

AS 2341.9:2021



STANDARDS
Australia



Methods of testing bitumen and related roadmaking products

Method 9: Determination of water content (Dean and Stark)



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AS 2341.9:2021

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ARRB
Australian Airports Association
Australian Chamber of Commerce and Industry
Australian Flexible Pavement Association
Australian Institute of Petroleum
AUSTROADS
AustStab
Department of Transport, Vic
Engineers Australia
National Association of Testing Authorities Australia

Additional Interests

Conlaps

This Standard was issued in draft form for comment as DR AS 2341.9:2021.

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Method 9: Determination of water content (Dean and Stark)

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Preface

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee CH-025, Bitumen and Related Products (for Roadmaking), to supersede AS 2341.9—1992.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this document as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this document is to specify procedures for the determination of water content in bituminous emulsions and refined tar via the Dean and Stark method.

A list of all parts in the AS (AS/NZS) 2341 series can be found in the Standards Australia online catalogue.

The major changes in this edition are as follows:

- (a) References to road tars have been removed and replaced by refined tar.
- (b) The requirements for the Dean and Stark apparatus have been updated to reflect current equipment.
- (c) Precision statements have been updated to reflect the results of four inter-laboratory round robins organized by Construction Laboratories Auditing and Proficiency Services (Conlaps) which were conducted between 2016 and 2020.

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NOTES

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Australian Standard®

Methods of testing bitumen and related roadmaking products

Method 9: Determination of water content (Dean and Stark)

1 Scope

This document sets out a procedure for the determination of water content in bituminous emulsions and refined tar. The procedure is applicable to bituminous emulsions as specified in AS 1160.

WARNING — THE USE OF THIS DOCUMENT MAY INVOLVE HAZARDOUS MATERIALS, OPERATIONS AND EQUIPMENT. THIS DOCUMENT DOES NOT PURPORT TO ADDRESS ALL OF THE SAFETY ISSUES ASSOCIATED WITH ITS USE. IT IS THE RESPONSIBILITY OF THE USER OF THIS DOCUMENT TO ESTABLISH APPROPRIATE SAFETY AND HEALTH PRACTICES, AND TO DETERMINE THE APPLICABILITY OF REGULATORY LIMITATIONS PRIOR TO USE.

2 Normative references

The following documents are referred to in the text in such a way that one or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 1160, *Bituminous emulsions for construction and maintenance of pavements*

AS/NZS 2341.1, *Methods of testing bitumen and related roadmaking products, Part 1: Precision data—Definitions*

AS/NZS 2341.21, *Methods of testing bitumen and related roadmaking products, Method 21: Sample preparation*

3 Terms and definitions

For the purpose of this document the terms and definitions in AS/NZS 2341.1 and the following apply.

4.1

may

indicates the existence of an option

4.2

shall

indicates that a statement is mandatory

4.3

should

indicates a recommendation

4 Principle

The bituminous material is dissolved in a water-immiscible solvent and the mixture is boiled under reflux in a Dean and Stark apparatus. The water in the condensate of the water/solvent azeotrope is separated and measured volumetrically.