



Standard Guide for Selection and Use of Stretch Wrap Films¹

This standard is issued under the fixed designation D4649; 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 guide covers recommended guidelines and test methods for the selection, specification, and use of stretch wrap films for unitizing, reinforcing, and palletizing for indoor environments. This can include storage or transport, or both, in warehouses, closed containers such as truck trailers or rail boxcars, and associated transfer terminals. This guide does not cover the performance issues associated with outdoor exposure.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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

- D882 Test Method for Tensile Properties of Thin Plastic Sheeting
- D907 Terminology of Adhesives
- D996 Terminology of Packaging and Distribution Environments
- D1003 Test Method for Haze and Luminous Transmittance of Transparent Plastics
- D1505 Test Method for Density of Plastics by the Density-Gradient Technique
- D1746 Test Method for Transparency of Plastic Sheeting
- D1894 Test Method for Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting

¹ This guide is under the jurisdiction of ASTM Committee D10 on Packaging and is the direct responsibility of Subcommittee D10.25 on Palletizing and Unitizing of Loads.

Current edition approved Dec. 1, 2016. Published December 2016. Originally approved in 1987. Last previous edition approved in 2009 as D4649 – 03 (2009). DOI: 10.1520/D4649-03R16.

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.

- D1898 Practice for Sampling of Plastics (Withdrawn 1998)³
- D1922 Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method
- D2103 Specification for Polyethylene Film and Sheeting
- D2457 Test Method for Specular Gloss of Plastic Films and Solid Plastics
- D2578 Test Method for Wetting Tension of Polyethylene and Polypropylene Films
- D2863 Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
- D3951 Practice for Commercial Packaging
- D4321 Test Method for Package Yield of Plastic Film
- D4470 Test Method for Static Electrification
- D5331 Test Method for Evaluation of Mechanical Handling of Unitized Loads Secured with Stretch Wrap Films
- D5414 Test Method for Evaluation of Horizontal Impact Performance of Load Unitizing Stretch Wrap Films
- D5415 Test Method for Evaluating Load Containment Performance of Stretch Wrap Films by Vibration Testing
- D5416 Test Method for Evaluating Abrasion Resistance of Stretch Wrap Films by Vibration Testing
- D5458 Test Method for Peel Cling of Stretch Wrap Film
- D5459 Test Method for Machine Direction Elastic Recovery and Permanent Deformation and Stress Retention of Stretch Wrap Film
- E96/E96M Test Methods for Water Vapor Transmission of Materials
- E284 Terminology of Appearance

3. Terminology

3.1 *Definitions*—Terminology found in Terminology D996 shall apply.

3.2 Definitions of Terms:

3.2.1 *blocking*—an undesirable adhesion between touching layers of a material, such as occurs under moderate pressure during storage or use. (See Terminology D907.)

3.2.2 *clarity*—the characteristic of a transparent body whereby distinct high-contrast images or high-contrast objects (separated by some distance from the body) are observable through the body. (See Terminology E284.)

³ The last approved version of this historical standard is referenced on www.astm.org.