

AMERICAN SOCIETY FOR TESTING AND MATERIALS

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Standard Method of STATIC BENDING TEST FOR CORRUGATED PAPERBOARD¹



ASTM Designation: D 1098-61

ADOPTED, 1952; REVISED, 1961

This Standard of the American Society for Testing and Materials is issued under the fixed designation D 1098; the final number indicates the year of original adoption as standard or, in the case of revision, the year of last revision.

NOTE.—General editorial changes were made in January, 1962.

Scope

1. This method covers a procedure for static bending tests of double-face or double-wall corrugated paperboard of any grade or flute.

Significance

2. (a) The static bending test makes use of the relationship between load and deflection which may be used to determine the modulus of elasticity or stiffness of corrugated fiberboard. This stiffness is one factor in the evaluation of the strength of corrugated fiberboard. The deflection of a beam under load varies inversely as the modulus of elasticity, that is, the higher the modulus the less the deflection. This physical property of corrugated fiberboard is influenced by the kind, weight, and thickness of the facings; the quality and thickness of the corrugating medium; the form of the corrugations; and the quality of the adhesive

bond between the component paperboards of the built-up structural material.

(b) While the results of static bending tests are indicative of the strength characteristics of corrugated board, it must be recognized that when made up into containers such board seldom acts as a simple beam or column due to the effect of scores and other features of construction.

Apparatus

3. (a) *Testing Machine*.—A testing machine of accepted design and suitable capacity for measuring accurately the relatively small loads (Note 1) required in this test. If the machine available for the tests cannot weigh the small loads used in this test, auxiliary scales may be used for the purpose. The testing machine shall be calibrated in accordance with the Methods of Verification of Testing Machines (ASTM Designation: E 4).²

¹ Under the standardization procedure of the Society, this method is under the jurisdiction of the ASTM Committee D-6 on Paper and Paper Products. A list of members may be found in the ASTM Year Book.

² 1967 Book of ASTM Standards, Part 30.