

## Test Method

# Performance Properties of Asphalt Mixes

## RC 201.13

### 1. Scope

This method covers the determination of performance properties of asphalt required for Level 2 designs as detailed in VicRoads Code of Practice RC 500.01 - *Code of Practice for Registration of Bituminous Mix Designs* and job contracts.

### 2. Mix Design

Design an asphalt mix as detailed in RC 201.12.

### 3. Preparation Of Test Specimens

- (a) Manufacture a batch of asphalt in accordance with AS 2891.2.1 using the proportions of aggregates, filler and binder as determined in RC 201.12.

Measure the temperature of the asphalt mix. The temperature shall be at recommended temperature of the binder at end of mixing.

*Note: the size of batch shall be sufficient to prepare the specimens listed below. In some cases, multiple batches will be required.*

- (b) Obtain the following sub-samples from the batch:
- 3 Gyratory compacted specimens for the determination of indirect tensile modulus;
  - 8 Gyratory compacted specimens, for the determination of moisture sensitivity;
  - A slab of suitable dimensions such that 3 beams can be, sub sampled for fatigue beams to be tested;
  - A slab of suitable dimensions for wheel tracking machine tests.
- (c) Condition the sub-samples which are to be compacted at recommended temperature of the binder for one hour prior to compaction in accordance with AS 2891.2.1.
- (d) Compact the gyratory compaction specimens in accordance with AS 2891.2.2 using sufficient cycles to achieve  $5 \pm 0.5\%$  air voids at the design binder content.

- (e) Compact a slab in accordance with Austroads AGPT/T220 using sufficient compactive effort to achieve  $5 \pm 0.5\%$  air voids at the design binder content for fatigue tests.

- (f) Compact a slab in accordance with AGPT/T220 using sufficient compactive effort to achieve  $5 \pm 1.0\%$  air voids at the design binder content for wheel tracking tests.

- (g) Remove the test specimens from the moulds. Ensure that the compacted slab is cooled to room temperature before removing it from the mould.

### 4. Testing

- (a) Determine indirect tensile modulus for three compacted Gyratory specimens in accordance with AS 2891.13.1 under standard conditions.
- (b) Determine the moisture sensitivity in accordance with AGPT/T232 of the following specimens which were compacted using the gyratory compactor:
- 3 tested when dry,
  - 3 tested when fully saturated, and
  - 2 tested when partially saturated
- (c) Cut the compacted slabs into 3 separate beams with dimensions as specified in AGPT/T233.
- (d) Determine the fatigue life of the asphalt mix using three beams prepared in step (c) above in accordance with AGPT/T233 under standard conditions (20°C and 400 microstrain) see AGPT/T233, clause 6.
- (e) Determine the deformation resistance (wheel tracking) of the asphalt mix using a slab as prepared in step (c) above in accordance with AGPT/T231.
- (f) Determine the dynamic creep deformation of asphalt mix using the samples after testing in step (a) has been completed.

## 5. Test Report

Report the following:

- (a) the type of asphalt
- (b) the mix design details and other requirements detailed in RC 201.12
- (c) details and test results as required by the referred test methods.

### Test Method - Revision Summary

#### RC 201.13 Performance Properties of Asphalt Mixes

Date	Clause Number	Description of Revision	Authorised by
June 2013	Full document	Re-issued without change	Manager Construction Materials