

Electrical contractor guide

Developing a safe system of work for electrical work

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Introduction

Electrical contractors play an important role in ensuring electrical safety in Queensland. The choices you make in your business not only affect you, they can also affect your family, friends, colleagues and the broader community.

Many incidents investigated by the Electrical Safety Office (ESO) could have been avoided by ensuring good risk management processes were followed and work was carried out under well-developed safe work processes and procedures (safe system of work). Understanding the risks associated with electrical work and having processes in place that promote a proactive approach to safety ensures you are well placed to meet your electrical safety duties.

What is a safe system of work (SSW)?

A SSW is a comprehensive and integrated system for managing risks associated with the work performed by a business. For an electrical contracting business, it includes managing risks during the performance of electrical work and ensuring that when complete, the work is tested and proven to be electrically safe. A documented SSW and evidence of its implementation can often be required when tendering for larger contracts. Increasingly it is becoming mandatory for government funded work.

Not every SSW will be the same. The size of your business and the type of work you perform will determine what your SSW will look like. As the business owner and the holder of the electrical contractor licence, should you decide to develop a SSW, you should ensure that it meets your needs. This guide provides important information to help you better understand some of the key areas to focus on to ensure you address your electrical safety obligations. It is not intended to provide detailed guidance on how to set up a SSW for the first time.

Although this guide focuses on electrical safety, if not considered elsewhere, your SSW should also address work health and safety risks relevant to your business. These include but are not limited to, working near asbestos, excessive heat and working at heights.

Developing the SSW

When developing an SSW, you need to fully understand your electrical safety duties under the *Electrical Safety Act 2002* (ES Act) and regulatory requirements under the *Electrical Safety Regulation 2013* (ES Regulation). You also need to identify all risks associated with the work that you do, assess those risks and implement suitable controls to manage the risk.

Consultation with your workers is vital when developing an effective SSW. When workers are involved in the development of the SSW, they gain a better understanding of the purpose of the SSW and feel greater ownership. This leads to better implementation, compliance and feedback on the SSW.

Depending on the nature of your business, you may need to engage external parties to provide advice (e.g. if your work is highly specialised or has very specific work health and safety risks, such as chemicals or hazardous areas).

Workplace Health and Safety Queensland (WHSQ) also offers a range of [services and assistance for small business](#).

There may be times when your SSW needs to accommodate other parties. For example, if you perform work for an electricity entity, they may have specific SSW requirements as part of the contract.

Implementing the SSW

Once developed, you should take your workers through the SSW ensuring everyone understands it and how it applies to what they do. You should clearly outline your expectations regarding compliance with the SSW and lead by example by demonstrating the business's commitment to it.

Auditing for compliance with your SSW

Regular auditing for compliance with the SSW ensures it is being effectively implemented. It also demonstrates an ongoing commitment to safety. The qualified technical person (QTP) and health and safety representatives should take responsibility for auditing work practices and record keeping, for example, checking that risk assessments are being completed correctly and safe work method statements (SWMS) are being followed.

Regular auditing and following up corrective actions for identified non-compliance can assist in ensuring unsafe incidents do not occur. Well documented audit processes also provide businesses with useful evidence of complying with their electrical safety duties.

The time spent on auditing for compliance is much less than the time you may spend if you become subject to an investigation or disciplinary action as the result of a failure of your SSW.

Reviewing your SSW

Establish a regular review program for the SSW. The review panel should include:

- those involved in its initial development
- those involved in its implementation (e.g. supervisors, managers)
- your workers.

As well as regular, planned reviews the SSW should also be reviewed when:

- there is a safety incident, including near misses
- introducing new technologies into the workplace
- taking on different work to that previously performed
- there are changes to legislation or Australian Standards that affect the business
- audits identify issues with the SSW or its application.

Following a review, changes to the SSW or safe work procedures need to be communicated to all workers.

Legislation, codes of practice and standards

Electrical Safety Act 2002

The ES Act imposes duties on all persons conducting a business or undertaking (PCBU). While you hold a primary duty of care as a PCBU to ensure your business is conducted in an electrically safe way, as an electrical contractor you may also hold more specific duties including being a:

- designer, installer or repairer of an electrical installation or electrical equipment
- manufacturer, importer or supplier of electrical equipment.

Duty of officers

If a PCBU has duties under the ES Act and the *Work Health and Safety Act 2011* (WHS Act), an officer of the PCBU (directors, partner, senior managers, etc.) must exercise due diligence to ensure compliance with that duty.

Due diligence includes taking reasonable steps to:

- acquire and keep up-to-date knowledge of electrical safety matters
- gain an understanding of the nature of the business and the hazards and risks associated with its operations
- ensure the PCBU has
 - available for use, and uses, appropriate resources and processes to eliminate or minimise risks to electrical safety from work carried out by the business
 - appropriate processes for receiving and considering information regarding incidents, hazards and risks and responding in a timely way to that information
 - and implements, processes for complying with any duty of the PCBU under the ES Act (and WHS Act).

As an owner, director, partner or senior officer of the business, you need to be actively involved in ensuring the safe operation of the business. Being a silent director or silent partner may not, on its own, relieve you of this duty.

Electrical Safety Regulation 2013

The Electrical Safety Regulation 2013 (ES Regulation) provides more specific requirements for managing electrical risk, for example specific requirements for the performance of energised electrical work (live work), isolation and lockout procedures and compliance with the *AS/NZS 3000 (the Wiring Rules)*. Failure to comply with the requirements of the ES Regulation may result in penalties.

Codes of practice

Codes of practice provide practical guidance on ways to meet your electrical safety duties. In many cases following a code of practice will ensure you comply with the ES Act and Regulation. However, codes of practice may not cover all the risks associated with your business. It is your responsibility to consider all the risks associated with your work and put appropriate controls in place to eliminate or minimise those risks as far as reasonably practicable. There are four electrical safety codes of practice:

1. [Electrical safety code of practice 2013 - Managing electrical risks in the workplace](#)
2. [Electrical safety code of practice 2020 - Electrical equipment rural industry](#)
3. [Electrical safety code of practice 2020 - Working near overhead and underground electric lines](#)
4. [Electrical safety code of practice 2020 - Works.](#)

Additionally, [WHSQ provides codes of practice](#) for managing work health and safety risks such as working near asbestos and working at heights.

When developing your SSW, attention should be given to the *Managing electrical risks in the workplace code of practice*. This code provides guidance on key electrical safety issues such as:

- low voltage isolation (section 6)
- energised electrical work (section 7)
- working near energised electrical parts (section 8)
- tools and equipment (section 9).

Standards

Where standards are called up in legislation, such as the Wiring Rules and *AS/NZS 3012 Electrical Installations – Construction and demolition* sites in Queensland's electrical safety legislation, compliance with the standard as it applies to electrical safety is mandatory. Standards are generally regarded as agreed industry benchmarks and should always be followed unless there are compelling reasons not to do so. Any deviation from a standard should be documented, including the reasoning behind the decision.

Effect of non-compliance

Failure to comply with legislation, codes of practice and standards may constitute a breach of your electrical safety duties as a PCBU or those of your workers (e.g. failing to comply with the Wiring Rules). Failing to comply may result in:

- improvement notices which may require costly remedial work
- financial penalties such as infringement notices
- prosecutions in the courts
- referral to the Electrical Licensing Committee for disciplinary action against your licence.

The cost of enforcement and disciplinary actions in time, money and stress often far outweigh the cost of doing the work correctly in the first place.

Electrical contractor licensing requirements

To be eligible for an electrical contractor licence, you must nominate a qualified technical person (QTP) and qualified business person (QBP) for the licence. You also needed to hold the relevant insurances required under the ES Regulation.

The scope of work permitted under the contractor licence is determined by the class of electrical work licence held by the nominated QTP. For example, if your QTP holds an electrical mechanic work licence, all electrical work is permitted. However, if the nominated QTP only holds an electrical fitter licence, the business is limited to electrical equipment work.

Electrical work performed outside of the scope of your licence is unlicensed electrical contracting for which penalties may apply. Additionally, your insurance may not cover that work.

You must continue to comply with all eligibility requirements applying to the electrical contractor licence. This includes ensuring you have an eligible QTP and QBP for the licence and your public and products liability insurance remains current.

Qualified technical person (QTP)

All electrical work performed by an electrical contractor licence holder must be performed or supervised by a QTP. The electrical contractor licence holder cannot transfer their electrical safety duties to the QTP, however the QTP is a valuable source of technical expertise and support to the business. The licence holder and the QTP can also be the same person, such as when a licence is held as a sole trader.

The QTP is a key person in your business who should help develop safe work procedures and the SSW and address the key areas of safety and compliance. They can play a key role in ensuring safe work procedures and the safety management system is being effectively implemented and followed by the workers employed by the business. You must ensure your QTP has adequate training and resources and time to fulfil their role effectively. This includes keeping up to date with current legislation, codes of practice and standards.

For more information view the [Role of a qualified technical person](#) factsheet or visit www.electricalsafety.qld.gov.au.

Qualified business person (QBP)

The QBP assists with the development and maintenance of business systems and processes that ensure the economic viability and risk management relevant to conducting electrical work.

Poor business practices such as underquoting, inaccurate time forecasts for work or poor supply chain management can impact on the work performed. Underquoting inevitably leads to taking short cuts to meet tight financial margins. Inaccurate estimations of the time needed to complete a job puts pressure on workers to speed things up. Buying non-conforming or non-compliant products can lead to unsafe installations. Even where the product is compliant, poor communication with suppliers that results in delivery delays puts additional time pressure on the work. All of these factors can put workers at risk when performing the work and may result in unsafe and untested work at its completion.

The QBP can also assist the QTP by ensuring worker refresher training is scheduled in a timely manner that doesn't impact on projected work schedules, and that records of training are maintained. The QBP should also oversee documentation and record keeping for the business.

Working together to put the SSW into practice

Where the QTP, QBP and the licence holder are different parties they need to communicate and collaborate with each other to fully implement the SSW. All parties should understand their roles and responsibilities and those of the other parties.

What happens if you lose your QTP or QBP?

You must notify the ESO within 30 days if your QTP or QBP is no longer eligible to act in that role or leaves your employment. Although the business can continue to perform electrical work within this period, you need to have processes in place to ensure all work is performed safely and is tested to ensure the work is electrically safe. These processes should have been developed and implemented by your previous QTP as part of your SSW.

When a new QTP is appointed, they should consult with your workers to review electrical work performed during the time a QTP was not employed.

Your contractor licence is automatically suspended if you do not have a QTP or QBP attached to the licence for longer than 30 days, regardless of whether you notify the ESO. You cannot perform electrical work once your contractor licence is suspended.

If you nominate a new QTP and/or QBP within one month of the suspension date, the suspension is lifted, and the contractor licence continues. You can add or remove a QTP or QBP by submitting a [Form 20 - Application for addition or change of qualified person/ authorised parties for a contractor licence](#).

If there is still no QTP or QBP one month after the suspension date the contractor licence is automatically cancelled and cannot be re-instated. You will need to apply for a new licence, meaning you will be issued a new electrical contractor licence number.

How many QTPs or QBPs are required?

An electrical contractor licence only requires one nominated QTP and one QBP. However, the number of QTPs and QBPs needed to enable you to run your business safely will depend on factors such as the nature of your work, the number of workers employed and the geographical spread of your business. You need to ensure your QTP can perform the role effectively.

Where the QTP or QBP is an employee

Mandatory training requirements apply to QTPs and QBPs. If the QTP or QBP on your licence is an employee, you need to consider the impact on your business if they resign. Ensuring other employees undertake the training not only upskills your workforce, it protects your business from the impact of sudden resignations, long term sick leave etc.

Register of workers

You must maintain a current register of your electrical workers' licences, including casual workers. The register must include the:

- licence holder's name
- licence number
- class of licence
- expiry date
- type of work on a restricted licence
- any restrictions or conditions on the licence
- jurisdiction of any external licences.

The register can be stored electronically and must be kept for five years from when a worker ceases employment. It must be able to be produced upon request from an ESO inspector.

Subcontractor or worker?

Subcontractors must have an electrical contractor licence. This includes subcontracting arrangements where they submit an invoice for labour only under an ABN, regardless of the degree of control they had over the job or whether they used their own tools and equipment. Licensed labour hire providers are not required to hold an electrical contractor licence when only supplying electrical workers to other parties.

Advertising

Electrical contractors must include their registered name and licence number when advertising their business. Using the ESO online licence register, these details allows consumers to confirm the business is licensed and that the licence is current.

Advertising that requires licence details include:

- websites and social media pages – social media posts which only direct the viewer back to the business's homepage do not require details provided they are clearly displayed on the homepage
- newspaper and Yellow Pages advertising
- posters, brochures and flyers
- fridge magnets and switchboard stickers
- vehicle signage
- radio and television advertising
- telephone on-hold advertising.

Licence details are not required for the following:

- uniforms
- business cards and stationery
- online advertising such as Google ads where the ads link back to the business's website/social media homepage
- merchandising (e.g. hats, pens)
- sponsorships (football jerseys)
- shopfronts
- telephone messenger service.

On printed materials, the licence details need to be displayed clearly enough to be easily read. For spoken advertising, the licence details must be clearly audible.

Electrical workers

Training and competency of workers

You must ensure workers are competent (not just licenced) to perform the work they carry out.

New workers may have minimal or no experience of the business's work or its practices and procedures. Their competency needs to be assessed during recruitment or as part of their induction. They then need to be trained in the business's work practices and procedures, and should be mentored by more experienced workers if required.

However, even experienced workers' competency may fade over time. When assessing competency, employers should consider workers:

- performing tasks that are undertaken infrequently
- returning from working in other roles within the business or from extended periods of leave.

As a minimum, employers also need to consider competency where:

- new technology or equipment is introduced that may require additional training
- new work practices or procedures are introduced
- new legislative or standards requirements are introduced.

If factors such as these are identified, employers need to assess the competency of workers to ensure they continue to have the knowledge and skills required to work safely.

Competency can be maintained through a variety of ways such as:

- regular refresher training for key safety tasks (e.g. service polarity testing, lock out procedures)
- internal auditing programs to ensure skills and competencies are being maintained
- accredited training to develop skills for new work (e.g. training in renewable energy storage or hazardous areas competencies)
- training provided by plant and equipment manufacturers.

Toolbox talks or daily pre-start meetings also provide opportunities to brief workers on changes to the business's work practices, legislation and industry safety alerts.

Workers must also be trained and competent in relevant rescue and resuscitation practices such as CPR, pole top rescue and low voltage switchboard rescue, as well as non-electrical competencies such as confined space and working from heights.

Worker consultation

Ongoing consultation with your workers through toolbox talks or pre-start meetings ensures everybody understands what's happening in the business.

The QBP should use these meetings to provide updates on:

- the progress of particular jobs
- changes in work schedules/business practices
- staffing changes.

The QTP should use the meetings to:

- discuss work-place incidents, including near misses
- discuss particular risks associated with the day's work or changes to the workplace
- discuss updates and alerts issued by the ESO

- conduct refresher training on key safety requirements, such as safe work procedures for isolation and lock-out or safe work method statements for live work.

The meetings also provide workers with an opportunity to raise any issues or concerns they may have about safety. Where concerns are raised the QTP should consider whether a review of any safe work procedures or the SSW is required.

Supervision and training of electrical apprentices

Effective supervision of apprentices allows them to develop the knowledge and skills needed to competently perform electrical work in a safe working environment, free from electrical and work health and safety risks.

Effective supervision includes:

- legislative requirements, such as the work apprentices can perform within their first six months of training
- compliance with work health and safety and electrical safety requirements
- technical compliance with relevant standards
- a SSW that considers the additional risks posed to young workers.

For more information view the [Supervising electrical apprentices](#) factsheet or visit www.electricalsafety.qld.gov.au.

E-profiling

Registered training organisations rely on the e-profiling record to assess an apprentice's progression and achievement of competency throughout their apprenticeship. The e-profiling record is used to determine an apprentice's readiness to undertake their capstone assessment.

Verifying e-profile cards must not be merely a tick and flick process. You are verifying evidence of the apprentice's competency to perform electrical work which will make them eligible for their electrical work licence.

You and your workers are responsible for verifying e-profile cards and you must confirm the apprentice performed the work. If you did not personally supervise the work, you need to discuss the work with the apprentice and the tradesperson who supervised the work before verification. Extra diligence is required when verifying records after the time period covered by the card. For a more accurate recording of the work performed, apprentices should complete e-profiling cards weekly.

The Department of Employment, Small Business and Training regularly monitors e-profiling records to ensure apprentices and employers are meeting their legal obligations.

Safe work procedures for electrical work

Safe work procedures form an integral part of any SSW. They provide workers with clearly defined processes to safely performing tasks that are either safety related or deal with specific risks. Typical safe work procedures may include isolation and lock out procedures or procedures for working near energised electrical parts. The type of work you do will determine where safe work procedures are required, but generally, every electrical contracting business should have safe work procedures for the following:

Testing electrical work

Safe work procedures ensure verification and testing work is carried out safely. Before commencing testing, consideration should be given to:

- the nature of the testing, particularly live testing (which requires a written risk assessment and a safe work method statement)
- tools and testing equipment needed
- competency requirements of persons performing the testing.

You should also have processes to record test results. For more information refer to [Section 8](#).

Isolation, safety tag and lockout

Unless otherwise permitted under section 18 of the ES Regulation, electrical work must be performed de-energised. You must ensure you have procedures in place to prove the equipment to be worked on is de-energised and that it cannot be inadvertently re-energised while the work is being carried out.

You need to develop effective testing, isolation and lockout procedures and ensure your workers and any other workers working near where the work is to be performed follow the procedures.

Energised electrical work

Energised electrical work (live work) is only permitted in specific circumstances:

- In the interests of health and safety that the work is carried out while the equipment is energised (e.g. life-saving equipment that needs to remain operating while electrical work is carried out).
- For the electrical equipment to be energised to allow the work to be carried out properly.
- Testing to prove isolation.

or

- When there is no reasonable alternative means of carrying out the work (e.g. electricity entities working live to avoid widespread network outages).

If live work needs to be performed, the following steps must be completed prior to work commencing. The electrical contractor must ensure:

- the person with management or control of the workplace has authorised the work
- the person performing the work is competent to carry out the work
- the person performing the work has the necessary tools, testing equipment and personal protective equipment (PPE) to perform the job safely
- a written risk assessment (kept for at least 28 days after the work is completed) is conducted by a competent person and a safe work method statement is prepared
- suitable control measures are put in place to prevent any unauthorised access to the work area (e.g. safety barrier)
- The work area is

- checked to ensure it is clear of obstructions
- designed so that workers are not exposed to a greater risk and can vacate quickly and easily
- easily accessed in the event of a rescue
- the isolation point is clearly marked, clear of obstructions and able to be operated quickly
- a safety observer is observing the work (unless the work is testing, and a risk assessment shows that there is no serious risk associated with the work).

If turning off the power is not an option, you need to record the reasons why and why you chose the controls you did, particularly if you chose lower order controls over higher order controls.

Safety observers for live work

Where a safety observer is required for the performance of live work, the safety observer must be competent to rescue and resuscitate a person and implement control measures in the event of accidental contact with live conductors or parts. Safety observers must have completed CPR and low voltage switchboard rescue training within the last year.

Safe work method statement (SWMS)

A SWMS must be prepared for energised electrical work. You need to ensure your workers have been provided with information and instruction on the SWMS so they understand it and can implement the risk controls. You must keep a copy of the SWMS until the work is completed or for two years in the event of an incident.

Working near exposed live parts

The risks associated with performing work near exposed live parts can be equivalent to those associated with live work. Typical risks include:

- electric shock if exposed energised parts are touched
- explosion, for example if a metal tool is dropped onto bus bars causing a short circuit
- exposed high-temperature parts causing burns to bare skin
- electrical fires induced by allowing moisture or dust to enter electrical equipment.

If there is a safety risk associated with working near exposed live parts, a written risk assessment should be conducted to determine the level of risk and decide on appropriate control measures. You must work through the hierarchy of controls and choose the control that most effectively eliminates or minimises the risk of working near exposed live parts.

This may involve a single control measure or a combination of two or more different controls. Under the hierarchy of controls, substitution, isolation and engineering controls are ranked at the same level of protection, ahead of administrative controls and then personal protective equipment.

If you can't turn off the power and have no reasonable alternative to working near exposed live parts, your SSW or SWMS for managing the risk should include:

- identifying electrical equipment and circuits that can be turned off to minimise the risk of contact as much as possible
- using insulated or non-conductive physical barriers to prevent inadvertent contact with live parts
- ensuring workers have appropriate knowledge and skills to perform the work safely
- ensuring testing procedures are in place to prove the parts you will be working on are de-energised before work commences

- ensuring people not required for the work are excluded from the area, by use of screens, barriers and signage
- ensuring workers have tools, test equipment and PPE suitable for the rated level of fault current.

Additional consideration should be given to using a safety observer.

If turning off the power is not an option, you need to record the reasons why and why you chose the controls you did, particularly if you chose lower order controls over higher order controls.

Working in switchboards - high fault currents and arc flash

Working in switchboards carries a greater risk of injury due to a greater presence of high fault current and the work is often carried out within a confined space. If possible, turn off the power to the entire switchboard, even if this means rescheduling the work to another time.

If you can't de-energise the entire board, your safe work procedures and risk assessment must consider the additional risk of high fault currents. When conducting your risk assessment, you should consider the following factors:

- the physical size of the switchboard
- the size of the incoming consumer mains
- high fault current ratings of circuit protection devices
- the presence of fault current limiters on the switchboard
- transformers located near the switchboard.

Managing the risk of high fault currents and arc flash is difficult. In most cases there is not enough space in switchboards to effectively implement higher order control measures such as barriers. Even putting insulated barriers in place with the switchboard energised can introduce additional risk to workers. Lower order control measures such as work procedures and PPE must only be used to manage the residual risk that remains after higher order controls have been implemented.

Elimination of the risk should always be the first option. For managing the risk of arc flash it's also the simplest solution. Turn off the power.

Arc flash injuries can be debilitating with some workers never fully recovering. The time and cost you think you might save by not turning off the power is nothing compared to the time and cost it may take you or your workers to recover from injuries or to repair a damaged switchboard.

Ceiling spaces and on roofs

There are serious electrical safety risks in ceiling spaces and on roofs. All workers, including electrical workers, should always turn off the power before working in these locations. If you can't turn off the power completely you need to turn off as many circuits as possible to reduce the risk to as low as is reasonably practicable.

Not wishing to inconvenience your customer is not a reason to leave the power on.

You and your workers also need to comply with the Wiring Rules when installing electrical equipment and wiring in an accessible ceiling space to prevent incidents occurring.

Tools and personal protective equipment (PPE)

Tools and equipment

Electrical workers performing energised electrical work must have the tools and equipment that are suitable for the work, properly tested and maintained in good working order.

You need to have procedures for the correct use, maintenance, and inspection and testing of the tools and equipment. You need to ensure that testing equipment is the correct category for the work being performed.

All tools and equipment must be visually inspected before each use for signs of damage and to ensure they are functioning correctly. The testing intervals for test equipment will depend upon the frequency of use, the environment in which it is being used and manufacturer's advice.

Personal protective equipment (PPE)

You must supply your workers with PPE if required. The PPE must be selected to ensure it is suitable for the task, has been properly tested and in good working order. Proper care and maintenance is essential to ensure the PPE continues to provide the necessary level of protection.

Workers must be provided information and training on the use of the PPE including how to use or wear it, how to store it correctly and how to check it before use. You need to keep records of periodic PPE tests where required.

Section 9 of the [Electrical safety code of practice – Managing electrical risks in the workplace](#) provides practical guidance for PPE.

Section 9 of *AS/NZS 4836 - Safe working on or near low-voltage electrical installations and equipment* provides additional guidance.

Testing of electrical work

You must ensure all electrical work performed by your business is tested to ensure it is electrically safe.

Workers must be competent to test the work and the QTP must supervise or perform all electrical testing. Mistakes when testing or failure to test can have disastrous effects. Failure to comply with your testing requirements can attract fines or court action.

Certificates of test (Certificate of testing and safety/ Certificate of testing and compliance)

You must provide a certificate of test to the customer as soon as practicable after testing electrical work. The certificate must include:

- the name and address of the customer
 - the electrical equipment or installation tested
 - the day the equipment or installation was tested
 - your electrical contractor licence number
 - a statement that certifies
 - the electrical installation (to the extent it is affected by the electrical work) has been tested to ensure it is electrically safe and is in accordance with the requirements of the Wiring Rules and any other standard applying under the ES Regulation to the electrical installation
- or
- the electrical equipment (to the extent it is affected by the electrical work) has been tested to ensure it is electrically safe.

You are required to keep a copy of all certificates for five years.

For more information go to [Certificate of test](#).

Documented testing procedures and test reports

Although electrical contractors are only required to issue customers with a certificate of test, documented inspection and test procedures, and inspection and test records provide evidence of the actual test results which support the certificate. They also provide workers with a visual reminder of the step by step testing process. Workers can easily review the completed test record and identify if any steps have been missed.

A key role of the QTP for an electrical contractor licence is to ensure electrical work is inspected and tested correctly. Providing workers with test result sheets that cover the Wiring Rules section 8.2 - Visual inspection and section 8.3.3 - Mandatory tests, ensures consistency with testing procedures. Implementing an audit process of test records allows the business to ensure workers are following procedures.

More information on installation verification and testing is available in [AS/NZS 3017:2007 Electrical installations – Verification guidelines](#).

You can create your own test sheets or use versions provided by others. Industry associations such as Master Electricians Australia and the National Electrical and Communications Association can provide members with a range of testing documentation.

Electrical equipment and supply chain management

The ES Act imposes specific duties on importers, manufacturers and suppliers of electrical equipment. While you may not import or manufacture electrical equipment, electrical contractors often supply electrical equipment. Although the ES Act requires suppliers to ensure they provide information about the safe use of electrical equipment, there is much more that you need to consider.

Electrical equipment safety system (EESS)

The EESS aims to protect householders from the risks associated with electrical appliances and equipment used in the home (in-scope electrical equipment). This includes low voltage electrical equipment used for household, personal or similar use.

The EESS does not apply to commercial and industrial equipment unless it can also be used in a domestic setting. All in-scope electrical equipment sold and installed in Queensland must comply with relevant standards, be electrically safe and be marked with the Registered Compliance Mark.



The EESS provides traceability of the product to an Australian based entity (responsible supplier) by requiring the responsible supplier to register certain high risk products. There are three risk levels of electrical equipment:

- Level 2 and 3 electrical equipment must be registered on the EESS.
- Level 1 electrical equipment does not need to be listed, but the responsible supplier for the product does.

Responsible suppliers

A responsible supplier either manufactures or imports electrical equipment. They must ensure that the equipment meets the relevant standards and is electrically safe. When you provide in-scope electrical equipment to install for your customer this equipment must be traceable back to a registered responsible supplier. You can check by searching the [national database](#) using information such as the brand and model number of the equipment.

If you import or manufacture in-scope electrical equipment, you are a responsible supplier under the EESS. You must comply with the specific requirements of the EESS before you sell the equipment. For more information visit www.eess.gov.au.

Electrical equipment supplied by your customer

You may have customers who want you to install electrical equipment they provide, such as chandeliers or hard-wired kitchen products manufactured overseas. You still need to ensure the equipment is safe and compliant. As a licensed electrical contractor, customers rely on your knowledge about electrical safety and electrical equipment. If the equipment is unsafe or non-compliant, don't install it. Even if you didn't supply the equipment you have a duty as the installing electrician to take steps to confirm the safety of the product.

Supply chain management

Poor supply chain management can impact on safety. Delays on supplies of materials affects timeframes which can put pressure on workers to speed things up. Poor communication with

suppliers that results in delivery delays puts additional time pressure on the work. This can put workers at risk when performing the work and result in unsafe and untested work at its completion. Incidents occur when things are rushed.

Incident notification

Section 265 of the ES Regulation requires that you notify the ESO of any serious electrical incident or dangerous electrical event arising out of your work.

A serious electrical incident is where a person:

- is killed by electricity
- receives a shock or injury from electricity and is treated by or under the supervision of a doctor
- receives a shock or injury from high voltage electricity.

A dangerous electrical event includes:

- a person is electrically unsafe around high voltage
- significant property damage caused by electricity
- unlicensed electrical work
- unsafe electrical work
- unsafe electrical equipment or electrical equipment that does not have the EESS approval markings.

It is an offence to interfere with a scene of an incident without the permission of an inspector unless you are assisting an injured person or making the site safe.

You also required to notify WHSQ of any notifiable incidents under the WHS Act.

You can notify the ESO or WHSQ by:

- calling 1300 362 128
- completing [Form 3 - Incident notification form](#) and either faxing 07 3874 7730 or emailing whsq.aaa@oir.qld.gov.au
- submitting an [online incident notification](#).

You should also encourage internal reporting of all incidents and near misses within your business. Incident data from near misses helps with the continual improvement of your safety management system and can minimise the risk of more serious incidents later.

Remember! Every near miss could have been more serious.

Further information

ESO website

For more information on managing electrical safety risks and access to electrical safety legislation and codes of practice visit www.electricalsafety.qld.gov.au.

To receive up to date advice on electrical safety, sign-up to our [eSafe newsletter](#).

Safety leadership

Safety leadership starts at the top and is demonstrated at every level of an organisation. Safety leadership is key to a positive safety culture and a healthy, safe and productive workforce. You can demonstrate safety leadership by:

- allocating resources to work health and safety (WHS)
- showing a visible commitment to WHS
- supporting WHS initiatives across your business.

When workers see the importance being placed on working safely, they are more likely to be motivated to follow safety procedures and raise safety issues. Having a positive safety culture can help you avoid costly incidents and injuries, minimise disruptions and reduce overheads.

[More information on safety leadership.](#)

Industry associations and employer groups

Industry associations such as [Master Electricians Australia](#), the [National Electrical and Communications Association](#) and the [Electrical Trades Union](#) can assist you with your business through risk management training and skills competencies for you and your workers. They can also assist with safe work procedures and testing procedures and test record sheets.

Relevant standards and guides

- AS/NZS 3000:2018 Electrical installations (the Wiring Rules)
- AS/NZS 3012:2019 Electrical Installations - Construction and demolition sites
- AS/NZS 3017:2007 Electrical installations - Verification guidelines
- AS/NZS 3760:2010 In-service safety inspection and testing of electrical equipment
- AS/NZS 4836:2011 Safe working on low-voltage electrical installations and equipment
- AS/NZS 5033:2014 Installation and safety requirements for photovoltaic (PV) arrays
- AS/NZS 5139:2019 Electrical Installations - Safety of battery systems for use with power conversion systems
- AS/NZS 4509.1:2009 Stand-alone power systems
- [Best Practice Guide: Battery Storage Equipment – Electrical Safety Requirements](#)

SSW checklist

Use the following checklist to check the effectiveness of your SSW for performing electrical work.

	Yes	No
Legislation and standards		
Do you have access to the: <ul style="list-style-type: none"> • <i>Electrical Safety Act 2002</i> • Electrical Safety Regulation 2013 • Electrical safety codes of practice • <i>Work Health and Safety Act 2011 (WHS Act)</i> • Work Health and Safety Regulation 2011 • Work health and safety codes of practice 		
Do you have access to applicable standards/manuals, for example: <ul style="list-style-type: none"> • AS/NZS 3000 Electrical installations (the Wiring Rules) • AS/NZS 4836 Safe working on or near low voltage electrical installations and equipment • AS/NZS 3012 Electrical installations – Construction and Demolition sites • AS/NZS 3760 In-service inspection and testing of electrical equipment • AS/NZS 5033 Installation of PV Arrays • Queensland Electricity Connection and Metering Manual 		
Do your workers have access to legislation, codes of practice and standards?		
Licence details		
Are your electrical licences (work and contractor) current?		
Do you display your electrical contractor licence details when advertising?		
Are your workers licensed for the type of work they perform and are their licences current?		
Do you have an up to date register of your licensed workers?		
Live work		
Are you and your workers aware of when live work is permitted, such as: <ul style="list-style-type: none"> • if it is necessary in the interest of health and safety • if it is necessary in order for the work to be carried out properly • if it is necessary to determine whether electrical equipment is energised or not • if there is no other reasonable alternative means to carry out the work 		
Before live work is carried out do you ensure: <ul style="list-style-type: none"> • a risk assessment is conducted • the work area is clear of obstructions to allow easy access and exit • the isolation point has been clearly marked or labelled and easily accessed if required and able to be operated quickly • consultation has taken place with the person with management or control of the workplace 		
Do you have processes in place to ensure only authorised persons are within the immediate area where the live work is to be carried out?		
Do you have processes in place to ensure persons are prevented from making inadvertent contact with live electrical parts?		

When live work is carried out are the persons carrying out the live work competent and trained to do the work?		
Is a safety observer present where required?		
Is the live work carried out in accordance with safe work method statement (SWMS) that: <ul style="list-style-type: none"> identifies the electrical work specifies the hazards and risks associated with the work describes the control measure to be implemented for the work describes how those control measures are to be implemented 		
Do workers have tools, test equipment and PPE suitable for the work?		
Do you keep records of risk assessments and SWMS as required?		
Working near live parts		
Where electrical work is carried out near live parts, is it possible to turn off the live parts? If not: <ul style="list-style-type: none"> Are workers aware of the presence of the live parts? Can insulating barriers be safely put in place to reduce the risk of inadvertent contact with the parts? Has a risk assessment been carried out? Do workers have suitable tools and PPE to reduce the risk of inadvertent contact with the parts? 		
Have you managed the risk to as low as is reasonably practicable?		
Information, training and supervision		
Do workers have access to current copies of your work procedures?		
Do you conduct regular toolbox talks?		
Do you conduct daily pre-starts?		
Are apprentices/young workers adequately supervised?		
Are competency records available for rescue and resuscitation?		
Tools and test equipment		
Are tools and equipment suitable for the work being carried out?		
Are test instruments suitable and functioning correctly?		
Do workers know how to use tools and testing instruments correctly?		
Personal protective equipment		
Is PPE in good condition and suitable for the work to be carried out?		
Electrical work		
Is electrical work installed and tested in accordance with AS/NZS3000 and other applicable standards?		
Do you keep copies of test results?		
Do you provide copies of Certificates of Test for the electrical work carried out?		
Do you have a procedure in place to ensure any equipment supplied is from a reputable supplier and is appropriate for the job?		
Reporting of incidents		
Do you ensure serious electrical incidents (SEI) AND dangerous electrical events (DEE) are notified?		
Do you ensure notifiable incidents under the WHS Act are notified?		
Do you have reporting processes in place for workers to report incidents, including minor incidents or “near misses”, to you?		