

## Approval & Reception Procedure

DG – Geotechnical Department	
<b>Bituminous Concrete Mix Approval</b>	Document no. <b>ARP/DG/05</b>
	Date: <b>2010/07/01</b>
	Page no. <b>1 of 3</b>

### 1. Reference standard

ASTM C127, ASTM C128, ASTM C136, ASTM C535, ASTM D1559, ASTM D2172, ASTM D5361, ASTM D2041, ASTM D2726, ASTM D3549, BS 812 (Section 105. 2:1990), BS 812 (Section 105. 1:1989).

### 2. Approval procedures

**Lot:** A Lot is any quantity of materials of the same grade and supplier used for each layer.

#### 2.1 Information to be submitted

Catalogues of Bituminous Emulsion and Bitumen;

Mix Design of Hot Mixed Asphalt Concrete and their test report (not older than 6 months)

#### 2.2 Sampling and Laboratory Tests

Bitumen shall follow the Approval & Reception Procedure ARP/DG/01 "Bitumen".

For Aggregates samples, the minimum mass of the sample for testing shall be 100 kg, the following laboratory tests shall be performed (one test per lot):

Los Angeles Test (ASTM C131, ASTM C535)

Elongation Index Test (BS 812, Section 105. 2:1990)

Flakiness Index Test (BS 812, Section 105. 1:1989)

Water Absorption Test (ASTM C127, C128)

Particle Size Distribution Test (ASTM C136)

For Hot Mixed Asphalt Concrete samples, the minimum mass of the sample for trial-mix testing shall be 100 kg, the following laboratory tests shall be performed (1 sample per layer).

Particle Size Distribution Test (ASTM C136)

Bitumen Content Test (ASTM D2172)

Specific Gravity Test (ASTM D2041, ASTM D2726)

Marshall Test (ASTM D1559, ASTM D3549)

## Approval & Reception Procedure

<b>DG – Geotechnical Department</b>	
<b>Bituminous Concrete Mix Approval</b>	Document no. <b>ARP/DG/05</b>
	Date: <b>2010/07/01</b>
	Page no. <b>2 of 3</b>

### 3. Acceptance criteria

For Particle Size Distribution Test, the material shall be continuously well graded within the limits specified in specification or the table below.

#### Percentage by Weight Passing Square-Mesh Sieve

<b>Base Course</b>			<b>Wearing Course</b>		
Sieve Designation mm	Range Requirement		Sieve Designation mm	Range Requirement	
25.0	100	100	12.5	80	95
19.0	85	100	9.5	70	90
12.7	73	87	4.76	50	70
4.76	45	60	2.00	32	46
2.00	32	46	0.42	16	27
0.42	16	27	0.177	9	18
0.177	9	18	0.075	6	10
0.075	5	10			

For Los Angeles Test, test result shall comply with the requirement of specification (or shall not exceed 30% if not specified).

For Elongation Index Test, test result shall comply with the requirement of specification (or shall be less than 25% for wearing course and shall be less than 30% for base course if not specified).

For Flakiness Index Test, test result shall comply with the requirement of specification (or shall comply with the value specified in the table below if not specified).

Property	Nominal maximum aggregate size (mm)			
	37.5	28	20	10
Flakiness index	≤ 25.0%	≤ 26.0%	≤ 27.0%	≤ 30.0%

For Water Absorption Test, test result shall comply with the requirement of specification (or shall not exceed 2% if not specified).

## Approval & Reception Procedure

DG – Geotechnical Department	
<b>Bituminous Concrete Mix Approval</b>	Document no. <b>ARP/DG/05</b>
	Date: <b>2010/07/01</b>
	Page no. <b>3 of 3</b>

For Marshall Test, test result shall comply with the requirement of specification (or shall comply with the value specified in the Table below if not specified).

Layer	Air Voids (%)	Degree of Saturation (%)	Loading (kg)	Deformation (mm)	Loading/Deformation (kg/mm)
Base Course	3 - 6	75 - 85	> 1000	< 3.5	> 200
Wearing Course	4 - 6	72 - 82	> 1200	< 3.5	> 250