



Australian Government

CPCCON3041 Place concrete

Release: 2

CPCCON3041 Place 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 CPCCCO3041 Place concrete.

Application

This unit of competency specifies the skills and knowledge required to place concrete into prepared formwork or foundations. It includes receiving and checking concrete against specifications, calculating the required volume of concrete, moving concrete from the truck to the pour location, and placing and screeding concrete.

A person who has achieved this unit of competency would be expected to take responsibility for organising and completing these 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 essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Plan and prepare to place concrete.	1.1 Interpret specifications for concrete placement and clarify requirements with relevant persons.

- 1.2 Assess work site to check scope of work against specifications.
 - 1.3 Plan work tasks to comply with relevant legislation, regulations, standards, codes, work health and safety (WHS), environmental and workplace requirements.
 - 1.4 Calculate required material quantities including volume of concrete to meet specifications.
 - 1.5 Estimate and record required time for concrete pour based on size of area to be concreted, volume of concrete, weather conditions and other relevant site factors.
 - 1.6 Select plant, tools and equipment, check for serviceability and rectify or report any faults.
 - 1.7 Select and fit required personal protective equipment (PPE).
- 2 Prepare location for concrete placement.
 - 2.1 Inspect work site, assess hazards and apply risk controls including required signage and barricades around pour location.
 - 2.2 Determine location for concrete placement from specifications.
 - 2.3 Discuss implications for concrete placement near existing structures with relevant persons and define separation or connection requirements.
 - 2.4 Check that location for placement is free of debris and waste.
 - 2.5 Ensure site access is clear to allow concrete to be received.
- 3 Receive concrete.
 - 3.1 Check concrete delivery docket for accuracy against order.
 - 3.2 Direct concrete delivery vehicle to location of discharge.
 - 3.3 Identify slump tolerance against specifications and relevant standards for minimum grade.

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| | 3.4 | Monitor concrete discharged via chute into appropriate receptacle and communicate with relevant persons to maintain safety and quality in accordance with workplace requirements. |
| 4 | Carry out concrete placement activities. | |
| | 4.1 | Use required plant, tools and equipment to place concrete in horizontal layers into location in accordance with indicated levels. |
| | 4.2 | Ensure vertical drop of concrete is less than two metres to avoid segregation of concrete materials. |
| | 4.3 | Consolidate poured concrete using required compaction or vibration method. |
| | 4.4 | Carry out measurements and calculations throughout pour to ensure sufficient concrete is delivered to fill placement area, and place order for any shortfall in accordance with workplace requirements. |
| | 4.5 | Check finished levels against datum using levelling device and rectify incorrect levels. |
| | 4.6 | Screed concrete to required levels and grades in accordance with specifications. |
| 5 | Clean up. | |
| | 5.1 | Clear work area and dispose of, reuse or recycle materials in accordance with regulatory and workplace requirements. |
| | 5.2 | 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 CPCCCO3041 Place 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 CPCCON3041 Place concrete

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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by placing concrete in either a non-precast work environment or a precast work environment:

- for the non-precast work environment, placing concrete at five different sites:
 - each site must measure at least 100 square metres
 - one site must include a fall of at least 25 millimetres over 1 metre in distance
- for the precast work environment, on five different occasions, placing concrete for a minimum of three panels involving more than one truck load of concrete.

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, codes and Australian Standards relevant to concrete placement tasks:
 - damp proofing
 - environmental protection and waste disposal
 - material specifications and placement tolerances
 - minimum and maximum temperature limits for pouring concrete
 - work health and safety (WHS)
- concrete placement techniques:

- horizontal layering
- controlling vertical drop
- cold joints and how to manage them effectively
- consolidation
- concrete reinforcement
- levelling
- screeding
- correct positioning of reinforcement for different concrete products to ensure reinforcement is free from movement and has the correct cover within tolerance
- correct concrete compaction and vibration techniques and risks associated with improper vibration
- 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 placing concrete
- health risks associated with silica dust exposure
- preparation requirements of concrete placement locations:
 - single slab
 - multi-level slab
 - set down and wet areas
 - temporary formwork
- processes for calculating material requirements at various times throughout a concrete pour
- processes for determining levels indicated by:
 - level pegs
 - lines
 - markers
- purpose and importance of slump testing and the impact to concrete strength and durability of adding water on site:
 - drying shrinkage
 - early age strength
 - density
 - cracking
 - discolouration
- specifications used to interpret concrete placement requirements:
 - methods for calculating concrete quantities
 - methods for checking minimum strength and mix specifications
 - types and applications of concrete materials
- types and purpose of concrete additives
- types, characteristics, uses and limitations of plant, tools, equipment and materials used when placing concrete

- workplace requirements for placing concrete:
 - cleaning up the work area
 - maintaining and storing plant, tools and equipment
 - placing orders for shortfalls in materials
 - 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.

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>