



Australian Government

CPPSIS5048 Conduct engineering surveys

Release: 1

CPPSIS5048 Conduct engineering surveys

Modification History

Release 1.

Replaces superseded equivalent CPPSIS5048A Conduct an engineering survey.

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

Application

This unit of competency specifies the outcomes required to conduct an engineering survey based on specifications and information in construction or engineering designs. The unit covers using surveying equipment to measure, record and reduce surveying data. It requires the ability to validate the accuracy of data, and identify discrepancies between specifications and actual activities.

The unit supports those who work under limited supervision in a surveying 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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|---|---|
| <p>1. Prepare for engineering survey.</p> | <p>1.1. Project requirements and specifications are identified and analysed to determine surveying data requirements in consultation with <i>appropriate persons</i>.</p> <p>1.2. Key survey activities are planned according to available resources, project and organisational requirements.</p> <p>1.3. Compliance with legal and statutory standards is planned according to project requirements.</p> |
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| 2. Carry out engineering surveying tasks. | 2.1. Surveying equipment is selected, calibrated and checked to ensure correct operation and functionality, and problems are reported or resolved according to manufacturer specifications.

2.2. Identified survey components are measured according to project requirements and specifications.

2.3. Measured surveying data is reduced according to project requirements and specifications.

2.4. Measurements are validated and recorded according to project specifications and organisational requirements.

2.5. Problems are identified and resolved, and contingencies managed according to organisational requirements. |
| 3. Finalise and report engineering survey results. | 3.1. Survey is finalised and checked for compliance with project and organisational requirements.

3.2. Appropriate persons are notified of survey results according to organisational requirements.

3.3. Survey documentation is completed and data archived according to project and 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
Planning and organising skills to:	plan and prioritise work to meet survey timeframes and resource constraints.
Numeracy skills to:	conduct precise measurements and computations relating to length, angle, elevation, area and volume.
Oral communication skills to:	- ask questions to clarify client requirements - explain and discuss survey results with appropriate persons.

- Reading skills to:
- analyse graphical and technical information in construction and engineering drawings.
- Writing skills to:
- prepare conformance and non-conformance reports
 - record technical information in organisational documentation.
- Technology skills to:
- calibrate specialised surveying equipment.
- Problem-solving skills to:
- select appropriate validation methods to verify accuracy of data.

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:
- client
 - colleague
 - end user
 - engineer
 - manager
 - registered or qualified surveyor.

Unit Mapping Information

CPPSIS5048A Conduct an engineering survey

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 CPPSIS5048 Conduct engineering surveys

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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 conduct two different engineering surveys.

While conducting the above engineering surveys, the person must:

- plan and document data collection methodologies that allow for contingencies
- analyse survey specifications, including:
 - cross-sections and plans
 - technical descriptions of surveying data and their requirements
- collect data appropriate to surveying specifications using three of the following pieces of surveying equipment:
 - echo sounder
 - global navigation satellite system (GNSS)
 - level
 - tape
 - total station
- communicate clearly with others to clarify and report work information
- comply with organisational and legal requirements for:
 - applying industry-accepted standards to measurements and computations
 - completing records and documentation
 - recording, storing and filing data
 - using, checking and storing surveying equipment
 - working safely and using personal protective equipment (PPE)
- interpret design information to identify components to be measured
- comply with industry-accepted standards for validating accuracy of surveying data and identifying errors and discrepancies
- schedule work tasks to meet survey timeframes.

Knowledge Evidence

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

- accuracy and precision requirements for surveying data
- data reduction techniques
- industry-accepted methods for validating data to identify errors and discrepancies
- methods for calibrating surveying equipment
- methods for identifying and reporting non-conformities in collected surveying data
- organisational policies and procedures relating to:
 - health and safety relating to survey activities and work on construction sites
 - reporting and documentation
 - using the surveying equipment specified in the performance evidence
- project management techniques for scheduling work tasks and planning for contingencies
- key features of reference systems for surveying data.

Assessment Conditions

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

- equipment:
 - as specified in the performance evidence, including PPE
- specifications:
 - survey specifications, including relevant construction or engineering plans and drawings
 - organisational policies, procedures and documentation relating to work health and safety
- 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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