

KK-L-254D  
September 15, 1975  
SUPERSEDING  
Fed. Spec. KK-L-254C  
May 10, 1972

## FEDERAL SPECIFICATION

### LEATHER, SHEEPSKIN, CHROME TANNED

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 chrome tanned sheepskin.

#### 1.2 Classification.

1.2.1 Types, classes, and subclasses. The leather shall be of the following types, classes, and subclasses as specified (see 6.2):

Type A. - Hair sheep.

Type B. - Domestic.

Class 1. - Mildew resistant treated.

Class 2. - Not mildew resistant treated.

Subclass a. - Perspiration resistant treated.

Subclass b. - Not perspiration resistant treated.

#### 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:

##### Federal Standards:

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

Fed. Test Method Std. No. 131 - Leather, Methods of Sampling  
and Testing.

FSC 8330

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(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

**Military Specification:**

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

(Copies of Military Specifications 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.)

**3. REQUIREMENTS**

3.1 Material. The leather shall be full grain, chrome tanned sheepskin. The flesh side of the leather shall be smooth and free of coarse loose fiber.

3.1.1 Type A, hair sheep. Type A leather shall be made from the skins of the hair sheep of Brazil, Nigeria, Sudan, Abyssinia, Djeddah, or other origins. Wool, or coarse wool sheepskins, such as Iranian type sheepskins, are not acceptable.

3.1.2 Type B, domestic. Type B leather shall be made from the skins of the domestic sheep.

3.1.3 Subclass a. When subclass a is specified (see 6.2), glutaraldehyde shall be incorporated into the leather.

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### 3.2 Physical requirements.

3.2.1 Color. The color of the leather, the method of application (drum, spray or brush), and the degree of dye penetration shall be as specified (see 6.2 and 6.3). When the spray or brush method is required, the surface of the leather to be dyed shall be as specified (see 6.2).

3.2.2 Finish. Unless otherwise specified (see 6.2), a light application of finish and dye containing only sufficient pigment as to assist in making the color uniform shall be applied to the grain surface. The finish shall not shrink or change the appearance of the natural grain surface, mar the leather, or camouflage any defect.

3.2.3 Form. The leather shall be in the form of whole skins and shall be trimmed in accordance with the definition of trim as listed under "Definitions of Terms" in FED-STD-311. The area expressed in terms of square feet shall be legibly marked in the butt area on the flesh side of the leather.

3.2.4 Thickness. Unless otherwise specified (see 6.2), the thickness of the leather shall be  $2 + \frac{1}{2}$  ounces when examined in accordance with 4.2.2. The leather may be buffed or shaved to obtain the desired thickness (NOTE: 1 ounce = 1/64 inch).

3.2.5 Stiffness. At least 80 percent of the specimens tested shall have stiffness values no greater than 60 degrees when tested as specified in 4.3.

3.2.6 Colorfastness (resistance to rubbing). Unless otherwise specified (see 6.2), staining of the dry crock cloth shall be not lower numerically than Munsell Value 9.5 and staining of the wet crock cloth shall be not lower numerically than Munsell Value 8.5 when the leather is tested as specified in 4.3.

3.2.7 Staining. Unless otherwise specified (see 6.2), staining of the test pad shall have an expanded AATCC value of not less than 4 when the leather is tested as specified in 4.3.

#### 3.2.8 Stitch tearing strength.

3.2.8.1 Type A. At least 80 percent of the specimens tested shall have stitch tearing strength values of not less than 15 pounds when tested as specified in 4.3.

3.2.8.2 Type B. At least 80 percent of the specimens tested shall have stitch tearing strength values of not less than 10 pounds when tested as specified in 4.3.

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3.2.9 Elongation. At least 80 percent of the specimens tested shall have elongation values of not less than 25 percent when tested as specified in 4.3. The elongation of type A shall be determined at a load of 25 pounds and the elongation of type B shall be determined at a load of 20 pounds. Any specimen that ruptures or exhibits grain crack below the specified load shall be recorded as a failing specimen.

3.2.10 Shrinkage temperature. Shrinkage of the leather shall not take place at or below 92° C, when tested as specified in 4.3.

3.2.11 Area stability to perspiration (subclass a). At least 80 percent of the specimens shall have an area loss no greater than 15 percent when tested as specified in 4.3.

3.2.12 Area stability to laundering (subclass a). When specified (see 6.2), the subclass a leather shall be tested for area stability to laundering and at least 80 percent of the specimens shall have an area loss no greater than 20 percent when tested as specified in 4.3.

### 3.3 Chemical requirements.

3.3.1 Class 1. When class 1 leather is specified, the leather shall contain not less than 0.18 percent and not more than 0.70 percent paranitrophenol fungicide when tested as specified in 4.3.

3.3.2 The leather shall conform to the chemical requirements specified in table I, when tested as specified in 4.3.

TABLE I. Chemical requirements

| Characteristic                                  | Minimum | Maximum |
|---|---------|---------|
| Chloroform-soluble material (percent) <u>1/</u> | -       | 25.0    |
| Total ash (percent) <u>1/</u>                   | -       | 9.0     |
| Chromic oxide (percent) <u>1/</u>               | 2.5     | -       |
| pH value  | 3.0     | -       |

1/ Calculated on the moisture free basis.

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

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#### 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 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 Quality conformance inspection. Sampling for inspection shall be performed in accordance with FED-STD-311, except where otherwise indicated hereinafter.

4.2.1 Component and material inspection. In accordance with 4.1, 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 document.

4.2.2 Examination of the end item. The classification of defects found during the examination of the leather for visual and dimensional characteristics shall be in accordance with 4.2.2.1 and 4.2.2.2. The sample unit for these examinations shall be one sheepskin. The lot size shall be expressed in units of one sheepskin. Sampling for these examinations shall be performed in accordance with FED-STD-311, except that a sample size of 15 and a rejection number of 2 shall be applicable for thickness determinations on lots consisting of 51 or more sheepskins. Separate examinations shall be performed for visual and dimensional characteristics, but the same sample may be used for each examination.

##### 4.2.2.1 Examination for visual defects.

| <u>Examine</u> | <u>Defect</u>   |
|----------------|---|
| Color          | Not as specified.<br>Not dyed as specified.<br>Not uniform.   |
| Finish         | Unless otherwise specified, grain side not finished.<br>Streaky, flaky, cracked or tacky.<br>Excessively pigmented. |

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| <u>Examine</u>     | <u>Defect</u>  |
|--------------------|--|
| Form               | Not whole sheepskin.   |
| Quality of leather | Any cut, hole, tear, scratch, brand, vein, wrinkle, cockle, coarse loose fiber on flesh side, boardy area, flanky area and other imperfections that individually or collectively cause more than a 12 percent loss in the total area of the leather. |

4.2.2.2 Examination for dimensional characteristics.

| <u>Examine</u>                           | <u>Defect</u>   |
|--|---|
| Area (expressed in terms of square feet) | Not as marked on the unit.  |
| Marking                                  | Omitted, illegible, or not in area specified.                                     |
| Thickness <u>1/</u>                      | Less than 1-1/2 ounces or greater than 2-1/2 ounces (unless otherwise specified). |

1/ Thickness shall be measured in accordance with Method 1011 of FED-STD-311. Any sample unit having one or more thickness measurements outside the specified thickness range shall be classified as a defective unit.

4.2.3 Examination of preparation for delivery requirements. An examination shall be made in accordance with the provisions of MIL-L-43432 to determine that the packaging, packing, and marking comply with the section 5 requirements.

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

- (a) More than 3 specimens fail to meet stiffness requirements.
- (b) More than three specimens fail to meet stitch tearing strength requirements or more than 3 specimens fail to meet elongation requirements.

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(c) When subclass a is specified, more than 3 specimens fail to meet perspiration resistance requirements.

(d) When subclass a is specified and the leather is required to be tested for area stability to laundering (see 6.2), more than 3 specimens fail to meet the laundering requirements.

(e) One or more specimens fail to meet any of the remaining requirements applicable to the sample unit.

(f) Any composite test result fails to meet the specified requirement.

TABLE II. Tests

| Characteristic                              | Requirement paragraph | Test method    | Requirement applicable to |           |
|---|-----------------------|----------------|---------------------------|-----------|
|   |                       |                | Sample unit               | Composite |
| Material identification                     | 3.1                   | <u>1/</u>      | -                         | -         |
| Stiffness                                   | 3.2.5                 | 4212 <u>2/</u> | X                         | -         |
| Colorfastness                               | 3.2.6                 | 3031           | X                         | -         |
| Staining                                    | 3.2.7                 | 3021           | X                         | -         |
| Stitch tearing strength                     | 3.2.8                 | 2151           | X                         | -         |
| Elongation                                  | 3.2.9                 | 2021           | X                         | -         |
| Shrinkage temperature                       | 3.2.10                | 7011           | X                         | -         |
| Area stability to perspiration (subclass a) | 3.2.11                | 3211           | X                         | -         |
| Area stability to laundering (subclass a)   | 3.2.12                | 3041           | X                         | -         |
| Paranitro-phenol, class 1                   | 3.3.1                 | 6711           | -                         | X         |
| Chloroform-soluble material                 | 3.3.2                 | 6341           | -                         | X         |

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TABLE II. Tests (cont'd)

| Characteristic | Requirement paragraph | Test method | Requirement applicable to |           |
|----------------|-----------------------|-------------|---------------------------|-----------|
|                |                       |             | Sample unit               | Composite |
| Total ash      | 3.3.2                 | 6421        | -                         | X         |
| Chromic oxide  | 3.3.2                 | 6515        | -                         | X         |
| pH value       | 3.3.2                 | 6621        | -                         | X         |

- 1/ Unless otherwise specified, a certificate of compliance shall be submitted and will be acceptable for the stated requirement.
- 2/ Exceptions to Method 4212: In paragraph 5.2, line 23, delete "by applying a 90 degrees angular twist through two cycles". Delete subparagraph "b" and substitute "b Reverse rotation to the clockwise direction and continue rotating slowly until the specimen clamp indicator (I) has passed the original reference line indicated on the lower dial (J) by approximately 45 degrees. Reverse the direction of rotation again and slowly realign the specimen clamp indicator (I) with the original reference line indicated on lower dial (J)."

## 5. PREPARATION FOR DELIVERY

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

5.1.1 Levels A and C. Leather shall be packaged in accordance with the applicable requirements of MIL-L-43432.

5.1.2 Level B (Civil agencies). Leather shall be packaged in accordance with level A of 5.1.1 (see 6.2).

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

5.2.1 Levels A, B and C. Leather shall be packed in accordance with the applicable requirements of MIL-L-43432.

5.3 Marking.

5.3.1 Civil agencies. In addition to any special marking required by the contract or order, shipments shall be marked in accordance with FED-STD-123.



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5.3.2 Military requirements. In addition to any special marking required by the contract or order, shipments shall be marked in accordance with MIL-L-43432.

## 6. NOTES

6.1 Intended use. The leather is intended for use in jackets, gloves, mittens, and other wearing apparel.

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 subclass required (see 1.2.1 and 3.1.3).
- (c) Color, method of application, and degree of dye penetration required (see 3.2.1). Surface of the leather to be dyed when brush or spray methods are specified (see 3.2.1).
- (d) When finish is not required (see 3.2.2).
- (e) When required thickness is not in accordance with thickness specified (see 3.2.4).
- (f) When colorfastness and resistance to staining are not to be in accordance with specified requirements (see 3.2.6 and 3.2.7).
- (g) When subclass a leather is to be tested for area stability to laundering (see 3.2.12).
- (h) Selection of applicable levels of packaging and packing (see 5.1 and 5.2).
- (i) When level B packaging is required for Civil agencies (see 5.1.2).

6.3 Chrome tanned sheepskin leather may be purchased as a commercial item in the following colors: cream, black, dark brown and saddle brown.

6.4 Level B packaging and packing should be used by ordering agencies only when shipment is known to be made to a holding supply depot or warehouse from which partial shipments will be made to ultimate consumers.

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**Custodians:**

Army - GL  
Navy - SA  
Air Force - 11

**Review activities:**

Army - MD  
Air Force - 82  
DSA - CT

**Preparing activity:**

Army - GL

**Civil Agency Coordinating Activities:**

GSA - FSS  
USDA - ARS

Project No. 8330-0157

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