



Australian Government

CPCCCO3046A Repair and rectify concrete

Release 1

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Modification History

This version first released CPC08 Construction, Plumbing and Services Training Package Version 9.

- Changes to unit title, performance criteria, required skills and knowledge, range statement, critical aspects for assessment, and methods of assessment
- Range of other minor editorial changes

Not equivalent to CPCCCO3026A Carry out repair and rectification of concrete

Unit Descriptor

This unit of competency specifies the outcomes required to repair and rectify minor and major defects in concrete work in order to fix damaged areas.

The unit includes patching, refinishing, sealing and colouring concrete. It may also include working with others and as a member of a team.

Application of the Unit

This unit of competency supports the role of concreters working on residential, commercial or civil construction sites to repair damaged concrete on surfaces that could include driveways, foundations and footpaths.

Licensing/Regulatory Information

Licensing, legislative, regulatory or certification requirements apply to concreting work in different states and territories. Candidates are advised to consult with the relevant regulatory authorities.

Pre-Requisites

CPCCOHS2001A	Apply OHS requirements, policies and procedures in the construction industry
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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 required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

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|---|--------------------------|--|
| 1 | Plan and prepare. | <p>1.1 Work instructions, <i>work health and safety (WHS) requirements</i> and other <i>information</i> relevant to the work are identified, confirmed and applied for <i>planning and preparation</i> purposes.</p> <p>1.2 Plant, <i>tools and equipment</i> consistent with job requirements are selected and checked for serviceability, and faults are rectified and reported before work begins.</p> <p>1.3 Material quantity requirements are identified and calculated according to plans, specifications and <i>quality requirements</i>.</p> <p>1.4 <i>Materials</i> appropriate to the work application are obtained, prepared, safely handled and located ready for use.</p> <p>1.5 <i>Environmental requirements</i> are identified for the project according to environmental plans and regulatory requirements.</p> |
| 2 | Carry out minor repairs. | <p>2.1 <i>Types of surfaces that may require repair</i> are identified and <i>repair work</i> is categorised as <i>major repairs</i> or <i>minor repairs</i>.</p> <p>2.2 Colour variations are repaired by applying a concrete staining agent.</p> <p>2.3 Effects of dusting are repaired by applying an appropriate surface hardener/dust inhibiting agent or removing the weak top layer.</p> |

- 2.4 ***Damaged or blistered concrete*** is repaired either by grinding or topping.
 - 2.5 Repair mortars and self-levelling floor compounds are applied according to manufacturer specifications.
 - 2.6 Sealers and coloured paints are applied to concrete surfaces according to manufacturer specifications.
- 3 Repair cracks and other major defects.
 - 3.1 Root cause of defect is determined and rectified.
 - 3.2 Concrete is prepared and flexible epoxy resins are applied to manufacturer specification.
 - 3.3 Toppings are applied to concrete using correct materials and techniques.
 - 3.4 Acid etching and cleaning are applied safely according to manufacturer requirements.
- 4 Clean up.
 - 4.1 Work area is cleared and materials disposed of, reused or recycled according to regulations, codes of practice and job specification.
 - 4.2 Plant, tools and equipment are cleaned, checked, maintained and stored according to manufacturer recommendations and standard work practices.

Required Skills and Knowledge

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

Required skills

- learning skills to:
 - evaluate own actions and make judgments about performance and necessary improvements
 - respond to change, such as differences in work site, and environmental and quality requirements
- numeracy skills to:
 - calculate and confirm correct quantities of materials for work tasks
 - estimate time required for repair and rectification of concrete
- oral communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, and share information
 - report work site hazards to appropriate personnel, including faults in tools, equipment or materials
 - use language and concepts appropriate to cultural differences
- reading skills to:
 - interpret documentation, including drawings and specifications
 - understand written instructions, procedures and signage
 - interpret manufacturer instructions for safely handling tools, equipment and materials
- writing skills to complete equipment fault forms

Required knowledge

- types, location and use of relevant safety resources and information:
 - job safety analyses (JSA) and safe work method statements (SWMS)
 - safety data sheets (SDS)
 - signage and barricades
- principles and processes for general concreting work:
 - materials and techniques for repairing concrete
 - preparation and placement of formwork and reinforcement
 - use of control joints
 - levelling techniques
 - mortar mix composition and additives
 - placing and finishing of concrete to ensure timely completion of job within quality

requirements and specifications

- general construction terminology
- processes for material storage and environmentally friendly waste management
- processes for calculating material requirements
- quality requirements relevant to the repair and rectification of concrete
- types, characteristics, uses and limitations of concreting plant, tools and equipment:
 - safe operating procedures
 - operational, maintenance and basic diagnostic procedures
 - workplace and equipment safety requirements

Evidence Guide

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.

Overview of assessment This unit of competency could be assessed by undertaking a range of tasks 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 A person should demonstrate the ability to:

- identify and apply the correct repair method and top coat to a minimum of one square metre of affected area for three minor repairs and one major repair listed in the range statement
- remove a section or whole defective area of concrete, cleaning and preparing the affected area and applying the necessary bonding
- locate, interpret and apply relevant information, standards and specifications relating to repairing and rectifying concrete
- comply with site safety plans and procedures
- comply with organisational policies and procedures relating to repairing and rectifying concrete while maintaining quality requirements
- safely and effectively operate and use plant, tools and equipment required to repair and rectify concrete
- communicate and work effectively and safely with others at each stage of the process to repair concrete.

Context of and specific resources for assessment Assessment of this unit:

- must be in the context of the work environment
- may be conducted in an off-site context, 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
- must meet relevant compliance requirements.

Resource implications for assessment include:

- an induction procedure
- realistic tasks or simulated tasks covering the mandatory task requirements
- 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
- safety data sheets.

Method of assessment

Assessment for this unit must verify the practical application of the required skills and knowledge, using a combination of the following methods:

- direct observation of tasks in real or simulated work conditions
- questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- review of relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

Guidance information for assessment

This unit could be assessed on its own or in combination with other units relevant to the job function.

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.

Assessment processes and techniques should, as far as is practical, take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.

Range Statement

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.

Work health and safety (WHS) requirements

must comply with state and territory legislation and regulations and project safety plan, and may include:

- assistance of others or the use of manual or mechanical lifting devices with handling activities where size, weight or other issues, such as disability, are a factor
- emergency procedures, including extinguishing fires, organisational first aid requirements, and evacuation procedures
- hazard control
- hazardous materials and substances
- personal protective equipment (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
 - working outdoors in warm climates
- use of firefighting equipment
- use of tools and equipment
- workplace environmental requirements and safety.
- instructions issued by authorised organisational and external personnel
- memos
- regulatory and legislative requirements relating to repairing concrete
- relevant Australian standards
- safe work procedures relating to repairing concrete
- safety data sheets
- signage
- verbal, written and diagrammatical instructions, including manufacturer specifications and instructions where specified
- work bulletins
- work schedules, plans and specifications.
- assessing conditions and hazards
- determining work requirements and safety plans and procedures
- identifying equipment defects
- inspecting work sites.
- brooms
- concrete mixers
- floats
- grinders
- hoses

Information may include:

Planning and preparation must include:

Tools and equipment may include:

- polishers
 - rollers
 - screeds
 - shovels
 - trowels, including power trowels
 - water blasters
 - wheelbarrows.
- Quality requirements*** must include:
- internal organisational quality policy and standards
 - manufacturer specifications where specified
 - relevant regulations and Australian standards
 - workplace operations and procedures.
- Materials:***
- must include concrete
 - may include:
 - bonding agents
 - acrylic co-polymers
 - resin based compounds
 - silicate compounds
 - curing compounds
 - retardants.
- Environmental requirements*** may include:
- clean-up management
 - dust and noise control
 - stormwater management
 - vibration management
 - waste management.
- Types of surfaces that may require repair*** may include:
- beams
 - columns
 - concrete aprons
 - pathways
 - ramps
 - slabs
 - stairs
 - walls.
- Repair work*** may include:
- dowelling
 - drilling
 - formwork
 - patching
 - replacing concrete
 - resurfacing
 - self-levelling compounds.
- Major repairs*** may
- cracks (wet, live and dormant)
 - non-bonding of new to old interfaces

include:

- non-compliant surfaces
- subsidence.
- acid etching and cleaning
- bonded toppings
- levelling compounds
- mortars
- slippery surfaces
- topping existing concrete
- unbonded toppings.

Minor repairs may involve:

Damaged or blistered concrete may include:

- blow holes
- dusting
- rain damage
- spalling
- stamped concrete defects
- stencilled concrete defects
- wavy or uneven surfaces.

Unit Sector(s)

Concreting

Custom Content Section

Not applicable.