

Dust Exposure and Sampling Strategies for Coal Mine Workers with Respiratory Conditions



Mine Safety
Occupational Hygiene

If an employer receives a health assessment certificate or health assessment review report that recommends dust exposure restrictions for a coal mine worker, there are several factors to consider.

It is important to note that every case of identified respiratory disease will be different. As such, the affected coal mine worker will need to be managed on their individual circumstances as well as that of the mine site where they are working.

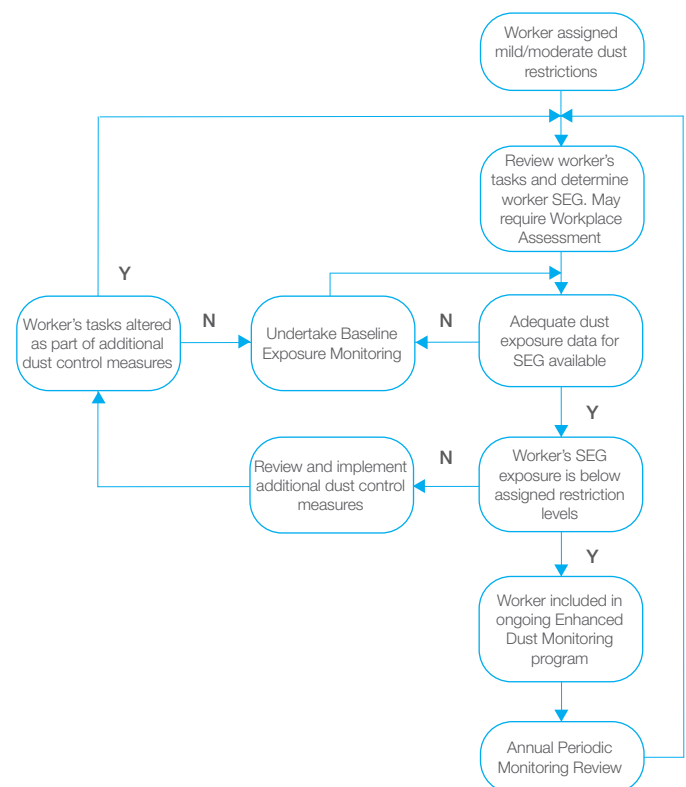
The diagram (right) provides guidance for employers in reviewing dust exposure results and developing an ongoing dust sampling strategy. It is recommended that a competent person, such as an occupational hygienist, assists with this review and the development of the sampling strategy.

Initially, a review of the coal mine workers' tasks should be undertaken to determine the most appropriate Similar Exposure Group (SEG).

Next, a review of dust exposure monitoring data should be conducted for the applicable SEG. If adequate exposure monitoring data has not yet been collected, additional monitoring should be carried out over a representative period to assess the SEG's exposure level.

If the collected data indicates that exposure levels exceed the recommended restrictions, additional controls should be considered and implemented according to the hierarchy of controls. The review of controls may include considering changes to tasks and work areas.

After implementing any additional controls, the SEG should be reviewed, and exposure levels reassessed through baseline exposure monitoring.



Similar Exposure Group (SEG)	SEGs are groups of workers who share similar exposure risks due to the frequency, manner of tasks performed, and the materials and processes used.
Workplace Assessment	Workplace Assessments involve site inspections to document tasks and identify high-risk exposure activities and relevant controls.
Baseline Exposure Monitoring	Baseline Exposure Monitoring assesses SEG exposure over a representative period, accounting for variations in activities, seasons, operations, work crews, and individual workers. The number of samples collected should enable statistical analysis to assess compliance with dust restriction levels. Various sampling strategies are outlined in the NSW Resources Regulator Technical Reference Guide 'Monitoring and control of worker exposure to airborne dust' .
Periodic Exposure Monitoring	Periodic Exposure Monitoring ensures that controls remain effective and provides an estimate of the SEG's exposure profile. This monitoring program should be risk-based and conducted at defined intervals, such as annually. Various sampling strategies are referenced in the NSW Resources Regulator Technical Reference Guide 'Monitoring and control of worker exposure to airborne dust' .
Enhanced Exposure Monitoring	Enhanced Exposure Monitoring aligns with Baseline and Periodic monitoring strategies, with additional focus on workers with assigned dust restrictions. These workers should be periodically monitored to assess individual variations and have periodic reviews of their work tasks, potentially including a Workplace Assessment.