

INQUIRY INTO 2021 REVIEW OF THE DUST DISEASES SCHEME

Organisation: Australian Institute of Occupational Hygienists, Inc.

Date Received: 11 December 2021



AIOH submission

2021 review of the NSW Dust Diseases scheme

Association number: A0017462L

ABN: 50 423 289 752

Approved by Council: 11 December 2021

Prepared by: AIOH External Affairs Committee

Introduction

Occupational hygienists are the main frontline professionals who assess the degree of worker exposure to toxic chemicals and dusts and work to prevent ill health through investigation and testing the efficacy of control mechanisms in industry.

The Australian Institute of Occupational Hygienists Inc (AIOH), <https://www.aioh.org.au/>, is the largest organisation representing professionals working in occupational hygiene in Australia. Established in 1980, membership is open to both professional occupational hygienists and to those with an interest in worker health protection and a healthier work environment. The AIOH is the certifying body for professional hygienists and maintains registers of professional members and Certified Occupational Hygienists (COH)[®] to assist organisations seeking to engage occupational hygienists.

Our mission is to promote healthy workplaces and protect the health of workers through the advancement of knowledge, practice and standing of occupational health and occupational hygiene. The AIOH is a founding member of the International Occupational Hygiene Association, and many Australian occupational hygienists are engaged in occupational hygiene research with international collaborators. As such, AIOH brings world wide experience and insights on a range of occupational hygiene issues.

In 2018 the AIOH launched the Breathe Freely Australia website, <https://www.breathefreelyaustralia.org.au/> to make information readily available for workers and supervisors about the hazards and prevention of lung diseases for construction, manufacturing, mining and engineered stone industries. The AIOH also initiated the RESP-FIT program in 2020, which is of particular relevance to those who rely on respiratory protection, such as those workers covered by the dust diseases scheme.

As many lung diseases are serious and irreversible, the focus must be on prevention of harm. Thus the need for assessing the degree of exposure and associated risk to health, tailored interventions with layered controls, health monitoring and effective regulation all make a difference to protect our workers. The incorporation of good occupational hygiene and the engagement of competent occupational hygienists are fundamental to making such improvements to the health and safety of our workplaces.

ACKNOWLEDGEMENTS

The AIOH Council acknowledges the work of members who contributed to this submission including Alan Rogers and the External Affairs Committee: Tracey Bence, Kate Cole, Dino Pisaniello, Peter Knott, Shelley Rowett and Sharann Johnson.

2022 Council: President – Kate Cole, President Elect – Tracey Bence, Treasurer – Aleks Todorovic, Secretary – Neil Goulding, Councillor – Kelly Johnstone, Councillor – Melanie Windust, Councillor – Candice Dix.

Summary

AIOH members measure dust and chemical exposures so as to determine the effectiveness of work practices and controls to protect worker health and prevent occupational disease. Occupational hygienists work closely with other health professionals working in health surveillance and worker's compensation. The AIOH recognises the necessity for compensation, health surveillance and a dust disease registry and supports these functions. However, we are firmly of the view that these are after the event actions and primacy must be given to preventative actions.

The profession of occupational hygiene is focused on prevention of occupational illness and disease by applying a range of assessment tools. We know from our experience in the field testing that the most effective way of tackling silicosis is to prevent exposure to silica dust.

The prevention of silicosis is well known and regulated, and yet workers have suffered mainly in our experience because of the failure of compliance with standard dust control protocols. As professionals we need to re-energise the preventative strategies including getting occupational hygienists into all workplaces, large and small.

We note that significant improvements have been made in New South Wales (NSW) since the 2019 review of the Dust Diseases Scheme. Most notable is the establishment of the NSW Dust Disease Register on 1 July 2020, the reduction of the Workplace Exposure Standard (WES) for respirable crystalline silica (RCS), and the introduction of amended Work Health and Safety (WHS) regulations.

However, we recognise that the epidemic of silicosis in engineered stone workers has been a failure of WHS systems to protect worker health. This is not a new phenomenon as historic studies record large scale and widespread cases of silicosis in tunnelling, stone masonry, sand blasting and other industries in the 1920's -1950's. In essence, that was why the NSW Silicosis Board (later named the NSW Dust Diseases Board) was instigated. Both historic and contemporary situations demonstrate a failure of mechanisms to identify new and emerging issues in Australia. Moreover, non-compliance with the WES and lack of compliance with WHS regulations has demonstrated significant regulatory weaknesses in Australia. Based on the information available, there is no evidence to suggest that the rate of compliance activities has increased since the last review of the dust diseases scheme.

The AIOH remains concerned that the true magnitude of silica-related diseases in a wide range of silica using/generating industries in NSW is under-represented, and the experience of our members is that the level of compliance with WHS regulations, and therefore protections for workers, remains low.

The AIOH would be very happy to nominate a representative to give evidence in person at a public hearing.

AIOH - Consolidated recommendations

The following priority recommendations by the AIOH are made in this submission:

1. The AIOH supports the implementation of a licensing scheme operating to a uniform national standard. We need to create a level playing field and a list of reputable fabricators that sufficiently control their workforce dust exposures in the supply chain to developers and builders.
2. The AIOH reinstates its support for the recommendation in the 2019 report that the NSW Government provide an appropriate level of additional annual funding to SafeWork NSW to strengthen its regulatory enforcement and monitoring of health and safety standards in silica using/generating industries. Such funding should extend to other industries where RCS exposure presents a significant risk such as construction, quarrying, tunnelling and demolition industries for example.
3. The AIOH recommends that greater focus be placed towards education of workers and employers in high-risk industries to complement awareness-raising activities. The AIOH recommends that nationally accredited silica awareness courses e.g. 10830NAT – Course in Crystalline Silica Exposure Prevention¹ should be mandatory for engineered stone workers and for all construction trades and should be delivered as part of the general construction industry training.
4. The AIOH recommends that a Code of Practice be applied in NSW that addresses the need for basic competencies of those who undertake air monitoring for RCS along with the process and interpretation of air monitoring and testing of the efficacy of on-site dust control mechanisms.
5. The AIOH recommends that a database be created to capture exposure surveillance. It should involve the collection of information on workplace control systems and work conditions, and possibly medical surveillance data. The AIOH welcomes the opportunity to assist in this regard.
6. The AIOH recommends that icare reviews their inclusion in the definition of ‘significant level of exposure’ and contacts workers in high-risk sectors including those in tunnel construction, to undertake a high-resolution computed tomography (HRCT) scan as part of health monitoring.
7. The AIOH recommends strengthening regulatory and inspection practices in NSW to ensure that uncontrolled dry-cutting of quartz containing products ceases across all high-risk sectors.
8. The AIOH recommends that the Occupational Hygiene Training Association (OHTA) Basic Principles of Occupational Hygiene² course be used as the basis for the appropriate training of compliance officers.
9. The AIOH recommend that more comprehensive and standardised Safety Data Sheet (SDS) requirements be put on manufactured stone providers to enable appropriate risk assessment and management by users.

¹ Training.gov.au, National Register on Vocational Education and Training (VET), 10830NAT – Course in Crystalline Silica Exposure Prevention, <https://training.gov.au/Training/Details/10830NAT>, Accessed 18 April 2021.

² AIOH, Basic Principles of Occupational Hygiene, <https://www.aioh.org.au/education/bpoh/>

Introduction

The AIOH thanks the NSW Government for the opportunity to make a submission to the review of the Dust Diseases Scheme. We note that the Committee's role is primarily to review the operation of the Workers' Compensation (Dust Diseases) Scheme and that this review will evaluate the progress of the recommendations made in the 2019 review on the management of silicosis in the manufactured stone industry.

In making this submission, AIOH will not be discussing provision of compensation as such, as these matters are outside of the area of our expertise. However, there are a number of issues related to prevention of dust diseases and the progress of previous recommendations which primarily form part of our professional domain. We believe these issues are relevant to this review and these form the basis of this submission. The AIOH has selected to comment on the progress of the recommendations and responses documented by the NSW Government in their response in September 2020³. The recommendations of relevance to the AIOH made by the final report of the 2019 Review of the Dust Diseases Scheme were;

Recommendation 1: That icare, in light of SafeWork Australia's revised guidelines in the Crystalline silica health monitoring guide: • inform all manufactured stone workers previously screened that CT scanning is now part of the initial diagnostic process • conduct an urgent review of all cases of manufactured stone previously screened for silica-related health condition, in order to identify and prioritise those who should be sent for CT scanning as soon as possible.

Recommendation 6: That the NSW Government introduce a mandatory requirement for manufacturers and suppliers to: •affix standardised warning labels on all manufactured stone products •provide safety data sheets with all manufactured stone products, in a comprehensive range of languages.

Recommendation 7: That the Minister for Better Regulation ensure that steps are taken to further reduce the workplace exposure standard to a time weighted average of 0.02 mg/m³ for non-mining industries as soon as possible, to ensure workers are protected from the harmful effect of silica dust.

Recommendation 8: That the NSW Government introduce a legislative amendment to ensure all manufactured stone fabrication sites and employers are registered with SafeWork NSW and will maintain such registration every 12 months and are conducting regular air monitoring and regularly providing the results to SafeWork NSW.

Recommendation 9: That the NSW Government immediately introduce an explicit ban on dry cutting.

Recommendation 10: That the NSW Government provide an appropriate level of additional annual funding to SafeWork NSW to strengthen its regulatory enforcement and monitoring of health and safety standards within the manufactured stone industry.

Recommendation 12: That the NSW Government immediately establish the Silicosis Health Register and ensure that it captures not only diagnosed cases of silica related disease but also screening results and investigative reports undertaken for workers exposed to crystalline silica.

Recommendation 13: That SafeWork NSW, when reviewing its education and awareness campaigns, specifically consider how best to promote safe practices to independent contractors and installers in the manufactured stone industry. In doing so, SafeWork NSW should consult with suppliers, fabricators, installers and unions involved in the manufactured stone industry.

³ Government Response to Report of the Legislative Council Standing Committee on Law and Justice 2019 Review of the Dust Diseases Scheme Silicosis in the Manufactured Stone Industry 00128/20

Recommendation 14: That the NSW Government provide additional funding to the Dust Diseases Board and Centre for Work Health and Safety specifically for research projects related to the prevention, management and treatment of silicosis, and in terms of sourcing additional funding for research projects, commission icare to scope out possible funding models that would be based on a cost recovery basis from the industry.

The profession of occupational hygiene is focused on prevention of occupational illness and disease. The most effective way of tackling silicosis is to prevent exposure to silica dust. Our submission is made with this key focus in mind.

Progress of Recommendations

Recommendation 1: *That icare, in light of SafeWork Australia's revised guidelines in the Crystalline silica health monitoring guide: • inform all manufactured stone workers previously screened that CT scanning is now part of the initial diagnostic process • conduct an urgent review of all cases of manufactured stone previously screened for silica-related health condition, in order to identify and prioritise those who should be sent for CT scanning as soon as possible.*

The NSW Government Response 2020: *In early February 2020, icare instituted a policy of routinely recommending a CT scan for workers with a significant level of exposure to respirable crystalline silica. As part of this annual requirement of the health monitoring process, icare prompts employers to return their workers for screening. Employers who do not comply can receive a compliance breach through Safework NSW and as a result will have their workers screened. The majority of previously screened workers will be informed via this process, which allows them to ask questions and discuss their personal situation with a medical professional. During this consultation, medical professionals can also identify workers who meet the criteria for a CT scan and arrange an immediate referral. • icare will conduct an audit to determine which workers are not captured through this process and then look to use alternate means to contact them and discuss the recommendations and options for CT scans'.*

The AIOH notes with experience that workers employed in trades outside of those who work with manufactured stone can be exposed to RCS at concentrations that are also considered to be significantly well above the regulatory Workplace Exposure Standard (WES).

Attention is drawn to a case series analysis of eight underground tunnellers with chronic silicosis in Queensland⁴. That paper identified eleven workers with chronic silicosis, some of which had previously undergone health surveillance in NSW, however their first diagnosis of silicosis was when they undertook health surveillance in Queensland. The AIOH therefore strongly recommends that icare reviews their boundary in defining 'significant level of exposure' and contacts workers in other high-risk sectors including those in tunnel construction, for such screening.

⁴ Seevnarain et al 2021 Case series of eight underground tunnellers with chronic silicosis in Queensland, Respiriology Case Reports, Vol. 9 No. 6

Recommendation 6: *That the NSW Government introduce a mandatory requirement for manufacturers and suppliers to: •affix standardised warning labels on all manufactured stone products •provide safety data sheets with all manufactured stone products, in a comprehensive range of languages.*

The NSW Government Response 2020: Supported in principle Hazard information relating to silica-containing products can currently be provided in the form of a label, product information sheet or safety data sheet. The regulations governing labelling and product safety information of this type are part of the nationally harmonised model Work Health and Safety laws. A model Code of Practice for the manufactured stone industry is currently being developed by Safe Work Australia. Accordingly, the NSW Government will refer to Safe Work Australia for consideration whether the Model Code of Practice currently under development should include a requirement that designers, manufacturers, importers and suppliers of manufactured stone provide warning labels, product information sheets, or safety data sheets in a range of languages with all manufactured stone products or whether such a requirement would be better placed in the model WHS Regulation.

The AIOH notes the development of the Model Code of Practice by Safe Work Australia⁵ and the inclusion of information on Safety Data Sheets (SDSs) within that Code. AIOH members recognise from their field investigations that workers often take little notice of the information and warnings in SDSs and need education in this area. Notwithstanding, the AIOH is aware of research underway by our members that seeks to determine the crystalline silica content of various brands of manufactured stone. That research compares the quantitative analysis of crystalline silica to the range reported in supplier's SDSs. Results, across six (6) different suppliers, suggest that there is significant variability in the crystalline silica content in manufactured stone in comparison to that reported in SDSs. In addition, potentially toxicologically relevant metallic and mineral constituents have been documented, and yet these have not been reported on an SDS. At present there remains a limited understanding of lung pathogenesis from manufactured stone, and debate continues as to whether it is due to just the very high silica dust exposures or a combination of exposures from the silica and the other constituents.

The AIOH recommend that more comprehensive and standardised labelling and SDS requirements be put on stone providers. This should include a requirement of stone providers to acknowledge the generation of carcinogenic dusts created as a by-product of work processes⁶ in addition to explanatory notes on the health issues associated with working with stone suitable for lay workers. Such is needed to enable appropriate risk assessment and management. The AIOH note the importance of providing this information in a range of languages for accessibility by workers from non-English speaking backgrounds.

⁵ Managing the risks of respirable crystalline silica from engineered stone in the workplace, Code of Practice, Safe Work Australia, October 2021

⁶ <https://roadmaponcarcinogens.eu/strategy/challenge-4-2-process-generated-carcinogens/>, last accessed 2/12/21

Recommendation 7: *That the Minister for Better Regulation ensure that steps are taken to further reduce the workplace exposure standard to a time weighted average of 0.02 mg/m³ for non-mining industries as soon as possible, to ensure workers are protected from the harmful effect of silica dust.*

The NSW Government Response 2020: Supported in principle The NSW Government supports reducing the workplace exposure standard for respirable crystalline silica for all workplaces. Submissions to the report noted there are limitations on a health-based evaluation (cumulative assessment preferred), measurements and analysis reliability at 0.02mg/m³. This is particularly so for extended work shifts (more than eight hours requires it to almost halve to silica 0.01mg/m³ creating further unreliability); and compliance and enforcement. In December 2019, a majority of Work Health and Safety Ministers (including the Minister for Better Regulation and Innovation) therefore agreed to lower silica standard to silica 0.05mg/m³. Safe Work Australia is to facilitate an investigation into measurement and practical considerations that may enable a future reduction to silica 0.02mg/m³. The revised standard of 0.05mg/m³ commenced on 1 July 2020 in NSW. An appropriate period of time should be allowed to consider the effectiveness of the new standard before any decision is made to further reduce the exposure standard. The NSW Government now awaits the outcome of the Safe Work Australia investigation. If the measurement difficulties and other practical considerations can be overcome the Government will move to lower the time weighted average exposure standard even further

Measurability of Exposure to RCS Dust

The AIOH members who are the professionals conducting RCS exposure monitoring on workers, have based on their field experiences, concerns regarding the measurability of RCS at concentrations below the current 8-hour time-weighted average (TWA) WES of 0.05 mg/m³, particularly in the context of compliance monitoring. This concern is shared by the National Association of Testing Authorities, Australia (NATA) and has resulted in the AIOH and NATA documenting such concerns to Safe Work Australia⁷. Both the AIOH and NATA and are the two organisations with the greatest involvement in the quantification of workplace exposures to RCS by applying the regulatory Standards Australia respirable dust monitoring method⁸ with laboratory analysis of the silica content of the dust by the regulatory NHMRC method.⁹

Of paramount concern to the AIOH is to ensure that workers are protected against RCS exposure. This will, in part, rely on ensuring that RCS exposure measurements are conducted according to regulatory methods with integrity and that the results provide meaningful conclusions for appropriate interpretation. It will also rely on SafeWork NSW being able to successfully regulate against the WES.

There is a view in the wider community that lower standards automatically equate to safer workplaces. The recent re-emergence of coal workers pneumoconiosis in Queensland coal mines proved that compliance with the WES was an issue rather than the numerical value of the WES. However, it is simply not possible to consistently and accurately measure RCS levels at this low concentration using currently available technology. To enforce the law, regulators must be confident that the measurements are accurate and reliably consistent and robust enough to withstand challenge and scrutiny in court. At this proposed WES 0.02 mg/m³ level, the analytical method approaches its limits of quantification (LoQ). In which case it is possible that some samples taken at the same site may not show evidence of overexposure at or above the WES because of the uncertainty in both the sampling and the analysis. Despite these limitations in measurement, the lack of air monitoring and implementation of dust control mechanisms by competent persons and the need for a well-resourced WHS regulator to enforce WHS legislation regarding compliance with existing exposure standards remains an issue.

⁷ AIOH NATA Joint Position Statement: Reliability of Respirable Crystalline Silica (RCS) Measurement Against a Limit Value of 0.05mg/m³ and below <https://www.aioh.org.au/media/2014/06/aioh-nata-silica-measurement.pdf>

⁸ AS 2985-2009: Workplace atmospheres – *Method for sampling and gravimetric determination of respirable dust*. Standards Australia 2009.

⁹ National Health and Medical Research Council (NHMRC), *Methods for Measurement of Quartz in Respirable Airborne Dust by Infra-red Spectroscopy and X-ray Diffractometry*, NHMRC, Canberra, 1984.

Controlling short-term exposures to RCS

The risks of silicosis over a working lifetime can rise dramatically with even brief (0-2 months) exposure to very high and extreme RCS concentrations¹⁰ as has been found in the manufactured stone industry. It should be noted that Safe Work Australia deems that a process is not considered to be under reasonable control if short term exposures exceed three times the TWA exposure standard for more than a total of 30 minutes per eight-hour working day, or if a single short term value exceeds five times the 8-hour TWA exposure standard¹¹. Proving this by short term RCS monitoring is difficult due to the limitations posed by the analysis methodology as previously discussed.

Such patterns of high to extreme exposure have been typical for the engineered stone benchtop industry and the stonemasonry creation and restoration industry. In general, monitored exposures can exceed the current RCS WES by 20 to 40 times. This evidence leads the AIOH to believe that the sad cases of silicosis and progressive massive fibrosis (PMF) seen in the engineered stone benchtop industry of recent times would not have occurred if the RCS WES had been complied with by employers and enforced by regulators, and workers had been made aware of the health hazard of RCS over exposure and complied with the relevant control strategies both in the factory manufacturing process and installation and fitting on customer premises.

While dry cutting creates short-term exposures, there are many other work tasks that contribute to high short-term exposures in the manufactured stone sector, and indeed in other industries. It is for this reason that professional occupational hygienists commonly use real-time dust monitoring (light scattering) instruments to complement personal exposure monitoring. Such tools enable occupational hygienists to identify key tasks that need prompt attention and control but are not suitable for establishing compliance to the regulatory WES.

To address these issues, the AIOH recommends that a Code of Practice be applied in NSW that addresses the need for basic competencies of those who undertake monitoring for RCS along with the process and interpretation of monitoring and applying the results to testing and implementation of dust control strategies. This should include monitoring undertaken by professional occupational hygienists overseen by a Certified Occupational Hygienist (COH)[®].

¹⁰ Buchanan, D, BG Miller & CA Soutar (2003). *Quantitative relations between exposure to respirable quartz and risk of silicosis*. *Occup Environ Med*; 60; pp 159-164.

¹¹ Safe Work Australia, (2013), *Guidance on the Interpretation of Workplace Exposure Standards for Airborne Contaminants*, April 2013, page 6. <https://www.SafeWorkaustralia.gov.au/system/files/documents/1705/guidance-interpretation-workplace-exposure-standards-airborne-contaminants-v2.pdf>

Recommendation 8: *That the NSW Government introduce a legislative amendment to ensure all manufactured stone fabrication sites and employers are registered with SafeWork NSW and will maintain such registration every 12 months and are conducting regular air monitoring and regularly providing the results to SafeWork NSW.*

The NSW Government Response 2020: *Not Supported. The Government does not support this recommendation as SafeWork NSW is aware of the location of all manufactured stone fabrication sites in NSW and has visited them. SafeWork NSW is able to obtain information about the location of manufactured stone fabrication sites by issuing notices to the importers of manufactured stone. SafeWork NSW will continue to support Safe Work Australia's development of a model Code of Practice for the manufactured stone industry, which will provide guidance on the content of health and safety duties at manufactured stone sites, including existing obligations to conduct air monitoring under the Work Health and Safety Regulation 2017 (cl 50). In accordance with the 2017-2022 Hazardous Chemicals and Materials Exposures Baseline and Reduction Strategy SafeWork NSW will also continue to conduct educational, compliance and enforcement activities to ensure that persons conducting a business or undertaking (PCBUs) on manufactured stone fabrication sites are fulfilling their work health and safety duties, including air monitoring where appropriate.*

The AIOH notes that a significant impediment to protecting worker health is the varied behaviour of engineered stone fabricators and, in some cases, the attitudes of the workforce. Some companies, particularly smaller enterprises, consider the costs associated with workplace monitoring, health surveillance and use of effective controls to be unacceptable and therefore avoid making changes that would entail cost. This has led to ongoing problems in these workplaces. Companies that have tried to manage dust exposures through implementing controls, workplace monitoring and health surveillance, have to pass on the cost to the consumer, which in turn makes their product less competitive. One fabricator has likened this situation to a sports team competing against drug cheats. Some workers do not comply with their employers work and control systems such as, not wearing or incorrectly wearing respiratory protective equipment or using dry rather than wet cutting methods, such as when making adjustments to engineered stone articles on customers premises.

The marketplace for engineered stone benchtops should be a level playing field supplied by fabricators complying with regulations. Licensing will help establish a supply chain for developers and builders to engage reputable fabricators and not “backyard” operators. As a result of licensing, there is transparency with a list of registered fabricators for both the inspectorate to monitor and builders to engage for supply of fabricated stone bench tops from reputable companies.

The AIOH notes the development of the Model Code of Practice by Safe Work Australia¹² and the inclusion of information on air monitoring within that Code. Notwithstanding that publication, the AIOH supports the implementation of a licensing scheme. For stone processors, the possibility of the business losing their license to operate is considered to be a strong motivator. This is a high-risk industry and companies should be licensed to operate in this industry. Licensing will mean they meet high standards of exposure control and are inspected on regular basis. Licensing should operate to a uniform national standard.

¹² Managing the risks of respirable crystalline silica from engineered stone in the workplace, Code of Practice, Safe Work Australia, October 2021

Recommendation 9: *That the NSW Government immediately introduce an explicit ban on dry cutting.*

The NSW Government Response 2020: *Supported. The NSW Government has amended the Work Health and Safety Regulation 2017 to ban the practice of dry cutting. This came into effect on 1 July 2020. It is now an offence for a person conducting a business or undertaking at a workplace to direct or allow a worker to cut, grind, drill or polish manufactured stone containing crystalline silica with a power tool, unless the worker is using respiratory protective equipment and additional controls are in place and properly designed, installed, used and maintained. The Regulation also provides SafeWork NSW inspectors with the power to issue on-the-spot fines for non-compliance.*

The introduction of the amended WHS Regulation to ban the practice of dry cutting is a welcome step. However, dry-cutting of other quartz containing products also results in exposures above the WES and is commonplace across many industries, hence a similar ban on dry cutting should be imposed on these other industries.

The NSW Dust Disease Register Annual Report 2020-2021 reported that approximately 42% of the 57 workers notified to have silicosis were from industries not associated with manufactured stone. There is sufficient national and international evidence to show workers in construction, tunnelling, demolition, quarrying and other trades, perform tasks that involve cutting into quartz-containing products. The question of why uncontrolled release of quartz containing dusts is commonplace across these sectors without specific regulatory controls must be asked?

WHS Regulations require employers to ensure that no person at a workplace is exposed to RCS above the WES and guidance material identifies dry cutting into silica containing products as a significant risk¹³. The introduction of amended WHS Regulation to ban dry cutting of manufactured stone sent a clear and direct message to industry in general that the practice must not continue. No such clear and direct message has been made to other sectors where this practice is commonplace.

We note that the current draft of the proposed Code of Practice for 'Managing respirable crystalline silica dust exposure in construction and manufacturing of construction elements' by Workplace Health and Safety Queensland states that *"PCBUs must not allow workers to undertake uncontrolled dry cutting or processing of materials that contain 1% or more crystalline silica"*¹⁴.

The AIOH recommends strengthening regulatory and inspection practices in NSW to ensure that uncontrolled dry-cutting or processing of quartz containing products ceases across all high-risk industry sectors.

¹³ Working with silica and silica containing products, National guidance material, Safe Work Australia, September 2019

¹⁴ WHSQ 2022, "Managing respirable crystalline silica dust exposure in construction and manufacturing of construction elements"

Recommendation 10: *That the NSW Government provide an appropriate level of additional annual funding to SafeWork NSW to strengthen its regulatory enforcement and monitoring of health and safety standards within the manufactured stone industry.*

The NSW Government Response 2020: *Supported in principle. SafeWork NSW continues to use its existing resources to regulate the manufactured stone industry and enforce NSW work health and safety laws. The NSW Government has already made legislative amendments which strengthen SafeWork NSW's regulatory enforcement powers and the monitoring of health and safety standards within the manufactured stone industry. SafeWork's capacity to undertake its role as a work health and safety regulator is regularly reviewed and enhanced as appropriate.*

The AIOH note the SafeWork NSW 'Silica dashboard'¹⁵ which outlines the 'Current Silica project status (2017-2022)'. The NSW Government should be commended on the provision of such publicly accessible available information including the publication of circumstances where notices were issued where compliance with the WES was not met. The dashboard reported a total of 1,530 workplace visits over a three-year period which included visits to manufactured stone (57% of visits), construction (37% of visits) and other industries including tunnelling, manufacturing, foundries and stonemasons (6% of visits). The AIOH support strong regulatory presence and enforcement of the WES across all high-risk industries inclusive of those industries listed.

We note that the 2019 Review of the Dust Diseases Scheme report stated that SafeWork NSW had undertaken 523 workplace visits during the period between July 2018 and July 2019¹⁶. The SafeWork NSW Silica Dashboard¹⁷ reported that 1,530 workplace visits had been performed since 2018. Extrapolating this data suggests that 1,007 workplace visits occurred between the 26 month period between July 2019 and 30 September 2021, equating to an average of 464 visits over each following 12-month period (i.e. a reduction since the last review of the dust diseases scheme).

Strong regulatory enforcement of WHS regulations is crucial to the prevention of silicosis. The AIOH reinstates its support for the above recommendation in the 2019 report that the NSW Government provide an appropriate level of additional annual funding to SafeWork NSW to strengthen its regulatory enforcement and monitoring of health and safety standards. Such should extend to other industries where RCS exposure presents a significant risk such as construction, tunnelling and demolition industries for example.

We note the NSW Resources Regulator reports on compliance activities in mines and quarries in relation to airborne dusts. The last annual compliance report reports a total of 7111 active sites under their regulatory remit. Air quality / dust and other airborne contaminants constituted the highest number (26 of 109) of targeted site assessments and an exceedance of the exposure standard for RCS is treated as a notifiable incident. From July 2020 to September 2021, the number of reported incidents totals 261 and has remained relatively constant at approximately 50/quarter¹⁸. As a comparison, the SafeWork NSW Silica Dashboard identifies a total of 37 instances of overexposure in the same period with only 12 from the construction sector.

¹⁵ <https://www.nsw.gov.au/customer-service/publications-and-reports/silica-dashboard>

¹⁶ Para 5.1 2019 Review of the Dust Diseases Scheme Silicosis in the Manufactured Stone Industry Report

¹⁷ <https://www.nsw.gov.au/customer-service/publications-and-reports/silica-dashboard>

¹⁸ https://www.resourcesregulator.nsw.gov.au/data/assets/pdf_file/0005/1374476/RR-Quarterly-Safety-Report-July-to-September-2021.pdf, last accessed 2/12/21

Recommendation 12: *That the NSW Government immediately establish the Silicosis Health Register and ensure that it captures not only diagnosed cases of silica related disease but also screening results and investigative reports undertaken for workers exposed to crystalline silica.*

The NSW Government Response: *Supported. From 1 July 2020, silicosis is notifiable by all NSW medical practitioners to NSW Health as a scheduled medical condition under Part 4 of the NSW Public Health Act 2010. Amendments to the NSW Work Health and Safety Act 2011 have been introduced to Parliament to enable the NSW work health and safety regulators to lawfully use information provided by NSW Health to track and investigate relevant workplaces and take appropriate compliance and enforcement action if required.*

The introduction of disease notification requirements in NSW is a welcome step. However, using such information to investigate relevant workplaces is a moot point. As is evident from the NSW Dust Diseases Annual Report 2020-2021, more than 77% of workers diagnosed with silicosis were classified as having 'chronic' silicosis. The latency period between exposure and disease diagnosis for chronic silicosis can be more than 10-years. Many construction projects, and indeed companies, that existed 10-years ago are no longer in business.

A more appropriate tool to use for regulatory intervention and predicting future trends in silica related disease is the establishment of a formal system to capture data about exposure and air monitoring and linking such to the specific control mechanisms in place, and the medical surveillance records of the workforce. The AIOH strongly recommends that such a database must be created to capture exposure surveillance.

Historically it is recognised that the results of respirable dust, RCS and asbestos exposure monitoring by the NSW specialised occupational hygiene inspectors who were funded by the Dust Diseases Board (DDB), were copied to the DDB and placed in DDB company listed files. The AIOH recommends that this system be reinstated and form, partially the basis of the recommended overall database of the combination of exposure, control and medical surveillance data. As part of the database involves the collection of workplace exposures and work conditions, the AIOH welcomes the opportunity to assist in this regard.

Unlike the requirements to notify the NSW WHS Regulator of an exceedance of criteria for asbestos in air monitoring, the AIOH notes that there are no legislative requirements to notify a WHS regulatory authority of a WES exceedance of RCS outside of the resources sector. A national exposure notification register could alert SafeWork NSW of this issue at the time of exposure, thereby enabling intervention to prevent the onset of disease.

Unlike disease surveillance of any condition, exposure surveillance fills an important niche in occupational health because it identifies risks of ill-health, including long latency or chronic diseases, without waiting for the disease to manifest. It also allows for intervention and exposure reduction efforts to target interventions to locations already identified to be sources of exposure. In addition, it also removes any concerns of individual privacy in the reporting of health status. Exposure surveillance can also take into account the organisational context in which the exposure occurs — especially fixed industry versus mobile workforce such as construction, or on demand (gig) and freelance work etc.¹⁹

¹⁹ Noah S. Seixas and David Wegman, (2019) Looking Upstream, Editorial, Annals of Work Exposures and Health, 2019, Vol. 63, No. 5, 485–487, <https://academic.oup.com/annweh/article/63/5/485/5485363>

Recommendation 13: *That SafeWork NSW, when reviewing its education and awareness campaigns, specifically consider how best to promote safe practices to independent contractors and installers in the manufactured stone industry. In doing so, SafeWork NSW should consult with suppliers, fabricators, installers and unions involved in the manufactured stone industry.*

The NSW Government Response 2020: *Supported. The NSW Government recognises and supports the promotion of safe practices for workers in the manufactured stone industry, including independent contractors and installers. In accordance with NSW Government advertising and project requirements, SafeWork NSW conducts pre and post-evaluations for all awareness campaigns, including behavioural insights and questionnaires, and undertakes mid-point and post-project evaluations that include a range of surveying and interviewing methodologies. While the majority of fabricators also perform installation work and are already caught by SafeWork NSW reviews, SafeWork NSW will specifically include independent contractors and installers in the manufactured stone industry in future evaluations.*

The AIOH has developed a substantial body of useful information relevant to RCS exposure from engineered stone, as Breathe Freely Australia, and has made this freely available online²⁰. Breathe Freely Australia is aimed at reducing occupational lung disease and also provides information relevant to construction, mining and welding.

The work to date by SafeWork NSW is acknowledged in helping to raise awareness of the hazardous nature of RCS. The long-term impact of advertising and awareness campaigns for occupational disease is variable. In a large scale scoping review²¹ the effectiveness of educational interventions was found to be context-dependent and influenced by the manner of delivery. In light of these findings, the AIOH recommends for long term chronic diseases, extended periods of time are used for post-evaluation review and these reviews are published in the peer-reviewed literature for the benefit of the wider community.

The AIOH recommends that greater focus be placed towards education and training of workers in high-risk industries to complement awareness-raising activities. As such, the AIOH is supportive of registered training organisations (RTOs) such as those that provide nationally accredited silica awareness courses e.g. 10830NAT – Course in Crystalline Silica Exposure Prevention²². The AIOH considers that this represents an effective and efficient means of ensuring that nationally consistent information is accessible to all people who are potentially exposed to RCS. As the people in question include building trades and apprentices, the AIOH recommends that this course should be mandatory for all construction trades. This should be delivered as part of the general construction industry training, as required in accordance with Part 6.5 of the WHS Regulations (commonly called the ‘White Card’).

The AIOH recommends that the internationally accepted course from the Occupational Hygiene Training Association (OHTA), *W201: Basic Principles in Occupational Hygiene*²³ be used as the basis for the appropriate training of compliance officers. This 1-week course has been delivered over many years to many hundreds of students, to provide them with a good working knowledge of occupational hygiene. The course would be specifically tailored for compliance officers, with increased emphasis on rules of evidence; sample collecting methodology to withstand legal scrutiny; interpretation of exposure standards; etc. The AIOH believes that without adequate understanding of risk at the workplace level, the system is then dependent on having a sufficiently resourced inspectorate, with adequate occupational hygiene knowledge, to identify risks and ensure their remediation.

²⁰ <https://www.breathefreelyaustralia.org.au>

²¹ Keefe, A. R., Demers, P. A., Neis, B., Arrandale, V. H., Davies, H. W., Gao, Z., Bornstein, S. (2020). A scoping review to identify strategies that work to prevent four important occupational diseases. *Am J Ind Med*, 63(6), 490-516. doi:10.1002/ajim.23107

²² Training.gov.au, National Register on Vocational Education and Training (VET), 10830NAT – _Course in Crystalline Silica Exposure Prevention, <https://training.gov.au/Training/Details/10830NAT> Accessed 18 April 2021.

²³ AIOH, Basic Principles of Occupational Hygiene, <https://www.aioh.org.au/education/bpoh/>