DISPERSION OF BITUMEN IN SOIL

1 SCOPE

This method describes the procedure for determining of the degree of dispersion and coating of soil with bitumen by visual assessment.

2 SAFETY

This method does not attempt to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this method to establish appropriate occupational health and safety practices that meet statutory regulations.

3 REFERENCED METHODS

Main Roads Western Australia

WA 100.1 Sampling Procedure for Soils and Manufactured Granular Pavement Materials

4 APPARATUS

(a) A temperature controlled **drying cabinet or oven** with mechanically forced air circulation capable of maintaining a temperature within the range 45ºC to 50ºC.

(b) **Stereo microscope** approximately 15 to 20 times magnified observation.

5 PROCEDURE

(a) Obtain a test sample in accordance with WA 100.1.

(b) Dry the test sample to constant mass in the drying cabinet.

NOTE: The sample is deemed to be dry when the difference between successive determinations of the mass of the cooled sample after re-drying in an oven at a temperature within the range of 45ºC to 50ºC, for periods of four hours does not exceed 0.1 percent of the original mass of the sample.

(c) Prepare a representative test portion using sample division.

(d) Examine the test portion and rate the degree of coating and dispersion into one of the classes listed.

NOTE: Assessment is more easily carried out when both mixed and unmixed samples are viewed in conjunction with one another. The coating of bitumen on particles is likely to be very thin and in these circumstances bitumen appears brown rather than black.

Class 1

The soil mass has changed colour from its unmixed state and is uniformly dark in appearance although odd large particles may not be uniformly coated. No individual drops or concentrations of bitumen are visible to the naked eye. Examination of the sample magnified shows 80 to 100% by volume of the soil particles are coated with bitumen.

Class 2

The soil mass has changed colour from its unmixed state but not uniformly. Some concentrations of bitumen in the soil are visible to the naked eye. Examination of the sample magnified shows 60 to 80% by volume of the soil particles are partly coated with bitumen.

Class 3

Most of the soil mass has changed colour from its unmixed state but there is considerable localised darkening. Many individual concentrations of bitumen in the soil are clearly visible to the naked eye. Examination of the sample magnified shows 40 to 60% by volume of the soil particles are partly coated with bitumen.

Class 4

The soil has not changed colour from its unmixed state. Individual drops of bitumen and many concentrations of bitumen in the soil are clearly visible to the naked eye. Examination of the sample magnified shows up to 40% by volume of soil particles are partly coated with bitumen.

6 REPORTING

Report the class number that most closely describes the dispersion and coating of bitumen in the test sample.

7 ISSUING AUTHORITY

Document Owner
Pavements Manager

8 REVISION STATUS RECORD

Page No.	Section	Revision Description / Reference
2	7	Update Issuing Authority