



Designation: D5224 – 12 (Reapproved 2019)

Standard Practice for Compression Molding Test Specimens of Thermosetting Molding Compounds¹

This standard is issued under the fixed designation D5224; 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.

1. Scope

1.1 This practice covers the general principles to be followed when compression molding test specimens of thermosetting molding compounds, such as phenolics, aminoplastics, melamine phenolics, epoxies, and unsaturated polyesters.

1.2 Molding conditions are given for amino, phenolic, and allyl molding compounds. The exact molding conditions will vary from material to material, and, if not incorporated in the material specification, shall be agreed upon between the purchaser and the supplier or determined by previous experience with the particular type of material being used.

1.3 The values stated in SI units are to be regarded as standard. The values in parentheses are given for information only.

1.4 *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 standard and ISO 295 address the same subject matter, but differ in technical content.

1.5 *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

D638 Test Method for Tensile Properties of Plastics

D883 Terminology Relating to Plastics

¹ This practice is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.09 on Specimen Preparation.

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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 Standard:*

ISO 295 Plastics—Compression Molding Test Specimens of Thermosetting Materials³

ISO 3167 Plastics—Multipurpose—Test Specimens³

3. Terminology

3.1 *Definitions*—For definitions of terms pertaining to plastics used in this practice, see Terminology D883.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *breathe step, n*—in plastics molding, the part of the molding cycle in which the mold halves are opened momentarily, prior to curing, to release volatiles from the molded part.

3.2.2 *skin, n*—in plastics molding, the thin resin-rich layer (skin) on the surface of the molded part.

3.2.3 *skin effect, n*—in plastics testing, the positive or negative effect on the results of some standard tests attributable to the skin.

4. Summary of Practice

4.1 Compression molded test specimens are produced by loading a mold cavity with some form of the molding material, applying a specified pressure to the mating surface for a specified time and at a specified temperature, and then removing the part from the cavity.

5. Significance and Use

5.1 The conditions at which compounds are molded are known to influence the properties of the specimens. The degree of cure, elimination of knit-lines between particles, density of the part, and degradation of the polymer are among those factors which will be affected by the molding conditions. Thus it is important to conform to a standard set of conditions in order to have a valid comparison of properties between different compounds and different batches of the same compound.

³ *ISO Standards Handbook 21*, Vol 2, Plastics, 2nd Ed., 1990, available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

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