

## **INQUIRY INTO 2021 REVIEW OF THE DUST DISEASES SCHEME**

**Organisation:** The Mine Ventilation Society of Australia

**Date Received:** 12 December 2021

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# THE MINE VENTILATION SOCIETY OF AUSTRALIA

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## 1 WHO WE ARE:

The Mine Ventilation Society of Australia (MVSA) was founded in 2012 by Australian mine ventilation practitioners, who share a common passion, dedication, and commitment to ensure a safe and healthy work environment for fellow Underground mine workers. The formation of the MVSA was inspired by the need to improve ventilation practices across Australasia, to share valuable knowledge, implementing innovative techniques, utilising a wealth of world-wide knowledge and experience the MVSA has to offer.

### Our Vision:

Ventilation is for everybody working in underground mining. It is, therefore, our vision that best ventilation practices are communicated and implemented in the mines across Australia in a consistent manner. The MVSA's vision is to assist the mining industry in continuous improvement and management in ventilation practices which would also lead to improved safety and productivity. Growth in the number of members increases our strength as a Society to make positive changes. The MVSA is for all mine ventilation practitioners, industry partners and persons sharing our visions and goals.

### Our Mission:

In order to meet our Vision, the MVSA needs to reach out to the mining Industry Partners such as Tertiary Education Institutes, Mining Departments, and Suppliers. It is further the mission to:

- Participate in committees or areas where ventilation plays a fundamental role.
- Review ventilation related Guidelines, Codes of Practices, Ventilation training material, and Legislation.
- Inform the Mining industry of new ventilation practices and technical aspects.
- Mentoring ventilation practitioners who have limited knowledge and experience in the ventilation discipline.
- Education through mentoring, conferences, forums and participation.
- Grow from strength to strength. By providing active support and commitment from all MVSA members, we will create a positive impact on the industry. Positive change is only made by drawing from each other's strengths and communication.

### Our Values:

The MVSA ultimately serves our fellow underground mine workers to ensure and maintain a safe and healthy working environment. Having this as our core focus we need to:

- Respect the view of all members and industry partners with regards to ventilation and provide feedback.
- Seek continuous improvement in all ventilation aspects
- Share our knowledge and experience
- Act in a professional manner

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## **2 INTRODUCTION:**

The Mine Ventilation Society of Australia (MVSA) welcomes the opportunity to make a submission to the Standing Committee of Law and Justice (Standing Committee) of the 2019 Dust Disease Scheme review.

Although the MVSA does not have a great deal of experience in the processes involved in stonemasonry and specific work practices utilised presently, we believe that we can add value to the 2019 Dust Disease Review Standing Committee's end objective.

After reviewing the submissions made in the 2018 Dust Disease Scheme Review it was clear that prevention was not at the forefront of the submissions, but rather the treatment and aid provided to workers who contracted various diseases associated with exposure to dust.

This submission to the Standing Committee will mainly focus on the prevention of diseases (stonemasonry working with Caesar stone) rather than the current short falls within current systems which treats affected workers. It is well known that prevention is better than cure.

## **3 RECOMMENDATIONS**

### **3.1 Elimination**

To eliminate is to get rid of the substance or material in its entirety.

This control would not be recommended as it is not a practicable control. This could have dire consequences on the stonemasonry industry and would negatively impact various parties and threaten the livelihood of not only the workers, but that of the overarching industry and supply chain.

### **3.2 Substitution**

To substitute is to use a less hazardous substance or material in processes.

Due to the abundant nature of crystalline silica in the earth's crust it will be difficult, if not impossible to eliminate silica as a material of choice to manufacture stone benches. This could however happen with technological advances.

### **3.3 Engineering**

There are various engineering control measures which can be introduced to minimise workers exposure to crystalline silica. MVSA will list the most important controls, but it is highly recommended that the stonemasonry workers be consulted to get more practicable, cost effective and sustainable engineering control measures.

#### **3.3.1 Local Exhaust Ventilation**

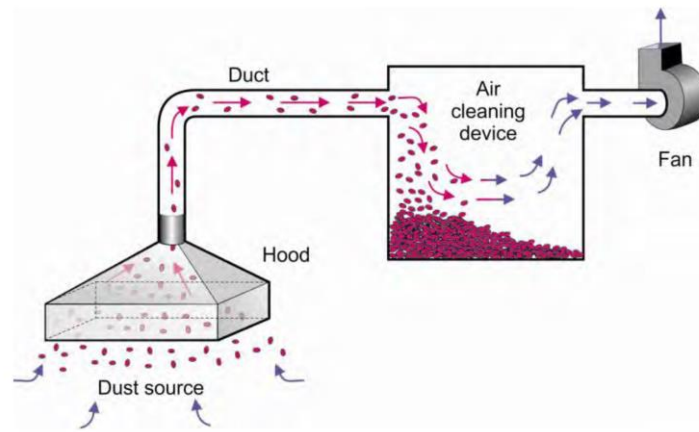


Figure 1 Example of LEV system

Local exhaust ventilation (LEV) systems as shown above in Figure 1 can be used in various workplace scenarios to drastically minimise exposure of workers. It is important that each LEV system is designed specifically for each site. A professional engineer must be consulted to assist with design criteria to ensure sufficient capturing velocities.

A maintenance program must be in place so that the system operates optimally. It is also recommended that a periodical performance test be conducted to ensure it is running to its design. If there is a change in the process, then the design of the system must be reviewed to ensure it is still fit for purpose.

There is a lot of helpful literature on LEV systems which will not be discussed in this submission. Procedures on how to safely clean / discard used filters and remove dust from the LEV systems should be made available to workers.

### 3.3.2 Wet Process

By wetting most of the processes sufficiently the dust can be effectively controlled. This is one of the most effective ways to reduce exposure to workers.

If sprays are introduced at strategic areas in the workplace, it must be specifically engineered nozzles which ensures the water droplets are the correct size to capture the respirable particles as shown below in Figure 2.

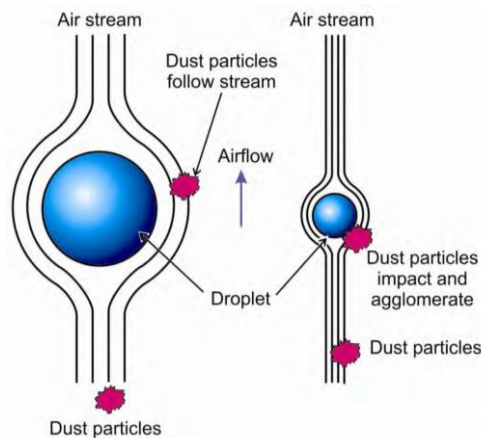


Figure 2 Interaction of dust with water droplet

To use wet spray effectively they must be designed taking into consideration the type of dust and the application point as shown below in Figure 3.

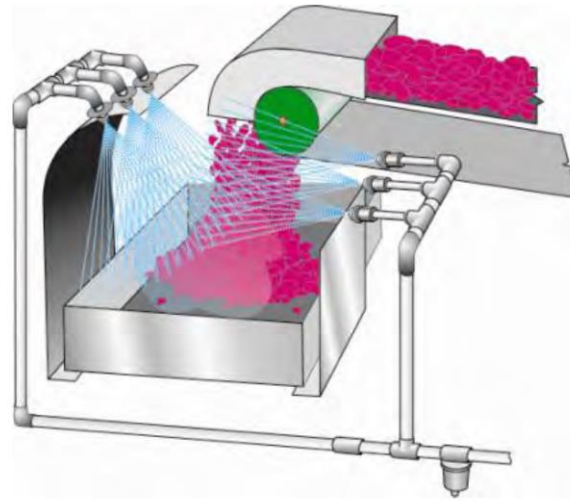


Figure 3 Example of a Spray system

It must be noted that if wet processes are being used, it is critical to clean all areas in time before the dust dries and liberates into the air. The traps must also be cleaned, and the hazardous material discarded in a controlled and designated waste area.

### **3.4 Administrative Controls**

Administrative control will play a major role in the prevention of future silicosis cases. Education of the workforce combined with well thought through systems and procedures to empower and protect the worker must form part of the culture being cultivated and encouraged. A major mind shift will be encouraged by empowering all in the industry with the tools and knowledge to take ownership of their health and safety. Having adequately qualified and experienced auditors available, will encourage and guide the industry to achieve a better outcome for all.

#### **3.4.1 Medical Surveillance**

It is important to understand a worker's physiological condition both pre- and post-employment to ensure the workers' health is put first when deciding to work in certain areas / conditions.

It is also recommended that each worker gets an Occupational Risk Exposure Profile (OREP) which must then be supplied to the medical practitioner. This profile will divulge the worker's historical quantitative exposures at each employer per substance exposed to. This must be viewed as critical information required for any physician to make an informed decision about the workers' health. This form will also indicate the worker's risk associated per employer, per substance exposed to, so to indicate if the worker is a high or low risk worker. This will also aid in managing the worker's health when in the workplace.

#### **3.4.2 Sampling**

Sampling provides essential information about the working conditions. Sampling can substantiate whether workplaces are complying with WES or not, and to what extent. With sampling, informed decisions can be made about current controls in place and where additional controls are required. This will enable the employer to strategically plan for any financial impacts.

The sampling regime must be determined by a Certified Occupational Hygienist (COH) to ensure it is relevant for that specific site and to obtain enough confidence in the data collected to make

- informed decisions. With enough data collected, certain risks can be determined, and control strategies identified to lower the risk if deemed necessary.

Data collected from sampling will also give confidence to the workers that they are being looked after.

To reduce financial impacts on operations by implementing sampling regimes, certain methodologies can be used (i.e. European Standard EN 689<sup>1</sup>, Bayesian Statistical analysis etc.) to reduce the number of samples required (thus the overall financial impact) over the sampling period, but still provide confidence in the dataset.

Sampling must be done in accordance with AS2985. The samples must also be analysed by a NATA accredited lab to ensure the analysis is sound.

### **3.4.3 Appointing a Certified Occupational Hygienist**

It is highly recommended that each employer consults with a COH. The COH will form an integral part of the sampling regime and guide the employer with strategic control measures ensuring as low as reasonably practicable exposures are achieved (ALARA).

The COH will also be able to assist the employer in technical challenges arising from sampling or statistical data.

It is recommended that the Dust Disease Board approach a reputable COH to join the board so to assist in combating the current silicosis crisis.

### **3.4.4 Appointment of a Ventilation Engineer**

It is highly recommended that each employer consults and engages a suitably qualified Ventilation Engineer who is competent and capable of designing an adequate ventilation system to remove any hazards in the workplace. The Ventilation Engineer in collaboration with the COH will review the strategic control measures required to enable as low as reasonably practicable exposures are achieved (ALARA).

The engagement of a Ventilation Engineer will also assist the employer in technical challenges arising from the required design or operational issues, collaborate with the COH, and enable the correct preventative measures are being implemented to assist in combating the current silicosis crisis.

Queensland legislation imposes statutory obligations to the appointed Ventilation Officer at a given Mine or Quarry. The Ventilation Officer role will become a more highly sought after and professional position in the near future.

### **3.4.5 Drafting and implementing COP for Crystalline Silica**

It is highly recommended to draft and implement a code of practice to guide employers in the right direction. This will also give the employers a better understanding of crystalline silica, and thus more confidence to prevent high exposures.

### **3.4.6 Training**

Training is essential in the fight against any type of hazard. This can reduce the risk factor, provide knowledge to the employer and workers who can effectively manage their workplaces and minimize exposure. Training may be used to drive change in workplace culture and instill a sense of self-governance / investigation, and care for self and co-workers.

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<sup>1</sup> EN 689:1995 Workplace Exposure - Guidance For The Assessment Of Exposure By Inhalation To Chemical Agents For Comparison With Limit Values And Measurement Strategy

- Training should be provided about the controls required to reduce exposures in the workplace, what PPE is required, the limitations of the PPE and the use and maintenance of PPE. Personal hygiene is also important, and this must form part of training.

Training employees to understand that the health surveillance is there for the benefit of the employees. Training and encouraging employees to be more aware of the air monitoring process and what the results mean to them and their health.

### **3.4.7 Work Clothes**

Secondary exposures can occur when workers take their work clothes and boots home to be cleaned. This poses a secondary exposure risk to the occupants.

It is important to understanding that occupants could be infants or elderly which increase the health risks due to exposures considerably.

The other risk is that the worker may wear the set of contaminated clothes for extended periods of time after leaving the workplace, thus still being exposed to crystalline silica. This will elevate the exposure of the worker unknowingly and reduce the rest / recovery time.

It is recommended that washing facilities be made available at every workplace and be mandatory for the workers to wash themselves and their clothes at the workplace before knocking off to prevent any secondary exposures and / or cross contamination (Washing clothes at home with the families).

### **3.4.8 PPE**

PPE must form part of the control measures but must be the last resort. This can be used until all preceding controls on the hierarchy of controls are implemented.

It is recommended that a “No facial hair” policy be adopted by the employer to ensure all RPE provided are effective and help to drive personal ownership by the workforce.

It is also recommended that all employers adopt a respiratory fit testing program that aligns with the AS/NZ 1715:2009 to ensure each worker is properly protected.

PPE must be provided free of charge at the workplace and must be freely available for all to use.

The importance of wearing PPE should never be downplayed. It may be the last line of defence for a worker to place a barrier between oneself and a risk, but this barrier when used correctly will form a life saving defence against respirable dust that is already in the air and within the working zone of the employee.

### **3.4.9 Enforcement of the Legislation**

Operators of Coal mining and Quarrying companies need to feel the weight of the Legislation that is in place to protect the workforce from silicosis and the other numerous diseases through the inhalation of respirable crystalline silica and quartz dust particles. Operators and Senior Management are responsible for the wellbeing of the persons working within their charge. Rigorous monitoring of workplaces from check inspectors, safety and health reps and the Inspectorate forms an important part of ensuring that Mining Operators and Senior Mining Staff act with due diligence to ensure that ‘What We Say, We Do’ is what actually happens. Enforced penalties for non-compliance is one way to keep companies on track.

### **3.4.10 Worker compensation for an illness contracted at work**

In conjunction with regular medical assessment for workers who are at risk of exposure to respirable crystalline silica and quartz dust particles, workers need to feel the reassurance that if they have been exposed and have contracted one of the numerous diseases, then they will be duly compensated. Substantial financial payouts to workers who have had their safety and health impacted through the exposure to harmful respirable dust particles containing crystalline silica and quartz will encourage Mining operators to further reduce the risk.

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#### **4 CONCLUSION**

The MVSA recommends that the Dust Disease Review Committee not only focus on how to manage affected workers, but also adopt a prevention campaign focusing on the control of silica dust exposure in the workplace and preventing silicosis from occurring in the first place.

The MVSA does not support the reduction of the current WES for crystalline silica as there is no merit in the changes supporting the reduction in silicosis from occurring.

It is the opinion of the MVSA that the reduction of the WES may have a devastating impact on employment and the economy. The main aim should be to reduce the incidence of the disease through the robust strategies described in this document, rather than lowering the standard. This will serve all parties in a collaborative manner for a positive and manageable outcome.

Regards

Mine Ventilation Society of Australia