Designation: D1204 – 14 (Reapproved 2020)

# Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature[1]

This standard is issued under the fixed designation D1204; 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.

*This standard has been approved for use by agencies of the U.S. Department of Defense.*

## 1. Scope

1.1 This test method covers the measurement of changes in linear dimensions of nonrigid thermoplastic sheeting or film that result from exposure of the material to specified conditions of elevated temperature and time.

1.2 The values stated in SI units are to be regarded as the standard.

1.3 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—This test method and ISO 11501 address the same matter, but differ in technical content (and results cannot be directly compared between the two methods).

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

2.1 *ASTM Standards:*[2]

D618 Practice for Conditioning Plastics for Testing

D883 Terminology Relating to Plastics

D2732 Test Method for Unrestrained Linear Thermal Shrinkage of Plastic Film and Sheeting

D4000 Classification System for Specifying Plastic Materials

2.2 *ISO Standard*

ISO 11501 Plastics: Film and Sheeting—Determination of Dimensional Change on Heating[3]

## 3. Terminology

3.1 *Definitions*—Terms applicable to this test method are defined in Terminology D883.

## 4. Significance and Use

4.1 This test method is particularly applicable to nonrigid thermoplastic sheeting or film made by the calender or extrusion process. The test gives an indication of lot-to-lot uniformity in regards to the degree of internal strains introduced during processing.

4.2 The heating medium in this test method is air and does not necessarily yield the same results as Test Method D2732, which uses a liquid medium.

4.3 Before proceeding with this test method, review the specifications of the material being tested, if available. Any test specimen preparation, conditioning, dimensions, or testing parameters, or combination thereof, covered in the relevant ASTM material specification shall take precedence over those mentioned in this test method. If there are no relevant ASTM material specifications, then the default conditions apply. Table 1 of Classification System D4000 lists the ASTM material standards that currently exist.

## 5. Apparatus

5.1 *Oven*—A mechanical convection oven capable of maintaining a temperature of 100 ± 1°C.

5.2 *Scale,* graduated in 0.25-mm (0.01-in.) divisions, 30 cm (12 in.) or more in length.

5.3 *Thermometer,* graduated in 1°C divisions, with a range suitable for the test temperature used.

5.4 *Timer,* graduated in minutes.

[1] This test method is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.19 on Film, Sheeting, and Molded Products.

Current edition approved April 1, 2020. Published April 2020. Originally approved in 1952. Last previous edition approved in 2014 as D1204 - 14. DOI: 10.1520/D1204-14R20.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

*A Summary of Changes section appears at the end of this standard