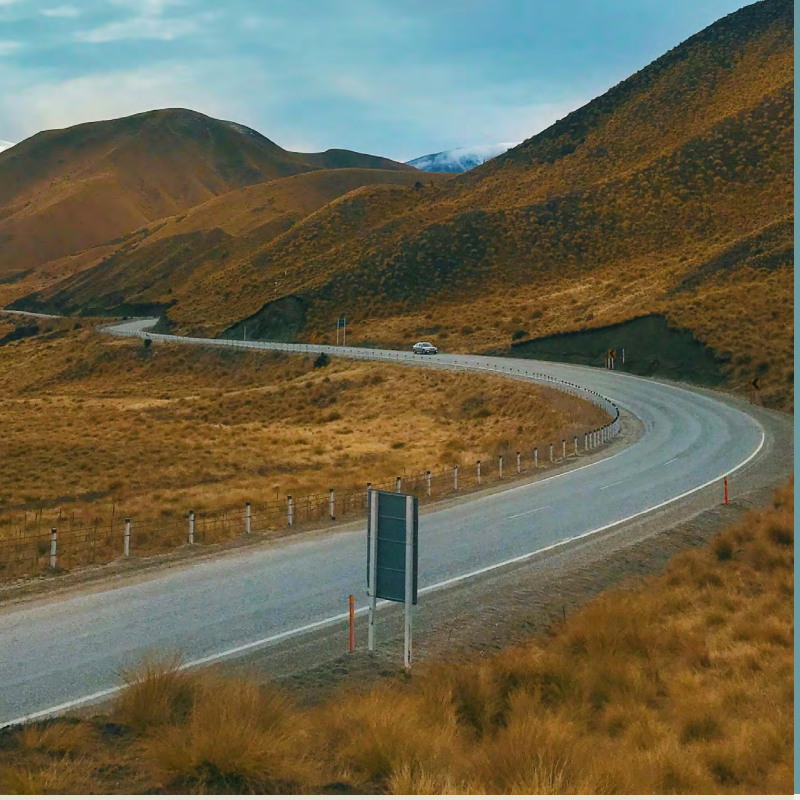

USED FOR

Ravelling Cracking Rutting

ENVIRONMENTS

Motorway Roundabouts & Intersections Industrial Rural Residential

FlexiPlus Bind

Advanced polymer-modified binder for superior fatigue and rut resistance

FlexiPlus Bind is a high-performance polymer-modified binder formulated to enhance both fatigue resistance and rutting performance in asphalt mixes. Engineered for long-life pavement solutions, FlexiPlus Bind delivers performance well beyond that of conventional bitumen-based binders.

By significantly improving cracking resistance, and moderate improvements for rut resistance, FlexiPlus Bind ensures extended service life for road and pavements, even under heavy traffic loads and demanding environmental conditions. Its use in standard asphalt mixes transforms them into durable, high-resilience surfaces capable of withstanding continuous stress and deformation.

Treatment areas ideal for FlexiPlus Bind use

- Dense and gap graded asphalt mixes
- High loading applications without rutting or shoving
- High-deflection bases
- Applications include arterial routes, intersections, roundabouts, and slow crawler lanes
- Ultra-thin asphalt mixes where exceptional fatigue resistance and long-term durability is required

Benefits

- Extended fatigue life
- Increased rut resistance
- Optimised for construction – Balances high-performance properties with constructability, ensuring ease of use

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FlexiPlus Bind

Specification

Typical properties of FlexiPlus Bind

Property	Method	Specification
Viscosity mPas (at 135˚C 10rpm)	ASTM /D4402	3000 max
Softening point	ASTM D36	80˚C min
Density	ASTM D70	1029 (kg/l)
Torsional recovery	AGPT/122	50% min

Properties

Handling

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

FlexiPlus Bind	
Normal safe handling temperature	180˚C
Maximum safe handling temperature	185˚C
Pumping binder temperature	170˚C - 185˚C

For mixing and compaction temperature guidance, refer to Road Science asphalt binder mixing and compaction temperatures document.

Circulation

FlexiPlus Bind should be circulated for at least 2 hours prior to commencing mixing.

Heating

- Heating needs to be undertaken slowly with a rate of no more than 10°C per hour
- FlexiPlus Bind is a highly polymer-modified product and is therefore highly viscous. The viscous nature means that FlexiPlus Bind is reluctant to move away from a heat source; hence there is higher risk of 'cooking' the polymer than would be experienced when handling conventional bitumen.
- If the tank is fitted with an agitator, then this should be used when heating above 140°C. This will ensure good FlexiPlus Bind flow over the flame tubes, thereby reducing the likelihood of localised over-heating and product degradation
- Electric heating is always preferred over flame tubes for heating FlexiPlus Bind due to the lower surface temperatures
- Under no circumstances should you exceed the 320°C on the flame tube surface

Critical: Cold start heating process

FlexiPlus Bind

The following procedure must be followed when heating FlexiPlus Bind from cold or any temperature where the product temperature is less than 100°C

1. Check and ensure that the product level in the tank is at or above the minimum safe handling level
2. Carry out all pre-operation checks for the tank and burner/heating system
3. Run the burner/heating system for a maximum of 15 minutes and switch off
4. Leave the tank heating off for a minimum of 5 minutes
5. Repeat steps 3 and 4 until FlexiPlus Bind temperature exceeds 100°C
6. Once FlexiPlus Bind temperature is above 100°C the heating system can be run continuously to bring the product temperature up to the required working temperature
7. Once FlexiPlus Bind temperature is above 140°C, turn on the agitator

FlexiPlus Bind

Storage

FlexiPlus Bind	
Short term storage temperature (up to 2 days)	185˚C
Medium term storage temperature (3 to 5 days)	150˚C - 160˚C
Long term storage temperature (beyond 5 days)	150˚C max
Critical: Long term storage	
If there is a need to postpone manufacture beyond 5 days, the storage temperatures of FlexiPlus Bind should be dropped immediately to <150°C. If there is considerable delay; it may be economic to drop the product temperature to ambient, then the reheating cycle must follow the 'Cold Start' procedure (see above)	

Equipment

Following the use of FlexiPlus Bind, all lines should be flushed with straight run bitumen to prevent any blockages due to the cooling of residual FlexiPlus Bind

Treatment Selection + Mix Design

Prior to undertaking the manufacture of stone mastic asphalt (SMA) or ultra thin asphalt (UTA) mixes; the design mix using FlexiPlus Bind binder should be tested in the laboratory using the Schellenberg Drainage test to ensure that the mixing temperature will not cause excessive drain down of the binder during transportation and paving.

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.