



Australian Government

MSMPMC330 Produce architectural precast concrete

Release: 1

MSMPMC330 Produce architectural precast concrete

Modification History

Release 1. New unit. Supersedes and is equivalent to PMC553050 Produce architectural precast concrete

Application

This unit describes the skills and knowledge required to produce architectural precast concrete products.

This unit applies to experienced operators who are required to take responsibility for own outputs and follow established procedures to prepare mould assemblies, fittings and reinforcement (not pre-stressed) and mould, cure and strip the product. Operators are also required to work autonomously and apply their own judgement to interpret information; monitor processes; identify and address routine and non-routine problems and control hazards.

The experienced operator may work alone or as part of a team or group and in liaison with other shift team members, team leader and supervisor.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil

Competency Field

Operations

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare mould for casting	1.1 Check casting schedule, drawings and job specification 1.2 Check finish and veneer requirements for any or all faces, edges or surfaces 1.3 Prepare veneering equipment and formwork to temporarily support veneers and backing concrete
2. Prepare reinforcement	2.1 Check quantities, type, size and shape of reinforcement supplied

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	against drawings and schedules 2.2 Place reinforcement and check concrete covers 2.3 Complete mould assembly 2.4 Insert lifting devices, lugs, fixing and other fittings according to drawings and specifications 2.5 Seal mould
3. Cast concrete	3.1 Pour concrete in correct sequence according to work schedule 3.2 Check adequate vibration 3.3 Complete casting process to plans and specification 3.4 Prepare test samples and/or cylinder as required by work instructions 3.5 Screed to a flat, accurate surface in preparation for finishing 3.6 Finish green concrete as required 3.7 Wet patch as required
4. Cure product	4.1 Cover and cure mould in accordance with standard procedure and any special requirements 4.2 Monitor curing to achieve specified stripping strength
5. Strip and store product	5.1 Safely remove mould parts at appropriate time, with care, and inspect for damage 5.2 Lift unit using appropriate lifting equipment and lifting methods 5.3 Arrange storage using protective pads to ensure against damage
6. Respond to problems	6.1 Identify routine and non-routine problems in the equipment or process 6.2 Rectify problems using appropriate solution within area of responsibility 6.3 Report problems outside area of responsibility to designated person
7. Control hazards	7.1 Identify architectural precast concrete production hazards 7.2 Assess the risks arising from those hazards 7.3 Implement measures to control those risks

Foundation Skills

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

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

Unit Mapping Information

Release 1. New unit. Supersedes and is equivalent to PMC553050 Produce architectural precast concrete

Links

Companion Volume Implementation Guides are available at VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=d1287d36-dff4-4e9f-ad2c-9d6270054027>

Assessment Requirements for MSMPMC330 Produce architectural precast concrete

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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:

- produced at least 1 architectural precast concrete product, including:
 - monitoring the following key variables to ensure product integrity and conformance to specification:
 - mould condition
 - amount and consistency of concrete mix
 - placement of reinforcement and fittings
 - concrete cover
 - compaction and vibration
 - curing conditions
 - curing time and rate
 - stripping strength
 - recognising possible causes of the following routine problems:
 - raw material and mix variations
 - mould anomalies
 - casting and operating conditions
 - process errors.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- principles of casting process
- significance to architectural concrete products of key factors, including:
 - veneer adhesion
 - concrete cover
 - role of reinforcement
 - placement of reinforcement and fittings
 - curing
 - compaction and vibration

- mould design
- mould condition and wear
- water-cement ratio
- concrete finishing
- methods of curing
- compaction methods
- fabrication methodologies
- concrete sampling and testing procedures
- the potential effects of variations in raw materials and equipment operation, processes in relation to quality of product
- 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
- architectural precast concrete production hazards and:
 - their possible causes
 - potential consequences
 - risk control procedures.
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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:
 - architectural precast concrete production equipment and ancillary equipment
 - materials to be processed
 - specifications, procedures and job sheets
- modelling of industry operating conditions, including:
 - routine and non-routine problems.

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

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