



Australian Government

CPPSIS4041 Set out site and building works

Release: 1

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Modification History

Release 1.

Replaces superseded non-equivalent CPPSIS4029A Collect and set out basic surveying data.

This version first released with CPP Property Services Training Package Version 3.

Application

This unit of competency specifies the outcomes required to set out spatial data for building or site works using surveying methods and equipment. The unit covers using horizontal and vertical control techniques to set out marks and lines to define the position and level of design points on site. It also covers interpreting plans and specifications in order to conduct measurements and calculations that ensure building elements are the correct size, in the correct plan position, and at the correct reduced level. The unit requires the ability to check and validate measurements and calculations against specifications, and complete set-out documentation.

The unit supports those who work under supervision in a surveying field team.

No licensing, legislative, regulatory, or certification requirements apply to this unit of competency at the time of endorsement.

Pre-requisite Unit

Nil

Unit Sector

Surveying and spatial information services

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

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|-------------------------------|--|
| 1. Prepare for set-out tasks. | 1.1. Relevant plans and specifications are accessed and interpreted to identify set-out requirements. |
| | 1.2. Equipment is selected and prepared according to set-out and organisational requirements. |
| | 1.3. Work is planned in consultation with <i>appropriate persons</i> to ensure correct understanding of set-out |

activities.

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|----|-------------------------------------|--|
| 2. | Use control techniques for set-out. | 2.1. Horizontal control points are located throughout work area and coordinates are set out according to plans and specifications.

2.2. Design points are set out and checked to ensure correct tolerances according to specifications.

2.3. Control points are used and accuracy is checked according to plans and specifications.

2.4. Set-out pegs or markers are used to indicate base lines and offsets relative to work area.

2.5. Vertical control points are established to ensure design points are positioned at correct levels according to plans and specifications.

2.6. Offsets and profiles are put in place to define main lines of building or site works and provide vertical controls.

2.7. Measured surveying data is reduced and calculations are conducted according to industry-accepted standards and organisational requirements. |
| 3. | Finalise set-out tasks. | 3.1. Measurements are checked and validated to ensure correct size, plan position, and reduced level of set-out according to plans and specifications.

3.2. Discrepancies between specifications and actual activities are identified and addressed or reported according to organisational requirements.

3.3. Set-out is finalised and documentation completed according to organisational requirements. |

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
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- Numeracy skills to:
- perform surveying calculations relating to height, distances, angles and coordinates
 - set required datums and projections.
- Oral communication skills to:
- ask questions to clarify task requirements.
- Reading skills to:
- interpret graphical information in construction plans and drawings.
- Writing skills to:
- record field notes in a format that can be interpreted by a third party.
- Problem-solving skills to:
- identify and use primary and secondary controls to improve accuracy of measurements.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

- Appropriate persons*** must include at least one of the following:
- experienced colleague
 - qualified surveyor
 - site engineer
 - supervisor or line manager.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPSIS4041 Set out site and building works

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Performance Evidence

A person demonstrating competency in this unit must satisfy the requirements of the elements, performance criteria, foundation skills and range of conditions of this unit. The person must also set out spatial data for site or building works for two different projects as follows:

- one project is to be conducted using a total station
- one project is to be conducted using a global navigation satellite system (GNSS).

While setting out the above spatial data, the person must:

- plan work tasks by checking plans, maps, specifications and control marks
- communicate clearly with others to clarify work tasks and report project information
- set out marks and lines to define position and level of design points on site
- use horizontal and vertical control techniques to position design points and markers
- comply with organisational and legislative requirements for:
 - identifying hazards and working safely
 - recording, storing and filing spatial data
 - setting up and using surveying equipment
- comply with manufacturer specifications when using surveying equipment
- measure and calculate spatial data within industry-accepted tolerances for accuracy.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- mathematical concepts relating to algebra, trigonometry and geometry and their use in calculating spatial measurements
- methods for performing the following:
 - calculating surveying data and verifying its accuracy using primary and secondary controls
 - establishing a control network that meets specified tolerances
 - recording spatial data relating to set-out
 - setting up, levelling and calibrating equipment used to set out spatial data

- purpose of primary and secondary controls for set-out
- reference and coordinate systems for surveying data, including Australian Height Datum and Map Grid of Australia
- types of pegs and markers used during set-out, and methods for ensuring their optimal placement on site.

Assessment Conditions

The following must be present and available to learners during assessment activities:

- equipment:
 - GNSS
 - total station
- specifications:
 - job specifications, maps and plans
 - organisational policies and procedures relating to:
 - work health and safety
 - setting up and using surveying equipment
 - spatial data collection
- relationships with team members and supervisor:
 - working in a team.

Timeframe:

- as specified by project requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

Links

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