



Standard Test Method for Grease Resistance of Paper¹

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1. Scope

1.1 This test method covers paper and paper products that have been treated or designed to resist penetration by oils or greases commonly found in foodstuffs. Such papers include but are not limited to greaseproof, glassine, and vegetable parchment papers.

1.2 This test method provides relative data regarding the degree of grease resistance for the materials tested based on time required for penetration of a test specimen by turpentine under specified laboratory conditions. For paper or paper products that are not penetrated under these conditions by the upper arbitrary time limit of the test (1800 s), no relative information is provided.

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

1.4 *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 585 Practice for Sampling and Accepting a Single Lot of Paper, Paperboard, Fiberboard, and Related Product²

D 685 Practice for Conditioning Paper and Paper Products for Testing²

D 1968 Terminology Relating to Paper and Paper Products²

D 5039 Methods for Identification of Wire Side of Paper²

E 122 Practice for Calculating Sample Size to Estimate, with a Specified Tolerable Error, the Average for a Characteristic of a Lot or Process³

3. Terminology

3.1 Definitions—For definitions of terms used in this test method, refer to Terminology D 1986 or the *Dictionary of Paper*.⁴

4. Summary of Test Method

4.1 A test specimen is placed directly in contact with a piece of white book paper that is lying horizontally on a laboratory bench or similar support in an environment of specified temperature and relative humidity. Five grams of sand of a specified particle size are placed in a pile on top of the test specimen. The sand is then saturated with a known quantity of turpentine containing a dissolved red dye. The time required for the turpentine to penetrate the test specimen and stain the book paper red is measured to the nearest 10 s.

5. Significance and Use

5.1 This test method gives a relative indication of the degree to which paper and products made from paper resist penetration by oils and grease commonly found in foodstuffs. The measured penetration times are greatly accelerated under the conditions of the test, in comparison to the time that might be required for grease penetration in an actual end-use application of the tested material.

5.2 While this test method may be used as a preliminary tool to select and predict paper or paper products for an intended end use, it is not a substitute for actual use tests with the material or product of interest.

5.3 This test method may also be useful in specifications where experience has shown that paper having a particular grease resistance as measured by this test method is suitable for an intended end use.

6. Apparatus

6.1 *Tube*, of any rigid material, 25 mm (1 in.) in inside diameter and at least 25 mm (1 in.) in height, the ends of which have been smoothed.

6.2 *Buret*, or automatic pipet, calibrated to deliver 1.1 mL of liquid.

¹ This test method is under the jurisdiction of ASTM Committee D06 on Paper and Paper Products and is the direct responsibility of Subcommittee D06.92 on Test Methods.

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² *Annual Book of ASTM Standards*, Vol 15.09.

³ *Annual Book of ASTM Standards*, Vol 14.02.

⁴ Formerly published by American Paper and Pulp Assoc. (currently API), New York, NY.