

Church fire guidance

Electrical wiring in churches



Despite increasingly high standards of installation, numerous church fires can be attributed to faulty electric wiring or apparatus. It is therefore important that electricity should be treated with respect.

General

All new electric wiring should be installed in accordance with the 'Requirements for Electrical Installations' issued by the Institution of Engineering and Technology (IET). BS 7671 - the IET Wiring Regulations.

Only electrical contractors with 'Full Scope' registration or membership to work on commercial installations with the National Inspection Council for Electrical Installation Contracting (NICEIC), The Electrical Contractors' Association (ECA), The National Association of Professional Inspectors and Testers (NAPIT) or The Electrical Contractors' Association of Scotland (SELECT) should be employed.

Electricians or electrical contractors who are only registered to undertake work on domestic installations under Part P of the Building Regulations are not acceptable.

The NICEIC carries out periodic and random inspections of contractors' work; should any remedial work be required to repair faulty work, then this is carried out at the contractor's expense. The Electrical Contractors' Association (ECA) operate a guarantee scheme for the work of their members - work done which does not comply with the safety requirements of the regulations will be rectified, at the member's expense. NAPIT operate a similar scheme.

Inspection and testing

Churches should have their electrical installations (including the organ blower box if appropriate) inspected and tested every five years. The inspection and testing should be carried out in accordance with IET Regulations, Guidance Note No. 3, and an inspection certificate obtained in every case. The certificate should be kept with the church records.

The switchgear should be labelled to show:

- the date of the most recent inspection
- the date of the recommended future inspection.

Portable electrical appliance testing

Portable appliances can be regarded as any electrical equipment capable of being carried and, in general, connected to the mains supply by a flexible lead and a plug. Once connected they are deemed to be part of the electrical 'system'.

There are two main classifications. Class I appliances rely on earthing of the conductive case and one layer of insulation covering its live internal parts for protection against electric shock, such as a kettle or heater. Class II appliances are 'double insulated' and rely on two layers of insulation between the live internal parts and the user for protection against electric shock, such as DVD players and multi-media projectors. The main difference as far as testing is concerned is that Class I appliances require an earth continuity/bonding test which is not required in the case of Class II appliances.

If you employ anyone, you will have a legal requirement to maintain portable electrical appliances under a number of pieces of legislation. The portable electrical appliances being used must be maintained in a safe working condition to prevent injury.

Electricity at Work Regulations 1989 require all systems to be maintained so as to prevent danger. The Provision and Use of Work Equipment Regulations 1998 require work equipment (which would include portable electrical appliances) to be maintained in an efficient state, in efficient working order and in good repair. There are also general duties under the Health & Safety at Work etc. Act 1974 for employers to provide a safe place of work and plant and systems that are safe and without risks to health.

A competent person must carry out inspection and testing. This is someone with electrical knowledge and experience, who understands the equipment to be worked on, the hazards which could arise and has the ability to recognise if equipment presents a hazard. Successful completion of an appropriate course, such as a City and Guilds 2377 Portable Appliance Testing course, would demonstrate competency to complete appliance testing. Visual inspections can be completed by anyone with the required level of basic electrical knowledge.

There is no statutory frequency for inspection and testing. The frequency should reflect the risk of the appliance causing damage or injury and this increases with the amount the appliance is used and the harshness of the working environment. A simple visual check should be carried out by the user every time before use to check for such things as damaged plugs, frayed cables and loose connections.

Records must be kept of all inspections, examination and maintenance carried out.

Portable electrical appliances – visual inspection checklist

Plug

- Cracked casing
- Bent pins
- Pins not insulated
- Incorrectly rated fuse
- Incorrectly connected wires
- Loose connections
- Loose cable clamp
- Outer insulation not held by clamp or cut short
- Should be marked BS 1363

Mains lead

- Cuts
- Fraying
- Brittle
- Kinked
- Coiled
- Taped joints
- Signs of burning or singeing
- Not secured by grommet/clamp on appliance

Appliance

- Damaged/faulty operation of on/off switch
- Damage to casing
- Loose parts
- Missing screws
- Evidence of overheating
- Evidence of moisture
- Accessible fuse holders
- Exposed cables

This is only a very brief outline and is based on our understanding of current law and practice. No electrical work of any kind should be undertaken by anyone who is not sufficiently qualified.

The organ

Most churches are rightly aware that the organ presents a 'danger area'. Organ lights, whether for illuminating keyboards or for internal inspection, should be installed by a qualified electrician using permanent wiring.

Lights should be installed so that there is no danger of them igniting timber or music sheets if they are accidentally left on. The wattage of light bulbs should be kept as low as possible.

It is suggested that maintenance lights are fitted above each section of pipework within the organ. The lights should be of the non-heat-producing fluorescent type. A 'wandering lead' from a 13-amp socket should be fitted in the lower section of the organ and be fitted with a proper inspection lamp. All maintenance light switches should be fitted at the entrance to the organ chamber or casework.

If a portable electric heater is required for the organist, it should be of the convector or fan-assisted type fitted with a thermostatic cut-out that operates in the event of overheating. The plug should always be disconnected from the socket at the end of each service.

Inspection, maintenance or repair of all pipe organs, particularly those having electric or electro-pneumatic actions should only be entrusted to an experienced professional organ builder. Reliance should not be placed on the fact that an organ is regularly tuned because the tuner may not have the detailed technical knowledge required to detect dangers in the complex electrical circuitry of a modern organ. The organ builder should be consulted and arrangements made for a detailed inspection to be carried out at agreed intervals.

The electric organ blower is frequently overlooked, as is the specialised humidifying apparatus, which often sits alongside the blowing equipment. The electric organ blower should be examined at regular intervals by a qualified electrician. This is in addition to regular visual inspections, when the organ tuner may be able to observe the blowing apparatus during the course of a tuning contract visit and report anything felt to be suspect. Humidifying apparatus should be subject to a maintenance contract and be inspected every six months.

Switches incorporating pilot warning lights should be installed in the mains circuits to the organ and ancillary equipment to ensure that they are switched off whenever the instrument is not in use. Modern electronic organs should be routinely inspected and tested for electrical safety by a competent person.

The Institute of British Organ Building, the trade association for church pipe organ builders, will be happy to provide help and assistance.

The website address is www.ibo.co.uk

Temporary wiring

Temporary or extension wiring should only be allowed in exceptional circumstances. All temporary circuits should be physically disconnected from the mains when not in use (even where the mains switches are turned off).

Temporary wiring should always be installed in accordance with the 'IET Requirements for Electrical Installations' (BS 7671) Current Edition and be protected against physical damage by means of armoured cable or conduit.

Temporary wiring should not be used for extended periods.

Permanently wired socket outlets should be installed as near to the location of lecterns, cribs or Christmas trees etc., as possible.

Mains circuits

Wiring should be arranged so that as many circuits as possible can be isolated at the mains switches when the church is not in use. All power and external circuits should be protected by Residual Current Devices (RCDs) to reduce the risk of electric shocks.

Physical damage

Any evidence of damage to wiring, plugs, sockets or other fittings should be attended to immediately upon discovery. Any wiring installations should take into account the possibility of physical damage and be protected accordingly. Trailing cables are a health and safety hazard. Where essential, they should be kept to the absolute minimum length and should never be hidden under carpets, as the risk of physical damage from sharp heels etc. is considerable.

Electricity at Work Regulations 1989

The Electricity at Work Regulations have wide application and apply to most churches. They require that electrical installations are safe and regularly checked by a qualified electrician working to the current edition of the IET 'Requirements for Electrical Installations' (BS 7671). In no circumstances should an untrained person attempt any electrical work.

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Monday to Friday, 9am to 5pm (excluding Bank Holidays).

We may monitor or record calls to improve our service.

Email us at: risk.advice@baptist-ins.com

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