



Australian Government

RIICTC401D Apply the principles of tunnel construction

Release: 2

RIICTC401D Apply the principles of tunnel construction

Modification History

Release	Comment
1	This unit replaces RIICTC401A Apply the principles of tunnel construction
2	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

Application

This unit describes a participant's skills and knowledge required to apply the principles of tunnel construction in Civil construction.

This unit is appropriate for those working in supervisory or technical specialist roles.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare to apply the principles of tunnel construction	1.1 Access, interpret and apply principles of tunnel construction documentation and ensure the work activity is compliant 1.2 Access, interpret and clarify the specific task information and requirements 1.3 Ensure a job plan, is available which makes best use of the available resources and meets the tunnel construction task requirements 1.4 Identify the training requirements of team members and develop training plans
2. Ensure appropriate initiation of tasks is carried out	2.1 Confirm that the necessary resources are available 2.2 Ensure clear and timely instructions are communicated to team members and others involved

	2.3 Ensure appropriate set out of tasks
3. Oversee the execution of tasks	3.1 Monitor tunnel construction task performance to ensure it achieves the required outcomes 3.2 Initiate adjustments to tunnel construction practice or job plan and ensure safe execution of work and achievement of required outcomes 3.3 Ensure plant equipment and tools maintenance requirements are carried out and recorded 3.4 Implement training plans
4. Report on the execution of tasks	4.1 Complete and submit reports 4.2 Recommend changes to improve the safety, efficiency and effectiveness of the execution of tasks

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIICTC401A Apply the principles of tunnel construction

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIICTC401D Apply the principles of tunnel construction

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Performance Evidence

vidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant legislation, documentation, policies and procedures
- works effectively with others to undertake and complete the applying of the principles of tunnel construction that meets all of the required outcomes including:
 - communicating clear and timely instructions to those involved
 - preparing for and conducting briefings, toolbox and site meetings
 - maintaining clear and legible written records and the reports
- demonstrates completion of the principles of tunnel construction that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - successful supervision of tunnel construction tasks
 - interpreting tunnel construction materials properties and test results
 - providing recommendations for the improvement of the safe, effective and efficient execution of tunnel construction tasks
 - preparation of job plan, which includes at least five (5) of the following:
 - human resource requirements
 - plant and machinery requirements
 - construction materials requirements
 - sub-contractor support requirements
 - waste disposal requirements
 - coordination requirements

- activity scheduling
- materials delivery scheduling
- risk assessment and management requirements
- occupational health and safety requirements
- quality management requirements, including testing scheduling requirements
- traffic management requirements
- environmental requirements
- task monitoring requirements
- task performance monitoring requirements
- communication requirements
- reporting requirements
- assessment of resource requirements including at least two (2) of the following:
 - labour
 - plant, equipment and tools
 - highway haulage vehicles
 - construction materials
 - shoring materials
 - sub-contractor services

Knowledge Evidence

The candidate must demonstrate knowledge in applying the principles of tunnel construction through:

- engineering survey principles
- materials quality and delivery requirements and procedures
- shoring requirements and procedures
- slope management requirements and procedures
- tunnel construction plant and equipment capabilities and application
- operational techniques for the execution of tunnel construction tasks
- job plan drafting of and administration requirements and procedures
- tunnel construction and related activities' terminology
- set out requirements and procedures
- scheduling work activities
- relationship between various areas of resources and infrastructure industries
- monitoring methods
- resource requirements
- activities scheduling
- estimating principles
- civil works construction sequencing

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,
- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,
- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,
- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 Year
	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 Years
Other sectors	Where this Unit is being assessed outside of the Resources and Infrastructure Sectors assessor and/or Industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no Industry standard is specified should comply with any relevant regulation.	

*Assessors can demonstrate current work experience through employment within Industry in a role relevant to the outcomes of the Unit; or, for external assessors this can be demonstrated through exposure to Industry by conducting frequent site assessments across various locations.

**Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

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