

WHAT DO WE NEED TO TEST AND WHEN DO WE NEED TO TEST IT?

Key question in terms of compliance, cost and priorities include:

- What do we need to test?
- When do we need to test it?
- Are we compliant?
- Are we spending unnecessarily?
- What is the priority?

EDIS answers these questions for an entire estate easily!

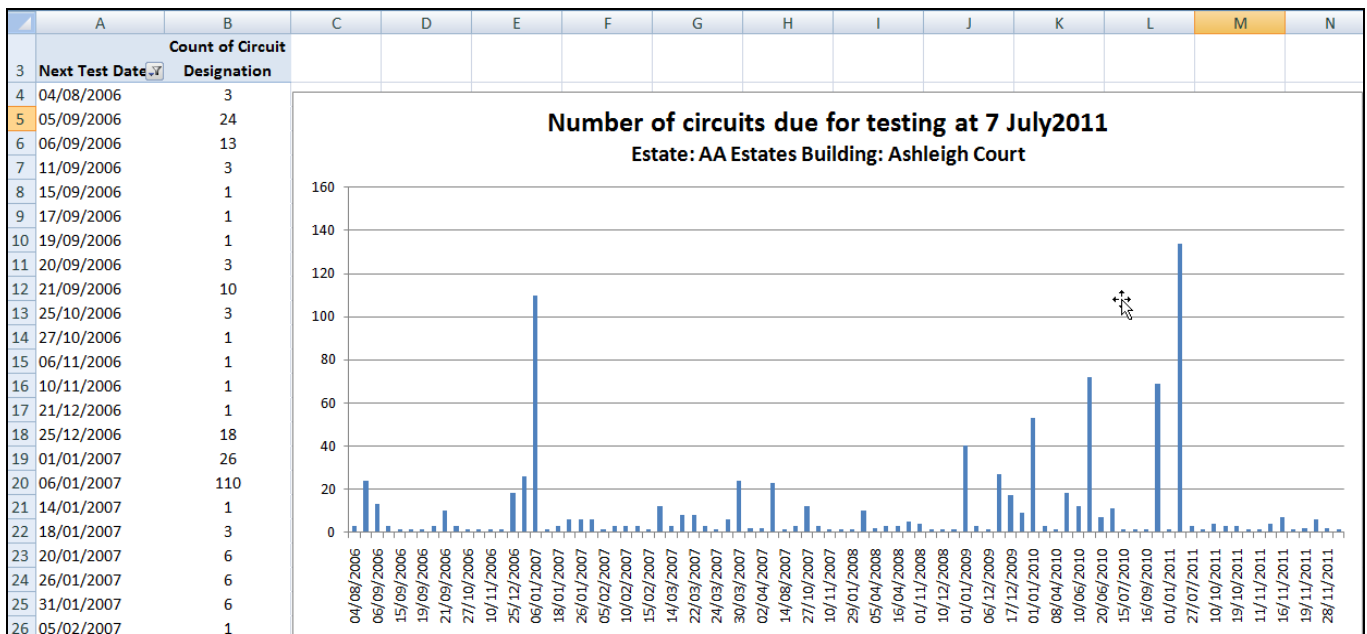


Figure 1 EDIS provides customizable reports for determining what needs to be done, the volume of work required and the priority

1 Introduction

The frequency of periodic electrical testing depends on the type and nature of the installation:

- Testing and Inspection for commercial property is required at least 5 every years and between 1 and three years for industrial premises depending on the nature of the premises. (IEE Guidance Note 3 Table 3.2).
- For domestic landlord's it is recommended that a Testing and Inspection exercise is carried out at least every 10 years and at each change of occupancy (IEE Guidance Note 3 Table 3.2). This is to protect the landlord against prosecution should a tenant leave an installation in a dangerous manner.

The APPENDIX - Specifying the requirements for testing projects provides further details relating to the testing frequency. Once the frequency has been determined the challenge is to identify what needs to be tested, based on the last test date or the recommended next test date. If there are a large number of properties in an estate this challenge becomes difficult; without an integrated enterprise wide system it is not possible.

An integrated enterprise wide system will allow all changes and testing of the electrical infrastructure to be captured centrally – providing workflow, automation and a central repository for all stakeholders. The benefit of this is data

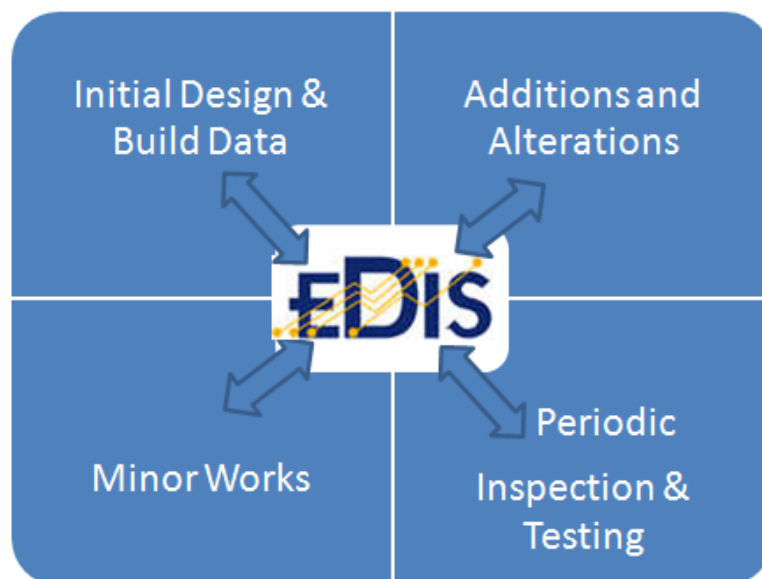
integrity, improved compliance, cost reduction, prioritization as well as overall electrical safety. This document outlines how these benefits can be achieved using the EDIS process.

2 EDIS manages the electrical data through-out it's life cycle

EDIS is used to manage electrical compliance across an estate. It is a web based repository that provides an integrated solution for ensuring electrical compliance - regardless of the number of buildings, geographic distribution or number of electrical contractors. EDIS provides a - one version of the truth - for electrical certificates, distribution board schedules, electrical schematics, compliance status, next test dates and much more.

It provides a simple, convenient web based software to create, edit, store and recall all the information relating to electrical certificates and electrical installations. EDIS follows the format of British Standard BS 7671 "Requirements for electrical installations" 2008, amendment no.1

Simply completing electrical certificates on the centralized EDIS system ensures that the distribution board and circuit schedule data is up to date and correct.



**The Single Online EDIS Repository
Ensures One Version Of The Truth**

All electrical work requires an electrical certificate to prove the safety and compliance of the infrastructure. Electrical contractors, in-house electricians, construction projects all use the web based EDIS repository to access electrical data and create certificates. On completion of the BS7671 certificates EDIS ensures all electrical data is stored and updated automatically – the contractor need only complete the certificate using the EDIS process and all the certificates will be stored and distribution board schedules will be correctly updated. This repository becomes a source of reports for next test date for electrical circuits.

3 The Next Test Date

The recommended next test date is defined on the new Electrical Installation Certificates and Condition Report certificates. The recommended next test on the certificate refers to an entire building, EDIS keeps track of the last test / next test for each circuit, i.e. in cases where less than 100% of the circuits are tested the recommended next test will be tracked for each circuit – allowing the user to assess an exact last test / next test date for each circuit. This is useful if a policy of partial annual testing is in place; in such a case EDIS provides the necessary information for tracking the compliance status for each circuit.

The status of each circuit can be reported and interrogated providing cost saving insights as to what needs to be tested, an example is shown below:

	A	B	C	D	E	F	G
1	Sl. No.	Board Designation	Circuit Designation	Circuit Phase	Circuit Description	Last Test Date	Next Test Date
3	2	-A-001DB	1	Y	TEST circuit 1	01-Jan-11	28-Jul-12
86	85	-UTest_A2_not same pointF/S	1	R	MAIN BUILDING	10-Oct-11	11-Oct-11
87	86	-UTest_A2_not same pointF/S	1	Y	MAIN BUILDING	10-Oct-11	11-Oct-11
88	87	-UTest_A2_not same pointF/S	1	B	MAIN BUILDING	10-Oct-11	11-Oct-11
103	102	-UTest_A3_not same pointF/S	1	B	Mechanical Services	10-Oct-11	11-Oct-11
107	106	-UTest_A9 Tech section Fed froF/S	1	R	Crypt	19-Oct-11	12-Oct-15
108	107	-UTest_A9 Tech section Fed froF/S	1	Y	Crypt	19-Oct-11	12-Oct-15
109	108	-UTest_A9 Tech section Fed froF/S	1	B	Crypt	19-Oct-11	12-Oct-15
114	113	-UTest_N2F/S	1	R	NB_N22	11-Nov-11	11-Nov-11
122	121	001 TestDB	1	L1	High lights	24-Mar-07	24-Mar-07
128	127	1LVP	1	L1	Power to 1.1	10-Apr-08	09-May-08
129	128	1LVP	1	L2	Power to 1.1	10-Apr-08	09-May-08
130	129	1LVP	1	L3	Power to 1.1	10-Apr-08	09-May-08
131	130	1LVP	2	L1	Supply to CON_1/1	23-Mar-07	23-Mar-11
132	131	1LVP	2	L2	Supply to CON_1/1	23-Mar-07	23-Mar-11
133	132	1LVP	2	L3	Supply to CON_1/1	23-Mar-07	23-Mar-11
146	145	1.1DB	1	L1	Power sockets to 2rd	08-Apr-10	08-Apr-15
147	146	1.1DB	1				

Figure 2 -The next test date report lists the circuits that are due for testing. This data provides a circuit level schedule of work which will allow the planner to prepare their inspection and testing programme regardless of the size of the estate or building.

Using EDIS to create and manage minor works, new installations and condition report will automatically capture the required circuit next test date, allowing planners to answer key compliance, cost and planning questions:

What do we need to test?

Because EDIS tracks the last test/next test date at a circuit level, the EDIS reports provide dates for the next test for each circuit in the building.

When do we need to test it?

The circuits requiring testing can be easily identified – regardless of the size or complexity of the building.

Are we compliant?

The report provides immediate information on the last test date, ensuring all circuits are prioritized based on their last test date. Monitoring which circuit has not been tested, possibly due to access or availability, is useful as testing can be planned to take advantage of times when the business is not dependent on them. This will ensure that circuits are tested at the appropriate time. Where sample testing is done EDIS will ensure that the same 10% of the installation is not tested with the remaining 90% will never be tested; testing a different 10% of the installation will in a typical office type environment will require ongoing testing every year to ensure that all circuits are tested every 5 years.

Are we spending unnecessarily?

The report ensures that testing is not unnecessarily done, because all work is updated through EDIS the testing requirement is know at a circuit level. Ongoing changes due to minor works, circuit changes and new installations are captured and accounted for this ensures that no circuit is unnecessarily tested before it is due. Tracking the next test date at a circuit level allows the planner to accurately plan 10% testing without – retesting or not testing circuits.

What is the priority?

Exact next test dates and last test dates are tracked for each circuit. Allowing the planner to accurately prioritise the testing requirements to ensure practical compliance.

Number of circuits due for testing at 7 July 2011
Estate: AA Estates Building: Ashleigh Court

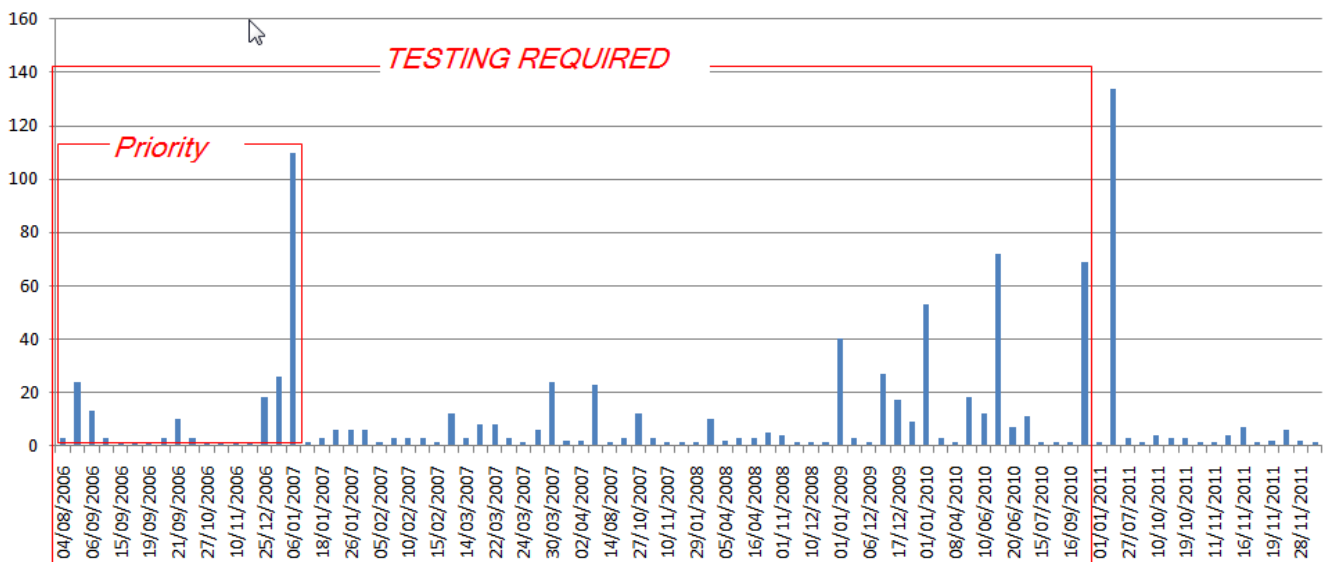


Figure 3 The electrical testing compliance and priority can be identified by the above report, the data is downloaded into EDIS and graphed via Excel. It shows the number of circuits due for testing.

The level of detail provided by EDIS allows planners to answer compliance questions, control costs and ensure the audibility if in place to confirm compliance. EDIS provides the end-to-end certificate workflow, automation and integration to make this level of planning possible.



4 APPENDIX - Specifying the requirements for testing projects

The legislation of specific relevance to electrical maintenance and Fixed Installation Testing is the Health & Safety at Work Act 1974, the Management of Health & Safety at Work Regulations 1999, the Electricity at Work Regulations 1989 and the Workplace (Health, Safety and Welfare) Regulations 1992. **The Health & Safety at Work Act 1974** puts the duty of care upon both the employer, employee and self employed to ensure the safety of all persons using the work premises.

The Management of Health & Safety at Work Regulations 1999 states:

"Every employer shall make suitable and sufficient assessment of:

(a) the risks to the health and safety of his employees to which they are exposed whilst at work, and

(b) the risks to ensure the health and safety of persons not in his employment arising out of or in connection with the conduct by him or his undertaking."

The Electricity at Work Regulations 1989 states:

- "All systems shall at all times be of such construction as to prevent, so far as reasonably practicable, such danger."
- "As may be necessary to prevent danger, all systems shall be maintained so as to prevent, so far as reasonably practicable, such danger."
- "'System' means an electrical system in which all the electrical equipment is, or may be, electrically connected to a common source of electrical energy and includes such source and such equipment"
- "'Electrical Equipment' includes anything used, intended to be used or installed for use, to generate, provide, transmit, transform, rectify, convert, conduct, distribute, control, store, measure or use electrical energy."

It is clear that the combination of the HSW Act 1974 and the EAW Regulations 1989 apply to all electrical equipment used in, or associated with, places of work. The scope extends from distribution systems down to the smallest piece of electrical equipment. The legislation provides the overall required outcome; the specifics are contained in the standards and regulations relating to electrical installations, viz. BS 7671 and the associated regulations.

Most specifications issued by contractors for Fixed Electrical Inspection and Test services make mention of sample testing. This can be confusing; A practical approach is to test 100% of electrical circuits from every Distribution Board in the installation, while only a sample (typically 10 to 20%), of the final points are tested, i.e light and sockets, if faults are found in the sample the electrician will need to increase the number of items tested in order to satisfy his professional judgment as to the compliance of the installation.

Guidance Note 3 provides a guide to the frequency of periodic inspection and testing, the table 3.2 from Guidance Note 3¹ below provides guidance on the initial frequency of inspections **, the frequency is for the initial inspection following a new installation, subsequent inspections are defined at the discretion of a person .

Type of Installation	Routine Check	Maximum Period between inspections and testing as necessary	Reference (see notes below)
General installation			
Domestic	N/A	change of occupancy/10 years	N/A

¹ ©The IEE, Inspection and Testing, Guidance Note 3

Commercial	1 year	change of occupancy/5 years	1,2
Educational establishments	4 months	5 years	1,2
Hospitals	1 year	5 years	1,2
Industrial	1 year	3 years	1,2
Residential accommodation	at change of occupancy/ 1 year	5 years	1
Offices	1 year	5 years	1,2
Shops	1 year	5 years	1,2
Laboratories	1 year	5 years	1,2
Buildings open to the public			
Cinemas	4 months	1 year	2,6,7
Church installations	1 year	5 years	2
Leisure complexes	4 months	1 year	1,2,6
Places of public entertainment	1 year	5 years	1,2,6
Restaurants and hotels	4 months	1 year	1,2,6
Theatres	4 months	1 year	2,6,7
Public houses	1 year	5 years	1,2,6
Village halls/Community centres	1 year	5 years	1,2
External installations			
Agricultural and horticultural	1 year	3 years	1,2
Caravans	1 year	3 years	N/A
Caravan parks	6 months	1 year	1,2,6
Highway power supplies	as convenient	6 years	N/A
Marinas	4 months	1 year	1,2
Fish farms	4 months	1 year	1,2
Emergency lighting	daily/monthly	3 years	2,3,4
Fire alarms	daily/weekly/monthly	1 year	2,4,5
Laundrettes	1 year	1 year	1,2,6
Petrol filling stations	1 year	1 year	1,2,6
Construction site installations	3 months	3 months	1,2

Reference Key

1. Particular attention must be taken to comply with S1 1988 No 1057. The Electricity Supply Regulations 1988.
2. S1 1988 NO 635 The Electricity at Work Regulations.
3. See BS5266: Part : 1988 Code of practice for the emergency lighting.
4. Other intervals are recommended for testing operation of batteries and generators.
5. See BS 5839: Part 1: 1988 Code of practice for system design installation and servicing.
6. Local Authority Conditions of License.
7. S1 1995 No 1129 (Clause 27) The Cinematography (Safety) Regulations

** Information taken from IEE guidance note 3