



Australian Government

CPPSSI6033 Conduct underground mine surveys

Release: 1

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Modification History

Release 1 This version first released with CPP Property Services Training Package Release 12.0.

This unit supersedes and is equivalent to CPPSIS6033 Conduct underground mine surveys.

Application

This unit specifies the skills and knowledge required to conduct underground mine surveying operations that comply with standards, legislation and regulations applicable to the mining industry. It includes identifying objectives, and organising resources and planning to support an underground mine surveying operation. The unit also includes the use of specialised survey equipment to capture and reduce data for the creation of mine drawings.

This unit is suitable for surveyors who use broad theoretical and technical knowledge to analyse information as well as interpret and provide solutions to unpredictable and sometimes complex surveying/spatial information problems. The unit supports those who work in a technical management role in an underground mining environment.

All work must be carried out to comply with workplace procedures, in accordance with relevant state/territory regulations that govern surveying work, as well as work health and safety (WHS), regulations and legislation that apply to the workplace.

Cadastral surveying must be undertaken under the supervision of a registered surveyor. Users must check with the relevant regulatory state/territory authority before delivery.

Licensing, legislative or certification requirements apply to this unit in some states/territories where mining surveying must be undertaken under the supervision of a registered surveyor. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Pre-requisite Unit

Nil.

Unit Sector

Surveying and Spatial Information Services

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan underground mine surveying operations.	1.1 Identify and document surveying objectives, deliverables, constraints, work activities and surveying equipment needs according to spatial data specifications and organisational requirements. 1.2 Manage workflow to schedule and measure, record and report progress of activities in relation to agreed plans. 1.3 Implement and maintain agreed communication processes between client and other appropriate persons. 1.4 Devise and apply risk management and contingency strategies so that project complies with legal and statutory standards and organisational requirements.
2 Prepare for underground mine surveying.	2.1 Consult appropriate persons and plans to identify underground mine survey objectives, specifications and constraints. 2.2 Establish processes and procedures for undertaking underground surveying according to requirements. 2.3 Identify surveying techniques applicable to the development of headings in underground mining operations according to project objectives and organisational requirements. 2.4 Perform the required check and adjust of equipment prior to commencing survey tasks.
3 Conduct underground mine surveying tasks.	3.1 Maintain situational awareness of potential hazards and risks. 3.2 Measure or set out identified spatial components of mine design according to project specifications. 3.3 Reduce measured spatial data for comparison with design. 3.4 Create mine drawings as required. 3.5 Reduce and use captured data to calculate mine volumes according to project requirements.

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| | 3.6 | Record and validate measurements according to project requirements. |
| | 3.7 | Resolve problems and implement contingencies according to project requirements. |
| | 3.8 | Set out underground development according to design parameters. |
| 4 | Finalise and report project outcomes. | |
| | 4.1 | Finalise survey activities and confirm that contractual and legal requirements are met. |
| | 4.2 | Notify appropriate persons of project results according to organisational requirements. |
| | 4.3 | Complete documentation and store spatial data according to project and organisational 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 CPPSIS6033 Conduct underground mine surveys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPSSI6033 Conduct underground mine surveys

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Performance Evidence

To demonstrate competency a candidate must meet the elements and performance criteria of this unit by wearing appropriate personal protective equipment (PPE), safety apparel and equipment for underground work and performing two different activities for underground mine surveys from the list below:

- position and install a laser for directional control
- set out and mark up a series of rings for stope creation
- use a surface control network to establish underground wall stations.

Knowledge Evidence

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

- terminology applicable to underground mining
- graphical and technical information in mining and engineering plans
- mineral exploration methods, including geophysical, geochemical and geological techniques
- stages and methods of exploration
- mining methods for metalliferous and coal mines
- survey requirements for:
 - mine access and egress
 - mine layout
 - service provision
- specialised surveying equipment requirements
- work area accessibility requirements
- accuracy and precision requirements for surveying data
- underground positional accuracy relative to surface representation
- methods to set up and check and adjust specialised surveying equipment
- drilling techniques:
 - applicable to blasting in mining operations

- used for sampling rock and unconsolidated sands
- techniques for providing rock stability and ground support
- methods for developing headings in underground mining operations
- methods for maintaining adequate mine ventilation:
 - properties of natural air flow
 - requirements for ventilation plans
 - duties of ventilation officer for an underground mining operation
 - exposure standards for atmospheric contaminants
 - procedures for testing and sampling atmospheric contaminants
 - methods for measuring air velocity and determining air quantity given relevant operational data
 - methods of mechanical and auxiliary ventilation
 - sources of atmospheric contaminants in an underground mining environment
- relevant regulations and legislation relating to the mining industry and underground mining
- work health and safety (WHS) requirements in mining
- risk management and contingency strategies
- duty of care in the mine environment
- client and stakeholder communication
- records and reporting using organisational naming conventions
- techniques for planning, scheduling, measuring and monitoring work progress.

Assessment Conditions

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

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting where these skills and knowledge would be performed.

Candidates must have access to:

- PPE
- mining and surveying specifications, relevant plans and drawings
- procedures and documentation relating to mining regulations.

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