

The Australian Institute of Occupational Hygienists

Response to the National Dust Disease Taskforce, 11th Nov 2020

The AIOH welcomes the opportunity to comment on these challenging questions and offer our support to the National Dust Disease Taskforce (NDDT). Our goals are aligned to protect the health of Australian workers by controlling risks of exposures to prevent dust related occupational lung diseases.

If you require any further information, please contact Dr Sharann Johnson, Honorary Secretary, AIOH, secretary@aioh.org.au, mob 0400 248 042.

Regulatory and Governance

1. From a regulatory perspective, what should be considered 'engineered stone'? Please provide the rationale for your recommendation

Engineered stone is a manufactured product that is primarily composed of crushed stone (quartz) and resin. The crystalline silica content in stone bench tops can vary depending on the type of quartz used. Generally speaking, the value of >90% of silica content is referred to in documents.

This is a key issue for the manufacturers and suppliers as they will be looking to improve the formulation of the blended material. They can change the selection as well as content of the stone and resin used, to reduce the potential hazard of RCS dust during fabrication.

Although manufacturers keep formulations confidential as proprietary information, they will be the best source of information on this question.

2. Various jurisdictions have already banned uncontrolled dry processing of engineered stone. What other practical measures could be introduced to reduce worker exposure to silica dust?

Banning uncontrolled dry processing of engineered stone was an important step. However, there are a number of other controls to improve work practices which can deliver even lower dust exposures.

Our goal is always to reduce exposures to as low as practicable.

The implementation of the recent State codes and guides such as those listed below, provide a number of items to reduce dust exposure such as improve the engineering controls, management of respirator protection, worker training and awareness to improve competency and better work practices.

- Workplace Health and Safety Queensland Code of Practice (2019). “Managing respirable crystalline silica dust exposure in the stone benchtop industry”.
- WA Guidance Note - Safe stone product fabrication and installation (2018)
- WorkSafe Victoria Compliance Code (2020). “Managing exposure to crystalline silica: Engineered stone”.

Hence , there is no shortage of information in Australia on how to do the job safely but it is the implementation by the employer that is variable.

3. Relevant to dust-related diseases, what mechanisms exist or could be further developed to ensure effective enforcement of regulations and codes of practice?

1. To prevent future incidence of dust related disease, the AIOH’s position is that regulators should direct their attention to all parts of industry, including the small/micro enterprise sector: engineered stone factories and small construction contractors. In these types of businesses there are clear gaps in awareness of statutory requirements and the means to meet these. Regulators should determine the high-risk industries for dust diseases using parameters such as materials used, knowledge of work practices and number of workers in that industry. The following applies to the engineered stone industry but could be applied to other industries where dust related disease occurs.
2. **Reporting of Exposures** - In high risk industries such as engineered stone fabrication, the employer should be required to report all air monitoring results and exceedances of the WES directly to the work health and safety regulator. An exceedance of the WES confirms that the current controls present in the workplace to reduce worker exposure to RCS are not effective. This model has been used successfully the WA mining industry and reduced the incidence of silicosis and has established a repository of exposure data for various jobs in the industry.
3. **Licensing Businesses** - Other mechanisms include licensing of businesses which perform high risk activities as a means of being on the regulators “radar screen”. The issue for engineered stone industry was that the regulators were made aware AFTER workers had been seriously injured and fatalities were occurring.
4. **Auditing by Suppliers** – Suppliers must be required to demonstrate that they are supplying their products , as required by OHS Act, so there is no risk of harm to the

worker. Regulators could use this as another means of identifying businesses using engineered stone to ensure they are registered.

5. **Equipment Suppliers** – Cutting and grinding equipment suppliers should provide RCS exposure data on their equipment and reference to the regulations and WES values to ensure fabricators are using the correct equipment and assist in compliance with the law. A similar example occurs with noise where noise levels of equipment is attached to the equipment and technical product information.
6. **Users must ensure product sourced from a reputable and ethical company** – Engineered stone benchtops is a marketplace product. Builders and the general public should be educated to question the source of the product from a reputable supplier and reject product supplied offshore. This would also drive the licensing of engineered stone businesses and indirectly assist the regulators.

4. Hazard elimination sits at the top of the hierarchy of control measures (see <https://www.safeworkaustralia.gov.au/risk> for an example of a hierarchy of control measures). Do you consider a ban (either total or partial) of high silica content engineered stone material, a proportionate and practical response to the emergence of silicosis in the engineered stone benchtop industry in Australia?

High risk chemicals and materials can be handled safely.

There are many industries across Australia where high quartz-containing materials are encountered and exposures to RCS are effectively controlled. Typically, these situations are associated with large employers with strong and mature health and safety systems in place, supported by the engagement of health and safety professionals and Occupational Hygienists.

In contrast, the engineered stone sector features a significant number of smaller employers, including micro businesses, with limited financial resources, limited access to professional assistance, limited knowledge of the array of controls available to manage exposure of their workers to atmospheric contaminants and limited awareness of their responsibilities under OHS law.

The high silica content (up to 90%) of engineered stone, has led to calls for bans. A well-known case history is Asbestos which has been banned but yet more workers than ever have the potential to be exposed to asbestos fibres from the asbestos removal industry. The controls put in place through regulations, licensing and compliance exposure monitoring by occupational hygienists has allowed this industry to continue to work without harm to worker health.

The key focus with high risk materials and chemicals is about control of the work activity and the risk assessment of the concentration in the workers breathing zone. Factors such as frequency of exposure and duration of exposure are essential and variability of tasks during the day and extended periods of time. It is the dose of respirable fraction crystalline silica in the breathing zone that is the critical piece of information. The 0.05mg/m³ WES represents a 40-year working lifetime for a worker without adverse health effects. Risk assessments must be performed by competent occupational hygienists to assess the exposures and recommend appropriate control methods for the particular dust exposures.

The silica content of the worked material is a factor, but not an overriding one. To elaborate, if a low silica product is improperly cut, this may deliver a considerably higher concentration of RCS to the breathing zone of the worker than would be the case with a high silica content product where suitable engineering or work practice controls are in place.

Notwithstanding these points, the AIOH is supportive of intentions to encourage use of lower silica products. This fits with the substitution approach in the Hierarchy of Control model.

5. The Taskforce is aware some jurisdictions are considering a licensing scheme for engineered stone. Do you consider this a proportionate and practical response in relation to the following?

a. Restricted (under licence) or otherwise prohibited manufacture in Australia?

The AIOH, as mentioned earlier, does not advocate prohibiting manufacture or banning engineered stone but ensuring that the controls and monitoring exposures are put in place to meet regulatory compliance prevent silicosis and protect worker's health.

b. Restricted (under licence) or otherwise prohibited importation and distribution?

The prohibition of imported engineered stone benchtops and kitchens would support the Australian workers and employment, essentially removing cheaper imports. This again is a commercial issue about price not about regulating Australian OHS.

c. Fabrication and installation performed only under licence?

The AIOH would support a registration scheme with the State WHS regulator such that all businesses involved with fabrications and installation can be monitored for safe operating work practices to ensure RCS exposures are below the WES and compliance with the OHS regulations.

d. Licence required after installation modifications or repurposing of installed engineered stone?

AIOH would support licencing businesses to ensure that the repurposing of engineered stone is completed in compliance with regulations.

6. What learnings from the re-emergence of accelerated silicosis as an occupational health and safety risk can be applied to enhance workplace health and safety systems more generally?

Occupational hygienists were missing from this event. Furthermore, involvement of occupational hygienists would have been able to document suitable control strategy, as they did in the State Codes, after the incidence of silicosis in engineered stone workers.

Occupational hygienists are experts in workplace risk assessments. They are experienced and knowledgeable about workplaces, controls and occupational disease prevention. Just like Safety experts advise on accidents, asset damage and injury, Occupational hygienist advise on the long-term disease, health effects and injury.

Risk assessment of health effects involves:

- Identification of dust hazards
- Proper monitoring strategy to quantify exposures,
- Interpretation of data using the WES,
- Perform qualitative or quantitative risk assessments and
- Recommend appropriate controls – engineering, administrative and PPE.

However, such professionals are rarely seen in a small business setting. The challenge is how to get this resource engaged with the micro business environment, particularly when new technologies and hazards are introduced. Two options stand out:

1. Rely on suitably resourced government agencies to provide some level of advice and direction, or
2. Encourage/support representative organisations to provide professional services to their member organisations.

The following learnings should be addressed by the Taskforce to enhance health and safety systems:

1. Support the adoption of a National Code of Practice, modelled from that released by Work Health and Safety Queensland to:
 - a. Assist businesses understand how to manage hazardous substances.
 - b. Enable straight forward enforcement by State and Territory work health and safety regulatory authorities.
2. Encourage an increase the number of technical experts in government, in that each State and Territory has sufficient experienced persons in each Health and Safety regulatory authority to enforce hazardous substances legislation. This relates to a lack of budget allocation for such specialised resources, along with equipping such resources with the necessary authority to enforce such legislation. This should be addressed as a priority.

3. Consider the establishment of a centralised Australian register for the reporting of dust-related lung disease and over-exposure to RCS along the lines recommended by the Senate Inquiry into Toxic Dust (2005). Such an initiative may have alerted State and Territory WHS regulators of this issue at the time of exposure, thereby enabling intervention to prevent the onset of related disease.

Workforce Organisational Culture

1. Given the nature of the building and construction industry, and the increase in the number of smaller, often independent businesses and suppliers, what particular strategies and supports are needed to ensure that these businesses are able to provide adequate protection for workers?

To support smaller businesses and suppliers, the AIOH recommends the following strategies:

- Provide clear requirements for managing the risk of RCS exposure through the development of a National Code of Practice mirroring the requirements from the WHSQ Code.
- Establish a requirement for businesses to register with the State WHS regulator, such that all businesses can be monitored for safe operating work practices to ensure RCS exposures are below the WES.
- Encourage provision of increased Occupational Hygiene resources in State and Territory WHS regulator ranks to support businesses and take compliance action where required.
- Encourage increased provision of health monitoring services, such as the NSW mobile lung screening service, to be adopted as a National model.

In 2019, the AIOH launched its *Breathe Freely Australia* (BFA) initiative, www.breathefreelyaustralia.org.au.

This was, in part, a response to the emergence of silicosis in the stone benchtop industry. Its purpose was to raise awareness about occupational lung disease and, in particular, the engineering, administrative and PPE controls that are available to prevent adverse health outcomes.

The AIOH partnered with key tripartite organisations, individual state government agencies, industry representative bodies, unions and equipment supply organisations to deliver a series of roadshow events in Queensland and Western Australia. These were aimed primarily at supervisors and workers in the residential building industry, and were provided free of charge.

The BFA website provides free resources to support best practice for the control of dust in different industry sectors, including engineered stone. It offers guides, fact sheets, checklists, manager toolkits and a management standard.

With support, this initiative could be taken a lot further to influence a key underlying factor in the emergence of accelerated silicosis in this country – a lack of awareness in small/micro businesses about statutory requirements, the risks attached to work with engineered stone and the means to address those risks.

2. What health and safety strategies can be improved?

The accelerated silicosis experience in Australia has highlighted several improvement opportunities. Lessons are as follows:

- Regulators should direct their attention to all parts of industry, including the small/micro enterprise sector where there are clear gaps in awareness of statutory requirements and the means to meet these.
- The answer is to apply well-known, highly effective workplace controls for dust, often in combination, to ensure that there are no impacts on worker health.
- Awareness building is another key. The *Breathe Freely Australia* initiative is very suited to collaborative exercises with stakeholder groups.
- Emphasis should be placed on control and prevention. Occupational Hygienists work in this space and have much to offer. The challenge is to find a way to channel the experience that they have with engineering controls, administrative and work practice controls, and PPE controls to the people who need this information.

3. What return to work support is available or should be considered to assist workers following a diagnosis of silica-associated disease, including for those who are unable to return to the engineered stone industry?

Nothing to add.

4. What are examples of good dust exposure workplace monitoring processes? (Where possible please provide evidence to support the effectiveness of these processes).

There are examples of businesses which have implemented robust systems to anticipate, control, monitor, and continuously improve the control of exposures to hazardous substances such as RCS. Much of this work has been performed by major companies such as the mining industry and not documented for general distribution.

Where good practices have been implemented, it usually involves the engagement of technical specialists such as a Certified Occupational Hygienist (COH)[®] by such companies as they understand appropriate control strategies for their working environment.

An example of an excellent operational guideline was developed for the quarrying industry by the Cement, Concrete, Aggregates Australia (CCAA), Management of Respirable

Crystalline Silica in Quarries, 2020. This is a comprehensive guide for members about all aspects of compliance with the regulations. This was developed with their industry occupational hygienists and knowledge of exposures for various equipment, and serves as an excellent example of good dust exposure management.

It is the AIOH's position that all workplace monitoring processes be undertaken under the governance of a Certified Occupational Hygienist (COH)[®] and Full members of the AIOH.

Resourcing and Capability

1. What specific resources (e.g. information, education, other supports etc.) are required, that are not currently available, for small to medium sized businesses, to ensure that owners and staff are fully informed of the availability and correct use of control methods, including by workers from non-English speaking backgrounds?

Occupational Hygienists are the professionals using science and technology to risk assess and advocate controls to protect worker health.

Occupational Hygienists can provide advice on control strategies including hazard elimination, engineering modifications, administrative controls and, finally, personal protective equipment. Importantly, their advice takes in account other safety factors to be able to do the task without an accident for example the wrong or poorly designed personal protective equipment for the task.

For the reasons mentioned earlier, they are generally not available to small to medium sized businesses. Yet they hold many of the answers in terms of the workplace controls needed to prevent of ill-health outcomes targeted by the NDDT.

In similar vein, Occupational Physicians are rarely seen in an SME environment. In large industry, they work closely with their Occupational Hygiene counterparts to prevent occupational disease.

Other materials which could be used for multicultural workforce is simple translation of key information. Experience with non – English speaking contractors, found that simple cartoons or photographs with words assisted key messages and work rules to be learnt.

2. With a specific focus on dust related diseases, what mechanisms exist that could be used as a basis for providing a coordinated national system with representation across stakeholder disciplines for identifying and communicating emerging issues?

Establish the Centre for Control of Occupational Disease

One of the key functions of Safe Work Australia, as set out in the Safe Work Australia Act (2008), is evidence gathering. This function is to collect, analyse and publish relevant data, to undertake and publish research, and to inform the development and evaluation of WHS and workers' compensation policies and strategies. The preparation of watching briefs

should have identified new and emerging issues. The question has to be asked as to how they failed to identify the emergence of this silicosis epidemic.

In April 2019, Senator R Di Natale (G), raised a motion in the Senate that said, in part: “ ... the Federal Government is called upon to recognise the need for:

(a) qualified and competent Occupational Hygienists to be involved in the recognition, evaluation and control of silica exposures, and

(b) the establishment of a multi-disciplinary Centre for Control of Occupational Disease.

The recommendation for a multi-disciplinary Centre for Control of Occupational Disease echoes a similar recommendation from the Queensland ‘Black Lung, White Lies’ Inquiry (2017), that the Mine Safety and Health Authority should have a properly resourced and dedicated health research function, including epidemiological research into health conditions experienced by mine workers. These research functions should be undertaken in a collaborative way drawing upon and sharing research with leading international research bodies such as the National Institute for Occupational Safety and Health (NIOSH) in the USA.

The AIOH believes that such a Centre should include occupational hygienists, occupational physicians and toxicologists. However, to function effectively, such a Centre should be a national body, independent of the Government. It must also be adequately resourced. A possible model is the UK Institute of Occupational Medicine; the IOM19 was founded in 1969 by the UK National Coal Board as an independent charity in the UK and retains this charitable purpose and status today.

One obvious role for such an Institute would be horizon scanning for new and emerging occupational health threats. Currently, there is a horizon scanning unit in the Commonwealth Department of Health and Aging, established to provide advance notice of significant new and emerging technologies to health departments in Australia and New Zealand, and to exchange information and evaluate the potential impact of emerging technologies on their respective health systems. This is obviously a very broad remit which may indicate why such a specific issue as stone mason’s silicosis was not detected. One example of a suitable subject matter for horizon scanning and monitoring are those materials promoted as a safer substitute for engineered stone.

The AIOH acknowledges the excellent service provided by agencies such as the National Industrial Chemical Notification and Assessment Scheme (NICNAS) in assessing risk of industrial chemicals that are new to Australia. However, a possible new or emerging risk may be a consequence of an unknown hazard of a substance, a known hazard of a substance used in a different way leading to a different exposure (e.g. other route of exposure, exposure scenario), or a known exposure in a new work situation.

As seen with the example of engineered stone, this arose from a new work situation. Despite several early warning systems that are available in Australia, there is a lack of integration and collaboration between the systems and states. With rare events with a long latency, it is important to have a wide, national surveillance system, or a combination of

existing initiatives, and interdisciplinary and international research and debate. In addition, expert collaboration is important to use limited resources in the most effective way.

Research and Development

1. What industry mechanisms could be introduced to ensure workers have appropriate competencies for handling engineered stone or preforming processes that generate silica dust?

Training for workers e.g. apprentices, contractors and industry induction training must include a stronger health component, including silica dust. The current “White Card” for apprentices would be appropriate for hazard awareness, health effects, preventative information about the right type of equipment to use and how to use respirators properly so they fit and protect.

The *Breathe Freely Australia* (BFA) website, referred to earlier, has a significant amount of free materials available to organisations that may have limited resources in terms of training and awareness about how to work safely with hazardous materials and processes. The AIOH would be supportive to work with the National DD Taskforce and engage with the BFA website and if appropriate a program of roadshows, to support the regulators, employer and union groups.

The AIOH supports the development of a specific training program with associated assessment requirements as an element of competency.

2. What are the specific challenges related to linking workplace exposure with disease development (at a later date) and how should these be addressed?

One challenge relates to the lack of validated data to demonstrate the employer’s compliance, or non-compliance with silica dust exposure control measures. This can be addressed, at least in part, through the implementation of mandatory notification requirements to the State or Territory WHS Regulator in all cases where the shift-adjusted Workplace Exposure Standard is or has been exceeded for RCS.

3. What are three key pieces of information about dust disease that you would like to see collected at a national level? What are the three key uses of the information collected at a national level?

Three key pieces of information that could be collected:

1. **Identification** - A list SME business sectors that generate atmospheric hazards and may need support. This could be a useful area for research and collaborative effort.

2. **Exposure Database & Task information** - together with the typical exposures that go with the task (a sub-set of the job). This enables the setting up of a task-exposure database – to provide guidance on where resources need to be directed.
3. **Workplace Control** - Examples of where there has been successful application of workplace controls for dust – as evidenced by quantitative measurement of personal exposures and static (fixed position) concentrations. This could form the basis of a best practice manual.

4. What alternative products are currently available which could replace high silica-content engineered stone? How could we drive innovation in relation to products?

Nothing to add

5. The interim advice identified immediate research priorities which has led to a research funding grant opportunity announced by the Medical Research Future Fund and National Health and Medical Research Council. Are there other research priority areas that have not been identified in the interim advice that should be considered, and why? What research areas should be a priority following this first round of research funding?

OHS always has a component about training and awareness. This is not as simple as a set of power point slides or simple document. There are opportunities to do better and ensure all workers understand the hazards, risks and safe work practices.

Hence the AIOH recommend that there are better communication sources for diverse work populations. Determine how do workers best learn about safe work practices for their jobs e.g. – videos on mobile phones, websites, cartoons, documents.

Finally , the AIOH welcome the opportunity to comment on these challenging questions and offer our support to the NDDT.

Our goal is the same as the NDDT and that we are committed to protecting the health of Australian workers.