



[The Health and Safety at Work \(General\) \(Guernsey\) Ordinance, 1987](#)

[The Health and Safety \(Gas\) \(Guernsey\) Ordinance, 2006](#)

[The Safety of Employees \(Electricity\) Ordinance, 1956](#)

[The Safety of Employees \(Miscellaneous Provisions\) Ordinance 1952](#)

## Electrical installation event Safety Guidance

The dangers that electricity can create will, under most foreseeable situations, be removed or reduced to an acceptable level by following [BS 7671:2018+A2:2022 | IET Wiring regulations](#) and [BS 7909:2023 - TC | 31 Jan 2023 | BSI Knowledge \(bsigroup.com\)](#) and the guidance provided in this document.

### What can go wrong?

Electricity creates many potential hazards, including:

- Fires can occur if electrical equipment (including wiring) develops a fault or circuits are overloaded.
- Contact with electricity can cause electrical shock and/or burns.
- Electrical protection devices can be rendered useless by long cables or the wrong equipment.
- Using electrical equipment in higher risk environments: wet, damp, humid, dusty conditions, increases the hazards significantly.
- Fires and burns from contact with hot surfaces.
- Electrical circuit protection may not work properly if the electrical system is not properly designed.
- Earthing systems need to be effective and co-ordinated if there are multiple contractors or electrical supplies (e.g., generators).
- Some electrical problems (e.g. poor design) may only become apparent when there is a fault and the protection against shock or fire doesn't work.

### Legal Requirements

All electrical systems must comply with The [Safety of Employees \(Electricity\) Ordinance, 1956](#).

This places requirements on dutyholders to ensure that *all apparatus, conductors and electric lines shall be sufficient in size and power for the work which they may be called upon to do and shall be so constructed, installed, protected, worked and maintained as to prevent danger so far as is reasonably practicable.*

Specific guidance to which Guernsey HSE expects all electrical installations to comply with can be found in [BS 7671:2018+A2:2022 | IET Wiring regulations](#) often known as 'The 18th Edition' or 'Wiring Regs'.

Temporary electrical systems, no matter how small, also need to comply with [BS 7909:2023 - TC | 31 Jan 2023 | BSI Knowledge \(bsigroup.com\)](#).

### BS 7909 requirements

BS 7909 deals specifically with setting-up and use of temporary electrical systems in the events and entertainment industry. Temporary electrical systems are typically required to be set-up hastily in challenging conditions, which in turn leads to a heightened risk of damage or other problems.

BS 7909 therefore requires systems to be designed in accordance with the IET Wiring Regulations (BS 7671) so that adequate protection against the risks of electric shock, fire and interference are ensured. A properly designed system is then deployed and managed in accordance with BS 7909.

BS 7909 requires that the person with overall control of any entertainment activity (for example, event manager, producer etc) needs to appoint a Senior Person Responsible (SPR) who will manage and take responsibility for the safe use of electricity on that event or production. The SPR should have sufficient knowledge, experience and skill to carry out this duty for the complexity of temporary electrical system involved. It should be remembered that this requirement is to oversee **all** electrical systems and equipment.

## What do I need to certify and why?

All temporary systems need to have some electrical tests done to ensure that protective measures are likely to work effectively. They also need to be visually inspected to ensure that they are not likely to suffer damage or cause it.

The testing and inspection should be carried out by someone with suitable electrical skill. Specialist qualifications such as [Temporary Electrical Installations Scheme \(BS 7909\) | NAPIT](#) are available.

## Small/simple systems versus everything else

Many temporary electrical systems are quite simple and don't need a skilled electrician to assemble and operate it. BS 7909 recognises this under the 'Small/simple' category which has a limit of approximately 6 kW of power.

Examples might include press interviews, sales conferences, small studio operations and so on. The key aspects of a small and simple system are:

- It generally uses less than 6kW of power.
- It is contained indoors, and extensions are not run outside the building.
- Generators are not being used.
- The supply is derived from a socket protected by a 30mA RCD.

Examples of systems that, despite being small, are not classed as simple include generator use or connecting directly into fixed wiring distribution equipment (such as the 'fuse board' in a house). These situations require someone with electrical skill to ensure it is done safely, even though the power used may be less than 6kW.

## Event Electrical System

Agreement should be reached between the owner of the source of electrical supply and the SPR for the temporary electrical system as to who makes the connection and any tests that are required for the temporary system before connection.

Electrical equipment potentially exposed to rain or other adverse conditions should be protected by suitable covers, enclosures or shelters or have a suitable IP rating. If possible, all electrical equipment should be located so that it cannot be touched by unauthorised people.

The event risk assessment and the major incident plans should cover all possible hazards associated with the electrical and lighting installations. Planning is a vital part of any electrical installation and site-specific information should be given to the responsible person in good time to enable them to plan the event.

Consideration should be given to:

- Site Layout.
- The date, time and location of the event.
- Whether any animals might be involved.
- Power requirements.
- Number of supplies.
- Site access.
- Ground conditions.
- Vehicle movements.
- Availability of generators.
- Access to and details of any mains (utility) power supply.
- Location of overhead power lines or buried cables.
- Emergency equipment power supply.
- Restriction of access to electrical equipment by non-authorized personnel.
- Routing of cables.

It is good practice to have a completion certificate for temporary systems connected **to each source of supply**. This should be completed and handed over to the event manager/producer by the SPR and placed into the production safety file or similar. If it is a large operation and the distribution has been split into distinct areas, there may be more than one certificate, in which case the SPR should fill out a 'Confirmation of Electrical Completion' for the event management.

Each completion certificate should have a 'Schedule of test results' attached which details the results of the actual tests conducted and is important because it proves that the parts tested are going to provide the required level of safety.

### **Electrical Risk assessment**

The SPR for the temporary electrical system should prepare a risk assessment, to be given to the event manager, which covers the provision, setting-up, operation and removal of the system.

The results of the risk assessment should be communicated to all relevant people and incorporated into the planning and design of the temporary electrical system.

All significant hazards related to the electrical system and its use should be considered, including the following:

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| a) Weather conditions, including the possibility of lightning.                           | f) The presence of water.  |
| b) The effects that lightning might have on nearby transport routes including aircraft.  | g) The length of time the temporary electrical system is due to exist.   |
| c) Time of day.  | h) Possible mutual EMI effects between temporary electrical system and any permanent electrical installations. |
| d) The presence of the public, including children, people with special needs or animals. | i) Medical areas and locations.  |
| e) The presence of overhead or underground power cables or other utility's.              | j) Movement of vehicles.   |
|  | k) Agricultural locations.   |

There should be a continuous assessment of risk that might occur or change as the event develops. Any hazards should be removed or minimized and controlled and the event manager kept informed.

### **Electrical Equipment Test and Identification before delivery on site**

All equipment should be inspected and tested before delivery to site. Valid evidence of this should be provided. Any equipment lacking such evidence should be rejected or inspected and tested with the results recorded.

The SPR should ensure that only equipment having this evidence is used. Equipment without this evidence should either be tested before use and records of such tests kept or labelled as faulty and returned to the supplier.

Prior to arrival on site the following equipment tests should have been conducted and the results recorded:

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|------------------------------|---------------------------------|
| a) Continuity of conductors. | d) Performance testing of RCDs. |
| b) Insulation resistance.    | e) Functional testing of units. |
| c) Polarity.                 |                                 |

Labelling or marking of the equipment is vital to allow the electrically responsible person to identify the equipment corresponding with the test results.

### **Faulty Equipment**

Equipment discovered to be faulty in the course of setup or testing should be clearly labelled as such and removed from use. Faulty equipment may be repaired and re-tested at the site if means are available, otherwise the equipment should be returned to the supply for repair, or made unusable to prevent accidental use.

### **Generators**

Generators are a source of energy having the same electrical hazards as the electrical system at home or work - an electrical supply derived from a generator is no more or less dangerous than a supply derived from a building.

However there some elements to consider as follows:

- There are potential issues around the fuel storage and refuelling of generators. If a petrol or other fuel-cell generator is being used then it should not be refuelled when hot or whilst running.
- In order for electrical protection to be effective, the generator wiring configuration needs to be understood.
- Generators may (but not always) require an effective connection with earth.

- Modern loads (e.g. LED lighting) can cause instability problems with generators.
- Fire extinguishers capable of dealing with both electrical and fuel fires (CO2 and powder respectively), should be positioned nearby, not at the generator itself.
- A spill kit should be provided with the generator, by the supplier, to be used in the event of accidental spillage of fuel oils. Ensure the spill kit is visible and accessible.
- Any generators should where possible be enclosed and segregated from public areas of the venue.
- When earthing generators refer to [BS 7430:2011+A1:2015 protective earthing](#). This will provide guidance on the earthing of mobile generators for outdoor events.

### Supply of equipment for events

A simplified inspection and testing routine is permitted for temporary electrical systems set-up for events, where each of the following conditions should be met.

- Equipment should be supplied in the form of tested complete stock items that can be plugged together at the location to form the temporary electrical system required.
- Equipment should be delivered to the event in a safe and serviceable condition and within a valid period, having passed a formal inspection and test.
- Evidence should be provided to show that the equipment has passed the formal inspection and test, The evidence should include relevant dates that show the period of validity.  
*This evidence might be provided by a suitable "tested" label applied to the equipment or by printed or electronic certificate clearly referring to the equipment concerned or supplier process records, coloured cable ties(which are not confused with other colour coding), tested labels or a declaration from the supplier of the equipment.*
- Equipment should be suitable for the manner for which it was manufactured.
- Mobile and transportable units with an electrical installation should be within a valid period having passed a formal inspection and test.

The results should be available, and the mobile or transportable units should be provided with evidence that these formal inspections and tests are valid.

If the above conditions a-e are not fulfilled the equipment should be subjected to a formal inspection before use.

The name of the owner or supplier should be shown on equipment. Dutyholders with large amounts of equipment may find it useful to label equipment to indicate that the equipment has been tested satisfactorily, i.e. has been passed as safe, and when it was tested.

In terms of installation any electrical equipment that is not suitable for exposure to weather, or other adverse conditions should be enclosed in a suitable waterproof structure and as far as reasonably practicable, all electrical equipment should be located so that it cannot be touched by members of the public or unauthorised workers.

All cables should be rated to meet the provisions of electrical safety and adverse weather conditions to which the cables may be exposed. All cabling should be routed to minimise tripping hazards, potential mechanical damage with particular care paid to position of cable connections.

Every temporary distribution should be protected by a 30mA RCD having an operating time not exceeding 40ms. Sited at the socket providing the supply, this ensures that all circuits are protected.

Apart from open-tails to a supply, all temporary electrical connections should be made using plugs, sockets and cable couplers complying with [BS EN 60309-2:1999+A2:2012 | Plugs, socket-outlets and couplers for industrial purposes](#)

### System in use and testing

Work on site should be under the control of the person responsible for the temporary electrical system on which the work is to be carried out. It is critical that electrical systems are looked at holistically, not just as kits of tested parts. It is possible to plug safe equipment together in an unsafe fashion.

Any equipment constructed or repaired on site should be inspected and tested before being made available for use.

Suitable overcurrent protection should be provided for each section. The type and rating of fuses/circuit breakers should take account of the prospective short circuit current, the discrimination required and characteristics and current rating of the circuit they are protecting.

Connections made using plugs and sockets should only be made once the supply and means of isolation have been verified.

Contact details of the electrically responsible person should be available on site in case any changes to the temporary system are necessary as it is necessary that the system is isolated and retested once restored.

The PR should ensure that everybody involved with work on temporary systems is aware of the emergency procedures for the event and who to contact for assistance in case of emergency.

If the PR has to leave site while it is still energised they should appoint a suitable deputy who has the competence to control the use of the system in the form it has been left.

## **Cables**

Running cables alongside existing or temporary fence lines is preferred and it is important to segregate vehicle traffic and cables routes wherever possible. Alternatively, use alternatives, such as a cable bridge. Use fences to segregate roads from overhead cables running in parallel and the position of any overhead cables should be clearly displayed.

Cables such as extension leads including blue "artic" cables are designed for domestic use not considered suitable for general outdoor use.

Any extension leads in use should not be left coiled up as they are prone to overheating.

## **Initial Verification**

Persons carrying out the inspection and testing should record the results and prepare any documentation as required. This should be comprised of a Completion Certificate(s) and accompanying Schedule of Test Results and where applicable a Confirmation of Electrical Completion might also be required.

Copies of the Confirmation of Electrical Completion or the Completion Certificate as appropriate should be available to any parties that require such evidence, for example local authorities and suppliers of electricity to the temporary system and owners or occupiers of premises where the event is taking place.

## **Electrical systems brought by facilities providers (stallholders, caterers etc)**

Facilities that include electrical systems might be introduced to site and providers of such equipment should request an electrical supply from the main temporary distribution provider or make their own arrangements with the agreement of the senior person responsible.

Those bringing facilities to site should provide a certificate for their electrical system that shows it is within a valid period having passed a formal inspection and test. The responsibility for checking that the electrical systems associated with such facilities are safe and suitable for use should be part of the original agreement between the event manager and senior responsible person.

## **Supplies to facilities providers (stallholders, caterers etc)**

If electrical supplies are provided to facilities providers on site, the person responsible for the temporary electrical system should be satisfied that the equipment is safe for use before energising. Agreement should be reached between the person responsible and the facilities providers on matters of:

- equipment suitability.
- testing of the electrical equipment.
- the provision of RCDs.
- the connection of any required protective bonding.

## Visual inspection

All items should be visually inspected for damage before they are incorporated into the temporary electrical system.

The visual inspection of the temporary electrical system should ensure it is correctly set-up according to the design, is safe and suitable for the purpose and that full account is taken of all the electrical and environmental conditions that exist or might reasonably be predicted to occur at the location.

The visual inspection should include the following checks:

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|--|---|
| a) The earthing arrangements of the supplies involved are as expected and according to the design.                       | k) Electrical equipment is positioned so that it does not create a hazard to any persons, animals or property.                      |
| b) Where an earth electrode(s) is required, it is correctly deployed and connected.                                      | l) Electrical equipment is secure against tampering or unauthorised operation.  |
| c) Suitable means of switching and isolation are present.  | m) The temporary electrical system follows the design and requirements of the event.  |
| d) The terminations of open-tails are correct.   | n) All covers and protective barriers are correctly in place.   |
| e) Single pole connectors are correctly connected for circuit function and fully mated.                                  | o) Fire protection arrangements and barriers are not compromised.   |
| f) Protective devices are in their correct circuit positions and of the correct rating.                                  | p) Supplies for safety services are in accordance with the design.  |
| g) Protective conductors, where required, are correctly connected.   | q) Evidence is provided of formal inspection and test for all facilities brought to site that include installed electrical systems. |
| h) All cables are correctly connected.   | r) Evidence is provided of valid inspection and test for all facilities providers' equipment.                                       |
| i) All cable runs are tidily laid and protected from damage.   |   |
| j) Environmental factors do not cause connectors, distribution units and other electrical equipment to become hazardous. |   |

Anything found faulty should be corrected and re-tested before proceeding.

Faulty equipment removed should be labelled and returned to the supplier. Any significant findings during the visual inspection should be recorded and the SPR for the temporary electrical system should retain a copy.

## Further Guidance and References

More specific guidance is provided by the following documents:

- British Standards (BS) 7671: Requirements for electrical installations (also known as the 'IEE Wiring Regulations'). This is the most widely used UK standard for fixed electrical installations.
- BS 7909: Code of practice for temporary electrical systems for entertainment and related purposes.
- BS 7430: Code of practice for earthing.
- BS (EN) 62305: Protection against lightning
- BS 5499 part 1: Graphical symbols and signs. Safety signs, including fire safety signs. Specification for geometric shapes, colours and layout.
- BS 5499 part 2: Fire safety signs, notices and graphic symbols. Specification for self-luminous fire safety signs.
- Health and Safety Executive's (HSE) guidance note [GS50](#) Electrical safety at places of entertainment - for smaller venues.
- HSE's guidance note [HSG107](#) Maintaining portable and transportable electrical equipment.
- The Institution of Engineering and Technology (IET) Code of Practice for in-service inspection and testing of electrical equipment.
- IET Guide to Temporary Power Systems and Infrastructure for Entertainment. Commentary on the application of BS 7671 and BS 7909 for temporary live events.
- HSE's booklet [HSR25](#) Memorandum of guidance on the Electricity at Work Regulations 1989.
- HSE booklet [INDG247](#) Electrical safety for entertainers.
- Guide to Safety at Sports Grounds – Fifth Edition (known as The Green Guide), published by The Stationary Office.