



## Designation: **F1315–00 (Reapproved 2014) F1315 – 17**

# Standard Test Method for Density of a Sheet Gasket Material<sup>1</sup>

This standard is issued under the fixed designation F1315; 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 a procedure for determining the density of a gasket material.
- 1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.
- 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>
  - [E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method](#)
  - [F104 Classification System for Nonmetallic Gasket Materials](#)

## 3. Summary of Test Method

- 3.1 A die-cut specimen is conditioned. Thickness, weight, and area are measured, and the density is calculated and reported.

## 4. Significance and Use

4.1 Density is an important property of a gasket material, since it has an inverse relationship to the void volume of the material. Density is often used in a specification, since relationships to sealability, compressibility, creep relaxation, and tensile strength can be found for a given gasket grade.

4.2 Density is a measurement of the mass to the volume ratio and therefore easily determined with a weight scale and thickness measuring device. This test method requires from 1 h to two days of sample conditioning, which is necessary to achieve a high level of precision, but which detracts from its usefulness as a production test method. Where it must be modified for manufacturing control, it is recommended that thickness and weight measurement methods be adhered to strictly.

## 5. Interferences

5.1 Moisture adds to the weight of most gasket specimens, and may cause the material to swell. Proper conditioning of the specimen should control moisture as a variable.

## 6. Apparatus

6.1 *Thickness*—A thickness measurement device actuated by a dead weight load as specified in [Table 1](#). The presser foot shall be  $6.40 \pm 0.13$  mm ( $0.252 \pm 0.005$  in.) in diameter. The device shall be capable of reading within 1 % of the thickness being measured. The anvil shall have a diameter not less than that of the presser foot.

6.2 *Weight*—An analytical balance accurate to  $\pm 1$  % of the specimen weight.

## 7. Specimen Conditioning

7.1 Specimen shall be conditioned in accordance with their classification as specified in Classification System [F104](#) prior to testing.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee [F03](#) on Gaskets and is the direct responsibility of Subcommittee [F03.20](#) on Mechanical Test Methods. Current edition approved March 1, 2014; Feb. 1, 2017. Published April 2014; February 2017. Originally approved in 1990. Last previous edition approved in 2006 as F1315 – 00 (2006) (2014). DOI: [10.1520/F1315-00R14](#); [10.1520/F1315-17](#).

<sup>2</sup> 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.