



Standard Methods for CREASING PAPER FOR PERMEABILITY TESTS¹

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1. Scope

1.1 These methods² cover creasing of paper and other thin sheet materials previous to testing for water vapor permeability as described in ASTM Methods E 96, Test for Water Vapor Transmission of Materials in Sheet Form.² The two methods may be described as follows:

1.1.1 *Method A*—Creasing by the Use of Weights.

1.1.2 *Method B*—Creasing by the Use of a Suitable Press.

1.2 These methods are also applicable to the creasing of specimens previous to determining the grease resistance or water resistance as described in ASTM Methods D 722, Turpentine Test for Grease Resistance of Paper² and D 779, Test for Water Resistance of Paper, Paperboard, and Other Sheet Materials by the Dry-Indicator Method,² if tests are desired on creased specimens. Comparison of permeability values of creased specimens with those of uncreased specimens gives some indication of the brittleness of the material. These methods are not applicable to paperboards.

1.3 The methods described are for creasing specimens with areas from about 5 to 380 cm² (0.78 to 59.0 in.²). When performed as specified, the creasing pressure is 19.6 ± 1.0 N/cm of crease length (11.2 ± 0.6 lbf/in.) applied for 10 to 15 s. The ratio of total length of creases formed (centimetres) to the effective area of the test specimen (square centimetres) is 0.30 to 0.34; when the total length of creases is expressed in inches and the area of the test specimen is expressed in square inches, the ratio becomes 0.76 to 0.86.

2. Test Specimens

2.1 The test specimens shall be selected so

as to be representative of the sample secured by ASTM Method D 585, Sampling and Accepting a Single Lot of Paper, Paperboard, Fiberboard, or Related Product.² They shall be square with a diagonal in the machine direction and with the length of the sides $1\frac{1}{8}$ times the diameter of the actual test area. The test specimen is illustrated in Fig. 1. After creasing, disks of the proper size to fit the water vapor permeability test dishes shall be cut from the square specimens.

3. Conditioning

3.1 *Prior to Testing*—All specimens shall be conditioned in accordance with ASTM Method D 685, Conditioning Paper and Paper Products for Testing.³

3.2 *During Creasing*—The creasing shall be done in the standard atmospheric conditions specified in Method D 685.

METHOD A—CREASING BY THE USE OF WEIGHTS

4. Apparatus

4.1 *Creasing Surface*, consisting of a flat smooth rectangular plate (for example, a piece of machined metal) preferably steel, about 0.25 to 0.5 in. (6 to 13 mm) thick, whose width is at least 1 in. (25 mm) greater than the length of the specimens to be creased.

4.2 *Creasing Platen*, consisting of a flat, smooth, square or rectangular metal plate (preferably steel) whose length is about 0.5 in.

¹ These methods are under the jurisdiction of ASTM Committee D-6 on Paper and Paper Products.

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² The methods are related to ISO Draft Recommendation DR 2528.

³ *Annual Book of ASTM Standards*, Part 20.