



Australian Government

RIICFW307E Direct cast in-situ piling operations

Release: 1

RIICFW307E Direct cast in-situ piling operations

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 direct cast in-situ piling operations in civil construction. This includes establishing pile locations, providing guidance for the boring of holes, relocating and removing boring rigs and installing casting in bored holes, as well as installing caissons with reinforced construction and placed concrete.

It applies to those working in operational roles. They generally work under minimal supervision to undertake a broad range of tasks in varied work contexts, using some discretion and judgement in selecting equipment, services or contingency measures.

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 direct in-situ piling operations	1.1 Obtain, interpret and confirm work instructions 1.2 Access, interpret and apply documentation required to direct cast in-situ piling operations and confirm work activity is compliant 1.3 Obtain and interpret emergency procedures and identify steps required to respond to emergencies 1.4 Select and wear personal protective equipment according to site requirements 1.5 Confirm and identify requirements for complying with environmental protection, safety and traffic management signage

ELEMENT	PERFORMANCE CRITERIA
	requirements 1.6 Identify potential hazards and environmental issues, implement control measures within scope of own role and escalate where required 1.7 Select plant, tools and equipment required to carry out tasks and check for faults 1.8 Identify, confirm, and locate materials required for work application
2. Direct rig, locate and prepare pile positions	2.1 Establish location of piles from reference points and set out according to job requirements 2.2 Establish recovery pegs and conduct on-going measurements to confirm location according to job requirements 2.3 Position plant and related equipment according to job requirements and conduct pre-start checks 2.4 Provide guidance for boring of holes according to job requirements 2.5 Direct installation of casing in bored hole according to job requirements 2.6 Prepare pile to receive concrete according to job requirements
3. Assist with placing concrete	3.1 Place concrete into pile according to job requirements 3.2 Identify the process of placing concrete in dry situations and implement where required 3.3 Identify the process of placing concrete in wet situations and implement where required
4. Conduct post-operational requirements	4.1 Provide direction for the relocation of boring rig according to job and site requirements 4.2 Provide direction for the removal of boring rig from site according to job and site requirements 4.3 Clear work area and dispose of or recycle materials according to site requirements 4.4 Clean, check, perform maintenance on and store plant, tools and equipment according to manufacturer specifications and site 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
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SKILL	DESCRIPTION
Initiative and enterprise	Identifies and executes tasks independently
Numeracy	Calculates basic measurements including mass and dimensions
Oral communication	- Identifies and interprets information from verbal instructions - Conveys information and instructions to others verbally
Self-management	Monitors and minimises own exposure to worksite risks and hazards during work activities

Unit Mapping Information

Supersedes and is equivalent to RIICFW307D Direct cast in-situ piling operations.

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 RIICFW307E Direct cast in-situ piling operations

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:

- direct cast in-situ piling operations on at least two occasions, including:
 - boring a hole to install at least one caisson, including reinforcement construction and placing concrete into caisson.

During the above, the candidate must:

- locate and apply required legislation, documentation, policies and procedures
- identify, report and record hazards and risks
- work with others to direct, undertake and complete cast in-situ piling operations tasks that meets required outcomes, including:
 - completing written and verbal reporting requirements and procedures
 - communicating with others to resolve coordination requirements and receive and clarify work instructions
 - using communication techniques and equipment, including signage to advise others of work activity and exclusion zones.

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 direct cast in-situ piling operations
- policies, procedures and documentation required to direct cast in-situ piling operations, including those relating to:
 - hazard and risk management
 - work health and safety
 - emergency response
 - site and equipment safety

- environmental protection
- environmentally sensitive fluids and material disposal
- waste management
- communication techniques and equipment
- site isolation and traffic control responsibilities
- operational, maintenance and basic diagnostic procedures
- project quality requirements chemical and fuel safety
- hazardous goods handling
- site heritage requirements
- site record keeping
- inspecting and preparing work areas
- pre-start checks
- job plans and specifications
- site requirements
- manufacturer specifications for required plant and equipment
- principles and techniques required to direct cast in-situ piling operations, including those relating to:
 - off-set pegging
 - pile location
 - bored cast in-situ characteristics and installation
 - piling operation
 - placing concrete in wet/dry conditions
 - water erosion
 - scaffolding and work platform installation
 - foundation work
 - maintenance
 - machine operation, including characteristics, technical capability and limitations
 - boring process for cast in-situ piles and their installation techniques
 - installing piles in water
 - concrete characteristics
 - bore types
 - hole boring
 - caisson types and characteristics
 - soil types and characteristics, including:
 - sand
 - rock
 - clay
 - shale
 - gravel
 - silt

- personnel coordination
- interpreting engineering drawings
- types, characteristics, technical capabilities and limitations of plant and equipment required to direct cast in-situ piling operations, including:
 - pile hammers
 - shovels
 - crow bars
 - spirit levels
 - plumb bob
- materials safety data sheet (SDS) compliance processes
- components of job safety analyses (JSAs), job safety environmental analyses (JSEAs), and safe work method statements (SWMs)
- civil construction terminology related to directing cast in-situ pilings operations.

Assessment Conditions

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

- include access to:
 - personal protective equipment
 - equipment required to direct cast in-situ piling operations
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with required 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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