



Australian Government

PMC552094 Prepare for and apply shotcrete for installation

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to PMC552094B Prepare for and apply shotcrete for installation

Application

This unit of competency covers the skills and knowledge required to prepare for and apply shotcrete refractory installation. Shotcrete is the generic term used to describe the placement of cementitious products, such as concrete or refractory monolithics, by high volume and high velocity air. It is also known as guniting.

This unit of competency applies to installation with shotcrete alone and with shotcrete that needs to join to brick/block, moulded or cast refractory. The refractory may be applied by wet or dry processes.

This unit of competency applies to operators who are required to prepare for and apply shotcreting to procedures and specifications, mix the shotcrete, correct any deficiencies in the quality of work and identify and take action on any 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.

1	Establish the suitability of resources	1.1	Check all information conforms with resources
		1.2	Record discrepancies in information
		1.3	Report any inaccuracies in information to the person in charge
		1.4	Identify and select materials, components, tools and equipment
2	Apply shotcrete to prepared surface	2.1	Prepare backgrounds, cutting out, demolition and keying
		2.2	Mix shotcrete
		2.3	Assemble and operate shotcreting equipment
		2.4	Apply shotcrete
		2.5	Remove and reinstate damaged shotcrete material
		2.6	Maintain tools and equipment
3	Contribute to controlling hazards in work area	3.1	Identify hazards in work area
		3.2	Assess risks arising from those hazards
		3.3	Take appropriate action to control risks to procedures and duty of care
4	Respond to problems	4.1	Identify possible problems in equipment or process
		4.2	Determine problems needing action
		4.3	Determine possible fault causes
		4.4	Rectify problem using appropriate solution within area of responsibility
		4.5	Follow through items initiated until final resolution has occurred

4.6 Report problems outside area of responsibility to designated person

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:

- manufacturer's technical information
- job cards
- drawings
- 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.

Problems

Routine problems must be resolved by applying known solutions.

Routine problems are predictable and include one or more of:

- damaged/worn tools/equipment
- incorrect tools/equipment for job
- incorrect/incomplete information for job
- variations in materials
- preparation problems.

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.

Tools and equipment

Tools and equipment include:

- mixing equipment
- air compressors
- water addition equipment
- gunning equipment/nozzles
- equipment allowing access.

Hazards

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

- heat, 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/>