



Australian Government

CPCCB4018 Apply site surveys and set-out procedures to building and construction projects

Release: 2

CPCBC4018 Apply site surveys and set-out procedures to building and construction projects

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 CPCBC4018A Apply site surveys and set-out procedures to building and construction projects. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to use technical instruments and levelling and surveying techniques to accurately set-out a building on site. It includes determining grid levels and developing contour plans.

It applies to National Construction Code (NCC) classifications:

- Residential - Class 1 and 10 buildings, maximum two storeys
- Commercial - Class 2 to 9, Type C only constructions

This unit of competency applies to builders, site supervisors and related construction industry professionals responsible for ensuring accurate application of site surveys and set-out of a residential and/or commercial building.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of CPCWHS1001 Prepare to work safely in the construction industry meets this requirement.

Licensing, regulatory or registration requirements apply to this unit of competency in some jurisdictions. Relevant state and territory regulatory authorities should be consulted to confirm these requirements.

Pre-requisite Unit

Nil.

Unit Sector

Building and Construction

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Prepare for and conduct site set-out.	1.1 Source, read and follow current project plans and site set-out procedures. 1.2 Select and use levelling devices in accordance with standard operating procedures (SOPs). 1.3 Apply the 'two peg test' to check the amount of error present in the instrument. 1.4 Carry out reduction in a closed level run by rise and fall method and by height of plane collimation (HPC) method. 1.5 Calculate accurate staff readings to enable a specific reduced level (RL) set-out. 1.6 Identify and explain errors in measured distances due to site characteristics and measurement methods.
2 Develop a contour grid.	2.1 Determine set-out grid and levels. 2.2 Prepare contour plans from grid levels to specified tolerances and stated contour intervals. 2.3 Determine surface area being levelled and calculate cut and fill volumes. 2.4 Calculate and record trigonometric and geometric calculations commonly used with grid lines, off sets and right-angle triangles without error.
3 Determine grades and levels.	3.1 Draw longitudinal sections from RLs. 3.2 Determine levels and clearances from given grades and distances to specified tolerances. 3.3 Express calculation angles, percentages and run ratios in

grades.

- 3.4 Determine calculations for batter levels from grades and distances.
- 3.5 Construct longitudinal sections and determine associated grades and levels in typical drainage and pipeline situations.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require

- numeracy skills to:
 - extract, interpret and comprehend measurements and information from site and set-out plans
 - perform trigonometric and geometric calculations
- technology skills to:
 - use digital tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCCBBC4018A Apply site surveys and set-out procedures to building and construction projects.

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 CPCBC4018 Apply site surveys and set-out procedures to building and construction projects

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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by surveying and setting out a residential or commercial building on site.

In doing this, the candidate must:

- select and operate one surveying and one levelling device
- develop a topographic contour plan
- calculate cut and fill quantities:
 - area and volume of land to be levelled
 - area of land to be filled
 - volume of fill required.

Knowledge Evidence

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

- working drawings, specifications and design principles
- relevant building codes and specifications
- linear and angular measurements, geometry and trigonometry
- principles of surveying and set-out
- operational and functional features of levelling and surveying devices:
 - electronic distance measuring (EDM) equipment
 - laser
 - optical level
 - water level
 - theodolite.

Assessment Conditions

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

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current project and site plans and specifications
- organisational surveying, set-out and associated documents
- relevant computer software packages and technology applicable to survey and set-out practices
- levelling devices and survey equipment to enable site survey and set-out for a building and construction project.

Links

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