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## Standard Specification for Sheet Linoleum Floor Covering<sup>1</sup>

This standard is issued under the fixed designation F 2034; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

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~~<sup>ε1</sup>Note—Definitions of drying room film, linoleum cement, and rosin were removed from Section 3 in October 2005 since they are defined in Terminology F141.~~

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### 1. Scope

1.1 This specification covers sheet linoleum floor covering.

1.2 Three types of linoleum floor covering are covered (see Section 4). These floor coverings are intended for use in commercial, light commercial, and residential buildings based on serviceability characteristics. General information and performance characteristics, which determine serviceability and recommended use, are included in this specification.

1.3 The values stated in inch-pound units are to be regarded as the standard; the values in parentheses are provided for information only.

1.4 The following safety hazards caveat pertains only to the test methods portion, Section 11, of this specification. *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 to determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

F 137 ~~Test Method~~ Method for Flexibility of Resilient Flooring Materials with Cylindrical Mandrel Apparatus

F 141 Terminology Relating to Resilient Floor Coverings

F 150 Test Method for Electrical Resistance of Conductive and Static Dissipative Resilient Flooring

F 386 Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces

F 410 Test Method for Wear Layer Thickness of Resilient Floor Coverings by Optical Measurement

F 710 Practice for Preparing Concrete Floors and other Monolithic Floors to Receive Resilient Flooring

F 925 Test Method for Resistance to Chemicals of Resilient Flooring

F 970 Test Method for Static Load Limit

F 1482 ~~Guide to Wood Underlayment and Preparation of the Surface to Receive Resilient Flooring~~<sup>2</sup> Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring

F 1514 Test Method for Measuring Heat Stability of Resilient Flooring by Color Change

F 1515 Test Method for Measuring Light Stability of Resilient Flooring by Color Change

F 1516 Practice for Sealing Seams of Resilient Flooring Products by the Heat Weld Method (when Recommended)

2.2 *European Norms:*

EN 670 Identification and Composition of Linoleum—Determination of Cement and Ash Residue<sup>3</sup>

2.3 *American National Standard:*

ANSI/ASQC Z1.4 Sampling Procedures and Tables for Inspection by Attributes<sup>4</sup>

### 3. Terminology

3.1 *Definitions:*

3.1.1 For definitions, refer to Terminology F 141.

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<sup>1</sup> This specification is under the jurisdiction of ASTM Committee F06 on Resilient Floor Coverings and is the direct responsibility of F06.80 on Specifications. Current edition approved Sept. 10, 2003. Published November 2003. Originally approved in 2000. Last previous edition approved in 2001 as F2034-01.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards*, Vol 15.04, volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> Available from CEN European Committee for Standardization—Central Secretariat: rue de Stassart, 36 B-1050, Brussels.

<sup>4</sup> Available from American National Standards Institute, 11 West 42<sup>nd</sup> St., 13<sup>th</sup> Floor, New York, NY 10036.

#### 4. Classification

4.1 The floor coverings shall be of the following types:

- Type I — Linoleum sheet with backing
- Type II — Static dissipative linoleum sheet with backing
- Type III — Linoleum sheet with special backing

#### 5. Ordering Information

5.1 Linoleum sheet shall be ordered by type, class, thickness, and other characteristics important to the purchaser for the intended use.

- 5.1.1 Title, number, and date of this specification.
- 5.1.2 Type, class, and pattern number.
- 5.1.3 Quantity in square yards (square metres).
- 5.1.4 Thickness required (see Section 8).
- 5.1.5 Sampling if other than as specified in ANSI/ASQC Z1.4, level S-1, as noted in Table 1.
- 5.1.6 Packing requirement if other than specified (see Section 14).
- 5.1.7 Marking required if other than specified (see Section 14).
- 5.1.8 For specific chemical resistance (see 11.3).
- 5.1.9 Other requirements.

#### 6. Material

6.1 *Wear Surface*— The wear surface is the portion above the fibrous or suitable backing/bedding layer or base coat. The wear surface should have a minimum thickness of 0.04 in. (1 mm).

6.1.1 *Type I/Type II/Type III*—For all types, the wear surface of the linoleum shall consist of a homogeneous mixture of linseed oil or vegetable drying oils, or both; rosin, wood flour, or cork flour, or a combination thereof; color pigments; and inorganic filler. For Type II, the linoleum shall have incorporated into the wearing surface additives, which will give the linoleum electrostatic discharge controlling properties.

6.2 *Backings*:

6.2.1 *Jute*—The jute backing shall be firmly bonded to and partially embedded in the linoleum mix.

6.2.2 *Special Backing*— In some cases a special backing is added such as cork, polyolefin, or other suitable backing.

6.3 *Composition*— The minimum amount of linoleum cement shall be 30 % when tested in accordance with European Norm 670.

#### 7. Performance Requirements

7.1 Linoleum sheet floor covering shall meet the requirements in Table 1.

**TABLE 1 Performance Requirements**

Property	Requirement	Test Method	Reference
Thickness	Average overall thickness shall be the nominal thickness with a tolerance of $\pm 0.006$ in. (0.15 mm)	ASTM F 386	11.1
Static load	Residual indentation shall not exceed 0.005 in. (0.12 mm), tested with a load of 150 lb (67.5 kg)	ASTM F 970	11.2
Resistance to chemicals	No more than a slight change in surface dulling, surface attack, or staining	ASTM F 925	11.3
Resistance to heat	$\Delta E$ not more than 8.0	ASTM F 1514	11.4
Resistance to light	$\Delta E$ not more than 8.0	ASTM F 1515	11.5
Flexibility	The wear surface will not crack or break when bent face out (see Table 2)	ASTM F 137	11.6
Static dissipation (Type II)	Surface to ground resistance in the range of $1.0 \times 10^6$ to $1.0 \times 10^9 \Omega$ tested at 100 or 500 V	ASTM F 150	11.7
Wear surface	Wear surface shall be a minimum thickness of 0.04 in. (1 mm)	ASTM F 410	11.8