

COMMENTARY TO AG:PT/T452 - MEASUREMENT OF LOOSE AGGREGATE ON SPRAYED SEALS

PREFACE

This method was prepared by the Bituminous Surfacing Research Review Group on behalf of Austroads. Representatives of Austroads, ARRB Transport Research and the Australian Asphalt Pavement Association have been involved in the development and review of this method.

SCOPE

This test method sets out the procedure for determining the quantity of loose aggregate on the surface of a sprayed seal.

Further Development

None.

MEASUREMENT OF LOOSE AGGREGATE ON SPRAYED SEALS

1 REFERENCED DOCUMENTS

The following documents are referred to in this method:

AS /NZS

1141.3.1 Methods for sampling and testing aggregates – Sampling Aggregates

RTA NSW

T211 Loose Unit Mass of Aggregate

RTA Form 395 Design Calculation Sheet

2 APPARATUS

- a. 1 m² metal template (Fig. 1).
- b. Stiff yard broom
- c. Industrial vacuum (optional).
- d. Banister brush
- e. A balance of at least 10 kg capacity readable and accurate to 0.1 g.
- f. Plastic bags.
- g. Shovel.

3 PROCEDURE

The procedure is divided into two parts.

3.1 *Conversion of the aggregate spread rate (m²/m³ to glm²)*

- a. Obtain a bulk sample of the sealing aggregate in accordance with AS 1141.3. Determine the loose unit mass of the aggregate in accordance with RTA Test Method T211 and record as (LUM) to the nearest 0.01 t/m³.
- b. Record the calculated aggregate design spread rate (m²/m³) from RTA Form 395 Design Calculation Sheet as (D_{SR}) to the nearest 1 m²/m³. Convert this rate to the nearest 1 g/m² and record as the Converted Aggregate Spread Rate (C_{DS}).

3.2 *Field measurement of loose aggregate on a sprayed seal.*

- a. Place the 1 m² template on the seal surface and carefully sweep or vacuum the loose aggregate from within the template area. Weigh and record the mass as (M₁) to the nearest 1 g.

- b. Record the time and date of the testing so that the quantity of loose aggregate remaining on the seal can be reported for specific periods of the sealing operation, for example after the completion of rolling and before sweeping by the operations crew.
- c. There are other times in the life of a seal when the testing may be done and these should also be clearly recorded.

Note: Care should be taken not to dislodge any aggregate embedded into the seal binder when sweeping or vacuuming the loose aggregate from the surface of freshly sprayed seals.

- d. Where repeated tests are to be performed or testing is to be done at different stages of an operation, for example after rolling and after sweeping, select the new area about 5 m away from the previous aggregate measuring site.

4 Calculations

Spread rate conversion formula:

$$\text{Converted aggregate spread rate (C}_{DS}) = 1/D_{SR} \times \text{LUM} \times 10^6 \text{ (g/m}^2\text{)}$$

Percentage of loose aggregate particles:

$$\text{Loose aggregate} = M_1/D_{SR} \times 100 \text{ (\%)}$$

Where

D_{SR} = Design aggregate spread rate in m^2/m^3 (RTA Form 395 Design Sheet)

M_1 = Total mass of loose aggregate (g).

C_{DS} = Converted aggregate spread rate in g/m^2 .

4 INFORMATION TO BE REPORTED

- a. Date and location of test
- b. The percentage of loose aggregate particles left on the seal to the nearest 0.1%.
- c. The stage or time at which the testing was performed, for example, "after rolling and before sweeping by operations crew".
- d. Reference to this method, i.e. AG:PT/T452.

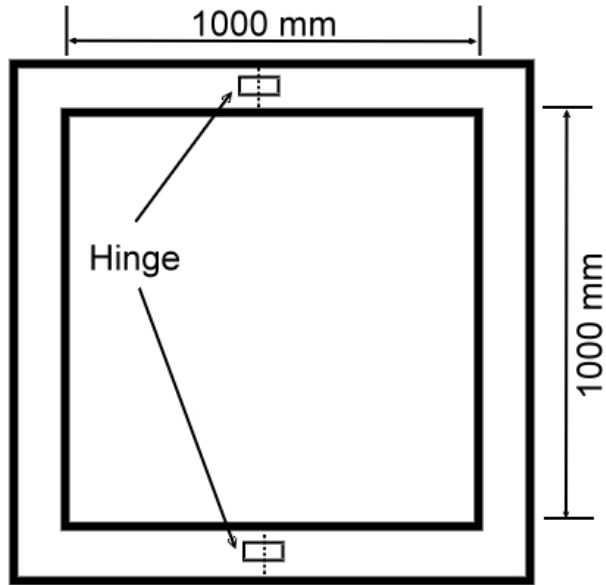


Fig. 1 Plan view of template (not too scale)

AMENDMENT RECORD

Amendment No.	Clauses amended	Action	Date
1	Commentary Page	New	June 2005
	Footer and header	Format	
	Applied revised test method number	Format	
	Applied new styles	Format	
2	Preface	Substitution	June 2006

Key

Format	Change in format
Substitution	Old clause removed and replaced with new clause
New	Insertion of new clause
Removed	Old clauses removed