

# Australian/New Zealand Standard™

## Methods of sampling and testing asphalt

### Method 10: Moisture content of asphalt

#### PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CE-006, Asphalt and Sprayed Surfacing, to supersede AS 2891.10—2005, *Methods of sampling and testing asphalt*, Method 10: *Water and volatile oils content*.

The objective of this Standard is to set out the method for determining the moisture content of asphalt by oven drying.

The principle difference between this revision and the superseded standard is to change the method from determining moisture content and volatile oil content of asphalt using a boiling test to a method determining moisture content only by oven drying. The revision also facilitates measuring the moisture content of larger size asphalt mixes.

#### METHOD

##### 1 SCOPE

This Standard sets out two methods for determining, by loss in mass from oven drying, the moisture content of freshly produced hot or warm mixed asphalt. The methods are not applicable to asphalt that may contain any volatile material.

##### 2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

|          |                                         |
|----------|-----------------------------------------|
| AS/NZS   |                                         |
| 2891     | Methods of sampling and testing asphalt |
| 2891.1.1 | Method 1.1: Sampling—loose asphalt      |

##### 3 DEFINITIONS

For the purpose of this Standard, the definitions given in AS/NZS 2891.1.1 apply.

##### 4 APPARATUS

The following apparatus is required:

- (a) *Oven* Thermostatically controlled and operating at a set temperature of between 150°C and 170°C.

NOTE: Where asphalt is being manufactured at a temperature less than 150°C and a testing laboratory is not operating an oven at a temperature between 150°C and 170°C, drying the asphalt in a drying oven at a temperature of 105°C to 110°C may be considered. Experience indicates that it takes longer to dry asphalt at this lower temperature so longer drying cycles are required. Where an oven temperature of 105°C to 110°C is used a laboratory should increase the minimum periods of oven drying in Step 5.2 or 5.3 to achieve the same extent of drying as for an oven operating at a temperature of between 150°C and 170°C.

- (b) *Tin for delayed testing* Nominal 4 L capacity tin made of metal with a double tight friction lid. All drying and weighing of a metal tin shall include the lid.
- (c) *Tray for immediate testing* Heat and corrosion resistant tray or dish of suitable size to hold the sample without risk of spillage.
- (d) *Balance* Of sufficient capacity with a limit of performance not exceeding 0.5 g.

## 5 PROCEDURE

### 5.1 General

The moisture content may be determined using either the procedure in Step 5.2 or 5.3. The procedure at Step 5.2 is suitable for samples taken at the site of an asphalt mixing plant and tested at the site immediately. Where testing cannot be undertaken immediately the procedure at Step 5.3 shall be used.

### 5.2 Immediate testing of sample

The procedure shall be as follows:

- (a) Dry a tray in the oven.
- (b) Remove the tray from the oven and determine the mass of the clean and dry tray ( $m_1$ ).
- (c) Unless otherwise specified, obtain a test sample of at least 4 kg in accordance with AS/NZS 2891.1.1.
- (d) Place the test sample into the tray.
- (e) Determine the mass of the tray and test sample ( $m_2$ ).
- (f) Place the tray and test sample into the oven for a period of at least 2 h. If the tray is not placed into the oven within 5 min of the time of sampling, discard the test sample and repeat Steps (a) to (e). If the oven operates at a temperature less than 150°C to 170°C record the period of time of the drying and the temperature of the oven.

NOTE: Refer to Note to Step 4(a) with regard to oven temperature.

- (g) Remove the tray and test sample from the oven and determine the mass of the tray and test sample ( $m_1$ ).
- (h) Place the tray and test sample into the oven for further drying with a period of at least 30 min.

NOTE: Refer to Note to Step 4(a) with regard to oven temperature.

- (i) Remove the tray and test sample from the oven and determine the mass of the tray and test sample ( $m_2$ ).
- (j) Repeat Steps (h) and (i) until the loss in mass from the previous weighing is less than 0.5 g.
- (k) Record the final mass of the tray and test sample after drying ( $m_3$ ).

### 5.3 Delayed testing of sample

The procedure shall be as follows:

- (a) Dry a tin and lid in the oven.