



Australian Government

Department of Education, Employment and Workplace Relations

UETTD RTP25A Pre-tension stringing overhead transmission conductors and cables

Release: 1

UETTD RTP25A Pre-tension stringing overhead transmission conductors and cables

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This Competency Standard Unit covers the stringing of overhead conductors and cables with no electrical connections being made. It includes the preparation of the site, the pre-positioning of conductors and fitting of conductor/cable stringing equipment where appropriate and the cleaning of insulators in accordance with works order.

Application of the Unit

Application of the Unit 2)

This Competency Standard Unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice 3)

The skills and knowledge described in this unit may require a licence/registration to practice in the work place subject to regulations for undertaking of electrical work. Practice in workplace and during training is also subject to regulations directly related to Occupational Health and Safety, electricity/telecommunications/gas/water industry safety and compliance, industrial relations, environmental

License to practice**3)**

protection, anti discrimination and training.
Commonwealth, State/Territory or Local Government
legislation and regulations may exist that limits the age of
operating certain equipment.

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

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

Where pre-requisite pathways have been identified. All
competencies in the Common Unit Group must be have
been completed.

Common Unit Group

Unit Code	Unit Title
UEENEEE101 A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UETTDREL13 A	Comply with sustainability, environmental and incidental response policies and procedures
UETTD RTP23 A	Erect power systems transmission structures
UETTD RTP24 A	Erect power systems transmission structure hardware

**Literacy and numeracy
skills****4.2)**

Participants are best equipped to achieve 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 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills 5)

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 pre-tension string the transmission overhead conductors and cables	1.1	Work instructions are received and confirmed.
		1.2	Relevant requirements and established procedures to be followed for the work to be performed are discussed with all personnel to establish and confirm the work schedule.
		1.3	OHS policies and procedures to be followed for the work to be performed are received and confirmed.
		1.4	Suggestions to assist in meeting pre-tension stringing of transmission overhead conductors and cables outcomes are made to others involved in the work.
		1.5	Hazards are identified, OHS risks assessed and

ELEMENT**PERFORMANCE CRITERIA**

		emergency exits kept clear according to given instructions and established procedures.
	1.6	Scope of responsibility under the relevant work permit are received and confirmed according to requirements and established procedures with relevant personnel.
	1.7	Resources including, equipment, tools and personnel protective equipment required for the job are obtained and, in working order according to established procedures.
	1.8	Relevant responsibility associated with First Aid, Tower/Pole Top Rescue and/or other related work safety procedures at the work site are confirmed in accordance with requirements and established procedures to ensure safety measures are followed in the instance of an incident.
	1.9	Client issues are referred to appropriate personnel in accordance with industry/acceptable /community standards.
	1.10	Site is prepared according to given instructions and the work schedule for a quality outcome and to minimise risk and damage to property, commerce, and individuals in accordance and established procedures.
	1.11	Road signs, barriers and other warning devices are positioned in accordance with given instructions and requirements.
2	Carry out pre-tension stringing of transmission overhead conductors and cables	<p>2.1 OHS and sustainable energy principles and practices to reduce the incidents of accidents and minimise waste are followed in accordance with given instructions, requirements and/or established procedures.</p> <p>2.2 Lifting, climbing, working aloft, and use of power tools/equipment, techniques and practices are safely followed in accordance with given instructions and, according to requirements confirmed to eliminate the prospects of incidents.</p>

ELEMENT**PERFORMANCE CRITERIA**

	2.3	Operational knowledge for the pre-tension stringing of transmission overhead conductors and cables to be applied to the work is confirmed to ensure completion in an agreed timeframe and, to quality standards with a minimum of waste according to requirements and established procedures.
	2.4	Pre-tension stringing of transmission overhead conductors and cables is carried out in accordance with given instructions and established routines/procedures.
	2.5	Hazard warnings and safety signs are recognised and hazards and assessed OHS risks are reported to the immediate authorised persons for directions according to established procedures.
	2.6	Non-routine events are referred to the immediate authorised personnel for directions according to established procedures.
	2.7	Problems associated with pre-tension stringing of transmission overhead conductors and cables are dealt with using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met.
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures.
3	Complete pre-tension stringing of transmission overhead conductors and cables	3.1 Work undertaken is checked against work schedule and anomalies reported to authorised personnel in accordance with established procedures.
		3.2 Accidents and/or incidents are actioned and reported to authorised personnel in accordance with established procedures.
		3.3 Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures.

ELEMENT**PERFORMANCE CRITERIA**

- 3.4 Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures.
- 3.5 Appropriate personnel are notified of work completion according to established procedures.
- 3.6 Works completion records, report forms/data sheets are completed accurately in accordance with given instructions and established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) Essential Knowledge and Associated Skills (EKAS): This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of pre-tension stringing transmission overhead conductors and cables.

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

KS01-TTP25A Overhead transmission conductors and cables - stringing

Evidence shall show an understanding of the stringing (pre-tension) of overhead transmission conductors and cables to an extent indicated by the following aspects:

T1 Stringing installation overhead transmission conductors and cables encompassing:

- Standards, codes, legislation, supply authority regulations and or enterprise requirements applicable to stringing conductors and cables
- Requirements for the use of overhead line construction manuals, system diagrams/plans and drawings, material lists.
- Conductor size, type and route length
- Constructions types and structures for transmission lines
- Types, sizes and characterises of overhead conductors
- Resources for the stringing of conductors, - personal protective equipment, plant, tools and equipment
- Techniques in stringing conductors - safe working practices, method of conductor support, consideration for the environment, location/positioning of the conductor/cable, types and application of tools, equipment and hardware.
- Methods of stringing conductors.

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit of competency and must be read in conjunction with the Performance Criteria and the Range Statement of the unit of competency and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all component 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 accord with Industry and, Regulatory policy in this regard.

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. Hence, sources of evidence need to be 'rich' in nature so as 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 practiced. 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 – UET12”. Evidence shall also comprise:

- A representative body of Performance Criteria 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; and
 - Apply sustainable energy principles and practices as specified in the Performance Criteria and range; and
 - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner’s performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment; and
 - Demonstrate an appropriate level of employability skills; and
- Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures; and
- Demonstrated performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/materials/procedures/workplaces/other variables		
Group No	The minimum number of items on which skill is to be	Item List

	demonstrated	
A	Any 2 of the following:	Copper Aluminium Steel Aluminium/steel reinforced HV ABC HV IUC
B	Any one of the following:	EWP Winches/capstans Tension equipment Stringing equipment Cable trailers Cable drum stands Ropes Rollers Sheaves Stockings Swivels
C	At least one occasion	Dealing with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items.

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 pre-tension stringing transmission overhead conductors and cables.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency working below ground, in limited spaces, with different structural/construction types and method and in a variety of environments.

**Method of
assessment**

9.4)

This Competency Standard 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 Transmission, Distribution and Rail Traction Industry. This requires that the specified essential knowledge and associated skills are assessed 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 associated 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 of competency 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.

This Competency Standard Unit shall be demonstrated in relation to the pre-tension stringing of transmission overhead conductors and cables in accordance with relevant enterprise safe working practices/procedures and environmental requirements, manufacturers specifications, codes of practice, statutory requirements, Australian Standards and Occupational Health and Safety standards.

Types of conductors and cables may include copper, aluminium, steel, aluminium conductor steel reinforced.

Stringing may be required to be carried out for all the types of conductors and cables listed above.

Plant may include elevating work platform, winches and capstans, specialist tension stringing equipment, cable trailers and cable drum stands. Other stringing equipment may include ropes, rollers and sheaves, stockings and swivels.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section 1 of this volume and form an integral part of the Range Statement of this unit:

- Appropriate and relevant persons (see Personnel)
- Appropriate authorities
- Appropriate work platform
- Assessing risk
- Authorisation
- Documenting detail work events, record keeping and or storage of information
- Drawings and specifications
- Emergency
- Environmental and sustainable energy procedures
- Environmental legislation
- Established procedures
- Fall prevention
- Hazards
- Identifying hazards
- Legislation
- MSDS
- Notification
- OHS practices
- OHS issues

RANGE STATEMENT

- Permits and/or permits to work
- Personnel
- Quality assurance systems
- Requirements
- Work clearance systems

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Transmission Units