

## H09-G01 Electricity

### 1. PURPOSE

This guidance has been created to support the H09 *Electricity* procedure and to provide additional information on assessing work activities involving electricity and any associated risks to ensure that electrical equipment is properly constructed, installed, maintained and that the installations are suitable for the environment in which they will be operating in accordance with the applicable legal and other requirements including the Electricity at Work Regulation 1989.

### 2. GUIDANCE

#### Electricity Site Guidance

2.1 Section 2.3 *Routine Inspection of Electrical Equipment* outline the need for examination and test of all electrical equipment. The frequency of test and examination is not legally specified but the table below culls information from a variety of official sources.

EMR Frequency of Electrical Test and Inspection		
Equipment/Environment	Formal Visual Inspection	Combined Inspection and Test
Fixed Installations	1 year	5 years
Temporary Installations	Continuous	3 months
Portable Class 1 (earthed) in Yard	3 months	6 months
Portable Class 1 (earthed) Internal Use	6 months	1 year
Portable Class 2 (double insulated) in Yard	6 months	1 year
Portable Class 2 (double insulated) Internal Use	1 year	2 years
Office earthed equipment e.g. kettles	1 year	2 years
Office double insulated hand held	1 year	No
Office double insulated not hand held	2 years	No
Office Information Technology equipment	3 years	double insulated No, otherwise 5yrs years

Note: Where conditions are particularly arduous, frequencies may need to be more often.

2.2 Visits by Owen David have shown that many sites are operating electrical testing but that the Competent Person involved is not particularly good at the paperwork side. As a result the attached Portable Appliance Register has been developed for the Competent Person to complete.

2.3 In certain instances residual current devices can give protection where normal earth leakage protection is found wanting e.g. steam cleaners. As RCDs are becoming very common in the industry a simple format for recording functional checks can be completed using the H09-01 *Residual Current Device (RCD) Functional Check*.

#### Action by Site Manager

2.4 The following actions are required to be carried out by the Site Manager:

- File the attached papers in the appropriate binder.
- Appoint Competent Persons for the visual inspections and the combined inspection and test (they need not be the same person).
- Enter all the portable appliances into column 1 of the Portable Appliance Register and bring the register up to date as regards work already done.
- If another format of recording work already exists this action need not be taken.
- File in the binder all circuit diagrams that are available as regards fixed electrical installations.
- If not already done, establish a programme of formal inspection and test of the fixed installations on a staggered basis so that all are covered within the appropriate period of frequency.
- Photocopy the various forms before they are filled in so that spares are available for future dates.

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### 2. GUIDANCE (Continued)

#### Routine inspection of electrical equipment

- 2.5 Electrical equipment is required to be maintained so as to prevent danger. While there is no specific regulations detailing the concerning routine inspection of equipment, the Health and Safety Executive Memorandum of Guidance on the Regulations makes it quite clear that regular inspection of equipment is an essential part of any preventative maintenance programme.
- 2.6 The Memorandum makes it quite clear that Inspectors will expect equipment to be inspected and records of these inspections to be kept. Their guidance publication states that it is up to the employer to use his judgement as to how often this inspection should be carried out, taking into account the type of equipment and conditions of use.
- 2.7 Many employers have found it difficult to decide on an appropriate frequency for these inspection procedures and, consequently, Owen David have prepared these notes which can be used as a starting point. Clearly, the following information is not authoritative and employers should use their own judgement in assessing whether it would be appropriate to increase or decrease the number of inspections. It might be appropriate, for example, to review the frequency of inspection, after a year of operation, in the light of defects discovered during those inspections.

#### Fixed Electrical Installations

- 2.8 It would be appropriate, in the case of fixed electrical equipment, to follow the guidance given in the Institution of Electrical Engineers Wiring Regulations regarding inspection and testing by 'competent persons'. These specify that, in general, electrical equipment should be inspected and tested at least every five years. This advice is modified in the case of agricultural/horticultural installations, with a period of three years being recommended. In some cases, even more frequent inspection and test is suggested, as in the case of caravan sites, where annual inspections might be appropriate. The advice given clearly reflects the site conditions and likelihood of deterioration.
- 2.9 The advice given above is for fixed electrical installations. However, the situation is different in the case of temporary installations, such as construction sites, stage lighting, etc. The IEE Regulations recommend that such temporary installations should be tested and inspected, initially, prior to use and then, subsequently, at least once every three months. Once again, this advice reflects the lower level of protection which is normally incorporated into such temporary installations, which results in a higher potential for deterioration and wear.

#### Portable Electrical Equipment

- 2.10 An inventory should be taken of all portable equipment which operates on a voltage in excess of 50 volts, and a register established in the form of a log book or record card system or similar. The equipment should then be inspected according to its type and nature of use.
- 2.11 The thorough test of portable Class 1 equipment should be carried out with a portable appliance tester capable of an earth continuity test under load and a high-voltage insulation test. In the case of Class 2 portable equipment obviously the earth continuity check is irrelevant.

#### Visual Inspections

- 2.12 All the inspections and tests referred to above should be carried out by persons who are electrically competent. However, much can be gained by supplementing the above inspections by routine visual inspections for basic defects. These can be carried out by persons who have no specific electrical qualifications, as long as they understand what they are looking for. We would suggest that permanent electrical installations should be checked at least annually for any obvious physical damage to cables, equipment enclosures, and conduits/trunking provided to protect wiring physically from damage.

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### 2. GUIDANCE (Continued)

2.13 In the case of portable equipment, three-monthly visual inspections are a good starting point. These should start from the plug and end at the appliance itself, and answer the following questions:

- Is the plug in good condition, fitted with a correct fuse and properly secured with a cable clamp to the outer sheath of the cable?
- Is the cable itself in good condition, free from signs of obvious damage, nicks, gashes, signs of melting?
- Has the cable been joined by unsuitable means, e.g. twisted joints or screwed block-type connectors?
- Is the cable properly secured at its entry to the appliance by means of a secure grommet or clamp, which takes the strain on the outer sheath of the cable?
- Is the outer casing of the appliance itself apparently in sound condition with no sign of damage, ingress of liquids, overheating, etc.?

Note: With double insulated Class 2 equipment, although there is less justification for frequent thorough inspection and test than with Class 1 equipment, it is essential that the outer case is maintained in good condition. If there is any doubt over its condition the equipment should be subjected to a thorough inspection and test with a portable appliance tester to verify the efficiency of the insulation.

### 3. OTHER RESOURCES

- H09 *Electricity*
- H09-PM01 *Electricity*

### 4. FURTHER SUPPORT

If you require any further information regarding this guidance please contact:

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