



Designation: D1895 – 17

Standard Test Methods for Apparent Density, Bulk Factor, and Pourability of Plastic Materials¹

This standard is issued under the fixed designation D1895; 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 These test methods cover the measurement of apparent density, bulk factor, and where applicable, the pourability of plastic materials such as molding powders. Different procedures are given for application to the various forms of these materials that are commonly encountered, from fine powders and granules to large flakes and cut fibers.

1.2 The values stated in SI units are to be regarded as the standard. The values 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, health and environmental practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—Test Method A is equivalent to ISO Method R 60 as described in the appendix. Test Method C is identical with ISO Method R 61.

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

- D792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- D883 Terminology Relating to Plastics
- D1505 Test Method for Density of Plastics by the Density-Gradient Technique

¹ These test methods are under the jurisdiction of ASTM Committee D20 on Plastics and are the direct responsibility of Subcommittee D20.70 on Analytical Methods.

Current edition approved Sept. 1, 2017. Published September 2017. Originally approved in 1961. Last previous edition approved in 2010 as D1895 – 96(2010) ^{ϵ 1}. DOI: 10.1520/D1895-17.

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.

2.2 *ISO Standards:*³

- R60 Determination of Apparent Density of Molding Materials that Can be Poured from a Specified Funnel
- R61 Determination of Apparent Density of Molding Material that Cannot be Poured from a Specified Funnel

3. Terminology

3.1 *Definitions:*

3.1.1 *apparent density*—the weight per unit volume of a material, including voids inherent in the material as tested.

3.1.1.1 The term *bulk density* is commonly used for materials such as molding powder.

3.1.2 *bulk factor*—the ratio of the volume of any given quantity of the loose plastic material to the volume of the same quantity of the material after molding or forming. The bulk factor is also equal to the ratio of the density after molding or forming to the apparent density of the material as received.

3.1.3 *pourability*—a measure of the time required for a standard quantity of material to flow through a funnel of specified dimensions.

4. Significance and Use

4.1 These test methods provide useful indexes of performance of plastic materials such as powders and granules with respect to their handling in packaging and fabrication.

4.2 Apparent density is a measure of the fluffiness of a material.

4.3 Bulk factor is a measure of volume change that may be expected in fabrication.

4.4 Pourability characterizes the handling properties of a finely divided plastic material. It is a measure of the readiness with which such materials will flow through hoppers and feed tubes and deliver uniform weights of material.

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