



# FS/NAAF GARRISON SAFETY OFFICE

## *Outsmart the Darkness: Your Weekly Safety Spotlight*



# Electrical Grounding

Electrical grounding is a non-negotiable safety practice designed to protect employees from serious injury or even fatalities. Proper grounding minimizes the risk of electric shock by providing a low-resistance path for fault currents, and it's essential for the safe operation of all electrical equipment. Understanding and adhering to grounding procedures is a key responsibility for everyone working with or near electrical systems.

## Electrical Grounding Basics

### What is electrical grounding?

- Electrical grounding creates a low-resistance path for stray electrical current to flow back to the source
- Electricity will always take the path of least resistance to ground

### Why is Electrical grounding important?

- Protection of personnel and employees by minimizing the risk of electric shock by diverting dangerous voltage
- Prevention of fires by reducing the chance of sparks, arcing and overheating that can ignite flammable materials
- Safeguards equipment by protecting sensitive electronic equipment from damage due to power surges

## Key Grounding Practices

### Utilize Electrical Safety Practices

- Never remove or bypass grounding pins on plugs—they are there for YOUR safety
- Inspect Cords and equipment regularly for damage—frayed cords or cracked casings can compromise grounding. Report damaged equipment immediately
- Report any unusual sensations (tingling, shock) immediately as it can indicate a grounding issue
- Always follow Lockout/Tagout procedures before working on electrical equipment. This includes verifying the equipment is properly grounded **before** re-energizing

### Use of GFCI (Ground Fault Circuit Interrupters) where required

- Quickly shut off power when a ground fault is detected (Common in wet or damp areas)
- Work by constantly monitoring the balance of electricity flowing to and from an electrical device, if a difference is detected, it instantly cuts off power to the circuit preventing severe shock and risk of fire
- Required anytime a water source is located within 6 feet of an electrical outlet
- Check and test (by pressing the test button and resetting) the GFCI monthly to ensure it is functioning correctly
- Remember, GFCI's protect against ground faults **but they do not provide grounding**

## Common Hazards and How to Mitigate Risk

- Using extension cords as permanent wiring: This often bypasses grounding protection
  - Ensure your workspace has the appropriate amount of outlets in the correct locations. If needed, adjust workspace to accommodate or install permanent, properly wired and grounded outlets where needed
- Working with electrical equipment in wet conditions without proper safeguard: Water significantly increases the risk of shock
  - Wear proper PPE such as rubber-soled boots or shoes, rubber gloves rated for the voltage you are working with
  - Keep tools and clothing dry
  - Utilize battery-powered tools rather than corded electric tools when possible
  - Utilize GFCIs or a GFCI adapter if available