



Designation: F 485 – 9802

## Standard Test Method for Effects of Cleaners on Unpainted Aircraft Surfaces<sup>1</sup>

This standard is issued under the fixed designation F 485; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This test method describes the procedure used to determine the effect of cleaners on unpainted aircraft surfaces. Visual observation is used for determining streaking or permanent stains which require polishing to remove.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

2.1 *ASTM Standards:*

D 740 Specification for Methyl Ethyl Ketone<sup>2</sup>

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee F-7 F07 on Aerospace and Aircraft and is the direct responsibility of Subcommittee F07.07 on Qualification Testing of Aircraft Cleaning Materials.

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D 1193 Specification for Reagent Water<sup>3</sup>

~~2.2 Federal Specification:~~

~~QQ-A-250/13 Aluminum Alloy, Industry Standards:<sup>4</sup>~~

~~SAE-AMS-QQ-A-250/13 Aluminum Alloy Alclad 7075, Plate and Sheet<sup>3</sup>~~

~~2.3 Military Specification:~~

~~MIL-T-9046, Type III, Titanium Sheet~~

~~SAE-AMS-T-9046 Titanium and Titanium Alloy, Sheet, Strip, and Plate (Composition AB-1)~~

### 3. Significance and Use

3.1 This test method is used to ensure that candidate aircraft surface cleaners do not leave a residue which, on drying, would leave a permanent stain requiring polishing to remove.

### 4. Test Specimens

4.1 *Materials:*

~~4.1.1 Aluminum 7075-T6 Alclad conforming to Federal Specification QQ-A-250/13, in accordance with industry standard SAE-AMS-QQ-A-250/13.~~

~~4.1.2 Titanium Alloy 6A14V conforming to Military in accordance with industry standard SAE-AMS-T-9046, Composition AB-1.~~

~~4.1.3 Reagent water in accordance with Specification MIL-T-9046, Type III.~~

~~4.1.3 Reagent Water conforming to Specification D 1193, Type IV.~~

~~4.1.4 Methyl ethyl ketone conforming to in accordance with Specification D 740.~~

### 5. Preparation of Test Specimens

5.1 Prepare two panels, each 2 by 6 by 0.020 in. ~~(or 50 (50 by 152 by 0.51 mm), from alclad aluminum and titanium alloy and clean them with methyl ethyl ketone conforming to Specification D 740.~~

### 6. Preparation of Test Solution

6.1 Make the solutions of the cleaner to be tested in reagent water (see 4.1.3) in accordance with the dilutions recommended by the manufacturer.

### 7. Procedure

7.1 Immerse the cleaned test specimens for 3 to 5 min in a sufficient quantity of the cleaning solution to cover approximately one half of the panel. After removing from the test solution, immediately place the panels at 45° from the horizontal in a mechanical convection oven maintained at 150 ± 5°F (65.5 ± 2°C) for 30 min. At the end of the 30-min period, remove the panels from the oven, cool to room temperature, rinse on each side within 15 min under running tap water for 1 min without using mechanical agitation, then rinse on each side with distilled or deionized water from a squeeze bottle for 15 s and allow to air dry for 30 min. Visually examine and compare the treated and untreated areas of the panels for the presence of residue or stains.

### 8. Report

8.1 Report the following:

8.1.1 The appearance of the panel after completion of the test, and

8.1.2 The concentration at which the test was performed and the diluent with which the cleaner was mixed, if other than distilled or deionized water (see 4.1.3).

### 9. Precision and Bias

9.1 Committee ~~F-7~~ F07 has no plans to establish a Precision and Bias statement for this test method.

### 10. Keywords

10.1 aircraft surface cleaners; permanent stain; unpainted aircraft surfaces

<sup>2</sup> Annual Book of ASTM Standards, Vol 06.04.

<sup>3</sup> Annual Book of ASTM Standards, Vol 11.01.

<sup>4</sup> Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15111-5094 Attn: NPODS. 15096-0001.

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