



Australian Government

DEFEXO124 Perform explosive tests, measurements and analyses

Release: 3

DEFEXO124 Perform explosive tests, measurements and analyses

Modification History

Release 3. Correction to typo in the unit title

Release 2. Modifications made to Foundation Skills and Assessment Conditions.

Release 1. This unit was released in DEF Defence Training Package release 1.0 and meets the Standards for Training Packages.

This unit supersedes and is equivalent to DEFEO604C Perform explosive tests, measurements and analyses.

- Unit code updated
- Content and formatting updated to comply with the new standards
- All PC transitioned from passive to active voice
- PC 1.4 removed

Application

This unit describes the skills required to conduct explosive material tests and/or experiments in an explosive research environment. It includes planning the tests or analyses, carrying out tests and measurements, performing quantitative and qualitative analysis, documenting and evaluating new procedures, and recording and validating the test results.

This unit applies to those required to conduct explosive material tests and/or experiments in an explosive research environment.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies and procedures must be consulted and adhered to.

Those undertaking this unit would work as part of a team under indirect supervision, using discretion and judgement and taking responsibility for the quality of their outputs. They would perform complex tasks in a range of contexts.

No licensing, legislative or certification requirements apply to unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

Explosive Ordnance

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

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| 1 Plan tests or analyses | 1.1 Identify explosive sample and determine test or analysis requirements |
| | 1.2 Select appropriate methods and assemble, set up and calibrate the required testing apparatus |
| | 1.3 Perform routine standardisation procedures prior to the test or analysis and record results |
| 2 Develop specialised tests or analyses | 2.1 Locate, discuss and confirm relevant technical information with other staff |
| | 2.2 Develop experimental design in liaison with other staff |
| | 2.3 Arrange the building or purchase of necessary equipment given project constraints and available skills and materials |
| | 2.4 Trial, document and evaluate new procedures |
| 3 Perform qualitative analysis | 3.1 Perform qualitative tests to observe explosive properties |
| | 3.2 Compare data with standards, charts, tables, and spectra in order to identify known or unknown materials and their properties |
| | 3.3 Perform tests or analyses efficiently and within the timeframe |
| 4 Perform quantitative analysis | 4.1 Perform quantitative tests to measure explosive properties |
| | 4.2 Use available computer technology to control instruments or acquire/translate/convert data to optimise test accuracy |
| | 4.3 Check samples and analyses when non-standard results |

		are obtained
	4.4	Complete tests or analyses within the timeframe
5 Record and validate results	5.1	Record data using appropriate worksheets and/or information management systems
	5.2	Analyse data for anomalies and ‘out of control’ conditions and accept or reject
	5.3	Assess data for validity against quantity and compatibility information, known standards and reference materials
	5.4	Modify test procedures, if necessary, under supervision

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit supersedes and is equivalent to DEFEO604C Perform explosive tests, measurements and analyses.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6bdbab1e-11ed-4bc9-9cba-9e1a55d4e4a9>

Assessment Requirements for DEFEXO124 Perform explosive tests, measurements and analyses

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and includes:

- accessing, interpreting and applying technical information
- conducting quantitative and qualitative analysis
- developing new explosive testing processes and techniques
- maintaining documentation and records
- recording and validating results
- trialling, documenting and evaluating new procedures
- using explosive testing processes and techniques
- using laboratory and testing equipment

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and includes:

- operational knowledge of:
 - calibration procedures and their basis
 - characteristics, technical capabilities and limitations of laboratory and testing equipment
 - chemical processes involved in testing
 - documentation and records requirements
 - properties and characteristics of relevant explosives

- quantitative and qualitative analysis processes and techniques
- validation processes

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- acceptable means of simulation assessment
- applicable documentation, including workplace procedures, regulations, codes of practice and operation manuals
- relevant materials, tools, equipment and PPE currently used in industry.

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