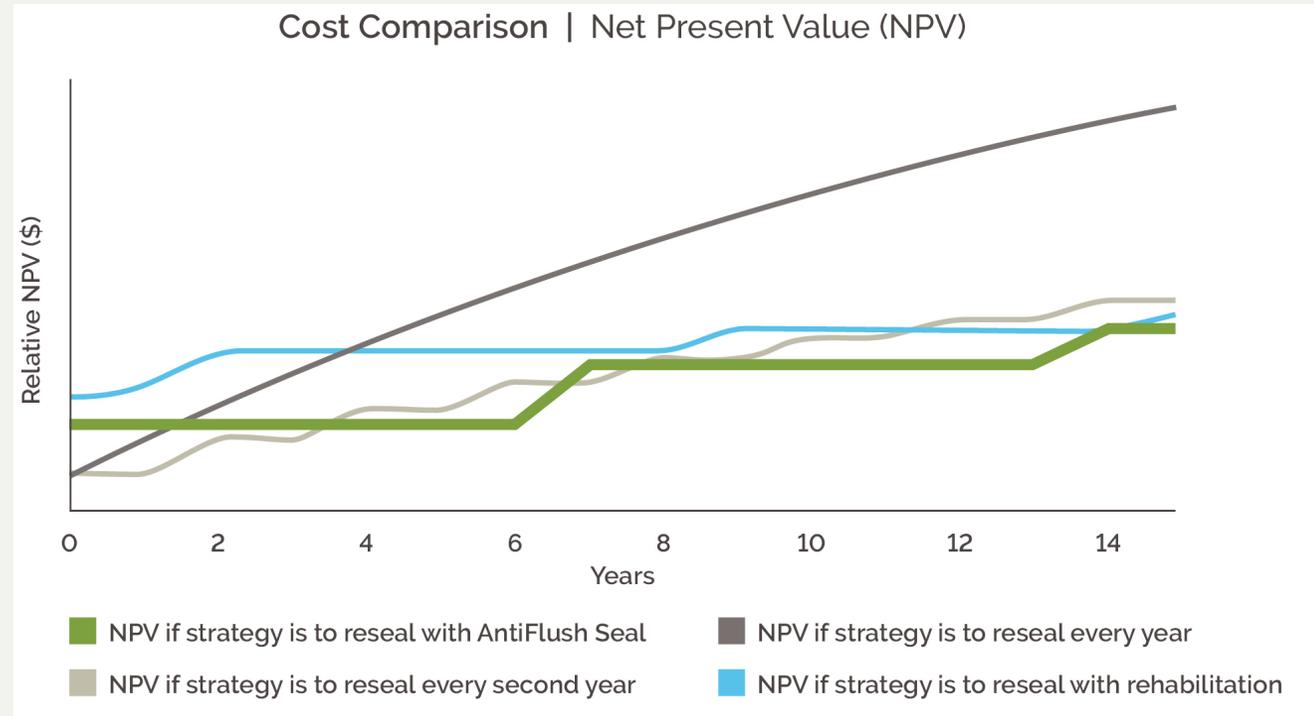
View full technical report on trials here: [AntiFlush Seal trial overview](#)

Cost comparison

NPV comparisons show that flushing sites often need resealing every 1–2 years due to rapid deterioration, driving up lifecycle costs.

While AntiFlush Seal has a higher upfront cost, its superior performance and extended service life delays repeat treatments.

The investment is typically recovered within 1.5–3.5 years, after which it delivers clear cost savings over standard resealing strategies.





AntiFlush Seal

“ Many sealed roads carry decades of chipseal layers, and increasing moisture and rising water vapour within these older pavements often leads to flushing - even where roadside drainage is good. After applying AntiFlush Seal, the results have been nothing short of spectacular: the treated section continues to retain strong surface texture two years on, while adjacent areas using conventional materials showed flushing within weeks. AntiFlush Seal offers Councils and road owners a valuable bituminous solution to extend the life of aging pavements and defer costly reconstruction ”

Downer

Brandon Walker
Surfacing Capability Manager



Key contacts

Jeremy Boyd
Product Manager
Road Science

021 443 624

Jeremy.boyd1@roadscience.co.nz
(on-site enquiries)

Manaf Alshamsi
Product Growth Manager
Road Science

021 882 822

Manaf.alshamsi@roadscience.co.nz
(sales enquiries)



roadscience.co.nz
0800 180 200