



Designation: F2199 – 09

# Standard Test Method for Determining Dimensional Stability of Resilient Floor Tile after Exposure to Heat<sup>1</sup>

This standard is issued under the fixed designation F2199; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This test method covers the determination of the change in linear dimensions of resilient floor tile after exposure to heat.

1.2 The values stated in inch-pound units shall 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 and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

[E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods](#)

[E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method](#)

[F141 Terminology Relating to Resilient Floor Coverings](#)

[F2055 Test Method for Size and Squareness of Resilient Floor Tile by Dial Gage Method](#)

## 3. Terminology

3.1 Definitions are in accordance with Terminology [F141](#) unless otherwise indicated.

## 4. Significance and Use

4.1 The final appearance of an installed tile floor depends upon several factors. These include but are not limited to size and squareness of the tile, the quality of joint cut, the quality and preparation of the subfloor and the skill of the installer. Long term appearance of the installed floor is also dependent on but not limited to the ability of the tile to resist shrinkage

due to internal stress relief. This test method is used to measure the ability of floor tile to retain its original dimensions following exposure to heat simulating a long service life at reasonable and expected temperatures.

## 5. Apparatus

5.1 *Mechanical Convection-Type Oven, or equivalent*, capable of maintaining a temperature of  $180 \pm 3.6^\circ\text{F}$  ( $82 \pm 2^\circ\text{C}$ ), with inside dimensions large enough to hold several tiles horizontally on aluminum exposure plates.

5.2 *Specimen Exposure Plates*, consisting of flat 14-gage, 0.0625-in. (1.6-mm), thick aluminum. The aluminum exposure plates may be contained in a rack, either fixed in or removable from the rack, and should be at least 1 in. (25.4 mm) larger in each linear dimension than the linear dimension of the specimen tested. If contained in a rack, the spacing between each plate should be at least 0.625-in. (16-mm). The rack shall be constructed with all four sides open.

5.3 *Block and Dial Gage Assembly*, as described in Test Method [F2055](#).

5.4 *Forced Air Cooling (Fan, Blower, etc.)*, may be used for accelerating specimen conditioning before heating and after cooling exposure to ensure proper equilibrium of test specimen (see [6.1](#) and [7.1](#)).

## 6. Test Specimen

6.1 The test specimen consists of a resilient floor tile. Typical floor tile dimensions are 9 by 9 in. (229 by 229 mm) or 12 by 12 in. (305 by 305 mm). Other sizes in square or rectangular dimensions may also be tested.

## 7. Conditioning

7.1 A conditioned room maintained at a temperature of  $73.4 \pm 1.8^\circ\text{F}$  ( $23 \pm 1^\circ\text{C}$ ) and  $50 \pm 5\%$  relative humidity.

## 8. Procedure

8.1 *Reference Plates*—Different tile sizes, with respective reference plates, can be specified if the size and squareness apparatus is designed to handle the testing and measurement of alternate sizes.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee [F06](#) on Resilient Floor Coverings and is the direct responsibility of Subcommittee [F06.30](#) on Test Methods - Performance.

Current edition approved Nov. 15, 2009. Published December 2009. Originally approved in 2002. Last previous edition approved in 2008 as F2199-02(2008). DOI: 10.1520/F2199-09.

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