



Designation: **F 696 – 9702**

Standard Specification for Leather Protectors for Rubber Insulating Gloves and Mittens¹

This standard is issued under the fixed designation F 696; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers leather protector gloves and leather protector mittens to be worn over electrical workers' rubber insulating gloves and rubber insulating mittens.

1.2 It is intended that the gloves specified herein shall fit snugly and without undue wrinkles over rubber insulating gloves and rubber insulating mittens specified in Specification D 120.

~~1.2 The purpose of the leather protectors is to provide mechanical protection only for the rubber insulating gloves and rubber insulating mittens. The leather protectors shall not be used for electrical protection.~~

2. Referenced Documents

2.1 *ASTM Standards:*

¹ This specification is under the jurisdiction of ASTM Committee F-18 on Electrical Protective Equipment for Workers and is the direct responsibility of Subcommittee F18.15 on Worker Personal Equipment.

Current edition approved March 10, ~~1997~~, 2002. Published May ~~1997~~, 2002. Originally published as F 696 – 80. Last previous edition F 696 – 947.

D 120 Specification for Rubber Insulating Gloves²

F 496 Specification for In-Service Care of Insulating Gloves and Sleeves²

2.2 *Federal Specifications*:³

KK-L-170C Leather, Kidskin or Goatskin, Chrome Tanned

KK-L-2004 Leather, Cattlehide, Deerskin and Horsehide, Chrome Tanned

751a Stitches; Seams; and Stitchings

3. Materials Significance and Use

3.1 The leather for the body purpose of the glove shall be grain cowhide, buffed grain cowhide, grain deerskin, grain pigskin, grain horsehide, or goatskin. Leather shall be free of cuts, open grub holes, or brand marks although well-healed grub scars are permitted. For protectors for Class 0 and Class 00 gloves, grain sheepskin or capeskin are also acceptable.

3.1.1 The thickness of the leather in the hand portion shall not be less than 1.00 mm (0.039 in.) nor greater than 1.60 mm (0.063 in.). For protectors is to provide mechanical protection only for Class 0 gloves, the rubber insulating gloves and rubber insulating mittens. The leather must be provided in a minimum thickness of 0.58 mm (0.023 in.), with the maximum thickness being 1.2 mm (0.04 in.). For protectors for Class 00 gloves, the leather must be provided in a minimum thickness of 0.40 mm (0.016 in.) with a maximum thickness being 1.20 mm (0.047 in.).

3.2 The cuff shall not be made of either leather or polymeric material or combination of both.

3.2.1 When leather is used for the cuff, it shall be of sufficient stiffness to be self-supporting.

3.2.2 When polymeric material electrical protection.

3.2 It is used for cuffs, it shall be made of 0.51 mm (0.020 in.) minimum thickness, 1.78 mm (0.070 in.) maximum thickness, common practice and shall be supported with fabric or equivalent to provide sufficient stiffness to be self-supporting and to prevent excessive elasticity. Cuffs may be made the responsibility of one or two layers the user of cuff material.

3.2.3 Cuffs may also be molded in one piece this type of elastomeric compounds, protective equipment to prepare complete instructions and shall be of sufficient thickness regulations to be self-supporting.

3.3 An adjustable drawstrap shall be made of either grain or split leather, webbing, or “shirred elastic.” It shall be a minimum of 13 mm (0.50 in.), maximum 19 mm (0.75 in.) wide. Adjustability of drawstrap shall be obtained through govern the correct and safe use of metal or synthetic buckles, nylon rings, or Velcro fasteners, except for shirred elastic, which such equipment.

NOTE 1—Specification F 496 provides its own adjustability.

3.4 Bonded nylon, polyester, or cotton thread shall be used throughout the protector glove. When bonded nylon or polyester thread is used, it shall be a minimum of size 69 and maximum of size 99, with the exception that when a looper thread is used, its minimum size may be size 46. When cotton thread is used, it should be size 16, 4-ply minimum.

3.5 The top edge of leather or polymeric cuffs shall be hemmed or finished with binding. significant guidelines on this subject.

4. Materials

4.1 The leather for the body of the glove shall be grain cowhide, buffed grain cowhide, grain deerskin, grain pigskin, grain horsehide, or grain goatskin. Leather shall be free of cuts, open grub holes, or brand marks although well-healed grub scars are permitted. For protectors for Class 0 and Class 00 gloves, grain sheepskin or capeskin are also acceptable.

4.1.1 The thickness of the leather in the hand portion shall not be less than 1.00 mm (0.039 in.) nor greater than 1.60 mm (0.063 in.). For protectors for Class 0 gloves, the leather must be provided in a minimum thickness of 0.58 mm (0.023 in.), with the maximum thickness being 1.2 mm (0.04 in.). For protectors for Class 00 gloves, the leather must be provided in a minimum thickness of 0.40 mm (0.016 in.) with a maximum thickness being 1.20 mm (0.047 in.).

4.2 The cuff shall be made of either leather or polymeric material or combination of both.

4.2.1 When leather is used for the cuff, it shall be of sufficient stiffness to be self-supporting with a minimum thickness of 1.2 mm (0.047 in.) and a maximum thickness of 1.78 mm (0.070 in.).

4.2.2 When polymeric material is used for cuffs, it shall have 0.51 mm (0.020 in.) minimum thickness and 1.78 mm (0.070 in.) maximum thickness, and shall be supported with fabric or equivalent to provide sufficient stiffness to be self-supporting and to prevent excessive elasticity. Cuffs may be made of one or two layers of cuff material.

4.2.3 Cuffs may also be molded in one piece of elastomeric compounds, and shall be of sufficient thickness to be self-supporting.

4.3 An adjustable drawstrap shall be made of either grain or split leather, webbing, or “shirred elastic.” It shall be a minimum of 13 mm (0.50 in.), maximum 19 mm (0.75 in.) wide. Adjustability of drawstrap shall be obtained through the use of metal or synthetic buckles, nylon rings, or Velcro fasteners, except for shirred elastic, which provides its own adjustability.

4.4 Bonded nylon, polyester, or cotton thread shall be used throughout the protector glove. When bonded nylon or polyester thread is used, it shall be a minimum of size 69 and maximum of size 99, with the exception that when a looper thread is used, its minimum size may be size 46. When cotton thread is used, it should be size 16, 4-ply minimum.

² Annual Book of ASTM Standards, Vol 10.03.

³ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-50948, Attn: NPODS.

4.5 The top edge of leather or polymeric cuffs shall be hemmed or finished with binding.

5. Manufacture

45.1 The leather protectors covered by this specification shall be manufactured in either clute, gunn, montpelier, or one-finger mitten patterns.

45.1.1 The clute pattern shall consist of a one-piece palm including the fronts of all four fingers and thumb. The one-piece palm may include the back of the index finger. When the palm includes the back of the index finger, there shall be three fourchettes to form the backs and sides of the other three fingers. When the palm does not include the back of the index finger, there shall be four fourchettes to form the backs and sides of the four fingers. The back of the thumb shall consist of one piece of leather.

45.1.2 The gunn pattern shall be a four-finger and thumb design in which the face of the thumb, the palm, and the first (index) and fourth (little) fingers are of one piece of leather. The palm may also include the back of the index finger. When it does, the back shall be of one piece and shall include the backs of the second, third, and fourth fingers up to the gauntlet. When the palm does not include the back of the index finger, then the back shall be of one piece including the backs of index, third, and fourth fingers up to the gauntlet. The fronts of the second and third fingers may be of one or two pieces of leather with outseams between fingers and the palm of the hand.

45.1.3 The montpelier pattern shall consist of a one-piece palm including fronts of all four fingers and thumb. The one-piece back shall include the backs of all four fingers. The palm and back shall be joined by fourchette strips. The back of the thumb shall consist of one piece of leather.

45.1.4 Mittens shall be of one-finger mitten design, which shall consist of the thumb, index finger, and one palm that will encompass the second, third, and fourth fingers into one. The face of the thumb, front and back of the index finger, and front of the palm shall be of one piece of leather. The back shall be one piece for the palm only. The back of the thumb shall consist of one piece of leather. A fourchette shall be sewn between the index finger and palm to make allowance for fit over the rubber insulating mitten.

45.2 *Thumb*—In all patterns, continuous thumb design, wing thumb, or set-in-thumb may be used. It may be of one or two pieces of material, and its relation to the other parts of the glove or mitten shall be such as not to interfere with the free movement of the fingers.

45.2.1 There shall be a reinforcement consisting of a strip of leather that shall extend from the cuff on the palm side across the thumb crotch.

45.2.1.1 Wing thumb patterns or protectors for Class 0 and Class 00 gloves may be made with or without this strip of leather.

45.3 The cuff shall be made of one or two pieces of cuff material and there shall be a leather or rubber shield reinforcing the front of the cuff. Protectors for Class 0 and Class 00 gloves may be cuffless or, if supplied with a cuff, may have the reinforcing shield omitted.

45.4 *Stitching*—There shall be no less than seven nor more than ten stitches per inch with the ends of all stitching securely backstitched. All stitching shall be in accordance with Federal Specification No. 751a, lock stitch Type 301 or chain stitch Type 401.

56. Dimensions

56.1 The overall length of the glove or mitten being supplied shall be measured laid flat as shown in Fig. 1 and the length shall be marked on the protector.

56.2 The actual length of the new (unused) protector glove shall not exceed the marked length nor shall the actual length be shorter than the marked length by more than 19.05 mm ($\frac{3}{4}$ in.).

6.3 The finished protectors may be lightly dusted inside with a talc that is not damaging to the rubber to reduce surface friction between leather protector and rubber insulating gloves or mittens.

7. Workmanship

67.1 *Forming*—The gloves or mittens shall be formed to proper shape and full size, with seams properly worked and smooth.

67.2 The finished glove shall be free of defects that may affect the serviceability of the glove.

7. Test Methods

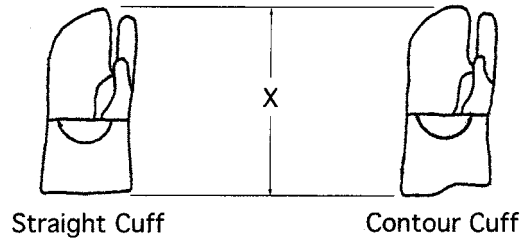
~~7.1 Testing of leather tannage shall be in accordance with test methods set forth in Federal Specification KK-L-2004 dated Nov. 15, 1976, and KK-L-170C dated Feb. 11, 1972, and amendments, as applicable.~~

8. Test Methods

8.1 Testing of leather tannage shall be in accordance with test methods set forth in Federal Specification KK-L-2004 dated Nov. 15, 1976, and KK-L-170C dated Feb. 11, 1972, and amendments, as applicable.

9. Marking

89.1 Each protector shall be clearly marked as to the following: (1) the hand size of the rubber insulating glove or mitten it is designed to cover, (2) the name of the manufacturer or vendor, and (3) the overall length of the protector. Size markings may be in single sizes or dual sizes such as 9/9½, 10/10½, 11/11½, or 12.



X = Overall Protector Length

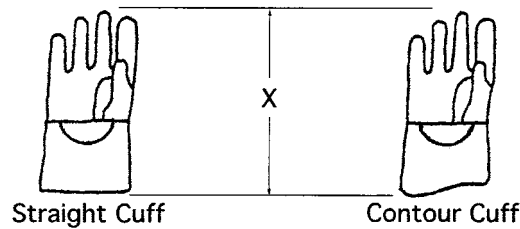


FIG. 1 Method of Measuring Overall Length of Leather Protectors

- 89.2 Each pair of protector gloves or mittens, at the time of purchase, shall be accompanied by a warning that the leather protectors are to be used only for mechanical protection for rubber insulating gloves and mittens and shall not be used for electrical protection. The warning shall also indicate that the correct length of leather protector is found in Specification F 496.
- 89.2.1 This requirement may be satisfied by marking on the gloves, attaching a tag to the glove, or enclosing printed material with each pair of gloves.

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