MILITARY SPECIFICATION

PLASTIC SHEET AND LAMINATES, FLEXIBLE, FOR ENVIRONMENTAL PROTECTIVE STORAGE AND SHIPPING SYSTEMS

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

1. SCOPE

- 1.1 <u>Scope</u>. This specification covers heat sealable, heavy duty, watervaporproof, waterproof flexible plastic sheet and laminates for use in environmental protective systems.
- 1.2 Classification. Plastic sheet and laminates covered by this specification shall be of the following types, classes and grades, as specified (see 6.2).

Type I - Watervaporproof

Type II - Moderately Watervaporproof

Type III - Waterproof
Class 1 - General Use
Class 2 - Flame Resistant

Grade A - Opaque

Grade B - Transparent

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

| PPP-T-45 | Tape, Gummed, Paper, Reinforced and Plain, for Sealing and Securing |
|-----------|---|
| PPP-T-60 | Tape, Packaging, Waterproof |
| PPP-T-76 | Tape, Packaging, Paper (for Carton Sealing) |
| PPP-B-601 | Box, Wood-Cleated, Plywood |
| PPP-B-636 | Box, Shipping, Fiberboard |
| UU-P-268 | Paper, Kraft, Wrapping |

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: US Army Aviation Research and Development Command, ATTN: DRDAV-EKS, PO Box 209, Main Office, St. Louis, MO 63166. Use the self-addressed Standardization Improvement Proposal (DD Form 1426) appearing at the end of this document.

MILITARY

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|-------------|---|
| MIL-H-6083 | Hydraulic Fluid, Petroleum Base, for Preservation and Operation |
| MIL-L-23699 | Lubricating Oil, Aircraft Turbine Engines, Synthetic Base |
| MIL-S-4461 | Sealing Machine, Hot Jaw and Continuous |
| MIL-S-18718 | Cleaning Compound, Solvent |
| MIL-T-5624 | Turbine Fuel, Aviation, Grades JP-4 and JP-5 |

STANDARDS

FEDERAL

| FED-STD-101 | Preservation, Packaging and Packing Materials | , Test | Procedures |
|-------------|---|--------|------------|
| FED-STD-191 | Textile Test Methods | | |
| FED-STD-406 | Plastics, Methods of Testing | | |
| FED-STD-595 | Colors | | |

MILITARY

| MIL-STD-105 | Sampling Procedures and Tables for Inspection by | Attributes |
|--------------|--|-----------------------|
| MIL-STD-129 | Marking for Shipment and Storage | 10 mm - 10 mm - 10 mm |
| MIL-STD-810 | Environmental Test Methods | |
| MIL-STD-831 | Test Reports, Preparation of | • |
| MIL-STD-1188 | Commercial Packaging of Supplies and Equipment | |

(Copies of specification and standards 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 the 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

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

| D882 | Tensile Properties of Thin Plastic Sheeting |
|-------|---|
| D1004 | Test for Tear Resistance of Plastic Film and Sheeting |
| D1203 | Tests for Loss of Plasticizer from Plastics (Activated Carbon |
| | Methods) |
| D3137 | Hydrolytic Stability of Elastomeric Vulcanizates |
| D3388 | Standard Method of Measuring Low Temperature Stiffening of |
| | Fabrics Coated with Rubber or Rubber-Like Materials, by Means |
| | of Torsional Wire Apparatus |
| | |

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.

REQUIREMENTS

- 3.1 <u>Material</u>. The flexible plastic sheet shall be made from such materials and by such processes as to ensure compliance with this specification.
- 3.2 <u>Color</u>. The color of the flexible plastic sheet shall approximate a specific color shade of FED-STD-595, as specified (see 6.2).
- 3.3 Form. The flexible plastic sheet shall be furnished in rolls.
- 3.4 <u>Construction</u>. Except as follows, the plastic sheet shall be constructed in any manner which will ensure compliance with the performance requirements; of this specification and which will be suitable for the purpose intended.
- 3.4.1 Rolls. The average length of rolls shall not be less than 50 yards. The length of any individual roll shall not be less than 48.5 yards. The width of Type I and Type II roll material shall be 36 inches, plus ½ inch, minus 1/8 inch. Type III roll material shall be 54 inches, plus ½ inch, minus 1/8 inch. The roll material shall be uniformly and smoothly wound on non-returnable fiber cores with an inside diameter of three inches, with a plus tolerance of 1/8 inch. The length of the core shall be equal to the width of the roll material, with a plus tolerance of ½ inch. The core shall be of sufficient rigidity to prevent distortion of the roll under normal conditions of transportation and use. Each roll shall be suitably restrained to prevent unwinding.
- 3.4.1.1 <u>Splices</u>. One splice per roll shall be permitted. A roll shall not have more than two pieces, nor less than 25 yards length per piece. Splices shall be evenly and neatly made over the entire width of the roll material, and shall not separate during unwinding of the roll. The length of the splices shall be as specified for bonding (see 3.6). Rolls containing splices shall be flagged at each end of the splice with colored markings to indicate splices within the roll.
- 3.5 Finish. The finish of the flexible plastic sheet shall be smooth, free of surface irregularities, and either gloss or matte.
- 3.6 Adhesive. The contractor shall furnish a part number and manufacturer's name for the adhesive known to be compatible with the plastic sheet produced under contract. This information shall be furnished the Government in accordance with the DD Form 1423 made a part of the contract (see 6.2).
- 3.7 <u>Physical Properties</u>. Unless otherwise specified (see 6.2), the physical properties of the flexible plastic sheet shall conform to the requirements in Table I, when tested as prescribed in 4.7.
- 3.8 <u>Identification of Material</u>. On shipments to the Government, the flexible plastic sheet shall be marked with the specification number, type, class, and

grade, manufacturer's name and designation, month and year of manufacture and lot number. Symbols shall be clean, legible, water-resistant, and a minimum of 1/8 inch high. The identification shall appear in continuous rows of constantly recurring symbols in the machine direction from one end of the sheet to the other. The markings shall be applied along the edges of the sheet no closer than three inches to the edge of the sheet. The recurring symbols shall be 60 inches apart, plus or minus one inch.

- 3.9 <u>Bonding Instructions</u>. The supplier shall include with each roll a printed sheet detailing the manufacturer's heat bonding, radio frequency (RF) bonding, and liquid bonding procedures. This sheet shall be visible upon opening the unit package.
- 3.10 Workmanship. The flexible plastic sheet shall be clean, finished, and free from dirt, oil, foreign matter, rough or sharp edges, scratches, scuffs, creases, blisters, bubbles, pimples, fish eyes or gills, tears, cuts, holes (including pinholes) and cracks. The finished product shall conform to the levels of quality prescribed herein.

TABLE I. PHYSICAL PROPERTIES

| Properties | Requi | cements | | Test Para |
|--|-------------|---------------|-----------------------|-----------|
| Watervapor Transmission | Type I | Type II | Type III | |
| Rate g/100 in ² /24 hrs, max As received After exposure (aging) | .02 | .08 | _ | 4.7.1 |
| and room temperature flexing | .02 | .09 | _ | |
| As received, after low temperature flexing | .03 | .10 | - - | |
| Waterproofness | _ | - | No dye penetration | 4.7.2 |
| Ply Separation ¹ | Plies sh | all not delam | inate | 4.7.1.5 |
| Breaking Strength: Each Direction | | | | 4.7.3 |
| After hydraulic aging | 120 lbs | 120 lbs | 120 lbs | 4.7.5 |
| % change from original | - 20 | - 20 | - 35 | |
| Elongation: % Each Direction As received (original) After hydraulic aging | 50 min | 50 min | 400 min | 4.7.4 |
| % change from original | <u>+</u> 25 | <u>+</u> 25 | + 25 | |

Applicable to laminated material only.

TABLE I. (CONTINUED)

| | | | · . | |
|--|----------------------|---|---------------------------------|-----------|
| Properties | Requ | irements . | | Test Para |
| Punctuma Boodetsees | Type I | Type II | Type III | |
| Puncture Resistance Required to puncture | 80 lb min | 80 lb min | 80 lb min | 4.7.5 |
| Resistance to Blocking | Slight b no ruptu | | delamination | 4.7.6 |
| Water Resistance of Marking | Marking legible | shall be cl | ear and | 4.7.7 |
| Flexibility Drape Flex, inches | 2.3 max | 2.3 max | 2.3 max | 4.7.8 |
| Bond Strength % of original breaking strength of material | 80 min | 80 min | 80 min | 4.7.9 |
| Tear Resistance, Pounds ea. direction, Min | 5.0 | 5.0 | 7.5 | 4,7.10 |
| Resistance to low temp stiffening temp (T10) | -40°F or colder | -40 ^o F or colder | -40 ⁰ F or colder | 4.7.11 |
| Resistance to Fluids: MIL-T-5624, Turbine Fuel MIL-T-23699, Lubricating Oil MIL-H-6083, Hydraulic Fluid | | ing, delami ement, or o defects | | 4.7.12 |
| Corrosivity | No Corrosion | No Corrosion | No Corrosion | 4.7.13 |
| Lacquer Lifting | or swell tact, an | ciable lift ing in the d no exudat zer from th | | 4.7.14 |
| Volatility Weight loss not to exceed | 1% | 1% | 1% | 4.7.15 |
| Weight, Ounces per square yard | 16.5 max | 16.5 max | 16.5 max | 4.7.16 |
| Resistance to Abrasion Avg loss in grams per 2000 wear cycles | .07 | .07 | .07 | 4.7.17 |

²Appreciable means a change that is immediately noticeable in comparing the tested specimen with the original.

TABLE I. (CONTINUED)

| Properties | _Requirements | Test Para |
|----------------------|---|-----------|
| Thickness Uniformity | Type I Type II Type III Shall not vary more than + 15% across the sheet. | |
| Flame Resistance | The plastic sheet shall show a time of flame of not more than ten seconds. | 4.7.19 |
| Resistance to Light | No embrittlement, cracking or delamination. | 4.7.20 |

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, when such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.
- 4.2 <u>Classification of tests</u>. The test requirements specified herein are classified as follows:
- a. $\underline{\text{Quality conformance tests}}$. Quality conformance tests are those listed in 4.7.
- b. Acceptance tests. Acceptance tests are those tests performed on shipments offered for acceptance. They shall consist of those inspections specified in 4.8.
- 4.3 Quality Conformance Inspection. Quality conformance inspection shall be the responsibility of the contractor, unless otherwise specified (see 6.2). The contractor shall furnish all samples. The contractor shall furnish a test report in accordance with MIL-STD-831, including a certificate of compliance showing quantitative results for all quality conformance tests required by this specification for each lot of material. After completion of tests by the contractor or his agent, the procuring activity may request shipment of the tested plastic sheet to a Government facility for further testing. The test report shall be submitted to the procuring activity at the completion of all tests and prior to shipping the plastic sheet to the Government testing facility. At the discretion of the procuring activity, written certification of compliance with

quality conformance tests may be acceptable in lieu of retesting when the contractor submits evidence of having passed the quality conformance tests within the previous six months, provided that the plastic sheet has not been changed or modified in the interim.

- 4.3.1 Quality conformance inspection lot. For sampling purposes, an inspection lot for examination and tests shall consist of all material of the same type made by the same process from the same components (or batch) by one manufacturer and submitted for delivery at one time.
- 4.3.1 <u>Inspection of materials</u>. Materials shall be inspected and tested in accordance with all the requirements of referenced specifications and standards, unless otherwise excluded, amended or qualified in this specification or other contract documents.
- 4.4 Physical Testing. Physical tests shall be performed for the applicable characteristics specified in Table I for each lot presented for examination for each type of material. The sample unit shall be one piece, full width of roll, fifteen yards long. Test results shall include the individual values utilized in expressing the final results. The lot shall be unacceptable if the sample unit fails to meet any requirements specified.
- 4.5 Test conditions. In general, the physical tests contained in this specification shall be performed under the controlled atmospheric conditions stated below. This requirement may be omitted when proper conditioning facilities are not available for control testing. However, for reference purposes, the specified tests shall be made in the specified atmospheric conditions. For purposes of this specification, material in the specified atmospheric conditions is defined as material which is in moisture equilibrium with an atmosphere having a relative humidity of 50± 5 percent and a temperature of 70 to 76 degrees F. Material shall be considered in equilibrium after exposure to the above conditions for a minimum of 24 hours.
- 4.6 Bonding instructions for quality conformance testing. For test purposes, all bonds shall be a minimum of ½ inch wide. Heat bonds shall be effected on a jaw-type heat sealer conforming to MIL-S-4461, types I, II or III, having one heated jaw and one resilient unheated jaw, utilizing the sealing conditions recommended by the manufactureer. The upper sealing conditions reasonable for production-sealing operations for commonly-available sealing equipment and commercially-practical fabrication time are a temperature setting of 525°, a 3-second dwell time, and a pressure of 60 psi.
- 4.7. Test Methods.
- 4.7.1 Watervapor Transmission Rate.
- 4.7.1.1 Flexing apparatus. Flexing apparatus shall be in accordance with Federal Test Method Standard 101, Method 2017.

- 4.7.1.2 <u>Preparation of test specimens</u>. Four 8-by 12-inch specimens, two in each principal direction, shall be cut from the plastic sheet for each type to be tested. An additional two 9-by 13-inch specimens shall be cut, one in each principal direction. The latter set of samples shall be exposed to an atmosphere of 80 to 85% relative humidity at 160+2°F for 72 consecutive hours. Following the exposure, the test specimens shall be returned to room conditions for four hours, then trimmed to produce 8-by 12-inch specimens. The test specimens, both exposed and unexposed, shall be prepared for flexing by seaming the two shorter edges of each sheet, thus producing a cylinder or sleeve eight inches long with an approximate 3½-inch diameter.
- 4.7.1.3 Room Temperature Flexing Procedure. Two unexposed and two exposed specimens shall be flexed 1800 cycles at 73+3.5°F, in accordance with Federal Test Method Standard 101, Method 2017.
- 4.7.1.4 <u>Low Temperature Flexing Procedure</u>. Two unexposed specimens shall be conditioned for at least 30 minutes at $-20\pm2^{\circ}F$. The flexing operation shall then be conducted at $-20\pm2^{\circ}F$, in accordance with Federal Test Method 101, Method 2017, using alternate short stroke operation.
- 4.7.1.5 Resistance to Ply Separation. Resistance to ply separation of the plastic sheet shall be observed during the aging and flex conditioning.
- 4.7.1.6 <u>Watervapor Transmission Rate Procedure</u>. After flexing, the specimen shall be tested in accordance with Federal Test Method Standard 101, Method 3030, Procedure B, in an environment of 100+2°F and 95+2 percent relative humidity.

4.7.2 Waterproofness.

- 4.7.2.1 <u>Test Preparation</u>. Two 8-by 12-inch specimens shall be prepared in accordance with 4.7.1.2, except for aging or exposure. The specimens shall be conditioned and flexed as in 4.7.1.4.
- 4.7.2.2 Procedure. After flexing the specimen, the sleeve shall be allowed to come to room temperature, and dried by wiping with absorbent material. The sleeve shall then be made into a pouch by sealing one end. A quantity of shredded absorbent paper sufficient to fill the pouch shall be placed inside the pouch, and the pouch placed in a water solution containing one percent Aerosol O.T. and methyl violet for ten minutes. The pouch shall then be removed, wiped dry, and the shredded absorbent paper examined for dye stains.
- 4.7.3 <u>Breaking Strength</u>. The breaking strength of the plastic sheet shall be determined in accordance with Federal Test Method Standard 191, Procedure 5100. The test shall be conducted on eight different specimens of each type of plastic sheet to be tested, four in the "as received" condition and four after hydrolytic aging (4.7.3.1).

- 4.7.3.1 Hydrolytic Stability. The Breaking Strength test shall be applied in conjunction with ASTM Test Method D3137 on three samples of 4.7.3 to determine the hydrolytic stability of the plastic sheet.
- 4.7.4 Elongation. The elongation test shall be conducted in accordance with Procedure A of ASTM Test Method D882 on eight different specimens of each type of plastic sheet to be qualitied, tour in "as received" condition and four after hydrolytic aging (4.7.3.1).
- 4.7.5 <u>Puncture Resistance</u>. The puncture resistance of the plastic sheet shall be determined in accordance with Federal Test Method Standard 101, Method 2065.
- 4.7.6 Resistance to Blocking. The blocking resistance of the prastic sheet shall be determined in accordance with Federal Test Method Standard 406, Method 1131.
- 4.7.7 Water Resistance of Marking. The water resistance of marking test shall be conducted in accordance with Federal Test Method Standard 101, Method 3027. The test shall be conducted on three unaged specimens of each type of plastic sheet to be qualified.
- 4.7.8 Flexibility. The drape stiffness of the plastic sheet shall be determined in accordance with Federal Test Method Standard 191, Method 5026. Specimens shall be cut in the cross-machine direction. The test shall be repeated face up and face down for each specimen and the values averaged.
- 4.7.9 Bond Strength. The bond strength of the plastic sneet shall be tested in accordance with ASTM Test Method D882. Each test specimen for each type of plastic sheet to be qualified shall consist of two 1-inch strips bonded with a 1-inch overlap. The tests snall be run separately, not sooner than 24 hours after bonding, on specimens bonded by the radio frequency (RF) method, the heat-seal method, and the adhesive seal method. The contractor shall furnish the reqired adhesive. The adhesive shall be a sample of the adhesive identified per 3.6.
- 4.7.10 <u>Tear Resistance</u>. The tear resistance of the plastic sheet shall be determined in accordance with ASTM Test Method D1004.
- 4.7.11 Resistance to Low Temperature Stiffening. The ability of the plastic sneet to resist stiffening at the temperature specified in Table I shall be determined in accordance with ASTM Test Method D3388.
- 4.7.12 Resistance to Fluids. The fluid resistance of the plastic sheet shall be determined in accordance with rederal Test Method Standard 101, Method 3015, except that the fluids used shall be as specified in Table I of this specification. The exposure to MIL-L-23699 shall be for 72 hours at 160°F.

- 4.7.13 <u>Corrosivity</u>. Test of the plastic sheet to determine if it induces corrosion shall be conducted in accordance with Federal Test Method Standard 101, Method 3005.
- 4.7.14 <u>Lacquer Lifting</u>. The lacquer lifting test shall be conducted by placing a 3-by 5-inch sample of the plastic sheet over a lacquered panel of equal or larger dimensions. The plastic sheet shall be covered with a flat glass plate which is then weighted with a 2-pound weight. The plastic sheet shall remain exposed for 14 days.
- 4.7.14.1 <u>Preparation of Test Panels</u>. The lacquered panels shall be prepared by applying two medium coats of the following lacquer to thin carbon sheet steel. The surface of the sheet steel shall be smooth and thoroughly cleaned with dry cleaning solvent conforming to MIL-S-18718, then with alcohol, and allowed to dry.

| Component | Parts by Weight |
|------------------------|-----------------|
| Nitrocellulose, ½ sec. | 16.0 |
| Dibutyl phthalate | 4.0 |
| Ethyl alcohol | 10.6 |
| Toluene | 40.0 |
| Butyl acetate | 16.0 |
| Ethyl acetate | 8.6 |
| Butyl alcohol | 4.8 |
| | |

The panels shall be air dried for a minimum of two days prior to use.

- 4.7.15 <u>Volatility</u>. Volatility shall be determined in accordance with ASTM Test Method D1203, Method A.
- 4.7.16 Weight. The weight of the plastic sheet shall be determined in accordance with Federal Test Method Standard 191, Method 5040.
- 4.7.17 Resistance to Abrasion. Resistance to abrasion shall be determined in accordance with Federal Test Method Standard 406, Method 1091. The wheels shall be H-18. Wheel load shall be 500 grams; the number of revolutions shall be 2000.
- 4.7.18 Thickness Uniformity. Thickness uniformity of the material shall be determined in accordance with Federal Test Method Standard 101, Method 1003. Five measurements shall be taken across the width of the 15-yard sample, one set of five measurements at each end of the sample and one set within one yard of the middle of the sample.
- 4.7.19 Flame Resistance. Flame resistance of the material shall be determined in accordance with Federal Test Method Standard 406, Method 2022.

- 4.7.20 <u>Resistance to Light</u>. Resistance to light shall be determined in accordance with MII-STD-810, Method 505, Procedure I. Three test specimens shall be used.
- 4.8 Acceptance tests. Acceptance tests shall be performed in accordance with $\overline{\text{MIL-STD-105}}$.
- 4.8.1 <u>Inspection levels and acceptable quality levels (AQLs) for examinations.</u> The inspection levels for determining the sample size, and the acceptable quality levels (AQLs) expressed in defects per 100 units, shall be as follows:

| Examination Paragraph 1/ | | | Inspection Level | | AQLs |
|--------------------------|---|-----|---------------------|---|------|
| 4.8.2 | | | I | | 6.5 |
| 4.8.3 | * | | S-4 | • | 10 |
| 4.8.4 | | | S-4 | | 10 |
| 4.8.5 2/ | | • | S-4 | | 10 |
| 4.8.6 | | . ' | S-4 | | 10 |

- 1/ The yardage used for examinations under 4.8.2 shall be from the roll randomly selected under 4.8.3, which roll shall also be used for examination under 4.8.4 and 4.8.5.
- 2/ For average length, acceptance number zero. For purposes of determining the sample size in accordance with MIL-STD-105, the lot size shall be expressed in units of rolls for examinations under 4.8.2 through 4.8.5, inclusive, and in units of shipping containers for examination under 4.8.6.
- 4.8.2 Examination of the rolls for defects in appearance, construction and workmanship. For examination of defects within rolls, the sample unit shall be two yards full width of roll. No more than five sample units, randomly selected, shall be drawn from any one roll. Both sides of the material shall be examined. Defects of each type shall be scored only once for each occurrence within each linear yard.

| Examine | Defect |
|-------------|--|
| Form | Not as specified. Incorrect type. |
| Appearance | Surfaces not clean; presence of any foreign matter, dirt, sand, grit, or oil spots. (Note: Defects do not apply to outer convolution of roll) |
| Workmanship | Blister, crack, cut, hole (including pinholes), tear, sharp crease or scuff mark (see 3.10). (Note: Defects do not apply to outer convolution of roll) |

| Examine | Defect |
|-------------------------|---|
| Workmanship (continued) | Evidence of delamination or embrittle- ment. Edges not clean cut; ragged, crushed, or uneven edges. |
| Construction | Not uniform; layer missing |
| Identification Markings | Illegible, incorrect, incomplete, or omitted. Color not lusterless red as specified. |

4.8.3 Examination of rolls for defects in general construction. The sample unit for this examination shall be one roll.

| Examine | Defect |
|--------------------------------------|---|
| Assembly of roll | Not suitably restrained to prevent unwinding. Material not wound uniformly and smoothly on roll, causing soft or uneven edges, or telescoping of roll. Material not wound on a substantial rigid fiber core; core broken, collapsed, crushed, or mutilated. |
| Unwinding of roll (check both sides) | When unwound, material sticks together to the extent that unrolling causes tearing or injury to any surface. Material wound unevenly, causing wrinkles, sharp creases, or folds within roll. Roll not continuous; more than two splices (2 pieces) in roll or more than one splice in any 25 consecutive yards. Splices not evenly and neatly made; does not cover entire width of material; comes apart during unwinding of roll. Manufacturer's instructions for sealing con- |
| | ditions of the material not securely attached to core of roll. |

4.8.4 Examination of rolls for dimensional defects. The sample unit for this examination shall be one roll.

| Examine | Defect | - |
|---------------|--|------------------------|
| Width of roll | Varies by more than minus plus 1/4 inch from width | 1/8 inch or specified. |

| Examine | Defect |
|-------------------------|--|
| Core | Length less than width or roll material, or greater by more than plus 1/2 inch. Inside diameter less than 3 inches or greater than 3-1/8 inches. |
| Identification markings | Lettering less than 1/8 inch in height. |
| Thickness uniformity | Average thickness varies by more than 15%. |

4.8.5 Examination of rolls for length per roll. The sample unit for this examination shall be one roll.

| Examine | Defect | |
|---------|-------------------------------------|--|
| Rolls | Average length per roll less than | |
| | specified. Length of any individual | |
| | roll less than 48.5 yards. | |

4.8.6 Examination of preparation for delivery. An examination shall be made to determine that packaging, packing and markings comply with the requirements of Section 5 of this specification. The sample unit shall be one shipping container, fully packed, selected just prior to the closing operation. Shipping containers fully prepared for delivery shall be examined for closure defects.

| Examine | Defect |
|-----------|--|
| Packaging | Not in accordance with contract require ments. |
| Packing | Not level specified; not in accordance with contract requirements. Container does not conform to applicable container specification. |
| Markings | Interior or exterior markings (as applicable) illegible, incorrect, omitted, or not in accordance with requirements. |

5. PACKAGING.

5.1 <u>Packaging</u>. Each roll shall be restrained from unwinding and wrapped with at least one thickness of 30 pound minimum basis weight kraft paper conforming to grade B of UU-P-268. The wrap shall be lapped approximately six inches and secured the entire length of the roll with 3-inch minimum width pressure

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sensitive or gummed paper tape conforming to PPP-T-76, Type IV of PPP-T-60, or Type III, Grade B of PPP-T-45. The width of the wrapper shall be such that the wrapper can be folded over the ends of the roll. The folded ends of the wrapper shall be fastened either by tucking into the core and inserting a restraining device into the core or by gluing a circular piece of the same paper over the folded wrapper ends.

- 5.2 <u>Packing</u>. Unit rolls, packaged per 5.1, shall be packed level A or B as specified (see 6.2).
- 5.2.1 <u>Level A</u>. Rolls shall be packed in wood-cleated plywood boxes conforming to PPP-B-601, Grade A. Gross weight shall not exceed 250 pounds.
- 5.2.2 <u>Level B</u>. Rolls shall be packed in snug-fitting fiberboard boxes conforming to V11c or V13c of PPP-B-636.
- 5.3 <u>Marking</u>. In addition to any special requirements of the contract or order, all unit rolls and snipping containers shall be marked in accordance with MIL-STD-129.
- 5.4 <u>Commercial</u>. When specified (see 6.2), the requirements of 5.1, 5.2, and 5.3 shall not apply. Rolls shall then be prepared for snipment in accordance with MIL-STD-1188.

6. NOTES

6.1 <u>Intended Use</u>. Flexible plastic sheet meeting the requirements of this specification has multiple applications. Type I material is intended for use as intimate environmental control envelopes in desiccated packs. Type III material is intended for use in protective covers and cocoons or shelters for aircraft, locomotives, and other major items when protection from the elements is sufficient. Type II material is intended for use in lieu of type III material when a dehumidified system is desired.

6.2 Ordering Data.

- a. Title, number and date of this specification.
- b. Type, class and grade of material regired (see 1.2).
- c. Color of grade A material (see 3.2).
- d. DD Form 1423 data requirements (see 3.6).
- e. Specific Table I requirements which are not required (see 3.7).
- f. Whether commercial packaging may be used (see 5.4).

g. Level of packing, if applicable (see 5.2).

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| STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL | | | | |
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| VENDOR USER MANUFACTURER | | | | |
| USE? IS ANY PART OF IT TOO RIGID, RESTRICTIVE, LOOSE OR AMBIGU A. GIVE PARAGRAPH NUMBER AND WORDING B. RECOMMENDED WORDING CHANGE | OUS? PLEASE EXPLAIN BELOW. | | | |
| C. REASON FOR RECOMMENDED CHANGE(S) | | | | |
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| 2. REMARKS | | | | |
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| SUBMITTED BY (Printed or typed name and address — Optional) | TELEPHONE NO. | | | |