Australian Standard®

Methods of testing bitumen and related roadmaking products

Method 2: Determination of dynamic (coefficient of shear) viscosity by flow through a capillary tube

PREFACE

This Standard was prepared by the Standards Australia Committee on Bitumen and Related Products (for Roadmaking), to supersede AS 2341.2—1980. The most significant modifications are revision of the table of viscosities of calibration fluids (Table 4) and changes to the figure for reproducibility (Clause 9—Precision) as a result of data produced from an inter-laboratory test program.

NOTE: The term 'dynamic viscosity' used throughout this document is synonymous with 'coefficient of shear viscosity'.

METHOD

1 SCOPE This Standard sets out procedures for the determination of dynamic viscosity of materials having viscosities in the range 0.0036 Pa.s to 80 000 Pa.s, using two different types of vacuum capillary viscometers. In particular the method is applicable to residual bitumen for pavements (as specified in AS 2008), cutback bitumen (as specified in AS 2157) and road tar for pavements (as specified in AS 1507).

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

AS

1507 Road tars for pavements

2008 Residual bitumen for pavements

2157 Cutback bitumen

2341 Methods of testing bitumen and related roadmaking products

2341.1 Part 1: Precision data—Definitions

ASTM

E 1 Specification for ASTM thermometers

IP Methods for analysis and testing, Part 1, Vol. 2, Appendix A

3 PRINCIPLE The time for a fixed volume of the liquid to be drawn up through a capillary tube by means of reduced pressure, under closely controlled conditions of pressure and temperature, is measured. The dynamic viscosity is calculated by multiplying the flow time by the viscometer tube calibration factor.