

Tentative Method for

LONG-TIME TENSION TESTS OF PLASTICS¹



A.S.T.M. Designation: D 674 - 46 T

ISSUED, 1942; REVISED, 1946.²

This Tentative Method has been approved by the sponsoring committee and accepted by the Society in accordance with established procedures, for use pending adoption as standard. Suggestions for revisions should be addressed to the Society at 1916 Race St., Philadelphia 3, Pa.

Scope

1. (a) This method covers the determination of the amount of extension of plastics due to the combined effects of tensile stress, time, temperature, and relative humidity, when tested in the form of specimens of standard shape.

(b) The details of this method are largely advisory, since the characteristics of a plastic as to its resistance to extension are not well known. For reference or comparative tests of any given series of materials or specimens, care shall be taken to secure the maximum degree of uniformity in details of preparation, treatment, and handling.

Significance of Test

2. The engineering significance of data obtained by long-time tension tests is not presently known.

Definitions

3. (a) *Ultimate (or Tensile) Strength*

¹ Under the standardization procedure of the Society, this method is under the jurisdiction of the A.S.T.M. Committee D-20 on Plastics.

² Revision accepted by the Society at annual meeting, June, 1946.

of a plastic is the tensile load per unit area of original cross-section, expressed in pounds per square inch, required to break a test specimen within the gage boundaries in accordance with the Tentative Method of Test for Tensile Properties of Plastics (A.S.T.M. Designation: D 638).³

(b) *Elongation* is the change in length, expressed in inches, produced by a tensile load on a longitudinal section of a test specimen measured between fixed gage points on the specimen.

Apparatus

4. The apparatus shall consist of the following:

(a) *Testing Machine*.—Any simple suspension device by means of which a predetermined load, accurately measured to within 1 per cent, may be applied in tension as dead weight loading or by the use of a simple lever system. The test system shall be as free from vibration as possible.

(b) *Grips*.—Grips for holding the test

³ Appears in this publication, see Contents in Numeric Sequence of A.S.T.M. Designations at front of book