



Test method T582

Application rate for enrichment or
rejuvenation treatments

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Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
		Reformatted and Revision Summary Added. Safety note added 3.	D.Dash	Jan 2000
Ed 2/ Rev 0	All	Reformatted RMS template	J. Friedrich	November 2012

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

The most recent revision to Test method T582 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T582

Application rate for enrichment or rejuvenation treatments

1. Scope

This test method sets out the procedure to determine the application rate of materials to be used for the enrichment or rejuvenation of a bituminous surface.

2. Apparatus

- (a) A 225 mm diameter disc of wood or metal with a centrally located handle.
- (b) Crayon.
- (c) 20 mm paint brush
- (d) 50 mL syringe or suitable measuring cylinder.
- (e) 500 mL glass beaker.
- (f) A suitable screwdriver.

3. Materials

- (a) 1 L container of water.
- (b) 1 L container of either a rejuvenator (containing 60% oils) or bitumen emulsion (containing 60% residual bitumen) as appropriate.

Note: Obtain a new sample of bitumen emulsion for each series of tests.

4. Procedure

- (a) Using the 225 mm disc mark out at least 4 circles on the road surface with the crayon. The area of each circle is approximately 0.04 m².
- (b) Using the 500 mL beaker prepare about 250 mL of a 1:1 mixture of water : rejuvenator or bitumen emulsion as appropriate.

Note: Always add the water to the rejuvenator or bitumen emulsion.

- (c) Using the measuring cylinder or syringe, apply to the road surface within each circle the following quantities of the mixture.

Circle Number	Quantity (mL)	Equivalent application rate of 1:1 mixture (L/m ²)
1	12	0.3
2	16	0.4
3	20	0.5
4	24	0.6
5	28	0.7
6	32	0.8

Note: Additional application rates may be adopted, if considered necessary. The rates should not exceed 1.15 L/m^2 where a rejuvenator is used as the bitumen may soften to such an extent that the aggregate may strip.

- (d) As soon as the mixture is placed in the circle, quickly spread the mixture uniformly over the area within the circle with the paint brush and record the time. Repeat for each circle.
- (e) Examine each circle after 15 minutes and note any colour change in the mixture, the apparent degree of penetration and the extent of any runoff from the circle.

Note: Some of the known rejuvenators change from an opaque to a clear liquid. The colour change when bitumen emulsion breaks is easily identified.

- (f) If the quantities of mixture applied to all the circles appear too light then repeat the test using heavier applications of mixture.

5. Assessment

5.1 Rejuvenation Treatment

The appropriate application rate for the rejuvenation treatment is assessed from the test circle where the applied mixture of 1:1 rejuvenator: water;

- Just begins to runoff from the circle
And
- Has changed to a clear liquid within 15 minutes.

Record the quantity (mL) of mixture applied to this circle.

5.2 Enrichment Treatment

The appropriate application rate for the enrichment treatment is assessed from the test circle where the applied mixture of 1:1 bitumen emulsion: water;

- Just begins to runoff from the circle
And
- Has started to break between the aggregate particles within 15 minutes of application
And
- Bitumen sticks to the end of a screwdriver when inserted gently between the aggregate particles and into the binder.

Record the quantity (mL) of mixture applied to this circle.

6. Calculations

Calculate the equivalent application rate of 1:1 mixture in L/m^2 using the following formula:

$$\text{Equivalent Application Rate of 1:1 mixture equals } (\text{L/m}^2) = \frac{\text{L}}{\text{A} \times 1000}$$

Where

L = Quantity of mixture (mL)

A = Area of circle (m^2)

Note: It is only necessary to use this formula when the quantity (mL) exceeds that listed in the procedure.

7. Reporting

7.1 Rejuvenators

Report the equivalent application rate of 1:1 mixture of rejuvenator in L/m^2 .

7.2 Enrichment Treatment

Report the equivalent application rate 1:1 mixture of bitumen emulsion in L/m².