



Standard Practice for Cutting Film and Sheeting Test Specimens¹

This standard is issued under the fixed designation D6287; 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 covers equipment and techniques for cutting film and sheeting specimens for testing.² The specimens are nick-free, non-stretched and can be rapidly prepared.

1.2 The values given in SI units are to be considered 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.*

NOTE 1—There is no known ISO equivalent to this standard.

2. Referenced Documents

2.1 *ASTM Standards:*³

[D882 Test Method for Tensile Properties of Thin Plastic Sheeting](#)

[D2838 Test Method for Shrink Tension and Orientation Release Stress of Plastic Film and Thin Sheeting](#)

[F88 Test Method for Seal Strength of Flexible Barrier Materials](#)

3. Significance and Use

3.1 Many test methods including Test Methods [D882](#), [D2838](#), and [F88](#) require the use of narrow strips of varying length. The quality of the sample preparation directly affects test results. This practice describes two techniques for preparing samples with straight, clean, parallel edges with no visible imperfections.

NOTE 2—After cutting, each specimen should be examined visually to insure the edges are undamaged (free of nicks). On a periodic basis

¹ This practice is under the jurisdiction of ASTM Committee [D20](#) on Plastics and is the direct responsibility of Subcommittee [D20.19](#) on Film and Sheeting.

Current edition approved Sept. 1, 2009. Published September 2009. Originally approved in 1998. Last previous edition approved in 2005 as D6287 - 05. DOI: 10.1520/D6287-09.

² This practice does not cover all types of techniques which may be used for cutting film and sheeting specimens.

³ 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.

specimen edge quality should be evaluated by microscopic examination. To determine when cutting blades need to be replaced or sharpened, a control chart of tensile strength and percent elongation at break (see Test Method [D882](#)) of a uniform material may be maintained. Tensile strength and percent elongation at break will decrease as the quality of specimen cutting decreases.

4. Apparatus and Materials

4.1 *Procedure A*—A hand rotatable drum cutter ([Fig. 1](#)) containing a 12.7 cm (5 in.) diameter drum with grooves at 12.7 mm (0.5 in.) intervals and a blade holder allowing a blade to ride in each groove or be raised above the groove.^{4,5}

NOTE 3—Plas-Tech in Boston offered a rotary drum cutter in the 1950's and 1960's which was shown to be an excellent instrument with respect to yielding nick free non-stretched film specimen(s) at high rates.⁶ However, Plas-Tech disappeared in the late 1960's and the cutter with them. This type of cutter has been redesigned to meet current government regulations and retain its original desirable characteristics plus additional improvements.

4.2 *Procedure B*—A dual blade shear cutter ([Fig. 2](#)) with parallelism tolerances within 0.0254 mm (0.001 in.). The cutter cuts individual strips of a particular sample width.

4.3 *Procedure C*—Dies with replaceable razor-blade cutters are available in many different specimen configurations. The dies are equipped with a spring-loaded mechanism that allows easy specimen removal. These dies are mounted on either a manual or pneumatic press and provide easy replacement of worn cutting elements.^{7,5}

4.4 *Scissors.*

4.5 *Marker.*

4.6 *Tape.*

⁴ The sole source of supply of the rotary drum film and sheeting cutter known to the committee at this time is Zebedee Corporation, P.O. Box 395, Landrum, SC 29356.

⁵ If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee¹, which you may attend.

⁶ Patterson, Gordon D., "An Interlaboratory Study of Cutting Plastic Film Tension Specimens," *Materials Research and Standards*, April 1964, p. 159.

⁷ The sole source of supply of the razor-blade cutters and associated equipment known to the committee at this time is the Dumbbell Co., Ltd, 2243-1 Kasahata Kawagoe-Shi, Saitama, 350-1175 Japan, represented by Ontario Die International, 235 Gage Avenue, Kitchener, ON, N2M 2C9.

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