Prohibiting Artificial Stone lawsuits:

Making Silicosis Great Again

Testimony of Professor David Michaels
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Between a Rock and a Hard Place:
Protecting the U.S. Stone Slab Industry from Lawfare

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Prohibiting Artificial Stone lawsuits: Making Silicosis Great Again

Good morning Chairman Jordan, Ranking Member Raskin, Chairman Issa, Ranking Member Johnson and Members of the Subcommittee. Thank you for inviting me to testify. My name is David Michaels. I am an epidemiologist and Professor of Environmental and Occupational Health at the Milken Institute School of Public Health of George Washington University. The views expressed in my testimony are my own and do not represent the views of George Washington University.

From 2009 until January 2017, I served as Assistant Secretary of Labor for Occupational Safety and Health, the longest serving Assistant Secretary in OSHA's history. From 1998 to 2001, I was Assistant Secretary for Environment, Safety and Health in the U.S. Department of Energy, charged with protecting the workers, community residents and the environment in and around the nation's nuclear weapons facilities.

Under my leadership, OSHA issued a long-overdue and strengthened standard to protect workers exposed to silica dust.

The message of my testimony today is very straightforward. Silicosis is a devastating, deadly, and thoroughly preventable disease. And the artificial stone fabrication industry is one of the most hazardous of all the industries where workers are exposed to silica dust. Over the last few years, hundreds of workers in the United States have been sickened by silicosis, and dozens have died following exposure to silica released in the fabrication of kitchen countertops made from artificial stone.

Passage of H.R.5437, the Protection of Lawful Commerce in Stone Slab Products Act would prohibit lawsuits against corporations that manufacture artificial stone,[1] Lawsuits play an important role in public health protection; if lawsuits by workers with silicosis are prohibited, more workers are likely to die or be disabled by this disease as a result of their exposure. There is no reason to allow this carnage to continue. There are safe substitutes that can make equally fashionable countertops. Shifting to a substitute will result in no loss of American jobs.

There is a national epidemic of silicosis among workers who are fabricating kitchen countertops made from artificial stone. The number of cases is alarmingly high and growing rapidly.

The epidemic of silicosis in artificial stone workers was identified in Australia before the epidemic was identified in the United States. Australia has not banned lawsuits. After careful study, Australia banned the deadly product. In response, countertop manufacturers

have found a safer substitute and many of the same manufacturers now sell the safer product in Australia and earn profits through these sales. The same Australian workers are now fabricating countertops. But unlike those US workers who still fabricate artificial stone silica countertops, these Australian workers are able to go home to their families at the end of their shifts as healthy as when they started that day.

There is one cause of silicosis – breathing tiny particles of silica. A silicosis diagnosis often portends a life of progressive disability and too often premature death. There is a delay (latency period) between silica exposure and the development of symptoms. The symptoms may be insidious at first and the diagnosis is often delayed. The hallmarks of the disease: shortness of breath and diminished exercise capacity that progresses to an inability to climb even one flight of stairs. A short walk that should take just 20 minutes can take an hour. Working is difficult or impossible. People cough incessantly. They can't sleep because it is difficult to breathe and they are kept awake coughing. Over time, people with more advanced silicosis require supplemental oxygen and can't leave home without an oxygen tank. And they are at increased risk of dying from lung cancer.

There are no cures or adequate treatments for silicosis. Lung transplantation – a costly and high-risk procedure— is sometime necessary as a last chance to extend life.

The California Department of Public Health (CDPH) maintains a dashboard to update the public and healthcare providers with how the epidemic is growing. Figure One is a snapshot of the dashboard as it appeared on January 8, 2026. As of that date, in California alone, there have been almost 500 cases of silicosis diagnosed among artificial stone workers. Twenty-seven have died. 52 have undergone lung transplants. Look at the curve charting the growth of the epidemic. Unless something is done to stop exposure, the number of cases, and the number of deaths, will continue to increase.

As staggering as these statistics are, they undoubtedly underestimate the true incidence of the disease because many of the workers in this industry do not speak English, are unauthorized, do not have regular sources of medical care, or are afraid of entering the medical system. Untold numbers currently exposed will get sick in the coming years even without additional exposure.

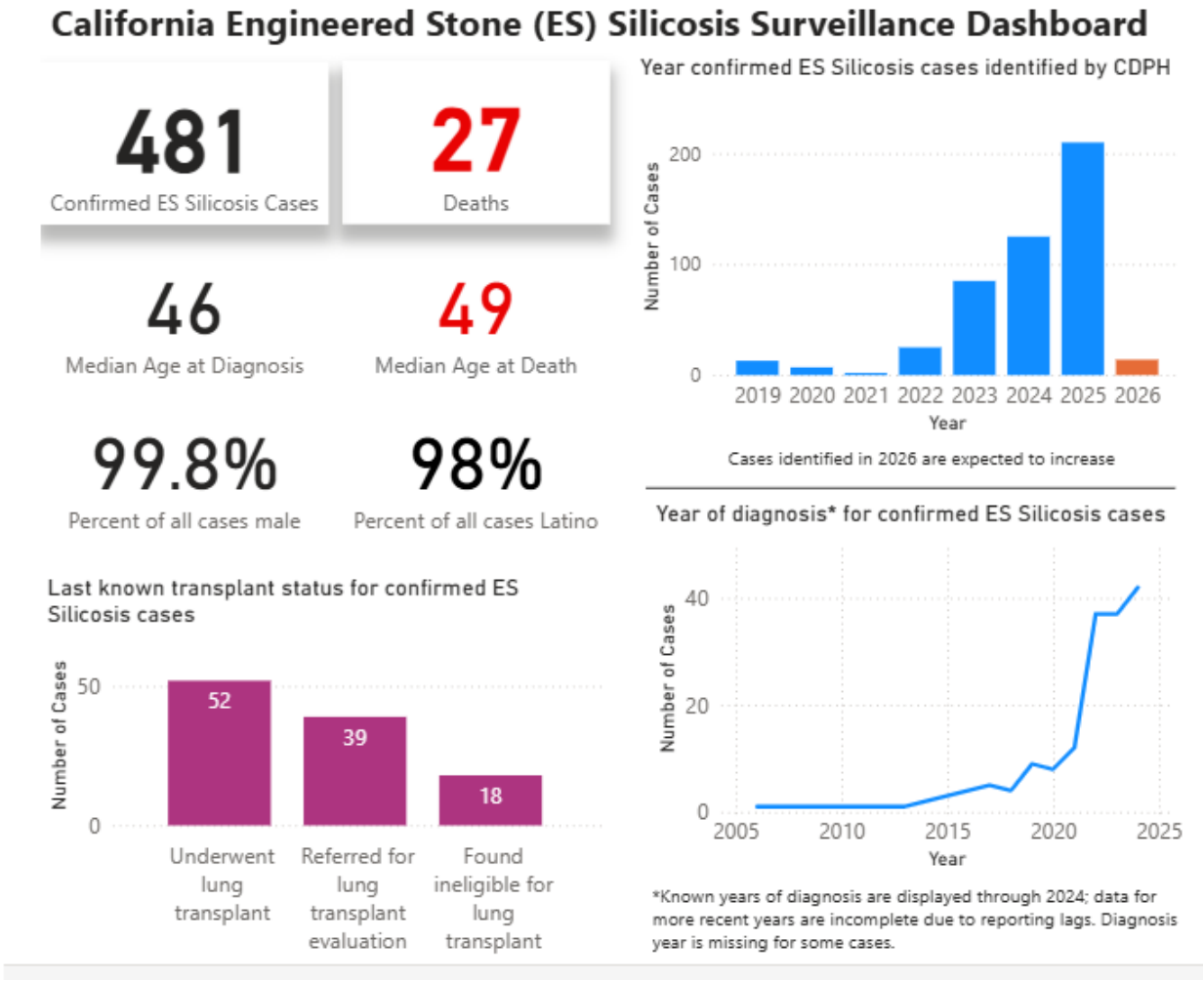

Figure One: California Department of Public Health Dashboard as of 1/8/2026[2]

The numbers in this dashboard are only those cases reported in California, where there is an active disease surveillance system. The fact that there has only been one case reported in Massachusetts does not mean the work is safe in Massachusetts. It simply means that there is no disease surveillance system that attempts to identify these cases. I am 100% sure that if more than 500 workers in California have developed silicosis, the number of today cases in the US is far, far higher. Silica exposure also increases the risk of lung cancer and kidney disease. But most of these workers will die before they have a chance to develop lung cancer.

But these are the statistics. In teaching about the epidemiology of workplace illnesses, it is easy to forget an important concept: **Statistics are human beings with the tears wiped away.**

Underlying the dashboard's statistics are workers in their 30s awaiting double lung transplants, who, if they survive, can never be employed doing physical labor again.

And young workers who cannot play with their children and whose deaths will leave their young children fatherless. Even those with less severe disease must choose between work and putting themselves at risk of a deadly lung condition.

This epidemic is being driven by what appears to consumers to be a harmless product: kitchen countertops. Over the last decade, millions of countertops have been fabricated using an artificial stone product that looks like marble but is less expensive. Manufacturers create slabs of a composite that contains up to 90 percent crystalline silica, to which resins, fillers, and pigments are added. The manufacturers and distributers of these slabs ship them to small fabrication shops in every city where local workers cut, grind, polish, and finish the artificial stone to produce the countertop.

These products contain an enormously high silica content and fabrication work releases into the air a dangerous amount of a mixture of silica, resins, and other materials. Breathing this air is extremely dangerous. The typical safety precautions that are used to protect workers from respirable silica dust, including standard dust respirators, are inadequate to protect these workers.

Silicosis caused by exposure to the products released in fabricating artificial stone is not a new problem or a local problem. It is a worldwide epidemic. According to a review by the Western Occupational and Environmental Medicine Association (WOEMA), a professional non-profit association representing over 600 occupational medicine physicians and other experts in occupational and environmental health and safety, in seven western states, there have been more than 100 scientific articles published over the past decade on the epidemic of silicosis caused by engineered stone.[3] Among these are several reviews that summarize the evidence and urgent need to take policy action to control exposures.[4]

On the basis of many decades of workplace safety and health policy, we do know how to prevent work-related disease: apply the fundamental industrial hygiene principle called the hierarchy of controls, a tiered system for managing workplace hazards, ranking methods from most to least effective. The most effective is **elimination** or physically removing the hazard, followed by **substitution**, replacing the hazard with something safer. If those are not adequate, engineering controls can isolate workers from the hazard. These can be supplemented by administrative controls, changing work practices (like training); and finally the least effective Personal Protective Equipment (PPE).

The industry complains that the fabrication shops do not apply the most effective methods to control silica dust. It is the industry that stands in the way of the one method that will be

most effective: substitution. There are substitute products that are comparable in use and cost, but which do not kill workers. Many substitutes are made from amorphous silica – a different and a safer material than crystalline silica. Since Australia banned countertops containing crystalline silica, countertops are fabricated from alternative products that look and cost the same but are safer for workers. Two major manufacturers (Caesarstone and Cosentino) already sell these in Australia.

It may be the case that manufacturers like Cambria can safely produce slabs artificial stone in highly automated facilities where expensive engineering controls keep silica dust levels low. But the US artificial stone manufacturers and distributors are acutely aware that the small fabrication shops that purchase this product have no ability to install comparable engineering controls and at the same time produce competitively priced counter tops. They are selling a product they know will be inevitably sicken many workers, killing some and disabling others.

They are now asking for protection from lawsuits, arguing it isn't their fault that workers are dying from their products. The manufacturers claim it is the fault of the fabricators who failed to comply with OSHA's rules. Clearly, the manufacturers know the OSHA standard is being violated by many of these shops, evidence that under the existing supply chain that their products cannot be fabricated safely.

Manufacturers might say that they provide extensive warnings to the fabrication companies and it is their obligation to protect their employees. But in cases where normal and expected use of the product is extremely dangerous and often deadly, warnings are not enough.

And what about the workers? Manufacturers and distributors apparently think that these hundreds of sick workers will receive wage loss payments and have their medical bills covered by workers' compensation. Perhaps the representatives of the manufacturers and distributors failed to read the reports in the medical literature on the cases in California. In one study of 114 artificial stone workers with silicosis, only 8 had filed for workers' compensation benefits.[5] In fact, there is no evidence of a manufacturer or distributor deciding they will not sell their product to a small shop that endangers its workers or doesn't ensure its workers are covered by workers' compensation insurance.

If workers comp doesn't cover medical costs, who pays for the extremely costly medical care provided to these workers when they get sick? Mostly the taxpayer. In that same study, MediCal (the state Medicaid program) was the payer in 73 of the 114 cases or 64%.

The families of sick workers bear substantial costs as well, especially wage loss. If they survive or are not totally disabled, many workers with silicosis are forced to take lower

wage jobs because they cannot handle the physical labor or they have been told that if they do not find a job with no silica exposure, they will likely be disabled.

Artificial Stone Hazards are Well Known to Manufacturers and Distributors

There is an extensive medical and industrial hygiene literature, with scores of peer reviewed papers, that explain why these workers are getting silicosis. Many of these address the lack of engineering controls at the small fabrication shops. Others report the failure of the workers' compensation system to provide the benefits to which these workers are entitled.

Clearly, the manufacturers and distributors are acutely aware of the dangerous conditions in the fabrication shops that purchase their products and that many of those workers are becoming sick and some are dying. And that the vast majority of sick workers never receive workers' comp benefits.

There have been lawsuits against these firms for at least a decade, lawsuits that raised many of these basic public health concerns.

Further, some of the companies that manufacture artificial stone in other countries have faced criminal charges, a fact which likely strikes fear into the hearts of American manufacturers.

In 2023, the owner of Cosentino, one of the largest manufacturers of artificial stone products, admitted in a Spanish court that he covered up the dangers of his company's product, which allegedly led to nearly 1,900 workers contracting the occupational lung disease silicosis. According to press reports, Francisco Martinez accepted a plea bargain in which he was given a six-month suspended prison sentence for five counts of serious injury due to gross negligence.[6]

Other High Hazard Industries Practice Product Stewardship

Other industries that manufacture hazardous products take a very different approach than the artificial stone industry. There is a term for this: Product Stewardship. Responsible firms consider the risks faced by downstream users and endeavor to limit or mitigate those risks.

For example, I am very familiar with the beryllium industry, having overseen the promulgation of workplace beryllium exposure standards at OSHA and the US Department of Energy. Recognizing that some downstream users of their product were not adequately protecting workers, resulting in workers being sickened and risking lawsuits very much like the ones we are discussing here, the nation's major beryllium product manufacturer instituted a product stewardship program that examined how downstream users were protecting workers and working with them to ensure workers would be safe.[7]

Similarly, the American Chemistry Council (ACC), the primary trade association of the chemical industry, has a product stewardship program called Responsible Care. Members are expected to work with downstream users to ensure safe use of the products. In describing organizations that participate in the Responsible Care Management System, the ACC requires:

> Commensurate with risk, the organization shall have a process, to select commercial partners, which takes into account Responsible Care or other environmental, health, safety or security performance and to work with them, as appropriate, to support continual improvement.[8]

This drives ACC member firms to avoid selling their products to downstream firms who misuse their products. For example, on its website, the Ethyl Corporation states that it "reserves the right not to work with customers who do not adhere to Responsible Care® principles or comply with the minimum standards requirement as determined by the company."[9]

Active product stewardship is a mechanism that high hazard firms ensure their products are used safely while protecting themselves from lawsuits,

Despite the success of these product stewardship efforts, the other witnesses at this hearing have presented no evidence that any artificial stone product manufacturers or distributors have ever announced they would not sell their product to a fabricator who did not adequately protect their workers, or who did not carry workers' compensation insurance.

OSHA is Unable to Ensure the Safety of Artificial Stone Fabrication Workers

But we already have an agency that is authorized to protect workers, you may be thinking. What about OSHA?

The hard, cold truth is that OSHA essentially relies on employers to self-enforce its standards.

OSHA is a tiny agency with a huge responsibility. In 2024, there were 1,802 inspectors (768 federal and 1,034 state) to inspect the 11.8 million workplaces under the Occupational Safety and Health Act's jurisdiction, covering 161 million workers. Combining the budgets of federal OSHA and all the state OSHA plans, the total government OSHA expenditures equal a little under $7.00 per year to protect each worker in the country.

Consequently, the agency makes relatively few inspections. It has only enough inspectors to visit every workplace every 185 years.

That means that even though the agency has prioritized inspecting establishments where workers are exposed to silica, most shops doing this extremely hazardous work will never see an OSHA inspector.[10]

Even if they had adequate resources, it would be extremely difficult for OSHA to identify and locate the thousands of small fabrication shops around the country. Currently, OSHA inspectors can visit at most a tiny percentage of these shops, and if OSHA does cite them for violating the standard, many of the shops are likely to close down and open under a new name.

And even if OSHA locates a manufacturer, identifies violations and issues a citation, the maximum penalty for a serious OSHA violation is only $16,550, and less for smaller employers. For medium or large employers, that's simply an acceptable cost of doing business.

One of the findings on which H. R. 5437 is based is that the artificial stone fabrication work involving silica is "heavily regulated by Federal and State workplace safety laws and regulations" and the failure of fabricators to comply with OSHA regulation is why the manufacturers should be protected from lawsuits.[1] Ironically, one of bill's two sponsors, Rep. Biggs (R-AZ), is also the sponsor of H.R.86, the Nullify Occupational Safety and Health Administration Act or the NOSHA Act.[11] The text of the NOSHA Act is:

> The Occupational Safety and Health Act of 1970 is repealed. The Occupational Safety and Health Administration is abolished.

Needless to say, abolishing OSHA (including its silica standard) would result in increased silica exposure levels and more cases of silicosis among the workers in this industry, which would no doubt be followed by more lawsuits against these manufacturers and distributors.

Lawsuits Save Lives

Lawsuits have played an important role in improving the protection of workers exposed to hazards at work and preventing disease and death among these workers. One example that parallels the case of artificial stone silicosis is the outbreak of bronchiolitis obliterans, a devastating lung disease that is characterized, as its name suggests, by an "obliteration'' of the pulmonary airways; a lung transplant is often the only treatment for these patients. Ten cases, three of whom were awaiting lung transplants at that time, were reported at a microwave popcorn processing plant in Jasper, Missouri. They were young non-smokers.

Soon there were more cases there, and then many more cases among workers employed in other factories where an artificial butter flavor chemical – called diacetyl – was used. Several of these workers sued, claiming that while the manufacturers of diacetyl had test results showing that breathing diacetyl damaged the lungs of laboratory rats, the firms did not share that information and did nothing to stop the exposure that made the workers sick.

The cases quickly led to $100 million in awards or settlements to sick workers. Rather than adding more warning labels, or asking Congress for protection against more litigation, the industry acknowledged the problem and determined to fix it. Through their trade association, the Flavor and Extract Manufacturers Association (FEMA), the industry hired expert occupational medicine physicians at National Jewish Medical and Research Center in Denver to implement a national lung disease screening program and provide treatment for workers determined to be sick.

To prevent future bronchiolitis obliterans cases, all the members of FEMA agreed to stop selling diacetyl to use as butter flavor, substituting a similar but less dangerous chemical. Now, if a downstream firm starts using diacetyl in a way in which people may be exposed, FEMA sends a cease-and-desist letter.

The result is a win-win. There are no more workers getting sick and no more lawsuits.

What needs to be done to prevent new silicosis cases?

Simply saying that OSHA needs to do a better job will not stop this epidemic. As long as the industry sells to small fabrication shops, workers will be overexposed.

Rather than take responsibility for their toxic products and shift to safer substitutes, the manufacturers want to shield themselves from all responsibility so they can continue to make dangerous crystalline silica-containing countertops.

When faced with hundreds of cases of artificial stone silicosis, Australia carefully studied the question and consulted with stakeholders. They did not choose to ban lawsuits. Instead, Australia banned the deadly product. As I summarized at the beginning of this testimony, many of the same manufacturers who previously sold the crystalline silica-based product now sell the safer product and make a profit doing so. Australian workers have not lost their jobs; the same workers are now fabricating safer countertops. And these workers are able to go home to their families at the end of their shifts as healthy as when they started that day.

The Western Occupational & Environmental Medical Association (WOEMA) has petitioned the California Occupational Safety and Health Standards Board (Board) to prohibit all

fabrication and installation tasks on artificial stone that contain more than 1% crystalline silica.[3] I strongly support this petition, which is appended to this testimony.

It is not hyperbole to state that if enacted, H.R.5437 - Protection of Lawful Commerce in Stone Slab Products Act will result in more disease and death. Unless and until we ban fabrication of artificial stone products, lawsuits are the most effective way to encourage the industry to move to a safer product, one that does not kill workers. For current workers, lawsuits help compensate them for their illness and suffering, the cost of medical treatment, and their lost income.

Thank you for listening to my testimony.

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[1] H.R.5437 - Protection of Lawful Commerce in Stone Slab Products Act. Available at: https://www.congress.gov/bill/119th-congress/house-bill/5437/text

[2] https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/Pages/essdashboard.aspx

[3] Western Occupational and Environmental Medicine Association (WOEMA) Petition to Revise 8 CCR § 5204 (Occupational Exposures to Respirable Crystalline Silica) to prohibit all fabrication and installation tasks on engineered stone that contains more than 1% crystalline silica.

[4] Fazio JC, Gandhi SA, Flattery J, Heinzerling A, Kamangar N, Afif N, Cummings KJ, Harrison RJ. Silicosis Among Immigrant Engineered Stone (Quartz) Countertop Fabrication Workers in California. JAMA Intern Med. 2023 Sep 1;183(9):991-998; Hoy RF, Dimitriadis C, Abramson M, Glass DC, Gwini S, Hore-Lacy F, Jimenez-Martin J, Walker-Bone K, Sim MR. Prevalence and risk factors for silicosis among a large cohort of stone benchtop industry workers. Occup Environ Med. 2023 Aug;80(8):439-446; Ramkissoon C, Gaskin S, Song Y, Pisaniello D, Zosky GR. From Engineered Stone Slab to Silicosis: A Synthesis of Exposure Science and Medical Evidence. Int J Environ Res Public Health. 2024 May 27;21(6):683; Fazio JC, Viragh K, Houlroyd J, Gandhi SA. A review of silicosis and other silica-related diseases in the engineered stone countertop processing industry. J Occup Med Toxicol. 2025 Mar 17;20(1):9; Heinzerling A, Harrison R, Flattery J, Fazio JC, Gandhi S, Cummings KJ. Deadly Countertops: An Urgent Need to Eliminate Silicosis among Engineered Stone Workers. Am J Respir Crit Care Med. 2025 Apr;211(4):557-559; León-Jiménez A, Martínez-González C, Cohen RA. Engineered Stone and Silicosis: An Acceptable Risk? Arch Bronconeumol. 2025 May;61(5):259-260.

[5] Flattery J, Woolsey C, Fazio JC, Gandhi SA, Heinzerling A, Harrison RJ, Cummings KJ. Silicosis Surveillance in California, 2019-2024: Tracking an Epidemic. Am J Public Health. 2025 Nov;115(11):1913-1921

[6] Latona D. Owner of Spain's Cosentino admits negligence over silicosis in workers – documents. Reuters Feb. 7, 2023. Available at: https://www.reuters.com/business/owner-spains-cosentino-admits-concealing-cause-silicosis-1900-workers-2023-02-07/

[7] https://www.materion.com/4ab3fa/globalassets/product-stewardship-v2.pdf

[8] American Chemistry Council. Responsible Care Management System Technical Specification. May 10, 2019. Available at: https://www.americanchemistry.com/content/download/3594/file/Responsible-Care-Management-System-Technical-Specification.pdf

[9] https://www.ethyl.com/safety/responsible-care/

[10] Wagner GR, Michaels D. Preventing the Continuing Tragedy of Silicosis. JAMA Intern Med. 2024;184(2):223–224

[11] H.R.86 - NOSHA Act. Available at: https://www.congress.gov/bill/119th-congress/house-bill/86/text

APPENDIX ONE

Western Occupational and Environmental Medicine Association (WOEMA) Petition to Revise 8 CCR § 5204 (Occupational Exposures to Respirable Crystalline Silica) to prohibit all fabrication and installation tasks on engineered stone that contains more than 1% crystalline silica.

Western Occupational & Environmental Medical Association

WOEMA

EDUCATION | ADVOCACY | EQUITY

December 12, 2025

To: Joseph Alioto
Chair, Occupational Safety and Health Standards Board

Re: Petition to Revise 8 CCR § 5204 (Occupational Exposures to Respirable Crystalline Silica) to prohibit all fabrication and installation tasks on engineered stone that contains more than 1% crystalline silica

Dear Mr. Alioto and Board Members:

We are submitting this petition to the California Occupational Safety and Health Standards Board (Board) to initiate expedited rulemaking to implement revisions to § 5204 (Occupational Exposures to Respirable Crystalline Silica) that will prohibit all fabrication and installation tasks (cutting, grinding, polishing, etc) on engineered stone that contains more than 1% crystalline silica. This action is necessary in light of the continuing epidemic of silicosis that is causing disabling disease and death among California fabrication workers as a result of their workplace exposure to silica dust from engineered stone containing crystalline silica.

The Western Occupational and Environmental Medicine Association (WOEMA) is a professional non-profit association representing over 600 occupational medicine physicians and other experts in occupational and environmental health and safety, in seven western states (Arizona, California, Hawaii, Nevada, Utah, Colorado, and New Mexico). In February 2023, WOEMA requested that the Standards Board adopt an Emergency Temporary Standard (ETS) to control the hazards of airborne silica dust in shops that fabricate engineered stone. After the Board approved the Cal/OSHA ETS, the Board adopted permanent updates to § 5204 on December 19, 2024. The permanent standard continued the requirements of the ETS and introduced new protections for workers engaged in high-exposure trigger tasks (cutting, grinding, polishing, clean up, etc.) on engineered stone containing more 0.1% crystalline silica, or other silica containing products, including natural stone containing more than 10% crystalline silica. Among other requirements, employers must ensure that workers who perform high-exposure trigger tasks use effective wet methods; do not dry cut or sweep; perform high-exposure trigger tasks within regulated areas; use a full-face, tight-fitting, powered air-purifying respirator (PAPR); and are offered medical testing at no cost to the exposed worker, including a low-dose chest CT scan and a breathing test.

We appreciate the efforts of the Standards Board in implementing tougher standards in the last two year to prevent silicosis among California fabrication workers. The recent passage of SB 20 (*Occupational safety: high-exposure trigger tasks on artificial stone* - approved by Governor Newsom October 13, 2025) is also another step to grapple with the rising number of silicosis cases. SB 20 reinforces the current approach of education and enforcement by requiring attestation of worker training, making serious violations of the silica standard a rebuttable presumption, and enhancing outreach, education, technical assistance, and reporting of silicosis cases.

However, the evidence is now clear that engineered stone containing crystalline silica is too toxic to fabricate and install safely, and education and enforcement alone will not be sufficient to curtail the escalating occupational health emergency caused by this product.

As physicians who specialize in occupational diseases, we expect the silicosis health epidemic to continue unless there is expedited Cal/OSHA rulemaking that effectively prohibits all fabrication and installation (processing that generates dust) of engineered stone. This action is necessary to protect these workers and their families from a deadly disease and to open the market for safer products, which are already commercially available.

As you may know, the most effective approach to preventing occupational disease is elimination of hazardous products and substitution with safer and less toxic materials.

Fortunately, there are many safer substitutes currently available that can be used as alternatives to engineered stone containing crystalline silica. **Manufacturers of engineered stone (including those with countertop product lines containing crystalline silica) are currently offering safer alternative products in Australia that are crystalline silica-free, and which retain the same quality, look and feel of engineered stone containing crystalline silica.** These products emerged in the market in response to Australia's July 1, 2024 ban on engineered stone containing crystalline silica. They are commonly composed of amorphous (not crystalline) silica and are manufactured in a process similar to that of engineered stone.[1] It is important to note that crystalline silica causes silicosis; amorphous silica is a different substance and is much safer. A recent Australian government evaluation confirmed that the prohibition is largely working as expected, creating a rapid change in the market and new opportunities for safer products, while protecting workers from exposure to respirable crystalline silica.

If the Standards Board adopts the Australian approach and implements revisions to § 5204 that prohibit all fabrication and installation tasks on all engineered stone that contain more that 1% crystalline silica, **it is highly likely that these safer products will be made immediately available in the California market, without significant economic consequences for fabrication businesses and their workers**. IKEA has already removed engineered stone from its U.S. retail locations. Indeed, responsible fabrication businesses will likely experience no additional

[1] Unlike crystalline silica, which has long been known to toxic and carcinogenic, amorphous silica is relatively less toxic and is regulated in the workplace as a nuisance dust. One of world's leading developer of engineered stone (Breton) offers a crystalline silica-free aggregated manufacturing plant with the same aesthetic and technical features (see https://breton.it/en_na).

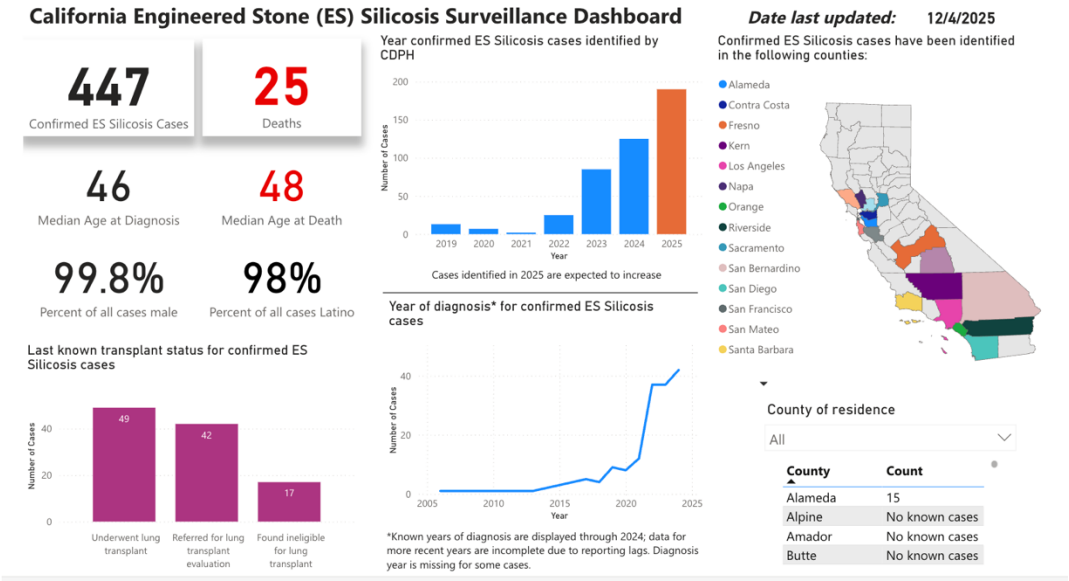
costs in complying with this new regulation, as they will continue to use the same dust control methods for safer products that they have installed to comply with §5204.

A more detailed scientific rationale for our request follows. There have been more than 100 scientific articles published over the past decade on the worldwide epidemic of silicosis caused by engineered stone. We recommend several reviews that summarize the evidence and highlight the dangers to workers posed by engineered stone and the need to take urgent policy action.[2] California academic and public health scientists have published many of these articles and can provide extensive scientific and technical knowledge as well.

1. **Rising counts of silicosis caused by engineered stone represent a health emergency.** Through passive surveillance, the California Department of Public Health (CDPH) continues to track silicosis cases caused by engineered stone. As of December 4, 2025 there were 447 cases with 25 deaths. The median age at diagnosis is 46, and the median age of death is 48.[3] As shown below, since the Board first considered engineered stone for regulatory action in 2023, case counts have continued to rise at an alarming rate:

[2]Fazio JC, Gandhi SA, Flattery J, Heinzerling A, Kamangar N, Afif N, Cummings KJ, Harrison RJ. *Silicosis Among Immigrant Engineered Stone (Quartz) Countertop Fabrication Workers in California.* JAMA Intern Med. 2023 Sep 1;183(9):991-998; Hoy RF, Dimitriadis C, Abramson M, Glass DC, Gwini S, Hore-Lacy F, Jimenez-Martin J, Walker-Bone K, Sim MR. *Prevalence and risk factors for silicosis among a large cohort of stone benchtop industry workers.* Occup Environ Med. 2023 Aug;80(8):439-446; Ramkissoon C, Gaskin S, Song Y, Pisaniello D, Zosky GR. *From Engineered Stone Slab to Silicosis: A Synthesis of Exposure Science and Medical Evidence.* Int J Environ Res Public Health. 2024 May 27;21(6):683; Fazio JC, Viragh K, Houlroyd J, Gandhi SA. *A review of silicosis and other silica-related diseases in the engineered stone countertop processing industry.* J Occup Med Toxicol. 2025 Mar 17;20(1):9; Heinzerling A, Harrison R, Flattery J, Fazio JC, Gandhi S, Cummings KJ. *Deadly Countertops: An Urgent Need to Eliminate Silicosis among Engineered Stone Workers.* Am J Respir Crit Care Med. 2025 Apr;211(4):557-559; León-Jiménez A, Martínez-González C, Cohen RA. *Engineered Stone and Silicosis: An Acceptable Risk?* Arch Bronconeumol. 2025 May;61(5):259-260.

[3] https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/Pages/essdashboard.aspx, accessed 11/30/25.



Source: California Department of Public Health

2. **Exposure to silica dust from engineered stone causes the rapid onset of silicosis.** In contrast to silicosis after workplace exposure to other silica-containing materials, silicosis caused by engineered stone dust is more severe and occurs more quickly. The short duration of exposure, severe disease and relatively young age of workers has been observed around the globe in countries where engineered stone has caused silicosis.[4] In the latest peer-reviewed publication from CDPH on silicosis cases in California, the authors found the median duration of exposure to silica dust from engineered stone was 19 years (range 1 to 39 years), with 24 patients experiencing exposure of less than 10 years.[5]

3. **Engineered stone is more toxic than other silica-containing materials such as natural stone.** The progressive nature and relatively short latency of silicosis among workers exposed to engineered stone dust suggests unique toxicity that cannot be attributed solely to the high levels of respirable crystalline silica produced by these materials. The progressive nature and relatively short latency of silicosis among workers exposed to engineered stone dust suggests toxicity that cannot be attributed solely to the high levels of respirable crystalline silica but may be due to a uniquely synergistic effect of crystalline silica together with other components. The polyester resins used in engineered stone can break down into volatile organic compounds (VOCs) during the fabrication process. Many of these VOCs are respiratory irritants or carcinogens. Engineered stone dust also contains trace metals that can cause inflammation in the lungs. Researchers have found VOCs and silica nanoparticles (in the sub-100 nm fraction) in aerosols released during the fabrication

[4] Hua JT, Zell-Baran L, Go LHT, Kramer MR, Van Bree JB, Chambers D, Deller D, Newbigin K, Matula M, Fireman E, Dahbash M, Martinez-Gonzalez C, León-Jimenez A, Sack C, Ferrer J, Villar A, Almberg KS, Cohen RA, Rose CS. *Demographic, exposure and clinical characteristics in a multinational registry of engineered stone workers with silicosis.* Occup Environ Med. 2022 May 3;79(9):586–93.

[5] Flattery J, Woolsey C, Fazio JC, Gandhi SA, Heinzerling A, Harrison RJ, Cummings KJ. *Silicosis Surveillance in California, 2019-2024: Tracking an Epidemic.* Am J Public Health. 2025 Nov;115(11):1913-1921.

of engineered stone into countertops and other products. Laboratory studies with human lung cells have shown that engineered stone dust causes significantly more inflammation and cell death compared to natural stone, with other non-silica ingredients independently associated with toxicity. Particle surface features may also be responsible for the unique toxicity of engineered stone on lung cells, with membrane destabilization and lysis, and the generation of reactive oxygen species that can add to lung injury. [6]

4. **The number of fabrication workers with silicosis is going to increase.** In early 2025, Cal/OSHA estimated there were approximately 800 fabrication shops that employed about 4,000 workers in California, and that the global rate of silicosis among workers in this industry was as high as 21%. At the time of Cal/OSHA's briefing to the Board in August 2025, CDPH had reported 364 cases of silicosis caused by engineered stone. Cal/OSHA staff reported that the *expected* number of cases of silicosis among these 4,000 workers was 680, based on a case rate of only 17%, and that the expected number of silicosis deaths among these 680 cases was 130 (19%), well above the 364 cases and 24 deaths CDPH had identified at that time through passive reporting channels. In their August briefing, Cal/OSHA updated the number of shops to 920 and the number of workers to 4,600, noting that "the projected case and fatality rates will be proportionately higher," and that "both the current conditions and the projections are alarming." [7] As long as exposure to crystalline silica dust from engineered stone continues, the total number of cases and deaths beyond these estimates will continue to grow.

5. **Airborne concentrations of respirable crystalline silica dust are above the Cal/OSHA limit in many fabrication shops.** After the first cases of silicosis were reported by CDPH in 2019, Cal/OSHA initiated a targeted inspection program of fabrication shops in California. An analysis of airborne silica dust concentrations during these inspections showed that over 50% of these workplaces had levels above the allowable OSHA Action Limit (25 ug/m^3) for respirable crystalline silica dust.[8] Similarly, a national survey of

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[6] Ramkissoon C, Gaskin S, Hall T, Pisaniello D, Zosky G. *Engineered Stone Fabrication Work Releases Volatile Organic Compounds Classified as Lung Irritants.* Ann Work Expo Health. 2023 Feb 13;67(2):288-293; Ramkissoon C, Song Y, Yen S, et al. *Understanding the pathogenesis of engineered stone-associated silicosis: The effect of particle chemistry on the lung cell response.* Respirology. 2024;29(3); Rishi K, Ku BK, Qi C, Thompson D, Wang C, Dozier A, Vogiazi V, Zervaki O, Kulkarni P. *Release of Crystalline Silica Nanoparticles during Engineered Stone Fabrication*. ACS Omega. 2024 Dec 10;9(51):50308-5031; Mandler WK, Knepp AK, Leonard SS, McKinney W, Keeley S, Qian Y. *Characterization of engineered stone dust-induced reactive oxygen species generation and cytotoxicity* in vitro*. J Toxicol Environ Health A. 2025 Oct 10:1-11;* Ophir N, Fireman E, Kramer MR, Korenstein R. *Artificial stone dust affects oxidative stress and epithelial barrier in CALU 3 cells.* Exp Lung Res. 2025;51(1):81-90; Pavan C, Fimiani M, Cananà S, Diana A, Marafante M, Bertinetti S, Escolano-Casado G, Mino L, Pisaniello D, Leinardi R, Tomatis M, Turci F. *The Combined Role of Silanols and Oxidative Stress in Determining Engineered Stone Dust Toxicity.* ACS Organic & Inorganic Au. November 5, 2025. DOI: 10.1021/acsorginorgau.5c00089.

[7] Cal/OSHA Update. *Silicosis among artificial stone fabrication workers.* Occupational Safety and Health Standards Board, August 21, 2025. Presented by Mike Wilson, Eric Berg and Betsey Noth, Cal/OSHA Research and Standards.

[8] Surasi K, Ballen B, Weinberg JL, Materna BL, Harrison R, Cummings KJ, Heinzerling A. *Elevated exposures to respirable crystalline silica among engineered stone fabrication workers in California, January 2019-February 2020.* Am J Ind Med. 2022 Sep;65(9):701-707.

fabrication shops conducted by the National Stone Institute (NSI) and the International Surface Fabricators Association (ISFA) found that 43.5% of shops had levels of respirable crystalline silica dust above this Action Limit.[9] Among 75 full shift personal air samples for respirable crystalline silica dust, 53% were above the OSHA 8-hour PEL of 50 ug/m3.[10] Even when engineering controls are used (such as wet methods and ventilation), workers' exposures to silica routinely exceed occupational exposure limits.[11] Many small fabrication shops are unable to afford the mechanical ventilation, wet methods and powered air purifying respirators that are necessary to protect fabrication workers and are required by section 5104. While there may be some shops that can reduce silica dust levels below the Cal/OSHA PEL, airborne concentrations of respirable crystalline silica in the majority of shops in California will likely continue to expose workers to unacceptable risks of a deadly disease.

6. **Enforcement of existing regulations to control silica dust exposures is not likely to prevent more cases.** The data presented by Cal/OSHA staff in August 2025 shows that the industry is routinely out of compliance with the revisions to § 5204 that require wet methods for cutting and grinding, frequent cleaning, providing and ensuring the use of appropriate respiratory protection, and conducting exposure monitoring for "high-exposure trigger" tasks. Cal/OSHA reported in August that the Division had opened inspections at 122 fabrication shops and had closed 99 of those inspections. Ninety-three of those 99 shops were found with violations of § 5204 or other Title 8 standards, representing 94% of shops. At 24% of shops (24), the conditions required the compliance officer to issue an Order Prohibiting Use, immediately shutting down the shop, or in some cases a specific operation, based on an imminent silica hazard. [12]

7. **Australia has successfully prohibited the use, supply and manufacture of all engineered stone containing more than 1% crystalline silica.[13]** The Australian

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[9] McGowan CM, Cantley LF, Klein R, Redlich CA. *Work Practices and Respirable Crystalline Silica Exposures in Stone Countertop Fabrication Shops.* Am J Ind Med. 2025 Nov;68(11):973-987.

[10] Soo JC, Houlroyd J, Warren H, Philpot BJ, Castillo S. *Respirable dust and respirable crystalline silica exposures among workers at stone countertop fabrication shops in Georgia from 2017 through 2023.* Ann Work Expo Health. 2025 Jun 30;69(5):473-485.

[11] Soo JC, Houlroyd J, Warren H, Philpot BJ, Castillo S. *Respirable dust and respirable crystalline silica exposures among workers at stone countertop fabrication shops in Georgia from 2017 through 2023.* Ann Work Expo Health. 2025 Jun 30;69(5):473-485.

[12] Cal/OSHA Update to Occupational Safety and Health Standards Board – August 21, 2025.

[13] The Australia domestic engineered stone prohibition commenced on July 1, 2024, with all jurisdictions except Victoria, Queensland and Australian Capital Territory implementing transition periods between July 1, 2024 and December 31, 2024. The prohibition applies to engineered stone benchtops, panels and slabs that contain at least 1% crystalline silica as a weight/weight concentration; are created by combining natural stone materials with other chemical constituents (such as water, resins, or pigments); and becomes hardened. The prohibition does not apply to engineered stone products that are not benchtops, panels or slabs, such as finished products including jewelry, garden ornaments, sculptures and kitchen sinks. The prohibition also does not include concrete and cement products; bricks, pavers, and other similar blocks; ceramic wall and floor tiles; sintered stone (provided it does not contain resin); porcelain products (provided they do not contain resin); roof tiles; grout, mortar, and render, and plasterboard. Provided that the

prohibition occurred in response to a similar public health emergency, characterized by a rapid rise of accelerated silicosis that disproportionately affected young Australian workers. Health authorities implemented the prohibition after consultation with multiple stakeholders, including researchers, unions, clinicians, industrial hygienists, shop owners and manufacturers.[14] Safe Work Australia (the Australia national safety and health policy body) recently completed a review of the engineered stone prohibition and concluded that the "prohibition of engineered stone benchtops, slabs and panels is working as intended at this early stage of implementation."[15] The report makes recommendations for improved implementation of the prohibition, including standardized testing, marketing, labelling and safety data sheets for engineered stone and alternative products, and consistent and clear guidance for the disposal of engineered stone and other silica containing products. Additional health monitoring and epidemiological studies are also recommended, including exposure assessment and evaluation of continued workplace controls. After a series of silicosis cases were reported in the UK, medical experts have called on the UK government to follow Australia's lead in banning artificial stone worktops.[16]

8. **Alternative products are readily available and price competitive in Australia in place of engineered stone.** Following the prohibition in Australia, numerous alternative products have emerged on the market with similar qualities, appearance and feel as engineered stone. These include crystalline silica free acrylic-based products; recycled glass products that consist primarily of amorphous (not crystalline) silica; and porcelain, sintered stone and natural stone.[17] An occupational medicine specialist from UC San Francisco (Robert Harrison, MD, MPH) recently returned from Australia, where he met with Australian researchers and fabrication workshop owners and confirmed there are numerous crystalline silica-free products that are widely available (personal communication). Of these, many products are composed largely of amorphous silica. These alternative products cost the same or less than prohibited engineered stone products, resulting in no economic impact to the fabricator or consumer.

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processing of engineered stone is controlled, the following exceptions also apply: research and analysis; to sample and identify engineered stone; removal, repair and minor modification of installed engineered stone; and the disposal of engineered stone.

[14] Cavalin C, Menéndez-Navarro A, Lescoat A. *The Banning of Engineered Stone in Australia: An Evidence-Based and Precautionary Policy.* Int J Soc Determinants Health Health Serv. 2025 Oct;55(4):415-423; Yates D, Brislane K, Coles J, Hosseini-Beheshti E, Linton A. *Comment on the Paper by Cavalin et al. The Banning of Engineered Stone in Australia: An Evidence-based and Precautionary Policy.* Int J Soc Determinants Health Health Serv. 2025 Oct;55(4):424-427; Tefera Y, Cole K, Ramkissoon C, Pisaniello D, Rowett S, Gaskin S, Coad M, Lalchandani NK, Williams C. *Opening the policy window: how Australia banned engineered stone.* Public Health Res Pract. 2025 Dec 10;35(4):PU25031.

[15] Safe Work Australia. *Review of the Engineered Stone Prohibition.* December 4, 2025. See https://www.safeworkaustralia.gov.au/doc/review-engineered-stone-prohibition.

[16] Feary J, Devaraj A, Burton M, Chua F, Coker RK, Datta A, Hewitt RJ, Kokosi M, Kouranos V, Reynolds CJ, Ross CL, Smith V, Ward K, Wickremasinghe M, Szram J. *Artificial stone silicosis: a UK case series.* Thorax. 2024 Sep 18;79(10):979-981; Wise J. *Doctors call for ban on cutting artificial stone after reporting first UK cases of silicosis. BMJ*. 2024 Aug 7;386:q1755.

[17] Ibid.

9. **Safe work practices must continue while alternative non-crystalline silica products are used in fabrication shops.** Data are limited regarding the health risks associated with amorphous silica exposure as a result of processing benchtops, panels and slabs, with some studies suggesting that there may be significant lung inflammatory response in animal studies.[18] There may also be an increase in the use of acrylic-based solid surfaces containing aluminum hydroxide, with two case reports of lung fibrosis linked to a similar product.[19] It is also likely that many fabrication shops will continue to fabricate countertops containing crystalline silica (for example, marble, granite, and quartzite). Therefore, it is essential that Cal/OSHA continues to enforce the provisions of 8 CCR § 5204 while the Board takes action to prohibit the fabrication of engineered stone containing more than 1% crystalline silica.

In summary, silicosis is a devastating, deadly, and thoroughly preventable disease. In light of the scientific evidence and the emergence of silicosis among hundreds of California stone fabrication workers, WOEMA is hereby petitioning the Standards Board to initiate expedited rulemaking to implement revisions to § 5204 (Occupational Exposures to Respirable Crystalline Silica) that will prohibit all fabrication and installation tasks on engineered stone that contains more than 1% crystalline silica. We stand ready to assist the Division and the Standards Board to clarify our request and answer any questions. Please do not hesitate to contact me or our legislative staff expert, Mr. Don Schinske (415-497-5716), if you have questions or need more information.

Sincerely,

Rosalie Banasiak M.D.

Rosalie Banasiak, MD, FACOEM
President WOEMA

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[18] Ramkissoon C, Pavan C, Petriglieri JR, Fimiani M, Pisaniello D, Gaskin S, Turci F. *Physico-chemical features and membranolytic activity of dust from low or no crystalline silica engineered stone with implications for toxicological assessment.* Sci Rep. 2025 Jul 15;15(1):25451; Ramkissoon, Chandnee; Gaskin, Sharyn (2025). *Engineered stone is now banned. How safe are new-generation low and no-silica stone materials?* The University of Adelaide. Journal contribution. https://doi.org/10.25909/29916743.v1

[19] Raghu G, Collins BF, Xia D, Schmidt R, Abraham JL. *Pulmonary fibrosis associated with aluminum trihydrate (Corian) dust.* N Engl J Med. 2014 May 29;370(22):2154-6; Corwin C, Waterhouse H, Abraham JL, Sanyal S, Crawford JA, Caddell M, Hodgson MJ. *Interstitial pulmonary disease and aluminum trihydrate exposure: A single case report and detailed workplace analysis.* Am J Ind Med. 2024 Mar;67(3):274-286.