

INCH-POUND

MIL-T-6841D
26 June 1992
 SUPERSEDING
 MIL-T-6841C
 24 February 1965

MILITARY SPECIFICATION

TAPE AND SHEET, ADHESIVE, RUBBER AND CORK COMPOSITION

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers one type of tape and sheet for use in the installation of windshields, panels, and windows in cabins and cockpits of aircraft.

2. APPLICABLE DOCUMENTS

2.1 Government documents

2.1.1 Specifications and standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation. (see 6.2).

SPECIFICATION

FEDERAL

L-P-390	Plastic, Molding Material, Polyethylene, Low and Medium Density
NN-P-530	Plywood, Flat Panel
QQ-A-250/4	Aluminum Alloy 2024, Plate and Sheet
TT-T-291	Thinner, Paint, Volatile Spirits (Petroleum Spirits)
UU-P-268	Paper; Kraft, Untreated, Wrapping
MMM-A-260	Adhesive, Water-resistant, (For Sealing Waterproofed Paper)
PPP-B-601	Boxes, Wood, Cleated-Plywood
PPP-B-621	Boxes, Wood, Nailed and Lock-Corner
PPP-B-636	Box, Fiberboard
PPP-B-1055	Barrier Material, Waterproofed Flexible
PPP-T-45	Tape, Gummed, Paper Reinforced & Plain, for Sealing & Securing

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: ASD/ENES Wright-Patterson AFB OH 45433-6503, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 9320

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

MIL-T-6841D

MILITARY

MIL-P-5425	Plastic Sheet, Acrylic, Heat Resistant
MIL-P-8184	Plastic Sheet, Acrylic, Modified
MIL-C-17564	Cloth, Holland
MIL-C-38736	Compound, Solvent, for Use in Integral Fuel Tanks
MIL-P-83310	Plastic Sheet, Polycarbonate, Transparent

STANDARD

MILITARY

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	Marking for Shipment and Storage

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM B 21 Rod Naval Brass, Bar and Shapes

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

UNIFORM CLASSIFICATION COMMITTEE

Uniform Freight Classification Rules

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

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulation unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Materials and construction. The tape and sheet shall consist of a granulated cork uniformly dispersed in a synthetic rubber compound which shall be calendered on print cloth and vulcanized to meet the detail requirements of this specification. The cloth backing shall be coated with a thin film of pressure-sensitive adhesive, over which shall be applied Holland cloth or polyethylene.

3.1.1 Cork. The tape and sheet shall consist of uniformly dispersed cork particles in a synthetic rubber binder. The cork content shall be not less than 20 nor more than 25 percent by weight of the tape or sheet and shall be free of hardback and adulterants. The cork particles shall all pass through a 20-mesh sieve with not more than 10 percent passing through a 40-mesh sieve.

3.1.2 Backing. The backing shall consist of print cloth weighing approximately 3 ounces per square yard and having a thread count of not less than 60 by 60 inch in the warp and filling.

3.1.3 Adhesive. The adhesive shall be pressure sensitive and may contain either synthetic or natural rubber or any combination thereof, but shall not contain reclaimed rubber.

3.1.4 Holland cloth. The Holland cloth shall conform to MIL-C-17564.

MIL-T-6841D

3.1.5 Polyethylene. The polyethylene shall conform to type I, grade 1, class M of L-P-390.

3.2 Data. Unless otherwise specified in the contract or order, no data are required by this specification or any of the documents referenced in section 2 (see 6.2).

3.3 Surface finish. The tape and sheet shall have a sanded finish and shall be as smooth as possible, consistent with the coarse character of the cork.

3.4 Size. Unless otherwise specified by the procuring activity, tape shall be in rolls of 100 \pm 2 feet in length, in thicknesses as specified in table I and widths shall be as specified in table II. Sheets sizes shall be as specified in table III and thickness as specified in table I.

TABLE I. Thickness and weight tape/sheet.

DASH	Thickness Inches +0.020 -0.000	Weight lb/sq. yd \pm 10 percent
1	.031 (1/32)	1-1/2
2	.062 (1/16)	2-1/2
3	.094 (3/32)	3-1/2
4	.125 (1/8)	4-1/4

TABLE II. Width tape

DASH	Inches \pm .031 (1/32)
01	.250 (1/4)
02	.500 (1/2)
03	.750 (3/4)
04	1.000 (1)
05	1.250 (1-1/4)
06	1.500 (1-1/2)
07	2.000 (2)
08	2.500 (2-1/2)

TABLE III. Sheet size.

DASH	Inches + .250 - 0.000
1S	24 X 24
2S	36 X 36

MIL-T-6841D**3.5 Weight**

3.5.1 As received. The as-received weight of the tape or sheet shall include the weight of the Holland cloth or polyethylene, and shall be as specified in table I, when tested as specified in 4.6.2.

3.5.2 After oven aging. The weight of the as-received sample as determined in 3.5.1 shall not vary by more than ± 10 percent after oven aging (see 4.4.2), when tested as specified in 4.6.2.

3.6 Physical properties. The physical properties shall conform to the requirements of table IV, based on tests made before removal of the Holland cloth or polyethylene (see 4.6.3 and 4.6.4).

TABLE IV. Physical properties.

Property	As received	After oven aging (see 4.3.2)
Compressibility (percent)	20-35	15-40
Recovery (percent) (min)	90	80
Low temperature resistance (percent) (min)	40	No requirement

3.7 Adhesive strength. The adhesive shall not transfer to the Holland cloth or polyethylene, nor reveal bare spots when unrolled. When applied to an aluminum alloy panel, as specified in 4.6.5, it shall be capable of supporting a weight of 3 pounds per inch of width for a period of at least 1 minute.

3.8 Accelerated crazing. The tape and sheet shall not contain ingredients that will cause MIL-P-8184 acrylic, MIL-P-5425 acrylic, or MIL-P-83310 polycarbonate plastic sheet to craze or crack when tested as specified in 4.6.6.

3.9 Identification of product. Each roll of tape shall be marked or tagged, and each sheet shall be marked in a permanent and legible manner with the information specified in 5.3.

3.10 Water vapor transmission rate. The average water vapor transmission rate (WVTR) of the tape, when tested as specified in 4.6.7 shall not exceed 4.0 gms./100 sq inch/24 hours.

3.11 Workmanship. The tape and sheet shall conform to the quality and grade of product established in this specification. Occurrence of defects shall not exceed the applicable quality levels.

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 their 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 that the supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a 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 accept defective material.

MIL-T-6841D

4.2 Classification of inspections. The inspection requirements specified herein are classified as quality conformance inspections (see 4.3).

4.3 Quality conformance inspection. Samples shall be labeled completely with information identifying the purpose of the sample, name of product, specification number, lot number, date of sampling and contract number.

4.3.1 Inspection

4.3.1.1 Inspection lot. A lot shall consist of all material manufactured in the same identifiable production period, by the same process under the same operating conditions, and submitted for acceptance by one supplier at one time.

4.3.1.2 Samples for quality conformance tests. The sample unit for each lot shall consist of 10 linear feet of tape, or 1 sheet. Two inch wide specimens shall be supplied for the water vapor transmission rate test. The inspection level for determining the sample size shall be S-1 of MIL-STD-105, except that not less than three sample units shall be randomly selected throughout the lot. The index level shall be 4.0 expressed in defects per 100 units. The lot size, for purpose of testing, shall be expressed in units of rolls or cut sheets, as applicable, of the specified width, length, and thickness.

4.3.2 Examination of component materials. In addition to conformance with quality assurance provision of any subsidiary specification, component material shall be examined as specified in table V. In addition, the supplier shall furnish a certificate stating that the cork content and adhesive conform to the requirements of 3.1.1 and 3.1.3, respectively. There shall be no evidence of failure to meet the requirements as applicable.

TABLE V. Examination of component materials.

Component and characteristic	Reference requirement	Requirements applicable to individual unit	Number determinations per sample unit	Results reported as-		Sample unit	Sample size
				Pass or fail ¹	Numerically to nearest ²		
Cork					(composite)	1 lb	
20-mesh sieve	3.1.1		Average of 2 on composite.		0.1 percent		
40-mesh sieve	3.1.1		Average of 2 on composite.		0.1 percent		
Backing						2 ft	3
Weight/sq yd	3.1.2	X	Average of 2	X	0.1 oz/sq yd		
Wrap	3.1.2	X	Average of 5	X			
Filling	3.1.2	X	Average of 5	X			

¹ If failure is indicated, report description of failure.

² Test reports shall include all values on which results are based.

4.3.3 Examination of the end item. The tape and sheet shall be visually examined to determine conformance with the requirements of this specification with respect to appearance, workmanship, construction, and dimension. The lot size shall be expressed in units of rolls or sheets. Defects found during this examination shall be scored in accordance with 4.3.3.1 through 4.3.3.4.

MIL-T-6841D

4.3.3.1 Examination for defects in appearance and workmanship. For examination of defects of tape (rolls), the sample unit shall be 1 yard. For examination of sheets (Flat cut), the sample unit shall be 1 sheet. The index level for this examination shall be 1.5 defects per 100 units. The sample size shall be based on level I of MIL-STD-105. Both sides of the tape and sheet shall be examined and shall conform to the requirements of table VI.

TABLE VI. Defects in appearance and workmanship

Examine	Defect
Appearance	Any holes, tears, cuts, cracks, or sharp creases. Imbedded particles of dirt, grit, or other foreign matter.
Workmanship	Not clean cut, broken, uneven or sticky edges. Adhesive coating not evenly and smoothly applied over entire area of one side of backing. Any bare spots or lumps.

4.3.3.2 Examination for defects in construction. The sample unit for this examination shall be 1 roll or 1 sheet, as applicable. The index for this examination shall be 2.5 defects per 100 units. The sample size shall be based on level S-3 of MIL-STD-105 and shall conform to the requirements of table VII.

TABLE VII. Defects in construction

Examine	Defect
Construction of tape and sheet Wind of tape Unwinding of tape	Not as specified. Roll not evenly and neatly wound. Does not unroll evenly and uniformly. Backing breaks, delaminates or splits. Tape sticks together to the extent unrolling causes tearing or injury to surface or adhesive separate from backing. Roll not continuous.

4.3.3.3 Examination for dimensional defects. The sample unit for this examination shall be 1 roll or 1 sheet, as applicable. The index level for this examination shall be 2.5 defects per 100 units. The sample size shall be based on level S-2 of MIL-STD-105 and shall conform to the requirements of table VIII.

MIL-T-6841DTABLE VIII. Defects in dimensions

Examine	Defect
Tape width	Various by more than the plus or minus tolerances specified in table I. Varies by more than $\pm 1/8$ inch from size specified in 3.4. and width
Sheet width	

4.3.3.4 Examination for length per roll. The sample unit for this examination shall be 1 roll. The index level for this examination shall be 4.0 defects per 100 units. The sample size shall be based on level S-2 of MIL-STD-105. The length per roll shall not vary by more than the plus or minus tolerance from the length specified.

4.3.4 Examination of preparation for delivery. An examination shall be made to determine that packaging, packing, and markings comply with section 5 of this specification. The sample unit for this examination shall be one shipping container fully packed, selected just prior to the closing operations. Defects of closure listed herein shall be examined on shipping containers fully prepared for delivery. The lot size shall be the number of shipping containers in the end item inspection lots. The inspection level shall be S-2 and the index level shall be 4.0 defects of 100 units and shall conform to the requirements of table IX.

TABLE IX. Preparation for delivery

Examine	Defect
Packaging	Not the level specified; not in accordance with contract requirements. Packaging material not as specified, closures not accomplished by specified or required methods or materials. Not individually wrapped and sealed as specified. Paper interleaves omitted or not extending over full contact area between sheets. Not evenly or neatly stacked; stacks exceed 10 inches in height. Not level specified, not in accordance with contract requirements. Linear material (as applicable) omitted, damaged or not as specified. Container not as specified, closures not accomplished by specified or required methods or materials. Any nonconforming component; component missing, damaged or otherwise defective affecting serviceability. Inadequate application of components, such as incomplete closures of case liners, container flaps, loose or inadequate strapping, bulged or distorted containers.
Rolls	
Sheets	
Packing	
Weight	Gross or net weight exceeds specified requirements. Interior or exterior markings (as applicable) omitted, illegible, incorrect, incomplete, or not in accordance with contract requirements.
Markings	

MIL-T-6841D

4.4 Test conditions

4.4.1 Atmospheric. Unless otherwise specified for the particular test, all tests shall be accomplished under standard atmospheric conditions of 50 ± 2 percent relative humidity at a temperature of $23 \pm 1^\circ\text{C}$ ($73^\circ \pm 2^\circ\text{F}$). Samples shall be exposed to these conditions for at least 2 hours before testing.

4.4.2 Oven aging. Oven aging specimens shall be given an accelerated aging by subjecting them to dry circulating air for 70 ± 1 hours at $100^\circ \pm 1^\circ\text{C}$ ($212^\circ \pm 2^\circ\text{F}$).

4.5 Quality conformance. Quality conformance tests for acceptance of individual lots shall consist of tests for all requirements specified in section 3 as listed in table X.

TABLE X. Quality conformance tests.

Characteristic	Reference		Requirements applicable to individual units	Number of determinations per sample unit	Results reported as—	
	Requirement	Test Method			Pass or fail ¹	Numerically nearest ²
Thickness	3.4 & table I	4.6.1	X	Average of 5		0.001 inch
Weight	3.5.1 & table I	4.6.2	X	Average of 3		0.05 lb
Compressibility	Table IV	4.6.3	X	Average of 2		Percent
Recovery	Table IV	4.6.3	X	Average of 2		Percent
Low Temperature resistance	Table IV	4.6.4	X	Average of 3		Percent
Adhesive strength	3.7	4.6.5	X	3	X	
Accelerated crazing	3.8	4.6.6	X	2	X	

¹ If failure is indicated, report either description of failure or numerical point of failure, as applicable.

² All test reports shall include all values on which average or unit results are based.

4.6 Test methods

4.6.1 Thickness. The thickness of samples shall be measured in not less than five areas and the average thickness computed from the results of the individual determinations. The gages employed shall have flat, parallel bearing surfaces $0.250+0.010$, -0.000 inch in diameter at both contact areas, and the pressure exerted shall be 1/4 pound. The accuracy of measurement shall be 0.001 inch.

4.6.2 Weight. A specimen approximately 12 inches in length shall be cut from the sample. The width and length of the specimen shall be determined to the nearest 0.01 inch, and the weight determined with a balance to an accuracy of 1 percent. The weight per square yard shall be calculated from the test results.

4.6.3 Compressibility and recovery. Specimens 1 inch in diameter shall be cut and plied up to at least 1/4 inch in thickness. The pieces shall be arranged in a single stack with edges even. The thickness of the combined samples shall be measured under an initial load 1 pound per sq. inch (psi), applied for 15 seconds. The stacked specimens shall be compressed under a load of 78.5 pounds for 5 minutes and the amount of compression recorded. The pressure shall be released for 5 minutes and another measurement made under a 1-pound load per square inch. The percent of compressibility and percent of recovery shall be calculated by the following formulas:

MIL-T-6841D

$$\text{Percent compressibility} = \frac{\text{Actual amount of compression in inches} \times 100}{\text{Original thickness}} \quad (1)$$

$$\text{Percent thickness of original after recovery} = \frac{\text{Thickness after 5 minutes} \times 100}{\text{Original thickness}} \quad (2)$$

$$\text{Formula to determine percent recovery: Percent recovery} = 100 \frac{t_r - t_c}{t_0 - t_c} \quad (3)$$

Where: t_0 = original thickness
 t_c = compressed thickness
 t_r = recovered thickness

The apparatus for tests shall consist of a small static load press, the platform and the presser foot of which shall be large enough to completely cover the sample under test. The moving head of the apparatus shall be equipped with suitable means for measuring thickness under the different compressions.

4.6.4 Low temperature resistance. Using a suitable testing machine, the load to compress a single layer specimen 25 percent shall be determined at $21^\circ \pm 3^\circ\text{C}$ ($70^\circ \pm 5^\circ\text{F}$). At least four equal weights shall be added at 1 minute ± 2 second intervals until at least 25 percent compression is obtained. The test shall be run in triplicate and results averaged. A single layer specimen shall be conditioned in cold chamber for 5 hours at $-40^\circ \pm 1^\circ\text{C}$ ($-40^\circ \pm 2^\circ\text{F}$). At the end of the conditioning period, the load which compressed the material 25 percent at room temperature shall be applied to the specimen in the cold chamber and the amount of compression recorded. At least four equal weights shall also comprise the load and the weights added at 1 minute ± 2 second intervals. This test shall be conducted in triplicate and results averaged. Low temperature resistance in percent shall be calculated as follows:

$$\text{Low temperature resistance (percent)} = \frac{\text{Percent compression at } -40^\circ \pm 1^\circ\text{C} \text{ (} -40^\circ \pm 2^\circ\text{F) under load produced 25 percent compression at } 21^\circ \pm 3^\circ\text{C} \text{ (} 70^\circ \pm 5^\circ\text{F) x 100}{25} \quad (4)$$

4.6.5 Adhesive strength. A test specimen 1 inch wide by 3 inches long shall be aged at $70^\circ \pm 1^\circ\text{C}$ ($158^\circ \pm 2^\circ\text{F}$) for 7 days in a circulating hot air oven. The specimens shall be allowed to rest 24 hours after removal from the oven before testing. A highly polished aluminum alloy panel conforming to QQ-A-250/4 (2024) shall be cleaned before the test by wiping with a cotton cloth soaked in cleaner conforming to MIL-C-38736 followed by wiping with a methyl alcohol soaked cloth. The panel shall be allowed to dry thoroughly before applying the test specimen. The Holland cloth or polyethylene shall be removed from the test specimen immediately before applying the tape or sheet to the polished panel. The tape and sheet shall be so applied that 2 inches are in contact with the panel allowing an overhang of 1 inch. The specimen shall be pressed on a panel by rolling a 5 pound weight over the tape and sheet once in each direction. Care should be taken that the 1 inch overhang is not pressed to the supporting surface. After the specimen is applied to the panel, the panel shall be supported in a vertical position and a 3 pound weight suspended from the 1 inch overhang of the tape and sheet by means of a suitable clip, so that the weight is supported by the adhesive acting in shear. The weight shall be applied gradually so that the tape and sheet are not subject to impact loading. The test shall be run in triplicate.

4.6.6 Accelerated crazing. Crazing shall be tested against MIL-P-8184 acrylic, MIL-P-5425 acrylic, and MIL-P-83310 polycarbonate. Two adjoining specimens, each 1 by 7 inches, shall be cut from the sheet of plastic to be tested and shall be cleaned with aliphatic naphtha or any other suitable cleaner. The pieces shall be set up as cantilever beams as shown on figure 1, in a circulating air oven maintained at a temperature of $43^\circ \pm 1^\circ\text{C}$ ($110^\circ \pm 2^\circ\text{F}$) for 24 hours. The beams shall be loaded to produce an outer fiber tensile stress of 2000 psi at the support. The adhesive surface of 1- by 2-inch specimen, with the Holland cloth or polyethylene

MIL-T-6841D

removed, shall be placed in intimate contact with one of the beams directly over the support. The specimen shall be held in form contact with the surface of the plastic by applying a small load (3 ounce shot bag) on top of the specimen. The other beam under a similar stress without test specimen shall be employed as control. The examination for crazing shall be made while the plastic is under stress at the end of the 24 hour test period. Stresses shall be calculated from the following beam formula, based on the 2:4 beam ratio:

$$F = \frac{24L}{WT^2} \quad (5)$$

L= Load in pounds (applied at free end of beam—4 inches from support)
W=Width of plastic in inches
T=Thickness of plastic in inches
F=Maximum outer fiber tensile stress directly over support

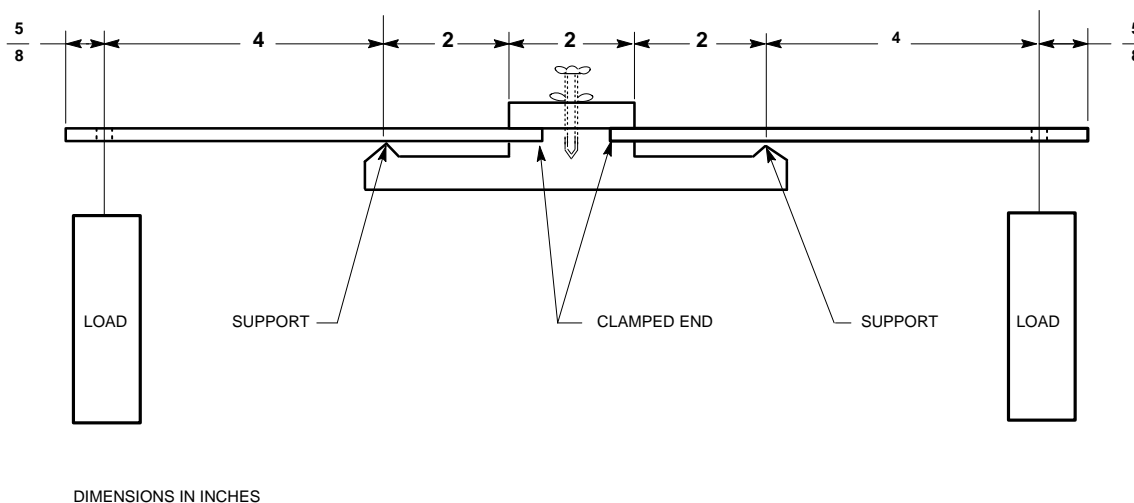


Figure 1. Diagrammatic sketch—head of crazing test apparatus with plastic strips in place.

4.6.7 Water vapor transmission rate (WVTR).

4.6.7.1 Apparatus.

4.6.7.1.1 Humidity cabinet. The humidity cabinet to be used in this test is standard equipment known as the General Foods moisture vapor transmission cabinet, or equivalent. It shall provide a relative humidity of 90 to 95 percent at a temperature of $38^{\circ} \pm 1^{\circ} \text{C}$ ($100^{\circ} \pm 2^{\circ} \text{F}$) with no condensation on the test dishes or in the space in which the test dishes are placed. The circulation over the test dishes shall be negligible.

4.6.7.1.2 Test dishes. The test dishes shall be flat, rigid, flanged rectangular cups formed of brass conforming to ASTM B21 (approximately 24 gage) and shall have the dimensions shown below:

Flange: Outside dimensions: 6 by 2 inches
Inside dimensions (opening): 4 by 1 inch

Body: Inside dimensions: 4 by 1 by 1-1/2 inches deep

The weight of the test dishes shall not exceed 100 grams.

MIL-T-6841D

4.6.7.1.3 Device for application of tape. The device for application of the tape for test purposes shall consist of a horizontally mounted, free turning, rubber-coated roller with the following dimensions:

Total weight	4.55	±0.1	pounds
Width	2.5	±0.1	inches
Diameter	3.25	±0.1	inches

The roller shall be faced with 1/4 inch of rubber with a Shore Durometer hardness of 75 ±5. The roller shall be propelled lengthwise back and forth over the tape in such a manner that only the weight of the roller rests on the tape, and at the rate of 12 inches per minute. The device can be either manually or mechanically operated. The adhesive side of the tape shall not be touched during application. For referee purposes, the device shall be mechanically operated.

4.6.7.2 Procedure. The flanged surface shall be polished lengthwise with 240 or 280 grit dry silicon carbide or aluminum oxide cloth or paper, and cleaned with solvent conforming to TT-T-291, grade 1. Approximately 25 grams of dry 8-mesh calcium chloride in a nonwoven porous cloth bag, or equivalent, shall be weighted to the third decimal place and inserted into the test cup. The bag of calcium chloride should be weighted in a closed container. The cup shall be positioned in a jig to support the flange, and a tape specimen 2 inches wide and longer than the test dish shall be rapidly and lightly applied. The tape shall then be trimmed to the edge of the dish. Final application shall be accomplished by rolling the tape application device once back and forth over the tape in the lengthwise direction. The assembly shall be placed for 15 minutes in a desiccator at standard temperature, and then removed from the desiccator and placed in the humidity cabinet. After 72 hours it shall be removed from the humidity cabinet and placed for 15 minutes in a desiccator at standard temperature. The cloth bag of calcium chloride shall then be removed from the assembly, immediately placed in the weighing container and weighted on analytical balance.

4.6.7.3 Calculation (WVTR) The water vapor transmission shall be report in grams of water vapor transmitted per 100 sq inches of tape area for 24 hours, and still be calculated as follows:

$$\text{Water vapor transmission rate (WVTR)} = \frac{(W_2 - W_1) \times 2400}{T \times A}$$

Where: W_1 = weight (in grams) before exposure period
 W_2 = weight (in grams) after exposure period
 T = exposure period (in hours)
 A = area (in sq inches) of opening in dish (normally 4 sq inches)

A minimum of three tests shall be made and the average of all tests on a sample shall be reported.

5. PACKAGING

5.1 Preservation and packing. Preservation and packing shall be level A, or C as specified (See 6.2).

5.1.1 Level A.

5.1.1.1 Tape. Unless otherwise specified, the tape shall be wound in rolls (see 3.4). Each roll shall be wrapped in heavy kraft paper conforming to UU-P-268, and sealed with paper tape conforming to PPP-T-45.

5.1.1.2 Sheets. Unless otherwise specified, sheet shall be interleaved with any suitable paper extending over the full area of contact between sheets. The sheets shall not exceed 10 inches in height when stacked.

5.1.2 Level C. Tape and sheet shall be preserved and packaged to afford protection against deterioration and damage.

5.1.3 The tape and sheet shall be not more than three quarters of a year old from date of manufacture to date of delivery for use in military aircraft or equipment.

MIL-T-6841D

5.2 Packing. Packing shall be level A, B, or C, as specified (see 6.2). Shipping containers, insofar as possible, shall contain the same number of rolls or sheets and shall be designed to enclose the contents in a snug, tight-fitting manner. The gross weight of the shipping container when packed for shipment shall not exceed approximately 200 pounds. The gross weight of fiberboard boxes, if used, shall be subjected to the weight limitation of the box specification.

5.2.1 Level A. Unless otherwise specified, for overseas packing the rolls of tape and sheet shall be packed in shipping containers conforming to PPP-B-601, overseas type, or PPP-B-621 class 2, any style. Plywood, when used, shall be type II, class 2 conforming to NN-P-530. A sealed waterproof liner shall be used in each shipping container. The liner material shall conform to PPP-B-1055. All seams and closures shall be sealed with adhesive conforming to MMM-A-260.

5.2.2 Level B. Tape and sheet shall be packed in suitable containers conforming to PPP-B-636, class domestic, RSC.

5.2.3 Level C. Tape and sheet shall be packed in a manner to ensure carrier acceptance and safe delivery at the lowest transportation cost to destination. Containers shall be in accordance with Uniform Freight Classification Rules or other carrier regulations applicable to the mode of transportation.

5.3 Marking of shipments. In addition to any special marking required by the contract or order, unit packages, intermediate package and shipping containers shall be marked in accordance with MIL-STD-129. The date of manufacture shall be marked by quarter and year (example 3Q91). The PIN number shall also be marked.

6. NOTES

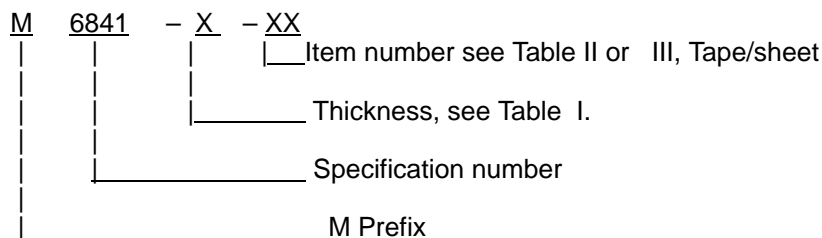
(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The tape and sheet are intended for use as a seal and packing for the installation of glass or acrylic plastic windshields, panels and windows in cabins and cockpit of aircraft.

6.2 Acquisition requirements. Acquisition requirements documents should specify:

- a. Title, number, and date of this specification
- b. Issue of DoDISS to be cited in the solicitation and, if required, the specific issue fo the individual documents referenced (see 2.1 and 2.2)
- c. Data requirements (see 3.2)
- d. Width, thickness, and number of rolls or sheet (see 3.4)
- e. Part or identification number (PIN)
- f. Level of preservation, packaging, and packing required (see 5.1).
- g. Special markings, if required (see 5.3)

6.3 Part or identifying number (PIN). The PIN to be used for tape and sheet acquired to this specification are created as follows:



MIL-T-6841D

6.4 Subject term (key word) listing

Adhesive tape
Cork
Holland cloth
Polyethylene
Rubber
Windshield seal

6.5 Change from previous issue. Marginal notations not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:

Army – MR
Navy – AS
Air Force – II

Preparing activity:

Air Force – II
(Project 9320–1096)

Review activities:

Army – MR
Navy – AS
Air Force – 85, 99
DLA – GS, CS

User activities:

Army – AV
Navy – SH
Air Force – 84