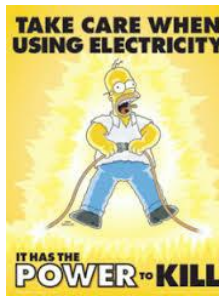


TOOLBOX TALK NO.16

Working safely with electricity



The law says you must take precautions against the risk of death or injury from electricity. Electrical equipment must be safe, and properly maintained. Only in exceptional circumstances should work be carried out on live systems, and then only by a competent authorised person.

Electrical systems in buildings - Refurbishment work in buildings presents the greatest risk and must be planned, managed and monitored to ensure that workers are not exposed to risk from electricity.

Overhead power lines - Any work near electric overhead power lines must be carefully planned and carried out to avoid danger from accidental contact or close proximity to the lines.

Underground cables - Damage to underground electrical cables can cause fatal or severe injury, you must take precautions to avoid danger. These precautions include a safe system of work based on planning, use of plans, cable locating devices and safe digging practices.

Each year the presence of electricity is the cause of deaths and injuries, mainly burns, on construction sites. Furthermore, over the years electricity has been a contributing factor to the starting of several fires on construction sites. Your body is an extremely good conductor of electricity.

Electricity can be regarded as a hidden killer. Unlike other hazards, in most cases, it cannot be seen, felt, smelt or heard, it may not become obvious that a cable is live until someone touches it.

Important points to remember:

- ✓ All site electrical tools and leads must have an in date portable appliance test (PAT), every 3 months.
- ✓ No-one other than a qualified electrician must install, maintain or alter the site distribution system.
- ✓ Work on or near to live, exposed conductor's poses an obvious danger. Competence is required and such work must only be carried out under a formal permit to work.
- ✓ Electrical distribution equipment must be obtained from a reputable supplier or hire company, to ensure that it has been manufactured to a known standard and tested.
- ✓ Permit to work systems are essential to ensure safe working where live electrical supplies, cables and equipment exist, particularly in installation, maintenance or construction work.

Possible causes of electrical fires:

- ✗ Overheating or poorly maintained or damaged equipment and hand tools
- ✗ Overloading of electrical circuits
- ✗ Overloading of electrical sockets in site accommodation
- ✗ Accumulation of combustible rubbish alongside cables
- ✗ Bypassing of circuit safety devices, rendering them inoperative
- ✗ Fitting of the incorrect rating of fuse
- ✗ Unauthorised modification or tapping into the site electrical distribution system
- ✗ All extension leads and splitter boxes must have earth wires connected to ensure any tools which are earthed are actually connected to earth.

**SAFETY AS
STANDARD**

Electrical Safety:

1. Joined lengths of cable should always be attached by the proper connections and never with insulating tape. Ideally these must be reviewed from site and replacements provided.
2. Keep electrical circuits in good repair with regular checks by an approved contractor.
3. Lighting sockets should never be used for electrical equipment.
4. Mains cables and flexes should never trail across the floor, where they may get caught or pulled.
5. New electrical equipment should be thoroughly tested before it goes in to everyday use.
6. Overloading sockets with plugs and adapters is dangerous. Only one appliance per power socket is recommended.
7. Portable power tools should never be used near flammable vapours or gases.
8. Qualified help should be sought immediately on all types of electrical problems. Never touch or tamper with these items yourself.
9. Report all defective tools and equipment.
10. See that all electrical connections are the correct ones.
11. Tampering with the internal workings of all types of electrical equipment and machinery should be avoided at all costs.
12. Under no circumstances should you touch plugs, sockets or electrical equipment with wet hands.
13. Very worn, twisted, crushed or kinked cables should be discarded and replaced.

14. Water should be kept away from all electrical equipment and tools should not be used in wet or damp conditions.
15. Extra care should always be taken when attaching plugs to be sure that all wires are well connected to the right terminals, and that the flex is held securely.
16. You are responsible for seeing that all of these safety rules are observed, to ensure the safety of yourself and others.

Use of portable electrical tools

- Portable electric tools should only be used for their designed purpose
- Ensure switches are working correctly before connection to the power supply
- Wear eye protection if there are any risks to your eyes
- Disconnect tools when not in use
- Electric power tools should be regularly inspected and maintained by a competent electrician

Question:

What are three potential hazards when using portable electrical tools? (Answer: cables off floor; wet portable electrical tools, standing on wet surface whilst using electrical equipment).

Electric Shock - Even non-fatal shocks can cause severe and permanent injury. For example, shocks from faulty equipment may lead to falls from ladders, scaffolds or other work platforms. Those using or working with electricity may not be the only ones at risk – poor electrical installations and faulty electrical appliances can lead to fire, which may also cause death or injury to others. Most of these accidents can be avoided by careful planning and straightforward precautions.

Keep ladders, poles and similar objects that could serve as grounding devices at least 10' away from overhead power lines. Electricity is always looking to ground itself...do not become a conductor of electricity.