



**Transport**  
Roads & Maritime  
Services

# Test method T1019

## Determination of salt deposits on steel structures

NOVEMBER 2012



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## Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
		Reformatted and Revision Summary Added	D. Dash	Jun 2001
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 T1019 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

# Test method T1019

## Determination of salt deposits on steel structures

### 1. Scope

This test method sets out the procedure for the determination of salt deposits on steel structures such as bridges.

### 2. Apparatus and Materials

- (a) Masking material such as packaging tape, grease gun etc. for marking off the test area.
- (b) Wash bottle with distilled water.
- (c) Flat brush 40 mm wide.
- (d) 200 mL glass stoppered sampling bottles.
- (e) Porcelain basins 150 mm diameter.
- (f) Glass funnel.
- (g) 50 mL pipette.
- (h) 50 mL burette.
- (i) Tape measure or ruler.
- (j) 250 mL volumetric flasks.

### 3. Reagents

- (a) 10% solution of potassium chromate indicator.
- (b) N/10 Silver Nitrate Solution.

### 4. Procedure

- (a) Select a suitable sampling position on the steel member to be tested and mark off a suitable area in the vicinity of 0.135 m<sup>2</sup> (300 x 450 mm). Calculate the area of the sampling position and record as (B).
- (b) Mask the area with masking tape or grease in such a manner that the washing water may be collected in a porcelain basin at the edge of the member. If this is not possible, form an enclosed pond and collect the washing water by means of a pipette.
- (c) Wash the area by a jet of water from the wash bottle working the washings across the masked area to the porcelain dish or to the lowest point of the area where the washings may be removed by pipette. Brush the water across the surface loosening any deposits and ensuring complete solution of all salts.
- (d) Collect all washings in a sample bottle, seal and label ready for transport to the laboratory.
- (e) Filter each sample into a 250 mL volumetric flask. Wash the filter paper, collecting the washings in the volumetric flask and make up to the mark with distilled water.
- (f) Transfer 50 mL of solution to an erlenmeyer flask, add 8-10 drops of potassium chromate indicator and titrate with N/10 Silver Nitrate. Record the volume of Silver Nitrate used (A).

## 5. Calculation and Report

Calculate the mass of Sodium Chloride per m by the following formula:

$$\text{Mass of NaCl per m}^2 = \frac{A}{B} \times 29 \text{ gram}$$

Where

A = Volume of N/10 Silver Nitrate required to react with 50 mL of solution.

B = Test area in m<sup>2</sup>.

Report the mass of Sodium Chloride in milligrams per square metre (mg/m<sup>2</sup>).