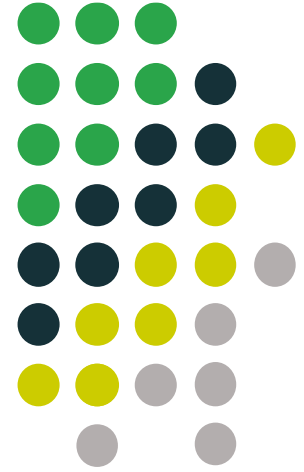


KENYA ROADS AND IMPORTANCE OF USING BITUMEN EMULSION



Presented by:

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A Chief Executive Officers

West European Group Sarl

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INTRODUCTION

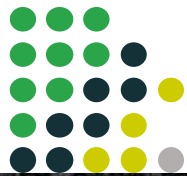


INTRODUCTION

Kenya Government has included the observance of the environmental protection standards in its agenda, and while observing its own safety and health precautions, try to consider the environmental instructions.

Bitumen emulsions it is new Bitumen Technology that introduce in this paper, are non-toxic, non-volatile and a new generation of liquid bitumen which is a green alternative for cutback bitumen and that is the reason why the production and development of bitumen emulsions has been considered as the most important goal by the Kenya Government .

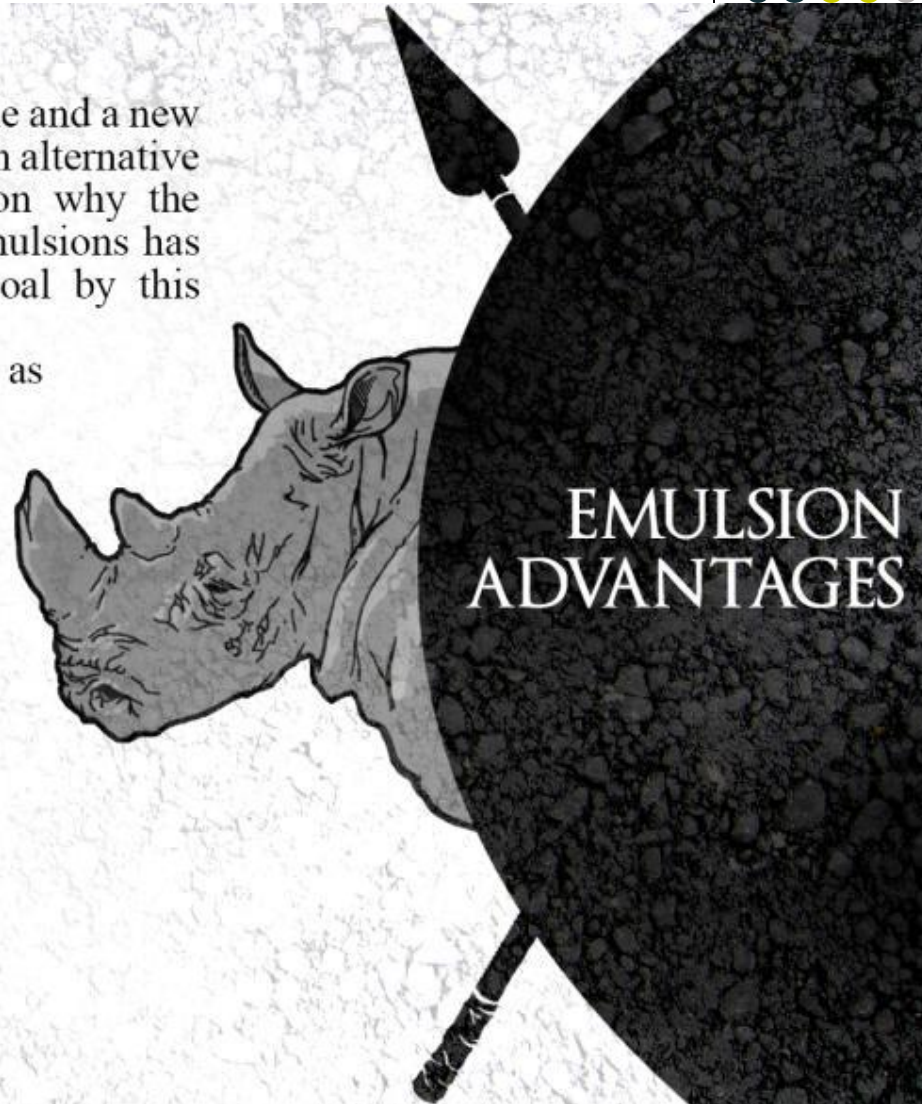
Bitumen emulsion advantage



Bitumen emulsions are non-toxic, nonvolatile and a new generation of liquid bitumen which is a green alternative for cutback bitumen and that is the reason why the production and development of bitumen emulsions has been considered as the most important goal by this company.

The advantages of the bitumen emulsion are as follows:

- No need for heating process when operating.
- No need for chemical solvents
- No risk of fire during storage, transportation and implementation
- No risk of environmental contamination
- Applicable in humid climates
- Extensive application in road construction and maintenance
- Another application of bitumen emulsion is stabilization of the shifting sands and mulching which are effective for the desert country suffering the risk of exposure to dust.



CRS



Bitumen Emulsion CRS-1

CRS-1 is a cationic rapid setting bitumen emulsion that contains 60% bitumen, is black in color and is manufactured strictly as per ASTM D 2397M-13 standard.

Property	Min	Max	Test Method
Viscosity, Saybolt Furol at 50°C, SFS	20	100	ASTM D7496
Storage stability test, 24-h, %	-	1	ASTM D6930
Demulsibility, 35mL, 0.8% dioctyl sodium sulfosuccinate, %	40	-	ASTM D6936
Coating ability and water resistance:			
Particle charge test	positive	positive	ASTM D7402
Sieve test, %	-	0.1	ASTM D6933
Distillation:			
Oil distillate, by volume of emulsion, %	-	3	ASTM D6997
Residue, %	60	-	ASTM D6997
Tests on residue from distillation test:			
Penetration, 25°C (77°F), 100g, 5s	100	250	ASTM D5
Ductility, 25°C (77°F), 5cm/min, cm	40	-	ASTM D113
Solubility in trichloroethylene, %	97.5	-	ASTM D2042

Bituminous-aggregate applications

Treatments and seals:

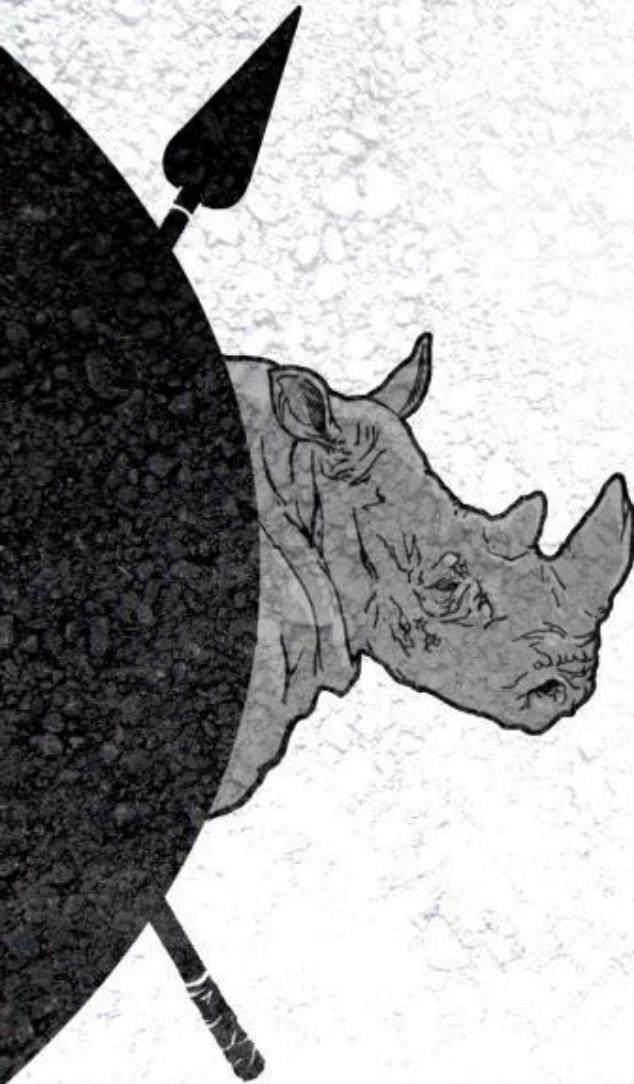
- Single surface treatment
- Multiple surface treatment
- Sand seal

Penetration macadam

- Small voids

* CRS-1 may be used as a tack coat in special cases where night construction or high humidity exists.

CMS



Bitumen Emulsion CMS-2

CMS-2 is a cationic medium setting bitumen emulsion that contains 65% bitumen, is black in color and is manufactured strictly as per ASTM D 2397M-13 standard.

Property	Min	Max	Test Method
Viscosity, Saybolt Furol at 25°C, SFS	-	-	ASTM D7496
Viscosity, Saybolt Furol at 50°C, SFS	50	450	ASTM D7496
Storage stability test, 24-h, %	-	1	ASTM D6930
Demulsibility, 35mL, 0.8% dioctyl sodium sulfosuccinate, %	-	-	ASTM D6936
Coating ability and water resistance:			
Coating, dry aggregate	Good		ASTM D244
Coating, after spraying	Fair		ASTM D244
Coating, wet aggregate	Fair		ASTM D244
Coating, after spraying	Fair		ASTM D244
Particle charge test	positive	positive	ASTM D244
Sieve test, %	-	0.1	ASTM D6933
Cement mixing test,%	-	-	ASTM D6935
Distillation:			
Oil distillate, by volume of emulsion, %	-	12	ASTM D6997
Residue, %	65	-	ASTM D6997
Tests on residue from distillation test:			
Penetration, 25°C (77°F), 100g, 5s	100	250	ASTM D5
Ductility, 25°C (77°F), 5cm/min, cm	40	-	ASTM D113
Solubility in trichloroethylene, %	97.5	-	ASTM D2042

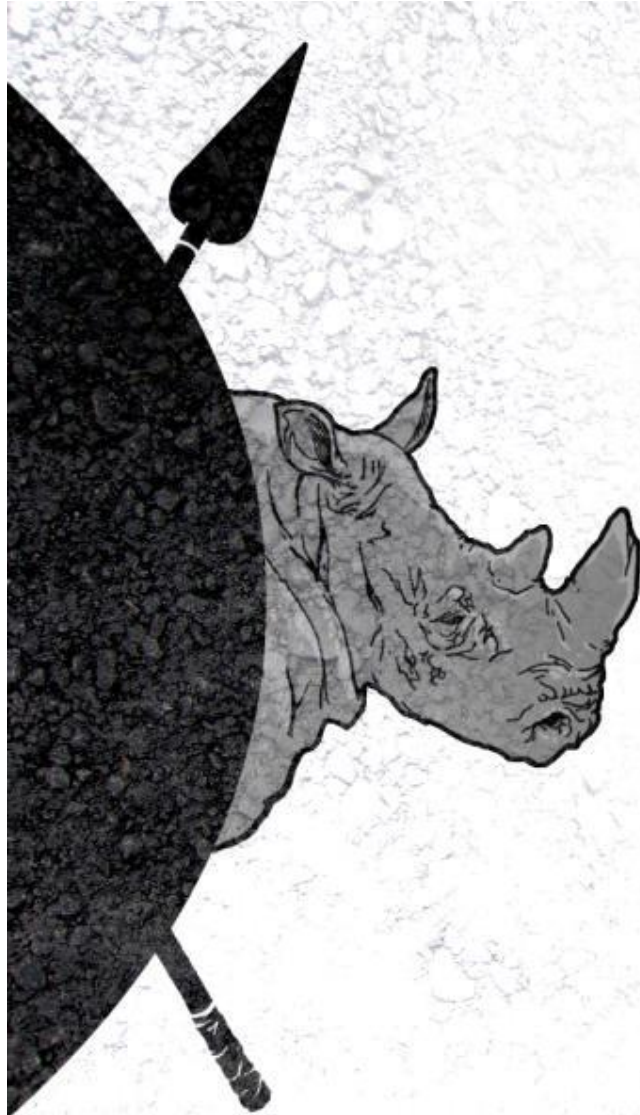
Bituminous-aggregate mixtures

For pavement bases and surfaces:

- Plant mix (cold): with open-graded aggregate
- Mixed-in-place:
- Open-graded aggregate

Bituminous applications

- Crack filler



Bitumen Emulsion CSS-1

CSS-1 is a cationic slow setting bitumen emulsion that contains 57% bitumen, is black in color and is manufactured strictly as per ASTM D 2397M-13 standard.

Property	Min	Max	Test Method
Viscosity, Saybolt Furol at 25°C, SFS	20	100	ASTM D7496
Storage stability test, 24-h, %	-	1	ASTM D6930
Demulsibility, 35mL, 0.8% dioctyl sodium sulfosuccinate, %	-	-	ASTM D6936
Coating ability and water resistance:			
Particle charge test	positive	positive	ASTM D7402
Sieve test, %	-	0.1	ASTM D6933
Cement mixing test, %	-	2.0	ASTM D6935
Distillation:			
Oil distillate, by volume of emulsion, %	-	-	ASTM D6997
Residue, %	57	-	ASTM D6997
Tests on residue from distillation test:			
Penetration, 25°C (77°F), 100g, 5s	100	250	ASTM D5
Ductility, 25°C (77°F), 5cm/min, cm	40	-	ASTM D113
Solubility in trichloroethylene, %	97.5	-	ASTM D2042

Bituminous-aggregate mixtures

For pavement bases and surfaces:

- Plant mix (cold): with both dense-graded aggregate and sand
- Mixed-in-place:
 - Dense-graded aggregate
 - Sand
 - Sandy soil
 - Slurry seal

Bituminous applications

- Fog Seal
- Prime coat-penetrable surface
- Tack coat
- Dust Binder
- Mulch Treatment
- Crack filler

PRICE INQUIRES

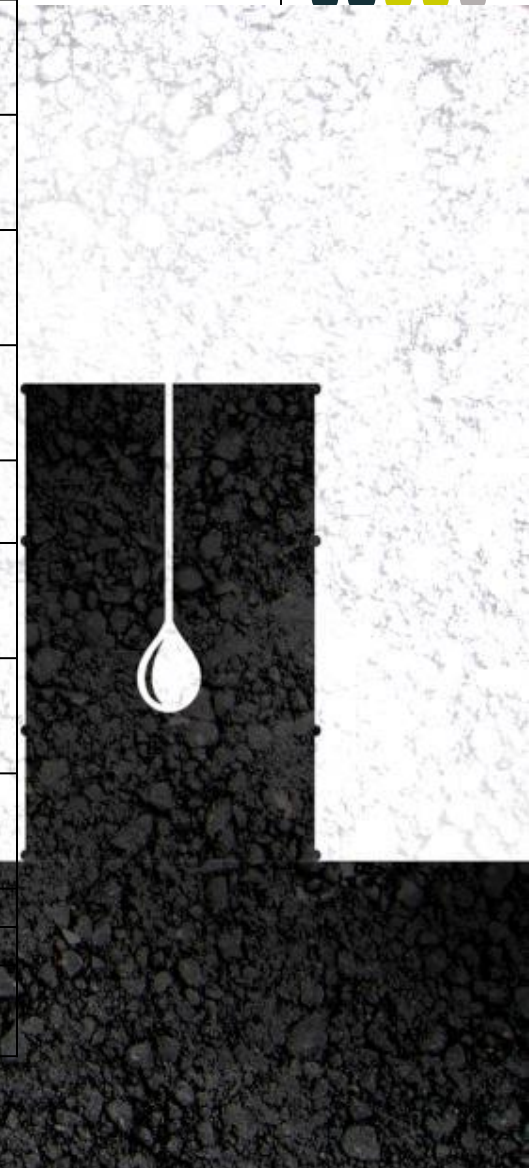
MOMBASA City Limit

NAIROBI City




Terms of Delivery		DDP	DDP
1 Cutback Bitumen	MC 30	720 \$	740 \$
2 Cutback Bitumen	MC 70	718 \$	739 \$
3 Cutback Bitumen	MC 250	719 \$	738 \$
4 Cutback Bitumen	MC 800	715 \$	735 \$
5 Cutback Bitumen	MC 3000	714 \$	735 \$
6 Bitumen Emulsion	CRS-1	650 \$	680 \$
7 Bitumen Emulsion	CSS-1	650 \$	680 \$
8 Bitumen Emulsion	CMS	650 \$	680 \$

Price Per 1 MT / Currency USD



TEST BY KENYA MATERIAL TESTING & RESEARCH DIVISION





MINISTRY OF TRANSPORT, INFRASTRUCTURE, HOUSING & URBAN DEVELOPMENT
STATE DEPARTMENT OF INFRASTRUCTURE

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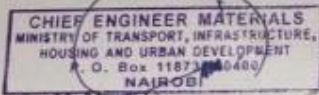
Ref No: **M.1252/35/L/2** Date: 8 February, 2018

Laboratory Test Report

- Client's Name:** West European Group
 E-mail: info@westeuropeangroup.com
Phone: None
- Client's Address:** Box 18945 - 00100, Nairobi
6. Job Card No: 1729/BT/18
- Sample Description:** K3-56 Emulsion Bitumen (CSS-1)
7. Date fee paid: 24/01/2018
- Sample Submitted by:** Client
8. GOK MR No: 2811483
- Date of Sample receipt:** 16/01/2018
9. Date Analysis started: 23/01/2018


10. **Additional information provided by the customer:**

EMULSION BITUMEN ANALYSIS				Clients Specifications	
Laboratory Ref. No.	8417/B/18				
Clients Ref No	Batch No. 1138				
Test Property	Unit	Test Method	Results	Min	Max
Viscosity, Saybolt Furol at 25°C S.F.S	Sec	ASTM D7496	22	20	100
Residue on sieve 75µm KS Sieve	(%)	ASTM D6933	0.03		0.1
Binder content	(%/m)	ASTM D699	61	57	
Particle charge test		ASTM D7402	POSITIVE	POSITIVE	



Eng. Charles M. Muriuki
 For: **CHIEF ENGINEER (MATERIALS)**

These results are specific to the sample(s) tested.





**THANK YOU
FOR YOUR ATTENTION**



Website

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