



Australian Government

CPCCON3049 Apply and finish sprayed concrete

Release: 2

CPCCON3049 Apply and finish sprayed concrete

Modification History

Release 2	Updated reference to general construction induction training program.
Release 1	This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0. Supersedes and is equivalent to CPCCCO3049 Apply and finish sprayed concrete.

Application

This unit of competency specifies the skills and knowledge required to apply and finish pre-mixed concrete using wet and dry spraying methods. Sprayed concrete has application where conventional concreting methods cannot be used such as for barrel vaulting, caissons, canal linings, diaphragm walls, drainage channels, irrigation systems, piled wall facings, reservoirs, shell roofs and domes, silo structures, tunnel linings, walls and water towers. The unit does not cover the application of sprayed concrete to shape and finish swimming pool and spa shells.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing work tasks with a high degree of self-direction.

Licensing, legislative, regulatory or certification requirements apply to this unit of competency in some states and territories. For further information, check with the relevant regulatory authority.

Completion of the general construction induction training program, specified in the Safe Work Australia model *Code of Practice: Construction Work*, is required by anyone carrying out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

Pre-requisite Unit

CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry

Unit Sector

Concreting

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan and prepare to apply and finish sprayed concrete.	1.1 Interpret specifications for concrete spraying and clarify requirements with relevant persons. 1.2 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements. 1.3 Select and fit required personal protective equipment (PPE). 1.4 Inspect work site, assess hazards and apply risk controls, including required signage and barricades. 1.5 Select plant, tools and equipment, check for serviceability and rectify or report any faults. 1.6 Calculate and acquire material quantities to meet task specifications and safely locate materials ready for use. 1.7 Check that material properties and slump meet specification and take any actions required to ensure compliance.
2 Carry out concrete spraying and finishing activities.	2.1 Prepare pumping equipment for delivery of concrete mix to spray nozzle. 2.2 Check reinforcement to ensure it is away from the structure where concrete is to be applied. 2.3 Apply concrete to surface using required spray method within specified tolerances. 2.4 Shape and finish sprayed concrete to required form in accordance with work specifications.
3 Clean up.	3.1 Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements. 3.2 Clean, check, maintain and store plant, tools and equipment in accordance with manufacturer and workplace requirements.

Foundation Skills

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

Unit Mapping Information

Supersedes and is equivalent to CPCCCO3049 Apply and finish sprayed concrete.

Links

Companion volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCCON3049 Apply and finish sprayed concrete

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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by applying and finishing sprayed concrete in two different projects:

- each project must involve a minimum of 10 square metres of concrete
- wet and dry spraying concreting methods must be used across the two projects.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- basic science of concrete involving cement chemical reaction (hydration) dependent on water content, temperature and time:
 - effect on plastic state performance:
 - benefits and non-benefits of admixture types and doses
 - plastic shrinkage cracking risk
 - effect on hardened state performance:
 - early age and later age strength development
 - drying shrinkage and cracking
- compliance requirements of legislation, regulations and Australian Standards relevant to concrete spraying tasks:
 - environmental protection and waste disposal
 - material specifications and tolerances
 - work health and safety (WHS)
- effects of temperature, wind and low humidity on the properties of concrete:
 - detrimental effect of water addition to concrete properties
 - precautions that should be taken to minimise any potential adverse effects when applying and finishing sprayed concrete
- health risks associated with silica dust exposure

- methods for checking that material properties meet specifications:
 - slump
 - water to cement ratios
- processes for applying and finishing sprayed concrete using wet and dry spraying methods:
 - dense flow process
 - mixing, transporting and placing sprayed concrete
 - thin flow process
- types, characteristics, uses and limitations of plant, tools, equipment and materials used to apply and finish sprayed concrete
- typical uses and applications of sprayed concrete
- workplace requirements for applying and finishing sprayed concrete:
 - cleaning up the work area
 - maintaining and storing materials, plant, tools and equipment
 - quality
 - reporting problems
 - safety requirements including personal protective equipment (PPE).

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment must be conducted in the workplace or a simulated workplace using realistic conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Candidates must have access to documentation, specifications, work sites, materials, plant, tools and equipment required to achieve the performance evidence.

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