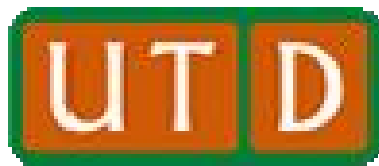


The University of Texas at Dallas Electrical Safety Manual



ELECTRICAL SAFETY

I. PURPOSE

These safety operation procedures provide information that is vital to every member of the University community. Electrical shock statistically accounts for a large percentage of national injury and death. Improper or faulty electrical wiring accounts for a large percentage of fire related incidents.

II. PROCEDURES

A. General Safety

1. No unauthorized person or persons shall tamper with electrical fuse boxes, alter existing wiring, or install electrical wiring. The persons authorized to perform these services are designated by the Director of Facilities Management.
2. Electrical equipment and electrical wiring shall be installed and maintained in conformity with the National Electrical Code.
3. There will be no work performed on energized electrical systems over 50 volts, except in instances where it is determined to be absolutely necessary, and such work has been approved by the Facilities Management Director or the Assistant Director. Work on energized circuits must be performed by qualified personnel, in the presence of qualified supervision.
4. Clearly illustrated instructions for resuscitation of persons suffering from electric shock should be conspicuously posted in all mechanical rooms.
5. Sufficient access and work space shall be provided and maintained around all electrical equipment to permit ready and safe operation and maintenance of such equipment. Working space shall not be used for storage.
6. Conductors shall be spliced or joined with mechanical splicing devices approved for the use. All splices and joints and the free ends of conductors shall be covered with an insulation equivalent to that of the conductors.
7. Each outlet box shall be provided with a cover. Openings through which conductors enter shall be adequately closed. Unused openings in boxes and fittings shall be effectively closed to afford protection substantially equivalent to that of the wall of the box or fitting. Boxes shall be securely and rigidly fastened to the surface upon which they are mounted.
8. Each disconnecting means required by the National Electrical Code for motors and appliances and each service feeder or branch circuit at the point where it originated shall be legibly marked to indicate its purpose

unless located and arranged so that the purpose is evident. Attachment plugs and connectors shall be designed so that they will not fit into receptacles of other than the correct rating.

9. Ducts and Air Handling Spaces: No wiring shall be installed in ducts.
10. Flexible cords shall not be used for the following: a) as a substitute for the fixed wiring or a structure; b) where run through holes in walls, ceilings, or floors; c) where run through doorways, windows or similar openings; d) where attached to building surfaces; or e) where concealed behind building walls, ceilings, or floors.

B. Portable Appliances

1. Portable appliances and equipment designed to be grounded shall be grounded.
2. Each appliance shall be provided with a means for disconnection from all ungrounded conductors. Switches on hand-held tools shall be of a type which must be manually held in the closed position.
3. Flexible cord shall be used only in continuous lengths without splice or tape.
 - a) Flexible cords and cables and their associated fittings shall be suitable for the conditions of use and location.
 - b) Worn or frayed electrical cables shall be discarded.

1. Fixed Equipment

1. Fixed equipment shall be grounded.
2. In areas where there is an accumulation of dust, motors should be enclosed yet well-ventilated to prevent overheating.

2. Generators

Generators shall be located in dry places. Live parts of generators of more than 50 volts above ground shall not be exposed to accidental contact where accessible to unqualified persons.

3. Protection Against Hazardous Motors

Suitable guards or enclosures shall be provided to protect exposed current carrying parts of motors unless the motor is designed for the existing condition.

4. Transformers

Exposed non-current carrying metal parts of transformer installations, including faces, guards, etc., shall be grounded where required under the

conditions and in the manner prescribed for electrical equipment and other exposed metal parts in Article 250 of the National Electrical Code.

5. Battery Room and Stationary Battery Area

1. Isolation
 - a. Storage batteries should be so located as to be accessible only to properly qualified persons.
 - b. Batteries of the non-sealed type shall be located in separate rooms or enclosures to prevent the escape into other rooms of objectionable quantities of electrolyte spray.
2. Ventilation should provide sufficient diffusion of the gases from the battery to prevent the accumulation of an explosive mixture.
3. Electrical wiring fittings and heating and ventilation appliances shall be in accordance with the requirements of the National Electrical Code.
4. Racks and trays shall be substantial and treated to be resistant to the electrolyte.
5. Floors should be of acid-resistant construction or be adequately protected from acid accumulations.