



Standard Practice for Effects of Cleaners on Unpainted Aircraft Surfaces¹

This standard is issued under the fixed designation F485; 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 (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice 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:*²

[D1193 Specification for Reagent Water](#)

2.2 *Industry Standards:*³

[SAE-AMS-QQ-A-250/13 Aluminum Alloy Alclad 7075, Plate and Sheet](#)

[SAE-AMS-T-9046 Titanium and Titanium Alloy, Sheet, Strip, and Plate \(Composition AB-1\)](#)

3. Significance and Use

3.1 This practice 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. Reagents and Materials

4.1 *Reagents:*

4.1.1 Reagent water in accordance with Specification [D1193](#), Type IV.

4.1.2 Methyl n-propyl ketone (MPK).

4.2 *Materials:*

4.2.1 Aluminum 7075-T6 Alclad in accordance with industry standard SAE-AMS-QQ-A-250/13.

4.2.2 Titanium Alloy 6A14V in accordance with industry standard SAE-AMS-T-9046, Composition AB-1.

5. Preparation of Test Specimens

5.1 Prepare two panels, each 2 by 6 by 0.020 in. (50 by 152 by 0.51 mm), from alclad aluminum and titanium alloy and clean them with methyl n-propyl ketone.

6. Preparation of Test Solution

6.1 Make the solutions of the cleaner to be tested in reagent water (see [4.1.1](#)) 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 [4.1.1](#)).

9. Keywords

9.1 aircraft surface cleaners; permanent stain; unpainted aircraft surfaces

¹ This practice is under the jurisdiction of ASTM Committee F07 on Aerospace and Aircraft and is the direct responsibility of Subcommittee F07.07 on Qualification Testing of Aircraft Cleaning Materials.

Current edition approved Dec. 1, 2013. Published December 2013. Originally approved in 1976. Last previous edition approved in 2008 as F485 – 08. DOI: 10.1520/F0485-08R13.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001.

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org). Permission rights to photocopy the standard may also be secured from the ASTM website (www.astm.org/COPYRIGHT/).