



Australian Government

Department of Education, Employment and Workplace Relations

RIICRC318 Cure Concrete

Release: 1

RIICRC318 Cure Concrete

Modification History

Not applicable.

Unit Descriptor

This unit of competency specifies the outcomes required to carry out the initial curing process to a nominated poured concrete section to control the moisture evaporation from finished concrete.

The unit includes using curing agents and curing techniques in accordance with engineering specifications. Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories and industry sectors. Relevant information must be sourced prior to application of the unit.

Application of the Unit

This unit is appropriate for those working in an operational role at worksites within:
Civil construction

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	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.
---	--

Elements and Performance Criteria

1. Plan and prepare for operations	1.1 Access, interpret and apply <i>compliance documentation</i> relevant to the work activity 1.2 Obtain and confirm <i>safety requirements</i> from the <i>site</i> safety plan and organisational policies and procedures, and apply to the allotted <i>task</i> 1.3 Identify, obtain and implement <i>signage</i> requirements from the project <i>traffic</i> management plan 1.4 Select <i>plant, tools and equipment</i> to carry out <i>tasks</i> consistent with the requirements of the job, check for serviceability and rectify or report any faults 1.5 Identify <i>environmental protection requirements</i> from the project environmental management plan, and confirm and apply to the allotted task 1.6 Identify <i>type of pavement</i> required
2. Cure concrete	2.1 <i>Cure concrete</i> to project specifications 2.2 Install and maintain <i>run-off devices</i> 2.3 Apply and maintain <i>curing compound</i> and <i>curing technique/method</i> on concrete surface to project specifications 2.4 Isolate and/or barricade the area to <i>protect concrete</i> during curing process
3. Clean up	3.1 Work area is cleared and materials disposed of, reused or recycled in accordance with legislation, regulations, codes of practice and job specification

	3.2 Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and standard work practices
--	---

-
-

Required Skills and Knowledge

Required skills

Required skills for this unit are:

- communication skills to:
- determine requirements
- enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
- follow instructions
- read and interpret:
- documentation from a variety of sources
- drawings and specifications
- report faults
- use language and concepts appropriate to cultural differences
- use and interpret non-verbal communication, such as hand signals
- evaluating own actions and making judgments about performance and necessary improvements
- identifying and accurately reporting to appropriate personnel any faults in tools, equipment or materials
- organisational skills, including the ability to plan and set out work
- numeracy skills for planning and operations
- recognising procedures, following instructions, responding to change and contributing to workplace responsibilities, such as current work site environmental and sustainability frameworks or management systems
- teamwork skills to coordinate own work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities
- technological skills to:
- use a range of mobile technology, such as two-way radio and mobile phones
- voice and hand signals to access and understand site-specific instructions.

Required knowledge

Required knowledge for this unit is:

- concrete curing materials and techniques
- curing duration and effect on ultimate strength
- general construction terminology
- job safety analysis (JSA) and safe work method statements

- material safety data sheets (MSDS)
- materials storage and environmentally friendly waste management
- plans, drawings and specifications
- processes for the calculation of material requirements
- quality requirements
- tools and equipment types, characteristics, uses and limitations
- workplace and equipment safety requirements.

Evidence Guide

Overview of assessment	This unit of competency could be assessed in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques fully replicate construction workplace conditions, materials, activities, responsibilities and procedures.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	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: • knowledge of the requirements, procedures and instructions for conducting concrete curing • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of concrete curing • working with others to undertake and complete the concrete curing operations in a way that meets all of the required outcomes • consistent timely completion of concrete curing operations that safely, effectively and efficiently meets the required outcomes • conduct concrete curing operations
Context of and specific resources for assessment	This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints. Assessment of essential underpinning knowledge will usually be conducted in an off-site context. Assessment is to comply with relevant regulatory or Australian standards' requirements. Resource implications for assessment include: • an induction procedure and requirement • realistic tasks or simulated tasks covering the mandatory task requirements • relevant specifications and work instructions • tools and equipment appropriate to applying safe work practices • support materials appropriate to activity • workplace instructions relating to safe work practices and addressing hazards and emergencies • material safety data sheets

	research resources, including industry related systems information. Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.
Method of assessment	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: - written and/or oral assessment of the candidate's required knowledge - observed, documented and/or first hand testimonial evidence of the candidate's: - implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes - consistent achievement of required outcomes - first hand testimonial evidence of the candidate's: working with others to undertake and complete concrete road paver operations
Guidance information for assessment	

Range Statement

Information includes:	- diagrams or sketches - instructions issued by authorised organisational or external personnel - manufacturer specifications and instructions, where specified - MSDS - memos - regulatory and legislative requirements pertaining to curing concrete - relevant Australian standards - safe work procedures relating to curing concrete - signage - verbal, written and graphical instructions
------------------------------	---

	• work bulletins • work schedules, plans and specifications.
Planning and preparation include:	• assessment of conditions and hazards • determination of work requirements and safety plans and policies • equipment defect identification • work site inspection
Safety (OHS) is to be in accordance with state and territory legislation and regulations and project safety plan and may include:	• emergency procedures, including extinguishing fires, organisational first aid requirements and evacuation • handling activities that may require the assistance of others or the use of manual or mechanical lifting devices where size, weight or other issues, such as a disability are a factor • hazard control • hazardous materials and substances • organisational first aid • PPE prescribed under legislation, regulations and workplace policies and practices • safe operating procedures, including the conduct of operational risk assessment and treatments associated with: • earth leakage boxes • lighting • power cables, including overhead service trays, cables and conduits • restricted access barriers • surrounding structures • traffic control • trip hazards • work site visitors and the public • working at heights • working in confined spaces • working in proximity to others • use of firefighting equipment • use of tools and equipment • workplace environmental requirements and safety
Tools and equipment include:	• hoses and sprinklers • rollers • spray applicators • tarpaulins and covers
Quality requirements include:	• internal company quality policy and standards • manufacturer specifications where specified

	• relevant regulations, including Australian standards • workplace operations and procedures
Materials include:	• curing compounds • plastic film • steam • water.
Environmental requirements include:	• clean-up management • dust and noise • stormwater management • vibration • waste management.
Types of pavement	• no – fines • kerb – gutter • base • subbase • type F barrier • shoulder • continuous road concrete pavements
Cure concrete includes:	• controlling moisture evaporation from finished concrete to minimise shrinkage, add to final strength and control cracking through curing process • retaining free mixing water within the concrete to ensure ongoing cement hydration to assist in minimising dry shrinkage and to improve properties, such as potential compressive strength.
Run-off devices include:	• preventative barriers to restrict curing agents from affecting environmental areas.
Curing compounds include:	• chlorinated compounds • hydrocarbon compounds • polyvinyl alcohol (PVA) compounds • silicate compounds • solvent-based acrylic compounds • water • water-based acrylic compounds • wax-based compounds.
Curing techniques/methods include:	• curing compounds • fogging • hessian overlays • hosing • impervious plastic membranes • misting • ponding

	• sprinklers • steam.
<i>Protect concrete</i> includes:	• using plastic membrane.

Unit Sector(s)

Road and Pavements Construction and Maintenance (General)

Custom Content Section

Not applicable.