

MIL-T-60394A(MU)
28 July 1967
SUPERSEDING
MIL-T-60394(MU)
30 September 1966

MILITARY SPECIFICATION

TAPE, PRESSURE-SENSITIVE ADHESIVE FILM
FOAM, DOUBLE-COATED
(FOR USE WITH AMMUNITION)

1. SCOPE

1.1 This specification covers a non-rigid foam coated on both sides with a pressure-sensitive adhesive that is suitable for adhering two similar or dissimilar materials together. (see 6.5).

2. APPLICABLE DOCUMENTS

2.1 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

FEDERAL

L-P-377 - Plastic Sheet and Strip, Polyester
PPP-T-680 - Tape, Pressure-Sensitive Adhesive
Packaging & Packing of

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for
Inspection by Attributes (ABC-STD-105)
MIL-STD-109 - Quality Assurance Terms and Definitions
MIL-STD-414 - Sampling Procedures and Tables for
Inspection by Variables for Percent
Defective
MIL-STD-650 - Explosive Sampling, Inspection and Testing
MIL-STD-1168 - Lot Numbering of Ammunition
MIL-STD-1235 - Single and Multilevel Continuous Sampling
Procedures and Tables for Inspection by
Attributes

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FEDERAL

Federal Test Method STD-101 - Preservation Packaging
and Packing Material
Test Procedures.

Federal Test Method STD-147 - Gum and Pressure-Sensitive
Tapes, Methods of Testing

(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.)

3. REQUIREMENTS

3.1 Construction.-The tape shall consist of a high density, open cell foam plastic backing, coated on both sides with a homogeneous, pressure-sensitive adhesive, applied in a smooth uniform layer throughout the length of the tape. The finished tape shall require no solvent, heat or other preparation prior to or after application to clean dry surfaces above freezing.

3.1.1 Rolls.-The tape shall be wound in rolls, on cores of sufficient rigidity to prevent roll distortion under shipping, handling and use conditions. The inside diameter of the core shall be 3, plus 1/16 inch (no minus tolerance allowed. (see 4.4.7)).

3.1.2 Liner.-Each roll of tape shall be provided with a suitable release coated liner, interleaved throughout the tape roll length so as to prevent the adherence of adjacent tape layers to each other.

3.2 Physical properties.-The test values for the tape shall comply with the requirements of Table I.

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TABLE I

| Property | Minimum (min.) | Maximum (max.) | Test Paragraph |
|--------------------------------------------------------|-------------------|-------------------|----------------|
| "Normal" tensile-pounds per square inch (psi) | 15 | -- | 4.4.1 |
| "Normal" tensile (aged) (psi) | 9 | -- | 4.4.1 |
| Caliper (w/o liner) inches | 0.021 | 0.045 | 4.4.2 |
| Peel Adhesion (unaged) inch width/oz. | 45 | | 4.4.3 |
| Liner Removal: | | | |
| Unaged oz./in. | -- | 4.0 | 4.4.4 |
| Aged oz./in. | -- | 4.0 | 4.4.4 |
| Holding Power: | | | |
| Unaged (minutes) | 2,000 | -- | 4.4.5 |
| Aged (minutes) | 2,000 | -- | 4.4.5 |
| Compatibility (Reactivity) milliliters (see para. 6.3) | -- | 5 | 4.4.6 |

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 order. A tolerance of plus or minus 1/16 inch shall be allowed unless otherwise specified in the contract or by the procuring agency.

3.4 Cold bend at 10 plus or minus 2 degrees Fahrenheit.-The tape shall show no signs of cracking when exposed to the cold bending under conditions specified in 4.4.8.

3.5 Holding Power on Polyester (Applicable to M12 Demolition Charge only).-The tape shall pass the holding power requirement of Table I when tested as specified in 4.4.5.3.

3.6 Bleeding of tape.-The tape shall show no evidences of bleeding when tested as specified in 4.4.9.

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3.7 Adhesive strength.-The adhesive strength of the tape shall meet the requirements of 3.7.1 and 3.7.2.

3.7.1 Adhesive strength of tape with adhesive of Specification MIL-A-60091 (initial).-When tested as specified in 4.4.10.1 and 4.4.10.3, the adhesive bond between the foam tape faced metal plates shall not fail for a period of 24 hours. Specimens of each of the above shall be tested in each of the following conditions:

- (a) immersed in (salt) water (see 4.4.10.1)
- (b) at low temperature (-40 degrees F.) (see 4.4.10.3)

Compliance shall be determined visually, and if satisfactory (steel plate remain attached to various panels) for 24 hours, each assembly shall be kept undisturbed for immediate use as test specimens for determining (final) adhesive strength required by 3.7.2 and tested as given in that paragraph.

3.7.2 Adhesive strength (final).-Provided the specimens of 3.7.1 have met the requirements of that paragraph when tested as specified therein, they shall be tested for final adhesive strength in each of the conditions given in 3.7.1 as provided for in 4.4.10.2 and 4.4.10.4. The adhesive bond of each specimen shall withstand a shearing load of 5, plus or minus 0.10 pounds evenly distributed, for a period of 60 seconds, applied immediately following the 24-hour tests of 3.7.1 and while maintained at the same conditions as given in that paragraph.

3.8 Length.-Unless otherwise specified in the contract or order, the tape shall be furnished in 72 or 216 yard rolls. Each roll shall consist of a single length of the tape except that any single 72 yard roll may contain not more than 6 splices (seven pieces), and any single 216 yard roll may not contain more than 12 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 machine or hand application.

3.9 Workmanship.-The adhesive film shall be smooth and uniform on both sides of the foam and shall have one surface covered with the protective liner. There shall be no lumps or foreign material in the adhesive film. The edges of the film and liner shall coincide and shall be straight true and unbroken, and shall not contain wrinkles, creases, holes or similar defects.

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4. QUALITY ASSURANCE PROVISIONS

4.1 General quality assurance provisions.-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, the supplier may utilize his own facilities or any commercial laboratory acceptable to 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. Reference shall be made to Standard MIL-STD-109 in order to define terms used herein.

4.1.1 Contractor quality assurance system.-If the contractor desires to utilize a quality assurance system, which is at variance with the quality assurance provisions of 4.3 and 4.4 and other documents referenced herein, he shall submit a written description of the system to the contracting officer for approval prior to initiation of production. It shall include a description covering controls for lot formation and identification, inspections to be performed, inspection stations, sampling procedures, methods of inspection (measuring and testing equipment), and provisions for control and disposition of non-conforming material. The written description will be considered acceptable when, as a minimum, it provides the quality assurance provisions required by the provisions of 4.3 and 4.4 and the other documents referenced herein. The contractor shall not be restricted to the inspection station or the method of inspection listed in this specification provided that an equivalent control is included in the approved quality assurance procedure. In cases of dispute as to whether certain procedures of the contractor's system provide equal assurance, the comparable procedure of this specification shall apply. The contractor shall notify the Government of, and obtain approval for, any changes to the written procedure that effects the degree of assurance required by this specification or other documents referenced herein.

4.1.2 Submission of product.-At the time the completed lot of product is submitted to the Government for acceptance, the contractor shall supply the following information accompanied by

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a certificate which attests that the information provided is correct and applicable to the product submitted:

- a. A statement that the lot complies with all quality assurance provisions of the approved current written description of the system.
- b. Quantity of product inspected.
- c. Results obtained for all inspection performed.
- d. Specification number and date, together with an identification and date of changes.
- e. Certificates of analysis on all material procured directly by the contractor, when such material is covered by referenced Government specification.
- f. Quantity of product in the lot.
- g. Date submitted.

The certificate shall be signed by a responsible agent of the certifying organization. The initial certificate submitted shall be substantiated by evidence of the agent's authority to bind his principal. Substantiation of the agent's authority will not be required with subsequent certificates unless, during the course of the contract, this authority is vested in another agent of the certifying organization.

4.1.3 Government verification.-Using the contractor's written quality assurance procedure (see 4.1.1), this detail specification, and other contractual documents as a guide, the Government inspector shall verify all quality assurance operations performed by the contractor. Verification shall be in accordance with a or b as applicable, the decision being the responsibility of the procuring activity. In either case, the inspector shall also ascertain, prior to acceptance, that all quality assurance provisions of other specifications referenced in any of the contractual documents have been complied with. Deviations from prescribed or agreed upon procedures discovered by the Government Inspector shall be brought to the attention of the supplier. Disposition of the product and remedial action shall be as directed by the Government inspector and, depending on the nature of the deviation, may consist of lot rejection, screening, re-sampling, re-instruction of the supplier's employees, or other appropriate action.

- a. Verification at the point of manufacture shall be accomplished at unscheduled intervals in accordance with 4.1.3.1 and 4.1.3.2.
- b. Verification at the point of delivery shall be in accordance with 4.1.3.2.

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4.1.3.1 Surveillance.-Surveillance shall include, but is not limited to:

- a. Observation of procedures concerning lot formation and identification.
- b. Observation of sampling procedures and application of acceptance criteria.
- c. Determination that all required examinations and tests are performed in accordance with the prescribed procedures of this specification, or of approved equivalents thereto.
- d. Review of procedures for control and disposition of non-conforming material.

4.1.3.2 Product inspection.-Product inspection shall consist of Government inspection of product which has been previously inspected by the contractor and found to meet the quality assurance provisions of this specification. The inspection by the Government shall be performed in order to determine that the product is of the quality required by this specification and that the contractor's records are reliable.

4.2 Inspection provisions

4.2.1 Lot formation.-The term "lot" as used throughout this specification refers to an inspection lot, which is defined as an essentially homogeneous collection of units of product from which a representative sample is drawn and inspected to determine conformance of the lot with applicable requirements. The sample selected shall represent only that quantity of units from which the sample was drawn and shall not be construed to represent any prior or subsequent quantities presented for inspection. Homogeneity shall be considered to exist provided the lot has been produced by one manufacturer, in one unchanged process, in accordance with the same drawing, same drawing revision, same specification and same specification revision. Changes to the process, specification, or drawing not affecting safety, performance, interchangeability, or storage, as determined by the Government, shall not be deemed to alter the homogeneity of the lot. Inspection lots shall comply with MIL-STD-105 and shall be numbered in accordance with MIL-STD-1168. Unless otherwise approved by the contracting officer, the inspection lot size of end items deliverable under the contract shall be not less than the smallest weekly estimate of quantities contractually scheduled for production during the contract period nor more than the largest

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monthly quantity contractually scheduled for delivery during the contract period. Inspection lots for components or subassemblies, other than the items of delivery, shall be homogeneous and of a size mutually convenient to both the contractor and the Government inspector.

4.3 End item examination.-

4.3.1 Sampling.-

4.3.1.1 Lot size.-The lot size, for the purpose of determining the sample size in accordance with MIL-STD-105, shall be expressed in units of rolls and shall consist of all material presented for examination at one time.

4.3.1.2 Inspection levels and acceptance quality (AQL's) for examination.-The inspection levels for determining the sample size and the acceptance levels (AQL's) expressed in defects per 100 units, shall be as follows:

| <u>Examination Paragraph</u> | <u>Inspection Levels</u> | <u>AQL</u> |
|------------------------------|--------------------------|------------|
| 4.3.2.1 | I | 4.0 |
| 4.3.2.2 | S-3 | 4.0 |
| 4.3.2.3 | S-3 | 4.0 |
| 4.3.2.4 | S-3 As in PPP-T-680 | |

NOTE: The same rolls of tape shall be used for examination under paragraphs 4.3.2.1 and 4.3.2.2. The yardage used for examination under 4.3.2.3 shall be from within rolls randomly selected under 4.3.2.1. The shipping containers from which rolls are selected shall initially be utilized for inspection under 4.3.2.4.

4.3.2 Examination of the end item.-The end item shall be examined in accordance with the classification of defects, inspection levels, and acceptance levels (AQL's) set forth in this section when sampled from the shipment. No more than two rolls, randomly selected, shall be drawn from any one shipping container from each lot of material.

4.3.2.1 Examination of the end item for defects in appearance and workmanship.-The sample unit for this examination shall be one (1) yard.

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| Categories | Defects | Method of Inspection | Code No. (see 6.2) |
|------------|---------|----------------------|--------------------|
|------------|---------|----------------------|--------------------|

Critical: None defined.

| Categories | Defects | Method of Inspection | Code No. (see 6.2) |
|------------|------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Major: | AQL 4.00 percent | | |
| 101. | Tape does not consist of the specified backing (if one is specified).....Visual | Visual | 01001 |
| 102. | Not coated as specified.....Visual | Visual | 01002 |
| 103. | Holes, tears, cuts, cracks or creases, not clean cut, broken uneven or sticky edges.Visual | Visual | 01003 |
| 104. | Adhesive coat not evenly and smoothly applied over the entire area of both sides of the backing.....Visual | Visual | 01004 |
| 105. | Any bare spots or lumps.....Visual | Visual | 01005 |
| 106. | Liner and foam edges do not coincide.....Visual | Visual | 01006 |

4.3.2.2 Examination of end item for defects in construction.-
 e sample unit for this examination shall be one roll.

| Categories | Defects | Method of Inspection | Code No. |
|------------|---------|----------------------|----------|
|------------|---------|----------------------|----------|

| Categories | Defects | Method of Inspection | Code No. |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------|
| Major: | AQL 4.00 percent | | |
| 101. | Rolls not evenly and uniformly wound; not wound on either paper fiber or plastic core; core not same width as tape....Visual | Visual | 02001 |
| 102. | Core crushed, broken, mutilated or collapsed.....Visual | Visual | 02002 |
| 103. | Liner not present, liner not easily removed.....Visual | Visual | 02003 |
| 104. | Adhesive transfers to liner....Visual | Visual | 02004 |
| 105. | Tape wound evenly causing wrinkles or creases within the roll.....Visual | Visual | 02005 |
| 106. | When unwound, tape sticks together to the extent that unrolling causes tearing or injury to the surface of the backing: adhesive separates from the backing.....Visual | Visual | 02006 |
| 107. | More than allowable number of splices per roll; splices separate on unwinding.....Visual | Visual | 02007 |

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4.3.2.3 Examination of the end item for dimensional defects.-
The sample unit for this examination shall be one roll.

| Categories | Defects | Method of Inspection | Code No. |
|------------|---------------------------------------------------------------------------------------------------------------|----------------------|----------|
| Major: | AQL 4.00 percent | | |
| 101. | Varies from specified width more than allowable specified tolerance..... | Visual | 03001 |
| 102. | Inside diameter of cores less than 3 inches or more than 3-1/16 inches; or not other specified dimension..... | Visual | 03002 |

4.3.2.4 Examination of the end product for defects in packaging, packing, and markings.-An examination shall be made to determine that packaging, packing, and markings as required by Section 5 of this specification are complied with. The sample unit for this examination shall be one shipping container. Classification of defects shall be in accordance with PPP-T-680.

4.3.3 End item testing.-

4.3.3.1 Lot.-The lot size, for the purpose of determining the number of sample units for testing shall be expressed in terms of 100 square yard and shall consist of all tape of the same type, class and color manufactured by the same process, from the same components at one time at one plant by one manufacturer, under the same conditions within a biweekly period, maximum size shall be 10,000-100 square yard units.

4.3.3.2 Sample unit.-The sample unit as referenced herein, is defined as the amount of tape required to perform all of the tests required one time. Only one test specimen shall be selected from each sample unit for each test. A sample unit shall consist of two one-inch or wider rolls of tape randomly selected from each lot presented for examination.

4.3.3.3 In the event that the inspection lot does not contain rolls of tape of the width required for test sample, the manufacturer shall supply tape of the required widths to be used as test samples.

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NOTE: This additional tape shall be taken from the same manufacturing lot(s) as the tape undergoing inspection.

4.3.3.4 Sampling for tests.-Samples shall be selected in accordance with MIL-STD-414 with inspection level I and acceptable quality level of 4.0.

4.3.3.5 Conditioning.-The tape shall be conditioned for testing for not less than 24 hours in an atmosphere of 73 degrees plus or minus 3.5 degrees F. and 50 plus or minus 2 percent relative humidity (standard conditions), and shall be tested under these conditions. One roll from each sample unit shall be conditioned at 150 degrees plus or minus 2 degrees F. (66 degrees plus or minus 1 degree c) for 10 days (240 hours) in a dry heat oven. This roll shall be cooled at standard conditions for a minimum of two hours prior to testing it, as the aged tape, at standard conditions.

4.3.3.6 Specimens.-The first three plies of tape shall be removed from the rolls before taking specimens for testing.

4.4 Test methods and procedures

4.4.1 "Normal" tensile.-Code No. 04001. MAJOR DEFECT.

4.1.1 Equipment.-The apparatus shall consist of:

a. Tensile machine of a pendulum type such as Model 37-4 Thwing-Albert or equivalent. Range of 100 pounds, jaw separation rate 12 inches per minute, initial jaw separation rate 12 inches per minute, initial jaw separation of 6 inches.

b. Suitable hangers for mounting special "T" blocks in jaws for tensile tester.

c. "T" section blocks made of aluminum with the following dimensions: 1 1/4 inch long, 1" x 1" square base, 1/4" T thickness, with 5/16" hole; countersunk on 2 sides, center line 1/4" from top.

d. Methyl ethyl ketone (MEK) in a metal container of sufficient size to allow total submersion of the "T" blocks.

4.4.1.2 Specimen.-The foam shall be cut to dimensions slightly larger than 1 square inch.

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4.4.1.3 Procedure.-The "T" blocks shall be cleaned by immersing in the MEK for 10 minutes and then removed and wiped dry with surgical gauze. The test specimen shall be placed, liner side down, on a flat horizontal surface. The one inch square face of the "T" block shall be contacted with the exposed adhesive surface of the specimen and pressed together. Using a razor or safety knife, the specimen shall be cut around the block so as to make the liner side of the specimen the exact dimensions of the block. The liner shall be removed and the "T" block placed on its side with the "T" section vertical. The other "T" block shall be placed against the exposed adhesive taking care that the two faces are in perfect alignment. The first mating is the only one possible as once together the two blocks cannot be separated without damaging the specimen. If the first mating is not perfect, discard the specimen and repeat the above steps. A hanger shall be placed through the holes in the blocks and hung by the upper hanger in the upper jaw, taking care that the lower hanger is vertically aligned with the upper. The tensile machine shall be started and the tensile value at the moment there is a cleavage (see 6.4) in the foam shall be noted. The machine shall be returned to its starting position removing the blocks and hangers. The bulk of the foam from the blocks shall be removed and placed in MEK.

4.4.2 Caliper (thickness of double-coated pressure-sensitive foam) - Code No. 05001. (Minor defect)

4.4.2.1 Equipment.-A thickness gauge with the following specifications shall be used: pressure foot of inch in diameter dead weight loading to give 0.15 to 0.20 psi with no specimen, dial graduated to read to 0.0005 inches, base anvil at least inch in diameter, and parallelism between pressure foot and base anvil within 0.0002 inches over the 1 inch diameter.

4.4.2.2 Specimen.-A specimen one inch wide by six inches long shall be used.

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4.4.2.3 Procedure.-It shall be made sure that the indicator reads zero with pressure foot on the base anvil. The liner shall then be removed. The specimen shall then be inserted between the raised pressure foot and the anvil. The pressure foot shall then be gently lowered into the specimen. The gauge dial shall be read to the nearest 0.0005 inches when no further change in reading is observed. Three readings on each specimen shall be taken at different locations. The average of three values shall be reported.

4.4.3 Peel adhesion - Code No. 06001. (Major Defect)

4.4.3.1 Equipment.-Test panels and testing machine as described in Method 10 of Federal Test Method Standard 147 shall be used. Also a one inch wide 0.002 uncalendered super flexrope with a basic weight of 17-20 lbs./480 sheets 24" x 36", tensile 20 lb./in. min. shall be required.

4.4.3.2 Procedure.-The exposed adhesive side of the specimen shall be covered with the tissue. The liner shall be removed and the specimen placed on the test panel centered the long way of the panel. The specimen shall be rolled on the panel and then proceed as described in Method 10 of Federal Test Method Standard 147. The peel adhesion value shall be reported in Oz./in. width.

4.4.4 Liner removal, Code No. 07001. (Major Defect).-The liner removal of double coated pressure-sensitive foam for fresh and aged foam shall be determined as specified in Method 12 of Federal Test Method Standard 147.

4.4.5 Holding power, Code No. 08001. (Major Defect)

4.4.5.1 Equipment.-Test panel and stands used shall be as those specified in Federal Test Method Standard 147, Method 20, paragraph 3.1 and 3.4. An aluminum hanger with 150 grit finish on the face sides with the following dimensions: 2" length x 1/2" width with 5/16 drill with center of hole located 3/8" from end along length 1/4" from end along width.

4.4.5.2 Specimen.-A section of foam slightly larger than 1/2 x 1 inch.

4.4.5.3 Holding Power on Polyester. The tape shall be tested in accordance with paragraph 4.4.5.1, except that polyester sheets Type VI of Specification L-P-377 shall be bonded to a rigid surface.

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4.4.5.4 Procedure.-The test panel and hanger as described in Federal Test Method Standard 147, Method 10, paragraph 4.1 shall be used. The exposed adhesive surface of foam shall be applied to end of hanger opposite hole so as to cover one inch of the length at the end. The edges and end of tape shall be trimmed so as to keep the sides of the specimen perpendicular to the adhesive faces of the foam. Thus an applied specimen 1/2 inch wide x 1 inch in length will be left. The liner shall be removed and the specimen applied with the hanger to the steel test panel, taking care that the axis of the hanger is made parallel to the sides of the test panel, and that the edge nearest the hole in the hanger of the 1/2 by 1 inch specimen is placed at least 1/4 inch from the end of the test panel. The prepared specimen shall be layed in a horizontal plane and a weight applied equal to 1000 grams to the test area. The weight shall be allowed to dwell 15 plus or minus 1 minute. The weight shall be removed and the completed specimen shall be mounted in the stand in a vertical position. The 1000 gram weight shall be gently attached to the hanger and the weight allowed to act for a minimum of 2000 minutes.

4.4.6 Compatability-(Reactivity test)-Code No. 09001.-Major Defect.-The compatability test shall be performed as specified in Method No. 504.1 of Standard MIL-STD-650 (see 6.3). (This test does not apply to the M112 demolition charge.) The explosive shall conform to MIL-E-46676.

4.4.7 Core dimensions, Code No. 10001.-A suitable measuring instrument for measuring compliance with 3.1.1 shall be used.

4.4.8 Cold temperature bend at 10 degrees plus or minus 2 degrees F. Code No. 10001, Major Defect. The test specimen shall be a strip 1 plus or minus 1/16 inch wide by 7 inches long by 1/32 inch thick. The specimens and the mandrel (3/32 plus or minus 0.062 inches diameter) shall be conditioned at 10 degrees F. for two (2) hours in a liquid carbon dioxide cool chamber. The specimen and mandrel shall then be removed from the chamber. Then the specimen shall be grasped at the ends and rapidly bent around the mandrel and examined for signs of cracking.

4.4.9 Bleeding of Tape.- (Major Defect).-Code No. 11001.-The tape shall be tested in accordance with Procedure A of Method 140.1 of Federal Test Method Standard No. 101 except that the specimens shall be strips of tape 1 plus or minus 1/16 inches wide by 3 inches long.

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4.4.10 Adhesive Strength Determination of Tape

4.4.10.1 Adhesive strength of tape immersed in water. Ten (10) steel SAE 1020 Cold rolled panel 12 inches long by 4 inches wide by 0.035 inches thick shall be presoaked in tap water for 24 hours prior to being used in this test. Immediately prior to conducting the tests, each panel shall be removed from the soaking bath, rinsed with cool running tap water and the surfaces wiped gently with clean cloths to remove any slime or loose material that may have formed. The wiped panels shall then be immersed in a clean water bath having a salt (sodium chloride) content of approximately 2.5 percent, and maintained at 70 degrees plus or minus 5 degrees F. Each of the panel shall be positioned in the bath so that the 12 inch dimension is perpendicular to the bottom of the bath, firmly held in that position, and so that they are completely immersed under a head of water of 2 inches. A sufficient amount of the adhesive shall be in accordance with MIL-A-60091, applied individually to the perpendicular surface of one side of each panel while immersed, from unit collapsible tubes and spread to form a very thin even coating across the 4 inch dimension of each panel and at least 1 inch in width, this coating to be applied in the upper portion of the submerged panels. As each panel is treated, in turn, one of the 1 by 1 by 3/8 inch steel plates, previously having the foam tape applied to a surface shall have the tape liner removed and the tape adhesive surface placed against the immersed adhesive coated panel area and bonded together by pressing together firmly with the fingertips, and holding each together for approximately 10 seconds while immersed. The assemblies shall be so maintained for 24 hours. Failure of any assembly to maintain its bond during the 24-hour period shall be taken as evidence on noncompliance with the adhesive strength requirement and the lot represented shall be rejected.

4.4.10.2 Adhesive strength of tape immersed in water (final) After meeting the test requirements of 4.4.10.1 above, a 5, plus or minus 0.10 pound weight shall be gently attached to each of the immersed test assemblies, in such a manner that a downward shearing action of the adhesive bond is provided. All assemblies shall withstand the above load for 60 seconds while in the same immersed condition. Failure to do so shall be cause for rejection of the lot represented.

4.4.10.3 Adhesive strength (initial) at low temperatures. The test procedure of 4.4.10.1 shall be repeated using 10 additional panels and tape covered plates, except that the panels shall be coated with the adhesive, the assemblies bonded together and the 24-hour test performed at -40 degrees, plus or minus 5 degrees F., in a suitable low temperature room, cabinet, or chamber so maintained.

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4.4.10.4 Adhesive strength (final) at low temperature.- After meeting the requirements of 4.4.10.3, a 5, plus or minus 0.10 pound load shall be attached to each assembly as in 4.4.10.2 while the assemblies are maintained at -40 degrees, plus or minus 5 degrees F. The adhesive bonds shall withstand the above load for 60 seconds. Failure to do so shall be cause for rejection of the adhesive lot represented.

5. PREPARATION FOR DELIVERY

5.1 Packing, packaging and marking shall be in accordance with the requirements of specification PPP-T-680.

5.2 Marking.-In addition to any special marking required by Specification PPP-T-680, each roll of tape shall be marked in or at the edge of the core with the product identification, manufacturer's name, tape designation and the date of manufacture. (Full and coded).

6. NOTES

6.1 Ordering data.-Procurement documents should specify the following:

- a. Title, number and date of this specification.
- b. Length and width of the rolls.
- c. Intended use.

6.2 Inspection code numbers.-The five-digit code numbers assigned to the inspection herein are to facilitate future data collection and analysis by the Government.

6.3 Compatibility: Suitability for use with explosives (Applicable only when specifically designated in the applicable contract, order, drawing or specifications).-When so specified, application shall be made to Government-approved laboratory designated by the procuring agency for determination of suitability of the tape for use with a particular explosive or explosives.

6.4 Cleavage.-Cleavage shall be defined as any evidence of tear of the foam during the tensile load application. It can also be observed that a sharp decrease in load is obtained when a tear occurs in the foam.

6.5 Intended use.-The tape of this specification is intended for use with the M112 demolition charge, M118 demolition charge, M185 demolition charge and with the other charges specified.

Custodian:
Army-MU

Preparing Activity:
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INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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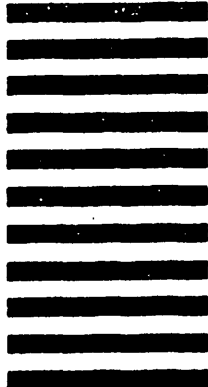
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