INSULATING GLOVES

LEATHER PROTECTORS, FABRIC LINERS AND GLOVE BAG

CONTENTS PAGE

1. GENERAL

1.01 This section covers the description, care and maintenance of insulating gloves provided for the protection of employees against electric shock, and the precautions to be followed in their use. Information on leather protector gloves, fabric liner gloves, and B glove bag is also included.

1.02 This section is identical to Section 081-710-200 and replaces Section 075-141-501.

1.03 A reference between the insulating glove size and the compatible sizes of leather protectors and fabric liner gloves is shown in Table A.

TABLE A

COMPATIBLE SIZES FOR
INSULATING GLOVE – LEATHER PROTECTOR –
FABRIC LINER

INSULATING GLOVE		LEATHER PROTECTOR		FABRIC LINER
TYPE	SIZE	B TYPE	C TYPE	
E	8	—	8	6
B, C, or E	9½	11	9½	7
B, C, or E	10	11	10	7
B, C, or E	11	12	11	8
B, C, or E	12	12	12	8

2. PRECAUTIONS

2.01 Except in emergencies such as to prevent serious injury or loss of life, employees shall not handle electric, power wires, or associated switches, and shall arrange to have the necessary work required on these circuits performed by the electric company. Similarly, employees shall not handle telephone wires that are known or suspected to be energized until the contact conditions have been cleared by the electric company. Employees wearing insulating gloves must avoid body contact with wires, poles, vehicles, and any other objects which might be energized.

2.02 Employees must be familiar with the precautions to be followed in rescuing an employee from a power contact (wearing insulating gloves) as described in Section 010-100-012 and 010-100-013.

2.03 Insulating gloves are inspected and subjected to an electrical test to ensure their insulating value when purchased from the manufacturer and periodically thereafter under the company's established routine. ***Employees and storerooms shall see that insulating gloves are returned for periodic electrical tests in accordance with local routine.***

2.04 Insulating gloves shall be inspected and tested in accordance with Parts 7 and 8 of this section.

2.05 Insulating gloves shall never be worn inside out as this stresses the curved portions of the gloves. Attack by ozone is more pronounced at points where rubber is stressed.

3. INSULATING GLOVES

3.01 All insulating gloves are gauntlet type with sizes 9 1/2, 10, 11, and 12 that are available in types B, C, D, and E. A smaller glove, size 8, is now available in types D and E. The size is equal to the approximate number of inches around the glove measured as shown in Fig. 1. The length of each glove, measured from the tip of the second finger to the outer edge of the gauntlet, is approximately 14 inches (Fig. 1).

3.02 B and C insulating gloves have been superseded by the E insulating gloves. Protector gloves are required to be worn over these gloves for mechanical protection. The C insulating gloves, while not as thick as the B insulating gloves, still are consistent with the desired dielectric strength and permit maximum flexibility.

3.03 D insulating gloves are of sufficient thickness to eliminate the need for protector gloves. They are primarily intended for central office use. These gloves are made of two plies of rubber, the outer ply black and inner ply red, to aid in determining the physical condition of the gloves.

3.04 E insulating gloves are made of two plies of rubber: The outer ply black and the inner ply red, to aid in determining the physical condition of the glove. Leather protector gloves must always be worn over these gloves when in use. They are intended for use by outside plant forces.

Fig. 1—E Insulating Glove

4. LEATHER PROTECTOR GLOVES

4.01 B or C leather protector gloves (Fig. 2) shall always be worn over B, C, or E insulating gloves to prevent mechanical damage to the insulating gloves. Leather protector gloves do not provide protection from electrical shock by themselves and shall never be worn except over insulating gloves. Neither shall they be worn as a substitute for work gloves.

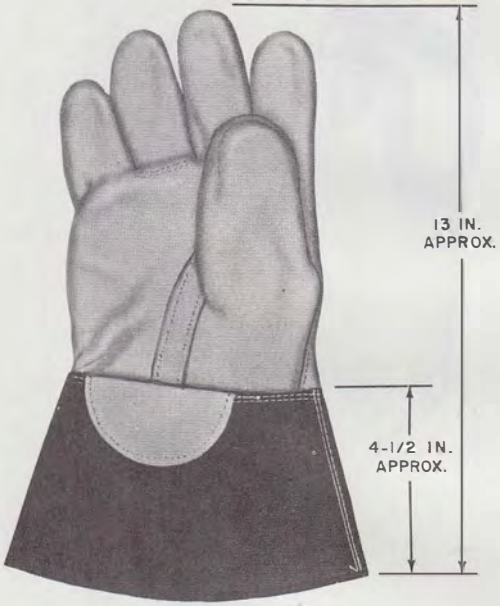

Fig. 2—Leather Protector Glove

4.02 ***B leather protector gloves*** are available in two sizes for use with B, C, or E insulating gloves. (See Table A.)

4.03 ***C leather protector gloves*** are flexible and less bulky than the B type and are available in five sizes for use over B, C, or E insulating gloves. (See Table A.)

4.04 Leather protector gloves shall be given reasonable care in their use. Oil, grease, paint, etc, on the palm and finger surfaces of the gloves will impair their usefulness for work operations. Such foreign matter should be immediately wiped off the gloves with a soft, dry cloth.

4.05 Inspect leather protector gloves before and after using them. Remove all foreign particles imbedded in the surface, especially splinters of wood or metal, since they could damage the insulating gloves.

4.06 After visually inspecting the leather protector gloves, check the inner portion of the glove for sharp or foreign objects.

5. C FABRIC LINER GLOVES

5.01 C fabric liner gloves (Fig. 3) are form fitting gloves made of knit cotton cloth and equipped with 3-inch wide rubberized fabric gauntlets.

5.02 C fabric liner gloves are available in 5 sizes for use inside B, C, and E insulating gloves. (See Table A.)

5.03 C fabric liner gloves may be worn inside all types of insulating gloves for warmth in cold weather and for absorbing perspiration in warm weather.

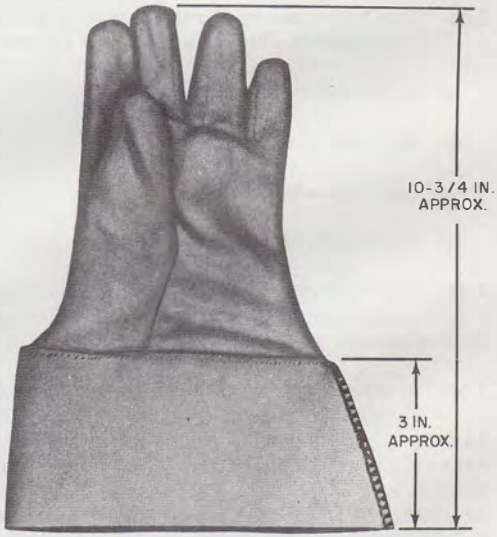

Fig. 3—Fabric Liner Glove

6. B GLOVE BAG

6.01 The B glove bag (Fig. 4) is provided for carrying and storing insulating gloves and associated leather protector and fabric liner gloves.

6.02 The bag is made of cotton duck with a liner of polyethylene. A web strap, terminated in a snap hook and a D ring is provided for suspending the bag from the body belt.

6.03 Dead air space is provided within the bag by the polyethylene liner and by the use of a zipper instead of a flap closure. The bag should be tightly zippered when gloves are stored in them to minimize ozone deterioration of the insulating glove.

7. INSPECTION OF INSULATING GLOVES

7.01 Employees shall at all times assume the responsibility for determining that their insulating gloves are in good condition. The appearance of the gloves should indicate neither deterioration from an electrical or a mechanical standpoint. Employees shall verify that they are being used within the specified electrical test period as indicated by the "Return for Test" date stamped on the back side of the gauntlet.

7.02 Employees shall inspect the insulating gloves in accordance with Parts 7 and 8 as follows:

(a) At the time the gloves are issued

(b) Each time before using them

(c) Each time after using them

(d) A minimum of once each month.

7.03 The supervisor shall inspect the insulating gloves periodically and shall see that all instructions are followed.

7.04 A visual inspection of insulating gloves shall be made to determine their condition. If any one of the following conditions is found to exist or if the condition of the gloves is such that there is any doubt as to their safety, they shall be exchanged at once for a pair in good condition in accordance with the locally established routine. Inspections should include the following in the sequence indicated:

Fig. 4—B Glove Bag

(1) Visually check return date for testing.

(2) Pull between the fingers looking for cracks and inner liner showing through (D and E type glove). Look for signs of abrasions or deterioration on the palm or back of glove. ***This test must be performed on the inner and outer surfaces.***

(3) Squeeze the fingers of the glove together and let go, live rubber will return to normal position. If there is a sign of stickiness, check

glove for deterioration and if in doubt, exchange gloves.

(4) The air test should be performed last. (See 8.01 and 8.02.)

7.05 When performing the above tests with the two-color D or E insulating gloves, the appearance of one color showing through the other means that the glove is defective and not safe to use. It shall be discarded in accordance with local routine.

8. AIR TEST OF INSULATING GLOVES

8.01 The air test (Fig. 5) shall be made on insulating gloves only when the conditions listed under 7.04 are satisfactory. Make this test as follows:

(a) Hold the glove at each side of the edge of the gauntlet. Slightly stretching the gauntlet will provide a slight air seal.

(b) Revolve it about the edge of the gauntlet as an axis, thus rolling it toward the palm and confining the air in the palm and fingers.

(c) Hold the rolled-up gauntlet in one hand.

(d) At head level, squeeze the palm of the glove with the other hand to put the confined air under pressure.

STEP 1

STEP 2

STEP 3

STEP 4

Fig. 5—Air Test Operations 1-2-3

8.02 An alternate method (Fig. 6) to air test the insulating gloves can be performed in the following manner:

(a) Hold the glove at each end of the gauntlet, allowing the gauntlet end to attain maximum opening.

(b) Bring the edges of the gauntlet together, and by using your fingers, roll up the gauntlet toward the palm of the glove, 1-1/2 turns.

(c) Fold the rolled gauntlet ends together and hold with one hand.

(d) At head level, squeeze the confined air with the other hand.

Note: Because of the rigidity in the D insulating gloves, the glove should be placed on a clean surface (desk or table) and rolled up to trap the air as described in 8.02(b) and (c).

8.03 Any puncture would be readily detected by feeling the escaping air against the face or by sound when the glove is air tested at head level.

8.04 If a puncture is found or if the condition of the gloves is such that there is any doubt as to their safety, they shall be exchanged at once for a pair in good condition in accordance with local routine.

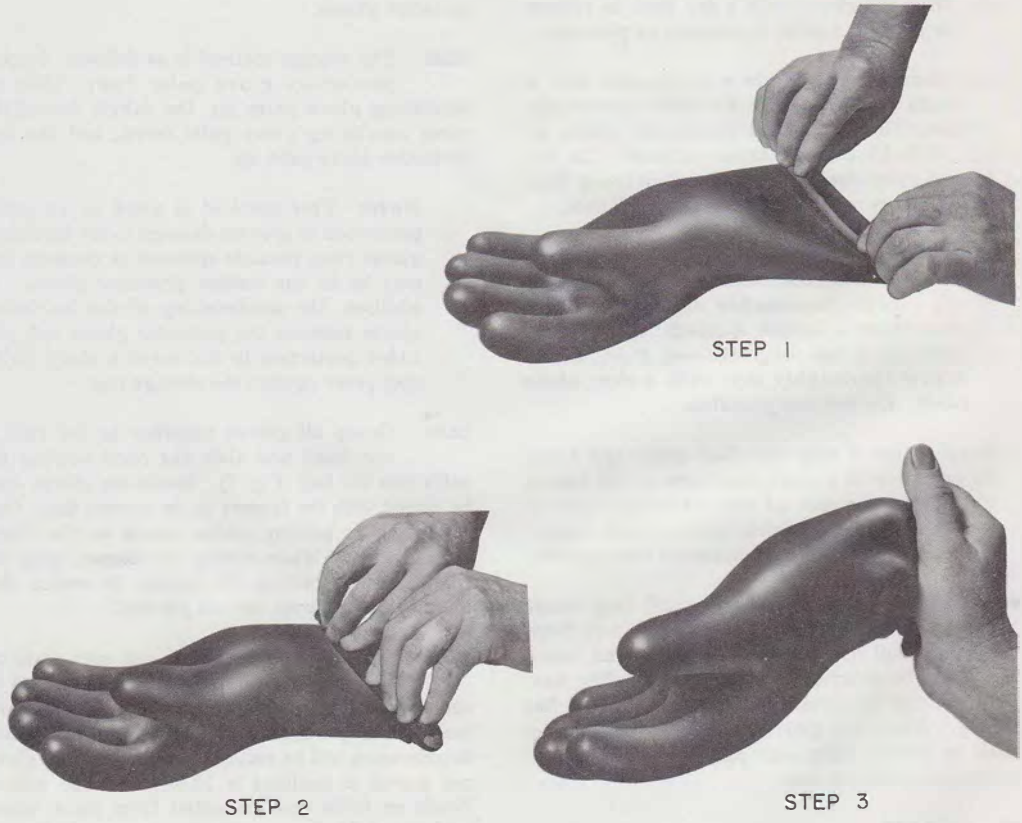

Fig. 6—Alternate Air Test

9. CLEANING OF INSULATING GLOVES

9.01 Insulating gloves shall be cleaned when they become wet from perspiration or when the gloves are subjected to contact with dirt, mud, paint, creosote, or other foreign matter. Perspiration, mud, dirt, and other foreign matter that does not adhere firmly to the glove shall be removed with clear water. Paint and creosote shall be removed as soon as practical, as some oils, if allowed to remain on the glove, will have an injurious effect on the glove.

9.02 The following method has been found satisfactory for removing paint or creosote from the glove:

(a) Wipe off gloves with a dry cloth to remove as much wet paint or creosote as practical.

(b) Clean the entire glove thoroughly with a cloth moistened with KS-14356 cleaner (dry cleaning fluid), KS-7860 petroleum spirits, or KS-19578 L1 cleaner (tricloroethane). Do not use an excessive amount of the cleaning fluid and do not wipe over "Return for Test" date.

> ***Warning: This cleaning shall be done in a well-ventilated location, as these materials are either flammable or their vapors constitute a health hazard. As soon as each glove has been cleaned, it should be wiped thoroughly dry with a dry, clean cloth. Do not use gasoline.***

Gasoline has a very low flash point and hence its use presents a much more serious fire hazard than does the use of the cleaning fluid or petroleum spirits, which have a much higher flash point. KS-19578 L1 cleaner is nonexplosive.

9.03 After insulating gloves are used, they should be thoroughly dried so the moisture from the hands will not become entrapped and cause the glove to deteriorate. Each time after use, gloves should be turned inside out and placed flat to dry. After the gloves have been dried, they shall be turned right side out and placed in the containers ready for use.

10. STORAGE

10.01 The quality and physical condition of insulating gloves will be maintained if they are properly stored. Folds, kinks, and creases can develop a weakness in the rubber and decrease the life expectancy of the insulating gloves.

10.02 Fabric liner gloves and leather protector gloves, where required, shall be stored with the insulating gloves so that they are available for use. Each of these gloves shall be dry before being stored.

10.03 Fabric liner gloves and leather protector gloves shall be separated from the insulating gloves before being stored.

10.04 Store the insulating gloves vertically in the B glove bag with the gauntlets down and between the fabric liner gloves and the leather protector gloves.

10.05 The storage method is as follows: stack a protective glove palm down, then an insulating glove palm up, the fabric liners, the other insulating glove palm down, and the last protective glove palm up.

> ***Note:*** This method is used as an extra precaution to prevent damage to the insulating gloves from possible splinters or creosote that may be on the leather protector gloves. In addition, the sandwiching of the insulating gloves between the protector gloves will give added protection in the event a sharp object may press against the storage bag.

10.06 Grasp all gloves together at the cuff in one hand and slide the hand holding the cuffs into the bag (Fig. 7). Insulating gloves must be stored with the fingers up to prevent them from collapsing or putting undue stress on the finger area (Fig. 8). When closing the zipper, keep one finger inside, guiding the zipper, to ensure that the insulating gloves are not pinched.

10.07 Insulating gloves deteriorate even when not in use. This deterioration is caused by ozone in the atmosphere reacting with the glove material to produce fine surface cracks. Ozone deterioration will be materially reduced if the gloves are stored as outlined in 10.05 and 10.06 without bends or folds and protected from light, edged tools, and from pressure due to heavy objects. Do not store insulating gloves in unventilated rooms containing ozone producing apparatus or equipment such as commutator-type electric motors and

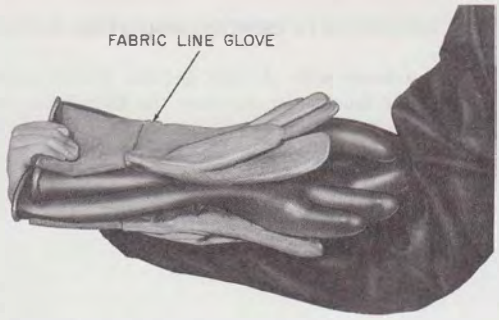

Fig. 7—Stacking Gloves

Fig. 8—Placing in Storage Bag

generators. Never place insulating gloves near steam pipes, radiators, or in places where they will be subject to heat, as heat will impair the strength of the glove material. For maximum protection of the gloves, one of the following methods of storage shall be employed:

(a) On motor vehicles, insulating gloves and associated leather protector and fabric liner gloves shall be kept in the glove bag, tightly zippered and stored in locations suitable for that purpose. They are not to be exposed to edged tools or pressure from weighted objects.

(b) With tool bags, insulating gloves and associated leather protector and fabric liner gloves shall be kept tightly zippered in the glove bag, which should be attached to the tool bag.

Note: Care should be taken to attach the glove bag so it will be flat against that side of the tool bag which is away from the body when the tool bag is carried.

(c) When kept in cable splicing trailers, insulating gloves and associated leather protector and fabric liner gloves shall be kept in the glove bag, tightly zippered and stored to avoid contact with edged tools and pressure from heavy objects.

(d) When the insulating gloves and associated leather protector and fabric liner gloves are being carried for use intermittently they shall be kept tightly zippered in the glove bag, attached to the body belt.

(e) If they are stored in lockers, desks, or offices, insulating gloves shall be kept in the chipboard container in which they are supplied by the manufacturer, or in which they are returned from the routine electrical test. This container affords reasonable protection against ozone deterioration because of restricted air circulation and the fact that a reaction between ozone and cellulose decomposes the former into a less active oxygen.

11. DISPOSITION OF INSULATING GLOVES REQUIRING ELECTRICAL TEST

11.01 Storerooms are responsible for insulating gloves in the storerooms and employees are responsible for insulating gloves which they have in the field. The dates of "Return for Tests" are stamped upon the backs of the gloves and in the space on the boxes provided for that purpose.

11.02 Employees shall see that gloves in the field are returned to the storeroom or office prior to the "Return for Test" date. Replacement gloves shall be available before returning the gloves to be tested.

11.03 Storerooms shall see that all gloves in their possession are returned for inspection on the dates indicated to the Western Electric Branch House or other authorized inspection agency. If, however, gloves are held beyond this date, they shall not be used or issued until retested.

11.04 All insulating gloves, before being returned to the Western Electric Company or other authorized agent, shall be given a careful inspection in accordance with Part 7 and a careful test in accordance with Part 8. Gloves with obvious defects shall be junked in accordance with Part 12.

12. DISPOSITION OF DEFECTIVE INSULATING GLOVES

12.01 Gloves with obvious defects should have the front cut open from the fingers to the top of the gauntlet and should be disposed of as junk in accordance with the locally established routine.