

Test Method

Pretreatment of Soils and Pavement Materials by Repeated Compaction

RC 301.05

1. Scope

This test method describes the procedure for pretreating material by repeated compaction prior to further testing.

2. Apparatus

Apparatus as described in AS 1289.1 and AS 1289.5.1.1 and 5.2.1

3. Procedure

- (a) Break down all soft material over a 37.5 mm sieve by hand or with the aid of a wooden mallet. Clean all fines from the material retained on the 37.5 mm sieve by brushing and add to the material passing the 37.5 mm sieve. Determine the mass of any material which will not break down and the mass of material passing the screen. Calculate the percentage by mass, on a wet basis, of material retained on the 37.5 mm sieve. The material passing the 37.5 mm sieve shall be used for the pretreatment sample and the material retained on that sieve shall be discarded.
- (b) Moisten the pretreatment sample to the estimated optimum moisture content (OMC) for the compactive effort to be used and allow it to cure for 24 hours.
- (c) Sub-divide the cured sample into sub-samples of about 7 kg each. The number of sub-samples shall be sufficient for the determination of maximum dry density and optimum moisture content, for the required number of CBR tests and for other tests required e.g. sieve analysis and plasticity index (see Note 1).

- (d) For each sub-sample:
 - (i) Compact the sub-sample in Mould B in three equal layers in accordance with AS 1289.5.1.1 or AS 1289.5.2.1, as appropriate. Do not screed off.
 - (ii) Remove the compacted specimen from the mould and break up over a 10 mm screen as described in AS 1289.1 Section 4.1.
 - (iii) Repeat steps (e) (i) and (ii) until the specified number of pretreatment compactions have been completed (see Note 2).
- (e) Recombine the pretreated sub-samples and screen over the 19.0 mm sieve and clean all fines from the material retained on the 19.0 mm sieve by brushing and add to the material passing the 19.0 mm sieve.
- (f) Determine the percentage of material retained on the 19.0 mm sieve on a dry basis.

4. Report

Report the following:

- (a) The percentage of material retained on the 37.5 mm sieve on a wet basis.
- (b) The number of cycles of pretreatment by compaction
- (c) The compactive effort used
- (d) The percentage of material retained on the 19.0 mm sieve after pretreatment.

5. Notes

Note 1 : Each determination of maximum dry density and optimum moisture content requires between 12 kg and 15 kg and each CBR test requires between 5.5 kg and 7 kg of material passing the 19.0 mm sieve.

Note 2 : Code of Practice RC 500.20 requires three pretreatment cycles.

Test Method - Revision Summary

RC 301.05 Pretreatment of Soils and Pavement Materials by Repeated Compaction

Date	Clause Number	Description of Revision	Authorised by
November 2012	Full document	Re-styled with minor corrections made	Principal Advisor – Pavements & Materials