

MIL-P-43432B
29 June 1987
SUPERSEDING
MIL-L-43432A
20 April 1978

MILITARY SPECIFICATION

* PACKAGING OF LEATHER

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

1. SCOPE

1.1 Scope. This document covers the preservation, packing, and marking of various kinds of leather for shipment and storage.

1.2 Classification. The leather shall be of the following classes and subclasses:

Class 1 - Cow, steer, and bull

Subclass a - Sides

Subclass b - Backs, bends, strips, and double-shoulders

Subclass c - Whole hides

Subclass d - Offal

Class 2 - Calf and kip

Class 3 - Sheep, goat, pig, lamb, kid, peccary, and ostrich

Class 4 - Horsehide, deer, buffalo, and camel

Class 5 - Aquatic, reptile, and all others

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering 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.

AMSC N/A

FSC 8330

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2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Documents. The following documents form a part of this document 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.

SPECIFICATIONS

FEDERAL

A-A-203	- Paper, Kraft, Untreated
QQ-S-781	- Strapping, Steel, and Seals
CCC-C-429	- Cloth, Osnaburg, Cotton
CCC-C-467	- Cloth, Burlap, Jute (or Kenaf)
PPP-B-601	- Boxes, Wood, Cleated Plywood
PPP-B-621	- Boxes, Wood, Nailed and Lock-Corner
PPP-B-636	- Boxes, Shipping, Fiberboard
PPP-B-640	- Boxes, Fiberboard, Corrugated, Triple-Wall
PPP-B-1055	- Barrier Material, Waterproof, Flexible
PPP-P-291	- Paperboard, Wrapping and Cushioning
PPP-S-760	- Strapping, Nonmetallic (and Connectors)
PPP-T-45	- Tape, Gummed, Paper, Reinforced and Plain, For Sealing and Securing
PPP-T-60	- Tape: Packaging, Waterproof

MILITARY

MIL-L-35078	- Loads Units: Preparation of Semiperishable Subsistence Items; Clothing, Personal Equipment and Equipage; General Specification For
MIL-T-40625	- Tubing, Bias Sewn (Burlap or Osnaburg), Cloth

STANDARDS

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
MIL-STD-731	- Quality of Wood Members for Containers and Pallets

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

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2.2 Other publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issues of the nongovernment documents which are current on the date of the solicitation.

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 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 a conflict between the text of this document and the references cited herein, the text of this document shall take precedence. Nothing in this document, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Material. The material shall be as specified herein.

3.2 Preservation. Preservation shall be level A or Commercial as specified (see 6.1).

3.2.1 Level A.

3.2.1.1 Class 1. Cow, steer, and bull leather.

- * 3.2.1.1.1 Subclass a. Sides, of like description only, shall be tightly rolled together in multiple sets of three. When a roll of leather consists of more than one set, each additional set shall be alternated so that the heads of one set are adjacent to the butts of the next set. The leather shall be rolled grain side out except that the outer piece shall be rolled flesh side out. Each roll of leather shall be completely wrapped in 80-pound minimum basis weight kraft paper conforming to A-A-203. The paper shall be folded to inclose each end of the roll and shall be secured with gummed paper tape conforming to type III, grade C of PPP-T-45. Alternatively, each roll of leather shall be completely wrapped in single-faced corrugated paperboard conforming to type III, style 1 of PPP-P-291. The wrap shall be folded over to completely inclose each end of the roll. The wrap shall be secured in place by tying with jute or cotton cord or twine, applied twice around the body, 12 \pm 1 inch from each end and once lengthwise, using nonslip knots.

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* 3.2.1.1.2 Subclass b. Backs, bends, strips, or double-shoulders, of like description only, shall be neatly and tightly rolled together in multiple sets of six or evenly stacked flat one on top of another. When a roll of leather consists of more than one set of six, each additional set shall be alternated to produce a roll of uniform diameter. The leather shall be rolled grain side out, except that the outer piece shall be rolled flesh side out. When leather is stacked and then bundled, each piece shall be positioned grain side up, except that the top piece shall be flesh side up. Each roll or bundle of leather shall be completely wrapped in 80-pound minimum basis weight kraft paper conforming to A-A-203. The paper shall be folded to inclose each end of the roll or bundle and shall be secured with gummed paper tape conforming to type III, grade C or PPP-T-45. Alternatively, each roll or bundle of leather shall be completely wrapped in single-faced corrugated paperboard conforming to type III, style 1 of PPP-P-291. The wrap shall be folded over to completely inclose each end of the roll or bundle. The wrap shall be secured in place by tying with jute or cotton cord or twine, applied twice around the body, 12 ± 1 inch from each end and once lengthwise, using nonslip knots.

3.2.1.1.3 Subclass c. Whole hides shall be individually rolled flesh side out and preserved as specified in 3.2.1.1.1.

3.2.1.1.4 Subclass d. Offal, of like description only, shall be neatly preserved in bundles and securely tied with jute or cotton cord or twine.

3.2.1.2 Class 2. Calf and kip leather, of like description only, shall be tightly rolled together in multiples of twelve with each set of six alternated so that the heads of one set are adjacent to the butts of the next set. The leather shall be rolled grain side out on a convolute or spiral wound kraft paper covered chipboard tube. The ends of the tube shall be flush with or extend not more than 1 inch beyond the rolled leather. Each roll of leather shall be completely wrapped in 80-pound minimum basis weight kraft paper conforming to A-A-203. The paper shall be folded to inclose each end of the roll of leather and shall be secured with gummed paper tape conforming to type III, style 1 of PPP-T-45. In addition, each roll of leather shall be protected by overwrapping in single-faced corrugated paperboard conforming to type III, style 1 of PPP-P-291 or solid paperboard of not less than 0.030 inch thickness. The overwrap shall extend not less than 1 inch beyond the ends of the roll and shall completely encircle the roll, overlapping not less than 4 inches. The overwrap shall be secured in place by tying with jute or cotton cord or twine, applied twice around the body approximately 12 inches (when applicable) from each end, and once lengthwise, using nonslip knots.

* 3.2.1.3 Class 3. Sheep, goat, pig, lamb, kid, peccary, and ostrich leather, of like description only, shall be neatly stacked with the grain side facing up in a set of one dozen. Multiple sets of one dozen each shall be alternated so that the heads of one set are adjacent to the tails of the next set. The set(s) of leather shall be rolled with the flesh side out and completely wrapped in 80-pound minimum basis weight kraft paper conforming to A-A-203. The paper

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shall be folded to completely inclose each end of the roll and the wrap secured with gummed paper tape conforming to type III, grade C of PPP-T-45. Alternatively, each roll of leather shall be wrapped in single-faced corrugated paperboard conforming to type III, style 1 of PPP-P-291 or solid paperboard of not less than 0.030 thickness. The wrap shall extend not less than 1 inch beyond the ends of the roll and shall completely encircle the roll, overlapping not less than 4 inches. The wrap shall be secured in place by tying with jute or cotton cord or twine, applied twice around the body, approximately 12 inches (when applicable) from each end, and once lengthwise, using nonslip knots.

3.2.1.4 Class 4. Horsehide, deer, buffalo, and camel leather, of like description only, when in the form of sides, and horsehide, when in the form of fronts shall be preserved in multiple sets of three as specified in 3.2.1.1.1. When in the form of whole hides, the leather shall be rolled individually and preserved as specified in 3.2.1.1.1.

3.2.1.5 Class 5. Aquatic, reptile, and other leather varieties shall be preserved as specified in 3.2.1.3.

* 3.2.2 Commercial. Leather shall be preserved in accordance with ASTM D 3951.

3.3 Packing. Packing shall be level A, B, or Commercial as specified (see 6.1).

3.3.1 Level A packing. Rolls or bundles of leather, of like description only, preserved as specified in 3.2, shall be packed in a snug-fitting fiberboard shipping container conforming to style FOL, grade V2s of PPP-B-636. Each shipping container shall be closed, waterproofed, and reinforced in accordance with the appendix of the applicable container specification. Alternatively, each roll or bundle of leather shall be inclosed in barrier material conforming to PPP-B-1055. The barrier material of each end shall be tightly folded over and sealed with waterproof pressure-sensitive tape conforming to type IV of PPP-T-60. The waterproofed rolls or bundles of leather, of like description only, shall be packed in bias-sewn tubing or a bag (presewn one end) made from cotton onsaburg cloth conforming to class 2 of CCC-C-429, or jute (or kenaf) burlap cloth conforming to class 3 of CCC-C-467. The bias-sewn tubing specified shall conform to MIL-T-40625. Tubing or bag packs shall have the open ends closed with two double-looped wire ties. The wire ties shall be not less than 6 inches long, 0.072 inch thick, galvanized soft iron or steel wire, with a 1/2-inch diameter formed eye at each end. The first wire tie shall be applied as close to the leather as possible so there will be a minimum of slack in the tube, the cloth being gathered evenly to form an ear, and all edges of the cloth being at least 3 inches from the wire tie at the base of the ear. The second wire tie shall be applied at a distance not more than 1-1/2 inches from the first wire tie. The twisted ends of the wire ties shall alternate and face in opposite directions. Each pack shall be reinforced with two 5/8-inch wide by 0.015-inch thick flat straps conforming to type I, finish A of QQ-S-781 or type II of PPP-S-760. The straps shall be applied around the pack placed 10 + 2

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inches from each end. Sufficient tension shall be applied to the strapping to insure tight application. The weight of the contents of each pack shall not exceed 100 pounds with a 10 pound plus tolerance permitted. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified (see 6.1). Strapping shall be limited to non-metallic strapping, except for type II, class F loads. When rolls or bundles exceed the dimensions set forth in MIL-L-35078, shipping containers or wrapped rolls shall be consolidated into snug-fitting wood boxes constructed, closed and strapped in conformance with overseas type, style A or J, grade B, type 2 load of PPP-B-601 or class 2, style 2 or 4, grade B, type 2 load of PPP-B-621.

- * 3.3.2 Level B packing. Rolls or bundles of leather, of like description only, preserved as specified in 3.2, shall be packed in a snug-fitting fiberboard shipping container conforming to style FTC or style OSC (overlap not less than 3 inches) type CF (variety SW) or type SF, class domestic, grade 275 of PPP-B-636; or style E, class 1, of PPP-B-640. Each container shall be closed and reinforced in accordance with the appendix of the applicable container specification. Alternatively, rolls or bundles of leather, of like description only, shall be packed in bias-sewn tubing or a bag (presewn one end) made from cotton osnaburg cloth conforming to class 2 of CCC-C-429, or jute (or kenaf) burlap cloth conforming to class 3 of CCC-C-467. The bias-sewn tubing specified shall conform to MIL-T-40625. Tubing or bag packs shall have the open ends closed with two double-looped wire ties. The wire ties shall be not less than 6 inches long, 0.072-inch thick, galvanized soft iron or steel, with a 1/2-inch diameter formed eye at each end. The first wire tie shall be applied as close to the leather as possible so there will be a minimum of slack in the tube, the cloth being gathered evenly to form an ear, and all edges of the cloth being 3 to 5 inches from the wire tie at the base of the ear. The second wire tie shall be applied at a distance not more than 1-1/2 inches from the first wire tie. The twisted ends of the wire ties shall alternate and face in opposite directions. Each pack shall be reinforced with two 5/8-inches wide by 0.015-inch thick flat straps conforming to type 1, finish A of QQ-S-781 or type II of PPP-S-760. The straps shall be applied around the pack placed approximately 10 inches (when applicable) in from each end. Sufficient tension shall be applied to the strapping to insure tight application. The weight of the contents of each pack shall not exceed 100 pounds with a 10 pound plus tolerance permitted.

3.3.2.1 Weather-resistant fiberboard container. When specified (see 6.1), the shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 or class 2 of PPP-B-640 and closed in accordance with the appendix of the applicable container specification.

- * 3.3.3 Commercial packing. Leather, preserved as specified in 3.2 shall be packed in accordance with ASTM D 3951.

3.4 Palletization. When specified (see 6.1), leather packed as specified in 3.3 shall be palletized in accordance with load type Ia or II of MIL-STD-147. Pallet type shall be type I (4-way entry), type IV or type V of MIL-STD-147. Pallets shall be fabricated from wood groups I, II, III or IV of MIL-STD-731.

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Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means K and L or film bonding means O or P. Pallet pattern shall be in accordance with the appendix of MIL-STD-147. Interlocking of loads shall be effected by reversing the pattern of each course.

- * 3.5 Marking. In addition to any special marking by the contract or purchase order, unit packs, shipping containers, and palletized unit loads shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable.

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 assure supplies and services conform to prescribed requirements.

- * 4.1.1 Responsibility for compliance. All items must meet all requirements of section 3. The inspection set forth in this document shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the document shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 Responsibility for dimensional requirements. Unless otherwise specified in the contract or purchase order, the contractor is responsible for assuring that all specified dimensions have been met. When dimensions cannot be examined on the end item, inspection shall be made at any point, or at all points in the manufacturing process necessary to assure compliance with all dimensional requirements.

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

4.2.1 Component and material 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, modified or qualified in this document or applicable purchase document.

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- * 4.2.2 Packaging examination. The fully packaged end items shall be examined for the defects listed in table I. The lot size shall be expressed in units of rolls, stacks, or bundles. The sample unit shall be one roll, stack or bundle. The inspection level shall be S-2 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major defects and 10.0 for total (major and minor combined) defects.

TABLE I. Packaging defects

Examine	Defect	Classification	
		Major	Minor
Leather	Sets made up with parts of unlike description	X	
	Not tightly rolled, stacked, or bundled when specified	X	
	Less than required number specified per set	X	
	Outer piece not rolled as specified	X	
	Sets not alternated when two or more sets are packaged together		X
Wrapper (Preservation)	Each roll not completely wrapped in kraft paper when specified	X	
	Ends not folded over and secured with specified gummed paper tape		X
	Single-faced corrugated or solid paperboard wrap missing when specified	X	
	Extends less than 1 inch beyond ends of roll (paperboard wrap only)	X	
	Less than 4-inch overlap (paperboard wrap only)		X
Cord or twine	Less than two ties around, and one lengthwise of body	X	
	More than 13 inches less than 11 inches from each end		X
	Knots slip	X	

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TABLE I. Packaging defects (cont'd)

Examine	Defect	Classification	
		Major	Minor
Tube (class 2 leather only)	Not convolute or spiral wound chipboard	X	
	Not covered with kraft paper	X	
	Ends of tube less than flush with ends of roll	X	
	Extends more than 1 inch beyond end of roll		X
Roll or bundle	Not of like description	X	
Shipping container (when specified)	Not snug-fitting container when specified	X	
	Overlap less than 3 inches on OSC container when specified	X	
	Not waterproofed in accordance with the appendix of the applicable specification	X	
Wrapper (Packing-when specified)	Each roll or bundle not completely wrapped in barrier material	X	
	Ends of wrap not tightly folded and secured with tape specified		X
Tubing or bag closure (when specified)	One or more wire ties missing	X	
	First wire tie at each end not applied close to leather	X	
	Cloth gathered unevenly and edges less than 3 inches from wire tie		X
	Twist on second wire not opposite that of first wire		X
	Wires spaced more than 1-1/2 inches		X
	Less than two straps around pack	X	
	Loose strap	X	
	Strap more than 12 inches or less than 8 inches from each end		X

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TABLE I. Packaging defects (cont'd)

<u>Examine</u>	<u>Defect</u>	<u>Classification</u>	
		<u>Major</u>	<u>Minor</u>
Tubing or bag closure (when specified) (cont'd)	Weight of contents more than 110 pounds	X	
Marking	Omitted; incomplete; incorrect; illegible; of improper size, location, sequence or method of application	X	

- * 4.2.3 Palletization examination. The fully packaged and palletized end items shall be examined for the defects listed below. The lot size shall be expressed in units of palletized unit loads. The sample unit shall be one palletized unit load, fully packaged. The inspection level shall be S-1 and the AQL, expressed in terms of defects per hundred units, shall be 6.5.

<u>Examine</u>	<u>Defect</u>
Finished dimensions	Length, width, or height exceeds specified maximum requirements.
Palletization	Pallet pattern not as specified. Interlocking of loads not as specified. Load not bonded as specified.
Weight	Exceeds maximum load limits.
Marking	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.

5. PACKAGING

This section not applicable to this document.

6. NOTES

6.1 Ordering data. Acquisition documents should specify the following:

- a. Title, number, and date of this document.
- b. Selection of applicable levels of preservation and packing (see 3.2 and 3.3).
- c. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 3.3.2.1).

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- d. When palletization is required (see 3.4).
- e. Type and class of unit load required (see 3.3.1).

6.2 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 were made. This was done as a convenience only, and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content, as written, irrespective of the marginal notations and relationship to the last previous issue.

6.3 Subject term (key word) listing.

Packaging, leather

Custodians:

Army - GL
Navy - NU
Air Force - 99

Preparing activity:

Army - GL
Project No. 8330-0185

Review activities:

Army - SM
Air Force - 11, 82

User activities:

Navy - OS, SH

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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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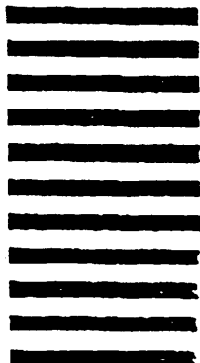
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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-P-43432B		2. DOCUMENT TITLE PACKAGING OF LEATHER	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
3b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR	
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		<input type="checkbox"/> MANUFACTURER	
		<input type="checkbox"/> OTHER (Specify): _____	
5. PROBLEM AREAS			
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	
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