STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF
AS/NZS 2341.5:1997
Methods of testing bitumen and related roadmaking products
Method 5: Determination of apparent viscosity by 'Shell' sliding plate micro-viscometer

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
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AS/NZS 2341.5:1997
Reconfirmed 2013

Australian/New Zealand Standard®

Methods of testing bitumen and related roadmaking products

Method 5: Determination of apparent viscosity by 'Shell' sliding plate micro-viscometer

1 SCOPE This Standard sets out a procedure for the determination of apparent viscosity of bitumens at a specified shear strain rate by means of the 'Shell' sliding plate micro-viscometer.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
2341 Methods of testing bitumen and related roadmaking products
AS/NZS
2341.1 Method 1: Precision data—Definitions
AS
2341.13 Method 13: Long-term exposure to heat and air

ASTM
E1 Specification for ASTM thermometers

3 APPLICATION This method of test is particularly applicable to the assessment of the—

(a) increase in viscosity of a bitumen, which has been hardened in accordance with AS 2341.13 by measuring the apparent viscosity at 45°C, and at a shear strain rate of 5×10^{-3} s^{-1} after the treatment; and

(b) condition of bitumen recovered from pavements by measuring apparent viscosity at 45°C and 5×10^{-3} s^{-1}.

4 PRINCIPLE A bitumen film of known thickness is sheared between a matched pair of parallel flat glass plates. One plate is clamped in a fixed position and the other is displaced in the direction of the plane of the film by a constant force. The displacement velocity of the moving plate is measured. Shear strain rate, shear stress, and apparent viscosity are calculated from the dimensions of the specimen, displacement velocity, and load. Measurements are taken at several different loads and the relationship between apparent viscosity and shear strain rate is determined.

5 APPARATUS

5.1 Analytical balance—readable to 0.0001 g and accurate to 0.0003 g.

5.2 Chart recorder—having a full-scale deflection of 100 mV and chart speeds in the range 1 cm/h to 60 cm/min. The chart width should preferably be 200 mm or greater.

NOTE: A data logger can be used as long as its sensitivity and sampling rate give equal or better data resolutions.