



Standard Test Method for Surface Wax on Waxed Paper or Paperboard¹

This standard is issued under the fixed designation D 2423; 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 test method covers determination of the weight of wax on the surface of waxed paper.

1.2 *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, or Related Product²

D 646 Test Method for Grammage of Paper and Paperboard (Weight per Unit Area)²

3. Terminology

3.1 Definitions:

3.1.1 *basis weight of paper*—basis weight is expressed in grams per square metre. In countries where the metric system is not universal, basis weight is also expressed in pounds per ream.

3.1.2 *ream of paper (news and wrapping)*—500 sheets each 610 by 914 mm (24 by 36 in.).

NOTE 1—For factors to convert basis weight in grams per square metre to other commercial reams, see Test Method D 646.

4. Summary of Test Method

4.1 The quantity of wax present as a surface film on paper or paperboard is determined through the difference in weight of specimens before and after scraping with a razor blade.

5. Significance and Use

5.1 Many of the functional properties of waxed paper and paperboard are related to the amount of wax present as a surface film. Test methods which determine wax load by solvent extraction do not differentiate between the wax present as a surface wax layer and that which has penetrated into the

substrate. This test method, which mechanically removes the wax, measures the amount on each surface of the substrate.

6. Apparatus

6.1 *Pad* of paper to be used as a cushion under the waxed paper specimens during the scraping operation.

6.2 *Analytical Balance*, capable of reproducing weights to the nearest 0.001 g.

6.3 *Razor Blade*, single-edged for scraping the wax from the specimen.

6.4 *Trimming Board*, or other device for cutting paper specimens. A paper cutter having an attachment for ensuring parallelism of the opposite edge of the trimmed sheet, or a template, or a die cutter is recommended.

6.5 *Measuring Device*, capable of measuring the size of the specimen to an accuracy 0.5 mm.

7. Sampling

7.1 Select samples that are free of wrinkles, cuts, or other defects in accordance with Practice D 585.

8. Procedure

8.1 Prepare a specimen consisting of a 100 by 100-mm square of waxed paper. Determine the area (in square millimetres) of each specimen to the nearest 1.0 % of its total area.

8.2 Weigh the specimen on the analytical balance to the nearest 0.5 % of its total weight.

8.3 Remove the surface wax from one side of the specimen (side No. 1) by scraping toward each of its four edges as follows: Hold the specimen firmly on the pad to prevent slippage. With a razor blade held vertically, scrape the entire area of one side of the specimen with repeated one-directional strokes of the blade, slightly overlapping the strokes. Rotate the specimen through 90° and repeat the scraping. Continue rotating and scraping twice more to complete the process.

8.4 Reweigh the specimen as described in 8.2. Record the weight of the specimen as the scraped basis weight side No. 1.

8.5 Remove the surface wax from side No. 2 of the specimen by scraping as described in 8.3.

8.6 Reweigh the specimen and record the weight as the scraped basis weight side No. 2.

9. Calculation

9.1 The surface wax weight is determined by weight difference. The weight of surface wax on side No. 1 of the sample is the difference between the initial weight and the scraped

¹ This test method is under the jurisdiction of ASTM Committee D-2 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.10.0A on Physical and Chemical Properties.

Current edition approved April 27, 1990. Published June 1990. Originally published as D 2423 – 65 T. Last previous edition D 2423 – 80 (1985).

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