

September 2023

Dust control on mobile crushing plant

Informative

Mine operators are responsible

Under the *Work Health and Safety Act 2011*, a person conducting a business or undertaking (PCBU) has the primary duty to ensure, so far as is reasonably practicable, workers and other people are not exposed to health and safety risks arising from the business or undertaking.

This duty includes eliminating exposure to airborne dusts, so far as is reasonably practicable.

The Work Health and Safety (Mines and Petroleum Sites) Regulation 2022 requires a mine operator to manage risks and implement control measures to ensure the workplace exposure standard for inhalable, respirable dust and crystalline silica is not exceeded (section 42).

Personal exposure monitoring is the responsibility of the PCBU. For coal mines, this includes sampling workers in each part of a mine where dust is or may be present. The same requirement applies to non-coal mines, which have identified silica as a hazard at their site (WHS(MPS) Reg 2022, Schedule 6).

Mobile crushing units are known to be a source of personal exposure to dust at surface mine sites. The onus is on the PCBU to manage the risks to health and safety associated with mobile crushing plant at their mine site.

Contracted crushing works

For contracted crushing operations, the operator of a mine must ensure the contractor's work arrangements are consistent with the safety management system (SMS) of the mine. The SMS for the mine must include the control measures used by the contractor during mobile crushing operations, including:

- the health and safety management plan for crushing operations
- how the contractor's health and safety plan is integrated into the mines' SMS, or how the contractor adopts the mine's SMS
- the process for assessing the contractor's competency, dust control procedures and health and safety policies, and their integration into the mines' SMS
- the monitoring and evaluation of the effectiveness of dust control measures with the mine's SMS.

Operational consistency

Mine operators should ensure that mobile crushing plant used on site are operated in a consistent manner to control the risk of dust exposure and to confirm the health and safety obligations of both the mine operator and the contractor are met. The mine operator should:

- undertake a periodic review the operational procedure for mobile crushing units to ensure they align with the sites SMS

- develop a pre-operational checklist for use before starting crushing operations, or when mobile crushing plant are moved to different areas of the site. This checklist is to be signed off by the contractor and the mine site before commencing crushing operations.
- ensure plant operators undertake a pre-start inspection of plant each day, including a check of the dust suppression system requirements (water, surfactants etc) and maintenance
- ensure workers, including contractors, are trained in dust awareness and the health effects of dust exposure
- ensure the mandatory use of dust suppression systems whenever the plant is running
- undertake random site inspections/audits of crushing operations to ensure operational compliance with safe working methods
- verify the effectiveness of dust control measures by conducting airborne dust monitoring
- include the crusher operators in the site’s personal exposure monitoring program
- verify and enforce the use of respiratory personal protective equipment (PPE) where required

Mobile crusher dust control

Controlling dust from mobile crushing plant should be implemented based on the hierarchy of controls.

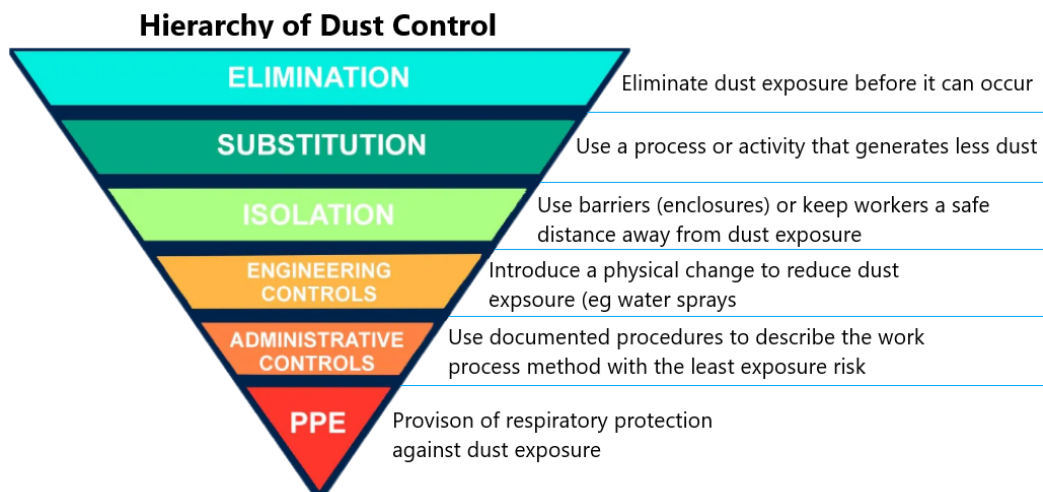
Elimination of activities or processes that generate dust, substitution of plant or processes to those that generate less dust.

Engineering controls such as using water sprays or mists to suppress dust where it is generated, e.g. hoppers, conveyors, vibrating components, and discharge points.

Isolating operators from dust exposure by use of remote operation, ideally located upwind of the operating plant.

Administrative controls including operational and maintenance procedures should be developed with consideration given to reducing worker dust exposures.

Selection of respiratory PPE should be made depending on the engineering controls in place and the nature and duration of the task.



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