

Technical Data Sheet

Viva Bitumen M500

Multigrade Bitumen

Description

Viva Bitumen M500 is an engineered bitumen with a reduced temperature susceptibility. At high in-service temperatures, the bitumen exhibits the viscosity characteristics of a 600 Pa.s material, whereas at low temperatures, the binder behaves as a C-170 bitumen. The unique manufacturing process produces a bitumen with an improved penetration index which can be used in both asphalt and sealing applications. Viva Bitumen M500 is designed as a hybrid multigrade bitumen for medium to heavy duty asphalt use and premium sealing applications.

Viva Bitumen M500 offers a bitumen with increased high temperature stiffness and viscosity characteristics, whilst maintaining good adhesion, fatigue and healing properties without the degree of cracking and fretting problems typical of conventional high viscosity grades of bitumen.

Performance Features

Ease of storage and handling

Viva Bitumen M500 does not require any special storage or handling procedures. M500 bitumen is an ex-refinery product and can be handled in the same manner as conventional binders. It can be stored at high temperatures (160 – 180 degrees) comfortably for 3 days, but longer term storage should be at a reduced temperature. (See AAPA Advisory note 7).

Improved Adhesion

The manufacturing route of M500 bitumen confers improved adhesion qualities to the binder which is manifested as greater competency in asphalt and seal performance.

Reduced temperature susceptibility

Viva Bitumen M500 has a higher penetration index than conventional paving grade binders meaning that for a unit change in temperature there is less change in viscosity, i.e. it is less temperature susceptible. This property is clearly illustrated on the Bitumen Test Data Chart (fig 1) where M500 can be seen to have a flatter slope than conventional bitumen.

The temperature susceptibility is a measure of the rheology of the product and is illustrated in the Bitumen Test Data Chart (Fig. 1).

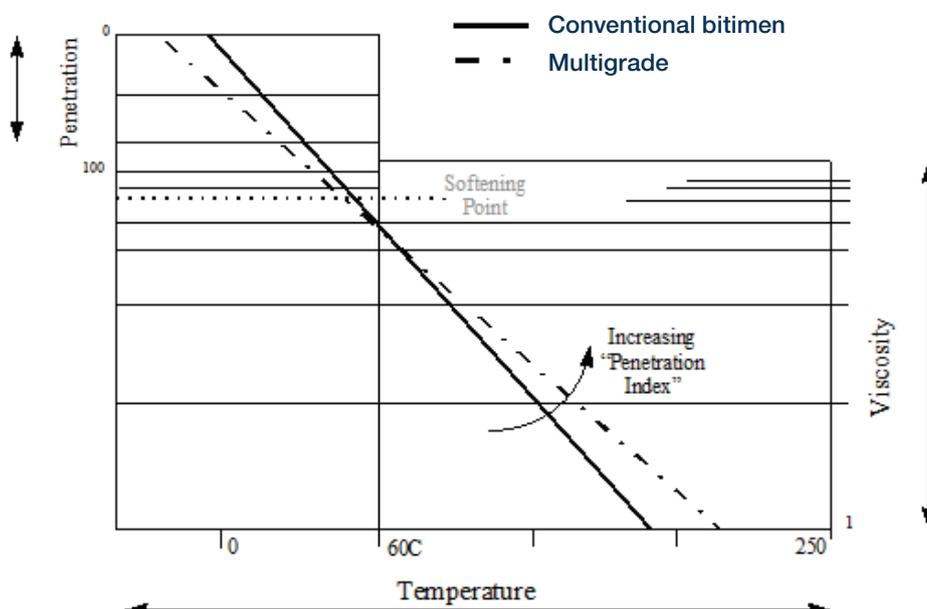


Fig. 1 Bitumen Test Data Chart

The top left hand corner of the chart shows that at low temperatures Viva Bitumen M500 is less susceptible to low temperature cracking than conventional bitumen helping to promote both the longevity of seals and asphalt mixtures.

The bottom right hand corner shows that for the same high temperature Viva Bitumen M500 has a higher viscosity than a conventional bitumen reducing the tendency for a seal to bleed or an asphalt mixture to deform.

Applications

Viva Bitumen M500 is typically used in seals or asphalts on highly stressed sites or regions where temperature extremes can be expected. The improved rheological characteristics of the Multiphalte bitumen make it a suitable binder for heavily trafficked areas.

In seals Viva Bitumen M500 can be used in conjunction with geotextiles to counteract significant crack movements, i.e. > 0.5mm, which cannot be accommodated by the bitumen itself.

Cutting Practice

Recommended cutting practice for M500 using Viva Bitumen cutter 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) Medium (100 - 1500 v/l/d) Heavy (>1500 v/l/d)	5-8 4-6 3-4
21 - 25	Low Medium Heavy	3-6 2-4 1-2
26 - 35	Low Medium Heavy	2-3 2-3 1-2
>36	All conditions	0-2

Polymer Factor

It is recommended that a 'polymer factor' of 1.1 is applied to M500 spray seals for all traffic levels

Health and Safety

Viva Bitumen M500 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

AS2008 Table 2.2	M500
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Typical characteristics

Description	Units	Methods	Typical
Viscosity at 60°C	Pa.s	AS 2341.2	500
Viscosity at 135°C	Pa.s	AS 2341.2	0.9
Pen at 25°C	dmm	AS 2341.12	min 65
Flashpoint	°C	AS 2341.14	min 250