



Designation: ~~D4334 – 05 (Reapproved 2010)~~ **D4334 – 18**

Standard Test Method ~~Practice~~ for the Determination of the Dip Tube Retention of a Mechanical Pump Dispenser¹

This standard is issued under the fixed designation D4334; 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 ~~test method practice~~ covers the determination of the force necessary to separate the dip tube from the body of a mechanical pump dispenser (spray or flow types).

1.2 *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 ~~consult and establish appropriate safety~~ safety, health, and ~~health~~ environmental practices and determine the applicability of regulatory limitations prior to use.*

1.3 *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. Significance and Use

2.1 This ~~test method practice~~ may be used to establish performance specifications.

2.2 This ~~test method practice~~ may be used as a quality control assessment.

3. Apparatus

3.1 *Test Stand*—The test apparatus shall be capable of applying a smoothly increasing load to the test specimen until the dip tube is separated from the body of the mechanical pump dispenser.

NOTE 1—The condition of 3.1 is fulfilled by most motor driven tensile strength testers with a constant rate of elongation.

NOTE 2—The test stand should be equipped with a maximum force indicator.

3.2 *Clamps:*

3.2.1 *Fixture*, to secure the upper part of the mechanical pump dispenser. The fixture shall secure the dispenser in such a way that there is no slippage between it and the test specimen.

3.2.2 *Clamp*, to secure the dip tube. The clamp shall hold the dip tube in such a way that there is no slippage between the dip tube and the clamp.

3.2.3 Arrange the fixturing so that the tube is maintained in a position parallel to, and within the colinear plane of, the applied force.

3.3 *Scale*, graduated in either millimetres or inches.

4. Sampling

4.1 Select an appropriate number of dry, unused pump dispensers at random for precision and accuracy desired. Use of 10 test specimens is recommended, but a minimum of three is acceptable.

5. Conditioning

5.1 If possible, condition the test specimens at $23 \pm 3^\circ\text{C}$ ($73 \pm 5.4^\circ\text{F}$) for not less than 4 h. If the test specimens are not conditioned at the recommended temperature, this should be noted in the test report discussed in 7.1.

¹ This ~~test method practice~~ is under the jurisdiction of ASTM Committee F02 on Flexible Primary Barrier Packaging, and is the direct responsibility of Subcommittee F02.30 on Mechanical Pump Dispensers.

Current edition approved Oct. 1, 2010 May 1, 2018. Published March 2011 June 2018. Originally approved in 1984. Last previous edition approved in 2005 2010 as ~~D4334 – 05~~ D4334 – 05(2010). DOI: ~~10.1520/D4334-05R10~~ 10.1520/D4334-18.