

AEROSPACE MATERIAL SPECIFICATION



AMS-T-22085

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Tapes, Pressure-Sensitive, Adhesive,
Preservation and Sealing

FSC 7510

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1. SCOPE:

1.1 Scope:

This specification establishes the requirements for pressure-sensitive adhesive tapes designed for exterior preservation and sealing of military vehicles, aircraft, missiles and other related equipment during handling, shipment and storage.

1.2 Classification:

The tapes shall be of the following types, as specified (see 6.2c):

Type II - For use with or without overcoating (see 6.1.1)

Type IV - For use without overcoating; for extended time periods (see 6.1.2).

1.2.1 Cross reference: Relationship of the types of tapes specified in previous revisions of this specification are detailed in 6.6.

2. APPLICABLE DOCUMENTS:

The following publications, 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.

2.1 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

L-T-80	Tape, Pressure-Sensitive Adhesive (Aluminum-Backed)
QQ-A-250/5	Aluminum Alloy Alclad 2024, Plate and Sheet
PPP-T-680	Tape, Pressure-Sensitive Adhesive, Packaging and Packing of
MIL-C-6799	Coatings, Sprayable, Strippable, Protective, Water Emulsion
MIL-A-8625	Anodic Coatings, for Aluminum and Aluminum Alloys
MIL-P-23377	Primer Coatings, Epoxy, High Solids
MIL-C-23760	Coating, Sprayable, Strippable, Protective, for Packaging of Weapon Systems and Components, Application of
MIL-C-83286	Coating, Urethane, Aliphatic Isocyanate, for Aerospace Applications
MIL-C-85285	Coating: Polyurethane, High-solids
FED-STD-595	Colors Used in Government Procurement
MS20470	Rivet, Solid-Universal Head, Aluminum Alloy and Titanium Columbian Alloy

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor, West Conshohocken, PA 19428-2959.

ASTM D 740	Methyl Ethyl Ketone
ASTM D 2860	Tape, Pressure-Sensitive Tape, to Fiberboard at 90-Deg. Angle and Constant Stress, Adhesion of
ASTM D 3330	Tape, Pressure-Sensitive Tape at 180 Degree Angle, Peel Adhesion of
ASTM D 3611	Tapes, Pressure-Sensitive, Accelerated Aging of
ASTM D 3654	Tapes, Pressure-Sensitive, Holding Power of
ASTM D 3715	Tapes, Pressure-Sensitive, Quality Assurance of
ASTM D 3759	Tape, Pressure-Sensitive, Tensile Strength and Elongation of
ASTM D 3811	Tape, Pressure-Sensitive, Unwind Force of
ASTM D 3816	Tape, Pressure-Sensitive, Water Penetration Rate of
ASTM D 3833	Tape, Pressure-Sensitive, Water Vapor Transmission of

2.3 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 4375	Magnesium Alloy Sheet and Plate 3.0Al-1.0Zn (AZ 31B-0) Annealed and Recrystallized
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2.4 Order of precedence:

In the event of a conflict between the text of this document and the references cited herein (except for related associated detail specifications, specification sheets or MS standards), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS:

3.1 Qualification:

The tapes furnished under this specification shall be products which are authorized by the qualifying activity for listing on the applicable qualified products list at the time of award of contract (see 4.3 and 6.4).

3.2 Materials:

The materials used in the construction of the pressure-sensitive adhesive tape shall be such as to assure performance of the tape over the temperature range of -54° to 52°C (-65° to 125°F) and shall conform to the requirements of this specification.

- 3.2.1 Adhesive: The adhesive for both type II and type IV tapes shall be pressure-sensitive, water-insoluble, homogeneous and coated in a smooth and evenly distributed layer on one side of the backing, and shall require no solvent, moisture, heat or other preparation prior to or after application to clean, dry surfaces.
- 3.2.2 Backing: Type II tape backing shall be black plastic of single ply construction. The type IV backing shall be a polyvinyl fluoride film with a minimum thickness of 0.002 inches.
- 3.3 Finished tape:
- 3.3.1 Rolls: The tape shall be furnished in evenly and uniformly wound rolls, adhesive side in, on cores made of paper fiber or non-fibrous plastic. The core shall have sufficient rigidity to prevent distortion of the roll under normal conditions of transportation, storage, and use. The inside diameter of the core shall be 3 ± 0.063 , -0 inches. The adhesive shall not be covered with a liner.
- 3.3.1.1 Marking of rolls: Each roll of tape shall be marked in or on the edge of the core with numerals or letters indicating the month and year of manufacture. In addition, the manufacturer's name and designation of the product and the specification number shall appear in the core.
- 3.3.2 Length: Unless otherwise specified in the contract or order, type II tape shall be furnished in 36 yard rolls and type IV tape shall be furnished in 72 yard rolls (see 6.2g). Each roll shall consist of a single length of tape, except that any roll may contain not more than three splices. The splices shall be made in such a manner that they will not separate when the roll is being unwound for inspection, or during application.
- 3.3.3 Width: The width of the rolls shall be 1, 2, 3, or 4 inches, or other commercially available widths, as specified, in the contract or purchase order (see 6.2e). A tolerance of plus or minus 0.031 inch shall be allowed in each width.
- 3.3.4 Color: The color of type II tape shall be black. Unless otherwise specified in the contract (see 6.2h), type IV tape shall be any color chosen by the manufacturer, except black.
- 3.4 Performance:
- 3.4.1 Visual examination: When visually examined as specified, the tape shall conform to the requirements of 3.2 and 3.3 of this specification.
- 3.4.2 Physical properties: The tape shall comply with the physical property requirements listed in table I, when tested as specified herein.
- 3.4.3 Service (type II and type IV): When required by the qualifying activity, the tape shall be tested as specified in 4.6.11 and shall show satisfactory performance under service conditions.

TABLE I. Physical properties.

Inspection	Requirement		Method
	Type II	Type IV	
Tensile Strength, min. (lbs./in. width)	10	16	4.6.1
Elongation, min. (%)	300	100	4.6.1
Unrolling (lbs./in. width)			
Initial - max.	5.0	7.0	4.6.1
After aging - max.	5.0	7.0	4.6.1
Accelerated Aging			
Roll distortion (inches)			
Radius - max.	0.5	0.5	4.6.4
Width - max.	0.5	0.5	4.6.4
Water Penetration Rate - max. (g./100 sq. in./24 hrs.)	0.5	1.0	4.6.1
Water Vapor Transmission Rate - max. (g./100 sq. in./24 hrs.)	0.5	1.0	4.6.1
Holding Power (in./24 hrs.)			
Lo Temp. Slippage - max.	0.25	0.125	4.6.6.1
Hi Temp. Slippage - max.	0.25	0.125	4.6.6.2
Adhesion - oz/in. width, min			
Peel - to steel	17	30	4.6.3
- to backing	9	17	4.6.3
- to MIL-C-6799 coating	12	17	4.6.3
- to Polyurethane gloss coating	12	17	4.6.3
Constant stress at 90° (minutes)	200	4000	4.6.5
Removability at low temp.	No breaking, tearing, adhesive mass transfer or delamination	No breaking or tearing	4.6.7
Compatibility with overcoating materials	No lifting or adhesive mass transfer; backing shall not soften or become brittle	N/A	4.6.3

TABLE I. - Physical Properties - Continued.

Inspection	Requirement		Method
	Type II	Type IV	
Accelerated Outdoor Exposure	No tearing or cracking; no excessive edge lifting or shrinkage; no adhesive mass transfer.	No tearing or cracking; no excessive shrinkage or lifting.	4.6.9
Rolling ball tack (inches)			
Stopping distance - max			
@ 70°F	4.0	N/A	4.6.10
@ 45°F	5.0	N/A	4.6.10

3.5 Workmanship:

The tape shall be free from foreign matter and defects that may impair its serviceability or appearance. The adhesive shall be a smooth uniform coating, covering the entire area of one side of the backing. The edges of the tape shall be straight, true and unbroken.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for inspection:

Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor 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 ensure supplies and services conform to prescribed requirements.

- 4.1.1 Responsibility for compliance: All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.