



Designation: D1337 – 10 (Reapproved 2016)

Standard Practice for Storage Life of Adhesives by Viscosity and Bond Strength¹

This standard is issued under the fixed designation D1337; 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 describes a laboratory method by which the storage life of an adhesive may be measured using viscosity, adhesive strength, or a combination thereof.

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:²

D618 Practice for Conditioning Plastics for Testing

D897 Test Method for Tensile Properties of Adhesive Bonds

D906 Test Method for Strength Properties of Adhesives in Plywood Type Construction in Shear by Tension Loading

D907 Terminology of Adhesives

D1002 Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal)

D1084 Test Methods for Viscosity of Adhesives

2.2 Other Standard:³

ISO 2555 Plastics—Resins in the liquid state or as emulsions or dispersions—Determination of apparent viscosity by the Brookfield Test method

3. Terminology

3.1 *Definitions*—Many terms in this practice are defined in Terminology D907.

¹ This practice is under the jurisdiction of ASTM Committee D14 on Adhesives and is the direct responsibility of Subcommittee D14.10 on Working Properties.

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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.

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

4. Significance and Use

4.1 This practice may be used to determine the storage life of any adhesive where this information is required.

4.2 This practice is intended to determine whether the storage life conforms to the minimum specified storage life required of an adhesive by viscosity tests (Procedure A) or by bond strength tests (Procedure B), or by both. It does so by providing results before and after a set of standard conditions that simulate storage life. The determination of what the requirements for percentage of the original property retained or the minimum value for a property is found in the relevant material specification, or as agreed between manufacturer and user.

PROCEDURE A—VISCOSITY TEST

5. Apparatus

5.1 *Viscometer*—Use the apparatus as described in ISO 2555.

5.2 *Controlled-Temperature Chamber*, capable of maintaining temperature to $\pm 3^{\circ}\text{C}$ ($\pm 5^{\circ}\text{F}$), to provide temperature storage conditions.

6. Storage of Adhesive

6.1 Store the adhesive and all its components, if there are any, in their original and unopened containers when the container is approximately litre (or quart) size. When the adhesive is supplied in larger containers, the desired number of samples is withdrawn from the large container. In this latter case, the size, type of closure, and nature (such as glass, steel, or tin-coated steel) of the small storage container is agreed upon by the purchaser and the manufacturer.

6.2 For storage temperature, use any one of the standard temperatures specified in Practice D618. The time of storage is any time agreed upon by the purchaser and the manufacturer. If the effect of storage time is desired, it is suggested that at least three quantities of the adhesive be stored under the prescribed conditions, and tested at various intervals of time. Use a separate, unopened container at each such test.

7. Conditioning

7.1 Condition all containers after storage at $23 \pm 3^{\circ}\text{C}$ ($73.4 \pm 5^{\circ}\text{F}$) before opening. If the adhesive consists of two or more