

Electricity

Improperly used, electricity can be a source of real danger. The main hazards to workers are shocks, burns, fire and explosions with additional incidents, such as falls, caused by lesser shocks.

The Electricity at Work Regulations 1990 place new duties on employers and employees to provide safe electrical working practices.

The Regs require employers to **assess activities which use or are affected by electricity. This includes the suitability, design, construction, siting and installation of systems and the evaluation of adverse effects.**

For safety reps, the Regs provide the basis for improving standards of electrical safety and ensuring adequate training.

There is an absolute duty on employers, employees and the self employed to comply with the provisions of these Regulations in all matters under their control.

The main parts of the Electricity Regulations are:

Reg 4 - All electrical systems should be constructed and maintained to avoid danger as far as reasonably practicable. Work activities including the operation, use and maintenance of a system and any work near a system, must be carried out in such a way as not to give rise to danger (safe systems of work).

Reg 5 - The strength and capability of electrical equipment may not be exceeded if it gives rise to danger. Consideration should be given power fluctuations, surges, faults, heating and electromagnetic effects, etc.

Reg 6 - The construction and protection of electrical equipment must prevent danger arising from mechanical damage, effects of the weather, natural hazards, temperature and pressure, wet, dirty, dusty or corrosive conditions, and flammable or explosive substances.

Reg 7 - All conductors shall be covered with insulating material and sited to avoid danger.

Reg 8 - Precautions shall be taken to enable discharge to earth from any conductor.

Reg 9 - Suitable precautions must be taken where there are interruptions to the electrical continuity, or where high impedance is introduced, to a referenced circuit conductor (ie a circuit conductor connected to earth or some other reference point) which may give rise to danger.

Reg 10 - All joints and connections in a system shall be mechanically and electrically suitable for use, including connections to terminals, plugs, sockets and joints between conductors.

Reg 11 - Suitably located and efficient means for protecting all parts of a system against foreseeable excess currents, ie faults, overloads, short circuiting, etc must be provided.

Reg 12 - Suitable means shall be available to cut off the electricity supply to equipment and to isolate any equipment.

Reg 13 - Precautions shall be taken to prevent equipment which has been made dead while work is being carried out on or near from becoming charged during that work.

Reg 14 - Work on or near live conductors is only permitted if:-

- it is unreasonable in all circumstances for the system to be dead;
- it is reasonable in all circumstances for work to be carried out on or near the system when it is live; and
- suitable precautions are taken to prevent injury, including the provision of protective clothing.

Work should only take place when all these conditions are met.

Reg 15 - Adequate space, access and lighting shall be provided at or near where work is being done with electrical equipment.

Reg 16 - Persons engaged in electrical work must have technical knowledge or experience necessary to prevent injury or danger, or must work under the appropriate degree of supervision.

These regulations are concerned with the prevention of danger and apply to all electrical equipment used at work which could give rise to electrical hazards.

Employees' Duties

Under Reg 3, every employee has a duty to:-

- co-operate with the employer in complying with the Regs as far as is necessary
- comply with the Regs so far as they are within their control.

In addition, safety representatives should be involved in the planning and organisation of any employee training and instruction, to ensure that they are adequately trained in the safety procedures to enable them to carry out the work safely in accordance with Reg 16.

Action Points for Safety Reps

1. Ensure that the employer consults with you on the selection of equipment.
2. Demand proper training for everyone who working with electrical equipment.
3. Insist that all equipment is tested and maintained at regular intervals by a competent person.
4. Ensure that all faulty equipment is mended or replaced right away.
5. Make sure Reg 14 on work with live systems is complied with to the letter at all times. Switch off first!
6. Make sure that all arrangements for earthing, circuit breaking, cutting off supply and rendering equipment dead, function in all foreseeable circumstances.
7. Insist that no equipment is run near to its strength or capability under either normal or adverse conditions.