

Supervision of Electrical Apprentices

Objective

To identify the level of supervision that licensed electrical workers must provide when apprentices are carrying out electrical work.

Effective supervision allows apprentices to develop the knowledge and skills they need 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
- working under a safe system of work.

Persons conducting a business or undertaking (PCBU) and supervising tradespeople (supervisors) are responsible for managing the work program of apprentices to ensure they are exposed to the full scope of work needed to successfully complete their e-profiling requirements.

PCBUs must ensure that nominated supervisors are licensed and competent to supervise the technical and safety aspects of the work and are experienced enough to provide effective supervision.

Supervisors must only supervise electrical work within the scope of their work licence. As supervisors have the greatest influence on an apprentice's attitude to health and safety, they need to have the ability to effectively provide safety advice and immediately correct any unsafe work practices. Apprentices must not be supervised by other apprentices or trades assistants.

Supervisors must always be available to apprentices. Whether this is in the immediate vicinity of the worksite or contactable through other means such as a phone (depending on the level of supervision deemed suitable for the apprentice). Supervision requires more than just knowing how to do the work. Supervisors will often be doing work themselves while monitoring and providing direction to apprentices at the same time. It's an acquired skill and not all tradespeople are suited to supervisory roles.

Although there are no prescribed ratios of apprentices to supervisors, PCBUs and supervisors need to ensure that when more than one apprentice is being supervised at the same time, the level of supervision is appropriate. Consideration should be given to the:

- type of work being performed
- skill and competence of each apprentice
- level of risk associated with the work
- supervisory experience of the supervisor.

The licensed electrical worker supervising an apprentice is ultimately responsible for any testing of electrical work performed by the apprentice.

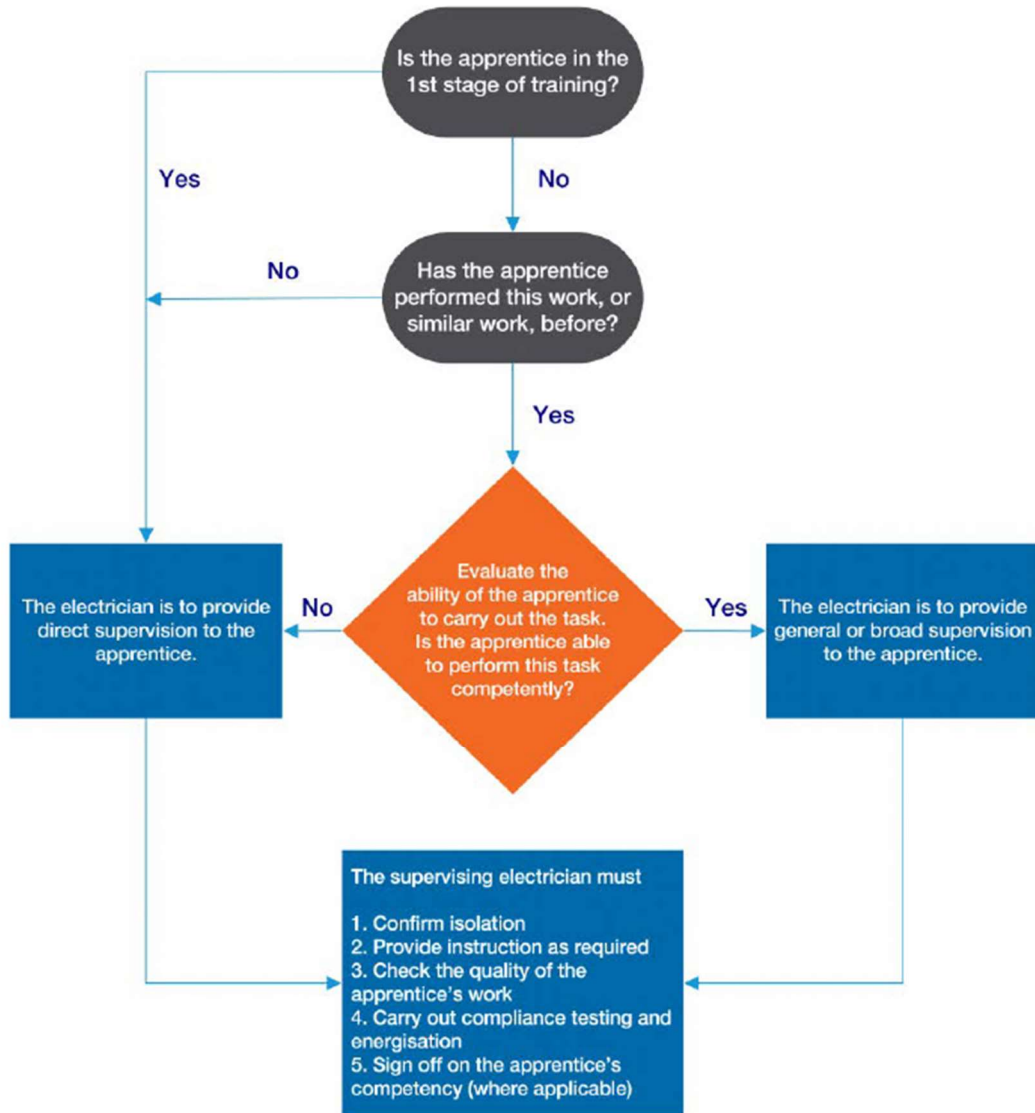
Limits on type of work

There are strict limitations on the type of work suitable for apprentices. These limitations ensure that new, less experienced and often younger workers are not placed at risk of electrical shock, injury or death.

The PCBU must ensure an apprentice with less than six months training does not work in the immediate vicinity of live high voltage exposed parts or anywhere there is a risk they could come into contact with live low voltage exposed parts. This includes testing.

The apprentice must be constantly supervised by an appropriately licensed electrical worker.

Guide to Site Supervision of Apprentices by the Licensed Electrical Worker



Determining supervision levels

The level of supervision required (direct, general or broad) will depend upon:

- the type of work performed and the associated risks
- the level of training and competence of the apprentice.

Type of work

Supervisors need to consider the type of work to be performed and the possible risks associated with that work. Consider:

- the task to be performed
- the location
- the environment
- work health and safety risks
- electrical risks.

Young workers often do not have the same understanding of risk that comes from experience on the job. Supervisors should assess the level of risk based on the apprentice, not their own understanding of the risk associated with the work.

Supervisors must include the apprentice in the risk assessment process and together manage any risks they identify to develop the apprentice's skills in this area.

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Factors to consider include:

- the work location (e.g. residential, commercial, industrial, mining)
- whether it is a new installation or alterations/additions to an existing installation
- whether the work will be performed near live electrical equipment
- the voltage and potential fault current levels associated with the installation.

Training and competence

The technical knowledge, practical skills and safe working ability of the apprentice need to be considered when determining the most appropriate level of supervision. The supervisor should use:

- information from the apprentice's registered training organisation
- on the job training records
- their own observations and knowledge of the apprentice performing the work.

Personal knowledge and observation of an apprentice's ability is one of the most important considerations when determining the appropriate level of supervision. Quite often a supervisor has worked with an apprentice before and has a good understanding of the apprentice's level of competence and their attitude or approach to work. Value and use this knowledge when determining the degree of supervision required.

When you're supervising an apprentice for the first time, talk to other tradespeople they have worked with, the PCBU and the apprentice. This will assist in determining the appropriate degree of supervision. However, you need to assess the apprentice yourself to determine the degree of supervision for each task.

Young workers (aged between 15 and 24) perceive risk differently and could be inexperienced in the workforce. This means that when a situation becomes unsafe they are less likely to identify and report a safety concern or even understand the significance of the risk.

Younger workers can often have personal issues that impact their work. While more experienced workers can remain focused at work, younger workers may not yet have developed this ability and are often easily distracted. Supervisors need to check in regularly with younger workers to ensure they are focused.

Supervision levels

Effective supervision ensures work is carried out safely and correctly and apprentices develop the knowledge, skills and ultimately the competency to transition from being an apprentice to a tradesperson.

The three levels of supervision, direct, general and broad, aim to ensure apprentices develop their knowledge and skills in the technical aspect of the trade, as well as the understanding of the risks associated with work and the ways to manage those risks. Apprentices need to transition through the three stages of supervision to best prepare for the completion of their apprenticeship. An apprentice who is never provided the opportunity to work under broad supervision is likely to struggle as a tradesperson, creating a risk to themselves and others.

Supervision levels for apprentices should diminish gradually over the course of an apprenticeship. Remember that each apprentice develops at a different rate. Time in the apprenticeship is not the only indicator of an apprentice's readiness to transition to different levels of supervision.

Direct supervision

Direct supervision is when a supervisor constantly monitors the apprentice. The supervisor should always remain readily available (within sight and/or earshot).

Direct supervision is usually appropriate where:

- the apprentice is new to the task
- the apprentice has not demonstrated ability to perform the task to a minimum standard
- the assessed risks determine direct supervision is required for the task
- the apprentice has not completed off-the-job training that supports competent performance of the task
- unplanned events are beyond the apprentice's ability to manage
- the work includes live work or work near exposed live parts.

General supervision

General supervision is when a supervisor is not constantly reviewing the apprentice but remains available in person (this does not include face time or video conferencing) for assistance or instruction as required.

General supervision is usually appropriate where:

- the apprentice has demonstrated their ability to perform the task safely to minimum standards without the need for constant intervention
- the apprentice has demonstrated an understanding of any risks and can manage those risks appropriately
- the assessed risks determine general supervision is required for the task
- the apprentice has an appropriate level of knowledge and practical skill from completing off-the-job and on-the-job training
- the apprentice has demonstrated an ability to manage or seek assistance with reasonably predictable unplanned events.

Broad supervision

Broad supervision is when a supervisor only needs to make occasional face to face contact at intervals determined suitable by the supervisor. Adequate apprentice supervision cannot solely be provided from an offsite location by electronic means such as phones, radios and webcams.

Broad supervision is usually appropriate where:

- the apprentice has demonstrated their ability to perform the task safely to acceptable standards without the need for supervisor intervention
- the apprentice has demonstrated an understanding of any risks and has the ability and demonstrated how to manage those risks appropriately
- the assessed risks determine broad supervision is required for the task
- the apprentice has a significant level of knowledge and practical skill from completing off-the-job and on-the-job training
- the apprentice has demonstrated an ability to manage or seek assistance with unplanned events.

This table details some of the electrical tasks that an apprentice performs and gives suggestions for typical amounts of time spent under which types of supervision for that work.

The table is a guide only and each apprentice needs to be assessed individually. It is based on the E-Oz Energy Skills National Supervision Guidelines for Electrotechnology Apprentices.

Supervision types and times by type of work guide

Type of work	Typical time served (in months)				
	0 - 6	6 - 12	12 - 24	24 - 36	36 - 48
Installation of cable support and mechanical protection.	Direct	Direct / General	General	Broad	Broad
Installation of low voltage cabling and terminating accessories.	Direct	Direct / General	General	General	Broad
Installation of low voltage electrical equipment.	Direct	Direct	Direct / General	General	Broad
Fault finding, repair and maintenance of de-energised low voltage electrical installations and equipment.	Direct	Direct	Direct	Direct / General	Broad
Proving de-energisation of low voltage electrical installations and equipment (isolation and lock-out).	Direct supervision. The supervisor is ultimately responsible for proving the isolation before work commences.			Direct	Direct / General ¹
De-energised verification (visual inspection and testing) of low voltage electrical installations and equipment.	Direct	Direct	Direct	Direct / General	General ² / Broad ³
Energised verification (visual inspection and testing) of low voltage electrical installations and equipment.	RTO Simulated only	RTO Simulated only	RTO Simulated only	RTO Simulated only	Direct
Commissioning (testing for correct operation/function) low voltage electrical installations and equipment (No access to exposed low voltage).	Direct	Direct	Direct	Direct / General	General ⁴

¹ General supervision should be restricted to apprentices who have completed training in isolation and lockout procedures and the supervisor has performed a risk assessment and ensured the apprentice is competent to undertake the task.

² General supervision is only appropriate after the apprentice has completed the relevant units of competency in installation verification.

³ Broad supervision should only be considered after the apprentice has successfully completed their Capstone assessment

⁴ General supervision is only appropriate after the apprentice has completed the relevant units of competency in installation verification.

Referenced Practices

- BEMSPRAC003 Before Use Inspection of Electrical Test Equipment
- BEMSPRAC004 Before use inspection of safety equipment
- BEMSPRAC006 Lock Out and Tag Out
- BEMSPRAC007 Risk Assessment Testing and Fault Finding