

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 1580.214.3—2003

Paints and related materials—Methods of test

Method 214.3: Viscosity—Cone-and-plate

RECONFIRMATION NOTICE

Technical Committee CH-003 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 25 September 2013.

The following are represented on Technical Committee CH-003

Australasian Corrosion Association
Australian Paint Approval Scheme
Australian Paint Manufacturers' Federation
Australian Pipeline Industry Association
Water Corporation Western Australia

NOTES

Australian Standard™

AS 1580.214.3

Paints and related materials—Methods of test**Method 214.3: Viscosity—Cone-and-plate****1 SCOPE**

This Standard sets out a method of determining the viscosity of paint samples using the cone-and-plate viscometer at a nominal temperature of 25°C.

NOTE: The suitability and applicability of this method is discussed in AS 1580.214.0.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- | | |
|------------|---|
| 1580 | Paints and related materials—Methods of test |
| 1580.101.5 | Method 101.4: Conditions of test, temperature control |
| 1580.214.0 | Method 214.0: Rheological properties—Guide to test methods |
| 2850 | Chemical analysis—Interlaboratory test programs—For determining precision of analytical method(s)—Guide to the planning and conduct |

BS

- | | |
|---------|---|
| 2000 | Methods of test for petroleum and its products |
| 2000-71 | Part 71: Kinematic viscosity of transparent and opaque liquids and calculation of dynamic viscosity |

3 PRINCIPLE

A small sample of paint, under controlled temperature conditions, is subjected to high shear between a conical rotating plate and a flat plate, and the resulting torque is measured. The viscosity is determined by calculation.

4 APPARATUS

A thermostatically controlled cone-and-plate viscometer, of nominal shear rate, 10 000 s⁻¹, and capable of meeting the viscosity specification of the reference oil (see Paragraph B3.1) to within 5% of its certified value at 25°C, is required. Figure 1 illustrates a suitable apparatus and a description is given in Appendix A.



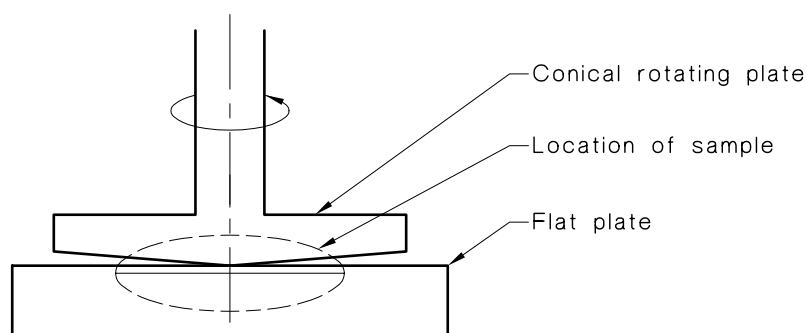


FIGURE 1 CONFIGURATION OF CONE-AND-PLATE VISCOMETER

5 TEST CONDITIONS

The test shall be carried out under the conditions specified in AS 1580.101.5.

6 OCCUPATIONAL HEALTH AND SAFETY GUIDANCE

During handling follow precautions for use outlined in supplier's Materials Safety Data Sheet (MSDS).

7 PREPARATION OF APPARATUS

A performance check of the apparatus, in accordance with Appendix B, shall be performed prior to use each day to assess its suitability.

8 PREPARATION OF SAMPLE

Prepare the sample as follows:

- (a) Prepare a paint sample in accordance with AS 1580.214.0.
- (b) Mix thoroughly.

9 PROCEDURE

The procedure shall be as follows:

- (a) Ensure the apparatus complies with Clause 7, has been cleaned (see Clause 10), and is dried.
- (b) With the cone in the DOWN position, activate the temperature control mechanism on the viscometer and wait for the plate to reach the preset temperature (25°C).
- (c) Switch on the rotation mechanism of the cone and, if necessary, 'zero' the apparatus.
- (d) Switch off the mechanism and raise the cone to the UP position.
- (e) Place sufficient paint sample on the centre of the plate so that when the cone is lowered onto the plate, paint exudes from the edges of the cone/plate interface.
- (f) Immediately place the cone in the DOWN position and allow the sample to attain the test temperature.

NOTE: A period of 15 s should be adequate for this operation.

- (g) Activate the rotation mechanism of the cone and as soon as the reading stabilizes, record the reading and switch off the rotation mechanism.

NOTE: If the reading does not stabilize in approximately 10 s, discontinue the test, investigate the cause and rectify it before recommencing the whole test (Steps (a) to (h)).