



Australian Government

PMC552007 Heat accelerate the curing of precast concrete

Release: 1

PMC552007 Heat accelerate the curing of precast concrete

Modification History

Release 1. Supersedes and is equivalent to PMC552007B Heat accelerate the curing of precast concrete.

Application

This unit of competency covers the skills and knowledge required to operate steam curing equipment and ancillary equipment that is integral to the process in order to accelerate the curing of precast concrete.

This unit of competency applies to operators who are required to prepare the equipment, load and discharge moulds/products, monitor and adjust the equipment and rectify routine problems.

This unit of competency applies to an individual working alone or as part of a team or group and working in liaison with other shift team members, team leader and supervisor, as appropriate.

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

Pre-requisite Unit

Nil

Competency Field

Operations

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|---|-----|--|
| 1 | Prepare the equipment for production | 1.1 | Conduct equipment pre-start procedures and visual checks according to enterprise procedures |
| | | 1.2 | Set up and configure equipment start-up function in accordance with procedures/work instructions |
| | | 1.3 | Ensure appropriate presetting period has been observed |
| | | 1.4 | Load mould (containing green concrete product) onto transfer car and move to steam chamber in accordance with procedures/work instructions |
| | | 1.5 | Cover mould as specified |
| | | 1.6 | Close and secure the steam chamber in accordance with procedures/work instructions |
| | | | |
| 2 | Operate equipment | 2.1 | Start up equipment in accordance with procedures/work instructions |
| | | 2.2 | Ensure equipment is operated in accordance with established enterprise procedures |
| | | | |
| 3 | Monitor and record operation | 3.1 | Monitor equipment performance in accordance with work instructions and manufacturer specifications |
| | | 3.2 | Monitor operating pressures and temperatures |
| | | 3.3 | Ensure the rate at which the concrete temperature increases is even, and that it doesn't exceed maximum temperature specified |
| | | 3.4 | Adjust and control equipment to ensure correct product quality |
| | | 3.5 | Complete appropriate records and logs |

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| 4 | Rectify routine problems | 4.1 | Identify the range of faults that can occur during the operation |
| | | 4.2 | Determine and rectify fault causes by procedures/work instructions |
| | | 4.3 | Identify and rectify equipment failure causes in accordance with procedures/work instructions |
| | | 4.4 | Ensure appropriate records and log books of equipment operations are maintained to meet procedures/work instructions |
| | | 4.5 | Identify non-routine problems and report to designated person |
| | | | |
| 5 | Shut down equipment | 5.1 | Shut down steam and depressurise chamber in accordance with work instructions |
| | | 5.2 | Allow product to cool gradually and evenly |
| | | 5.3 | Open the chamber and discharge cured product |
| | | 5.4 | Complete appropriate records and logs |
| | | 5.5 | Ensure transfer cars are clear of all product and left ready for reuse |
| | | 5.6 | Shut down equipment in an emergency situation |
| | | | |
| 6 | Prepare equipment for maintenance | 6.1 | Isolate equipment in accordance with work instructions |
| | | 6.2 | Remove any broken materials safely |
| | | 6.3 | Make sure area is clear and safe for maintenance |
| | | | |
| 7 | Control hazards | 7.1 | Identify hazards from the job to be done |
| | | 7.2 | Identify other hazards in the work area |
| | | 7.3 | Assess the risks arising from those hazards |
| | | 7.4 | Implement measures to control those risks in line with procedures |

Foundation Skills

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

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

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework

The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used.

Applicable legislation, regulations, standards and codes of practice include:

- health, safety and environmental (HSE) legislation, regulations and codes of practice relevant to the workplace, equipment and production processes and hazardous materials
- Australian/international standards relevant to the materials being used and products being made
- any relevant licence and certification requirements.

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and such requirements the legislative requirements take precedence.

Procedures

All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, and include one or any combination of:

- job cards
- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Tools and equipment

Tools and equipment include:

- steam chamber which may be:
- purpose built, low pressure steam chamber
- an autoclave (high or low pressure)
- temporary means of retaining low pressure steam near the curing concrete product (e.g. tarpaulin cover)
- ancillary equipment that is integral to the process
- programmable logic controllers (PLC), if fitted
- pressure/temperature measuring and/or recording equipment
- transfer cars
- relevant personal protective equipment (PPE).

Problems

Routine problems must be resolved by applying known solutions.

Routine problems are predictable and include one or more of:

- equipment malfunctions
- temperature or pressure fluctuations
- product quality variations
- material/feed variations
- chamber pressure losses.

Known solutions are drawn from one or more of:

- procedures
- training
- remembered experience.

Non-routine problems must be reported according to according to relevant procedures.

Hazards

Hazards must be identified and controlled. Identifying hazards requires consideration of:

- high temperatures
- smoke, dust, vapours or other atmospheric hazards
- weight, shape, volume of materials to be handled
- hazardous products and materials
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks

- electricity
- gas
- gases and liquids under pressure
- noise
- rotational equipment or vibration
- plant services (steam, condensate, cooling water, etc)
- structural hazards
- equipment failures
- machinery, equipment and product mass
- limited head spaces or overhangs
- working at heights
- working in restricted or confined spaces
- other hazards that might arise.

Records and reports Records include one or more of:

- log books/sheets
- electronic records
- job/work sheets
- other records used for the smooth running of the plant.

Reports include one or more of:

- paper or electronic-based logs and reports
- verbal/radio reports
- reporting items found which require action.

Unit Mapping Information

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Links

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