



Australian Government

MSMPMC336 Cast, finish and cure precast concrete products

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Modification History

Release	Comments
1	This unit of competency was first released in MSM Manufacturing Training Package Release 9.0.

Application

This unit describes the skills and knowledge required to cast concrete into pre-assembled moulds, and to finish precast concrete prior to curing to meet quality requirements. It requires a sound knowledge of the properties of concrete and how it reacts in different stages of the manufacturing process.

The unit applies to individuals who work in accordance with pre-determined instructions and established standard operating procedures (SOPs). They work in a team, but take responsibility for their own work using discretion and judgement to monitor work processes and solve both routine and non-routine problems in relation to concrete quality.

The manufacture of precast concrete products is subject to various statutory and industry requirements, and the relevant legislation, industry standards and codes of practice within Australia must be applied. Requirements may vary across states and territories.

Licensing/Regulatory Information

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite unit(s)

No prerequisite units.

Competency field(s)

N/A

Unit sector(s)

N/A

Elements and Performance Criteria

Elements	Performance Criteria
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Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for the concrete mix	1.1 Review work instructions and identify product quality requirements 1.2 Identify hazards associated with casting, finishing and curing, and follow risk control procedures 1.3 Set up vibrators in accordance with product requirements and SOPs 1.4 Complete pre-pour checks of moulds and anchor installations to meet work instructions and in accordance with SOPs 1.5 Advise other team members when mould is ready for concrete pour in accordance with SOPs
2. Cast concrete into moulds	2.1 Monitor and control pour speed of mix into mould according to scope of own job role 2.2 Vibrate mix to achieve required compaction in accordance with SOPs 2.3 Monitor variables during the casting process and take corrective action to address any problems 2.4 Follow workplace checks and procedures to complete the casting process
3. Finish green concrete	3.1 Confirm product readiness for finishing in accordance with workplace quality requirements and tolerances 3.2 Set up finishing equipment and materials to meet product specifications 3.3 Apply initial finishing over product surface using techniques to achieve specifications 3.4 Monitor progress of finishing and readjust processes until surface meets specifications 3.5 Dispose of waste in accordance with workplace waste management procedures 3.6 Identify need for patching and repairing and follow procedures for remedial work
4. Cure concrete products	4.1 Identify required curing method from work instructions 4.2 Set up and use curing equipment and materials in accordance with SOPs 4.3 Monitor the curing process until completion as required by work instructions

	4.4 Complete workplace documentation in accordance with SOPs
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Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

- Numeracy skills to:
 - locate and interpret explicit information involving measurement in workplace instructions and procedures
 - calculate material and resource requirements.
- Reading skills to locate and interpret explicit information in visual and text-based workplace instructions and procedures.
- Writing skills to complete familiar workplace documentation.
- Oral communication skills to share information with team members during work processes.
- Teamwork skills to work cooperatively with others during processes involving multiple people.

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

Range of conditions

No conditions apply to this unit of competency at the time of publication.

Unit Mapping Information

Current Code and Title	Previous Code and Title	Comments	Equivalence
MSMPMC336 Cast, finish and cure precast concrete products		This unit has been created to address a skill or task required by industry that is not covered by an existing unit of competency	Newly created

Assessment Requirements for MSMPMC336 Cast, finish and cure precast concrete products

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- cast, finish and cure concrete in accordance with work instructions on two occasions.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- key features of work instructions in relation to casting, finishing and curing, including:
 - types of information included and how the information is used during the process
 - main requirements of relevant Australian Standards
 - implications of not following instructions
- properties of concrete and how it behaves during each stage of the manufacturing process, including:
 - differences in behaviour in plastic and hardened state
 - effects of temperature, humidity and wind
- types of checks used to ensure correct concrete mix, consistency and pouring speed
- importance of vibration on compaction and potential impacts
- factors that impact concrete quality, their probable causes and corrective actions, including those related to:
 - raw material and mix variations
 - mould anomalies
 - placement of reinforcement and accessories
 - casting and operating conditions
 - process errors
- common finishing methods for green precast concrete products, including:

- trowelling
 - floating (fine, rough, hand and helicopter steel)
 - raking
 - spraying
- common surface defects and remedial techniques
- the risks posed by the presence of crystalline silica in concrete and required workplace risk controls
- types of concrete curing processes and their application
- other hazards associated with the casting, finishing and curing of precast concrete products, including:
 - their possible causes
 - potential consequences
 - workplace risk controls.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - operational concrete manufacturing facility equipped with tools, machinery and materials for casting, finishing and curing products
 - safety and personal protective equipment
 - work instructions
 - standard operating procedures.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Link

Companion volumes, including implementation guides, are found on the national training register - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=d1287d36-dff4-4e9f-ad2c-9d6270054027>.