Transport Roads & Maritime Services

NSW GOVERNMENT

Test method T277

Measurement of loose aggregate on sprayed seals

OCTOBER 2012

Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
		New Issue (David Bligh)	D.Dash	Aug 1999
Ed 2/ Rev 0	All	Reformatted RMS template	J Friedrich	October 2012

Note that Roads and Maritime Services is hereafter referred to as 'RMS'.

The most recent revision to Test method T277 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T277

Measurement of loose aggregate on sprayed seals

1. Scope

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

2. Referenced Documents

Test Method T211 - Loose Unit Mass of Aggregate
Form 395 – Design Calculation Sheet

3. Apparatus

(a) 1 m^2 metal template (Figure 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.

4. Procedure

The procedure is divided into two parts.

4.1 Conversion of the aggregate spread rate (m^2/m^3 to g/m^2)

(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 Test Method T211 and record as (LUM) to the nearest 0.01 t/m^3.

(b) Record the calculated aggregate design spread rate (m^2/m^3) from Form 395 Design Calculation Sheet as (D_{SR}) to the nearest 1 m^2/m^3. Convert this rate to the nearest 1 g/m^2 and record as the Converted Aggregate Spread Rate (C_{DS}).

4.2 Field measurement of loose aggregate on a sprayed seal

(a) Place the 1m^2 template on the seal surface and carefully sweep or vacuum the loose aggregate from within the template area. Weigh and record the mass as (M_1) to the nearest 1g.

(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.

There are other times in the life of a seal when the testing may be done and these should also be clearly recorded.

Note:

1. *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.*
2. *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 5m away from the previous aggregate measuring site.*

5. Calculations

(a) Spread Rate Conversion Formula

$$\textit{Converted Aggregate Spread Rate } (C_{DS}) = \left[\frac{1}{D_{SR}}\right] \times LUM \times 10^6 \ (g/m^2)$$

(b) Percentage of loose aggregate particles:

$$\textit{Loose Aggregate} = \left[\frac{M_1}{C_{DS}}\right] \times 100\ (\%)$$

Where

(c) D_{SR} = Design Aggregate Spread Rate - m^2/m^3 (Form 395 Design Sheet)

(d) M_1 = Total mass of loose aggregate (g).

(e) C_{DS} = Converted Aggregate Spread Rate in g/m^2.

6. Reporting

Report the following

(a) The percentage of loose aggregate particles left on the seal to the nearest 0.1%.

(b) The stage or time at which the testing was performed, for example, "after rolling and before sweeping by operations crew".

Template

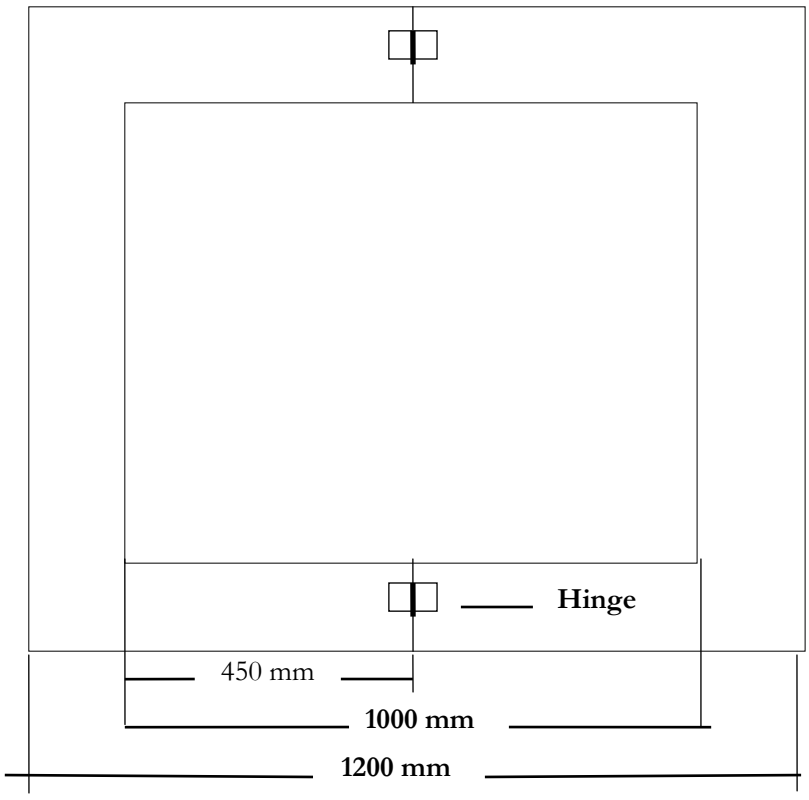

Figure 1 - Plan View

RMS 12.529