THE NATIONAL SOCIETY
OF
MASTER THATCHERS LTD

# Electrical Installations in Thatched Properties

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### 1. Introduction

It is not as easy to set fire to thatch but once alight it is virtually impossible to put out.

**Prevention is essential as detection is almost certainly too late.**

Chimney related fires are the major cause of losses to the thatched heritage, being responsible for around 50 losses each year. Faulty, damaged or inappropriate electrical installations are also a cause of serious thatch fires.

### 2. Conformity

Since 2005, all electrical work in dwellings in England and Wales whether carried out professionally or as DIY, must meet the requirements of Part P of the Building Regulations, and certain types of work is notifiable to a local building control. Using a competent electrician registered with one of the government approved schemes are able to self-certify their work.

Compliance with Part P is intended to keep you and your family as safe as possible from electrical hazards.

The requirements of Part P apply to new dwellings and to any alterations or additions to the electrical installations of existing dwellings, including full or partial rewires.

In England from April 2013 electrical work in a dwelling, or associated with its surroundings, is notifiable to a local building control body where the work includes:

- the installation of a new circuit, whether at low voltage (typically 230 V) or extra-low voltage); or
- the replacement of a consumer unit (fuse box); or
- any alteration or addition to an existing circuit in a special location*, whether at low voltage (typically 230 V) or extra-low voltage

*A special location is a room containing a bath or shower, swimming pool or a sauna heater.

An alteration or addition to an existing circuit in a room containing a bath or shower is notifiable only where carried out in the space surrounding a bath or shower.



Warringtons, Gelsmoor Road, Coleorton, Leicestershire LE67 8JF. Registration No 4816229

An alteration or addition anywhere within a room containing a swimming pool or sauna heater is notifiable.

Part P states that anyone carrying out electrical work in a dwelling must ensure that reasonable provision has been made in the design and installation of the electrical installations in order to protect any persons who might use, maintain or alter the electrical installation of that dwelling from fire and injury, including electric shock.

### 3. Consultation

Consultation with all interested parties is essential if satisfactory electrical design solutions are to be achieved. As well as conferring with any licensing or other authority exercising statutory control, it is advisable to consult with the Local Authority's Fire Prevention Officer and the building insurer in respect of the proposed design for the electrical installation.

### 4. Assessment

In assessing the general requirements, the designer would consider all the external influences likely to affect the choice of protective measures and the selection of equipment.
Examples of external influences which may be more significant in the case of thatched properties are listed in Table 1:

| External Influence | Example |
|---|---|
| **Foreign bodies** | Fragments of thatch, other combustible debris |
| **Vermin** | Birds, Rodents Squirrels, Insects |
| **Corrosion** | Waste from vermin and atmospheric moisture |
| **Mechanical damage** | Thatch fixings, impact |
| **Lightning** | |
| | |

**Table 1**

### 5. Design Considerations

Wiring systems in spaces adjacent to thatch should be suitably designed and installed to minimize:

- Temperature rise
- Ingress of foreign bodies
- Deterioration due to corrosion
- Mechanical damage
- Spread of fire

Wiring systems generally considered suitable for areas visited by vermin within thatched buildings include mineral-insulated cables having an overall thermoplastic covering, armoured cables, steel conduit, steel trunking, and thermoplastic insulated and sheathed flat twin and earth cables suitably shielded from mechanical damage by metallic capping.

Experience with high-impact plastic conduit and trunking in such situations is understood to be favourable. Metal conduit and trunking systems and other enclosures should be well sealed and galvanized, or otherwise protected with a corrosion-resistant finish where the environment is not expected to remain completely dry. Cables not in steel trunking or steel conduit should be positioned or otherwise protected to avoid damage caused by thatchers' fixings.

All wiring containment systems should be designed to prevent entry by rodents. In selecting wiring system(s) suitable for dusty areas, particular attention should be paid to the ingress of dust, the selection of equipment with suitable IP ratings, and the need to ensure that the ratings are maintained when the wiring system is constructed and installed.

Cables and wiring systems should not be installed immediately under, through or over the thatch. This includes not only those operating at mains voltage, but also extra-low voltage and communications wiring, and radio and television aerial down-leads. Overhead wiring systems should preferably not pass over or near the thatch. No wiring system should be installed closer than 300 mm to any wire-netting applied to the thatch.

**6. Terminations and joints**

Terminations and joints should preferably not be located in roof voids or other spaces adjacent to the thatch. Where this is unavoidable, terminations and joints should be contained within enclosures suitably selected to prevent the ingress of foreign materials or vermin, and mechanical damage. The enclosures should preferably be made of metal. Cable entries to ceiling roses, ceiling switches and luminaires etc. in an area beneath a roof void should preferably be made in suitable metal boxes or, alternatively, sealed to prevent the ingress of dust.

**7. Electrical equipment such as heat-emitting equipment, including luminaires, in the vicinity of the thatch**

Electrical equipment is to be selected and erected such that its temperature in normal operation, and foreseeable temperature rise in the event of a fault, is unlikely to cause a fire, taking due account of external influences. This requirement is to be achieved by the construction of the equipment or by additional protective measures taken during installation.

Heat-emitting equipment should be selected and positioned with great care. Recessed luminaires which penetrate the ceiling and enter the roof space generally require purpose-made enclosures to prevent ignition of combustible materials which may come into contact with high temperature surfaces, including those associated with lamps. Luminaires sited in loft spaces for loft lighting should be totally enclosed, such as the bulkhead type, to exclude foreign bodies which could cause overheating or fire.

**8. Minimizing the risk of fire**

For protection against fire, consideration should be given to the provision of a residual current device (RCD) having a rated residual operating current not exceeding 300 mA in the supply to all circuits and other electrical equipment in spaces adjacent to the thatch, such as roof spaces.

**9. Fire detection and alarm systems**

In certain cases, it may be prudent to consider a smoke and fire detection and alarm system, at least within areas adjacent to the thatch, including the loft(s). The provision of a fire detection and alarm system is necessary for compliance with The Building Regulations in the case of most new buildings, including dwellings, and where a material alteration is made to a building. Fire extinguishing systems may also need to be considered, where appropriate.

**10. Inspection and testing**

The above matters should be taken into consideration in the initial inspection and testing, and verification of a new installation, and in the periodic inspection and testing of an existing installation.

**11. The Dorset Model**

The Dorset Model is a guide for builders and others on certain requirements and recommendations, including some concerning electrical installation matters, that should be met for thatched properties. The Dorset Model forms part of the Building Regulations allowing construction of New thatched properties within 12m of the boundary.