Creasing of flexible packaging material paper specimens for testing  
(No changes from previous draft: Standard reaffirmed)

1. Scope

This standard practice describes a creasing procedure for tests requiring creased specimens of flexible packaging materials made of paper or paper-based materials. In most instances, it is advantageous to compare the results of the creased specimens with those of uncreased specimens. This standard practice is not applicable to board grades (those exceeding 0.25 mm [0.01 in.] in thickness).

2. Significance

The diagonal creasing procedure more realistically simulates the manner of creasing during converting operations than the static loading devices.

3. Apparatus

Approved by the Standard Specific Interest Group for this Test Method  
TAPPI
3.1  *Creasing surface or bedplate*, consisting of a flat, rectangular plate; e.g., a piece of machined, smooth, metal plate with a flatness of 0.13 mm (0.005 in.) within 300 mm (12 in.), approximately 6 mm (0.25 in.) thick or an equivalent piece of plate glass. The width and length are required to be at least 25 mm (1 in.) longer than the specimen size.

3.2  *Creasing roller*\(^1\), weighing 2.04 kg ± 0.04 (4.5 ± 0.1 lb) with a rubber cover approximately 6 mm (0.25 in.) thick and having a Shore A Durometer hardness of 75 ± 5. The dimensions of the roller are 95 ± 5 mm (3.75 in.) diameter and 45 ± 5 mm (1.75 in.) wide. A handle is so attached at the axis of the roller that it can be used without additional pressure being applied by the operator.

**NOTE 1:** If a glass plate is used, it is advisable to have a size at least 200 mm (8 in.) square to prevent the edges from being chipped by the roller used in creasing the specimen.

4. **Sampling and test specimens**

From each test unit of the material obtained in accordance with TAPPI T 400 “Sampling and Accepting a Single Lot of Paper, Paperboard, Containerboard, or Related Product,” cut square specimens of the number and size required for the applicable test and with the principal directions parallel to the cut edges.

**NOTE 2:** Unlike static loading procedures (e.g., TAPPI T 465 “Static Creasing of Paper for Water Vapor Transmission Tests”) where a weight and two plane surfaces are used to make the crease, the effectiveness of the creasing is independent of the size of the specimen or the length of the crease.

5. **Procedure**

5.1  Condition the specimens in an atmosphere in accordance with TAPPI T 402 “Standard Conditioning and Testing Atmospheres for Paper, Board, Pulp Handsheets, and Related Products.”

5.2  While wearing latex gloves, make two diagonal creases on each specimen as follows: bring two of the opposite corners of the specimen together, thus inducing a fold along a diagonal; place the specimen on the creasing surface, and, while holding the corners, place the creasing roller on one end of the fold and roll it once along the fold, taking care not to apply additional pressure (see 3.2) at a rate of 25 ± 12 mm/s (1 in./s) to form a crease. Unfold the specimen, then lightly refold it along the other diagonal, but with the reverse side folded in, and again crease it with the roller. Finally unfold the test specimen.

5.3  The specimens are now ready to be tested for the penetration of or permeability to grease, gases, or other fluids.

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\(^1\)Names of suppliers of testing equipment and materials for this method may be found on the Test Equipment Suppliers list, available as part of the CD or printed set of Standards, or on the TAPPI website general Standards page.
6. **Precision**

A precision statement is not applicable to this standard practice.

7. **Keywords**

Creasing, Flexible packaging, Paper, Samples, Sample preparation

8. **Additional information**

8.1 Effective date of issue: To be assigned.

8.2 The 1981 version included an explanation of the relationship to other creasing methods.

8.3 This method was first published in 1969 as a Suggested Method and became an Official Method in 1975. In 1996, it was reclassified as a Standard Practice.


*Your comments and suggestions on this procedure are earnestly requested and should be sent to the TAPPI Standards Department.*