

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

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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 ³	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	
Before Ageing			
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
After ageing (RTFO)			
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		
AFTER RTFOT						
Mass Change	Mass%	-	0.5	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	-	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



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	
AFTER RTFOT					
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

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