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Silicosis and the manufactured stone industry: an update

by Tom Gotsis

1. Introduction

Silicosis is a progressive lung disease caused by the inhalation of crystalline silica dust. The silica dust causes lung scarring (pulmonary fibrosis), which impairs breathing and can be fatal. Silicosis is categorised as either “simple” or “complicated”, depending on the pattern and extent of the scarring. Silicosis is also categorised on the basis of the duration between exposure and disease onset. Acute silicosis occurs relatively shortly after exposure to silica dust. Accelerated silicosis occurs from three to ten years after exposure. Chronic silicosis, the most common form of the disease, occurs from ten to thirty years after exposure.¹

Sources of crystalline silica dust include natural stone, such as marble and granite, and the manufactured or engineered stone used to produce kitchen and bathroom countertops. Natural stone contains up to 40% crystalline silica; whereas manufactured stone contains up to 95% crystalline silica.² The widespread use of manufactured stone has been associated with the re-emergence of silicosis as an occupational lung disease.

The NSW Legislative Council’s Standing Committee on Law and Justice is currently examining the management of silicosis in the manufactured stone industry as part of its annual [review](#) of the NSW Dust Diseases Scheme. This e-brief is a modified version of a paper that the Research Service produced for the Committee in October 2021. It provides an overview of developments at the State and Commonwealth level since the Committee’s 2019 [report](#) on this issue. Those developments include:

- the latest silicosis data in NSW and other States;
- government actions to prevent, monitor and manage silicosis;
- improvements in silicosis health screening;
- research into new diagnostic techniques and treatments; and
- the National Dust Disease Taskforce’s *Final Report*.

2. NSW silicosis data

2.1 Silicosis cases and silicosis-related deaths

2.1.1 Prior to July 2020

A case finding study, [*Respirable crystalline silica exposure in the NSW manufactured stone industry*](#) (the study), was commissioned by SafeWork NSW and published alongside the [*NSW Dust Disease Register Annual Report 2020-21*](#). The aim of the study was to provide “insight into the burden of silica-related disease in the manufactured stone industry from 2017-2020”.³

The study was conducted using information provided by SafeWork NSW, icare NSW and NSW Health.⁴ The financial years 2017-18, 2018-19 and 2019-20 constitute the study’s reporting period. Earlier data was presented where it provided context for the reporting period data.

Key findings from the case finding study included:

- In the five years before the reporting period, there was an average of 8.7 silicosis cases each year in NSW across all occupations and industries.⁵
- During the three-year reporting period, icare NSW screened 3,030 workers for silica exposure, including 696 workers from the manufactured stone industry. Among the 696 manufactured stone industry workers, 88 were diagnosed with silicosis (an average of 29 cases each year from the manufactured stone industry).
- Of the 88 manufactured stone workers diagnosed with silicosis, 63 (72%) had chronic simple silicosis and 25 (28%) had chronic complicated, acute or accelerated silicosis.
- Seventy-seven percent of manufactured stone workers with silicosis had a disability level (lung function loss) of 1%; which suggests that they had no or minimal silicosis symptoms at the time of diagnosis. In the remaining 23% of cases, the disability level was between 5% and 40%.
- The majority of manufactured stone industry workers with silicosis were stonemasons (70%), followed by installers (15%). Machine operators (7%) and workplace managers (7%) were also among the manufactured stone workers diagnosed with silicosis.⁶

The study noted that annual case numbers were relatively stable from 2012-13 to 2017-18 (Figure 1).⁷ The subsequent increase in silicosis cases during 2018-19 and 2019-20 was attributed to:

- The commencement of targeted workplace inspections by SafeWork NSW in March 2018, as part of a five-year strategy aimed at the manufactured stone industry
- The increased use of medical screening services and routine CT scans in 2018 to improve the detection of silicosis in workers exposed to high levels of respirable crystalline silica.⁸

The study also noted that silicosis is a latent disease; as symptoms often appear years after disease onset. Consequently, in the absence of heightened awareness and increased screening initiatives, the prevalence of silicosis in NSW manufactured stone industry workers may not have become apparent for many years.⁹

Figure 1: Silicosis cases for all industries and occupations reported by icare NSW, 2012-13 to 2019-20¹⁰



2.1.2 July 2020 onwards

From 1 July 2020, all NSW medical practitioners must notify NSW Health when a case of silicosis is diagnosed.¹¹ The NSW Dust Disease Register also commenced on 1 July 2020.¹² Data on notified silicosis cases has been published in the [NSW Dust Disease Register Annual Report 2020-21](#) and the NSW Government's [Silica Dashboard](#).

From 1 July 2020 to 30 June 2021, NSW Health was notified of 57 silicosis cases and there were seven silicosis-related deaths in NSW.¹³

From 1 July 2021 to 30 September 2021, NSW Health was notified of eight silicosis cases and there were two silicosis-related deaths.¹⁴

2.2 Disease characteristics and demographic features

Of the 57 silicosis case notifications made to NSW Health from 1 July 2020 to 30 June 2021:

- The silicosis was chronic in 77% of cases.
- Lung function impairment was between 0 and 5% in 40% of cases; which reflects the fact that “in the early stages of silicosis, symptoms are usually not present”.
- All cases involved men (100%).
- The most common region of birth was “Australia/New Zealand” (35%).
- The most common age group was 41 to 50 years (32%).

- The most common industry category was “other non-metallic mineral product manufacturing (including manufactured stone)” (58%).
- The most common occupational category was “clay, concrete, glass and stone processing machine operators” (53%).¹⁵

3. National silicosis data

At present, there is no national data relating to the incidence and outcomes of silicosis. Nor do all States and Territories publish silicosis data. The National Dust Disease Taskforce has responded to this data gap by recommending that a National Occupational Respiratory Disease Registry be operationalised “as soon as possible, with an initial focus on mandatory reporting of silicosis, and voluntary reporting of other occupational respiratory diseases.”¹⁶

In the absence of a National Occupational Respiratory Disease Registry, the National Dust Disease Taskforce noted that “best estimates” of silicosis prevalence have to be drawn from data collected and reported by “some jurisdictions.”¹⁷ The available data shows:

- Queensland has screened 1,053 workers and identified 202 silicosis cases.¹⁸
- Victoria has screened 456 workers and identified 133 silicosis cases.¹⁹
- South Australia has screened 295 workers and identified 18 cases of probable, possible or confirmed simple silicosis.²⁰
- Western Australia has screened 90 workers and identified eight silicosis cases.²¹

In its *Final Report*, the National Dust Disease Taskforce provided data on accepted silicosis workers’ compensation claims by jurisdiction and industry. However, it cautioned that workers’ compensation claims data “are not a true indication of the incidence of silicosis in Australia, as only accepted workers’ compensation claims are included.”²² Further, the established compensation schemes for workers affected by dust diseases are not uniform across all jurisdictions and “there are many reasons why a worker with silicosis may not make a compensation claim, including fear of loss of employment ...”²³

4. Recent developments in Australia

4.1 NSW

In 2019, Work Health and Safety Ministers across Australia agreed to reduce the workplace exposure limit for respirable crystalline silica, from 0.1 mg/m³ to 0.05 mg/m³.²⁴ The exposure limit operates as an eight-hour time-weighted average.

On 21 February 2020, the NSW Government announced its plan to transition the manufactured stone industry away from uncontrolled dry cutting practices.²⁵ A rebate of up to \$1,000 was introduced to assist businesses purchase necessary equipment.²⁶

On 1 July 2020, the NSW Government:

- halved the silica exposure limit, from 0.1 mg/m³ to 0.05 mg/m³;²⁷
- banned the uncontrolled dry cutting of manufactured stone;²⁸
- required manufactured stone to be cut using personal protective equipment and a water delivery system, prescribed extraction system or local exhaust ventilation system;²⁹
- introduced a \$30,000 maximum penalty for businesses using uncontrolled dry cutting and a \$6,000 maximum penalty for individuals directing or allowing a worker to engage in uncontrolled dry cutting;³⁰
- commenced the NSW Dust Disease Register;³¹ and
- required all NSW medical practitioners to notify NSW Health upon diagnosing a silicosis case.³²

In late 2020, the NSW Government published the [NSW Dust Strategy 2020-2022](#), which has three focus areas: asbestos, silica and wood, and other dusts. The strategy aims to “prevent dust exposure through compliance, regulation, awareness and education”.³³ Air monitoring and health screening are key features of the *NSW Dust Strategy*.³⁴ The health monitoring must include a “chest x-ray”, but not necessarily other types of imaging technology.³⁵ As noted above (at 2.1.1), from 30 June 2017 to 1 July 2020, 3,030 workers were screened for silica exposure by icare NSW.³⁶

Health screening in NSW is free in some instances. Icare NSW provides free lung screening when a business has received a SafeWork NSW improvement notice.³⁷ The first round of screening is also free for businesses with less than 30 employees.³⁸ For businesses with more than 30 employees, a 50% subsidy is available for the first round of screening; which reduces the cost of screening from \$100 to \$50 per employee.³⁹

Silica dust control measures are another key feature of the *NSW Dust Strategy 2020-2022*. The silica dust control measures identified by the strategy are: substitution of materials; training of workers; ventilation of work areas; wet cutting; dust capture; the use of personal protection equipment; wet clean-up; and the use of Class M or Class H vacuums. The strategy does not require the use of negative air pressure or licenced contractors for silica dust control.

4.2 Victoria

On 21 August 2019, a ban on the uncontrolled dry cutting of engineered stone came into effect across Victoria.⁴⁰ The reduced exposure standard of 0.05 mg/m³ came into effect on 17 December 2019.⁴¹ A [Compliance Code on Managing exposure to crystalline silica: Engineered stone](#) was published in February 2020.⁴² These measures were accompanied by an enforcement campaign, an education campaign, and free health screening for Victoria’s 1,400 stonemasons.⁴³

On 28 February 2021, Premier Daniel Andrews announced:

- More than 1,000 workers have registered for free health screening.

- A fast-tracked compensation process was established for affected workers and their families.
- The development of Australia's first licensing scheme for engineered stone workers.
- Since 1 July 2019, more than 1,000 silica-related workplace inspections had been conducted and more than 450 compliance notices had been issued.⁴⁴

On 16 September 2021, the Victorian Minister for Workplace Safety announced "Australia's first dedicated public occupational respiratory clinic":

Stonemasons at risk of silicosis will be able to access free world-class health screenings and treatments thanks to this landmark partnership between WorkSafe and The Alfred. For the first time, eligible workers in the stonemason industry can now undergo a full health assessment for silicosis and receive both their health outcome and a treatment plan during a one-day clinic visit. The clinic will also provide an ongoing centre for those with a positive diagnosis to manage their illness.⁴⁵

During the announcement, the Minister noted that more than 90 per cent of Victoria's estimated 1,400 past and present stonemasons had registered for screening.⁴⁶

The [Occupational Health and Safety Amendment \(Crystalline Silica\) Regulations 2021](#) is expected to commence in November 2021.⁴⁷ The Regulation will improve risk assessment and control measures, and introduce Victoria's licencing system for manufactured stone workers.⁴⁸

Results from Victoria's health screening program indicate that Lung Function Tests (LFT) and x-rays may be insufficiently sensitive to detect the early stages of silicosis:

Analysis of screening investigations for silicosis have demonstrated concern about whether the LFT and chest x-ray have sufficient sensitivity to detect early disease. The implementation of [High Resolution Computed Tomography (HRCT)] screening for silicosis does however carry additional costs and increased radiation exposure in comparison to chest x-ray. Evidence to support a recommended change in policy would be strengthened by undertaking a formal study with independent classification of chest imaging by a group of expert radiologists.⁴⁹

This WorkSafe Victoria finding is consistent with an August 2021 literature review published in the *International Journal of Environmental Health*.⁵⁰ The literature review found that there is a need to "standardise the process of respiratory surveillance".⁵¹ It further found that "X-ray was determined as not sufficient in detecting silicosis" and "HRCT is recognised as the optimal method, however it is not always available".⁵² Other techniques currently under investigation, such as biomarkers and Exhaled Breath Condensate, could potentially become useful in the future; although, at present, they have not been validated.⁵³ The WorkSafe Victoria findings are also consistent with the Royal Australian and New Zealand College of Radiologists' *Imaging of Occupational Lung Disease Position Statement*.⁵⁴

4.3 Queensland, South Australia and Western Australia

The Queensland Government had issued a safety alert for the uncontrolled dry cutting of engineered stone in 2018.⁵⁵ Queensland's [*Managing respirable crystalline silica dust exposure in the stone benchtop industry Code of Practice*](#) commenced on 31 October 2019.⁵⁶ The Code of Practice requires health monitoring of workers in the stone benchtop industry.⁵⁷ The occupational respirable crystalline silica exposure limit was reduced to 0.05mg/m³ on 1 September 2020.⁵⁸

On 24 November 2020, the Queensland Government announced that a world-first treatment, known as whole lung lavage, was being developed in a collaboration between the Prince Charles Hospital and the University of Queensland.⁵⁹ Whole lung lavage involves the precision removal of silica crystals and damaged cells from the lungs; "effectively 'rinsing out' the lungs in what can be a four to five-hour procedure."⁶⁰

South Australia reduced the occupational respirable crystalline silica exposure limit to 0.05mg/m³ on 1 July 2020.⁶¹ South Australia has also developed a Silicosis database⁶² and introduced a compliance program, with 102 compliance breaches identified in 2020-21.⁶³

The Western Australian Government reduced the occupational respirable crystalline silica exposure limit to 0.05 mg/m³ on 27 October 2020.⁶⁴ On 15 January 2021, the Western Australian Government announced that it had amended the *Occupational Safety and Health Regulations 1996 (WA)* to require employers "... to provide a low-dose high-resolution computed tomography (HRCT) scan ... instead of the previously required chest X-ray."⁶⁵ The National Dust Disease Taskforce noted:

WorkSafe WA may be the first regulatory body in Australia, and likely worldwide, to legislate the use of a low dose chest HRCT as health surveillance for silica workers.⁶⁶

4.4 Commonwealth

4.4.1 Safe Work Australia

The following developments relating to Safe Work Australia were discussed by the National Dust Disease Taskforce in its *Final Report*:

- In September 2019, Safe Work Australia published national guidance material on [*Working with silica and silica containing products*](#).⁶⁷
- In June 2021, Safe Work Australia launched its [*Clean Air, Clear Lungs*](#) education and awareness campaign. The campaign will run until the end of 2021 and target "micro, small and medium-sized businesses in the construction, agriculture, manufacturing and engineered stone industries".
- In June 2021, Safe Work Australia members agreed to amend the model WHS regulations to expressly prohibit uncontrolled dry cutting of engineered stone.
- Safe Work Australia members agreed to develop a model code of practice for managing the safety risks associated with respirable crystalline silica and engineered stone.⁶⁸

On 26 October 2021, Safe Work Australia published the [*Model Code of Practice: Managing the risks of respirable crystalline silica from engineered stone in the workplace*](#).⁶⁹

Safe Work Australia has also published the following guidance material:

- [*Health monitoring: Guide for crystalline silica*](#) (18 February 2020)
- [*Health monitoring: Guide for registered medical practitioners*](#) (19 February 2020)

4.4.2 National Dust Disease Taskforce

On 26 July 2019, the Commonwealth Government announced the establishment of the National Dust Disease Taskforce.⁷⁰ The National Dust Disease Taskforce conducted an independent review to inform the development of a national approach to silicosis and other occupational dust diseases.⁷¹ The Commonwealth Government committed \$5 million to support the National Dust Disease Taskforce and its work.⁷²

Following a consultation process, the National Dust Disease Taskforce provided its [*Interim Advice*](#) to the Minister for Health in December 2019. In January 2020, the Minister for Health announced that the Commonwealth Government was “acting to accept” its recommendations for the following five immediate national actions:

1. Developing a targeted education and communication campaign to raise awareness of the risks of working with engineered stone.
2. Ongoing staged development of a National Dust Disease Registry, with specific data requirements recommended by the Taskforce.
3. Targeted investment in key research activities, to improve understanding of prevention, diagnosis and treatment.
4. Developing national guidance on screening workers working with engineered stone.
5. Development of a national approach to identify occupational silica dust exposure and other future occupational diseases.⁷³

After delays caused by the Covid-19 pandemic, the National Dust Disease Taskforce reconvened in August 2020. It undertook further consultations and commissioned independent market research, including a [*Dust Disease Research Update*](#).⁷⁴ The [*Final Report*](#) of the National Dust Disease Taskforce was delivered to the Minister for Health in June 2021 for the Government’s “consideration and response”.⁷⁵ The National Dust Disease Taskforce website does not presently indicate that a response has been received.

The seven recommendations contained in the *Final Report* of the National Dust Disease Taskforce deal with a broad range of issues, including: prevention, standards, monitoring, compliance, risk assessment, health screening, education, research and treatment. Table 1 provides a summary of the *Final Report’s* recommendations.

Table 1: Summary of National Dust Disease Taskforce Recommendations⁷⁶

Recommendation	Summary
1	<p>Strengthen work health and safety measures, including:</p> <ul style="list-style-type: none"> • Take immediate action to ensure that businesses working with engineered stone demonstrate that they effectively and continuously manage risks. • Urgently conduct a regulatory impact analysis, which should consider: (i) implementing a licensing scheme for businesses in the engineered stone industry; and (ii) improving health screening by using methods such as HRCT scans. • Commence the processes required to implement a full ban on the importation of some or all engineered stone products by 2024, if required.
2	<p>Improve the quality, frequency and coverage of health screening for current and former workers.</p>
3	<p>Prioritise investment in prevention activities, including:</p> <ul style="list-style-type: none"> • Finalise and implement the National Silicosis Prevention Strategy and National Action Plan. • Implement a national, targeted education and communication campaign. • Design and implement an Early Detection and Rapid Response Protocol to identify emerging workplace risks using data from the national registry, when it becomes operational.
4	<p>Better support workers affected by dust diseases and their families through individually tailored programs of psychological, financial and return-to-work support.</p>
5	<p>Better support medical, health and other related professionals to improve the diagnosis and management of workers affected by silicosis.</p>
6	<p>Enhance research expertise in Australia and operationalise the National Occupational Respiratory Disease Registry as soon as possible, with an initial focus on the mandatory reporting of silicosis.</p>
7	<p>Establish a cross-jurisdictional governance mechanism to improve communication and information sharing, coordinate responses, and report on progress.</p>

The issue of banning manufactured stone products (referred to in Recommendation 1) is particularly noteworthy. In its November 2020 submission, the Australian Council of Trade Unions (ACTU) called for a ban on manufactured stone containing high levels of silica. The ACTU stated:

The principal action necessary is the implementation of a ban on the use of high silica content engineered stone. Unless we eliminate the installation of these products, we will face a similar legacy issue to that with asbestos containing materials, which is something we should be trying to avoid. Along with other organisations, unions have suggested a three-year, explicit, staged approach to a ban on the importation and manufacture of engineered stone with a high silica content.⁷⁷

In contrast to the ACTU's submission, the National Dust Disease Taskforce adopted a contingent approach in its *Final Report*. It recommended that the process of banning "some or all" manufactured stone products should commence *if*, by July 2024, regulatory compliance rates do not improve *and* preventive measures do not effectively protect workers.⁷⁸ The National Dust Disease Taskforce explained that it required further evidence on such issues as whether there is a safe level of silica in manufactured stone, whether a ban would be effective, and whether there are safer substitute products that would be accepted by the community.⁷⁹

4.4.3 Medical Research Future Fund

On 11 May 2021, the Medical Research Future Fund announced \$6 million of funding under its 2020 Silicosis Research Grant Opportunity.⁸⁰ A particular focus of the funding is the development of techniques that will enable the earlier detection of silicosis.

5. Conclusion

Silicosis is an insidious disease. An increase in silicosis cases has been associated with the use of manufactured stone products. Due to the time it takes for symptoms to emerge, the true extent of the problem may not be known for many years. Reforms are being introduced at the national and State levels to address the issue. Ongoing regulatory enforcement and health screening will be required to determine if those reforms are effective. The National Dust Disease Taskforce has recommended that, if reforms are not shown to be effective by July 2024, a partial or complete ban on manufactured stone products should be introduced.

¹ SafeWork NSW, [NSW Dust Disease Register Annual Report 2020-21](#), July 2021, p 30.

² Golder Associates Pty Ltd, [Case Finding Study - Respirable crystalline silica exposure in the NSW manufactured stone industry](#), 17 May 2021, p 2.

³ [NSW Dust Disease Register Annual report 2020-21](#), July 2021, p 4.

⁴ Golder Associates Pty Ltd, [Case Finding Study - Respirable crystalline silica exposure in the NSW manufactured stone industry](#), 17 May 2021, p i.

⁵ *Ibid*, p 11.

⁶ *Ibid*, p ii.

⁷ *Ibid*, p 11.

⁸ *Ibid*, p 11.

⁹ *Ibid*, p 11.

¹⁰ *Ibid*, p 12.

¹¹ SafeWork NSW, [Notification of silicosis diagnosis](#), no date, [website-accessed 27 September 2021]. Silicosis is a scheduled medical condition under [Part 4](#) of the *Public Health Act 2010*.

¹² For background information on the establishment of the NSW Dust Diseases Register, please see: Safe Work NSW, [NSW Dust Disease Register Annual Report 2020-21](#), July

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- 2021, p 4. The [Silica Dashboard](#) also includes information on workplaces visits, notices issued and action taken to reduce silica exposure.
- ¹³ [Silica Dashboard](#) and Safe Work NSW, [NSW Dust Disease Register Annual Report 2020-21](#), July 2021, p 6 and 9. Death data is subject to further updating following “formal coding processes at a national level”.
- ¹⁴ NSW Government’s [Silica Dashboard](#). Of the eight notified cases, two were diagnosed prior to the 2021-22 reporting period.
- ¹⁵ Safe Work NSW, [NSW Dust Disease Register Annual Report 2020-21](#), July 2021, p 9 -14 and NSW Government [Silica Dashboard](#).
- ¹⁶ National Dust Disease Taskforce, [Final Report to Minister for Health and Aged Care](#), June 2021, p 12 (Recommendation 6(b)).
- ¹⁷ *Ibid*, p 16.
- ¹⁸ WorkSafe Queensland, [Silicosis: WorkCover screening outcomes](#), 2021 [website - accessed 22 September 2021]. An additional 33 cases of progressive massive fibrosis were identified.
- ¹⁹ National Dust Disease Taskforce, [Final Report to Minister for Health and Aged Care](#), June 2021, p 16.
- ²⁰ Wellbeing South Australia, [Silicosis Health Screening Program: Baseline findings](#), September 2020, p 6.
- ²¹ National Dust Disease Taskforce, [Final Report to Minister for Health and Aged Care](#), June 2021, p 79.
- ²² *Ibid*, p 16.
- ²³ *Ibid*, p 16.
- ²⁴ *Ibid*, p 76. As of 8 June 2021, all jurisdictions, except Tasmania, had implemented the reduced value.
- ²⁵ NSW Government, SafeWork, [NSW unveils strategy to stamp out silicosis](#), 21 February 2020.
- ²⁶ *Ibid*.
- ²⁷ Safe Work NSW, [Crystalline Silica](#) [website-accessed 9 October 2021].
- ²⁸ [Work Health and Safety Amendment \(Silica Regulation 2020\)](#).
- ²⁹ *Ibid*.
- ³⁰ NSW Government, [NSW ahead of the curve in Silicosis prevention](#), 29 June 2020. See also: [Work Health and Safety Amendment \(Silica Regulation 2020\)](#).
- ³¹ Discussed above, at 2.1.2.
- ³² Discussed above, at 2.1.2.
- ³³ NSW Government, SafeWork NSW, [NSW Dust Disease Strategy](#) [website-accessed 9 November 2021].
- ³⁴ See [clause 50](#) and [clause 368](#) of the *Work Health and Safety Regulation 2017*.
- ³⁵ [Schedule 14](#) of the *Work Health and Safety Regulation 2017*, Table 14.1, item7.
- ³⁶ Golder Associates Pty Ltd, [Case Finding Study - Respirable crystalline silica exposure in the NSW manufactured stone industry](#), 17 May 2021, p ii.
- ³⁷ Icare, [Lung screening for employees working with crystalline silica and manufactured stone products](#), 2021 [website-accessed 25 November 2021].
- ³⁸ *Ibid*.
- ³⁹ *Ibid*.
- ⁴⁰ WorkSafe Victoria, [Uncontrolled dry cutting of engineered stone banned](#), 21 August 2019.
- ⁴¹ SafeWork Australia, [Workplace exposure standards for airborne contaminants \(2019\)](#), 2020. See also: Adams T, [Mine and quarry dust legislation changes in Australia](#), GRT, October 2021.
- ⁴² Work Safe Victoria, [Compliance Code on Managing exposure to crystalline silica: Engineered stone](#), February 2020.
- ⁴³ Andrews D, [Protecting Victorian Workers From Deadly Silica Dust](#), 1 May 2019 (media release).
- ⁴⁴ Andrews D, [Silica Health Assessments Reach One Thousand](#), 28 February 2021 (media release).
- ⁴⁵ Stitt I, [Ministerial Statements: Silicosis](#), Legislative Council (Victoria), *Hansard*, 16 September 2021, p 3,305.
- ⁴⁶ *Ibid*, p 3,306.
- ⁴⁷ WorkSafe Victoria, [Proposed OHS Amendment \(Crystalline Silica\) Regulations 2021](#) [website-accessed 10 November 2021]
- ⁴⁸ See: WorkSafe Victoria, [Summary of Proposed Changes](#), no date, [website-accessed 28 September 2021]. See also: Deloitte Access Economics, [Occupational Health and Safety](#)

- [Amendment \(Crystalline Silica\) Regulations 2021: Regulatory Impact Statement](#), November 2020.
- ⁴⁹ Monash University, [Final report of phase 1: Silica associated lung disease health screening research project](#), November 2020, p 44.
- ⁵⁰ Austin EK, James C and Tessier J, [Early Detection Methods for Silicosis and Internationally: A Review of the Literature](#), *International Journal of Environmental Research and Public Health*, 18(15), August 2021, p 8 and 123.
- ⁵¹ Ibid, p 8 and 123.
- ⁵² Ibid, p 8 and 123.
- ⁵³ Ibid, p 8 and 123.
- ⁵⁴ Royal Australian and New Zealand College of Radiologists, [Imaging of Occupational Lung Disease Position Statement](#), 4 October 2019, p 4-5.
- ⁵⁵ The Queensland Cabinet, [Safety alert issued for engineered stone benchtop workers](#), 18 September 2018.
- ⁵⁶ Queensland Office of Industrial Relations, Workplace Health and Safety Queensland, [Managing respirable crystalline silica dust exposure in the stone benchtop industry Code of Practice](#), 2019.
- ⁵⁷ National Dust Disease Taskforce, [Final Report to Minister for Health and Aged Care](#), June 2021, p 77.
- ⁵⁸ Queensland Government, Business Queensland, [Exposure limits for dust](#), 1 September 2020 [website-accessed 1 September 2020]
- ⁵⁹ Queensland Government, Metro North Health, [World-first treatment for silicosis underway at The Prince Charles Hospital](#), 24 November 2020.
- ⁶⁰ Ibid.
- ⁶¹ Government of South Australia, SafeWork SA, [Respirable crystalline silica](#), no date, [website-accessed 28 September 2021].
- ⁶² Wellbeing SA, [Silicosis Health Screening Program](#), September 2020.
- ⁶³ Government of South Australia, SafeWork SA, [Respirable Crystalline Silica Campaign Report 2020-21](#), p 3.
- ⁶⁴ Johnston B, [Workplace exposure standards for silica and coal dust halved](#), 27 October 2020 (Media Statement).
- ⁶⁵ Johnston B, [Health surveillance requirements for silica strengthened](#), 15 January 2021 (Media Statement). See also: [Schedule 5.3](#) of the [Occupational Safety and Health Regulations 1996](#) (WA).
- ⁶⁶ National Dust Disease Taskforce, [Final Report to Minister for Health and Aged Care](#), June 2021, p 79.
- ⁶⁷ Including translations in [Greek](#), [Italian](#), [Chinese](#) and [Vietnamese](#).
- ⁶⁸ National Dust Disease Taskforce, [Final Report to Minister for Health and Aged Care](#), June 2021, p 77.
- ⁶⁹ Safe Work Australia, [Model Code of Practice: Managing the risks of respirable crystalline silica from engineered stone in the workplace](#), 26 October 2021.
- ⁷⁰ National Dust Disease Taskforce, [Final Report to Minister for Health and Aged Care](#), June 2021, p 18.
- ⁷¹ Commonwealth Government, National Dust Disease Taskforce, [Terms of Reference](#), 14 July 2021 [website-accessed 27 September 2021].
- ⁷² Commonwealth Government, [National Dust Disease Taskforce](#), 14 July 2021 [website-accessed 27 September 2021].
- ⁷³ National Dust Disease Taskforce, [Final Report to Minister for Health and Aged Care](#), June 2021, p 18.
- ⁷⁴ Quantum Market Research, [Dust Disease Research Update: Final Report](#), May 2021.
- ⁷⁵ Commonwealth Government, Department of Health, [National Dust Disease Taskforce](#), 14 July 2021 [website-accessed 15 November 2021].
- ⁷⁶ National Dust Disease Taskforce, [Final Report to Minister for Health and Aged Care](#), June 2021, p 11-12.
- ⁷⁷ Australian Council of Trade Unions, [Failure to Act: Submission by the Australian Council of Trade Unions to National Dust Disease Taskforce – Second Consultation Paper September 2020](#), 26 November 2020, p 5.
- ⁷⁸ National Dust Disease Taskforce, [Final Report to Minister for Health and Aged Care](#), June 2021, Recommendation 1(d), p 11.
- ⁷⁹ Ibid, p 27-28.
- ⁸⁰ Commonwealth Government, Department of Health, [National Dust Disease Taskforce](#), 14 July 2021 [website-accessed 27 September 2021]. The funding was provided under the “Emerging Priorities and Consumer Driven Research” initiative.

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