



Australian Government

RIICTC401E Supervise tunnel construction

Release: 1

RIICTC401E Supervise tunnel construction

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to supervise tunnel construction in civil construction, including preparing team members to conduct tunnel construction and overseeing and reporting on task execution.

It applies to those working in supervisory or technical specialist roles. They generally perform a broad range of operational activities in their area of responsibility and are responsible for monitoring a safe work environment.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare to supervise tunnel construction	1.1 Obtain, interpret, clarify and confirm work requirements 1.2 Access, interpret and apply documentation required to supervise tunnel construction and confirm work activity is compliant 1.3 Identify and address potential risks, hazards and environmental issues and implement control measures 1.4 Select and wear personal protective equipment according to site requirements 1.3 Confirm job plan is available and meets task requirements 1.4 Identify training requirements of team members and develop training

ELEMENT	PERFORMANCE CRITERIA
	plans
2. Prepare team members to execute tasks	2.1 Confirm required resources are available to meet job requirements 2.2 Communicate instructions to team members and other involved personnel according to job requirements 2.3 Set out tasks required to complete work activity according to job requirements
3. Oversee execution of tasks	3.1 Monitor tunnel construction task performance and confirm outcomes are achieved according to job requirements 3.2 Initiate adjustments to tunnel construction practice or job plan as required to meet job requirements 3.3 Confirm plant, equipment and tools maintenance requirements are carried out and recorded according to manufacturer specifications and site requirements 3.4 Implement training plans according to job requirements
4. Report on execution of tasks	4.1 Complete and submit reports according to site requirements 4.2 Recommend required changes to confirm task execution meets job requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Numeracy	Calculates resourcing requirements and performs mathematical calculations
Oral communication	Conveys information and requirements clearly and listens actively
Writing	Prepares specific information that complies with requirements, using sector-specific vocabulary, grammatical structures and conventions

Unit Mapping Information

Supersedes and is equivalent to RIICTC401D Apply the principles for the installation of underground service using open excavation.

Links

Companion Volume Implementation Guide is found on VETNet -

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

Assessment Requirements for RIICTC401E Supervise tunnel construction

Modification History

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- supervise tunnel construction on at least two occasions, including:
 - interpreting tunnel construction materials properties and test results
 - providing recommendations for the improvement of tunnel construction tasks
 - preparing a job plan, including at least five 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 of the following:
 - labour
 - plant, equipment and tools

- highway haulage vehicles
- construction materials
- shoring materials
- sub-contractor services.

During the above, the candidate must:

- locate and apply required legislation, documentation, policies and procedures
- work with others to undertake and complete the supervision of tunnel construction that meets required outcomes, including:
 - communicating instructions to those involved
 - preparing for and conducting briefings, toolbox and site meetings
 - completing written records and reports.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislation required to supervise tunnel construction
- policies, procedures and documentation required to supervise tunnel construction, including those relating to:
 - work health and safety
 - risk assessment and management
 - statutory compliance
 - emergency response
 - communication techniques and equipment
 - job plan drafting and administration
 - environmental management
 - quality management
 - manufacturer specifications for required plant and equipment
 - site requirements
 - relevant specifications
 - workplace reporting requirements, including:
 - briefings
 - handovers
 - work orders
 - toolbox meetings
 - site meetings
 - set out
 - materials quality and delivery
 - shoring

- slope management
- scheduling work activities
- resource requirements
- principles and techniques required to supervise tunnel construction, including those relating to:
 - team leadership
 - engineering survey
 - operational techniques for the execution of tunnel construction tasks
 - monitoring methods
 - types of tunnel construction, including:
 - road tunnels
 - rail tunnels
 - pedestrian tunnels
 - underground service tunnels
 - estimating principles
 - civil works construction sequencing
 - tunnel construction and related activities terminology
- relationship between various areas of resources and infrastructure industries
- types, characteristics, technical capabilities and limitations of plant and equipment required to supervise and complete tunnel construction.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to supervise tunnel construction
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

- **Assessor requirements**

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 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.	

*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

**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 a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

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