



Australian Government

CPCCST3020A Produce reconstituted stone

Release 1

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Modification History

New unit based on superseded unit BCG3053A Produce reconstituted stone
This version first released with CPC08 Construction, Plumbing and Services Training
Package Version 9.
Not equivalent to superseded BCG unit

Unit Descriptor

This unit of competency specifies the outcomes required to create or use specific moulds; and mix, pour and finish to detailed specifications to produce reconstituted stone products, such as terrazzo and epoxy-based stone repairs.

Application of the Unit

This unit of competency supports the work of stonemasons who create stone products using different types of concrete mixes. The work may be completed individually or in a team.

Licensing/Regulatory Information

Check with relevant state and territory licensing and regulatory authorities. State and territory jurisdictions may have different regulatory requirements for work carried out on heritage structures.

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 | Select and prepare materials and equipment. | 1.1 | Work instructions are obtained using relevant <i>information</i> , confirmed and applied for <i>planning and preparation</i> purposes. |
| | | 1.2 | <i>Work health and safety (WHS) requirements</i> are followed according to safety plans and policies. |
| | | 1.3 | <i>Tools and equipment</i> selected to carry out tasks are consistent with job requirements, checked for serviceability, and faults are rectified and reported before work begins. |
| | | 1.4 | Material quantity requirements are identified and calculated according to plans, specifications and <i>quality requirements</i> . |
| | | 1.5 | <i>Materials</i> appropriate to the work application are obtained, prepared, safely handled and located ready for use. |
| | | 1.6 | <i>Environmental requirements</i> are identified for the project according to environmental plans and <i>statutory and regulatory authority requirements</i> . |
| 2 | Produce reconstituted stone. | 2.1 | Forms or moulds are constructed, or cleaned and prepared, according to job specifications ready for placement of aggregate mix. |
| | | 2.2 | Aggregates are measured, proportioned and mixed according to job specifications. |
| | | 2.3 | Mould is filled with mix and light vibration is applied to |

- consolidate material and eliminate voids.
- 2.4 Level of filled mould is screeded to form a flat surface and cured according to job specifications.
 - 2.5 Reconstituted stone section is removed from mould, carefully handled and placed on table ready for grinding process.
 - 2.6 Surface of mould is ground thoroughly to expose aggregate and voids are filled evenly with matching colour cement mortar.
 - 2.7 Surface is polished to produce finish that is flat and free from blemish.
- 3 Clean up.
- 3.1 Area is cleared of waste material, dust and equipment according to workplace requirements.
 - 3.2 Unused materials are stored and waste materials disposed of according to environmental and workplace requirements.
 - 3.3 Tools and equipment are cleaned, maintained and stored.

Required Skills and Knowledge

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

Required skills

- communication skills to:
 - enable clear and direct communication
 - use questioning to identify and confirm requirements
 - share information
 - follow instructions
 - use and interpret non-verbal communication
 - use language and concepts appropriate to cultural differences
- innovation skills to select appropriate tools and equipment, respond to workplace challenges and put ideas into action
- numeracy skills to apply measurements and calculate material requirements
- planning and organising skills to identify requirements, apply relevant resources and sequence tasks
- problem-solving skills to recognise and take action to rectify minor faults and problems
- reading skills to read and interpret drawings and specifications
- teamwork skills to work with others to action tasks

Required knowledge

- materials used to produce reconstituted stone and their characteristics
- methods for placing, levelling and compacting concrete
- polishing and grinding processes
- proportion of materials for different mortar mixes
- procedures for safely handling of materials
- safe operating methods for plant, tools and equipment used for producing reconstituted stone
- types of formwork and moulds for concrete and how they are constructed, cleaned and prepared
- workplace and equipment safety requirements, including relevant statutory regulations, codes and standards

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 observation in the workplace or simulated workplace setting.

Assessment may be conducted while tasks are undertaken either individually or as part of a team under limited supervision.

Critical aspects for assessment and evidence required to demonstrate competency in this unit A person should demonstrate the ability to construct a terrazzo panel and repair terrazzo, marble or granite in situ, including the ability to:

- apply organisational quality procedures within the context of producing reconstituted stone
- select and use appropriate processes tools and equipment to produce reconstituted stone
- select stone materials consistent with job specification
- ensure accurate setting up of forms or moulds for placement of mix
- proportion materials according to specification for mix
- adopt and use safe and effective procedures to apply grinding and polishing processes
- complete produced stone to specifications for mix and finish
- comply with work health and safety regulations and requirements, including safe handling and placement procedures
- identify typical faults and problems that may occur when creating moulds, and taking necessary action to rectify them
- communicate with others to ensure safe and effective workplace operations.

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 may include:

- drawings and specifications relevant to proposed tasks
- materials required for composition of proposed mix
- moulds or material for formwork appropriate to activities

- tools, plant and equipment appropriate to the application processes
- work area suitable to tasks.

Method of assessment Assessment for this unit must verify the practical application of the required skills and knowledge, using one or more 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.

Information may include:

- diagrams or sketches
- instructions issued by authorised organisational or external personnel
- memos
- regulatory and legislative requirements
- current Australian standards relating to the production of reconstituted stone
- safe work procedures
- safety data sheets (SDS)

Planning and**preparation** may include:

- signage
- verbal, written and graphical 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 policies
- identifying equipment defects
- inspecting work sites.

Work health and safety requirements must

comply 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 procedures
- hazard control
- hazardous materials and substances
- personal protective equipment (PPE) prescribed under legislation, regulations and workplace policies and practices
- safe operating procedures, including operational risk assessment and treatments associated with:
 - concealed services (water, power and gas)
 - lighting
 - restricted access barriers
 - traffic control
 - working at heights
 - work site visitors and the public
 - working in proximity to others
- use of firefighting equipment
- use of tools and equipment
- workplace environmental requirements and safety.

Tools and equipment

may include:

- concrete mixers
- floats
- forklifts
- gantry cranes
- grinding machines
- hammers
- measuring tapes and rules
- polishing machines
- screed boards
- shovels
- spirit levels
- wheelbarrows.

Quality requirements

- attention to specifications of work
- control of handling procedures

may include:

- finishing of stone surfaces
- quality of materials
- relevant regulations, including:
 - Australian standards
 - internal organisational quality policy and standards
 - manufacturer specifications where specified
 - workplace operations and procedures.

Materials used in the production of reconstituted stone may include:

- basalt (bluestone)
- coloured cement
- igneous rocks
- river gravel
- sand.

Environmental requirements may include:

- clean-up management
- dust and noise control
- vibration management
- waste management.

Statutory and regulatory authority includes:

- federal, state and local authorities administering applicable Acts, regulations and codes of practice.

Unit Sector(s)

Construction

Custom Content Section

Not applicable.