



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **CPCBC5006B Apply site surveys and set-out procedures to medium rise building projects**

Release: 1

## **CPCBC5006B Apply site surveys and set-out procedures to medium rise building projects**

### **Modification History**

Not Applicable

### **Unit Descriptor**

**Unit descriptor** This unit of competency specifies the outcomes required to apply site surveys and set-out procedures to medium rise building and construction projects. It addresses the skills and practices required to measure, record and interpret data using measuring and levelling equipment and to set out building projects. The ability to operate specific surveying equipment and apply calculations and knowledge of the Building Code of Australia (BCA) and Australian standards are essential.

### **Application of the Unit**

**Application of the unit** This unit of competency supports builders, surveyors and related construction industry professionals who have responsibility for conducting site surveys in preparation for medium-rise building and construction projects.

### **Licensing/Regulatory Information**

Not Applicable

## Pre-Requisites

**Prerequisite units** Nil

## Employability Skills Information

**Employability skills** This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

---

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Set out a T-shaped or L-shaped building on a selected site with minimal profiles.	1.1. Site information and dimensions are identified from site plan and checked against plan drawings. 1.2. Survey pegs are measured to ensure correct identification occurred before pilot pegs are positioned. 1.3. Profiles pegs are set up on site at a working distance from pilot pegs and parallel to pilot line. 1.4. Marks to indicate outside of building or other structural members are made.
2. Prepare and test levelling devices.	2.1. Various components of levelling devices are identified. 2.2. Basic tests on levelling device accuracy are performed according to manufacturer specifications. 2.3. Effects of maladjustment in levelling devices are identified and recorded according to standard operating procedures.
3. Operate levelling devices.	3.1. Temporary adjustments to set up <b>levelling equipment</b> are carried out in accordance with standard operating procedures. 3.2. Horizontal and vertical angles are determined using levelling devices. 3.3. Site is set out to specifications using levelling devices.
4. Identify specialised levelling and surveying equipment available on large building projects for various set-out and checking procedures.	4.1. Differences between various types of specialised surveying equipment are researched and recorded. 4.2. Survey of each level checked for vertical accuracy of 10mm using two levelling devices is carried out.
5. Compute coordinates and bearings, distances related to grids and general set-out work on large building sites.	5.1. Angular relationship between different bearings (whole circle) is demonstrated. 5.2. Bearing and distance between coordinates are calculated. 5.3. Coordinates of a point given the bearing and distance from a point with known coordinates are calculated. 5.4. Offsets from a coordinated point given the bearing and distance from a point with known coordinates are determined. 5.5. Information necessary to set out a structure using a site plan is determined.

## **Required Skills and Knowledge**

### **REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit.

#### **Required skills**

Required skills for this unit are:

- application of design concepts and principles to survey and site set-out
- application of measurements and calculations to survey and site set-out
- communication skills to:
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - perform survey and levelling procedures with others
  - read and interpret:
    - drawings and specifications
    - state regulatory authority requirement
    - other relevant documentation
  - use and interpret non-verbal communication
  - use language and concepts appropriate to cultural differences
- interpretation skills to understand documentation from a wide range of sources, including state regulatory authority requirements
- numeracy skills to apply measurements and calculations.

#### **Required knowledge**

Required knowledge for this unit is:

- application of design principles
- BCA and Australian standards and manufacturer specifications
- building systems and application to survey and site set-out
- level and grade checking used to perform survey control to accuracy criteria
- OHS measures as identified by equipment manufacturers and Australian standards
- relevant legislative requirements, codes and practices
- survey and levelling devices and effect of performance on site
- work drawings and specifications.

# Evidence Guide

## EVIDENCE GUIDE

---

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

### Overview of assessment

This unit of competency could be assessed by applying survey and site set-out procedures and selection and use of two levelling devices to survey and set out building projects.

This unit of competency can be assessed in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques fully replicate construction workplace conditions, materials, activities, responsibilities and procedures.

### Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of the ability to:

- accurately apply survey and levelling principles relating to performance of site set-out
- comply with OHS and organisational quality procedures and processes
- apply and interpret relevant documentation, codes and legislation
- use levelling devices to survey and set out building projects
- identify typical faults and problems and take necessary action taken to rectify
- identify hazard categories according to Australian standards, BCA and specifications.

### Context of and specific resources for assessment

This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- documentation, including design brief drawings, specifications, codes, design concepts, construction schedules and other

## EVIDENCE GUIDE

---

necessary supporting documents

- research resources, including systems information and data
- access to relevant legislation, regulations and codes of practice.

Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.

### Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete confidence in the person's demonstrated ability and applied knowledge
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and

## EVIDENCE GUIDE

---

supplementary evidence.

Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

## Range Statement

### RANGE STATEMENT

---

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

***Levelling equipment*** includes:

- electronic distance measuring (EDM) equipment
- laser
- optical plummets
- pegs methods
- theodolite.

## Unit Sector(s)

**Unit sector** Construction

## Co-requisite units

**Co-requisite units** Nil

## **Functional area**

**Functional area**