



Australian Government

Assessment Requirements for PMC553051 Produce structural precast concrete

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to PMC553051B Produce structural precast concrete

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and demonstrate the ability to:

- read and interpret plans/steel drawings, test results, product specifications, casting schedules, job sheets, procedures, material labels and safety information
- check and prepare/position/assemble materials, moulds, formwork/specialised formwork, fittings, reinforcement and equipment to meet specifications
- apply tension to strands
- cast the product, test raw materials and take samples
- cure, strip, destress and store product
- monitor key variables, including:
 - mould condition
 - amount and consistency of concrete mix
 - placement and anchorage of reinforcement and fittings
 - placement of voids and ducts
 - tension of reinforcement
 - concrete cover
 - compaction/vibration
 - curing conditions
 - curing time/rate
 - stripping strength
 - product integrity and conformance to specification
- make adjustments to meet product quality and production output specifications
- identify hazards and apply relevant hazard controls
- apply safety procedures
- apply housekeeping procedures
- recognise out of specification products, process problems and materials faults
- recognise routine and non-routine problems
- identify when the operator is able to rectify problems, when assistance is required and who is the appropriate source for assistance
- take action to resolve problems or report them to appropriate personnel
- distinguish between possible causes of routine problems, including:
 - raw material/mix variations
 - mould anomalies
 - casting/operating conditions
 - reinforcement abnormalities
 - process errors
- communicate effectively with team/work group and supervisors
- complete workplace records
- do basic arithmetical manipulations, including additions, subtractions, divisions, fractions and percentages.

Knowledge Evidence

Must provide evidence that demonstrates knowledge relevant to their job sufficient to operate independently and to solve routine and non-routine problems, including knowledge of:

- principles of casting process
- significance to structural concrete products of key factors, including:
 - concrete cover
 - role of reinforcement
 - placement and anchorage of reinforcement and fittings
 - stressing/destressing
 - curing
 - compaction and vibration
 - formwork/specialised formwork (e.g. voids and ducts)
 - mould design
 - mould condition/wear
 - water-cement ratio
 - concrete finishing
- methods of curing
- compaction methods
- fabrication methodologies
- concrete sampling and testing procedures
- physics and chemistry relevant to the equipment/process/materials
- the potential effects of variations in raw materials and equipment operation/processes in relation to quality of product
- factors which may affect product quality or production output and appropriate remedies
- quality requirements at each stage of production
- common adjustments in variables and their impact on product quality and production output
- routine problems, their probable causes and relevant corrective actions
- organisation procedures relevant to the work environment/job role
- hazards from critical stages of pre-stressing reinforcement (placement, stressing, de-stressing, cutting, etc)
- hierarchy of control
- hazards that may arise in the job/work environment and:
 - their possible causes
 - potential consequences
 - appropriate risk controls.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of an operating plant
 - will typically include a supervisor/third-party report or other evidence, focussing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include the use of an appropriate industrial item/s of equipment requiring demonstration of operation, start-up and shutdown procedures and responding to problems
 - may use industry-based simulation for all or part of the unit particularly where safety, lack of opportunity or significant cost is an issue.
- Assessment should occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment in a simulated environment should use evidence collected from demonstration of skills and one or more of:
 - walk-throughs
 - pilot plant operation
 - industry-based case studies/scenarios
 - 'what ifs'.
- Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- In addition the assessor or anyone acting in subject matter expert role in assessment shall demonstrate both technical competency and currency. If the assessor cannot demonstrate technical competency and currency they shall assess with a subject matter expert who does meet these requirements.
- Technical competence can be demonstrated through one or more of:

- relevant VET or other qualification/Statement of Attainment
- appropriate workplace experience undertaking the type of work being assessed under routine and non-routine conditions
- appropriate workplace experience supervising/evaluating the type of work being assessed under routine and non-routine conditions
- Currency can be demonstrated through one or more of:
 - being currently employed undertaking the type of work being assessed
 - being employed by the organisation undertaking the type of work being assessed and having maintained currency in accordance with that organisation's policies and procedures
 - having consulted/had contact with an organisation undertaking the type of work being assessed within the last twelve months, the consultation/contact being related to assessment
 - conducting on the job training/assessments of the type of work being assessed
 - being an active member of a relevant professional body and participating in activities relevant to the assessment of this type of work.

Links

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>