



TOOLBOX TALK – ELECTRICAL SAFETY

Topic

Electrical Safety

Objective

To prevent electric shock, burns, arc flash incidents, fires, and fatalities by following safe electrical work practices and using proper protective measures.

What is Electrical Safety?

Electrical safety involves identifying electrical hazards and taking appropriate precautions to prevent injuries and damage to equipment. Electricity cannot be seen, heard, or smelled, making it one of the most dangerous workplace hazards.

Why is Electrical Safety Important?

Electricity can cause:

- Electric shock
- Severe burns
- Arc flash injuries
- Arc blast injuries
- Fire and explosions
- Equipment damage
- Fatal accidents

Even low-voltage electricity can cause serious injury under certain conditions.

Common Electrical Hazards

- Exposed live wires
- Damaged electrical cables
- Loose electrical connections
- Overloaded sockets
- Open junction boxes
- Wet working conditions
- Defective power tools
- Missing grounding (earthing)
- Unauthorized electrical work
- Temporary wiring installed incorrectly



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Before Starting Electrical Work

- ✓ Conduct a risk assessment.
- ✓ Obtain the required Electrical Work Permit (if applicable).
- ✓ Isolate the power supply.
- ✓ Apply **Lockout/Tagout (LOTO)**.
- ✓ Verify zero energy using an approved voltage tester.
- ✓ Use insulated tools.
- ✓ Inspect electrical equipment before use.
- ✓ Ensure only authorized and trained persons perform electrical work.

Personal Protective Equipment (PPE)

Wear appropriate PPE based on the level of electrical risk:

- Electrical Safety Helmet
- Arc-rated Face Shield
- Arc Flash Suit (where required)
- Insulated Rubber Gloves
- Leather Protector Gloves
- Safety Glasses
- Electrical Safety Shoes
- Hearing Protection (during arc flash work)

Safe Electrical Work Practices

Always:

- Switch OFF power before maintenance.
- Verify isolation before touching conductors.
- Keep electrical panels closed.
- Maintain dry hands while handling electrical equipment.
- Use approved extension cords.
- Report damaged cables immediately.
- Replace damaged plugs and sockets.
- Maintain proper housekeeping around electrical panels.
- Never:
 - Work on energized equipment unless absolutely necessary and authorized.
 - Bypass electrical safety devices.
 - Pull a plug by the cable.



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- Use damaged electrical tools.
- Overload electrical outlets.
- Use makeshift wiring.

Lockout/Tagout (LOTO)

Before working on electrical equipment:

1. Identify all energy sources.
2. Shut down equipment.
3. Isolate the electrical supply.
4. Apply personal lock and tag.
5. Release stored energy.
6. Verify zero energy.
7. Start work only after confirmation.

Never remove another person's lock.

Extension Cord Safety

Inspect extension cords before use.

Do not use cords with:

- Exposed wires
- Broken insulation
- Loose plugs
- Burn marks
- Tape repairs

Always:

- Keep cords away from water.
- Protect cords from vehicle traffic.
- Use industrial-grade extension cords.
- Fully unwind cable reels before use.

Electrical Panel Safety

Always keep electrical panels:

- Closed and locked
- Properly labelled
- Easily accessible



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- Free from obstruction
- Dry and clean

Maintain at least **1 meter (3 feet)** of clear working space in front of electrical panels.

Portable Electrical Equipment

Before use:

- ✓ Check power cable condition.
- ✓ Inspect plug.
- ✓ Ensure proper earthing.
- ✓ Verify inspection tag.
- ✓ Test emergency stop (if applicable).

Do not use defective equipment.

Working Near Overhead Power Lines

- Identify voltage level.
- Maintain the required safe clearance distance.
- Use a spotter when operating cranes or boom lifts.
- Never store materials beneath power lines.
- Report damaged power lines immediately. **Working in Wet Areas**

Electricity and water are extremely dangerous together.

Always:

- Use Ground Fault Circuit Interrupters (GFCI/RCD).
- Keep electrical equipment dry.
- Wear insulated footwear.
- Disconnect power before cleaning.

Never operate electrical equipment while standing in water.

Warning Signs of Electrical Problems

Report immediately if you notice:

- Burning smell
- Sparks
- Flickering lights



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- Hot electrical panels
- Tripping breakers
- Electric shocks from equipment
- Unusual buzzing sounds

Do's

- ✓ Inspect electrical equipment before use.
- ✓ Follow Lockout/Tagout procedures.
- ✓ Use insulated tools.
- ✓ Keep electrical panels closed.
- ✓ Wear appropriate PPE.
- ✓ Report damaged wiring immediately.
- ✓ Only authorized persons should perform electrical work.

Don'ts

- ✗ Never touch exposed live wires.
- ✗ Never bypass circuit breakers or fuses.
- ✗ Never overload extension cords.
- ✗ Never use electrical equipment with wet hands.
- ✗ Never repair electrical equipment unless authorized.
- ✗ Never remove grounding connections.
- ✗ Never ignore electrical warning signs.

Emergency Response

If an electrical accident occurs:

1. Do **not** touch the victim until the power source is isolated.
2. Switch OFF the electrical supply immediately.
3. Call emergency services.
4. Use a non-conductive object (wood, fiberglass, or plastic) if the person must be separated from the electrical source.



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5. Provide first aid or CPR only if trained and after confirming the area is safe.
6. Report the incident to the supervisor.

Key Safety Message

Treat every electrical circuit as live until it has been properly isolated, locked out, and tested. Electrical safety depends on planning, isolation, and following safe work procedures.

Quick Safety Quiz

Q1. What is the first step before working on electrical equipment?

- A. Wear gloves
- **B. Isolate the power supply and apply Lockout/Tagout (LOTO) ✓**
- C. Start work immediately

Q2. Who is allowed to perform electrical work?

- A. Any employee
- **B. Authorized and trained persons only ✓**
- C. Visitors

Q3. What should you do if you see a damaged electrical cable?

- A. Use it carefully
- B. Wrap it with tape
- **C. Stop using it and report it immediately ✓**