

# Ventilation control devices

Mines safety alert no. 127 | 21 May 2005 | Version 1

## Mine type

Coal mine - underground

## Incident

A longwall tailgate ventilation control device (goaf seal) located approximately 1300m from the working face, collapsed - probably as a result of a windblast caused by a relatively small fall of roof behind the retreating face line.

## Equipment

Ventilation control devices (VCDs).

## Hazard

- Explosion: oxygen ingress into the previous longwall goaf could cause an explosive mixture to form in the goaf, and
- exposure to personnel to noxious / explosive gases in the mine workings.

## Cause

An inspection of the failed ventilation control device indicated that the construction of the VCD was not to the specification required by the design documentation, and would not therefore, likely meet the requirements of Schedule 4 of the Coal Mining Safety and Health Regulation 2001 for a Type C Seal.

## Comments and recommendations

On inspection, the VCD was reported to be from 50mm to 150mm thick, well below the 300mm design thickness to comply with the construction specification.

- All VCDs in Queensland underground coal mines are to be constructed/installed to the design specifications, as required to ensure that the VCD complies with the design criteria and the requirements of the Coal Mining Safety and Health Regulation 2001, Schedule 4 - Ventilation control devices and design criteria.
- Health Regulation 2001, Schedule 4 - Ventilation control devices and design criteria.

- Mine management should take reasonable steps to ensure that they appraise themselves of the VCD test/design criteria required to substantiate the VCD rating - as installed in the underground location. This requires an assessment of the structure design and performance capability of the VCD itself as well as the performance characteristics of the peripheral interface between the VCD and the strata.
- peripheral interface between the VCD and the strata.

The mine Safety & Health Management System should address inspection and auditing procedures relative to the specification and construction of VCDs at the mine. Such procedures should include appropriate inspection and acknowledgement of the VCD build at various stages of the construction, together with audit capabilities to

- demonstrate that the management system is effective.

Additional procedures should be developed that provide for a test/check regime for the VCDs that enable 'as built' examples to be suitably appraised in order to demonstrate that the construction has been in accordance with the design. This test/check regime should adopt statistical indicators to establish the extent of tests/checks on any one structure, as well as the number of structures out of the total population of structures that should be tested/checked to

- ensure statistical significance.

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