

MIL-P-130E  
30 September 1985  
~~SUPERSEDING~~  
MIL-P-130E  
3 February 1978

## MILITARY SPECIFICATION

### PAPER, WRAPPING, LAMINATED AND CREPED

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

#### 1. SCOPE

1.1 Scope. This document covers creped wrapping paper, laminated or treated if necessary, for use as a protective cover or wrapper.

1.2 Classification. Wrapping paper shall be furnished in rolls of the following types as specified (see 6.2):

- Type I - Heavy duty
- Type II - Medium duty
- Type III - Light duty

#### 2. APPLICABLE DOCUMENTS

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

Beneficial comments (recommendations, additions, deletions) and any pertinent data that may be of use in improving this document should be addressed to U.S. Army Natick Research and Development Center, Natick, MA 01760-5014, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 8135

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## MIL-P-130F

## SPECIFICATIONS

## FEDERAL

- MMM-A-260 - Adhesive, Water-Resistant (for Sealing Waterproofed Paper)
- PPP-B-601 - Boxes, Wood, Cleated-Plywood
- PPP-B-636 - Boxes, Shipping, Fiberboard
- PPP-B-1055 - Barrier Material, Waterproofed, Flexible
- PPP-D-723 - Drums, Fiber
- 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)

## MILITARY

- MIL-B-121 - Barrier Material, Grease Proofed, Water Proofed, Flexible
- MIL-F-130 - Identification Marking of US Military Products
- MIL-L-10547 - Liners, Case and Sheet, Overwrap, water-Vaporproof or Waterproof, Flexible

## STANDARDS

## FEDERAL

- FED-STD-101 - Test Procedures for Packaging Materials

## MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-147 - Palletized Unit Loads

(Copies of documents required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

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

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TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY (TAPPI)

- T 402 Standard Conditioning and Testing Atmosphere for Paper, Board, Pulp Handsheets, and Related Products
- T 403 Bursting Strength of Paper
- T 404 Tensile Breaking Strength and Elongation of Paper and Paperboard (Using Pendulum Type Tester)
- T 410 Grammage of Paper and Paperboard (Weight per Unit Area)
- T 414 Internal Tearing Resistance of Paper
- T 428 Hot Water Extractable Acidity or Alkalinity of Paper

(Application for copies should be addressed to the Technical Association of the Pulp and Paper Industry, 1 Dunwoody Park, Atlanta, GA 30341.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- D 3951 - Standard Practice for Commercial Packaging

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

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

2.3 Order of precedence. In the event of conflict between the text of this document and the references cited herein, the text of this document shall take precedence.

3. REQUIREMENTS

3.1 Material. The wrapping material shall be made from paper and such nonbituminous laminating or treating materials to ensure compliance with the requirements of this document. Recycled material may be used (see 6.4).

\* 3.2 Physical properties. The finished material shall conform to the applicable physical properties specified in table I when tested as specified in 4.3.

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TABLE I. Physical properties

Characteristic	Type I	Requirement Type II	Type III
Basis weight (24 x 36-500) creped, minimum, in pounds	150	125	100
Stiffness, most flexible direction, maximum, in grams	200	100	50
Tearing resistance, weakest direction, minimum, in grams	250	200	150
Tensile strength, one-way creped only, in weakest direction, minimum, in pounds per inch	30	25	20
Bursting strength, two-way creped only, minimum, in p.s.i.	40	35	30

3.3 Acid content. The water soluble acidity of the finished material shall be not more than 0.02 percent (calculated as sulfur trioxide, SO<sub>3</sub>), when tested as specified in 4.3.

3.4 Blocking. Finished material, when tested as specified in 4.3, shall not adhere to itself, causing tearing or surface damage.

3.5 Creping. The wrapping paper shall be creped either one-way or two-way. The finished material, when made from one-way creped material, shall have a minimum stretch of 20 percent in one direction; for two-way creped material, the stretch in either direction shall be not less than 15 percent when tested as specified in 4.3.

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3.6 Size and roll construction. Wrapping paper shall be furnished in rolls of the length and width specified (see 6.2). Rolls shall be wound uniformly and smoothly on nonreturnable cores of 3-inch inside diameter with a plus 1/8-inch tolerance. The core length shall be not less than the specified roll width nor greater by more than 1/4 inch. Cores shall be fitted with a plug at each end having a 1-inch diameter center hole having plus 1/4-inch tolerance. Rolls shall be suitably restrained to prevent unwinding.

3.6.1 Roll tolerance.

3.6.1.1 Width. A plus 1/8-inch and a minus 1/16-inch tolerance shall be permitted when the paper is creped in the cross direction and a plus or minus 1/8-inch tolerance shall be allowed when creping is in the machine direction or in both directions.

3.6.1.2 Length. The length of any individual roll shall be not less than 95 percent of the specified length. The average length of rolls in any one lot shall be not less than specified length.

3.6.2 Splices. Splices shall cover the entire roll width. Splices shall not separate during unwinding of the roll. No roll shall have more than one splice in any 50-yard length of the material. Each splice shall be tagged with a colored marker.

3.7 Identification. Wrapping paper shall be marked by printing the applicable document symbols (MIL-P-130), the applicable type (I, II, or III), and the year and month of manufacture at least once in each 3 feet of length and at least once in each 18 inches of roll width.

3.8 Workmanship. The wrapping paper shall be clean and free from wrinkles, folds, tears, holes, cuts, abrasions, foreign matter, oil spots, and surface dirt and dust. Edges shall be clean cut.

## 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 as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the document where such inspections are deemed necessary to ensure that supplies and services conform to prescribed requirements.

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4.2 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

4.2.1 Components and materials inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents unless otherwise excluded, amended, or qualified in this document or applicable purchase documents.

4.2.2 End item inspection. The wrapping paper shall be examined for the defects listed in 4.2.2.1 through 4.2.2.4. The lot size shall be all the rolls of the same type submitted at one time as specified in 4.2.2.1 through 4.2.2.4.

4.2.2.1 Examination for visual defects. The rolls of wrapping paper shall be examined for the defects listed in table II. The sample unit for this examination shall be three randomly selected finished rolls of two yards in length and the full roll width. No sample units shall be taken from the first or last convolutions of the roll. Both sides of the sheet shall be examined. Defects of each type shall be scored only once within a sample unit. The inspection level shall be S-3 and the acceptable quality level (AQL) shall be 4.0, expressed in terms of defects per hundred units.

TABLE II. Visual examination

Examine	Defect
Workmanship	Not clean: presence of any foreign matter, dirt, sand, grit, or oil spots. Presence of any cut, tear, puncture, chafed spot, wrinkle or fold. Edges not clean cut: ragged, crushed or uneven.
Identification markings	Missing, illegible, incorrect, incomplete, or do not conform to legend specified in 3.7.

4.2.2.2 Examination for dimensional defects. The rolls of wrapping paper shall be examined for the defects listed in table III. The sample unit shall be one finished roll selected at random. The inspection level shall be S-3 and the AQL shall be 4.0, expressed in terms of defects per hundred units.

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## TABLE III - Defects in roll construction

Examine	Defect
Width	Varies by more than $+1/8$ inch and $-1/16$ inch when crepe is in cross direction Varies by more than $+1/8$ inch when creping is in machine direction or in both directions
Core plugs	Plug holes not centered Diameter of plug hole less than 1 inch or more than $1\ 1/4$ inches
Core	Length less than specified width of roll material or greater by more than $1/4$ inch. Inside diameter less than 3 inches or more than $3\ 1/8$ inches
Identification markings	More than 36-inch distance along length between groups of marking More than 18 inches in width between groups of markings

4.2.2.3 Examination for defects in roll construction. The rolls of wrapping paper shall be examined for the defects listed in table IV. The sample unit for this examination shall be one finished roll. The inspection level shall be S-3 and the AQL shall be 4.0, expressed in terms of defects per hundred units.

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TABLE IV. Roll construction examination

Examine	Defect
Assembl, of roll	Not suitably restrained to prevent unwinding Material not wound evenly and tightly on roll causing wrinkles, creases, or telescoping Material not wound on core Core broken, collapsed, crushed, or mutilated Core plugs omitted or not as specified
Unwinding of rolls (examine both sides)	When unwound, material sticks together to the extent that unrolling causes tearing or injury to any surface Roll not continuous More than 1 splice in any 50 consecutive yards of roll Splice not evenly and neatly made, does not cover entire width of material Splice comes apart during unwinding Splice not flagged with colored marker

4.2.2.4 Examination for length of roll. The sample for this examination shall be one finished roll. The average length of the rolls examined shall be not less than the length specified, and the length of any individual roll shall be not less than 95 percent of the specified length.

4.2.3 Packaging inspection. An inspection shall be made to determine that packing and markings comply with requirements of section 5. Defects shall be as specified in table V. The lot size shall be the number of shipping containers in the inspection lot. The sample unit for this inspection shall be one randomly selected shipping container, fully packed. The inspection level shall be S-2 and the AQL shall be 2.5, expressed in terms of defects per hundred units.

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TABLE V. Packaging Inspection

Examine	Defect
Packing	Container not as specified Not in accordance with contract requirements Not level specified Rolls not overwrapped as specified Wrapper material other than specified for applicable level Headers, inside or out, omitted or not of same material as overwrap Closures not accomplished by specified methods or materials Inadequate application of components such as incomplete closure of case liner, container flaps, loose or inadequate sealing, strapping, or stapling Bulged or distorted container
Markings	Illegible, incomplete, omitted, or not in accordance with contract requirements

4.2.4 Examination for palletization. An examination shall be made to determine that the palletization complies with the requirements of section 5. Defects shall be in accordance with table VI. The lot shall be the number of palletized unit loads in the end item inspection lot. The sample unit shall be one palletized unit load fully packaged. The inspection level shall be S-1 and the AQL shall be 6.5 defects per hundred units.

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TABLE VI. Examination of palletization

Examine	Defect
Finished dimensions	Length, width or height exceeds specified maximum requirement
Palletization	Not as specified Pallet pattern not as specified Wood cap not used over and under the load Load not bonded with required straps as specified
Weight	Exceeds maximum load limits
Marking	Omitted, incorrect; incomplete, illegible; of improper size, location, sequence or method of application

4.3 End item testing. The end item shall be tested for the applicable characteristics listed in table VII. The lot size shall be the number of rolls in the end item inspection lot and the sample unit shall be one full roll-width sheet of 48 inch length. The sample size shall be selected in accordance with the following sampling plan. Test results shall include all values on which the results are based and there shall be no failures to meet the sample unit requirements.

<u>Lot size (rolls)</u>	<u>Sample size (number of sample units)</u>
800 or less	2
801 up to and including 22,000	3
22,001 or more	5

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TABLE VII. End item testing

Characteristic	Document Reference	Requirement Test Method	Requirement Applicable to Individual Unit	Requirement Applicable to Lot Average	Number of Determination per Sample Unit	Pass or Fail	Reported Results or Measure
Atmospheric conditions	4.3	T 4022/	All Testing				
Basic weight (creped) (24 x 36-500)	Table I	T 4102/	X				
Stiffness in most flexible direction	Table I	4.3.1	X		10		0.8
Tearing Resistance	Table I	T 4142/		X	10		0.8
Machine direction	Table I	T 4142/		X	10		0.8
Cross direction							
Acid content	3.3	T 4282/			Average of 2 on composite <sup>2/</sup>		0.002
Blocking							
Face to face	3.4	4.3.2	X		1	X	
Face to back	3.4	4.3.2	X		1	X	
Elongation (stretch)							
(creped in one direction)	3.5	4.3.3		X	10		0.12
(creped in two directions)							
Machine direction	3.5	4.3.3		X	10		0.12
Cross direction	3.5	4.3.3		X	10		0.12
Tensile strength (one-way creped)	Table I	T 4042/		X	10		0.1 lb/in
Bursting strength (two-way creped)	Table I	T 4032/		X	10 (one on each side of 5 specimens)		0.1 psi

1/ For characteristics on which multiple determinations are specified per sample unit, the determination shall be randomly distributed to the extent possible throughout the sample unit

2/ Refers to TAPPI test method standards.

3/ The composite sample shall be prepared from representative portions of small pieces taken from each sample unit combined into a single composite.

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#### 4.3.1 Stiffness.

4.3.1.1 Apparatus. The test shall be made with two stirrups attached to a tensile tester as described in TAPPI Test Method T 404 for the purpose of finding the load required to force the paper between two rolls. A single stirrup, the crossbar of which is a 1/2-inch metal tube 4 inches long, is fastened to the upper clamp of the tensile tester. An inverted double stirrup is fastened in the lower clamp of the tensile tester. The latter stirrup has two 7/8-inch parallel rollers separated by a distance of 3/4 inch. These rollers are 4 1/4 inches long. The tensile tester, with pendulum weights removed, is calibrated over the desired range by hanging small weights to the upper clamp with the single stirrup in place.

4.3.1.2 Procedure. Run the lower clamp of the tensile tester up until the tubular crossbar of the upper stirrup passes between the rollers of the lower stirrup and comes below them. Slip a specimen of the paper 4 inches square under the rollers of the double stirrup and over the tubular crossbar of the single stirrup. Run the lower clamp down at speed of 12 inches per minute, bending the specimen and pulling it between the rollers of the double stirrup. The force required to do this, which is calculated from the scale average of the test values for not less than ten specimens, shall be reported as the stiffness. For papers with dissimilar surface treatment, the tests shall be run with the treated surface down.

4.3.2 Blocking resistance. The blocking resistance shall be determined in accordance with Procedure A, Method 3003 of FED-STD-101. A static load of 3 pounds per square inch shall be evenly distributed on the entire area of the test assembly. The exposure environment of the complete assemblies shall be maintained at 158° +2°F (hot dry) and the exposure time shall be 2 hours.

4.3.3 Stretch (elongation). The stretch shall be determined in accordance with TAPPI Test Method T 404.

### 5. PACKAGING

5.1 Packing. Packing shall be level A, B, or Commercial as specified (see 6.2).

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\* 5.1.1 Level A packing. Wrapping paper in roll form, as specified in 3.6, shall be packed either in a snug-fitting fiber drum conforming to type III, grade D of PPP-D-723; fiberboard shipping container conforming to style RSC, type SF, grade V2s of PPP-B-636; or wrapped overall with waterproof barrier material conforming to PPP-B-1055 (except that, if class C-1 is used, two thicknesses shall be required). The barrier material wrapper shall be closed at the ends by means of inside and outside headers made of the same material as the wrapper. Seams and headers shall be sealed with an adhesive conforming to type I or II, grade B, class 2 or 3 of MMM-A-260, or sealed with 2-inch minimum width tape conforming either to type III, class 1 of PPP-T-60 or to PPP-T-76. The adhesive or tape shall be applied to the barrier material wrapper and headers in a manner which will effect a watertight seal. Each fiber drum shall be closed with pressure-sensitive tape conforming either to type III, class 1 of PPP-T-60 or to PPP-T-76 in accordance with the applicable requirements of PPP-D-723. Each fiberboard shipping container shall be closed in accordance with method III, waterproofed in accordance with method V, and reinforced as specified in the appendix of PPP-B-636. When specified (see 6.2), a multiple quantity of wrapping paper as specified in 3.6 shall be packed in a snug-fitting cleated-plywood shipping container conforming to overseas type, style A, type 2 load of PPP-B-601. Each shipping container shall be waterproofed with a sealed case liner conforming to type I or II, grade C of MIL-L-10547. Each container shall be closed and reinforced in accordance with the appendix of PPP-B-601.

5.1.2 Level B packing. Wrapping paper in roll form specified in 3.6 shall be packed in a snug-fitting fiber drum conforming to type I, grade D of PPP-D-723; fiberboard container conforming to style RSC, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636; or wrapped overall with 80-pound minimum basis weight (24 by 36-500) heavy duty wrapping paper. Each paper wrapped roll shall be closed at the ends by means of inside and outside headers made of the same material as the wrapper. Seams and headers shall be securely sealed with an adhesive commercially used for this purpose or by a 2-inch minimum width gummed paper tape conforming to type III, grade C of PPP-T-45. Each fiber drum shall be closed in accordance with the applicable requirements of PPP-D-723. Each fiberboard container shall be closed in accordance with method II as specified in the appendix of PPP-B-636.

\* 5.1.2.1 Weather-resistant shipping container. When specified (see 6.2), the fiberboard shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with method III as specified in the appendix of PPP-B-636.

\* 5.1.3 Commercial packing. Wrapping paper in roll form as specified in 3.6 shall be packed in accordance with ASTM D 3951.

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5.2 Palletization. When specified (see 6.2), wrapping paper of one type only, packed as specified in 5.1, shall be palletized in accordance with load type XIII of MIL-STD-147. Rolls of wrapping paper shall be stacked vertically in a single course with a wood cap over and under the load. A strap shall be positioned around the load outside of and at the vertical center of the rolls of the wrapping paper and shall be the first strap applied to the load. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means K and L.

5.3 Marking. In addition to any special marking required by the contract or purchase order, shipping containers and wrapped rolls shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable.

## 6. NOTES

6.1 Intended use. The laminated wrapping paper is used primarily as a protective cover or wrapper over grades A and C greaseproof wrappers (MIL-B-121) for added protection against mechanical damage; as a contacting wrapper on nonprecision parts where a greaseproof wrapper is not used or required, as a packaging wrapper on parts or articles where use of a carton would waste shipping space; and as a protective band around the periphery of cylinders on completed radial type engines or a complete cover for in-line-type engines. This material is not intended for use as a substitute for waterproof barrier material.

6.2 Ordering data. Acquisition documents should specify the following:

- a. Title, number, and date of this document.
- b. Type, width, and length per roll required (see 1.2 and 3.6).
- c. Selection of applicable level of packing (see 5.1).
- d. When weather-resistant fiberboard shipping containers are required for level B packing (see 5.1.2.1).
- e. Where wood shipping containers are required for level A packing (see 5.1.1).
- f. When palletization is required (see 5.2).

6.3 Environmental. Environmental pollution prevention measures may be contained in the material documents referenced herein. Refer to material document or preparing activity for recommended disposability methods.

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and recycled material. The contractor is encouraged to use recycled material when practical, provided that it meets the requirements of this document (see 3.1).

6.5 Changes from previous issue. The margins of this document are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous issue have been made. This was done as a convenience only and the Government assumes no liability whatsoever for inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

## Custodians:

Army - GL  
Navy - SA  
Air Force - 69

## Preparing activity

Army - GL  
Project No. 8135-0578

## Review activities:

Army - EA, MD  
Navy - OS, MC  
Air Force - 99

## User activities:

Army - AT  
Navy - YD, SH

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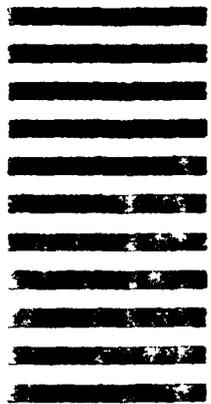


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## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-P-130F		2. DOCUMENT TITLE Paper, Wrapping, Laminated and Creped	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR	
		<input type="checkbox"/> USER	
5. PROBLEM AREAS		<input type="checkbox"/> MANUFACTURER	
		<input type="checkbox"/> OTHER (Specify) _____	
a. Paragraph Number and Wording			
b. Recommended Wording			
c. Reason/Rationale for Recommendation			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)	

90 FORM 1428

PREVIOUS EDITION IS OBSOLETE

NATICK CP, 1 Apr 84