

#### Description

Viva Bitumen S25E is a high performance SBS modified sealing grade bitumen. The binder has been designed to be used in seals over highly distressed pavements where both environmental cracking and traffic induced cracking may be observed. Environmental cracks are slow moving and can be induced by seasonal or diurnal changes in temperature or ground water conditions. Viva Bitumen S25E is a suitable bitumen for sites where the cracking severity is extensive and crack movement is observed to be up to 0.5mm.

Viva Bitumen S25E can also be used in SAMI applications where asphalt overlays are applied to existing heavily fatigued surfaces.

#### Performance features

The performance characteristics of bitumen can be significantly improved through the addition of appropriate polymers. Changes to the rheology of the base binder confer beneficial properties to the seal resulting in the following:

- Reduced temperature susceptibility
- Increased stiffness modulus
- Substantially increased elasticity
- Improved adhesion

Various types of polymers have been used as bitumen modifiers, however tests have shown the most effective to be the thermoplastic rubbers of the SBS type (Styrene - Butadiene - Styrene block co-polymer).

The introduction of the SBS polymer greatly improves binder adhesion and elasticity. These properties are essential in strain alleviating membranes which are commonly used to extend the life of damaged pavements.

This technology is only available through the integration of these premium SBS polymers with high-grade bitumen and other specially selected materials to give a binder that combines extraordinary performance with safe handling and ease of application.

This ensures the formation of a stable, three dimensional network within the bitumen, giving Viva Bitumen S25E substantially improved properties when compared with conventional bitumen and other PMB's.

#### Summary of benefits

Advantages of Viva Bitumen S25E over conventional binders are as follows:

- Improved aggregate adhesion in highly stressed areas.
- Superior rheology for seals subject to traffic induced cracks.
- Higher cohesive strength to withstand stripping action of high speed traffic.
- Higher viscosity at elevated temperatures combats bleeding of binder.

#### Applications

Viva Bitumen S25E is a bitumen with a high level of polymer modification which can be used for sealing applications where conditions demand the use of a highly robust and elastic seal. Fatigued bases which exhibit slow moving cracks, expanding and contracting with environmental changes as well as fast moving traffic generated cracks provide ideal sites for treatment with Viva Bitumen S25E. Preferably, a program of crack sealing treatment should be carried out prior to seal application in order to minimise the potential for the crack pattern to reflect through the seal. Viva Bitumen S25E can also be considered for SAMI applications where environmental cracking is the predominant distress mode in the base. It can also be applied as a high stress seal (HSS) where high traffic related stresses are transmitted to the seal at steep gradients, tight curves and heavy trafficked areas.

Viva Bitumen S25E can be used in conjunction with geotextiles to counteract significant crack movements, i.e. > 0.5mm, which cannot be accommodated by the bitumen seal itself.

#### Cutting Practice

Recommended cutting practice for S25E is as follows:

Pavement Temp (°C)	Parts cutter (vol) per 100 parts binder @ 15°C	
	Traffic Conditions	Rate
15 - 20	Low (<100 v/l/d)	5-8
	Medium (100 - 1500 v/l/d)	5-8
	Heavy (>1500 v/l/d)	4-7
21 - 25	Low	3-6
	Medium	2-5
	Heavy	2-4
26 - 35	Low	2-4
	Medium	2-3
	Heavy	2-3
>36	All conditions	Min 2

**Note:** when Viva Bitumen S25E is used as a SAMI it is recommended that no cutter is used to reduce the viscosity of the bitumen during the spraying operation as this may have a softening effect on the asphalt overlay.

#### Health and safety

Viva Bitumen S25E is unlikely to present any significant health or safety hazard when properly used in the recommended application where good standards of industrial practice are maintained.

Further guidance on Product Health and Safety is available on the relevant Material Safety Data Sheet.

Specifications/approvals		
AG:PT/T190		S25E
TMR MRS 11.18		S4.5S
SA Dot		SB-6

#### Typical characteristics

Description	Units	Methods	Typical
Consistency at 60° C	Pa.s	AG:PT/T1 21	6000 Min
Stiffness at 15° C	kPa	AG:PT/T1 21	95 max
Torsional recovery at 25° C	%	AG:PT/T1 22	52 min