



Australian Government

UEENEEG167A Align and install traction lift equipment

Release: 2

UEENEEG167A Align and install traction lift equipment

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers alignment and installation of lift mechanical and electrical equipment. It encompasses working safely, alignment of lift structures such as measuring, marking out and aligning of lift installations including machine room equipment, lift well equipment, the lift car and associated equipment and landing door frames and doors, setting out of multiple lift wells in varying configuration and the installations of well and pit equipment, lift car equipment, superstructure and counterweights, machine room equipment, landing, door frames and door, landing buttons and indicator boxes.

Application of the Unit

Application of the Unit 2)

This unit applies to any formal recognition for this standard at the aligned AQF 3 level or higher.

Licensing/Regulatory Information

License to practice 3)

The skills and knowledge described in this unit require a license to practice in the workplace where plant and equipment operate at voltage above 50 V a.c. or 120 V d.c. However other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the workplace and during training is also

License to practice**3)**

subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites**Prerequisite Unit(s)****4)****Competencies****4.1)**

Granting competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

UEENEEE1 01A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEENEEE1 02A	Fabricate, dismantle, assemble of utilities components
UEENEEE1 04A	Solve problems in d.c circuits
UEENEEE1 05A	Fix and secure electrotechnology equipment
UEENEEE1 07A	Use drawings, diagrams, schedules, standards, codes and specifications
UEENEEG0 06A	Solve problems in single and three phase low voltage machines
UEENEEG0 33A	Solve problems in single and three phase electrical apparatus and circuits
UEENEEG0 63A	Arrange circuits, control and protection for general electrical installations
UEENEEG1 01A	Solve problems in electromagnetic devices and related circuits
UEENEEG1 02A	Solve problems in low voltage a.c. circuit

Prerequisite Unit(s) 4)

UEENEEG1 06A	Terminate cables, cords and accessories for low voltage circuits
UEENEEG1 08A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits
UEENEEG1 16A	Diagnose and rectify faults in traction lift systems

Literacy and numeracy skills 4.2)

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	4	Writing	4	Numeracy	5
---------	---	---------	---	----------	---

Employability Skills Information**Employability Skills 5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.
--	---

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to align and install lift equipment.	1.1 OHS procedures for a given work area are identified, obtained and understood.
	1.2 OHS risk control measures and procedures in preparation for the work are followed.
	1.3 The likely extent of work to be undertaken is envisaged from site plans, drawings and specifications and/or discussions with appropriate person(s).
	1.4 Advice is sought from the work supervisor to ensure the work is coordinated effectively with others.
	1.5 Tools, equipment and alignment devices needed to carry out the work are obtained in accordance with established procedures and checked for correct operation and safety.
2 Align and install lift equipment.	2.1 OHS risk control measures and procedures for carrying out the work are followed.
	2.2 The need to test or measure live is determined in strict accordance with OHS requirements and when necessary conducted within established safety procedures.
	2.3 Circuits/machines/plant are checked as being isolated where necessary in strict accordance OHS requirements and procedures.
	2.4 Equipment are installed straight and square in the required locations and within acceptable tolerances.
	2.5 Equipment align and install in accordance with manufacture's specifications and regulatory requirements.
	2.6 Established methods for dealing with unexpected situations are discussed with appropriate person or persons and documented.
	2.7 Unexpected situations are dealt with safely and

ELEMENT	PERFORMANCE CRITERIA
	with the approval of an authorised person.
	2.8 Ongoing checks of the quality of installed equipment are undertaken in accordance with established procedures.
	2.9 Equipment installation is carried out efficiently without unnecessary waste of materials or damage to apparatus, circuits or the surrounding environment and using sustainable energy practices.
3 Completion and report of alignment and installation activities	3.1 OHS work completion risk control measures and procedures are followed.
	3.2 Work site is cleaned and made safe in accordance with established procedures.
	3.3 Final checks are made to that the installed equipment conforms to requirements.
	3.4 'As-installed' equipment is documented and an appropriate person or persons notified in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and aligning and installing lift equipment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-EG167A

Lift systems - installation

Evidence shall show an understanding of aligning and installing lift equipment to an extent indicated by the following aspects:

T1 Single lift wells encompassing:

- Purpose
- Need for accuracy
- Modification of errors
- Use of template
- Use of plumb lines and weights
- Measuring and marking out lift wells
- Measuring and marking out machine room (where appropriate)
- Plumbing chart
- Identification of clearances
- Adjustment of templates
- Use of laser level

T2 Multiple lift wells encompassing:

- Use of centre line/datum
- Use of survey information and layouts
- Setting of well templates
- Plumb charts analysis for three dimensional impact
- Corrective action
- Use of theodolite

T3 Fixing devices and methods encompassing:

- Inserts
- Expansion anchors
- Chemically bonded anchors

T4 Equipment layout encompassing:

- Specifications
- Clearances
- 3D impact on layout

REQUIRED SKILLS AND KNOWLEDGE

- Lift code

T5 Alignment equipment encompassing:

- Gauges
- Straight edges
- Rail gauges
- Shims/packers
- Lasers

T6 Machine room alignment encompassing:

- Machine and fixings
- Diverter sheave
- Governor and tensioning sheaves
- Counterweight centre lines
- Sheave and roping system

T7 Lift car alignment encompassing:

- Superstructure
- Frames
- Doors

T8 Lift well alignment encompassing:

- Guides and brackets
- Trimmer beams
- Buffers
- Landing doors and locks
- Compensators

T9 Running clearances encompassing:

- Safety gear
- Car sill
- Door operator

T10 Car operating devices encompassing:

- Slowdown switch
- Limits
- Inductors
- Door locks
- Vanes and Shaft information

T11 Installation and aligning hydraulic equipment procedure encompassing:

- Ram/Cylinder
- Hydraulic Lines
- Bleeding Hydraulic system

Evidence Guide

EVIDENCE GUIDE

9) The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment 9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment

instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit 9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEE11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
 - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range statement
 - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
 - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
 - Demonstrate an appropriate level of skills enabling employment
 - Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
 - Align and install lift equipment as described in 8) and including:

Install at least two types of the following lift equipment as described below

A Lift well equipment.

- B Lift cars.
- C Machine room equipment.

Carry out at least two types of set out and alignment functions as listed below:

- A Lift well alignment.
- B Lift car alignment.
- C Machine room alignment.
- D Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items.

Note:

Successful completion of relevant vendor training may be used to contribute to evidence on which competency is deemed. In these cases the alignment of outcomes of vendor training with performance criteria and critical aspects of evidence shall be clearly identified.

Context of and specific resources for assessment 9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

OHS policy and work procedures and instructions.

Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

Resources required to assess this unit are listed above in 'Context of assessment', which should also be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to aligning and installing lift equipment.

**Method of
assessment**

9.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:

Competent performance with inherent safe working practices is expected in the industry to which this unit applies. This requires assessment in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

**Concurrent
assessment and
relationship with
other units**

9.5)

There are no concurrent assessment recommendations for this unit.

Range Statement

RANGE STATEMENT

10) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Competency shall be demonstrated in relation to align and install at least two of the following:

- Lift well equipment
- Lift cars
- Machine room equipment
- Lift well alignment
- Lift car alignment
- Machine room alignment

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field 11)
 Electrical