Learning resource

Demonstrate knowledge of legislation and Standards governing electrical workers (Level 3, Credits 2)

Trainee Name: _____

Acknowledgement

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Contents

Basic employment rights

Employment Relations Act 2000

The Employment Relations Act 2000 governs relationships between employers, employees, unions and other employment representatives and advocates.

The main aim of the Act is to set out what is expected from each party to help make employment relationships work.

This is so that both the employee and employer know what is expected of them and what they are entitled to.

A work relationship should be based on mutual trust, confidence, and fair dealing.

Your right to representation

As an employee, you are entitled to a representative when negotiating or renegotiating the terms of your agreement with your employer.

This includes the right to join a union and have them negotiate an employment agreement for you.

If you do join a union, you will be required to be part of a collective employment agreement if the union has negotiated one that covers your work.

Although bargaining parties do not have to reach an agreement, the employer and the union must participate in the process and bargain in good faith.

Employment agreements

When you enter into an employment relationship, you are automatically entitled to all the rights and protections of an employee under the Employment Relations Act.

It is a requirement under the Act for your employer to:

- Provide you with a written copy of the employment agreement before you begin your employment
- Advise you that you may seek independent advice about the agreement
- Give you reasonable time to seek that advice
- Give you a copy of the employment agreement signed by both parties.

Types of employee agreements

There are two main types of employment agreements:

- Collective agreements.
- Individual agreements.

Collective Agreements

A collective agreement covers a group of people and are negotiated by a registered union and the employer. To be part of it, employees have to be members of the relevant union.

Employees who choose not to join a collective agreement will need have an individual employment agreement with their employers.

Individual agreements

Individual agreements cover only one employee. Where there is no collective agreement, or the employee does not wish to join the collective agreement, the employer and employee will negotiate an individual agreement.

An individual agreement must be in writing and MUST include the following items:

- The names of the employee and employer.
- A description of the work that the employee is expected to carry out.
- An indication of where the workplace will be.
- The wages or salary that the employee will receive.
- An indication of the arrangements relating to hours of work and breaks.
- A clear explanation of how to resolve employment relationship problems.
- Acknowledgement that the employee will receive at least time-and-a-half payment if required to work on a public holiday.

The agreement usually contains other terms and conditions mutually agreed upon between the employee and employer. These include:

- Hours of work and breaks.
- Leave and holidays.
- Termination procedures.
- Job descriptions.
- General standards of performance and conduct.
- Method of variation.
- Deduction provisions – including union fees.

Rights and responsibilities of an employment relationship

Every relationship between an employer and employee is expected to include the following rights and responsibilities for both sides:

- Good faith
- Fair treatment
- Health and safety

Good faith

Both employers and employees must act honestly and openly, be responsive and communicative towards each other, and raise issues promptly.

Good faith includes the following three elements:

- Not acting in a misleading or deceptive way.
- Being responsive and communicative.
- Before making a decision, which may result in employees losing their job, the employer must give the affected employees sufficient information to be able to understand the proposal and then give them a proper opportunity to comment.

Fair treatment

Both parties are to avoid discrimination against things like age, race, or gender and behave fairly including fulfilling the obligations of an employment agreement.

It includes acting honestly, openly, and without hidden motives, raising issues in a fair and timely way and working constructively and positively together.

Fair treatment also involves turning up to work on time, keeping an open mind, listening to each other and being prepared to change opinions about a particular situation or behaviour.

Health and safety

Both parties have rights and responsibilities in health and safety.

The employer has the primary responsibility for the employee's health and safety at work. The employer's responsibilities include:

- Providing and maintaining a safe work environment .
- Providing the necessary information, training, instruction or supervision for employees to work safely.
- Monitoring the health and safety of workers and their work conditions.

The employer must also manage risks as far as is reasonably practicable.

Employees have the following health and safety responsibilities:

- Be active in your own health and safety.
- Look after other workers so they are not harmed by something you do or don't do.
- Follow any reasonable instructions given to you by your employer, and cooperate with any reasonable health and safety policy or procedure to remove or eliminate hazards.

Sources for employment related information

There are a number of sources of information and assistance available to you for negotiating an employment agreement or for employment relationship issues. Some are listed here in the table below.

Source of Information	Services Provided	Cost
Employers	Most employers will assist their employees with queries in relation to employment rights and responsibilities	Free
Employment relations authority	Assesses the facts in an employment dispute and makes a decision based on the merits of the case	Application fee of approximately $71
Employment NZ website	General information on employment agreement negotiations and employment relationship problems	Free
Employment Relations Act (available on line)	You can look at the Employment Relations Act itself	Free
Citizen's Advice Bureau	Provides advice and pamphlets about employment relationships	Free
Trade unions	Provides information on employment rights; assists employees with negotiation and employment problems; carries out collective bargaining	Membership fee (variable)
Other Employment Relations Practitioners (can be found in the yellow pages).	Trained in employment relations and are able to assist you.	Variable
Lawyers	▪ Write up an employment agreement ▪ Check through your employment agreement ▪ Represent you in a personal grievance procedure ▪ Give you advise on how to deal with problems you have in an employment relationship.	Variable

Organisations

Let's look at the functions of the main organisations connected with the electrical industry. Most will directly affect you as an electrical worker, and if they don't you will need to know about them.

Electrical Workers Registration Board (EWRB)

The EWRB is important to you as an electrical trainee. Their roles include:

- Approving applications for provisional licenses and registration.
- Administering registration and licensing examinations.
- Ensuring the ongoing competency of electrical workers.
- Auditing of prescribed electrical work.
- Issuing of annual practising licenses to electrical workers.
- Conducting disciplinary hearings and the disciplining of electrical workers found guilty of offences.
- Promoting electrical safety and competency.

Electrical Workers Licensing Group (EWLG)

The EWLG is a service unit of the Department of Building and Housing (DBH) that carries out administrative operations and processes for electrical workers.

The EWLG does things like approving and issuing of employer licenses, special worker approvals (live line) and processing complaints about unsatisfactory electrical work undertaken by both registered and unregistered persons.

The EWLG is important to you as it is responsible for certifying the competency of electrical and electronic workers.

Electrical Regulatory Authorities Council (ERAC)

The ERAC is an organisation that liaisons between the eight Australian states and territories and New Zealand. Its role is to coordinate electrical regulatory strategies, policies and ongoing reforms.

ERAC is working towards having electrical safety systems that are current and harmonised wherever possible.

The ERAC provides a practical single point of contact for unions, industry and other areas of government at a national level.

The ERAC have led the way with the Electrical Equipment Safety System (EESS) for electrical equipment sold in in Australia and New Zealand. The EESS is legislation designed to make sure electrical equipment meets safety criteria and is not hazardous.

Worksafe New Zealand

Worksafe NZ (formally known as OSH) is responsible for health and safety in the workplace.

They carry the full weight of the New Zealand law and expect that all workers and businesses in New Zealand work according to the Health and Safety at work Act (HSWA)

They are about you getting home healthy and safe and not coming to harm because of your work.

Energy safety

Energy Safety is the part of WorkSafe New Zealand, which specifically looks after the safe supply and use of electricity and gas in New Zealand.

They're responsible for:

- Safeguarding people and property from the dangers of gas and electricity.
- The safety of gas and electrical appliances and installations.
- The safety of gas supply.
- The safety of electricity supply, transmission and generating systems.
- The quality and measurement of gas and electricity.

Ministry of Business, Innovation and Employment (MBIE)

MBIE is the part of the government whose job it is to grow the New Zealand economy to provide a better standard of living for all New Zealanders.

MBIE makes policy, gives advice, and deals with regulations for New Zealand businesses.

The Skills Organisation (Skills)

Skills is the Industry Training Organisation (ITO) for the Electrical industry and many other industries as well.

Skills does not do training, their role is to organise training and contracts for new electrical workers. Skills also look after the unit standards for the electrical industry.

Connexis

Connexis (formally ESITO) is the Industry Training Organisation for the electricity supply industry. They work closely with employers to design and develop training that is recognised both nationally and internationally.

Territorial Authorities (TAs)

Territorial authorities are the second tier of local government in New Zealand, below regional councils.

One of the functions of TAs (district, city and regional councils) is to provide dangerous goods inspectors who verify hazardous area zonings, such as those that occur in and around petrol stations for example.

As an electrician working in a hazardous area, you will need to be in contact with one of their inspectors to check safety requirements before you commence work.

Electricity Engineers Association (EEA)

The Electricity Engineers' Association (EEA) of New Zealand is an independent association. It was established in 1925 to meet the requirements of technical and engineering people working in the electricity supply industry.

The EEA is a strong voice in the electricity supply industry for the promotion of technical and safety issues.

Electricity retailers (Energy suppliers)

Electricity retail companies throughout New Zealand are responsible for purchasing electricity and distributing it to their customers -consumers.

If you are in charge of, or responsible for, a new electrical installation, you are required to contact the energy retailer for any requirements on metering and connecting the consumer's installation to the electricity supply.

Accident Compensation Corporation (ACC)

ACC is the part of the New Zealand government that looks after the country's accidental injury scheme. The scheme covers people working, unemployed, retired, and visitors to New Zealand.

Master Electricians (ME)

Master Electricians (formally known as Electrical Contractors Association of New Zealand, ECANZ) is New Zealand's only professional trade organisation for electrical contracting businesses in New Zealand.

ME's mission is to represent, promote and advance the interests of the electrical contracting industry, those substantially engaged within the industry, and the public who employ electrical contracting services.

New Zealand Electrical Institute Inc.

The NZEI is open to anyone with an interest in electrical matters, whether employed or retired. One of the functions of the NZEI is to prepare submissions to the government on electrical matters. Its members also serve on working parties and special interest bodies.

Site safe

Site safe is a national not-for-profit organisation that wants industry to be proud to be safe. They provide education and resources on safety systems and behaviours.

The Site Safe Passport system is a system that can be adopted by a worksite. It requires all workers and sub-contractors on site to have attended and completed Site Safe training.

This ensures that all workers onsite have had recent training in hazard identification, risk management, and working safely alongside other trades.

It also ensures that all workers understand their health and safety responsibilities.

Legislation for electrical workers.

There are a number of official documents that set out what you should do at work and how you should do it. It may seem as dry and difficult as eating 4 dry Weetbix at once, but really this legislation can be part of your road to success.

If you are working within the boundaries of legislation, you have the full force of the law behind you to back you up.

You can work with confidence knowing that you are operating in a way that you have the support of legislation.

To achieve this, you need to know about and study legislation. We will have a look at some of the more important ones you need to know about.

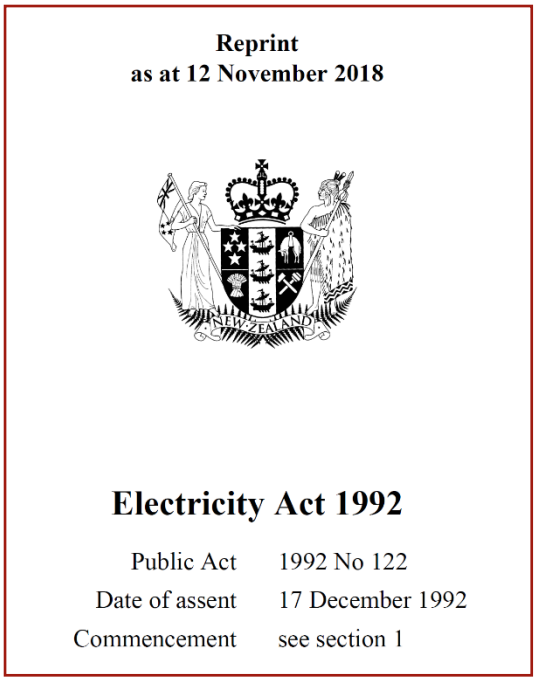
The Electricity Act is the principal legislation that governs electrical practices in New Zealand.

Regulations, Codes of Practice, and Standards also play a part in ensuring that the purpose and requirements of the Act are put into practice.

The Act provides authorisation for the Electricity (Safety) Regulations to be formed, which help to regulate how the electrical industry carries out its business.

This happens in conjunction with the New Zealand Standards, which provide detailed technical requirements for all electrical installations and appliances.

Codes of Practice provide additional guidance for specific types of electrical work and activities.



Reprint
as at 12 November 2018

Electricity Act 1992

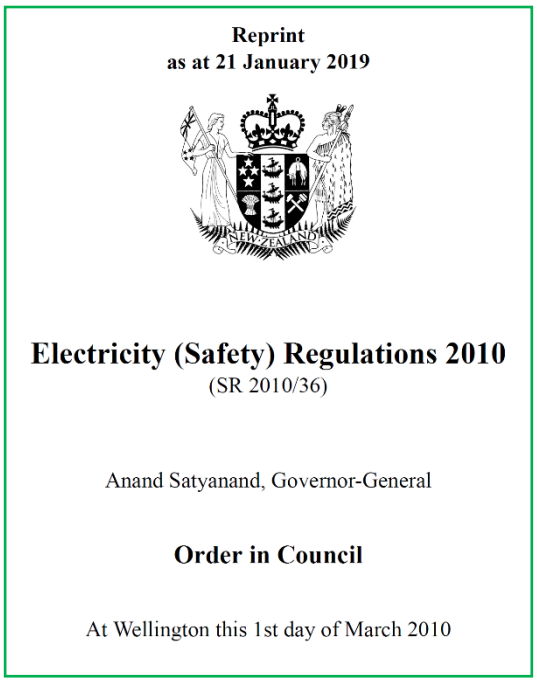
Public Act 1992 No 122
Date of assent 17 December 1992
Commencement see section 1

Acts

Acts are legislation passed by Parliament and are the highest level documentation that all other documentation is based on. Believe it or not, they are something that you need to know and understand.

Acts set out the broad legal/policy principles that you need to follow. If it is the legal/statement of Law that you need to know for some reason, then the Act is where you will find it.

Government Acts	Brief description of Act
Industry Training and Apprenticeships Act 1992	Provides guidance for industry implementation and administration of training programmes.
Health and Safety at Work Act 2015	Sets out the principles, duties and rights in relationship to workplace health and safety
Electricity Act 1992	The act that regulates the supply and safe use of electricity in New Zealand.
Building Act 2004	The act that regulates the design, construction and safe use of buildings in New Zealand
Consumer Guarantees Act 1993	The act that sets out the guarantees for products and services a business must provide to their customers



Reprint
as at 21 January 2019

Electricity (Safety) Regulations 2010
(SR 2010/36)

Anand Satyanand, Governor-General

Order in Council

At Wellington this 1st day of March 2010

Regulations

The next level down from the Acts are the Regulations.

Regulations, Rules, and Codes set out how an Act is applied. If you need to know how to implement something in your work to comply with the law, then the Regulation is where you would look.

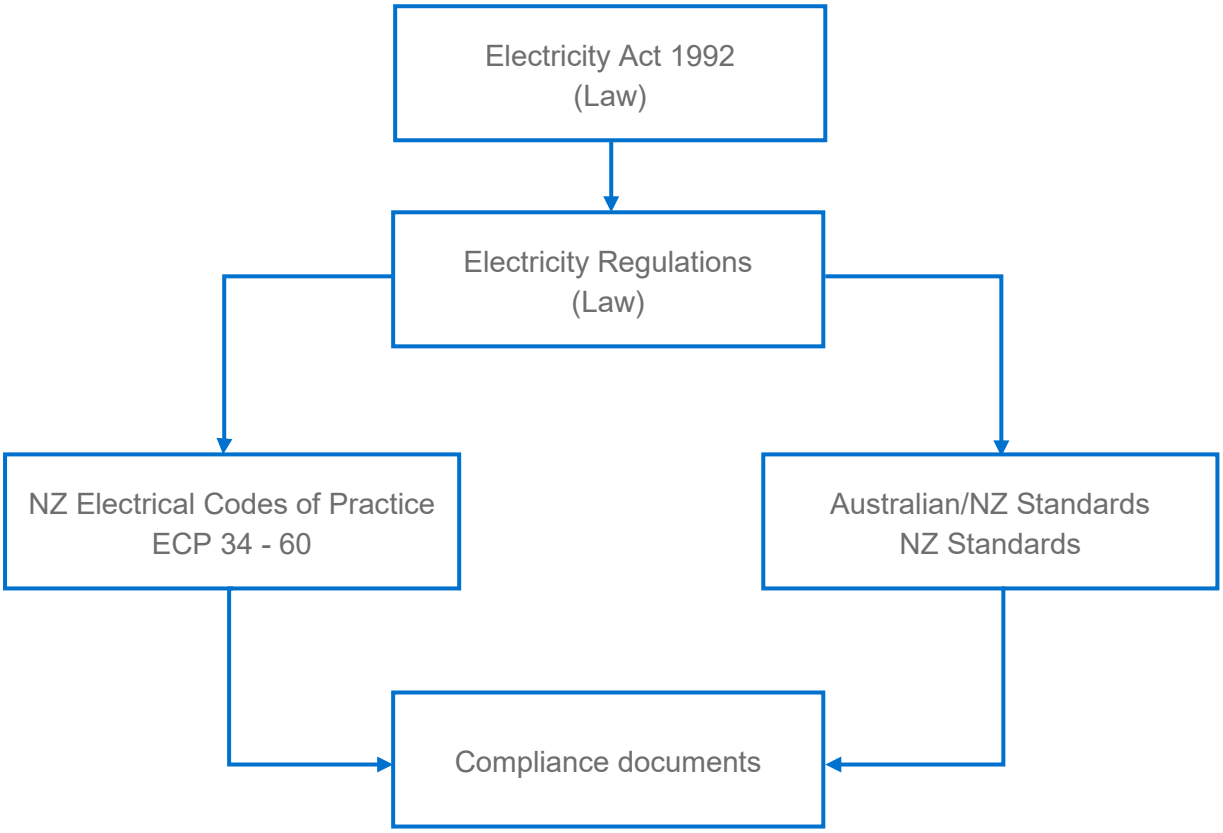
Some regulations that affect your work are as follows.

Regulations	Brief description of Regulations
Electricity (Safety) Regulations 2010	The ESR contain the basic safety outcomes expected to be achieved for all electrical work carried out in New Zealand. In all electrical work you must, as an electrical worker, comply with the Electricity Regulations and any amendments.
Building Regulations 1992	The builders equivalent to the Electricity (Safety) Regulations. The Building Code is found in Schedule 1 of the building regulations and it sets the performance standards that all building work must meet. Remember, you may be a sparkie, but if you are working on a building, then these regulations apply to you.
Building (Residential Consumer Rights and Remedies) Regulations 2014	The regulations that set out consumer protection measures for residential building contracts between the building contractor (including builders, plumbers, electricians, or any other tradesperson) and a client.
Building (Infringement Offences, Fees, and Forms) Amendment Regulations 2014	These regulations list a variety of offences under the Building Act 2004 that may be dealt with as infringement offences

New Zealand Electrical Codes of Practice

The NZECPs are looked after by WorkSafe to supplement the Electricity (Safety) Regulations (ESR).

While NZECP are produced under the umbrella of the Electricity Act, they require other legislation (in most cases the Electricity (Safety) Regulations) to cite them (officially identify them as the required code to work to) to make their use legitimate. See the flow chart below.



Standards

Standards get down to the nitty gritty of doing the job. They give far more practical guidance on doing the work or designing a product than the Act or regulations do.

Students can access the Electrical Safety Regulations, Electricity Safety Act and Electrical Codes of Practices (ECP) through the following link;
https://worksafe.govt.nz/laws-and-regulations/

Access to Australian/New Zealand Standards is through My Skills Portal.

Australian Standards (AS)

The Standards Association of Australia, prepares and publishes Australian Standards and promotes their adoption.

The Electricity (Safety) Regulations and the New Zealand Electrical Codes of Practice refer you to a number of Australian Standards which you must have access to.

New Zealand Standards (NZS)

Standards New Zealand is a self-funded organisation serving its members in industry and commerce and the public throughout New Zealand.

Its objectives include improvement of the quality of goods and services, and promotion of public safety through the development and use of Standards.

You will find that most NZS's referred to in the electrical industry have now become joint Australian/New Zealand Standards (AS/NZS).

AS/NZS 3000 is a joint Standard known as the Australian/ New Zealand Wiring Rules.

This Standard is an acceptable means of compliance with the Electricity (Safety) Regulations safety requirements for low voltage installations.

You will more than likely, do your work to this standard on a daily basis.

The Wiring Rules set out the minimum requirements for the design, construction and testing of electrical installations, including the selection and installation of electrical equipment.

IEC Standards

The International Electrotechnical Commission (IEC) is a worldwide organisation that publishes International Standards and manages conformity systems for electric and electronic products, systems and services.

The IEC is one of three global organizations (IEC, ISO, ITU) that develop International Standards.

ISO = International Organization for Standardization, ITU = International Telecommunication Union

The object of the IEC is to promote international cooperation on standardisation in the electrical and electronic fields. In addition, the IEC publishes International Standards.

Millions of devices that contain electronics, and use or produce electricity, rely on IEC International Standards and Conformity Assessment Systems to perform, fit and work safely together.

There are a number of Regulations and Standards that make reference to the IEC Standards.

Key standards for electrical workers

Let's have a brief look at two of the most important standards that will impact your work in the electrical Industry.

AS/NZS 3000

Australia / New Zealand standard 3000 is also known as the wiring rules.

AS/NZS 3000 sets out the requirements for the designing, constructing and verification (testing) of electrical installations.

It includes information to guide you to selecting and installing the right equipment correctly.

You may not know it, but this is the book that guides most of the electrical industry - and most likely the choices you will make on a daily basis.

You may not have read it personally (yet), but someone has, and you will be getting trained to do your work so that it complies with this standard.

The electrical work you do must comply with AS/NZS 3000, do you know that it does?

You should read AS/NZS 3000. To become a qualified electrician, you will need to sit an exam on it. The best preparation you can do, is get a copy now and use it everyday in your work.

Each job you do, look at the rules that cover what you are doing that day in AS/NZS 3000. By doing this, you will familiarise yourself with AS/NZS 3000 - bit by bit and reinforce that learning with its practical application.

This will not only make reading it far more interesting, it will make you a better electrical worker and help avoid the huge boring job of learning the standard in a big lump when you are faced with the exam.

AS/NZS 3000 is the key standard that you will use, you will use it in your study. You should download it now.

Note: Having a trainee licence gives you access to many electrical standards online and you can download a copy of AS/NZS 3000 via the EWRB web site. If you are having trouble getting access to it, the EWRB helpline people can easily sort you out.

There are different versions of AS/NZS 3000, you need to check that you have a copy of the current version.

Sometimes there are old out of date versions around, and sometimes there are newer versions that have not yet been made the legally required version.

Amendments are also produced now and then to update an existing standard without having to change the whole book.

You need to check that your copy has the latest amendments.

Check for information on the latest version and amendments of any NZ standard on the NZ standards website.

Structure of the AS/NZS 3000

AS/NZS 3000 has two parts to it and it is important for you to understand what they are about.

Part 1

Part 1 states the fundamental principles of ensuring the protection of people and property. These principles are mandatory, so electrical workers must comply with them.

In part one, Section 1.4 it has definitions which are really important and helpful to understanding electrical terms and the standard itself.

Then the book moves on and covers the “principles” of how you should do your work and what your work should be like. Kind of like an overview of safe electrical installations. It is the standard you must achieve when you do electrical work, so it is very important.

AS/NZS 3000 Part 1 (protection of people and property)

Section 1.5 of AS/NZS 3000 provides 14 fundamental safety requirements that are intended to protect people and property against harm and damage. These are summarised as follows:

1.5.1 Protection against dangers and damage

To keep people, livestock, and property safe during the reasonable use of any electrical installation.

1.5.2 Control and isolation

Electrical installations are to have control and isolation devices for safety and to allow maintenance of electrical equipment.

1.5.3 Protection against electric shock

Electrical installations are to have protection against shock current from contact with normally live parts (direct contact) or parts that may have become live under fault conditions (indirect contact).

1.5.4 Basic protection (protection against direct contact)

Electrical installations are to have protection against dangers from contact with normally live parts.

1.5.5 Fault protection (protection against indirect contact)

Electrical installations are to have protection against dangers from contact with exposed conductive parts that may have become live under fault conditions.

1.5.6 Additional protection by the use of RCDs

RCDs are not to be used on their own for protection but can be used to add safety to other means of protection.

1.5.7 Basic use and fault protection by use of extra-low voltage

Separated extra-low voltage (SELV) or protected extra-low voltage (PELV) systems can be used to for either basic and/or fault protection (subject to certain conditions).

1.5.8 Protection against thermal effects in normal service

Electrical installations are to be installed so that they don’t burn people or livestock, or cause flammable materials to burst into flames through high temperature or electric arcing during normal service.

1.5.9 Protection against overcurrent

Protection is to be provided against any likely overcurrent causing injury or damage to people and property because of excessive temperatures or electromechanical stresses.

1.5.10 Protection against earth fault currents

Any protective earthing conductors or other parts intended to carry an earth fault current, must be capable of carrying that current without heating up badly.

1.5.11 Protection against abnormal voltages

Protection must be provided against any harm caused by abnormal voltages—

a) caused by a fault between live parts of circuits supplied at different voltages; or

b) occurring in unused conductors; or

c) occurring through harmful influence between different circuits and installations.

1.5.12 Protection against the spread of fire

Protection must be provided against fire caused or spread by components of the electrical installation.

1.5.13 Protection against injury from mechanical movement

Protection must be provided to stop electrically driven equipment moving and injuring people, where—

a) mechanical maintenance may involve risk of physical injury; or

b) emergency stopping may be necessary to remove any unexpected danger.

1.5.14 Protection against external influences

All parts of an electrical installation must be able to cope with its (reasonably expected) normal environment whatever that may be.

Part 2

Part 2 of AS/NZS 3000 outlines the requirements and methods that allow electrical workers to ensure compliance with Part 1 of the standard.

It elaborates on the 'high level' performance outcomes of Part 1 and talks about how to achieve them in real life.

Part 2 provides details of how electricians are to do electrical work and it must be followed.

AS/NZS 3000 requires that all electrical installations are tested and verified to be safe after they are constructed, altered, modified, or repaired.

During inspection and testing, electrical workers must take precautions to ensure people remain safe and property is not damaged (including the installation itself).

If the installation is an existing one that has undergone repairs, alterations, or additions, the work must be verified to confirm that it is compliant with AS/NZS 3000, and that the safety of the installation has not decreased because of the latest work.

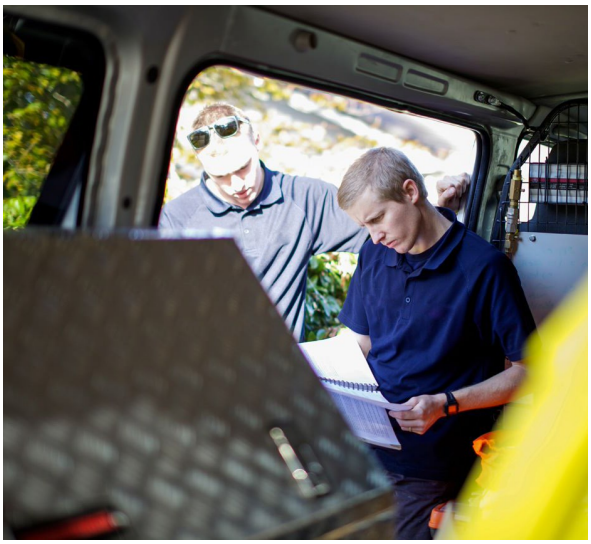
You will find specific information on testing in section 8 of AS/NZS 3000

Part 1 is what you are going to achieve, part 2 is how you are going to achieve it.

Locating passages in the AS/NZS 3000

The AS/NZS 3000 document has contents pages which present information in the following sequence:

- Contents: The Contents are broken down into sections 1 to 8. Each section has subject titles, and are further broken down into subsections with subject and page numbers
- Appendices: A list of appendices in the standard
- Tables: A list of tables in the Standard
- Figures: A list of figures in the Standard



The contents pages are great when you are looking for a subject that you don't have a specific term or name for. The contents help narrow down where you should look to find specific information.

AS/NZS also has a very good index at the end which can be useful for locating a subject you have a term or name for.

You need to get to know which is the most effective way to find what you are looking for - depending on what information you are starting with.

Let's look at an example. Assume you have been asked to define the term 'readily accessible'. You can do this in two ways.

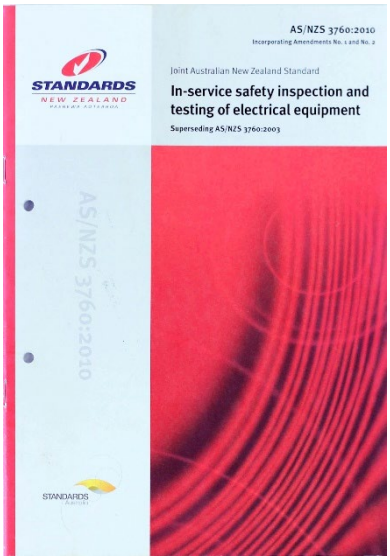
Method 1

Look up the Contents page and find 'Definitions'. This is Section 1 clause 4. Subclause 1.4.2 is 'Accessible, readily'.

Method 2

Look up the Index page at the end of the Standard and locate 'accessibility' which is the first term. There you have 'definition of 1.4.2' which refers to the definition being present in Section 1 clause 4 subclause 2.

AS/NZS 3760



Portable electrical equipment can get a bit knocked around in the workplace. AS/NZS 3760 is the standard that sets out the inspections, tests and the timing of when they need to be carried out for electrical equipment that is:

- New equipment placed into service for the first time
- Equipment that is already in-service;
- Equipment that has been serviced or repaired;
- Equipment that is returning to service from a second-hand sale; or
- Equipment available for hire.

AS/NZS 3760 covers the in-service safety inspection and testing of low voltage (single phase and polyphase) portable electrical equipment.

It also applies to equipment and machinery that is connected to the electrical supply by a flexible cord and/or connecting device.

AS/NZS 3760 is intended to minimise electrical hazards caused by these types of equipment.

It requires appliances and equipment to be tagged after testing, to show that they are safe and when they should next be tested and tagged.

AS/NZS 3760 is a key standard that you will use, you will use it in your study too. You should download it now.

The intent of AS/NZS 3760

The overall intent of AS/NZS 3760 is that electrical equipment must be inspected and tested routinely in order to identify any wear and tear, damage, or other problems that may make it unsafe to use.

If equipment is found to be faulty, it should no longer be used and must be either repaired or disposed of by a person with the appropriate expertise.

It requires appliances and equipment to be tagged after testing, to show that they have been checked and when they should be checked next.

According to AS/NZS 3760, inspection and testing of in-service portable electrical equipment must include the following:

- A careful external look over the gear and its way of connecting to the power (for example, its supply cord).
- Tests to check the earth continuity of class one equipment, EPODs, cord sets and cord extension sets.
- Insulation tests using an insulation resistance tester, or a tester measuring leakage current.
- Making absolutely sure that cord extension sets with rewireable plugs or rewireable cord extension sockets are made up with the correct polarity.

Terms

To understand AS/NZS 3760 you need to understand some technical speak.

I know it can be boring, but this is the world we find ourselves in in the electrical industry and you have to get a handle on some of these terms. It is important to your study and ultimately your job.

Have a look in AS/NZS 3760 1.3 interpretation for more information.

Shall

As with any standard, AS/NZS 3760 uses the term “shall” when you are required to do something that is compulsory. If the point is not compulsory, the standard will use words like “should” or “may”.

Normative or informative

If you have a look at 1.3.1 it talks about normative and informative in the appendixes of AS/NZS 3760.

The appendixes have a lot of good information to help you use the standard practically. The thing is, some of the information is compulsory to follow and some is just helpful for you to use.

If an appendix is called ‘normative,’ it is to be used as part of the Standard and must be complied with.

If the appendix is ‘informative’, it provides information and guidance and describes what is considered to be good practice. It is not compulsory to comply with informative appendix information to comply with the standard.

Electrical Codes of Practice

Section 36 of the electrical Act states that WorkSafe can issue documents called Electrical Codes of Practice (ECPs).

You need to know about ECPs, as they give extra information about a whole bunch of electrical information and technical requirements.

Things such as setting expected standards for the electrical industry and including things like training and qualifications, design and construction, operation and supply, and electrical safety around people and property.

The Electrical Codes of Practice are used to ensure compliance with the Electricity (Safety) Regulations. They help to ensure that all work done in relation to that standard is electrically safe.

ECPs work on the principle that any installation, fitting, appliance, or other equipment must be electrically safe to provide appropriate protection for people and property.

This means that they pose no significant risk of injuring people or damaging property as a result of the use or passage of electricity through works, fittings, installations, appliances, or associated equipment.

According to the Electrical Act, the purposes of the Electrical Codes of Practice include:

a) The setting or endorsing of standards or specifications concerning the design, construction, installation, importation, or manufacture of works, electrical installations, fittings, electrical appliances, or associated equipment.

b) The setting of standards in regard to electricity that will be supplied to, or used by, electricity retailers and consumers .

c) The operation or use of works, electrical installations, fittings, electrical appliances, or associated equipment.

d) The inspection or maintenance of works, electrical installations, fittings, electrical appliances, or associated equipment.

e) The safety of persons or property associated with or using works, electrical installations, fittings, electrical appliances, or associated equipment.

If you have a look in Schedule 2 of the Electricity (Safety) Regulations you will see which Electrical Codes of Practice are “cited” – made officially binding.

The table below gives a summary of sited ECPs

ECP number	Subject
ECP 34	Safe Distances
ECP 35	Power Systems Earthing
ECP 36	Harmonic Levels
ECP 46	High Voltage Live Line Work
ECP 50	Repair and Maintenance of Domestic Electrical Appliances by the Owner of the Appliance
ECP 51	Homeowner/Occupier's Electrical Wiring Work in Domestic Installations
ECP 60	Inspection, Testing and Certification of Low Voltage A.C. Railway Signalling Control Circuits

Structure of the ECPs

As in the case of the Standards, the ECPs contain mandatory (no choice, you must do this) requirements for compliance with the Electricity (Safety) Regulations, they also include best practices (not mandatory but highly recommended for good results) when carrying out work.

Best practices are often used in order to ensure safety where non-electrical workers (such as homeowners or other trades) are working on or around electrical equipment and fittings.

ECPs use the following terms to indicate whether the code is mandatory or not. These are:

- Shall: Indicates a statement is mandatory to achieve compliance with the ECP.
- Should: Indicates a statement is indicating good practice, but is not mandatory.
- May: Indicates the existence of an option.

Registered electrical workers

Prescribed Electrical Work (PEW)

Electrical work is dangerous and requires some control. The “powers that be” have decided that some electrical work is going to have laws around it, so that its safety can be controlled.

They have put together list of electrical work that is specifically “controlled” by legislation. This type of work is called “Prescribed Electrical Work”.

Anyone doing any “Prescribed Electrical Work” is required by the law of the land, to do it in a way that follows the rules. It is all about safety.

Schedule 1 of the Electricity (Safety) Regulations describes the Prescribed Electrical Work (PEW) that a licensed electrician may carry out.

Prescribed electrical work is:

- The installation or maintenance of conductors used in works or installations, or the testing and certification of this work.
- The installation or maintenance of fittings connected, or intended to be connected, to conductors used in works or installations.
- The connection or disconnection of fittings to or from a power supply, other than by means of a plug or pin inserted into a socket, or an appliance coupler inserted into an appliance inlet.
- The maintenance of appliances, or the testing, certification, inspection or supervision of maintenance carried out on appliances.

For a detailed list of what is, and is not, prescribed electrical work, see Schedule 1(2) of the Electricity (Safety) Regulations.

If you don’t know what “works” is, look it up in the definitions in the Act.

Responsibilities of person carrying out Prescribed Electrical Work

Part 2 of the Electricity (Safety) Regulations deals with the general safety requirements for electrical safety. For an electrical worker, these can be summarised as given below.

A person who carries out PEW must:

- Comply with the current regulations and standards that apply to the work they are undertaking.
- Ensure they have a high standard of workmanship.
- Use safe working practices.
- Ensure they provide certification for the PEW they are carrying out.

Who can carry out Prescribed Electrical Work

Section 74 of the Electricity Act says who can do prescribed electrical work.

To become registered to carry out prescribed electrical work, you must successfully complete either time-based or competency-based training.

For competency-based training, you must train through an appropriate Industry Training Organisation (ITO) that has an agreement with the Electrical Workers Registration Board (EWRB).

To become licensed, you must be registered and have completed competency-based training within the past two years.

To become authorised to carry out prescribed electrical work under the Electricity Act, you must gain registration with the EWRB and hold a current practicing licence.

Alternatively, you must hold a provisional licence OR be working under an employer licence.

Section 76 of the Act gives an exemption for someone to do prescribed electrical work under direct supervision, and Section 77 gives an exemption for any person who is a trainee as defined by subsection 2 of section 77.

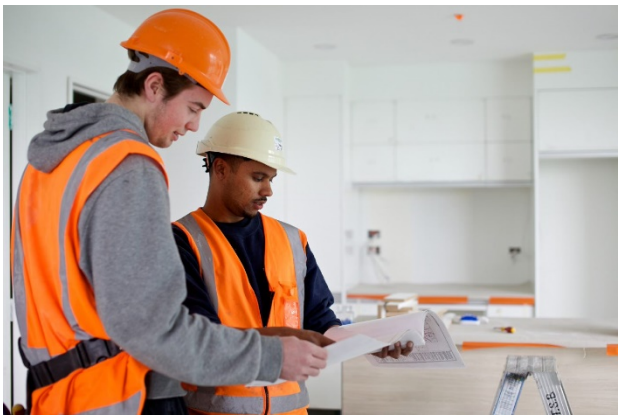
Electricity (Safety) Regulation 93 outlines the work that trainees may do or assist in doing.

This work must be within the particular class of work for which the trainee is seeking registration and be within the scope of work that the trainee's supervisor is authorised to do.

The Act also allows for other people to assist in doing prescribed electrical work.

They are:

- A registered person who is authorised to do, or assist in doing, the work under a current practising licence.
- A person who is authorised to do, or assist in doing, the work under a provisional licence.
- A person who is authorised to do, or assist in doing, the work under an employer licence.



Exemption for home owners doing domestic wiring work

Electricity Safety Regulation 57 outlines the requirements for home owners completing prescribed electrical work on their own premises.

An owner of a premises may only carry out work on domestic installations with current ratings no higher than 80 amperes per phase (for single-phase) or 50 amperes per phase (for multi-phase).

Home-owners may do most prescribed electrical work, but may not enter any enclosure in which live conductors are present.

All work carried out must be completed in conjunction with the Electrical Code of Practice ECP51.

In addition, the work must be tested and certified in accordance with part 2 of ASNZS 3000 by a person authorised to inspect mains work.

Appliance owners doing maintenance of domestic appliances

Electricity (Safety) Regulation 79 outlines the requirements for the owner of an appliance (that operates at low voltage) to carry out prescribed electrical work on it.

This work must be carried out in accordance with ECP 50.

Trainee Limited Certificate

Trainees must have a Trainee Limited Certificate to work while they are training, including if they are an apprentice or need to complete examinations or work experience to become registered.

Workers who hold a Trainee Limited Certificate, can assist their nominated supervisor in doing any prescribed electrical work that is relevant to the particular class of registration they are seeking.

A trainee can only be supervised by someone who holds the registration and current practicing licence of either the class they are training towards or a higher class.

A trainee with a Trainee Limited Certificate must be supervised by a supervisor who holds a practicing licence that allows them to do the type of work that the trainee is undertaking.

Practicing licence

As a qualified electrical worker, you are required to hold a current practicing licence to be authorised to carry out prescribed electrical work.

In order to apply for, hold, or renew a practicing licence, one of the requirements is the successful completion of an approved competency programme.

Competency programmes are likely to include:

- Basic first-aid
- Electrical safety
- Cardio-pulmonary resuscitation (CPR)

Trainee supervision

According to the Electrical Workers Registration Board's document *Supervision Procedures for Trainees*, all electrical trainees must be supervised.

The level and amount of supervision depends on factors such as the type of the prescribed electrical work the trainee will be undertaking, their experience in carrying out that type of work, and their supervisor's confidence in their abilities.

During the completion of the work, the supervisor must carry out visual and other inspections.

The aim of the supervision is to ensure that the electrical work is performed competently, that appropriate safety measures are adopted, and that the completed work complies with the necessary regulations.

Limits of work

There are quite a number of different classes of electrical registration and each has different limits of work. The EWRB lists the limits for each of these classes.

As an electrician, if you are found guilty of a disciplinary offence (hopefully you won't be), under the Electricity Act 1992, section 147M, the EWRB may put some limits on what work you can do. They may limit:

- The type of work you may do.
- Who you work for.
- Where you are able to work.

The Board may impose limits for a period of time that the Board sees as fitting.

EWRB audits of electrical workers

The Electrical Workers Registration Board is responsible for ensuring prescribed electrical work is carried out in accordance with current legislation, regulations, and standards.

At random intervals, or when the Board receives a complaint, it may choose to audit an electrical worker.

During an audit, the EWRB may require the electrical worker to provide documentation (including records of work) and it may appoint an investigator to carry out a physical inspection of prescribed electrical work.

If the audit finds evidence of non-compliance, the worker may be required to attend a hearing. If he or she is found guilty the board may impose fines, limitations of work, and/or suspension or cancellation of the worker's registration or practicing licence.

High risk electrical work

There is some prescribed electrical work that is deemed “high risk”. It is work that – obviously, comes with high risk to safety if it is wrong. Electricity (Safety) Regulation 6A (2) explains what high risk work is.

- Electrical work done to Part 1 of the Wiring rules.
- High voltage installations.
- Mains parallel generation systems.
- Photovoltaic systems.
- Electrical work in hazardous areas.
- Electrical work in mines.
- Electrical work in medical areas.
- Mains work.
- Animal stunning or meat conditioning work.

Electricity (safety) regulation 70 requires high risk electrical work to be inspected.

This is to let a second set of eyes look over a high risk installation to make sure it is safe.

High risk work must be inspected by a qualified electrical inspector.

There are some safeguards in place to ensure the inspector doing the inspection is suitable and not influenced or “blinded to detail” by previous involvement in the installation.

These safeguards are:

- An electrical inspector may inspect high risk electrical work only if they are authorised to do so.
- They must not have personally carried out the work or supervised someone else carrying out the work.
- They must not have issued a Certificate of Compliance for the work.

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