

SECTION 2.2 SPECIFICATIONS

- 2.2.1 The Hessequa Municipality wishes to enter into a contract with a suitable supplier or suppliers for the supply and delivery of bitumen products for a contract period of three (3) years, from date of award.

2.2.2 Conditions

- 2.2.2.1 Products will be ordered as and when required.
- 2.2.2.2 Bidders are required to indicate the delivery period (Section 3.2 – MBD1) after the receipt of an official order.
- 2.2.2.3 If the successful (preferred) bidder cannot or does not deliver the products within the delivery period as indicated, the bidder must inform the Municipality in writing of delays in delivery.
- 2.2.2.4 Should the bidder failed to inform the Municipality and the products is not delivered within the delivery period, the order will be cancelled and the Municipality will automatically source the bitumen products from the alternative bidder.
- 2.2.2.5 All prices given for any particular grid must be firm for product, delivery and spray within such grid, irrespective of actual road distance from the centre to the point of delivery.
- 2.2.2.6 The bitumen emulsion products (see section 2.2 – MBD3.1) must be supplied in 200 litre drums which are properly sealed and clearly marked as to the product it contains.

2.2.3 Material**2.2.3.1 Rubber Bitumen**

A 80/100 or 60/70 penetration grade bitumen shall be used.

A dilutant of hydrocarbon distillate may be added to improve the workability of the rubber bitumen blend. When tested the blended rubber bitumen may have a resiliency of 15% in accordance with the Test Method (BR 2T), and have a maximum flow of 60mm when tested in accordance with the Test Method (BNR 4T).

The rubber shall be obtained from granulated truck tyres or heavy duty construction plant tyres. 100% of the rubber shall pass a 1.18mm sieve. Maximum length may be 2mm. Natural rubber content as a percentage by mass of the total hydrocarbon rubber is to be at least 60%. Rubber content will be 20% - 25%.

2.2.3.2 Backing Material

The backing material shall be flexible and of sufficient strength to support the binder and the aggregate. It shall have a 5mm dimension tolerance limit.

2.2.3.3 Aggregate

All aggregate to be utilised shall conform to the relevant specifications applicable to the size of aggregate as per the COLTA Standard Specifications for Road and Bridge Works for State Road Authorities: 1998 Edition. All aggregates shall be pre-coated with a bitumen adhesion enhancing product.

The materials utilised for the "Extra Fine" below 2.75mm and the "Fine" below 4.75mm do not have to conform to any specification.

2.2.3.4 Packing Material

Packing material shall be "Siliconised Poly" sheeting. This material is to be placed between each sheet and over the top sheet of each batch delivered so as to prevent the sheets sticking together.

2.2.4 Polymer Modified Cationic Emulsion**2.2.4.1 Special conditions**

The special conditions applicable to conventional bitumen emulsions shall mutatis mutandis apply to the polymer modifier required to be added to the cationic emulsion only, where so ordered by the District Municipality. In addition to batch identification number and actual viscosity, the percentage SBR latex shall also be stated on the consignment documents.

2.2.4.2 Materials

A) Bituminous binders

The spray grade (65%) cationic bitumen emulsion shall comply with SABS 548 subject to the further viscosity requirements to ultimately satisfy the specified viscosity requirements for the blend.

B) Stabilised styrene butadiene rubber latex with a 60% to 65% by mass solids content of styrene butadiene rubber.

2.2.4.3 Composition of surfacing blend

The polymer modified cationic emulsion shall comprise a homogenous blend of 95 parts by mass of cationic 65% spray grade emulsion and 5 parts by mass of stabilised styrene butadiene rubber latex. The modified C and allbinder shall have a minimum viscosity of 70 seconds Saybolt Furol at 50 pH 6.

2.2.4.4 Properties of recovered binder

Test on reclaimed binder will be required to yield the following results:-

Characteristic Tested	Unit	Specified Value	Test Method
Softening point (Ring and Ball)	°C	55 min.	IP58
Penetration 0,1 mm		55-85	IP49

Dynamic viscosity C (min)at 135	dPa.s	record results	ASTM D4402 (Brookfield)
C Ductility at 10 (minimum)	Mm	1000	Mod ASTM D113
Elastic recovery C (min)at 10	%	55	Mod ASTM D113 (See par 1.5)
Adhesion test % at C min5 C minat 50		90 100	Mod Vialit method ⁽¹⁾

NOTE ⁽¹⁾: Dust content of aggregate used for test not to exceed 0,5 per cent.

2.2.4.5 Determination of the elastic properties of binders using the standard ductilometer

Ductilometer briquettes are prepared in the standard manner for ductility measurements. C The bath temperature is maintained at 10 and the samples immersed for 90 minutes prior to the test.

The briquettes are elongated at the standard rate of 50 mm/min until they have been stretched 200 mm. They are held at this position for five minutes when the threads are cut approximately in half by scissors.

The briquettes are left undisturbed for one hour after which the half sample specimens are retracted until the two broken ends touch. The elongation at this point (Xmm) is noted and the percentage recovery determined from -

$$\% \text{ recovery} = (200 - X) / 200 \times 100$$

2.2.4.6 A volatile solvent flux content of up to 5% mass by mass of the bitumen may be added to enhance emulsion performance with regard to prevailing climatic conditions. If added, the specified values will be affected; hence the supplier shall keep the District Council informed of expected changes.

2.2.4.7 Producing and transporting the blend

Blending of the component products shall be effected at ambient temperature at the factory designated to supply the latex emulsion, unless otherwise dictated by an approved alternative manufacturing process. Supply points and transport arrangements as for conventional emulsions shall equally apply.

2.2.4.8 General Limitations

A 6 week advance warning (prior to delivery) involving the use of the polymer modified blend shall apply.

2.2.4.9 Spraying

Spraying arrangement as for conventional emulsions shall equally apply.

2.2.4.10 Tolerances

Special conditions as for conventional emulsions shall equally apply.

2.2.4.11 Testing

Sampling and testing to be effected at discretion of the Council.

2.2.4.12 Measurement and Payment

The unit of measurement shall be the litre of latex modified cationic emulsion measured hot C where the homogeneous blend comprises 95 parts by mass of in bulk at 60 cationic 65% spray grade emulsion and 5 parts by mass stabilised styrene butadiene rubber latex.

Payment shall be effected on a cost per litre of emulsion basis. The tender rate/s shall include full compensation for all additional costs for procuring and furnishing all materials and for all labour, plant, transport and other incidentals necessary for effecting the specified latex modification.

Failure to adhere to the beforementioned may result in your tender being declared non-responsive.

DECLARATION,

I, THE UNDERSIGNED (NAME)
CERTIFY THAT THE INFORMATION FURNISHED ABOVE IS CORRECT. I ACCEPT THAT THE MUNICIPALITY
MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

AUTHORISED SIGNATURE:

NAME:

CAPACITY:DATE:

Initials of Service Provider's Authority: