



# 70/100 PENETRATION GRADE BITUMEN

## Penetration Grade Bitumen

Product Data Sheet 2013/09

### DESCRIPTION

**70/100 Penetration Grade Bitumen** is produced from the vacuum distillation of crude oil and is classified according to its penetration range.

### USES

**70/100 Penetration Grade Bitumen** is used in the construction of single seals, double seals and Cape seals, either as a tack coat or penetration spray. It is also used as the base bitumen for the manufacture of the majority of emulsions and polymer modified binders.

### PROPERTIES

**70/100 Penetration Grade Bitumen** is a thermoplastic material which softens gradually as it is heated and hardens as it is cooled. This unique temperature/viscosity relationship is important when determining its performance parameters and application temperatures. Unlike modified binders, penetration grade bitumen acts as a Newtonian fluid at high in-service temperatures, which allows one to establish a temperature/viscosity relationship.

### SPECIFICATIONS

**70/100 Penetration Grade Bitumen** conforms to the SANS 4001-BT1:2012 specification for penetration grade bitumen:

BINDER PROPERTIES	70/100 REQUIREMENTS		TEST METHOD
	Min	Max	
<b>Before Ageing</b>			
Penetration @ 25°C/100g/5s, 1/10 mm	70	100	EN 1426
Softening point, °C	42	51	ASTM D 36
Dynamic viscosity @ 60°C, Pa.s	75	-	ASTM D 4402
Dynamic viscosity @ 135°C, Pa.s	0,15	0,40	ASTM D 4402
<b>After Ageing (RTFO)</b>			
Mass change % m/m	-	0,3	ASTM D 2872
Dynamic viscosity @ 60°C, % of original, Pa.s	-	300	ASTM D 4402
Softening point, °C	44	-	ASTM D 36
Increase in softening point, °C	-	7	ASTM D 36
Retained penetration, % of original	50	-	EN 1426
Spot test, % xylene	-	30	AASHTO T102

### DIRECTIONS FOR USE

1. Pre-coating of stone is recommended. Chip spreader to follow closely behind sprayer
2. Apply with a conventional distributor at a minimum road surface temperature of 25°C and rising.
3. The seal can be opened to traffic immediately after rolling and sweeping without the risk of chip loss.
4. Recommended storage and handling criteria for **70/100 Penetration Grade Bitumen**:

Application temperature	170°C	
Maximum storage temperatures	< 24 hours	> 24 hours
	175°C	150°C

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