



**Transport**  
Roads & Maritime  
Services

# Test method T870

## Resistance to Taber Abraser

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 T870 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

# Test method T870

## Resistance to Taber Abraser

### 1. Scope

This method sets out the procedure for determining the degree of abrasion of a paint film when tested by the Taber Abraser. The method is derived from ASTM D4060-84.

### 2. Apparatus

- (a) Taber Abraser.
- (b) Abrasive Wheels-Resilient Calibrase No CS-17.
- (c) Resurfacing Disc, 150 abrasive paper for resurfacing the abrasion wheels.
- (d) Aluminium plates, 2.0 mm thickness, 100 mm square with 7 mm round hole centrally located on the panel.
- (e) Drawn-down applicator capable of spreading a film of paint of even thickness at the specified wet film thickness and 125 mm wide.

### 3. Test Conditions

Air temperature  $23 \pm 3^{\circ}\text{C}$

Relative humidity  $60 \pm 15^{\circ}\text{C}$

### 4. Preparation of Test Panels

- (a) Unless otherwise specified the wet-film thickness is  $0.375 \pm 0.025$  mm. Apply a uniform paint film to an aluminium plate.
- (b) Cure the applied coating in the laboratory for 7 days.

### 5. Standardization

- (a) Mount the CS-17 abrasive wheels on their respective flange holders. Adjust the load on the wheels to 1 kg.
- (b) Mount the resurfacing disc on the turntable. Lower the abrading heads carefully until the wheels rest squarely on the disc.
- (c) Set the counter to zero. Start the turntable of the abramer, and run the wheels against the resurfacing disc for 50 cycles.

Remove any loose abradings by vacuum pick-up or constant light brushing.

This resurfacing procedure must be carried out before testing each panel and after every 500 cycles.

### 6. Procedure

Duplicate test panels are to be tested.

- (a) Subject the test panels to abrasion for 100 cycles. During testing, constantly remove any loose abradings by either vacuum pick-up or light brushing. At the end of 100 cycles remove any loose abradings remaining on the panel by light brushing. Weigh the panel to the nearest 0.1 mg (A, mg).
- (b) Unless otherwise specified, subject the same panel to further abrasion for 400 cycles. During testing, constantly remove any loose abradings by either vacuum pick-up or light brushing. Stop the testing if wear-through of the coating is observed. Repeat the test at a reduced number of cycles. At the end of testing, remove any loose abradings remaining on the panel by light brushing. Record the number of cycles of abrasion (B, cycles) and reweigh the panel to the nearest 0.1 mg (C, mg).

## 7. Calculations

$$\text{Wear Index (mg lost per 1000 cycles)} = \frac{1000}{B} \times (A - C)$$

Where    A        =        Weight of panel at 100 cycles of abrasion.  
          B        =        Number of cycles of abrasion recorded in step (b)  
          C        =        Weight of panel after abrasion.

## 8. Reporting

Report the Mean Wear Index.

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