



Australian Government

Department of Education, Employment and Workplace Relations

CPCCCO3033A Slump test concrete

Release: 1

CPCCCO3033A Slump test concrete

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to conduct a slump test to concrete to ensure the mix is workable and complies with the delivery docket and specified order.

The unit includes sampling and slump testing to a set range or tolerance.

Application of the Unit

Application of the unit

This unit of competency supports the attainment of the understanding and skills to conduct a slump test to concrete, which may include working with others and as a member of a team.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units

CPCCOHS2001A

Apply OHS requirements, policies and procedures in the construction industry

Employability Skills Information

Employability skills 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

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare.	<p>1.1. Work instructions and operational details are obtained using relevant <i>information</i>, confirmed and applied for <i>planning and preparation</i> purposes.</p> <p>1.2. <i>Safety (OHS)</i> requirements are followed in accordance with safety plans and policies.</p> <p>1.3. Signage and barricade requirements are identified and implemented.</p> <p>1.4. <i>Tools and equipment</i> selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported prior to commencement.</p> <p>1.5. Materials quantity requirements are calculated in accordance with plans, specifications and <i>quality requirements</i>.</p> <p>1.6. <i>Environmental requirements</i> are identified for the project in accordance with environmental plans and regulatory obligations and applied.</p>
2. Slump test concrete.	<p>2.1. Standard slumping cone is cleaned in preparation for <i>slump testing</i>.</p> <p>2.2. <i>Sample</i> of concrete, using the correct sampling procedure, is taken directly from the delivery truck's initial discharge.</p> <p>2.3. Slumping cone is placed on a steel tray and cone is filled to one third of its capacity.</p> <p>2.4. Concrete is compacted by <i>rodding</i> 25 times in an even pattern with a steel rod.</p> <p>2.5. Slumping cone is filled to two thirds its capacity and rodding 25 times is applied to penetrate the previous layer.</p> <p>2.6. Slumping cone is filled to overflowing and rodding 25 times is applied to penetrate the previous layer.</p> <p>2.7. Slumping cone is levelled off with the steel rod and surplus concrete is cleared from steel plate and slumping cone.</p> <p>2.8. Slumping cone is raised without moving the sample.</p> <p>2.9. Sample is <i>measured</i> against height of the slumping cone for conformity.</p> <p>2.10. Collapsed or sheared samples are recorded.</p>
3. Clean up.	<p>3.1. Work area is cleared and materials disposed of, reused or recycled in accordance with legislation,</p>

ELEMENT**PERFORMANCE CRITERIA**

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.

3.3. Work completion procedures are applied and relevant personnel notified that work is finished.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

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
- 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:

REQUIRED SKILLS AND KNOWLEDGE

- 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:

- 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
- properties of concrete (strength, water content ratio, transportation, placement, compaction and curing)
- quality requirements
- relevant Acts, regulations and codes of practice
- slump testing techniques
- slump testing tools and equipment types, characteristics, uses and limitations
- workplace and equipment safety requirements.

Evidence Guide

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 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 who demonstrates competency in this unit must be able to provide evidence of the ability to:

- locate, interpret and apply relevant information, standards and specifications
- comply with site safety plan and OHS legislation, regulations and codes of practice applicable to workplace operations
- comply with organisational policies and procedures including quality requirements
- safely and effectively operate and use tools, plant and equipment
- communicate and work effectively and safely with others
- complete three slump tests from different batches in accordance with specifications.

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

EVIDENCE GUIDE

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

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete confidence in the person's demonstrated ability and applied knowledge

EVIDENCE GUIDE

- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

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.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

Range Statement

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 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 slump testing concrete
- relevant Australian standards
- safe work procedures relating to slump testing concrete
- signage
- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

RANGE STATEMENT

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.
- include:
 - bullet nosed rod (600mm x 16mm)
 - sampling scoops
 - standard slump cones

Tools and equipment:

RANGE STATEMENT

- steel rule
 - steel slump plate (500mm x 500mm)
 - may include:
 - brushes
 - buckets
 - sponges
 - trowels, including steel trowels
 - wooden floats.
- Quality requirements** include:
- internal company quality policy and standards
 - manufacturer specifications, where specified
 - relevant regulations, including Australian standards
 - workplace operations and procedures.
- Environmental requirements** include:
- clean-up management
 - dust and noise
 - vibration
 - waste management.
- Slump testing:**
- is successful when the sample remains true and does not collapse or shear
 - if initial test fails, a second test must be undertaken, if that also fails the batch should be rejected.
- Sampling:**
- includes that taken at initial discharge (after 0.2 square metre of the load has been placed)
 - may include routine samples taken at three places during the load
 - requires a standard slumping cone 200mm in diameter at the base, 100mm in diameter at the top and 300mm tall, with foot pieces for standing on while the sample is added.
- Rodding** includes:
- pushing a steel rod in and out of the concrete to compact it into the slump cone, 25 times for each layer applied.
- Measuring** includes:
- a steel rule placed in the centre of the sample to which the conformity of the slump is tested.

Unit Sector(s)

Unit sector Construction

Co-requisite units

Co-requisite units Nil

Functional area

Functional area