



Australian Government

MSMPMC328 Prepare for and apply shotcrete for installation

Release: 1

MSMPMC328 Prepare for and apply shotcrete for installation

Modification History

Release 1. New unit. Supersedes and is equivalent to PMC552094 Prepare for and apply shotcrete for installation

Application

This unit describes 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, including concrete or refractory monolithics, by high volume and high velocity air. It is also known as guniting.

This unit 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 applies to operators who are required to take responsibility for own outputs and follow established procedures to prepare for and apply shotcreting to procedures and specifications; mix the shotcrete and correct any deficiencies in the quality of work. 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 hazards.

This unit applies to an individual working 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. Establish the suitability of resources	1.1 Check all information conforms with resources 1.2 Record discrepancies in information

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.3 Report any inaccuracies in information to the person in charge 1.4 Identify and select materials, components, tools and equipment
2. Apply shortcode 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. Respond to problems	3.1 Identify problems in equipment or process 3.2 Rectify problem using appropriate solution 3.3 Report problems outside area of responsibility to designated person
4. Contribute to controlling hazards in work area	4.1 Identify shotcreting hazards 4.2 Assess risks arising from those hazards 4.3 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 PMC552094 Prepare for and apply shotcrete for installation

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 MSMPMC328 Prepare for and apply shotcrete for installation

Modification History

Release 1. New unit. Supersedes and is equivalent to PMC552094 Prepare for and apply shotcrete for installation

Performance Evidence

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

- mixed and applied shotcrete to at least 1 surface, including:
 - monitoring the following key variables to achieve required specifications:
 - uniformity and thickness of course
 - consistency of mix
 - correct compaction
 - conforming to required curves and angles
 - adhesion to surface
 - tying to structure
 - keying to existing refractory
 - cutting requirements
 - support requirements
 - recognising possible causes of the following routine problems:
 - raw material variations
 - equipment faults and abnormalities
 - procedure errors.
-

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- types, uses and characteristics of:
 - shotcreting materials and finishes
 - background surfaces
 - temporary support and formwork
- types, uses and operation of tools and equipment used in the process
- reasons for, and timing of, dedicated curing and heat-up programs and the consequences of the installed concrete if the program is not correctly followed
- reasons for and methods of:
 - background surface preparation

- protecting work during installation
- removing damaged refractory
- keying and bonding new to existing refractories
- obtaining seals between new and existing refractory
- providing test panels
- curing shotcrete
- cutting
- mixing and applying shotcreting materials
- avoiding lamination of applied shotcreting materials
- protecting applied shotcreting material during application and curing
- finishing the surface of the shotcrete
- safeguards to take during reinstatement
- routine problems, their probable causes and relevant corrective actions
- shotcreting hazards and:
 - their possible causes
 - potential consequences
 - risk control procedures.
-

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:
 - shotcreting equipment
 - shotcrete materials
 - 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.

Links

Companion Volume Implementation Guides are available at VETNet -

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