

DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS
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UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR
UPHOLSTERY LEATHER

FEDERAL SPECIFICATIONS BOARD SPECIFICATION No. 183

This specification was officially promulgated by the Federal Specifications Board on June 30, 1924, for the use of the Departments and Independent Establishments of the Government in the purchase of upholstery leather.

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I. TYPES

This specification applies to three grades of dyed or coated upholstery leather as follows: (*a*) Grain (snuffed), (*b*) machine buffed, and (*c*) No. 1 split.

II. MATERIAL AND WORKMANSHIP

1. HIDES.—Shall be brined or green salted.
2. TANNAGE.—Shall be with vegetable tanning materials.

III. GENERAL REQUIREMENTS

1. DEFINITIONS OF GRADES.—Grain leather (snuffed) is the first split from a hide from which an inappreciable thickness of the grain has been removed.

Machine-buffed leather is the first split from a hide after a thin layer of the grain, called a buffing and approximately 1/64 inch thick, has been removed.

No. 1 split leather is the next split from a hide after either a grain or machine-buffed split has been removed.

2. SELECTIONS.—All grades shall be cut from whole hides evenly trimmed, with the forehead trimmed off at the eyes, tail not more than 2 inches long, and shanks trimmed off above the knees.

“A” selection shall consist of leather free from brands, patches, cuts, scores, and open grub holes, excepting that 10 per cent of the hides may contain not over four open grub holes per hide.

“B” selection shall consist of leather free from brands, cuts, and scores, but may contain not over nine open grub holes per hide. Fifty per cent of the hides may also contain not over four patches (not over 1½ inches in the longest dimension) per hide.

3. COLOR, GRAIN, AND FINISH.—Shall conform to the accepted sample.

IV. DETAIL REQUIREMENTS

1. **SURFACE BLEMISHES.**—Such as brush marks, brush stops, and bad flows will not be allowed.

2. **AREA OF HIDES.**—Shall average 48 square feet in area. The minimum area of any hide shall be 44 square feet.

3. **THICKNESS.**—Shall be $3/64$ inch, plus or minus $1/128$ inch.

4. **CRACKINESS.**—The finished surface shall not crack.

5. **TENSILE STRENGTH.**—The leather shall not begin to tear when subjected to a load of 100 pounds for grain leather (snuffed), 150 pounds for machine buffed leather, and 200 pounds for No. 1 split leather.

6. **STRETCH.**—Shall not exceed 25 per cent for grain leather (snuffed) and 30 per cent for machine buffed and No. 1 split leathers.

7. **FIBER APPEARANCE.**—A vertical section of grain leather shall show approximately 50 per cent of the thickness to be the grain fibers. A vertical section of machine buffed leather shall show approximately 25 per cent of the thickness to be grain fibers.

8. **TACKINESS.**—The surface shall not be tacky or sticky at 120° F.

9. **CHEMICAL REQUIREMENTS.**—The leather, on analysis, shall be in accordance with the following requirements:

Chemical constituents (moisture-free basis)

Constituent	Per cent
Free mineral acid.....maximum..	0.5
Grease (petroleum ether extract).....	10 to 18

V. METHODS OF INSPECTION AND TESTS

1. **INSPECTION TO DETERMINE COMPLIANCE WITH SPECIFICATION.**—Shall be at point of manufacture when practicable, but the right is reserved to inspect at point of delivery, in which case material if rejected shall be removed by contractor at his own expense.

2. **SAMPLING.**—Sample for test purposes shall be cut from the hide beginning at the root of the tail, extending 15 inches in the lengthwise direction and 6 inches in the crosswise direction.

The number of hides to be sampled shall be in accordance with the following:

Number hides delivered	Number to be sampled
Up to 50.....	2
50 to 100.....	4
Over 100.....	Not less than 2 per cent

3. **CRACKINESS.**—Shall be determined by making a double fold with the leather, coating side out, at a temperature of 32° F.

4. **TENSILE STRENGTH.**—Three test pieces from each sample, 6 inches long and 3 inches wide, shall be clamped in a lengthwise direc-

tion in a testing machine with the jaws 3 inches apart. The upper jaw of each set shall be 1 inch in width and centrally located on the test piece. The lower jaw may be either 2 or 3 inches in width.

5. **STRETCH.**—Shall be determined by the amount of separation of the jaws of the testing machine during the tensile strength test. When the loads specified in Section IV, 5 have been applied the amount of separation of the jaws shall be noted and the percentage stretch calculated.

6. **TACKINESS.**—A test piece 6 by 3 inches shall be subjected to heat at a temperature of 120° F. for one hour, after which time a piece of bleached cheesecloth shall be placed over the finished surface. A weight, weighing 4 pounds and having a base area of 4 square inches, shall be allowed to rest on the cloth for five minutes. The cloth shall then be removed and shall not adhere to the finished surface.

7. **MOISTURE.**—Dry 10 g of leather for 16 hours at a temperature between 95 to 100° C.

8. **GREASE (PETROLEUM ETHER EXTRACT).**—Extract 5 to 10 g of air-dry leather in a Soxhlet apparatus until free from grease, using petroleum ether boiling below 80° C. Evaporate off ether and dry to approximately constant weight.

9. **ACIDITY.**—*Free mineral acid* (Modified Proctor and Searle method).—Weigh a 2 g sample. Add 25 cc of N/10 sodium carbonate in the case of an unloaded leather (or a larger amount, 35 or 50 cc in the case of a leather highly loaded with epsom salts). After careful evaporation to dryness ignite the contents of the dish until as much of the carbon is burned off as possible. Add 25 cc of hot water and digest a few minutes. Filter the solution into a 300 cc flask. Wash the filter paper and unburned carbon well with hot water. Return to the dish and completely ignite. To the remaining ash add an amount of N/10 sulphuric acid equivalent to the amount of sodium carbonate used, digest for at least 15 minutes either on the water bath or on a hot plate. Filter into the flask containing the first filtrate and titrate the excess of acid with N/10 sodium carbonate, using methyl orange as the indicator.

VI. PACKING AND MARKING

1. **PACKING.**—Shall be in accordance with the practice of the contractor unless otherwise specified in the request for bids.

2. **MARKING.**—Each hide shall be marked with the manufacturer's name, grade of the leather, and area in square feet. Each bundle of hides shall be marked with the name of the contractor, name of material, and contract, order, requisition, or schedule number.

VII. ADDITIONAL INFORMATION

1. **REQUEST FOR BIDS.**—Shall specify number of square feet desired, grade desired (grain snuffed, machine buffed, or No. 1 split), selection, grain (pebble, straight, or Spanish), color, finish (bright or dull), and whether dyed or coated.

2. **SHIPPING.**—Shall be in accordance with the instructions of the purchaser.

VIII. GENERAL SPECIFICATIONS

No details.

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