

# BITUMEN SUPPLIES & SERVICES

THE BITUMEN PROFESSIONALS



35 50 PEN GRADE

40 50 PEN GRADE

40 60 PEN GRADE

50 70 PEN GRADE

60 70 PEN GRADE

70 100 PEN GRADE

80 100 PEN GRADE

## BITUMEN

### PRODUCT SPECIFICATIONS

ESPECIFICACIONES DEL PRODUCTO

SPÉCIFICATIONS DU PRODUIT

ESPECIFICAÇÕES DO PRODUTO

产品规格

[www.bsspty.com](http://www.bsspty.com)



# 35/50 PENETRATION GRADE BITUMEN

Penetration Grade Bitumen

## DESCRIPTION

**35/50 Penetration Grade Bitumen** is produced from the vacuum distillation of crude oil and is classified according to its penetration range.

## USES

**35/50 Penetration Grade Bitumen** is used in the manufacture of the hotmix asphalt for base courses and wearing courses.

## PROPERTIES

**35/50 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

**35/50 Penetration Grade Bitumen** conforms to the AASHTO standards specification for penetration grade bitumen:

PROPERTY	UNITS	REQUIREMENT		TEST METHOD
		MIN	MAX	
Penetration @ 25°C/100g/5sec	0.1mm	35	50	ASTM D5
Softening point	°C	49	59	ASTM D36
Ductility @ 10°C	Cm	100	-	ASTM D113
RT Duct 15	Cm	10	-	ASTM D 113
RTFOT LOH	%	-	0.30	ASTM D 2572
Viscosity @ 60°C	Pa.s	220	-	ASTM D4402+
Viscosity @ 135°C	Pa.s	0.27	0.65	ASTM D4402+
RTFOT Softening point	°C	52	-	ASTM D36*
RTFOTD mass change	%	-	0.3	ASTM D2872
Xylene	%	-	30	AASHTO-T102

## DIRECTIONS FOR USE

Recommended storage and handling criteria for **35/50 Penetration Grade Bitumen**



# 40/50 PENETRATION GRADE BITUMEN

Penetration Grade Bitumen

## DESCRIPTION

**40/50 Penetration Grade Bitumen** is produced from the vacuum distillation of crude oil and is classified according to its penetration range.

## USES

**40/50 Penetration Grade Bitumen** is used in the manufacture of the hotmix asphalt for base courses and wearing courses.

## PROPERTIES

**40/50 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

**40/50 Penetration Grade Bitumen** conforms to the AASHTO standards specification for penetration grade bitumen:

PROPERTY	UNITS	REQUIREMENT		TEST METHOD
		MIN	MAX	
Penetration @ 25°C/100g/5sec	0.1mm	40	50	ASTM D5
Softening point	°C	52	60	ASTM D36
Ductility @ 25°C	Cm	100	-	ASTM D113
Loss on heating	Wt%	-	0.2	ASTM D6
Flash point	°C	232	-	ASTM D92
Viscosity @ 60°C	Pa.s	3200	4800	ASTM D2171
Viscosity @ 135°C	cSt	400	-	ASTM D2170
RTFOTD mass change	%	-	±0.8	ASTM D2872

## DIRECTIONS FOR USE

Recommended storage and handling criteria for **40/50 Penetration Grade Bitumen**



# 40/60 PENETRATION GRADE BITUMEN

Penetration Grade Bitumen

## DESCRIPTION

**40/60 Penetration Grade Bitumen** is produced from the vacuum distillation of crude oil and is classified according to its penetration range.

## USES

**40/60 Penetration Grade Bitumen** is used in the manufacture of the hotmix asphalt for base courses and wearing courses.

## PROPERTIES

**40/60 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

**40/60 Penetration Grade Bitumen** conforms to the AASHTO standards specification for penetration grade bitumen:

PROPERTY	UNITS	REQUIREMENT		TEST METHOD
		MIN	MAX	
Penetration @ 25°C/100g/5sec	0.1mm	40	60	ASTM D5
Softening point	°C	49		ASTM D36
Ductility @ 25°C,	Cm	100	-	ASTM D113
Penetration index PI	-	-1.5	+1.0	T0604
Wax content,	%	-	2.2	T0615
Flash Point,	°C	240	-	T0611
Solubility (15°C)	%	99.5%	-	T0607
Density (15°C)	g/cm <sup>3</sup>	Spot test	-	T0603
RTFOTD Mass Change	%	-	+/-0.8	T0609
Ductility@25°C	Cm	80	-	T0605

## DIRECTIONS FOR USE

Recommended storage and handling criteria for **40/60 Penetration Grade Bitumen**



# 50/70 PENETRATION GRADE BITUMEN

## Penetration Grade Bitumen

### DESCRIPTION

**50/70 Penetration Grade Bitumen** is produced from the vacuum distillation of crude oil and is classified according to its penetration range.

### USES

**50/70 Penetration Grade Bitumen** is used in the manufacture of the hotmix asphalt for base courses and wearing courses.

### PROPERTIES

**50/70 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

**50/70 Penetration Grade Bitumen** conforms to the SANS 4001-BT11:2012 specification for penetration grade bitumen:

BINDER PROPERTIES	50/70 REQUIREMENTS		TEST METHOD
	MIN	MAX	
<b>Before Ageing</b>			
Penetration @ 25°C?100g/5s, 1/10mm	50	70	EN 1426
Softening point, °C	46	56	ASTM D 36
Dynamic Viscosity @ 60°C, Pa.s	46	56	ASTM D 4402
Dynamic Viscosity @150°C, Pa.s	46	56	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	48	-	ASTM D 36
Increase in softening point, °C	-	7	ASTM D 36
Retained penetration, % of original	55	-	EN 1426
Spot test, % xylene	-	30	AASHTO T102

### DIRECTIONS FOR USE

Recommended storage and handling criteria for **50/70 Penetration Grade Bitumen**



# 60/70 PENETRATION GRADE BITUMEN

Penetration Grade Bitumen

## DESCRIPTION

**60/70 Penetration Grade Bitumen** is produced from the vacuum distillation of crude oil and is classified according to its penetration range.

## USES

**60/70 Penetration Grade Bitumen** is used in the manufacture of the hotmix asphalt for base courses and wearing courses.

## PROPERTIES

**60/70 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

**60/70 Penetration Grade Bitumen** conforms to the AASHTO standards specification for penetration grade bitumen:

PROPERTY	UNITS	REQUIREMENT		TEST METHOD	OTHER
		MIN	MAX		
Penetration @ 25°C/100g/5sec	0.1mm	60	70	ASTM D5	
Softening point	°C	49	56	ASTM D36	
Ductility @ 10°C	Cm	100	-	ASTM D113	
RT Duct 15	Cm	10	-	ASTM D 113	
RTFOT LOH	%	-	0.30	ASTM D 2572	
Viscosity @ 60°C	Pa.s	140	250	ASTM D4402+	
Viscosity @ 135°C	Pa.s	0.22	0.45	ASTM D4402+	
RTFOT Softening point	°C	48	-	ASTM D36*	
RTFOTD Softening point	°C	-	7	CALC	
Xylene	%	-	30	AASHTO-T102	

## DIRECTIONS FOR USE

Recommended storage and handling criteria for **60/70 Penetration Grade Bitumen**



**60/70**  
Penetration Grade 60/70

**PRODUCT DATA SHEET:**

PROPERTY	UNITS	REQUIREMENT		TEST METHOD	OTHER	RESULTS
		MIN	MAX			
Penetration @ 25°C/100g/5sec	0.1mm	60	70	ASTM D5		65.3
Softening point	°C	49	56	ASTM D36		49.3
Ductility @ 10°C	Cm	100	-	ASTM D113		>100
RT Duct 15	Cm	10	-	ASTM D 113		100
RTFOT LOH	%	-	0.30	ASTM D 2572		0.08
Viscosity @ 60°C	Pa.s	140	250	ASTM D4402+		201
Viscosity @ 135°C	Pa.s	0.22	0.45	ASTM D4402+		0.38
RTFOT Softening point	°C	48	-	ASTM D36*		54
RTFOTD Softening point	°C	-	7	CALC		4
Xylene	%	-	30	AASHTO-T102		25



# 70/100

## Penetration Grade 70/100

### PRODUCT DATA SHEET

PROPERTY	UNITS	REQUIREMENT		TEST METHOD	OTHER	RESULTS
		MIN	MAX			
Penetration @ 25°C/100g/5sec	0.1mm	70	100	ASTM D5	IP 49	
Softening point (Ring & ball)	°C	42	51	ASTM D36		
Ductility @ 10°C	Cm	100	-		DIN 52013	
Spot Test	% Xylene	-	30		AASHTO-T102	1
Viscosity @ 60°C	Pa.s	75	150	D4402		
Viscosity @ 135°C	Pa.s	0.15	0.40	D4402		
<b>AFTER RTFOT</b>						
Mass Change	Mass%	-	0.3	D2872		
Viscosity @ 60°C	% Original	-	300	D4402		
Ductility @ 10°C	Cm	5	-			
Softening point (Ring & Ball)	°C	44	-	ASTM D36		
Increase in Softening point	°C	-	7	ASTM D36		
Retained penetration	% original	50	-	ASTM D5	IP49	

#### Notes:

To be reported in units of five (5)

The maximum and minimum loading temperatures are 165 and 140°C, respectively

The implementation date for the new specifications is 05 May 1997





# 80/100

## Penetration Grade 80/100

### PRODUCT DATA SHEET

PROPERTY	UNITS	REQUIREMENT		TEST METHOD	OTHER
		MIN	MAX		
Penetration @ 25°C/100g/5sec	0.1mm	80	100	ASTM D5	IP 49
Softening point (Ring & ball)	°C	42	51	ASTM D36	
Ductility @ 10°C	Cm	100	-		DIN 52013
Spot Test	% Xylene	-	30		AASHO-T102
Viscosity @ 60°C	Pa.s	75	150	D4402	
Viscosity @ 135°C	Pa.s	0.15	0.40	D4402	
<b>AFTER RTFOT</b>					
Mass Change	Mass%	-	0.5	D2872	
Viscosity @ 60°C	% Original	-	300	D4402	
Ductility @ 10°C	Cm	5	-		DIN52013
Softening point (Ring & Ball)	°C	44	-	ASTM D36	
Increase in Softening point	°C	-	9	ASTM D36	
Retained penetration	% original	50	-	ASTM D5	IP49

#### Notes:

To be reported in units of five (5)

The maximum and minimum loading temperatures are 165 and 140°C, respectively

The implementation date for the new specifications is 05 May 1997





# BITUMEN SUPPLIES & SERVICES

THE BITUMEN PROFESSIONALS



MC30

MC3000

Cutback Bitumen 400-600

## CUTBACK BITUMEN

**PRODUCT SPECIFICATIONS**

**ESPECIFICACIONES DEL PRODUCTO**

**SPÉCIFICATIONS DU PRODUIT**

**ESPECIFICAÇÕES DO PRODUTO**

**产品规格**

**[www.bsspty.com](http://www.bsspty.com)**



# MC 30™

## Cutback Bitumen

### DESCRIPTION

**MC 30™** is a blend of medium curing petroleum cutters and penetration grade bitumen.

### APPLICATION

**MC 30™** is used for priming newly constructed, crushed stone or natural gravel base courses prior to surfacing.

### PROPERTIES

**MC 30™** is blended to a low viscosity to ensure that it penetrates the top 10mm of the base with the aid of the cutter, whilst depositing a thin film of bitumen on the surface to provide adhesion between the base coarse and the new surfacing.

### SPECIFICATIONS

**MC 30™** conforms to SANS 14001 – BT2:2012 requirements for cutback bitumen.

EMULSION PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
Kinematic viscosity @60°C, cSt	30	60	ASTM D2170
Dynamic viscosity @ 60°C, mPa-s	30	70	ASTM 4402
Residue from distillation to 360°C, vol%	50	-	ASTM D402
Penetration at 25 °C, 100g/5s on residue from distillation	90	180	ASTM D5/AASHTO T9
Viscosity @ 60°C on residue from distillation, Pa-s	30	-	ASTM D5
Distillation to 360°C, vol%:			
To 190°C	-	15	ASTM D402
225°C	15	60	
260°C	50	85	
316°C	80	100	

### DIRECTIONS FOR USE

1. Although **MC 30™** is pump-able at ambient temperature, heating of the binder is recommended prior to spray applications.
2. Special care must be taken whilst heating, as **MC 30™** contains flammable cutters which have a flash point of >40°C.
3. Before priming, the surface of the base course should be well swept.
4. The moisture content of the base course should be less than 50% of the Optimum Moisture content.
5. If the base is very dry, dampen slightly with water to prevent the formation of “fish eyes”.
6. Apply with a calibrated distributor at a binder spray temperature of 55°C and a minimum road surface temperature of 10°C and rising.
7. Drying time is dependent on the porosity of the base course as well as on the prevailing weather conditions. The prime must be allowed to dry before opening to traffic or proceeding with the construction of the surfacing



# MC 3000 Cutback Bitumen

## DESCRIPTION

**MC 3000** is a blend of medium curing petroleum cutter and penetration grade bitumen.

## APPLICATIONS

**MC 3000** is mostly used as the tack coat in grit seals, sand seals, Otta seals and single seats for lightly trafficked roads. Constructed during winter.

## PROPERTIES

**MC 3000** is a high viscosity cutback bitumen with a high binder content. The cutter ensures proper wetting of the cover aggregates whilst depositing a film of bitumen to provide adhesion to the base.

## SPECIFICATIONS

**MC 3000** conforms to SABS 308 specification for cutback bitumen.

EMULSION PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
Kinematic viscosity @60°C, cSt	3000	6000	ASTM D2170
Dynamic viscosity @ 60°C, MPa·s	3000	7000	ASTM 4402
Residue from distillation to 360°C, % v/v	80	-	ASTM D402
Viscosity @ 60°C on residue from distillation, Pa·s	30	-	ASTM D4402
Distillation to 360°C, % v/v:			
To 190°C	-	-	ASTM D402
225°C	-	25	
260°C	-	40	
316°C	35	80	

## DIRECTIONS FOR USE

1. Apply with a calibrated distributor at a binder spray temperature of 135°C and a minimum road surface temperature of 15°C and rising.
2. Special care must be taken whilst heating, as **MC 3000** contains flammable cutters which have a flash point of >40°C.
3. Curing time will depend mostly on the weather conditions.





## Bitumen Cutback 400-600™

BITUMEN CUTBACK PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
Pseudoviscosity measured by viscometer			NF T66-005
-4mm sieve, at 25°C	-	30	
-10mm sieve, at 25°C	400	600	
-10mm sieve, at 40°C	-	-	
Relative density at 25°C (pycnometer)	0.90	1.04	NF T 66-007
Fractional distillation (results expressed as percentage of initial volume)	-	-	NF T 66-003
Fraction distilled below:			
To 190°C	-	-	
225°C	-	2	
315°C	5	12	
360°C	-	15	
Penetrability of the distillation (at 25°C/100g/5s) of residue at 360°C(1/10mm)	80	200	NF EN 1426 (NF T66-004)
Flash Point (Cleveland Open) (°C)	55°C		NF T 66-009

### DIRECTIONS FOR USE

1. Although **Bitumen Cutback 0-1™** is pump-able at ambient temperature, heating of the binder is recommended prior to spray applications.
2. Special care must be taken whilst heating, as **Bitumen Cutback 0-1™** contains flammable cutters which have a flash point of >40°C.
3. Before priming, the surface of the base course should be well swept.
4. The moisture content of the base course should be less than 50% of the Optimum Moisture content.
5. If the base is very dry, dampen slightly with water to prevent the formation of “fish eyes”.
6. Apply with a calibrated distributor at a binder spray temperature of 55°C and a minimum road surface temperature of 10°C and rising.
7. Drying time is dependent on the porosity of the base course as well as on the prevailing weather conditions. The prime must be allowed to dry before opening to traffic or proceeding with the construction of the surfacing.





# BITUMEN SUPPLIES & SERVICES

THE BITUMEN PROFESSIONALS



ACE2

AE1

AE2

AP1

SE1

SE2

## MODIFIED BITUMEN

**PRODUCT SPECIFICATIONS**

**ESPECIFICACIONES DEL PRODUCTO**

**SPÉCIFICATIONS DU PRODUIT**

**ESPECIFICAÇÕES DO PRODUTO**

**产品规格**

[www.bsspty.com](http://www.bsspty.com)



## AC-E2

### Elastomer Modified Micro surfacing Emulsion

#### DESCRIPTION

**AC-E2** is a specially formulated quick set cationic microsurfacing bitumen emulsion modified with SBR latex for mixing with selected coarse graded crushed aggregate, cement and water. These raw materials are mixed and applied with a purpose designed machine and augured rut filling box.

#### APPLICATIONS

**AC-E2** Rut filling is a cost effective remedial treatment for improving the road profile by filling wheel ruts .20 mm, 50 mm, thus helping to reduce water spray and aquaplaning in wet weather conditions. Filled wheel ruts can be overlaid with microsurfacing, prepared with microsurfacing bitumen emulsion, to provide a uniform appearance.

#### PROPERTIES

Due to its fluid nature, the microsurfacing has the ability to fill surface irregularities, such as wheel ruts, to restore the road profile and improve the skid resistance of an existing surface. The specially designed augured rut filling box ensures that the coarser aggregate is concentrated in the centre of the rut, whilst the finer fractions are moved towards the edge of the box, ensuring a thin feathered edge.

#### SPECIFICATIONS

**AC-E2** bitumen emulsion is manufactured from 50/70 penetration grade bitumen and conforms to the AC-E2 specification for Polymer Modified Emulsions:

Emulsion Properties MIN	REQUIREMENTS		TEST METHOD	
	MAX			
Binder content, % m/m	63	65	MB – 22	
Residue on sieving, g/100ml	710µm	-	0.1	MB - 23
	150µm	-	0.5	
Particle charge	Positive		MB - 24	
Sedimentation after 60 rotations	Nil		SANS 309	
<b>RECOVERED BINDER PROPERTIES</b>				
Softening point, °C	≥55	-	MB - 17	
Elastic recovery @ 15°C	≥55	-	MB - 4	

#### DIRECTIONS FOR USE

1. Localised cracks must be sealed and fatigue cracks repaired prior to placing of micro surfacing prepared with AC-E2
2. Micro surfacing will not prevent cracks from reappearing and neither does it add structural strength to the pavement.
3. No tack coat is needed and neither is pneumatic rolling required.
4. The rut filling box width can be varied between 1.5 – 1.8metres.
5. Microsurfacing prepared with AC-E2 is designed to be opened to traffic within 90 minutes of placing during normal weather conditions with ambient temperatures not exceeding 35°C, provided that the reactivity of the aggregate is favourable.
6. Suitability of the crusher dust must be determined by a BSS Laboratory



# AE1

## Elastomer Modified Bitumen

### DESCRIPTION

AE1 is penetration grade bitumen modified with a Tur polymer.

### APPLICATIONS

AE1 is used mainly as a rut resistant binder for asphalt mixes, particularly on pavements with high deflections. It is suitable for use in open graded mixes such as porous asphalt that requires high binder film thickness.

### PROPERTIES

AE1 is a high softening point binder, which imparts rut resistance to asphalt mixes at high in-service road temperatures. It has high elastic recovery properties that imparts fatigue resistance to asphalt mixes at low in-service temperatures.

### SPECIFICATIONS

Depending on the customer's requirements, the polymer content of AE1 can be adjusted in order for the binder to conform to the AE1 specification for polymer modified binders for use in hot mix asphalt applications.

BINDER PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
<b>Before Ageing</b>			
Softening point, °C	55	65	MB - 17
Dynamic viscosity @ 165°C, Pa-s	-	0.6	MB - 18
Elastic recovery @ 15°C, %	50	-	MB - 4
Stability (R&B dif @ 160°C), °C	-	5	MB - 6
Flash point, °C	230	-	ASTM D93
<b>PROPERTIES AFTER RTFOT</b>			
Elastic recovery @ 15°C	50	-	MB - 4
Mass change, %	-	1.0	MB - 3

### DIRECTIONS FOR USE

Recommended storage and handling criteria for A1 are as follows:

Asphalt mixing temperature	160 - 170°C	
Asphalt compaction temperature	140 - 150°C	
Maximum storage temperature	180°C	150°C
	3 days	12 days

Note: it is important to circulate binder during heating as prolonged intense heating will cause localised overheating that may result in carbonisation of the binder on the flues. The aforementioned can result in polymer degradation which could lead to a reduction in the binder softening point. Every attempt should be made to reduce the binder temperature during transportation and storage.





# AE2

## Elastomer Modified Bitumen

### DESCRIPTION

AE2 is a penetration grade bitumen modified with Tur polymer.

### APPLICATIONS

AE2 is used mainly as a rut resistant binder for asphalt mixes, particularly on pavements with high deflections. It is suitable for use in open graded mixes such as porous asphalt that requires high binder film thickness.

### PROPERTIES

AE2 is a high softening point binder, which imparts rut resistance to asphalt mixes at high in-service road temperatures. It has high elastic recovery properties that imparts fatigue resistance to asphalt mixes at low in-service temperatures.

### SPECIFICATIONS

Depending on the customer's requirements, the polymer content of AE2 can be adjusted in order for the binder to conform to the AE2 specification for polymer modified binders for use in hot mix asphalt applications.

BINDER PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
<b>Before Ageing</b>			
Softening point, °C	65	85	MB - 17
Dynamic viscosity @ 165°C, Pa-s	-	0.6	MB - 18
Elastic recovery @ 15°C, %	60	-	MB - 4
Stability (R&B dif @ 160°C), °C	-	5	MB - 6
Flash point, °C	230	-	ASTM D93
<b>PROPERTIES AFTER RTFOT</b>			
Elastic recovery @ 15°C	60	-	MB - 4
Mass change, %	-	1.0	MB - 3

### DIRECTIONS FOR USE

Recommended storage and handling criteria for A2 are as follows:

Asphalt mixing temperature	160 - 170°C	
Asphalt compaction temperature	140 - 150°C	
Maximum storage temperature	180°C	150°C
	<24 hours	24 – 240 hours

Note: it is important to circulate binder during heating as prolonged intense heating will cause localised overheating that may result in carbonisation of the binder on the flues. The aforementioned can result in polymer degradation which could lead to a reduction in the binder softening point. Every attempt should be made to reduce the binder temperature during transportation and storage.



# AP1 Plastomer Modified Binder

## DESCRIPTION

AP1 is a penetration grade bitumen modified with Ter polymer.

## APPLICATIONS

AP1 is used mainly as a rut resistant binder for asphalt mixes. It is suitable for use in heavy trafficked areas where there is the risk of fuel spillage, such as:

- Intersections and climbing lanes.
- Bus depots and aircraft runways.

## PROPERTIES

AP1 is a high softening point binder which imparts deformation resistance to asphalt mixes at high in-service road temperatures. It is resistant to normal fuel spillage. Typical properties of a continuously graded asphalt after a briquette soaked in diesel for 24 hours.

PROPERTY	CONVENTIONAL ASPHALT	AP1 ASPHALT
Mass loss, %	11.0	0.6
% Retained Marshall stability	50	80

## SPECIFICATIONS

AP1 conforms to the A – P 1 specification for polymer modified binders for hot-mix asphalt.

EMULSION PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
Softening point, °C	63	73	ASTM D36
Dynamic viscosity @ 165°C, Pa-s	-	0.55	ASTM D4402
Elastic recovery @ 15°C, %	30	-	MB - 4
Stability (R&B dif @ 160°C), °C	-	5	MB – 6
Flash point, °C	230	-	ASTM D93
<b>PROPERTIES AFTER RTFOT</b>			<b>MB - 3</b>
Difference in softening point, °C	-2	+8	ASTM D6
Mass change, %	-	1.0	MB - 3

## DIRECTIONS FOR USE

Recommended storage and handling criteria for AP1 are as follows:

Asphalt mixing temperature	160 - 170°C	
Asphalt compaction temperature	140 - 150°C	
Maximum storage temperature	<24 hours	> One day
	170°C	150°C

Storage stable at recommended temperatures without risk of polymer degradation. Every attempt should be made to minimize the binder temperature during transportation and storage



# SE-1

## DESCRIPTION

**S-E1** is a 70/100 penetration grade bitumen modified with SBS Polymer.

## APPLICATIONS

**S-E1** has uses mainly:

- For resealing roads with active surface cracks <5mm,
- As a Stress Absorbing Membrane Interlayer (SAMI) to prevent cracks from reflecting through the overlying asphalt layers,
- In chip seals for new construction in highly stressed areas.

## PROPERTIES

**S-E1** is a high softening point binder with high elastic recovery. This makes the seal less susceptible to bleeding under heavy traffic at high in-service road temperatures. **S-E1** can also be applied at higher application rates than conventional hot binders without the risk of bleeding.

## SPECIFICATIONS

Depending on the customer's requirements, the polymer content of **S-E1** can be adjusted in order for the binder to conform either to the **S-E1** specification for polymer modified binders for use in seal applications.

BINDER PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
<b>Before Ageing</b>			
Softening point, °C	50	60	MB - 17
Dynamic viscosity @ 165°C, Pa-s	-	0.55	MB - 18
Elastic recovery @ 15°C, %	50	-	MB - 4
Stability (R&B dif @ 160°C), °C	-	5	MB - 6
Flash point, °C	230	-	ASTM D93
Stability (R&B dif @ 160°C), °C	-	5	MB - 6
<b>After ageing RTFOT</b>			
Elastic recovery @ 15°C	50	-	MB - 4
Difference in Softening point, °C	-2	+8	MB - 17
Mass change, %	-	1.0	MB - 3

1. Precoating of stone is necessary. 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 risk of chip loss.
4. Recommended storage and handling criteria for **S-E1** are as follows:



# SE-2

## DESCRIPTION

**S-E2** is a 70/100 penetration grade bitumen modified with SBS Polymer.

## APPLICATIONS

**S-E2** is used mainly:

- For resealing roads with active surface cracks <5mm,
- As a Stress Absorbing Membrane Interlayer (SAMI) to prevent cracks from reflecting through the overlying asphalt layers,
- In chip seals for new construction in highly stressed areas.

## PROPERTIES

**S-E2** is a high softening point binder with high elastic recovery. This makes the seal less susceptible to bleeding under heavy traffic at high in-service road temperatures. **S-E2** can also be applied at higher application rates than conventional hot binders without the risk of bleeding.

## SPECIFICATIONS

Depending on the customer's requirements, the polymer content of **S-E2** can be adjusted in order for the binder to conform either to the **S-E2** specification for polymer modified binders for use in seal applications.

BINDER PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
<b>Before Ageing</b>			
Softening point, °C	60	80	MB - 17
Dynamic viscosity @ 165°C, Pa·s	-	0.60	MB - 18
Elastic recovery @ 15°C, %	70	-	MB - 4
Stability (R&B dif @ 160°C), °C	-	5	MB - 6
Flash point, °C	230	-	ASTM D93
Stability (R&B dif @ 160°C), °C	-	5	MB - 6
<b>After ageing RTFOT</b>			
Elastic recovery @ 15°C	70	-	MB - 4
Difference in Softening point, °C	-2	+8	MB - 17
Mass change, %	-	1.0	MB - 3

## DIRECTIONS FOR USE:

Precoating of stone is necessary. Chip spreader to follow closely behind sprayer.

Apply with a conventional distributor at a minimum road surface temperature of 25°C and rising.

The seal can be opened to traffic immediately after rolling and sweeping without risk of chip loss.

Recommended storage and handling criteria for **S-E2** are as follows:

Spray temperature	180 -190°C	
Maximum Storage temperature	< 24 hours*	>One day
	180° C	150°C





# BITUMEN SUPPLIES & SERVICES

THE BITUMEN PROFESSIONALS



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CRS60

CRS65

CRS70

CSS60

CSS65

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## EMULSIONS

### PRODUCT SPECIFICATIONS

ESPECIFICACIONES DEL PRODUCTO

SPÉCIFICATIONS DU PRODUIT

ESPECIFICAÇÕES DO PRODUTO

产品规格

[www.bsspty.com](http://www.bsspty.com)



## CMS 60

Premix Grade Cationic Bitumen Emulsion

### DESCRIPTION

**CMS 60** is a low viscosity cationic medium set bitumen emulsion used for the manufacture of the cold asphalt mixes.

### USES

**CMS 60** is used for the manufacture of open graded cold asphalt mixed by hand or concrete mixer. **CMS 60** can only be used with aggregates containing a limited amount of fines. The coldmix is ideal for repairing damaged surfaces and edge breaks. Can also be used for surfacing sidewalks, driveways or parking areas.

### PROPERTIES

**CMS 60** is ideal for manufacturing cold asphalt mixes by hand. **CMS 60** relies primarily on the chemical attraction between the emulsified bitumen droplets and the aggregate surface to break/cure. These mixes can therefore be placed and compacted directly after mixing.

### SPECIFICATIONS

**CMS 60** conforms to SABS 548 specification for cationic bitumen road emulsions.

EMULSION PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
Binder content, % m/m	60	63	ASTM D244
Viscosity @50°C, SFs	20	50	ASTM D244
Fluxing agent content, % m/m of binder	5	10	ASTM D244
Residue on sieving, g/100ml	-	0.25	SABS548
Sedimentation after 60 rotations	Nil		SABS548
Particle charge	Positive		SABS548

### DIRECTIONS FOR USE

1. **CMS 60** can be stored and mixed with aggregates at ambient temperature.
2. **CMS 60** can be stored for up to three months at ambient temperature without risk of settlement. It is, however, recommended that bulk product is occasionally agitated and drummed product is rolled during prolonged storage.
3. If the mix is to be stockpiled, cover the stockpile to protect from dust/ rain.



# CRS 60

Cationic Spray Grade Bitumen Emulsion

## DESCRIPTION

**CRS 60** is a low viscosity cationic rapid-set bitumen emulsion.

## APPLICATIONS

**CRS 60** is used mainly as a hand applied tack coat or penetration spray in the construction of single, double or Cape seals. It is favoured over hot binders when resealing roads in cold/wet climates or small areas which require hand application. It is also used in new construction where traffic accommodation is not a problem.

## PROPERTIES

**CRS 60** has a low viscosity, which improves the flow of the binder allowing it to readily wet aggregates. The positive electrical charges of the emulsifier on the bitumen droplets are attracted to the free negative ions of the aggregates resulting in a chemical break, thus improving the binder adhesion to the stone.

## SPECIFICATIONS

**CRS 60** conforms to SABS 548 specification for cationic bitumen road emulsions.

1. No precoating of stone necessary. Can be used with slightly damp/dusty stone.
2. Apply with a handsprayer at ambient temperature or conventional distributor at a binder spray temperature of 60°C. The minimum road surface temperature should be 10°C and rising.
3. No heating of the product during storage; only prior to application. Product should be circulated and agitated from time to time for short periods only. Can be stored for long periods at ambient temperature without risk of settlement.
4. Open to traffic once sufficient cohesion development has occurred between binder and stone.
5. If diluting with water, first check the compatibility of the water with emulsion.

Emulsion Properties	REQUIREMENTS			TEST METHOD
	MIN	MAX		
Binder content, % m/m		60	63	ASTM D244
Viscosity @ 50°C, SFs		20	50	ASTM D244
Residue on sieving, g/100ml		-	0.25	SABS 548
Particle charge		Positive		SABS 548
Sedimentation after 60 rotations		Nil		SABS 548
Fluxing agent content, % m/m of binder		-	5	ASTM D244



## CRS 65

### Cationic Spray Grade Bitumen Emulsion

#### DESCRIPTION

CRS 65 is a medium viscosity cationic rapid-set bitumen emulsion.

#### USES

CRS 65 is used mainly as a tack coat or penetration spray in the construction of single, double or Cape seals. It is favoured over hot binders when resealing roads in cold/wet climates or new construction where traffic accommodation is not a problem.

#### PROPERTIES

The low viscosity of CRS 65 allows the binder to readily wet aggregates. The positive electrical charges of the emulsifier on the bitumen droplets are attracted to the free negative ions of the aggregates, resulting in a chemical break thus improving the binder adhesion to the stone.

CRS 65 can also be diluted with water and applied as a cover spray on a newly constructed seal.

#### SPECIFICATIONS

CRS 65 conforms to SABS 548 specification for cationic bitumen road emulsions.

Emulsion Properties	REQUIREMENTS			TEST METHOD
	MIN	MAX		
Binder content, % m/m		65	68	ASTM D244
Viscosity @ 50°C, SFs		51	200	ASTM D244
Residue on sieving, g/100ml		-	0.25	SABS 548
Particle charge		Positive		SABS 548
Sedimentation after 60 rotations		Nil		SABS 548
Fluxing agent content, % m/m of binder		-	5	ASTM D244
Binder deposit on the cathode after 30min, g		1.0	-	SABS 548

#### DIRECTIONS FOR USE

1. No precoating of stone necessary. Can be used with slightly damp/dusty stone.
2. Apply with a conventional distributor at a hinder spray temperature of 65°C. The minimum road surface temperature should be 10°C and rising.
3. No heating of the product during storage; only prior to application. Product should be circulated and agitated from time to time for short periods only. Can be stored for long periods at ambient temperature without risk of settlement.
4. Open to traffic once sufficient cohesion development has occurred between binder and stone.
5. If diluting with water, first check the compatibility of the water with emulsion.





## CRS 70

### Cationic Spray Grade Bitumen Emulsion

#### DESCRIPTION

**CRS 70** is a high viscosity cationic rapid-set bitumen emulsion.

#### APPLICATIONS

**CRS 70** is used mainly as a tack coat or penetration spray in the construction of single, double or Cape seals. It is favoured over hot binders when resealing roads in cold/wet climates or in new construction where traffic accommodation is not a problem.

#### PROPERTIES

Although **CRS 70** is a high binder content emulsion, its viscosity is sufficient for the binder to readily wet aggregates without the risk of run-off on steep inclines. The positive electrical charges of the emulsifier on the bitumen droplets are attracted to the free negative ions of the aggregates resulting in a chemical break, thus improving the binder adhesion to the stone.

#### SPECIFICATIONS

**CRS 70** conforms to SABS 548 specification for cationic bitumen road emulsions.

Emulsion Properties	REQUIREMENTS			TEST METHOD
	MIN	MAX		
Binder content, % m/m		70	73	ASTM D244
Viscosity @ 50°C, Sfs		51	400	ASTM D244
Residue on sieving, g/100ml		-	0.25	SABS 548
		-		
Particle charge		Positive		SABS 548
Binder deposit on cathode after 30min,g		-		SABS 548
Sedimentation after 60 rotations		Nil		SABS 548
Fluxing agent content, % m/m of binder		-	5	ASTM D244

#### DIRECTIONS FOR USE

1. No precoating of stone necessary. Can be used with slightly damp/dusty stone.
2. Apply with a conventional distributor at a binder spray temperature of 75°C. The minimum road surface temperature should be 10°C and rising.
3. No heating of the product during storage; only prior to application. Product should be circulated and agitated from time to time for short periods only.
4. Open to traffic once sufficient cohesion development has occurred between binder and stone.



# CSS60

## Stablemix Bitumen Emulsion

### DESCRIPTION

CSS60 is a low viscosity cationic slow set bitumen emulsion.

### USES

CSS60 is used mainly as a cold applied binder for the manufacturer of slow set slurry mixtures which can be batch mixed and applied by hand or with a continuous mix and lay machine.

CSS60 can be used for mixing with natural gravels or crushed aggregates for stabilisation of bases.

CSS60 can also be diluted with water and applied onto aged seals as an enrichment spray or as a tack coat for an asphalt overlay.

### PROPERTIES

The slow setting nature of CSS 60 makes it ideal for mixing and applying slurries by hand. Slurry mixtures prepared by batch mixing can be kept workable in transit mixes for 1 hour before setting.

The positive electrical charges of the emulsifier on the bitumen droplets are attracted to the free negative ions of the aggregates resulting in a chemical break thus improving the binder adhesion to the store, therefore making this emulsion more suitable for use with acidic aggregates.

### SPECIFICATIONS

CSS 60 conforms to SABS 548 specification for cationic bitumen road emulsions.

EMULSION PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
Binder content, % m/m	60	63	ASTM D244
Viscosity @50°C, SFs	-	50	ASTM D244
Residue on sieving, g/100ml	-	0.25	SABS 548
Sedimentation after 60 rotations	Nil		SABS548
Particle charge	Positive		SABS548
Fluxing agent content % m/m of binder	Nil		ASTM D244
Coagulation value when mixed with silica flour, % m/m	-		SABS 548

### DIRECTIONS FOR USE

1. CSS60 can be stored and mixed with aggregates at ambient temperature.
2. Can be stored for up to three months at ambient temperature without risk of settlement.
3. The binder should be heated to 60°C for spray application.
4. If diluting with water, check the compatibility with the water before adding to the emulsion



## CSS65

### Stablemix Bitumen Emulsion

#### DESCRIPTION

**CSS65** is a low viscosity cationic slow set bitumen emulsion.

#### USES

**CSS65** is used mainly as a cold applied binder for the manufacturer of slow set slurry mixtures which can be batch mixed and applied by hand or with a continuous mix and lay machine.

**CSS65** can be used for mixing with natural gravels or crushed aggregates for stabilisation of bases.

**CSS65** can also be diluted with water and applied onto aged seals as an enrichment spray or as a tack coat for an asphalt overlay.

#### PROPERTIES

The slow setting nature of **CSS 65** makes it ideal for mixing and applying slurries by hand. Slurry mixtures prepared by batch mixing can be kept workable in transit mixes for 1 hour before setting.

The positive electrical charges of the emulsifier on the bitumen droplets are attracted to the free negative ions of the aggregates resulting in a chemical break thus improving the binder adhesion to the store, therefore making this emulsion more suitable for use with acidic aggregates.

#### SPECIFICATIONS

**CSS 65** conforms to SABS 548 specification for cationic bitumen road emulsions.

EMULSION PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
Binder content, % m/m	65	68	ASTM D244
Viscosity @50°C, SFs	-	50	ASTM D244
Residue on sieving, g/100ml	-	0.25	SABS 548
Sedimentation after 60 rotations	Nil		SABS548
Particle charge	Positive		SABS548
Fluxing agent content % m/m of binder	Nil		ASTM D244
Coagulation value when mixed with silica flour, % m/m	-		SABS 548

#### DIRECTIONS FOR USE

1. CSS60 can be stored and mixed with aggregates at ambient temperature.
2. Can be stored for up to three months at ambient temperature without risk of settlement.
3. The binder should be heated to 60°C for spray application.
4. If diluting with water, check the compatibility with the water before adding to the emulsion



## K1 60

### Cationic Spray Grade Bitumen Emulsion

#### DESCRIPTION

**K1 60** is a low viscosity cationic rapid-set bitumen emulsion.

#### APPLICATIONS

**K1 60** is used mainly as a hand applied tack coat or penetration spray in the construction of single, double or Cape seals. It is favoured over hot binders when resealing roads in cold/wet climates or small areas which require hand application. It is also used in new construction where traffic accommodation is not a problem.

#### PROPERTIES

**K1 60** has a low viscosity, which improves the flow of the binder allowing it to readily wet aggregates. The positive electrical charges of the emulsifier on the bitumen droplets are attracted to the free negative ions of the aggregates resulting in a chemical break, thus improving the binder adhesion to the stone.

#### SPECIFICATIONS

**K1 60 conforms** to BS EN 13808

Emulsion Properties	REQUIREMENTS			TEST METHOD
	MIN	MAX		
Binder content, % m/m		58	62	ASTM D244
Viscosity @ 50°C, SFs		20	50	ASTM D244
Residue on sieving, g/100ml		-	0.1	ASTM D 244
Particle charge		Positive		SABS 548
Sedimentation after 60 rotations		Nil		SABS 548
Fluxing agent content, % m/m of binder		-	5	ASTM D244

1. No precoating of stone necessary. Can be used with slightly damp/dusty stone.
2. Apply with a handsprayer at ambient temperature or conventional distributor at a binder spray temperature of 60°C. The minimum road surface temperature should be 10°C and rising.
3. No heating of the product during storage; only prior to application. Product should be circulated and agitated from time to time for short periods only. Can be stored for long periods at ambient temperature without risk of settlement.
4. Open to traffic once sufficient cohesion development has occurred between binder and stone.
5. If diluting with water, first check the compatibility of the water with emulsion.



# SS60

## Anionic Stable Grade Bitumen Emulsion

### DESCRIPTION

**SS60 stable grade** is a low viscosity anionic *slow set* bitumen emulsion.

### APPLICATIONS

**SS60 stable grade** is used mainly as a cold applied binder for the manufacture of *slow set slurry mixtures* which can be batch mixed and applied by hand or with a continuous mix and lay machine.

### PROPERTIES

The slow setting nature of **SS60 stable grade** makes it ideal for mixing and applying slurries by hand. Slurry mixtures prepared by batch mixing can be kept workable in transit mixers up to 2 hours before setting.

Slow set slurry mixtures prepared with **SS60 stable grade**, rely on the evaporation of the water component to cure.

### SPECIFICATIONS

**SS60 stable grade** conforms to SABS 309 specification for anionic bitumen road emulsions.

EMULSION PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
Binder content, % m/m	60	62	ASTM D244
Residue on sieving, g/100ml	-	0.25	SABS 309
Sedimentation after 60 rotations	Nil		SABS 309
Coagulation value when mixed with cement, %m/m	-	2	SABS 309

### DIRECTIONS FOR USE

1. **SS60 stable grade** can be stored and mixed with aggregates at ambient temperature.
2. Can be stored for up to six months at ambient temperature without risk of settlement.
3. If diluting with water, check the compatibility of the water with the emulsion.
4. The binder should be heated to 60°C for spray application.





# SCE 1

## Elastomer Modified Bitumen Emulsion

### DESCRIPTION

**SCE 1** is a medium viscosity cationic spray grade bitumen emulsion modified with 3 % net SBR latex..

### APPLICATIONS

**SCE 1** is used mainly in cold/wet climates for resealing lightly cracked roads with surface cracks < 3 mm without pre-treatment. Also ideal for spraying as a tack coat for geofabric membranes or prime for a crack sealant.

### PROPERTIES

**SCE 1** has enhanced residual binder properties, while the lower viscosity of the emulsion improves the flow of the binder into lightly cracked surfaces. Can be stored for long periods without risk of polymer thermal degradation.

### SPECIFICATIONS

**SCE 1** conforms to the SC-E1 specification for modified emulsion for surface seals.

Emulsion Properties MIN	REQUIREMENTS		TEST METHOD	
	MAX			
Binder content, % m/m	65	68	MB – 22	
Viscosity @ 50°C, SFs	51	200		
Residue on sieving, g/100ml	710µm	-	0.1	MB - 23
	150µm	-	0.5	
Particle charge	Positive		MB - 24	
Sedimentation after 60 rotations	Nil		SANS 309	
<b>RECOVERED BINDER PROPERTIES</b>				
Softening point, °C	≥48	-	MB - 17	
Elastic recovery @ 15°C	≥50	-	MB - 4	

### DIRECTIONS FOR USE

1. No precoating of stone necessary. Can be used with slightly damp/dusty stone.
2. Apply with a conventional distributor at a binder spray temperature of 65°C and a minimum road surface temperature of 10°C and rising
3. No heating of the product during storage; only prior to application. Product should be circulated and agitated from time to time for short periods only. The residue on sieving value will increase with prolonged storage, but should not affect performance of the binder.
4. Open to traffic once sufficient cohesion development has occurred between binder and stone.





# BITUMEN SUPPLIES & SERVICES

## THE BITUMEN PROFESSIONALS



B COTE

MSP 1

QDP- ECO FRIENDLY PRIME

SC-E2

# MODIFIED EMULSIONS

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ESPECIFICAÇÕES DO PRODUTO

产品规格

[www.bsspty.com](http://www.bsspty.com)



# B COTE

## Bitumen- Based Stone Precoating Fluid

### DESCRIPTION

**B Cote** is a bitumen based cutback blend from selected petroleum derivatives and a chemical adhesion agent.

**B Cote** is used for precoating stone chips in road surfacing seals to improve adhesion between the stone and binder. It is non-tar based and therefore more environmentally friendly.

Can be used with:

- All bituminous binders including bitumen emulsion without the risk of incompatibility problems.
- All local road stone including granite and quartzitic aggregates.

### PROPERTIES

**B Cote** has excellent adhesion even when used with damp or dusty aggregate

**B Cote** is non –irritating to eyes or skin and odourless after curing

### SPECIFICATIONS

BINDER PROPERTIES	REQUIREMENT		TEST METHOD		
	MIN	MAX			
Density @25°C, kg/l	0.922	0.928			
Dynamic viscosity @ 25°C, cps	75	120	ASTM D4402		
Distillation to 360°C, % v/v to 190°C	0		ASTM D402		
225°C	15	15		55	
260°C	50	80		75	95
316°C					
Residue from distillation to 360°C, %, v/v	42	48	ASTM D402		
Penetration @ 25°C of residue distilled to 360°C, 0.1mm	300	-	ASTM D 5		

### DIRECTIONS FOR USE

1. Stone for precoating should be relatively clean of dust. Slightly damp stone will precoat more easily, but the wet stone must be dried out.
2. Add the prescribed quantity of precoating fluid (see table below for typical rates) to a measured quantity of aggregate. Mix with front end loader or concrete mixer until uniformly coated
3. After precoating, protect the stockpile against rain, otherwise the precoat will wash off. Allow the chips to dry for at least 3-4 days before use. Unlimited stockpile life, but avoid dust contamination.

Typical application rates for different stone sizes (l/m <sup>2</sup> )				
Stone size	6.7mm	9.5mm	13.2mm	19.0mm
B- Cote	14 - 18	13 - 17	12 - 16	11 - 15





# MSP 1™

## Inverted Bitumen Emulsion Prime

### DESCRIPTION

MSP 1™ is an inverted bitumen emulsion manufactured from bitumen and a cutback medium.

### APPLICATIONS

MSP 1™ is specially designed as a prime for non-bituminous bases prior to surfacing. The product is ideal for priming:

- Natural gravel, crushed stone and stabilized bases.
- Small areas by hand sprayer
- Damp bases and during inclement weather.

### PROPERTIES

MSP 1™ penetrates the top 10mm of the base with the aid of the cutter, whilst depositing a film of bitumen on the surface to provide adhesion between the base course and the new surfacing. Other benefits of MSP 1™ are:

- Faster penetrating than MC 30.
- Reduced solvent emissions vs cutbacks.

### SPECIFICATIONS

MSP 1™ conforms to SABS 1260 specification for inverted bitumen emulsion.

EMULSION PROPERTIES	REQUIREMENT		TEST METHOD
	MIN	MAX	
Kinematic viscosity @50°C, SFs	25	40	ASTM D88
Water content, % v/v	-	20	ASTM D402
Residue from distillation to 360°C, % v/v	50	-	ASTM D402
Penetration @ 25°C of residue distilled to 360°C, 0.1mm	90	180	ASTM D5
Distillation to 360°C, % v/v:			
To 190°C	25	55	ASTM D402
225°C	45	75	
260°C	60	90	
316°C	80	100	

### DIRECTIONS FOR USE

1. The surface of the base should be well swept and slightly dampened with water before priming.
2. Apply with a hand sprayer at ambient temperature or calibrated distributor at a binder spray temperature of 60°C and a minimum road surface temperature of 10°C and rising.
3. Drying time will depend on the porosity of the base and weather conditions. The prime must be allowed to dry before opening to traffic or proceeding with the construction of the surfacing.



# QDP (Quick Drying Prime) – Eco Friendly Prime

## Emulsion Based Quick Drying Prime

### DESCRIPTION

**QDP (Quick Drying Prime)** can be used as a non-flammable, low viscosity emulsion prime with reduced drying time, formulated with a special blend of BSS emulsifiers.

### USES

**QDP (Quick Drying Prime)** can be used on natural gravel, crushed stone and cement treated base course materials. Due to its low viscosity

### PROPERTIES

**QDP (Quick Drying Prime)** reduces the use of hydrocarbon solvents and surfaces primed with this material can usually be overlaid within 24 hours. The product is brown in colour immediately after application, but changes to a black colour within minutes after application. Quicker penetrating MC30.

### SPECIFICATIONS

EMULSION PROPERTIES	SPECIFICATION	TEST METHOD
Water content % m/m	42-46	ASTM D244
Dynamic viscosity @ 25°C	50-100	ASTM D 4402
Residue on sieving g/100 ml Particles > 710µm Particles > 150µm	<0.10 <0.25	SABS 548
Storage stability % 7 days 1 day	<1 <5	NF T 66-022
Rupture Index	>120	NF T 66-017
Particle charge	Positive	SABS 548

### DIRECTIONS FOR USE

1. For hand-spray application, the **QDP (Quick Drying Prime)** can be applied cold. Theoretically, for application by binder distributor, **QDP (Quick Drying Prime)** can be cold applied – however, depending on the type of equipment, best results are obtained if the product is heated to a maximum temperature of 45°C.
2. **QDP (Quick Drying Prime)** can be applied at a minimum road surface temperature of 10°C and rising.
3. Typical application rates are 0.8 to 1.2l/m<sup>2</sup>.
4. If a chipseal is to be placed over the primed surface, a minimum curing period of 24 hours is recommended.
5. Do not wet the base course prior to the application of **QDP (Quick Drying Prime)**.



# SC - E<sup>2</sup>

## Elastomer Modified Bitumen Emulsion

### DESCRIPTION

SC - E<sup>2</sup> is a medium viscosity cationic spray grade bitumen emulsion modified with 5% net SBR latex.

### USES

SC - E<sup>2</sup> is used mainly in cold/wet climates for resealing roads with surface cracks < 5mm without pre-treatment. Also used in new construction or reseals where traffic accommodation is not a problem.

### PROPERTIES

SC - E<sup>2</sup> has much enhanced residual binder properties while the lower viscosity of the emulsion improves the flow of the binder into lightly cracked surfaces without the risk of run off on steep inclines. Can be stored for long periods at ambient temperature without risk of polymer thermal degradation.

### SPECIFICATIONS

SC - E<sup>2</sup> conforms to specifications modified emulsion for surface seals.

EMULSION PROPERTIES		REQUIREMENT		TEST METHOD
Min				
Max				
Binder content, % m/m		65	68	MB - 22
viscosity @ 50°C, SFs		51	200	
Residue on sieving g/100ml	710µm		0.1	MB - 23
	150µm		0.5	
Particle charge		Positive		MB24
Sedimentation after 60 rotations		Nil		SANS 309
RECOVERED BINDER PROPERTIES				
Softening Point, °C		55		MB - 17
Elastic recovery @ 15°C		55	-	MB - 4

### DIRECTIONS FOR USE

1. No precoating of stone necessary. Can be used with slightly damp/dusty stone.
2. Apply with a conventional distributor at a binder spray temperature of 65°C and a minimum road surface temperature of 10°C and rising.
3. No heating of the product during storage; only prior to application. Product should be circulated and agitated from time to time for short periods only. The residue on sieving value will increase with prolonged storage but should not affect performance of the binder.
4. Open to traffic once sufficient cohesion development has occurred between binder and stone.

