October 30, 2026

VIA ELECTRONIC MAIL

The California Occupational Safety and Health Standards Board

RS@dir.ca.gov

Re: Comments on the October 22, 2026 Revised Discussion Draft for Proposed New Section § 5204.1 "Prohibition of the Manufacture and Fabrication of Artificial Stone Slabs or Panels Containing 1.0% or More Crystalline Silica."

Dear Board Members:

I write to submit comments on the revised discussion draft of § 5204.1, "Prohibition of the Manufacture and Fabrication of Artificial Stone Slabs or Panels Containing 1.0% or More Crystalline Silica," issued by the California Occupational Safety and Health Standards Board (the "Standards Board") on October 22, 2026. I am an environmental health scientist with deep experience and expertise in exposure science, toxicology, and epidemiology and knowledge of crystalline silica exposure in the countertop fabrication industry. I discuss here several ways in which the proposed silica prohibition and related changes can better align with the scientific evidence.

1. **The Board should consider an appropriate testing method for bulk samples.**

The Discussion Draft refers to analytical methods listed in Appendix A to 5204. The listed methods in Appendix A are intended for analysis of airborne particulate samples. In my experience, the process of preparing and analyzing crystalline silica in engineered stone slabs with these methods is time consuming, costly, and may be subject to precision and accuracy concerns. To illustrate, we recently conducted analysis of crystalline silica in stone slab samples using NMAM 7500 as the laboratory method. The samples were received in 'sheet form' and first shipped to a materials lab for further processing. The materials lab further broke down each product sample into "chip" form to ease heating of the slab material. Each slab sample was then weighed to determine total mass and then heated in what's known as Loss on Ignition (LOI) testing to approximately 500°C to vaporize the polymer matrix/binder and then re-weighed to determine the mass of non-vaporized

solid material. This solid material was subsequently pulverized in a puck mill to a nominal grain size of 74 micrometers (μm). The pulverized slab samples were then shipped to an industrial hygiene lab for analysis.

A subsample of the pulverized slab was analyzed at the industrial hygiene lab to determine concentrations of crystalline silica according to NIOSH Analytical Method 7500. Prior to analysis, the pulverized slab was screened with a 10 μm sieve to obtain respirable sized particles. The samples were weighed and then transferred to small glass vials, mixed with isopropanol, and sonicated to disperse the sample. The samples were then deposited onto silver membrane filters and assayed for crystalline silica (quartz, cristobalite, and tridymite) by X-ray diffraction (XRD). Tridymite is an uncommon form of crystalline silica; therefore, the laboratory's standard practice is to conduct a qualitative XRD scan for the presence of tridymite. The silica content for each sample was reported as both the calculated normalized value based on the original intact weight of the engineered stone before LOI testing as well as the silica content provided by the laboratory relative to the weight of the non-vaporizable material (after LOI testing).

Given the complexity of this process, testing took longer and cost more than usual testing of respirable dust samples. I ask the Board to consider an analytical method and a standardized procedure for collecting and preparing samples specific to and validated for determination of crystalline silica polymorph concentrations in bulk slab materials.

2. Application of the 1% crystalline silica threshold for artificial stone is unclear

The proposed threshold of 1% crystalline silica approaches the method detection limit for crystalline silica polymorphs and is silent on interpretation of testing results reported as below the detection limit. In my experience, the detection limits for quartz and cristobalite from analytical laboratories are approximately 0.8% by weight for quartz and range from approximately 0.8% - 2% by weight for cristobalite. Thus, a bulk sample may test below the detection limit for both quartz and cristobalite, yet the sum of the quartz and cristobalite concentrations may still exceed the 1% crystalline silica threshold depending on treatment of results below the method detection limit, such as imputing a value for non-detects.

Also, the definitions for Artificial Stone do not make clear whether the 5204.1 requirements will be triggered when new generation composite materials that contain less than 1% crystalline silica are processed using high-exposure trigger tasks. The wording of these definitions needs to be better coordinated with the existing standard language.

3. Conclusion

For the reasons outlined above, I consider the revised discussion draft of § 5204.1 and related changes to be unworkable in the near term and unnecessarily burdensome and

conclude that it cannot be complied with in the timeframe contemplated in the regulations as currently drafted. I encourage the Standards Board to consider and implement the above comments to the standard for further public review.

Thank you for your consideration and attention to this matter.

Very truly yours,



David L. MacIntosh, ScD, CIH, DABT

dmacintosh@eheinc.com
617-485-9560