

Title	Describe and operate CABA in an underground mine		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: describe the physiology of respiration and the effects of an irrespirable atmosphere, in relation to conditions in an underground mine and the use of CABA; describe the working mechanisms and function of a CABA; operate a CABA in an underground mine; decommission, clean, assemble, test, and store a CABA; and complete documentation.
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Classification	Extractive Industries > Underground Extraction
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Available grade	Achieved
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Prerequisites	Unit 21281, <i>Test for gases, interpret findings, and demonstrate knowledge of follow-up actions in an underground coal mine</i> ; and Unit 6401, <i>Provide first aid</i> ; or demonstrate equivalent knowledge and skills.
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Guidance Information

- 1 Performance of the outcomes of this unit standard must comply with the following:
 - Health and Safety at Work Act 2015 (HSW);
 - Health and Safety at Work (General Risk and Workplace Management) Regulations 2016;
 - Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016;
 - Health and Safety at Work (Worker Engagement, Participation, and Representation) Regulations 2016;
 - approved codes of practice issued pursuant to the HSW Act;
 - WorkSafe New Zealand Act 2013.
- 2 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.
- 3 Definitions
 - CABA* refers to Compressed Air Breathing Apparatus.
 - Level of *exertion* is determined by the individual's rate of respiration.
 - Industry best practice* refers to those practices which competent practitioners within the industry recognise as current industry best practice. These may be documented in management plans, company procedures, managers' rules, occupational health

and safety policy, industry guidelines, codes of practice, manufacturers' instructions, and safe working and/or job procedures (or equivalent).

Mine plan refers to the current topographical map of the incident area.

Outcomes and performance criteria

Outcome 1

Describe the physiology of respiration and the effects of an irrespirable atmosphere, in relation to conditions in an underground mine and the use of CABA.

Performance criteria

- 1.1 The composition of the atmosphere, average air requirements for an adult, and respiratory and blood circulations systems are described in relation to normal daily respiration.
- 1.2 The air needs of an adult are described in relation to average air consumption during various activities.
- Range activities may involve a range of exertion – from light exertion, average exertion, heavy exertion, to very heavy exertion.
- 1.3 The effects of air deficiency and toxic atmosphere are described in relation to asphyxia.
- 1.4 The factors that affect the air consumption rates of operators using CABA are described
- Range work rate, workload, vital lung capacity, physical fitness, psychological stability, heat and humidity.
- 1.5 The required treatment for, and symptoms of, air deficiency and asphyxia in an irrespirable atmosphere are described.

Outcome 2

Describe the working mechanisms and function of a CABA.

Performance criteria

- 2.1 Construction features and functions of CABA sets are described.
- Range may include but is not limited to – cylinder construction, charge air attachments, lung demand valve, pressure gauge, duration of unit, harness, pressure reducer, face mask, back plate, warning whistle.

Outcome 3

Operate a CABA in an underground mine.

Performance criteria

- 3.1 The current mine plan or simulated environment is viewed and an operational plan is formulated in accordance with industry best practice.
- 3.2 Essential equipment is checked in accordance with manufacturer's instructions.
- 3.3 The CABA is donned and pre-entry checks are applied in accordance with manufacturer's instructions.
- Range high-pressure test, leak test, test of essential equipment.
- 3.4 The CABA facemask is donned and all relevant checks are applied in accordance with manufacturer's instructions.
- 3.5 The operation of the CABA is in accordance with the operational plan, and procedures.
- Range procedures include but are not limited to – Captain's check, entry and exit control, atmospheric testing.

Outcome 4

Decommission, clean, assemble, test, and store a CABA.

Performance criteria

- 4.1 The CABA is turned off, removed from carry position, and placed in a safe position.
- 4.2 Contaminated CABA parts are dismantled, cleaned, and dried in accordance with manufacturer's instructions.
- 4.3 The CABA is reassembled using clean and dry replacement parts in accordance with manufacturer's instructions.
- 4.4 Test functions are applied to the CABA, recorded, set tagged, and capped in accordance with manufacturer's instructions.
- 4.5 CABA is stored for immediate use in accordance with manufacturer's instructions and industry best practice.

Outcome 5

Complete documentation.

Range documentation may include but is not limited to – Team Captain’s book, operational plans, photographs, operational recordings, relief teams, fresh air base recording sheets, incident reports, surface documentation.

Performance criteria

- 5.1 Documentation is completed in accordance with industry best practice.
- 5.2 Documentation is made available for discussion in accordance with industry best practice.

Planned review date	31 December 2022
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	22 October 2003	31 December 2014
Rollover and Revision	2	23 February 2007	31 December 2014
Rollover and Revision	3	16 July 2010	31 December 2017
Review	4	21 May 2015	N/A
Rollover and Revision	5	25 January 2018	N/A

Consent and Moderation Requirements (CMR) reference	0114
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.