

Technical Data Sheet

Viva Bitumen M1000

Multigrade Bitumen

Description

Viva Bitumen M1000 is an engineered bitumen with a reduced temperature susceptibility. At high in-service temperatures, the bitumen exhibits the viscosity characteristics of a 1000 Pa.s material, whereas at low temperatures, the binder behaves as a C320 bitumen. The unique manufacturing process produces a bitumen with an improved penetration index which confers excellent rut resistant qualities to asphalt mixtures. Viva Bitumen M1000 is designed as a cost effective solution to deformation problems where conditions would not warrant the use of more costly alternatives.

Viva Bitumen M1000 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 M1000 does not require any special storage or handling procedures. M1000 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 - 175 degrees) for up to 14 days, but longer term storage should be at 140 degrees. (See AAPA Advisory note 7).

Viva Bitumen recommend that M1000 is not heated above 185 degrees.

Reduced temperature susceptibility

Viva Bitumen M1000 bitumen has a higher penetration index than conventional paving grade binders meaning that for a unit change in temperature there 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 M1000 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).

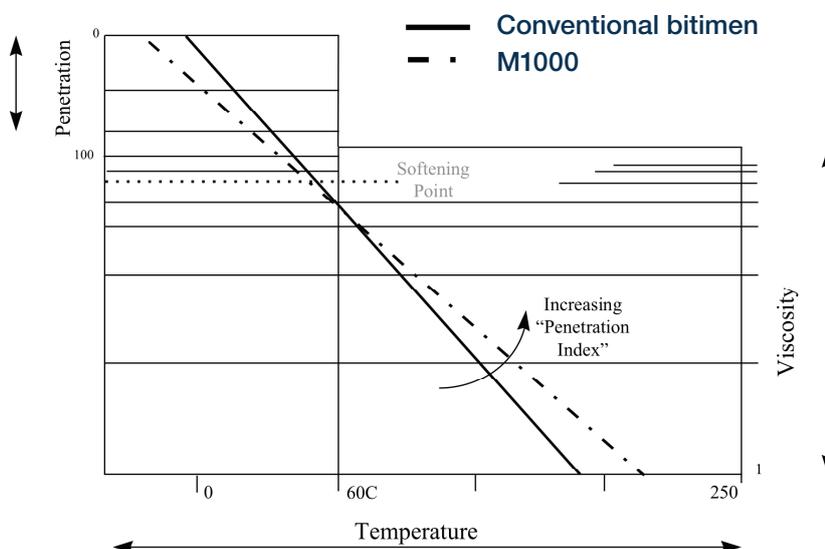


Fig. 1 Bitumen Test Data Chart

The top left hand corner of the chart shows that at low temperatures M1000 is less susceptible to low temperature cracking than conventional bitumen meaning that as a component in asphalt it is less brittle at low winter temperatures.

The bottom right hand corner shows that for the same high temperature M1000 has a higher viscosity than a conventional bitumen meaning that it improves the pavements resistance to permanent deformation during high summer road temperatures.

Specifications/Approvals

Advantages of Viva Bitumen M1000 over conventional binders (e.g. Class 320) when used in asphalt manufacture are as follows:

- Significantly improved resistance to rutting of asphalt mixtures.
- Greater fatigue and adhesion properties to provide a road surface with superior rut resistance in a wide variety of mix types.
- Greater resistance to low temperature cracking.

Handling advantages of Viva Bitumen M1000 are as follows:

- Requires no special handling methods or equipment and has application temperatures similar to conventional bitumens.
- Can be maintained at elevated temperatures for considerable periods without affecting its properties.

Applications

Viva Bitumen M1000 is typically used as a binder in locations where heavy traffic loads and/or extremes of temperature can be expected. M1000 is ideal for use where heavily trafficked sites have failed due to rutting.

Accelerated laboratory tests have clearly demonstrated the effectiveness of multigrade Bitumens to rutting resistance. To prove the practical implications of these tests, the construction of public roads using M1000 began in Europe in 1985. The outstanding performance from the original trials led to the commercial introduction of Multigrade bitumen in Europe, Canada and Australia.

Health and Safety

Viva Bitumen M1000 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	M1000
------------------	-------

Typical characteristics

Description	Units	Methods	Typical
Viscosity at 60°C	Pa.s	AS 2341.2	1200
Viscosity at 135°C	Pa.s	AS 2341.2	1.1
Pen at 25°C	dmm	AS 2341.12	min 40
Flashpoint	°C	AS 2341.14	min 250
Viscosity at 60°C post RTFOT	Pa.s	AS2341.2	5000