



Australian Government

RIICTT301E Conduct fluid assisted directional boring

Release: 1

RIICTT301E Conduct fluid assisted directional boring

Modification History

This unit replaces RIICTT301D Conduct of fluid assisted directional boring. Minor endorseable amendments have been made to Elements, Performance Criteria, Foundation Skills, Performance Evidence and Knowledge Evidence to better reflect current industry practices and clarify training outcomes.

Application

This unit describes the skills and knowledge required to conduct fluid assisted directional boring in civil construction.

It applies to those working in operational roles in civil construction. They generally work under supervision and hold some responsibility for conducting fluid assisted directional boring.

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

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. Prepare for fluid assisted directional boring	1.1 Obtain, interpret and confirm work requirements plans, specifications, quality requirements and operational details for task 1.2 Access, interpret and apply fluid assisted directional boring documentation and confirm work activity is compliant 1.3 Identify environmental issues and potential hazards, and assess and address risks within scope of own role and according to workplace procedures 1.4 Select and wear personal protective equipment required for work activities 1.5 Complete induction procedures as required by workplace policies and procedures and job role requirements 1.6 Identify, obtain and implement traffic signage requirements

ELEMENT	PERFORMANCE CRITERIA
	1.7 Select tools and equipment required for tasks and check for faults and report or rectify within scope of own role 1.8 Obtain and interpret emergency procedures and identify steps required in case of fire, accident, and other emergencies
2. Determine boring requirements	2.1 Determine location, alignment direction, level and grade of bore from drawings and specifications 2.2 Determine bore pathway for underground vertical and horizontal alignment using above and below ground survey instruments 2.3 Conduct visual geological investigation of alignment and determine differing soil types and groundwater conditions
3. Check and prepare equipment	3.1 Select bore head and drilling fluid for strata 3.2 Position and stake down boring equipment 3.3 Conduct preoperational start-up, shutdown and communication procedures 3.4 Inspect equipment controls and functions and report faults 3.5 Carry out equipment maintenance to schedule
4. Drive bore hole	4.1 Prepare launch and receiving pits for inserting and receiving bore head according to site requirements 4.2 Extract and dispose of mud according to job specifications 4.3 Monitor bore head progress for vertical and horizontal alignment and confirm machine operations meet site and task requirements 4.4 Monitor drilling fluid and accommodate differing strata formation 4.5 Remove bore head according to job requirements 4.6 Check and fit back reaming attachment to drill string 4.7 Conduct back reaming to specifications as required 4.8 Position drums and rolls of installing product as required and confirm discharge of product
5. Clean up	5.1 Clear work area and dispose of and recycle materials as required 5.2 Clean, check, perform maintenance on and store plant, tools and equipment and report issues as required or address within scope of own role 5.3 Finalise and process written records according to workplace procedures

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
Reading	Identifies and interprets information from at times complex workplace procedures, documentation, legislation and regulations
Writing	Records simple and routine information relating to work activities

Unit Mapping Information

Supersedes and is equivalent to RIICTT301D Conduct of fluid assisted directional boring.

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 RIICTT301E Conduct fluid assisted directional boring

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:

- conduct fluid assisted directional boring on at least two occasions including at least 50 metres of fluid assisted directional boring.

During the above, the candidate must:

- locate, apply and retain on site access to documentation, policies and procedures required for conducting fluid assisted directional boring
- implement the requirements, procedures and techniques for conducting fluid assisted directional boring, including:
 - interpreting engineering drawings, plans and specifications
 - using laser control equipment
 - using electronic devices to locate electronic cable
 - applying electronic equipment calibration
 - applying thrust and rotation of boring equipment
 - applying hazardous materials handling methods
 - applying job safety analyses (JSAs) and safe work method statements
 - completing housekeeping activities
- work with others to conduct fluid assisted directional boring that meets required outcomes, including:
 - organising work activities to meet task requirements
 - communicating with others to receive and clarify work instructions
 - using a range of communication techniques and systems
 - using signage to advise others of work activity and exclusion zones
- use systems to monitor boring status
- confirm work instructions, plans, specifications and quality requirements.

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:

- asset location drawings and specifications
- safety data sheets and materials handling methods
- strike alert systems
- key risks relating to conducting fluid assisted directional boring, including those associated with:
 - traffic
 - live electrical services
 - confined spaces
 - falls
 - locating near other works in progress
 - manual handling
 - gas
- key policies and procedures, legislation and established requirements for conducting fluid assisted directional boring operations, including those for:
 - workplace health and safety
 - site isolation and traffic control
 - launch and receiving pits
 - waste disposal and recycling
 - operating and maintaining equipment
 - anchoring and back reaming
- key factors affecting work activities described in performance evidence above, including:
 - categories of horizontal directional drilling
 - working in a road reserve
 - equipment types, characteristics, technical capabilities and limitations
 - procedures for drilling fluids
 - thrust and rotation of boring equipment
 - slinging procedures
 - soil types
 - groundwater conditions
 - attachment types including implements
 - stabilising equipment including anchors
 - remote unit operations.

Assessment Conditions

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

- include access to:
 - equipment required to conduct fluid assisted directional boring
 - personal protective equipment
- be conducted in a safe environment; and,

- be assessed in context of this sector's work environment; and,
- 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,
- 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 sectors 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 competency standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/AQTF 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 a high level of RII training product knowledge
- having an understanding and knowledge of legislations and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence as 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 hold the relevant vocational competencies and have current industry skills directly relevant to the training and assessment being provided and must work alongside a trainer and/or assessor to conduct the assessment. This means the industry subject matter expert should hold the unit being assessed (or an equivalent unit), and must also 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** Level	Required assessor or industry subject matter expert experience
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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 of competency 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 Companion Volume 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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