

FACT SHEET

Maintenance, examination and testing of in-service breathing apparatus to assist escape (including self-rescuers)

Introduction

This fact sheet provides information about a mine operator's obligations to ensure breathing apparatus is maintained in good working order to minimise risk to the user. It also sets out the Resources Regulator's position on how mine operators can meet this requirement through maintenance, examination and testing of in-service breathing apparatus.

Background

Under clause 100 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 (WHS (MPS) Regulation), operators of underground mines in NSW (other than opal mines) must:

- **provide an appropriate self-rescuer** to all persons who go underground if there is a risk of an irrespirable atmosphere (including during an emergency) and ensure the person is trained and able to use the self-rescuer
- **conduct a risk assessment** to determine whether self-contained self-rescuers should be provided to any person who is to go underground at the mine
- **train workers** in a simulated work environment; in the donning and change-over of each type of self-rescuer; and to operate any oxygen-generating self-contained self-rescuers (for workers at underground coal mines).

The design of breathing apparatus used at underground coal mines must be registered and comply with any design standards specified by the regulator by order published in the NSW Government Gazette (clause 177(1)(f) and (5) WHS (MPS) Regulation).

Maintenance, examination and testing of in-service breathing apparatus to assist escape (including self-rescuers)

Breathing apparatus must be maintained

Breathing apparatus are considered personal protective equipment (PPE). Under clause 44(3) of the Work Health and Safety Regulation 2017 (WHS Regulation), a person conducting a business or undertaking who directs the carrying out of work must ensure that PPE is maintained, repaired or replaced to that it continues to minimise risk to the worker, including by ensuring the equipment is clean and hygienic, and in good working order.

Regulator's position

To ensure breathing apparatus is in good working order, mine operators should comply with the following sections of the Technical Reference Guide: *Escape breathing apparatus for underground mining applications*:

- Section 6: Examination and testing of self-rescue units in service
- Section 7: General maintenance requirements of apparatus in service.

Section 6 of TRG: Examination and testing of units in service

Under section 6 of TRG: *Escape breathing apparatus for underground mining applications*, the mine operator or owner of the breathing apparatus must arrange for samples of units in service to be submitted to a recognised test authority for prescribed testing. Section 6 also includes information on the following for the different types of breathing apparatus:

- *retesting schedules
- number of units to be submitted for testing
- examination and test methods
- performance criteria.

Note: *TRG *Escape breathing apparatus for underground mining applications* was updated in 2020 to extend the retesting schedule for in-service units out to the manufacturer's recommended service life. Previously, chemical oxygen self-contained self-rescuers and compressed oxygen self-contained breathing apparatus were required to be discarded in year 10 of their service life, and carbon monoxide filter self-rescuers were required to be discarded in year 8 of their service life.

Maintenance, examination and testing of in-service breathing apparatus to assist escape (including self-rescuers)

Section 7 of TRG: General maintenance requirements of apparatus in service

Section 7 of TRG: Escape breathing apparatus for underground mining applications provides information on what the mine operator should consider when developing a risk-based scheme for regular maintenance and checks on the apparatus. This includes:

- the scheme should implement the supplier's recommendations for maintaining the apparatus, and must define the frequency, responsibility, location and details of the required maintenance and checks, and clear criteria for deciding whether a particular apparatus is to be accepted, examined further, or rejected.
- damaged units must be repaired only by the manufacturer or authorised agent. The manufacturer or authorised agent must certify the integrity of any repaired apparatus before being returned to service.
- apparatus that is body-worn, handled frequently, or subject to rough usage, should be checked visually on a daily basis by the user.
- checks should verify that the apparatus is free of external damage; the seal is intact and has not been tampered with; the case does not have a significant dent (according to manufacturer's recommendations); the apparatus has no visible puncture, and the moisture indicator (where fitted) has not changed colour.
- all units should be maintained in a clean condition, as ingrained dirt may affect seals and disguise damage.
- carbon monoxide filter self-rescuers must be accurately weighed in a clean condition on a monthly basis. Any apparatus that shows an increase in weight of 12 grams or more above the weight indicated on the unit must be immediately withdrawn from service. (This may indicate that the unit has absorbed moisture).
- cylinders used for compressed gases, and refilling devices, must comply with statutory requirements and any relevant Australian Standard (such as for periodic pressure testing, internal examination).
- cylinder pressures must be checked frequently to ensure that they are fully charged (minimum pressure 90% or other value defined by the escape strategy).
- cylinders with rubber protective boots may suffer corrosion under the boot. Checks should be made where appropriate.

Maintenance, examination and testing of in-service breathing apparatus to assist escape (including self-rescuers)

- all cylinder refilling devices must be subjected to the checks and tests detailed in the manufacturer's maintenance schedule, to ensure that they are free of visible external damage and meet the manufacturer's test requirements.
- any required protection on aluminium and light alloys must be intact.
- detergents and cleaning agents should not be used unless recommended by the supplier.

Conditions on the registration holder

As noted earlier, the design of breathing apparatus used at underground coal mines must be registered. The Resources Regulator places conditions on the registration holder to require certain 'Limitations on the use of this design' information to be provided to each person the apparatus is provided to (including mine operators). This includes, but is not limited to, the following information on maintenance, examination and testing of breathing apparatus:

- at least 1% of manufactured breathing apparatus must be examined and tested in accordance with sections 5 and 6 of TRG *Escape Breathing Apparatus for Underground Mining Applications*, as amended from time to time.
- there must be cleaning, storage, maintenance and inspection processes and procedures for the breathing apparatus. The procedures must ensure breathing apparatus cannot be contaminated with fungi.
- replacements and spares for breathing apparatus must only be supplied by the manufacturer or agent and they must comply with the requirements in the *Notice of Registration of Plant Design (Breathing Apparatus to Assist Escape (including Self-Rescuers))*.
- before entering an underground coal mine, any person issued with breathing apparatus must examine it for signs of external damage, check the moisture indicator and ensure that any external seal is in position and intact.

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DOC20/777481