



Designation: F2825 – 18

Standard Practice for Climatic Stressing of Packaging Systems for Single Parcel Delivery¹

This standard is issued under the fixed designation F2825; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This practice provides a uniform basis for evaluating, in a laboratory, the ability of a packaging system to withstand a range of climatic stresses that a packaging system may be exposed to during distribution throughout the world and still provide the product protection from damage or alteration.

1.2 This practice is designed as conditioning prior to testing for overnight or two-day delivery systems of a single parcel packaging system or as a standalone test for climatic stressing of packaging systems.

NOTE 1—Practice F2825 climatic stressing or conditioning is short term in duration. Fiberboard containers are not expected to approach equilibrium moisture content at the climatic conditions used in Practice F2825. Therefore, Practice F2825 conditioning should not be used for distribution environments other than one- to two-day single parcel delivery as it may provide inaccurate or misleading test results for the fiberboard containers.

1.3 This practice does not cover refrigerated, frozen food storage, or cryogenic storage conditions. Only the climatic environments encountered in various regions of the world are covered by this practice.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *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.*

1.6 *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.*

¹ This practice is under the jurisdiction of ASTM Committee D10 on Packaging and is the direct responsibility of Subcommittee D10.21 on Shipping Containers and Systems - Application of Performance Test Methods.

Current edition approved March 1, 2018. Published April 2018. Originally approved in 2010. Last previous edition approved in 2015 as F2825 – 10(2015). DOI: 10.1520/F2825-18.

2. Referenced Documents

2.1 *ASTM Standards:*²

D996 Terminology of Packaging and Distribution Environments

D4332 Practice for Conditioning Containers, Packages, or Packaging Components for Testing

E337 Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures)

F17 Terminology Relating to Primary Barrier Packaging

2.2 *ISO Standard:*³

ISO 2233 Packaging—Complete, Filled Transport Packages: Conditioning for Testing

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions used in this practice, see Terminologies D996 and F17.

3.1.2 *climatic stressing*—exposing packaging system test samples to conditions of temperature and humidity for a specified period of time which would simulate expected conditions seen in the defined storage and distribution system.

4. Summary of Practice

4.1 Products shipped through the distribution environment, regardless of mode of transportation, encounter various climatic and physical environments as they pass through different parts of the world at various times of the year. This practice is designed to provide guidance when establishing the climatic stresses imparted to packaging systems using expected climatic conditions and durations that they can encounter in distribution in order to evaluate its ability to provide protection to the package contents or devices.

5. Significance and Use

5.1 This practice provides a method for conditioning packaging systems using climatic conditions that occur in actual

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.