



Australian Government

Department of Education, Employment and Workplace Relations

RIICFW307A Direct cast in-situ piling operations

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers directing of cast in-situ piling operations in the civil construction industry. It includes planning and preparing for the operations; directing the rig, locating and preparing pile positions; placing concrete; and carrying out post-operational requirements.

Application of the Unit

The boring process for casting in-situ piles may include auger bored and they may be CFA piles. This unit is appropriate for those working in supporting roles in piling, at worksites within:

- Civil construction

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</p>
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare for assisting with operations	1.1. Access, interpret and apply compliance documentation relevant to the directing of cast in-situ piling operations 1.2. Obtain, confirm and apply work instructions for the allocated task 1.3. Identify, manage and report all potential hazards 1.4. Obtain, confirm and apply safety requirements and environmental requirements for the allotted task 1.5. Select and use appropriate personal protective equipment and protective clothing at all times 1.6. Identify, obtain and implement signage requirements from the project traffic management plan and/or safety requirements 1.7. Resolve coordination requirements with others at the site prior to commencing and during work activities 1.8. Select plant, tools and equipment to carry out tasks that are consistent with the requirements of the task, and check them for serviceability and rectify or report any faults
2. Directing the rig, locating and preparing pile positions	2.1. Establishing the location of piles from reference points and set out to requirements 2.2. Establishing recovery pegs and conducting on-going measurements to ensure correct location 2.3. Positioning and checking plant and related equipment for operation 2.4. Provide guidance for boring of holes to work instructions 2.5. Installing the casing in the bored hole if applicable 2.6. Preparing pile to receive concrete in accordance with work instructions
3. Assist with placing concrete	3.1. Placing concrete into pile 3.2. Have knowledge of placing concrete in

	wet/dry conditions
4. Carryout post-operational requirements	<ul style="list-style-type: none">4.1. Provide direction for the relocation of boring rig to next point of installation operation4.2. Provide direction with removal of boring rig from site on completion of work4.3. Clear work area and dispose of or recycle materials in accordance with requirements4.4. Clean, check, maintain and store plant, tools and equipment as recommended and required

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Specific skills are required to achieve the performance criteria in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to direct with cast in-situ piling operations:

- apply legislative, organisation and site requirements and procedures for
- apply off-set pegging techniques
- apply pile locating techniques
- apply maintenance requirements and procedures
- interpret engineering drawings
- apply operational safety requirements
- apply environmental requirements
- apply environmentally sensitive fluids and materials disposal requirements and procedures
- apply chemical and fuel safety measures
- apply hazardous goods handling techniques
- apply manual lifting techniques
- work wearing personal protective equipment
- apply cast in-situ piling operation techniques
- apply maintenance requirements and procedures
- apply work tasks organising techniques

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to assist with cast in-situ piling operations:

- hazard identification and risk management procedures
- site personal protective equipment requirements
- site and equipment health and safety procedures
- site environmental and heritage requirements and constraints
- emergency procedures
- isolation and traffic control responsibilities and authorities
- materials safety data sheets and materials handling methods
- safe work method statement and/or Job safety analysis requirements and procedures
- environmental requirements and procedures
- water erosion issues

- types and characteristics of soil, sand, rock, clay, shale, gravel and silt and water table
- civil construction terminology
- civil construction procedures
- foundation work procedures
- machine characteristics, technical capability and limitations
- the boring process for cast in-situ piles and their installation techniques
- techniques for installing piles in water
- project quality requirements
- work platform installation requirements and procedures
- operational, maintenance and basic diagnostic procedures
- machine operational procedures
- isolation procedures
- maintenance systems and procedures
- site record keeping requirements

Evidence Guide

<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
<p>Overview of assessment</p>	
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following:</p> <ul style="list-style-type: none"> • knowledge of the requirements, procedures and instructions for assisting with cast in-situ piling operations • implementation of requirements, procedures and techniques for the safe, effective and efficient assisting with cast in-situ piling operations, which is to include: <ul style="list-style-type: none"> • preparation and boring of a hole to install a minimum of one caisson, including reinforcement construction and placing concrete to that caisson • working with others to undertake and complete the cast in-situ piling operations that meet all of the required outcomes • consistent timely completion of cast in-situ piling operations that safely, effectively and efficiently meets the required outcomes
<p>Context of and specific resources for assessment</p>	<ul style="list-style-type: none"> • This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • Evidence for assessment is best gathered using the outcomes of products and processes of the workplace context. • The assessment environment should not disadvantage the participant. For example,

	<p>language, literacy and numeracy demands of assessment should not be greater than those required on the job.</p> <ul style="list-style-type: none"> • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues. • Assessment of this competency requires typical resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances. • Where applicable, physical resources should include equipment modified for people with disabilities. • Access must be provided to appropriate learning and/or assessment support when required.
<p>Method of assessment</p>	<p>This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods:</p> <ul style="list-style-type: none"> • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes, including: <ul style="list-style-type: none"> • preparation and boring of a hole to install a minimum of one caisson, including reinforcement construction and placing concrete to that caisson • consistently achieving the required outcomes • first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • working with others to undertake and complete cast in-situ piling operations

Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.
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Range Statement

<p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
<p>Relevant compliance documentation may include:</p>	<ul style="list-style-type: none"> • legislative, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • code of practice • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
<p>Work instructions may come from briefings, handovers, plans and work orders and may be written or verbal, formal or informal and may include:</p>	<ul style="list-style-type: none"> • nature and scope of tasks, • specifications • quality of finished works • achievement targets • operational conditions • obtaining of permits required • site layout • out of bounds areas • worksite inspection requirements • lighting conditions • plant or equipment defects • hazards and potential hazards • coordination requirements or issues • contamination control requirements • environmental control requirements • barricade and signage requirements
<p>Hazards may include:</p>	<ul style="list-style-type: none"> • uneven terrain • unstable terrain • trees • fires • overhead and underground services • excavations • traffic • embankments • cuttings

	<ul style="list-style-type: none"> • structures • hazardous materials • equipment failure • confined operations • uncontrolled interaction with other plant
Inspect and prepare work area may include:	<ul style="list-style-type: none"> • identification of hazards • selection and implementation of control measures for the hazards identified • safeguarding site and non-site personnel by: <ul style="list-style-type: none"> • erection of barricades and posting of signs • selection of appropriate equipment to ensure personnel safety and protection • determination of appropriate path of movement for loads and equipment/vehicles • selection and implementation of environmental control measures
Safety requirements may include:	<ul style="list-style-type: none"> • protective clothing and equipment • use of tools and equipment • workplace environment and safety • handling of materials • use of fire fighting equipment • use of First Aid equipment • control of hazardous materials and substances • obtain platform certification • obtain Underground services clearance • safe operating procedures, including recognising and preventing hazards associated with: <ul style="list-style-type: none"> • overhead and underground services • other machines • personnel • traffic control • working in proximity to others • worksite visitors and the public • adjacent structures • emergency procedures, including: <ul style="list-style-type: none"> • emergency shutdown and stopping • extinguishing equipment fires • organisational First Aid requirements • evacuation • safe parking practices, including:

	<ul style="list-style-type: none"> • clear access ways • equipment/machinery is away from overhangs and refuelling sites • safe distance from excavations • secured from unauthorised access or movement
Environmental Requirements may include:	<ul style="list-style-type: none"> • waste management • water quality protection • noise • vibration • dust • clean-up management
Coordination requirements may include:	<ul style="list-style-type: none"> • piling team • other equipment operators • maintenance personnel • supervisors • other worksite personnel • external consultants • visitors
Personal protective equipment includes:	<ul style="list-style-type: none"> • steel-capped boots and hardhat • gloves • dust mask • eye and hearing protection • general protective and reflective clothing
Tools and equipment will include:	<ul style="list-style-type: none"> • pile hammers • shovels • crow bars • measuring tapes • spirit levels • plumb bob • and may include scaffolding
Hazardous and emergency situations may include:	<ul style="list-style-type: none"> • powerlines and other overhead services • underground services • dust and noise • lighting strikes • high wind • unstable ground conditions • confined operations • uncontrolled interaction with other plant

Unit Sector(s)

Foundation Works

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.