Cal/OSHA’s Emergency Silica Standard

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Artificial Stone Workplace

Photos provided to Cal/OSHA courtesy of Dr. Jane Fazio, UCLA
Dry grinding to create bullnose edge

Photo: https://fedvrs.us/cutting-and-polishing-granite-countertops/
Dry edging

Photo: https://fedvrs.us/cutting-and-polishing-granite-countertops/
Dry polishing

Photo: https://fedvrs.us/cutting-and-polishing-granite-countertops/
Global market valued at $25 billion for 2023. Annual projected growth to 2033: 13%
July 2023: 52 cases
Dec 2023: 93 cases, 10 deaths
April, 2024: 127 cases, 13 deaths, 16 lung transplants
Rulemaking Timeline, Section 5204

• Mar 2016: Federal OSHA adopts silica regulations (250 to 50 µg/m3)
• Oct 2016: Cal/OSHA adopts silica regulations into Title 8, section 5204
• Feb 2023: Cal/OSHA sends warning letters to 1,000 employers
• Apr 2023: WOEMA petition to Board for ETS
• May 2023: Cal/OSHA submits petition response, recommending ETS
• Dec 2023: Board unanimously adopts Cal/OSHA’s proposed ETS
• Dec 2023: ETS in effect for 6 months, with two 90-day extensions
• May 2024: Standards Board notices permanent regulation
• Dec 2024: ETS expires. Regular rulemaking currently in process.
Deficiencies of Pre-Existing Silica Regulations

The Pre-Existing §5204 “Occupational Exposures to Respirable Crystalline Silica” was not able to effectively protect workers from the hazards of engineered stone.
Deficiencies of Pre-Existing Silica Regulations

Feasibility exemptions created a lack of clarity on requirements for:

• RCS engineering controls
• Wet sweeping
• HEPA-filtered vacuums
• Prohibition on using compressed air to clean clothing and surfaces

Photo: Los Angeles County Dept of Public Health
Deficiencies of Pre-Existing Silica Regulations

“Objective data:” 5204 allowed employers to exempt themselves from the standard (and from air monitoring) when the employer determined that silica exposures were likely below the action level, based on “objective data.”

Objective data: industry-wide monitoring data or calculations based on the composition of a substance.

Photo: NIOSH, U.S. CDC
Deficiencies of Pre-Existing Silica Regulations

Monitoring: All protective measures hinged on the results of either “objective data” or air monitoring conducted by the employer.

Cal/OSHA’s enforcement of worker protections also hinged on results of air monitoring.

Photo: NIOSH, U.S. CDC
Deficiencies of Pre-Existing Silica Regulations

Widespread Non-compliance found in the 2019-2020 SEP:

• 72% of countertop employers in violation of section 5204.

• Only 5% of workers received required medical exam.

• Only 45% of workers reported using wet methods.

Deficiencies of Pre-Existing Silica Regulations

Cal/OSHA RCS air sampling measurements, January 2019–February 2020 for 47 shops. Dashed lines represent the RCS AL (25 μg/m$^3$) and PEL (50 μg/m$^3$). Surasi et al. 2022 https://pubmed.ncbi.nlm.nih.gov/35899403/.
Cal/OSHA Silicosis Projections under the Pre-Existing Silica Regulation

Based on 2019 findings; silicosis rate of 12% to 21% in the industry; and silicosis fatality rate of 19% in the industry—Cal/OSHA estimates:

Of ~4000** workers in California, about 1,000 (25%) are likely exposed over the PEL of 50 µg/m³.

* After median of 15 years of exposure
** The number of countertop workers might be as high as 11,000 (CDPH, MMWR 2018).
Between 500 and 800 of these 4,000 workers could develop silicosis.

Between 95 and 150 of these workers with silicosis could die of pulmonary fibrosis and respiratory failure, absent a lung transplant.
Silica Emergency Temporary Standard

New Protections for Stone Fabrication Workers in the Emergency Temporary Standard (ETS) Title 8, section 5204
Silica Emergency Temporary Standard

Stone Fabrication Shop

- Artificial Stone with >0.1% silica or Natural Stone with >10% silica.
- High-Exposure Trigger Task. ETS Requirements

- All other stone products
- Existing 5204 Requirements
• For “high-exposure trigger tasks” (HETTs) the ETS closes the “loopholes” in section 5204.

• All HETTs require new protections, regardless of RCS exposure levels measured by the employer or “objective data” obtained by the employer.

• Cal/OSHA is mandated to quickly issue an Order Prohibiting Use (OPU) when dry cutting is observed, and may issue an OPU for other conditions, without the need to conduct air monitoring.
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New Protections in the ETS

Methods of compliance (f).

• Use wet methods without exception.
• Properly handle all waste materials.
• Promptly clean up all waste materials.
• Do not use compressed air.
• Do not dry sweep.
• Do not rotate employees to reduce exposures.
• Do not allow employees or equipment to move through dust.
• Maintain records.
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New Protections in the ETS

Respiratory protection (h)

• Use full-face, tight-fitting powered air-purifying respirator (PAPR), or equally protective alternative.

• Use a half-face supplied-air respirator under certain conditions.
New Protections in the ETS

Respiratory protection (h)

• If employer demonstrates exposures are less than the action level through air monitoring every 6-months, they can use:
  • Loose fitting PAPR,
  • Tight-fitting half-face PAPR,
  • Non-powered, full-face air purifying respirator, or
  • Equally protective alternative.
Silica Emergency Temporary Standard

Are wet methods sufficient?

- NIOSH and Georgia Tech studies show that wet methods are not sufficient by themselves to protect workers from RCS exposure while cutting, grinding or polishing artificial stone.

- ETS therefore requires respiratory protection even when wet methods are in place and properly used.

- Exceptions when sampling shows RCS levels below the AL.

Videos available at: Clean Air, Clean Water: Silicosis - November-December 2020 (stonemag.online)
NIOSH 1: Water stream misdirected away from blade.
NIOSH 2: Not enough water causing exposed dry sections of countertop.

Video provided to Cal/OSHA courtesy of NIOSH
NIOSH 3: Flooding surface + internal tool stream is more effective.
Silica Emergency Temporary Standard

New Protections in the ETS

Communicating with employees (k)

• Ensure training and information is appropriate for the language and literacy of employees.

• Train employees on symptoms of silica exposure.

• Train employees on proper use of engineering controls, work practices, clean-up procedures, prohibited tasks.

• Encourage reporting of symptoms of silica exposure without fear of reprisal.
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New Protections in the ETS

Reporting of silicosis (I)

• Employers must report employees with confirmed silicosis or lung cancer to Cal/OSHA and CDPH.

• Healthcare providers that provide medical services to employers under the silica regulation must report confirmed silicosis cases to Cal/OSHA.
Silica Emergency Temporary Standard

How does the ETS improve enforcement by Cal/OSHA?

When employees conduct high-exposure trigger tasks:

• Cal/OSHA can enforce protections without having to prove silica exposures are over the PEL, and;

• Cal/OSHA must quickly issue an OPU if the CSHO observes dry cutting and may issue an OPU for certain other hazardous conditions or violations.
“I’m averaging about 10 citations per countertop inspection. Other CSHOs I have talked to are finding similar results. Even cutting wet, they are still over the PEL.”

“By issuing OPUs without sampling we can stop the exposures immediately. We are also requiring a higher level of protection for those workers once the shops do reopen.”

Karen Smith, CIH, CSP
Cal/OSHA Senior Industrial Hygienist
Outreach on Silica ETS

• Distributed Cal/OSHA letter with OHB materials to 1,000 employers
• Fact sheets, guidance, FAQs
• Model Exposure Control Plan
• External trainings
• Multi-media public awareness campaign
• Meeting with CBOs and worker centers
Acknowledgements

Cal/OSHA thanks our partners in labor, industry, NGOs, academia, and state and federal agencies who are working together to protect California’s stone fabrication workers through advocacy, regulation, outreach, education, and organizing.

Photo: NIOSH, CDC