



## High Voltage Insulating Equipment

As of January 2009, Cal/OSHA has new requirements for insulating protective equipment used in high-voltage electrical work. The amendments to Title 8, Section 2940.6, Tools and Protective Equipment, and Appendix C of Article 36 update references to current American Society for Testing Material (ASTM) national standards regarding insulating protective equipment storage, inspection, and testing intervals.

Insulating equipment is designed to protect you from the risk of injury and death from electrical shock. This equipment includes gloves, mittens, sleeves, covers, blankets, and mats. Your employer should have a variety of insulating equipment designed to meet ASTM standards and appropriate for the differing voltage levels that you encounter at work.

Insulating equipment is usually made of a material that will not conduct electricity (dielectric), including rubber, leather, and certain paper and plastic composite materials. Insulating equipment must be made of materials that provide at least equal electrical and mechanical protection as rubber equipment.

Regular inspections and maintenance ensure that insulating equipment functions properly. If there are cuts, punctures, worn areas, or other openings in the equipment, it will not be able to insulate against electrical current and could result in a shock to the user. To prevent accidental failure and electric shock, visually inspect insulating protective equipment daily before each use for defects and damage. Clean insulating equipment daily before each use. If, during inspection or cleaning, you find that the insulating equipment is defective or damaged, take it out of service immediately. Don't try to patch or repair damaged equipment, it will not likely function properly without qualified service work or replacement.

Rubber gloves should be used only when an outer canvas or leather glove is also used to protect against abrasion, cuts, and punctures. Air- and water-test rubber gloves before each work period, or more frequently if the glove condition requires it. During the inspection, visually examine the whole inner and outer surface. Look for defects such as burns, cuts, cracks, punctures and weak or worn spots. Stretch the glove cuff as well to look for abrasions or weak spots.

In addition to the daily inspections and cleanings, insulating equipment requires periodic visual and electrical testing to ensure that it functions properly. This additional testing is required for all insulating gloves, sleeves and blankets, as well as line hoses and covers. The testing protocol must follow the appropriate ASTM standards and time intervals as follows:

EQUIPMENT	ASTM STANDARD	TESTING INTERVAL
Gloves	ASTM F 496-02a	Every 6 months
Sleeves	ASTM F 496-02a	Every 12 months
Blankets	ASTM F 479-06	Every 12 months
Line Hose and Covers	ASTM F 478-92 (Reapproved 1999)	When found to be damaged or defective

Mark gloves, sleeves and blankets to show compliance with the above testing schedule. These marks should include the date that the equipment was tested or the date the next test is due. Certification tests are only good for one year; don't use newly issued gloves, sleeves, and blankets unless they have been electrically tested within the previous twelve months. Never use insulating equipment if it has not been properly tested and within required time frames.

Store insulating equipment properly to maintain and protect it from damage. Keep insulating gloves and sleeves in glove bags or containers. Store insulating blankets in a canister or other container offering the same protection. Store insulating equipment out of direct sunlight and away from excessive heat sources (steam pipes, radiators, etc.). Don't fold gloves, sleeves, or blankets while they are in storage; the materials can wear out at the edges of the folds. You can, however, roll a blanket for storage. □