

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF

AS/NZS 2341.22:1996

Methods of testing bitumen and related roadmaking products

Method 22: Determination of particle charge

RECONFIRMATION NOTICE

Technical Committee CH-025 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 14 May 2013.

Approved for reconfirmation in New Zealand on behalf of the Standards Council of New Zealand on 20 May 2013.

The following are represented on Technical Committee CH-025:

Australian Road Research Board (ARRB)
Australian Asphalt Pavement Association
Australian Chamber of Commerce and Industry
Australian Institute of Petroleum
AUSTROADS
Engineers Australia
National Association of Testing Authorities Australia
Roading New Zealand
Transit New Zealand

NOTES

Australian/New Zealand Standard®

Methods of testing bitumen and related roadmaking products

Method 22: Determination of particle charge

1 SCOPE This Standard sets out a method for determining the nature of the charge on particles of bituminous emulsion, as indicated by the bitumen deposited on electrodes to which an electric current is applied.

2 PRINCIPLE Electrodes are immersed in the emulsion. A controlled electric current is applied for a given time and the deposition of bitumen on the electrodes is observed.

3 APPARATUS The following apparatus is required:

- (a) *Electrodes* Electrodes consisting of two stainless steel plates, 75 ± 1 mm long, 25 ± 1 mm wide and 3 ± 2 mm thick, with an immersion mark at 25 ± 2 mm. An insulating device is used to hold the plates parallel, 25 ± 2 mm apart in the emulsion sample during the test.
- (b) *Glass beaker* A glass beaker of 150 mL or 250 mL capacity.
- (c) *Timing device* A timing device graduated in at least 1 min intervals.
- (d) *Variable direct current power source* A variable direct current power source (see Figure 1) of about 12 V capable of supplying at least 8 mA during the test, and a milliammeter. A suitable circuit for such equipment is shown in Figure 2.

4 PROCEDURE The procedure shall be as follows:

- (a) Suspend the electrode assembly in the beaker.
- (b) Pour the emulsion into the beaker until the electrodes are immersed to a depth of 25 mm.
- (c) Connect the leads from the electrodes to the power source through the milliammeter.
- (d) Adjust the current to about 8 mA and start the timing device.
- (e) When one of the electrodes is visibly coated with bitumen or the current reading has dropped to about 2 mA, or at the end of 30 min, whichever occurs first, disconnect the power source and gently wash electrodes in running water.
- (f) Observe electrodes for bitumen deposition.

5 REPORT The test report shall contain the following:

- (a) If an appreciable layer of bitumen is deposited on the anode, report particle charge as negative.
- (b) If an appreciable layer of bitumen is deposited on the cathode, report particle charge as positive.
- (c) Reference to this Australian/New Zealand Standard, i.e. AS/NZS 2341.22.