



Standard Practice for Rubber—Preparation of Pieces for Test Purposes from Products¹

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This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This practice describes methods for the preparation of pieces of a rubber vulcanizate that is not in the form of sheet. Such pieces are used as a source from which specimens are obtained for testing.

1.2 The values stated in SI units are to be regarded as the standard.

1.3 *This standard does not purport to address all of the safety problems, 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:

D 3182 Practice for Rubber—Materials, Equipment, and Procedures for Mixing Standard Compounds and Preparing Standard Vulcanized Sheets²

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *piece*—a term used for a rubber vulcanizate in a size and shape suitable for cutting specimens.

4. Significance and Use

4.1 This practice is used when it is necessary to test a product from which specimens cannot be cut directly. Procedures are given for preparing pieces suitable for preparing specimens of the product.

5. Conditioning

5.1 Pieces shall be prepared for specimen cutting and testing not sooner than 16 h. after vulcanization and not later than 60 days after delivery to a purchaser (see Note 1).

NOTE 1—For production quality control, testing within 1 to 6 h after

vulcanization may be necessary to monitor plant operation.

6. Pieces

6.1 Pieces shall be obtained, if possible, from the product to be tested in accordance with the specification for the particular product. The pieces shall be prepared in accordance with Section 7.

6.2 When it is not feasible to prepare suitable pieces from the product, specially molded pieces or sheets may be prepared from the same unvulcanized rubber compound used to prepare the product. The sheets shall be vulcanized in accordance with Practice D 3182 and shall have an equivalent state of vulcanization judged from such properties as can be determined on the product. The sheets shall have one of the following thicknesses unless another thickness is technically necessary:

mm	in.
2 ± 0.2	(0.08 ± 0.008)
4 ± 0.2	(0.16 ± 0.008)
6.3 ± 0.3	(0.25 ± 0.12)
12.5 ± 0.5	(0.50 ± 0.02)

7. Preparation of Pieces

7.1 Rubber vulcanizates, particularly products, may not have a suitable form or size for use in cutting specimens for test. Procedures in this section describe the preparation of pieces from vulcanizates that are too thick, have uneven surfaces, or contain textiles.

7.1.1 After the piece is prepared, it shall rest at least 30 min before the specimens are cut.

7.2 *Separation of Textiles*—The separation should preferably avoid the use of a swelling liquid. If this is not possible, use commercial iso-octane. Take care to avoid excessive stretching of the rubber during the separation, by separating a little at a time while the rubber is gripped near the point of separation. If a liquid is used, place the rubber so as to permit free evaporation of the liquid. Allow time for the complete evaporation of the liquid before the specimens are cut and tested. Some skiving machines can separate plies of rubber as in belts, hose, and tires (see 7.4).

7.3 *Cutting Knife Procedure*—This procedure is based on commercial slicing machines. The machine consists of a motor- or hand-driven disk cutter of suitable diameter with a

¹ This practice is under the jurisdiction of ASTM Committee D11 on Rubber and is the direct responsibility of Subcommittee D11.10 on Physical Testing.

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² *Annual Book of ASTM Standards*, Vol 09.01.