

Guidance for Electrical Installation and Maintenance in Churches

Before any electrical work is undertaken, the eligibility of the electrician or electrical contractor must be verified first. If a problem occurs later (for instance a fire or an injury to someone caused by the electrical system) and it is discovered that work or testing to the electrics has been carried out by someone not on the role of the NICEIC or ECA as Full Certificate holders, the insurance cover of the church may well be compromised.

Membership of one of the following trade associations is mandatory:

An NICEIC Approved Contractor (National Inspection Council for Electrical Installation Contracting)
A Full member of the ECA (Electrical Contractors Association)
A Full Member of NAPIT without a "Limited Scope" membership

An NICEIC Domestic Installer, ELECSA, BSI, STROMA members or other Part "P" only electricians are NOT acceptable

Always choose a contractor who understands the significance & uniqueness of church buildings and the expectations of the DAC. References to this effect may be requested.

Insurance

The insurance documentation for the contractor should **always** be checked for validity **before** works begin, including the amount of public liability cover. The minimum amount of public liability cover should be **£5,000,000**. This cover may have to be increased to £10,000,000 for some of our larger buildings.

Professional Indemnity Insurance is also required for contractors undertaking electrical installation condition reports for the quinquennial inspection.

Electrical Installation Condition Reports / Test and Inspections

Health and Safety legislation (Electricity at Work Regulations 1989) says that every electrical installation must be properly maintained. This legal necessity is common sense. Wiring systems and electrical equipment can and do wear out, develop faults and sustain damage in use. The problem is that a wiring system which has developed some major fault and is potentially dangerous can continue to work. In church buildings which are often used on an occasional basis – perhaps even as little as a couple of hours a week - it can be a long time before anything is found to be wrong. Despite the requirements of the law, many electrical systems are left untended for many years. Architects, when carrying out quinquennial inspections are required to recommend a test is carried out. Such a recommendation must not be ignored. A new full **Electrical Installation Condition Report** must be carried out for every quinquennial. It may be better still for the architect to employ someone on behalf of the parish to carry out such a test and include the electrical report as a part of his full report.

The inspection and testing procedure and parameters are set down in the Regulations for the Electrical Equipment of Buildings BS7671 as amended.

It is important that the competency of the person carrying out the inspection and test is of the appropriate level having gained sufficient education and knowledge to be fully conversant with the aspects required of carrying out such an important inspection.

Some electrical contractors employed to undertake testing, arrive ill-equipped to carry out a comprehensive inspection, leaving out many vital items and areas, e.g. high level heaters, lights and cable runs. These areas and items are often listed in the certificate under (Agreed Limitations), however most of the time they are not agreed with the parish before the inspection is undertaken, but listed afterwards when the testing company finds they don't possess the correct access equipment to attend with the high level items and circuits. If these accessories and circuits are not included in the report, the test and inspection is incomplete, leaving a possible hazard.

Please note that the DAC ask for a copy of the latest test and inspection report when applying for a faculty where electrical works are included.

Completion of Electrical Works

When electrical installation work is completed, the electrical contractor must issue an installation certificate whether it minor or major. The certificate should detail the work carried out, the test results obtained and the inclusion of a name and signature of the contractor declaring all is safe to use and compliant to the latest amended edition of BS7671 (the electrical regulations).

The condition report and installation certificates should be kept safe together as they will give a valuable history of the work carried out over the years and by whom, including the progress of any deterioration, if applicable, of the installation

Wiring Systems

The wiring systems permitted for use in churches are as follows:-

Mineral-insulated metal sheathed cables.

Cables drawn into steel conduit or trunking.

Cables drawn into heavy-gauge high impact plastic conduit.

FP200 Gold or a direct equivalent (e.g. Vencroft Standard Fire Cable) when installed at high level, and protected against mechanical damage (if deemed necessary) at low level.

Steel Wired Armored Cable (SWA/LSF)

Any new wiring or additions to the existing wiring installation must follow these criteria regardless of the type and installation method of any of the existing wiring.

PVC T&E wiring and mini plastic trunking are not appropriate wiring materials to use in churches.

The choice of a wiring system is made against a background of many varied criteria. Safety is of vital importance, but there are other criteria too, including durability, good value for money, and how the installation looks in the context of the building.

422.6 Selection and erection of installations in locations of national, commercial, Industrial or public significance

The requirements of Regulation 422.1 shall apply to locations that include buildings or rooms with assets of significant value. Examples include national monuments, museums and other public buildings. Buildings such as railway stations and airports are generally considered to be of public significance. Buildings or facilities such as laboratories, computer centers and certain industrial and storage facilities can be of commercial or industrial significance.

The following measures may be considered:

(i) Installation of mineral insulated cables according to BS EN 60702

(ii) Installation of cables with improved fire-resisting characteristics in case of a fire hazard

(iii) Installation of cables in non-combustible solid walls, ceilings and floors

(iv) Installation of cables in areas with constructional partitions having a fire-resisting capability for a time of 30 minutes or 90 minutes, the latter in locations housing staircases and needed for an emergency escape.

Where these measures are not practicable improved fire protection may be possible by the use of reactive fire protection systems.

Temporary Wiring

Temporary wiring is often required for trials of proposed new equipment or reordering projects, temporary wiring MUST always comply to BS7671 and to the above "Wiring Systems" section. Extension leads are not to be used for a period of more than 4 months and never used in areas where a trip hazard could be created. Extension leads must not be used on stairs or under carpets, and should always be selected correctly for length and power loading.

Portable Appliances

Portable appliances e.g. heaters, vacuum cleaners, lights and tea urns etc. should always be checked for safety on a regular basis. Some electrical companies offer PAT (Portable Appliance Testing) as a service. This should be included into a maintenance program; the regularity of these tests is now the responsibility of the PCC and is dependent on the type of use the appliances get. A competent person in the parish should be responsible for looking after appliances by visually checking them for breakage, pulled flexes and general damage/wear & tear. If any appliance is found to be damaged or suspected to be anything other than 100% safe, the item should be removed from service and given to a suitable professional for repair and PAT testing again before being put back into service.

Electric Heating

If your church has tubular heaters at low level around the walls or under the pews, these tubes must always be guarded. Heating tubes will have a touch temperature of up to 150 degrees Centigrade. BS7671 (The electrical Regulations) require all open metal heaters of this type that emit a touch temperature in excess of 80 Degrees to be guarded.

Quartz radiant heaters are not recommended by the DAC for new heating installations because of the intensity of the light emitted. DAC's have found that this light is distracting during a service, destroying ambiance.

When applying for a faculty that includes electric heating, detailed information is required showing the type and loading of the new proposed heaters and the loading of any existing electrical heating including details of the electrical supply/distribution.

RCD's

Socket outlets should always be protected by RCD earth fault protection rated at 30ma. It is recommended that lighting circuits should also have RCD protection with a minimum rating of 100ma but 30ma is advisable. All RCD's must be selected and installed as per BS7671.

RCD's give added protection to persons using electrical equipment in the event of a fault and could save lives.

SPD's or Surge Protection Devices

With increasing use of electronic equipment in church buildings, it is recommended that SPD's or "Surge Protection Devices" are installed to protect from the all too common electrical spikes and surges, often present during a lightning storm, that can destroy this type of expensive equipment. SPD's are self-contained units normally easily hard wired in at the main fuse box position.

Information to be enclosed with form 1 faculty applications for electrical work.

- 1, Details of the proposed electrical work, heating, lighting, power sockets, repairs etc. and any loading information.
- 2, The name and address of the electrician/electrical contractor and their trade affiliation (NICEIC – ECA)
- 3, Confirmation of £5M public liability insurance cover
- 4, Information of the chosen cable types, colour of the cables if applicable, containment and routes.
- 5, Drawings and pictures showing proposed cable routes and equipment.
- 6, If electric heating is being considered, a power loading schedule is required.