Australian Standard™

AS 2891.5

Methods of sampling and testing asphalt

Method 5: Determination of stability and flow—Marshall procedure

1 SCOPE

This Standard sets out the method for preparing test specimens of freshly mixed asphalt (either produced in the laboratory or at a mixing plant) by the Marshall procedure and determining stability and flow values of the specimens using the Marshall apparatus. It is applicable to asphalt mixes not exceeding 20 mm nominal size.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS		
2008	Residual bitumen for pavements	
2193	Calibration and classification of force-measuring systems	
2891	Methods of sampling and testing asphalt	
2891.1	Method 1:	Sampling of asphalt
2891.9.1	Method 9.1:	Determination of bulk density of compacted asphalt—Waxing procedure
2891.9.2	Method 9.2:	Determination of bulk density of compacted asphalt—Presaturation method
2891.9.3	Method 9.3:	Determination of bulk density of compacted asphalt—Mensuration method

3 DEFINITIONS

For the purpose of this Standard, the definitions given in AS 2891.1 apply.

4 APPARATUS

The following apparatus is required:

(a) *Specimen mould assembly*—of steel or brass and consisting of a mould base, a mould cylinder and an extension collar to conform to the dimensions shown in Figure 1.

(b) *Hand compaction hammer*—consisting of a 98.5 ±0.1 mm diameter flat circular tamping face and a 4.53 ±0.02 kg sliding weight with a free fall of 457 ±1 mm. A suitable design for the hammer is shown in Figure 2.

NOTES:

1 Where a mechanical compactor is used instead of the hand compactor, the mass, free fall and design of the hammer foot should be identical to those of the hand compaction hammer and the automatic compactor should be securely anchored to a concrete base.

2 Where a mechanical compactor is used, it should be calibrated against hand compaction to determine the number of blows equivalent to the specified number of blows of hand compaction. Calibration checks should be performed on a regular basis and the difference between the density results obtained using the mechanical and hand compaction method should be not greater than 0.01 t/m^3. Calibration should be conducted using quartered samples of the mix.