USED FOR

Cracking | Waterproofing | Chip Loss | Life Extension | Flushing

ENVIRONMENTS

Residential | Rural | Motorway

AntiFlush Seal

Prevent flushing + enhance road durability.

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

AntiFlush Seal is reinforced with premium polymers and binders, it forms a strong, flexible, and waterproof membrane that prevents bitumen migration and surface bleeding. Its highly elastic properties allow it to deform under pressure without perforating, ensuring long-lasting pavement stability.

Engineered to withstand extreme weather temperature variations and heavy traffic, AntiFlush Seal enhances road longevity by resisting bitumen flushing, wear, moisture infiltration, and surface deterioration.

What is flushing?

Flushing occurs when bitumen in the road layers refuses to stay put, and migrates to the surface. This phenomenon is driven by frequent temperature fluctuations, where trapped moisture within the pavement evaporates, increasing water vapour pressure beneath the road and pushing bitumen to the surface. The issue becomes particularly problematic during the height of summer, when the relentless New Zealand sun can turn roads into a sticky, deteriorating mess.

Where to use AntiFlush Seal

Chip sealing application on sites characterised with:

- Low texture
- Multiple seal layers (4+)
- History of flushing resulting in seal failure within 2 years

Benefits

- Prevents flushing
- Practical solution
- Extended seal lifespan
- Safe application
- Standard sprayer compatibility

Road Science
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AntiFlush Seal

Specification

Typical properties of AntiFlush Seal

Property	Method	Specification
Binder content	In-house method	72.5 - 76%

Properties

Handling

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

AntiFlush Seal	
Normal handling temperature	50 - 55˚C
Maximum safe handling temperature	60˚C
Spray temperature	50 - 55˚C
Pumping temperature	40 - 55˚C
AntiFlush Seal must be always be handled within the temperature range of 40 - 55˚C	

AntiFlush Seal is a water based system and as such care should be taken with regard to risks associated with rain and runoff. Normal environmental control precautions for the use of emulsions should be taken.

Flush tank, spray bar, hand lance, and pump thoroughly with standard emulsion within 24hrs of use to avoid build up and to ensure equipment does not have any blockages. Ensure all the product is sprayed out, and none remains in the tank below safe minimum heating level. Transfer into IBCs if required.

The tank must be reloaded (to at least the same level) with standard emulsion, and flushed within 24hr of using AntiFlush Seal.

Circulation

AntiFlush Seal should be circulated for at least 10 minutes prior to commencing spraying, but should not be circulated for extended time. Ensure temperature is above 40˚C before pumping/recirculating.

Heating

If you do need to reheat AntiFlush Seal emulsion, then this needs to be undertaken slowly with the rate of heating not exceeding 10˚C per hour. Never heat beyond 60˚C.

Curing

AntiFlush Seal does have a longer curing window than standard bitumen emulsions. The option of using AntiFlush Seal is available in Zeus, Road Sciences targeted weather insights tool.

Storage

AntiFlush Seal	
Short term storage temperature (up to 2 days)	50 - 55˚C
Long term storage temperature (beyond 2 days)	25˚C
Critical: Long term storage	
If there is a need to postpone spraying beyond 2 days, storage temperatures should be dropped immediately to 25˚C to reduce risk of skinning. Never allow AntiFlush Seal to freeze, or recirculate it over an extended period of time as the emulsion will break.	

Application

AntiFlush Seal is applied using a catalogue 4/6 sandwich seal design with a wet application rate of 2L/m^2. This rate may be adjusted depending on the specific application, determined on a site-by-site basis. AntiFlush Seal can be applied using standard emulsion application equipment and methods.

AntiFlush Seal Application Rate	
Wet application rate	**Residual binder application rate**
2L/m^2	1.5L/m^2 residual
Critical: Wet emulsion rate must be as noted above in order to guarantee membrane strength	

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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.

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.