

Draft 0.1

This is our work-in-progress update to CPCCCO3046 Repair and rectify concrete:
<https://training.gov.au/Training/Details/CPCCCO3046>.

We are working with industry experts to ensure the updated unit:

- meets current and anticipated industry needs
- complies with current Standards for Training Packages
- is written in clear understandable English.

Information on our training package review and development process is available here:
<http://www.artibus.com.au/project-stage>.

Summary of changes from current endorsed unit:

- code changed to comply with policy for NSSC endorsement required changes to units
- elements and PCs modified to clarify assessment requirements
 - element 3 changed to “Repair major defect in concrete” (cracks are a major defect)
 - PC 3.2 (formerly 3.1) rewritten as it may be impossible to identify root cause of major defect
 - new PCs 3.1 and 4.1 as there was no requirement to use tools and equipment
- knowledge simplified to remove duplication and add specificity, eg:
 - all safety and environmental requirements under WHS and environmental legislation and regulations
 - included new knowledge points:
 - risks associated with silica dust
 - basic science of concrete:
 - chemical structure
 - plastic and hardened states
 - strength as measured using megapascals (MPa)
 - concrete hydration process
 - correct positioning of mesh for different concrete products to ensure mesh is free from movement and within height tolerance
 - effects of weather and climatic conditions on the properties of concrete and precautions that should be taken to minimise any potential adverse effects when placing concrete
 - included “oversized or undersized slabs” as a sub-point under techniques for repairing or rectifying major defects
 - deleted “mortar failure”
 - added the following to point about Australian Standards and the NCC: “including tolerances and damage categories of cracks deemed defective”
- assessment conditions: standard wording changed and modified requirement for candidates

Unit of Competency

CPCCON3046 Repair and rectify concrete

Modification history

Release	Comments
1	Supersedes and equivalent to CPCCCO3046A Repair and rectify concrete. The unit of competency was updated to the Standards for Training Packages 2012. This version first released with CPC Construction, Plumbing and Services Training Package Version 4.0.
2	Supersedes and equivalent to CPCCCO3046 Repair and rectify concrete. This version first released with CPC Construction, Plumbing and Services Training Package Version 6.0.

Application

This unit of competency specifies the skills and knowledge required to repair and rectify minor and major defects in concrete. It includes patching, refinishing, sealing and colouring concrete to repair damaged concrete on surfaces such as driveways, foundations and footpaths.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Prerequisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

1. Plan and prepare to repair and rectify concrete.	<ul style="list-style-type: none">1.1 Interpret specifications for concrete repair and rectification and clarify requirements with relevant persons.1.2 Plan all work to comply with relevant legislation, regulations, standards, codes, work health and safety, environmental and workplace requirements.1.3 Calculate material quantity requirements to meet specifications.1.4 Select tools and equipment, check for serviceability and rectify or report any faults.1.5 Select and fit personal protective equipment appropriate for work activities.1.6 Inspect work site, assess hazards and apply risk controls, including required signage and barricades.1.7 Acquire required materials and safely locate them ready for use.
2. Carry out minor repairs to concrete.	<ul style="list-style-type: none">2.1 Use tools and equipment required to carry out minor repairs to concrete in accordance with manufacturers' instructions and workplace requirements.2.2 Repair colour variation in concrete by applying colour staining agent.

	2.3 Repair effects of dusting by applying suitable surface hardener/dust inhibiting agent or removing the weak top layer. 2.4 Repair damaged or blistered concrete by grinding or topping. 2.5 Apply repair mortars and self-levelling floor compounds in accordance with manufacturers' instructions.
3. Repair major defect in concrete.	3.1 Use tools and equipment to repair major defect in concrete in accordance with manufacturers' instructions and workplace requirements. 3.2 Assess major defect to determine required repair process. 3.3 Prepare concrete and apply flexible epoxy resins in accordance with manufacturers' instructions. 3.4 Apply toppings to concrete using correct materials and techniques in accordance with manufacturers' instructions. 3.5 Apply acid etching and safely clean concrete in accordance with manufacturers' instructions.
4. Clean up.	4.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements. 4.2 Clean, check, maintain and store tools and equipment in accordance with manufacturers' instructions and workplace requirements.

Foundation skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3046 Repair and rectify concrete

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3046 Repair and rectify concrete

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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by repairing and rectifying a minimum of one square metre of affected area for each of three minor repairs and one major repair to concrete.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- basic science of concrete:
 - chemical structure
 - plastic and hardened states
 - strength as measured using megapascals (MPa)
- concrete hydration process
- correct positioning of mesh for different concrete products to ensure mesh is free from movement and within height tolerance
- dust suppression methods to be used when repairing or rectifying concrete
- effects of weather and climatic conditions on the properties of concrete and precautions that should be taken to minimise any potential adverse effects when placing concrete
- requirements of Australian Standards and the National Construction Code related to concrete repair and rectification including tolerances and damage categories of cracks deemed defective
- requirements of Commonwealth and state or territory work health and safety and environmental legislation and regulations relevant to repairing and rectifying concrete:
 - hazard identification and risk control
 - hazardous material and waste disposal
 - job safety analyses
 - personal protective equipment
 - risks associated with silica exposure
 - safety data sheets
 - safe work method statements
 - safety manuals and instructions for tools and equipment
 - signage and barricades
- techniques and materials used to repair or rectify major defects in concrete:
 - defective cracks: wet, live and dormant
 - non-bonding of new to old interfaces
 - non-compliant surfaces
 - oversized or undersized slabs

- subsidence
- techniques and materials used to repair or rectify minor defects in concrete:
 - acid etching and cleaning
 - bonded toppings failure
 - existing concrete toppings failure
 - levelling failure
- types and purpose of concrete additives
- types, characteristics, uses and limitations of tools, equipment and materials used when repairing and rectifying concrete
- workplace requirements for repairing and rectifying concrete:
 - cleaning up
 - maintaining and storing tools and equipment
 - quality
 - reporting problems.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, work sites, materials, tools and equipment required to achieve the performance evidence.

Links

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