

# **Electrical Personal Protective Equipment**

INNM



# Electric Shock

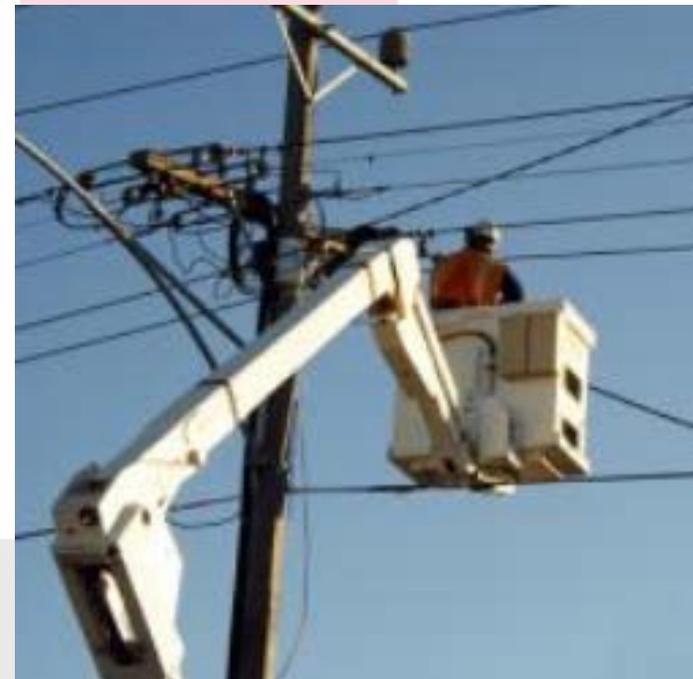
- **Electric shock** occurs upon contact of a (human) body part with any source of electricity that causes a sufficient current through the skin, muscles, or hair. Typically, the expression is used to describe an injurious exposure to electricity.

**Table 1: Effects of Electricity on the Body**

Body Effect	<i>Milliamperes (Thousandths of an ampere)</i>	
	DC Voltage	AC Voltage 60 hz
No sensation on hand	0.6 - 1	0.3 - 0.4
Slight tingling	3.5 - 5.2	0.7 - 1.1
Non-painful shock, muscular control not lost	6 - 9	1.2 - 1.8
Painful shock, muscular control not lost	41 - 62	6 - 9
Severe shock, muscular control lost, difficult breathing	60 - 90	15 - 23
Fibrillation from shock, 3-second duration	500	100



# Electrical Hazards



# ASTM F2413 05 Marking on Shoes



# ASTM F2413 05 Marking on Shoes

- Line #1: ASTM F2413-05:
  - This line identifies the ASTM standard it indicates that the protective footwear meets the performance requirements of ASTM F2413 issued in 2005.
- Line #2: M I/75 C/75 Mt75:
  - This line identifies the gender M or F of the user. It also identifies the existence of impact resistance (I) (75 or 50 foot-pounds), compression resistance (C) (75 or 50 which correlates to 2500 pounds and 1750 pounds of compression respectively). The metatarsal designation (Mt) (75 or 50 foot-pounds) is also identified.
- Lines 3 & 4: PR CS
  - Lines 3 and 4 are used to identify footwear made to offer protection. They are used to designate conductive (Cd) properties, electrical insulation properties (EH), footwear designed to reduce the accumulation of excess static electricity (SD), puncture resistance (PR), chain saw cut resistance (CS) and dielectric insulation (DI), if applicable. Line 4 is only used when more than three sections of the ASTM standard apply.



# Hand Protection – Electrical Gloves

- Class 00 - Maximum use voltage of 500 volts AC/proof tested to 2500 volts AC
- Class 0 - Maximum use voltage of 1,000 volts AC/proof tested to 5,000 volts AC
- Class 1 - Maximum use voltage of 7,500 volts AC/proof tested to 10,000 volts AC
- Class 2 - Maximum use voltage of 17,000 volts AC/proof tested to 20,000 volts AC
- Class 3 - Maximum use voltage of 26,500 volts AC/proof tested to 30,000 volts AC
- Class 4 - Maximum use voltage of 36,000 volts AC/proof tested to 40,000 volts AC



# Head Protection



**Class E (electrical) helmets**: Class E helmets are proof tested at 20,000 volts



# Equipment

- Use insulated tools when working around electrical hazards or if the area is suspected of having electrical hazards.





**Be Safe**

INMNM



# Acknowledgement

I \_\_\_\_\_, have completed the PPE Electricity training.  
(Print Name)

Date: \_\_\_\_\_

Please print the acknowledgement sheet, fill in requested information and email to [srsweb@unm.edu](mailto:srsweb@unm.edu) to complete training.