

18. Common Electrical Safety

- 18.01. Daily, prior to use, all electrical equipment including extension cords shall be inspected prior to use. Defective equipment shall be tagged out of service and either repaired or destroyed.
- 18.02. With the exception of double insulated tools (with UL approval), all electrical tools and equipment shall be grounded.
- 18.03. Tools shall not be hoisted by their flexible electrical cords.
- 18.04. Except in an emergency, load rated switches and circuit breakers shall be used for the opening and closing of circuits under load conditions as opposed to fuses and splice connections.
- 18.05. While working on electrical equipment, unqualified persons shall be kept clear by barricades, barriers, safety monitors or other means of guarding.
- 18.06. Temporary wiring and extension cords shall be kept off of walking working surfaces and vehicle traffic areas; secured or covered to prevent tripping and vehicle damage.
- 18.07. Electrical cords shall not be suspended with staples, hid under temporary floor coverings, hung from nails, or suspended by wire.
- 18.08. Worn or frayed electric cords or cables shall not be used.
- 18.09. Hands and hand protection shall be dry when working on electrical equipment including plugging in extension cords.
- 18.10. Areas in which electrical work is to be done shall be adequately illuminated and temporary lighting shall:
 - 18.10.01. Have guards in place.
 - 18.10.02. Not be suspended by its cords unless specifically designed for such installation.
 - 18.10.03. A qualified and or competent person; before work commences, shall inform all employees in the work area of both exposed and concealed electrical hazards. If appropriate, warning tags shall be used to prevent unintended contact with electrical energy.
- 18.11. When working around any electrical power circuit, employees shall:
 - 18.11.01. Apply the proper Electrical Protective Equipment before work begins on any electrically energized parts.
 - 18.11.02. Administer all applicable Lock out Tag out Procedures.
 - 18.11.03. De-energize the equipment, system, and or machines; apply a ground where required and.
 - 18.11.04. Ensure that any conductive materials and equipment that are in contact with any part of the body will be handled in a manner that will preclude contact with exposed energized equipment, conductors or circuit parts.
 - 18.11.05. Use portable ladders that have non-conductive side rails.

18.11.06. Remove or insulate conductive articles of jewelry and clothing that might contact exposed energized parts.

18.12. Extension Cords

Extension cords shall not replace permanent wiring and the following safety precautions shall be adhered to:

18.12.01. Inspect the cord for cracks and cuts.

18.12.02. Cords shall have a three prong plug that includes a connection to ground.

18.12.03. Use the shortest continuous length of cord possible. Cords shall not be spliced together.

18.12.04. Make certain the cord does not lie in water.

18.12.05. Ensure cord is properly rated for the tools and or activity being performed.

18.12.06. Secure and route cords out of the traffic flow to prevent tripping.

18.12.07. Defective cords shall be tagged and removed from service.

18.12.08. All extension cords used shall be used with a ground fault circuit interrupter (GFCI).

18.12.09. All 15, 20, or 30 amp receptacle outlets that are not part of the permanent wiring of the building or structure and that are used by personnel shall have ground-fault circuit interrupter protection. GFCI pigtails may be used to meet this requirement if properly sized.

18.13. Ground fault circuit interrupters shall be tested before use.

18.14. Only qualified persons shall perform testing work on electric circuits or equipment.

18.15. Sufficient access and working space shall be maintained about all electric equipment to permit safe, readily accessible operation and maintenance. This space shall be kept clear and shall not be used for storage.

18.16. The above electrical safety measures are not all inclusive; however they cover many normal job site events.

18.17. Heavy Equipment and Electrical Power Lines

18.17.01. Except where electrical distribution and transmissions lines have been de-energized and visibly grounded at point of work or where insulating barriers (not attached to the vehicle) have been erected to prevent physical contact with the lines, the following clearance -- between any part of the vehicle and the line -- shall be observed:

18.17.02. Line Rating	Minimum Clearance
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18.17.03. All Utility Owned Electrical Lines	25 Feet
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18.18. A ground attendant shall be designated to observe clearance of the equipment and give warning to the equipment operator in situations where it is difficult for the equipment operator to maintain the desired clearances by visual means.

- 18.19. An overhead wire shall be considered energized unless the owner of the line or the electrical utility authorities indicates that it is not energized, has been visibly grounded and deemed intrinsically safe to approach.