

KK-L-201f
May 31, 1968
~~SUPERSEDING~~
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FEDERAL SPECIFICATION
LEATHER, CATTLEHIDE, LACE, AND CUT LACES

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers the requirements for alum, Indian, latigo, and chrome tanned lacing leather and cut laces (see 6.1).

1.2 Classification.

1.2.1 Types, classes, and treatments. The leather and cut laces shall be furnished in the following types, classes and treatments as specified (see 6.2).

Type I - Alum tanned, rawhide.
Type II - Alum and vegetable tanned, Indian tanned.
Type III - Alum and vegetable tanned, latigo.
Type IV - Chrome tanned.

Class 1 - Sides
Class 2 - Cut laces.
Class 3 - Backs.

Treatment A - Mildew resistant treated.
Treatment B - Not mildew resistant treated.

2. APPLICABLE DOCUMENTS

2.1 The following specifications and standards of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

Federal Specifications:

KK-L-311 - Leather; Methods of Sampling and Testing.
UU-P-268 - Paper, Kraft, Untreated, Wrapping.
PPF-B-636 - Box, Fiberboard.
PPP-F-320 - Fiberboard; Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes.

Federal Standard:

Fed. Std. No. 123. - Marking for Domestic Shipment (Civilian Agencies).

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards, and at the prices indicated in Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402.

(Single copies of this specification and other product specifications required by activities outside the Federal Government for bidding purposes are available without charge at the General Services Administration Regional Offices in Boston, New York, Washington, D.C., Atlanta, Chicago, Kansas City, Mo., Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, Wash.

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Military Specification:

MIL-L-43432 - Leather, Packaging and Packing of.

Military Standards:

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

MIL-STD-129 - Marking for Shipment and Storage.

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer).

3. REQUIREMENTS

3.1 Material. The lace leather and cut laces shall be full grain cattlehide. The flesh side shall be smooth and free from loose flesh.

3.1.1 Class 1. Class 1 leather shall be furnished in the form of sides.

3.1.2 Class 2. Class 2 shall be furnished in the form of cut laces. The laces shall be cut from class 1 or class 3 leather.

3.1.3 Class 3. Class 3 leather shall be furnished in the form of backs.

3.2 Tannage.

3.2.1 Type I. Type I leather shall be tanned with aluminum salts.

3.2.2 Types II and III. Type II and III leather shall be tanned with aluminum salts and vegetable tanning materials.

3.2.3 Type IV. Type IV leather shall be chrome tanned.

3.3 Physical requirements.

3.3.1 Classes 1 and 3.

3.3.1.1 Trim (form and area). Class 1 and class 3 leather shall conform with the definitions of sides and backs as applicable and as listed under "Definition of Terms" in KK-L-311. Class 1 leather shall be not less than 16 square feet in total area. Class 3 leather shall be not less than 12 square feet in total area. The area in terms of square feet shall be legibly marked in the butt area on the flesh side of the leather.

3.3.1.2 Thickness. The thickness of class 1 and class 3 leather shall be as specified (see 6.2). A minus thickness tolerance of 50 percent shall be permitted. The thickness shall be expressed in terms of ounces.

NOTE: 1 ounce = 1/64 inch.

3.3.1.3 Color. The color of the class 1 and class 3 leather shall be as specified (see 6.2).

3.3.1.4 Cracking. The leather shall not crack when tested as specified in 4.3.

3.3.1.5 Shrinkage temperature (type IV). The type IV leather shall not shrink at or below 97°C when tested as specified in 4.3.

3.3.1.6 Elongation. Not less than 80 percent of the specimens tested shall have elongation values no greater than 20 percent at the loads specified below for the indicated thicknesses when tested as specified in 4.3.

Thickness (ounces)	Loads (pounds)
4	45.0
5	60.0
6	70.0
7	80.0
8	95.0

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3.3.1.7 Breaking force. Not less than 80 percent of the specimens tested shall have minimum breaking force values as specified below for the indicated thickness when tested as specified in 4.3.

Thickness (ounces)	Breaking force (pounds)
4	95.0
5	115.0
6	140.00
7	165.0
8	190.0

3.3.2 Class 2.

3.3.2.1 Cutting. The cut laces shall be cut in the lengthwise direction of the side or back. The cut laces shall be free of cuts, holes, scars, and grain damage which adversely affects serviceability or appearance. The laces shall have clean cut square edges.

3.3.2.2 Color. The color of the laces shall be as specified (see 6.2).

3.3.2.3 Width, length and thickness. The laces shall be furnished in the widths indicated below and as specified (see 6.2). The length and thickness of the laces shall be as specified below and as required for the width specified.

Width, inch ($\pm 1/64$ inch)	Length, feet (± 1 inch)	Thickness, ounces ($\pm 0, - 50$ percent)
1/8 1/	4	8
1/4	4	6
5/16	4	6
3/8	5	7
7/16	5	7
1/2	6	8
5/8	6	8
3/4	6	8
7/8	6	8
1	6	8

1/ Tolerance of plus 1/64 inch only.

3.4 Chemical requirements.

3.4.1 The leather shall conform to the requirements of table I when tested as specified in 4.3.

TABLE I. Chemical requirements

Characteristic	Minimum	Maximum
Aluminum oxide, percent 1/ Type I	2.0	-
Type II and III	1.0	-
Chromic oxide, percent 1/ Type IV	3.5	-
Total ash, percent 1/ Types I, II, III	-	15.0
Type IV	-	8.0
Chloroform-soluble material, percent 2/ Types I, II and IV	20.0	30.0
Type III	12.0	22.0
Acidity (pH) Types I, II, III, IV	3.5	-

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1/ Calculated on the moisture free and chloroform extractable-free basis.

2/ Calculated on the moisture free basis.

3.4.2 Mildew resistance (treatment A). When treatment A is specified (see 6.2), the leather shall contain not less than 0.18 percent nor more than 0.70 percent paranitrophenol fungicide when tested as specified in 4.3.

3.5 Workmanship. The finished leather shall conform to the quality and grade of product established by this specification. Occurrence of defects shall not exceed the applicable quality levels.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the 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 where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1 Certificate of compliance. Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

4.2 Inspection. Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated hereinafter.

4.2.1 Component and material inspection. In accordance with 4.1 above, components and materials shall be tested in accordance with all the requirements of referenced specifications, drawings and standards, unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase documents.

4.2.2 Examination of the end item. The classification of defects found during the examination shall be in accordance with 4.2.2.1 and 4.2.2.2.

4.2.2.1 Examination of classes 1 and 3. The sample unit for visual and dimensional examination of class 1 and class 3 leather shall be one side or back. The lot size shall be expressed in units of one side or back. The sample size for thickness determinations shall be 15 regardless of lot size, and the rejection number shall be 2.

4.2.2.1.1 Examination for visual characteristics (classes 1 and 3).

Examine	Defect
Trim	
class 1	Not sides.
class 3	Not backs.
Color	Not as specified.
Quality of leather	Flesh side not smooth or contains areas of loose flesh in excess of 4 square inches in total area. Stain, cut, hole, scratch, brand, hip mark, rough shoulder, heavy vein, deep fat wrinkle, boney or flanky area or other surface imperfection which impairs the cutting value of more than 12 percent of the total area of the leather.

NOTE: Light well healed scratches and grub holes, light fat wrinkles and slight stains shall not be classified as defects.

4.2.2.1.2 Examination for dimensional characteristics (classes 1 and 3).

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Examine	Defect
Thickness 1/	Not as specified
Area (expressed in terms of square feet)	Not as marked on leather Class 1 less than 16 sq. ft. Class 3 less than 12 sq. ft.
Marking	Omitted, illegible or not in area specified.

1/ Thickness shall be determined in accordance with method 1011 of KK-L-311.

4.2.2.2 Examination of class 2. Sampling procedure for visual and dimensional examination of class 2 laces shall be performed in accordance with MIL-STD-105. The sample unit for these examinations shall be one cut lace. The lot size shall be expressed in terms of one cut lace. The inspection levels and acceptable quality levels (AQLs) expressed in defects per 100 units shall be as follows:

Examination	Inspection level	AQL
For defects applicable to 4.2.2.2.1 visual characteristics.	II	4.0
For defects applicable to 4.2.2.2.2 dimensional characteristics.	S-3	4.0

4.2.2.2.1 Examination for visual characteristics (class 2).

Examine	Defect
Color	Not as specified.
Quality of leather	Flesh side not smooth or contains loose flesh. Stain, cut, hole, open scratch, heavy vein, scar, deep fat wrinkle, brand boney or flanky area. Edges of lace not cleanly cut.

4.2.2.2.2 Examination for dimensional characteristics (class 2).

Examine	Defect
Width	Not as specified.
Length	Not as specified.
Thickness	Not as specified.

NOTE: A rule calibrated to 1/64 inch shall be used to determine the width, and a rule calibrated to 1 inch shall be used to determine length. The spring-type gage specified in method 1011 of KK-L-311 shall be used to determine thickness. The thickness and width shall be determined at the center of the lace and at points one inch from each end of the lace.

4.2.3 Examination of preparation for delivery requirements.

4.2.3.1 Classes 1 and 3. An examination shall be made in accordance with the provisions of MIL-L-43432 to determine that packaging, packing and marking requirements of section 5 of this specification are complied with.

4.2.3.2 Class 2. An examination shall be made to determine that packaging, packing, and marking requirements of section 5 of this specification are complied with. The sampling procedure for this examination shall be in accordance with MIL-STD-105. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully prepared for delivery with the exception that it need not be sealed. Defects of closure listed below shall be examined

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on shipping containers fully prepared for delivery. The lot size shall be the number of containers in the end item inspection lot. The inspection level shall be level S-2 and the AQL shall be 2.5 defects per 100 units.

Examine	Defect
Marking (exterior and interior)	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing. Any component damaged, affecting serviceability.
Workmanship	Inadequate application of components, such as; incomplete closure of container flaps, loose strapping, inadequate stapling.
Content	Bulged or distorted container. Number of laces per bundle is more or less than required. 1/
Weight	Net weight exceeds requirement.

1/ For this defect, three bundles from each shipping container in the sample shall be examined.

4.3 End item testing. The methods of testing specified in KK-L-311, wherever applicable, and as listed in table II shall be followed. Sampling procedures and location from which the sample unit is to be obtained shall be in accordance with KK-L-311. All test reports shall contain the individual values utilized in expressing the final results. The lot shall be rejected if any one of the following conditions exists:

- More than three test failures occur for elongation or breaking force.
- More than one test failure occurs for the remaining requirements applicable to the sample unit.
- Any composite test result fails to meet the specified requirement.

TABLE II. Tests

Characteristic	Requirement paragraph	Test method	Requirement applicable to	
			Sample unit	Composite sample
Material identification	3.1	1/	-	-
Tannage	3.2	1/	-	-
Cracking	3.3.1.4	4011 2/	X	-
Shrinkage temperature	3.3.1.5	7011	X	-
Elongation	3.3.1.6	2021	X	-
Breaking force	3.3.1.7	2021	X	-
Aluminum oxide	3.4.1	6531	-	X
Chromic oxide	3.4.1	6515	-	X
Total ash	3.4.1	6421	-	X
Chloroform-soluble material	3.4.1	6341	-	X
Acidity (pH)	3.4.1	6621	-	X
Paranitrophenol	3.4.2	6711	-	X

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- 1/ The supplier shall submit a certificate of compliance for this characteristic.
- 2/ The diameter of the mandrel shall be 1/8 inch.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A or C as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Classes 1 and 3. Leather shall be packaged in accordance with the applicable requirements of MIL-L-43432.

5.1.1.2 Class 2. Laces of one type, width, color, and treatment only shall be compactly folded or coiled in multiples of twelve to form a bundle. Each bundle shall be securely tied with cotton tape or twine.

5.1.2 Level C. Leather and laces shall be packaged to afford adequate protection against physical damage during shipment from the supply source to the first receiving activity. The supplier may use his standard practice when it meets this requirement.

5.2 Packing. Packing shall be level A, B, or C as specified (see 6.2).

5.2.1 Level A.

5.2.1.1 Classes 1 and 3. Leather shall be packed in accordance with the applicable requirements of MIL-L-43432.

5.2.1.2 Class 2. Laces of one type, width, color, and treatment only, packaged as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC-L, grade V2s of PPP-B-636. The inside of each shipping container shall be fitted with a taped liner conforming to type CF, class weather-resistant, variety DW, grade V15c of PPP-F-320. Each container shall have the contents completely covered on the top and bottom with a sheet of 30 pound minimum basis weight kraft paper conforming to grade B of UU-P-268. Each shipping container shall be closed, waterproofed and reinforced with strapping or tape banding in accordance with the appendix of the container specification. The weight of contents of each shipping container shall not exceed 65 pounds.

5.2.2 Level B.

5.2.2.1 Classes 1 and 3. Leather shall be packed in accordance with the applicable requirements of MIL-L-43432.

5.2.2.2 Class 2. Laces, of one type, width, color, and treatment only, packaged as specified in 5.1, shall be packed in a fiberboard shipping container conforming to style RSC-L, type CF (variety SW), or SF, class domestic, grade 275 of PPP-B-636. The inside of each shipping container shall be fitted with a taped liner conforming to type CF, class domestic, variety DW, grade 275 of PPP-B-636. Each container shall have the contents completely covered on the top and bottom with a sheet of 30 pound minimum basis weight kraft paper conforming to grade B of UU-P-268. Each shipping container shall be closed in accordance with method II as specified in the appendix of the container specification. The weight of contents of each shipping container shall not exceed 65 pounds.

5.2.2.2.1 When specified (see 6.2), the shipping container shall be grade V3c or V3s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with the appendix of the container specification. The shipping container material may also be grade V4s of PPP-F-320.

5.2.3 Level C. Leather and laces, packaged as specified in 5.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate for such supplies. Containers shall be in accordance with rules or regulations of carriers applicable to the mode of transportation.

5.3 Marking.

5.3.1 Civil agencies. In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with Fed. Std. No. 123.

5.3.2 Military agencies. In addition to any special marking required by the contract or order, interior packages of cut laces and shipping containers shall be marked in accordance with MIL-STD-129. Each interior package of cut laces shall be attached a manila colored paper shipping tag for the identification information.

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6 NOTES

6.1 Intended use. The cattlehide lace leather and cut laces are primarily intended for shoe laces, name tags, slings for parachutes, and splicing purposes.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

- (a) Title, number and date of this specification.
- (b) Type, class and treatment required (see 1.2.1).
- (c) Thickness required (see 3.3.1.2).
- (d) Color required (see 3.3.1.3 and 3.3.2.2).
- (e) Width required (see 3.3.2.3).
- (f) Selection of applicable levels of packaging and packing (see 5.1 and 5.2).
- (g) When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).

MILITARY CUSTODIANS:

Army - GL
Navy - SA
Air Force - 11

Review activities:

Army - MD
Navy - SA
Air Force - 82, 85

User Activity:

Navy - MC

Preparing activity:

Army - GL

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