

## Crystalline Silica ETS

T8CCR Section 5204

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State of California  
Department of  
Industrial Relations




STATE OF CALIFORNIA  
**CAL OSHA**  
DEPARTMENT OF INDUSTRIAL RELATIONS



State of California  
Gavin Newsom  
Governor

Material	Percent Crystalline Silica
Artificial Stone	More than 93%
Quartzite	95%
Sandstone	60%
Granite	10 to 45%



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### The concern

- Increase in artificial stone fabrication
- Epidemic of silicosis among artificial stone fabrication workers
- Existing regulation:
  - > Employer non-compliance
  - > Adequacy for artificial stone hazard
  - > PELs may not protect all employees




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### The concern

**Artificial stone:** Any manufactured stone, porcelain, or quartz. Commonly made by binding crushed stone with a binding material to form a slab

High-exposure trigger tasks


- > Artificial stone >0.1% crystalline silica
- > Natural stone >10% crystalline silica
- > Includes clean up and handling of debris



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### Essential hazard control sequence

1. **Substitute**
2. **Engineer**
  - Isolate
  - Water
  - Local Ventilation
3. Work practices
4. Administrative
5. Respirators




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### ETS high-risk exposure tasks

- 5204 (vs. 1532.3 Table 1) applies
- Exposure assessments
  - Initial + ongoing
  - No objective information
  - Proper methods
- Always done in regulated areas
  - Sign language change (English/Spanish)

DANGER  
RESPIRABLE CRYSTALLINE SILICA  
**CAUSES PERMANENT LUNG DAMAGE THAT MAY LEAD TO DEATH**  
MAY CAUSE CANCER  
WEAR RESPIRATORY PROTECTION IN THIS AREA  
AUTHORIZED PERSONNEL ONLY



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### ETS high-risk exposure tasks

- Engineering and work practice controls
  - Regardless of exposure
  - **Effective wet methods only**






### Effective Wet methods

- **Water** must cover the entire surface of the work object that contacts the tool
  1. Constant, continuous, **appropriate** volume of running water. Flow rates equal or exceed manufacturer recommendations/specs
  2. Submersing the work object underwater
  3. Water jet cutting




### ETS high-risk exposure tasks

- Housekeeping (no exceptions)
  - Wet or HEPA vac
  - Prompt - prevent visible dust build-up
  - Leak-tight containers
  - Respirator required
  - Readily available washing facilities
- Prohibitions:
  - Compressed air
  - Dry sweeping
  - Employee rotation
  - Moving equipment through debris



### ETS high-risk exposure tasks

- Written exposure control plan
  - Air monitoring records
  - Proper PPE donning/doffing procedures
  - Document carcinogen reporting to Cal/OSHA
  - Training procedures
- Imminent hazard = Order Prohibiting Use (OPU)
  - Wet methods
  - Prohibitions
  - Respirators
  - Reporting of silicosis or carcinogen use



### ETS high-risk exposure tasks

- Medical surveillance
  - PLHCP/specialist
- Respirators
  - Full face, tight-fitting PAPR (equal or greater protection)
    - Loose fitting PAPR or full-face APR if <AL (PLHCP OK)
    - Full face tight-fitting SAR in pressure demand if silica diagnosis or PLHCP requires
  - Silica: N, R, or P-100
  - Artificial stone: combination OV cartridge
  - Change-out schedule

### ETS high-risk exposure tasks

- Employee information and training
  - Language understood by employees and appropriate for education/literacy level
  - Hazcom + additional info
    - Symptoms: **cough, difficult breathing, fatigue, shortness of breath, weakness, fever, chest pain, or unexplained weight loss**
    - High-risk trigger task exposure controls
    - Increased smoking risks
    - TB latency
    - Reporting of symptoms

