

MIL-L-47088 (MI)

10 May 1974

SUPERSEDING

MIS 14318

1 May 1965

## MILITARY SPECIFICATION

### LAMINATE, ALUMINUM FOIL - POLYETHYLENE TEREPHTHALATE

This specification is approved for use by all departments and agencies of the Department of Defense.

#### 1. SCOPE

1.1 Scope. This specification covers the requirements for one type of aluminum foil-polyethylene terephthalate laminated.

#### 2. APPLICABLE DOCUMENTS

2.1 Government documents. The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

#### SPECIFICATIONS

##### Military

MIL-I-631

Insulation, Electrical,  
Synthetic-Resin Composition,  
Nonrigid.

FSC 9535

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STANDARDS

MIL-STD-129

Marking for Shipment  
Storage

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

American Society for Testing and Materials

|            |  |
|------------|--|
| ASTM D 373 | Aluminum Foil for Capacitors, Specifications for |
| ASTM D 689 | Tearing Resistance of Paper, Test for            |
| ASTM D 774 | Bursting Strength of Paper, Test for             |
| ASTM D 828 | Tensile Breaking Strength of Paper, Test for     |

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia Pennsylvania 19103.)

Uniform Classification Committee

Uniform Freight Classification Rules

(Application for copies should be addressed to Uniform Classification Committee, 202 Chicago Union Station, Chicago, Illinois, 60606.)

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American Trucking Association Publication**National Motor Freight Classification Rules and  
Container Regulations**

(Application for copies should be addressed to the National Classification Board, 1424 Sixteenth Street, N.W., Washington D.C. 20013.)

Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.

**3. REQUIREMENTS**

**3.1 Preproduction sample.** Unless otherwise specified (see 6.2), a preproduction sample of the laminate shall meet the requirements of this specification.

**3.2 Material.** The laminate shall consist of approximately 0.00035-inch thick aluminum foil conforming to ASTM B-373 for alloy 1145 bonded to approximately 0.001-inch thick polyethylene terephthalate film conforming to MIL-I-631, Class G.

**3.3 Mechanical properties.** Mechanical properties of the laminate shall be as specified in Table I.

Table I

| Mechanical properties |                           |
|-----------------------|---------------------------|
| Property              | Value (minimum)           |
| Tensile Strength      | 20 pounds per inch (psi)  |
| Bursting Strength     | 58 pounds per square inch |
| Tear Strength         | 30 grams (g)              |

**3.4 Physical properties.**

**3.4.1 Thickness.** The thickness of the laminate shall be 0.0015 plus or minus 0.0001 inch.

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3.5 Workmanship. The workmanship shall be such as to insure a product which is uniform and in compliance with this specification. The material shall be free of delaminations, seams, foreign matter or defects that may impair its serviceability.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Preproduction sample. The preproduction sample shall be prepared using the same methods proposed for the preparation of subsequent production lots of material. Preproduction samples which do not meet all the requirements of this specification shall be subject to rejection and return to the supplier.

4.3 Classification of examinations and test. The inspection and testing of the laminate shall be classified as follows:

- a. Preproduction tests.
- b. Quality conformance tests.

4.3.1 Preproduction tests. Preproduction tests shall be conducted only on the preproduction sample and shall consist of all the examinations and tests specified herein.

4.3.2 Quality conformance tests. Quality conformance tests for acceptance of the laminate shall consist of the following examinations and tests:

- a. Visual examination.
- b. Thickness.

4.3.2.1 Lot size. Lot size shall consist of all the laminated manufactured at one time from one batch, forming part of one contract or order, and submitted for acceptance at the same time and place.

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4.3.2.2 Sampling. Unless otherwise specified (see 6.2), 2 feet from one unit, representative of each lot shall be selected at random for quality conformance testing. Each roll shall be considered as a unit of product. Failure of sample to meet the quality conformance tests requirements shall be cause for lot rejection (see 4.5).

#### 4.4 Test methods.

4.4.1 Visual examination. The laminate shall be visually examined to ensure compliance with 3.5.

#### 4.4.2 Mechanical property tests.

4.4.2.1 Tensile strength. The tensile strength of the laminate shall be determined in accordance with ASTM D 828. The tensile strength shall be 20 pounds per inch minimum.

4.4.2.2 Bursting strength. The bursting strength of the laminate shall be determined in accordance with ASTM D 774. The bursting strength shall be 58 pounds per square inch minimum.

4.4.2.3 Tear strength. The tear strength of the laminate shall be determined in accordance with ASTM D 689. The tear strength shall be 30 grams minimum.

#### 4.4.3 Physical property test.

4.4.3.1 Thickness. The thickness of the laminate may be measured with an instrument capable of measuring to the tolerance specified. The thickness shall be 0.0015 plus or minus 0.0001 inch.

4.5 Preservation, packaging, packing and marking. The preservation, packaging, packing and marking shall be examined for compliance with Section 5.

### 5. PREPARATION FOR DELIVERY

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5.1 Packaging. The film shall be put on paper core rolls three inches inside diameter by 1/4 inch minimum wall thickness, core extending one inch beyond film on both ends. Each roll shall be individually wrapped in two separate layers of soft textured material. Each layer shall be a minimum of 1/8 inch thick and shall be backed by 30 or 40 pound wrapping paper.

5.2 Packing. Rolls shall be packed in shipping containers in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate. Containers shall be in accordance with Uniform Freight Classification rules or National Motor Freight rules as applicable.

5.3 Marking. Marking shall be in accordance with MIL-~~129~~ and as specified by ~~procuring~~ activity.

## 6. NOTES

6.1 Intended use. The laminate is intended for use as radio frequency interference shielding for electrical cables.

6.2 Ordering data. Procurement documents should specify the following:

- a. Title, number, and date of this specification.
- b. Whether a preproduction sample is required (see 3.1) and if so, pertinent details.
- c. Sampling plan if other than specified (see 4.3.2.2).
- d. Width of laminate required and length of laminate on roll.

6.3 Supersession data. This specification includes the requirements of Missile Interim Specification MIS-14318, dated 1 May 1965.

Custodian:  
Army-MI

Preparing Activity:  
Army-MI  
Project No. 9535-A015