

State Building & Construction Trades Council

Silica “Train-the-Trainer” Course Evaluation



(Pankow - San Francisco, CA)

Joey Hebl, Nina Townsend, Jordan Brown, Laura Boatman

Silica?

- Naturally occurring mineral found in construction materials
- Respirable crystalline silica
- Mixing, cutting, drilling



Worker cutting stone that creates respirable silica dust

Health Effects

- 2 million workers are exposed
- Silicosis – inflammation and scarring of lung tissue
- Lung cancer
- Chronic obstructive pulmonary disease (COPD)
- Tuberculosis
- Heart disease



Chest x-ray of patient with silicosis

2017 Federal Silica Standard

- Expanded standard features:
 - Specified engineering controls for tasks
 - Objective data or air monitoring
 - Medical surveillance







Task	Engineering Control	Respiratory Protection	
<p>Stationary masonry saws</p> 	<ul style="list-style-type: none"> • Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	 <p>(None required)</p>	 <p>(None required)</p>
<p>Dowel drilling rigs for concrete</p> 	<p>For tasks performed outdoors only:</p> <ul style="list-style-type: none"> • Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter-cleaning mechanism. • Use a HEPA-filtered vacuum when cleaning holes. 	 <p>(APF 10 required)</p>	 <p>(APF 10 required)</p>

Table 1

Engineering Controls

- Reduce amount of respirable crystalline silica
- Vacuum integration system
- Wet-cutting methods



Figure 1: Jackhammer with vacuum off



Figure 2: Jackhammer with vacuum on

SBCTC “Train-the-Trainer” Course

- Program Coordinator: Laura Boatman
- Co-instructor: Nazima El-Askari, LOHP
- Hands-on, interactive course
- 95 participants



SBCTC training materials

Our Project

Lookback survey

2018 SBCTC Silica in Construction Train-the-Trainer (TOT) Follow-Up

State Building and Construction Trades Council of California

Project Coordinator: Laura Boatman
Occupational Health Interns: Jordan Brown, Joey Hebl

Thank you for participating in this survey! This survey will take you approximately 15 minutes to complete. Your answers and comments will be used by the State Building and Construction Trades Council of California (SBCTC) to evaluate the SBCTC *Silica in Construction* train-the-trainer (TOT) course you received in March or April of 2017. Furthermore, your responses will be used by two Occupational Health Interns, Jordan Brown and Joey Hebl, whose summer project is aimed at assessing the TOT course and identifying additional resources or trainings that could benefit the various stakeholders.

If you have any technical difficulties while completing the survey, please contact Jordan Brown at Jordan.Brown@cdph.ca.gov.

At the end of the survey, please click "Submit" to record your answers.

[Click next to continue](#)

5%

Next

Worksite visits



Worker/Foreman/Supervisor Interviews



“Train the Trainer” Lookback Survey

- One year follow-up
- In partnership with the SBCTC
- Goals:
 - Course effectiveness
 - Dissemination
 - Future training directions

How many people have you trained?

What additional TOT classes would you like?

What strategies are being used at your worksite to control silica dust?

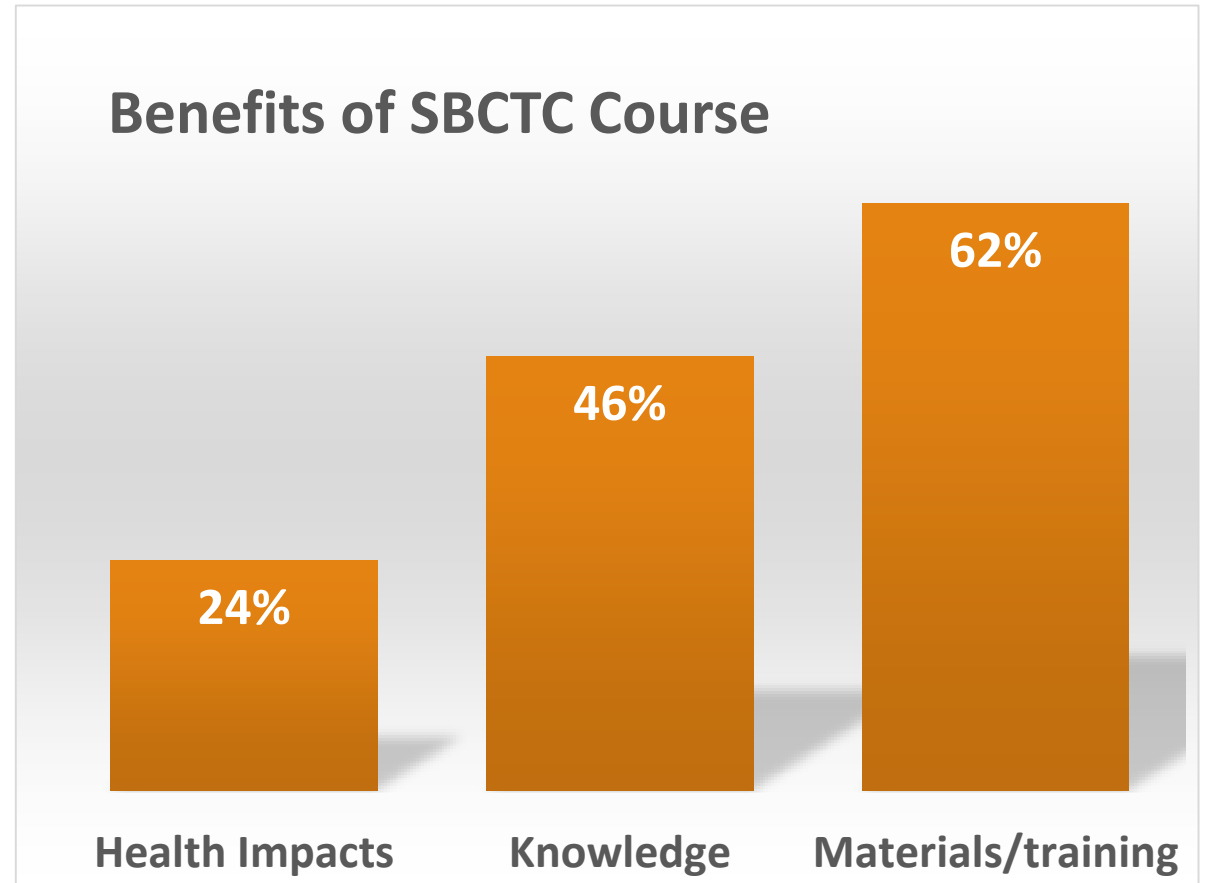
Would a refresher-course on silica be useful?

What was the biggest benefit you got from the TOT course?

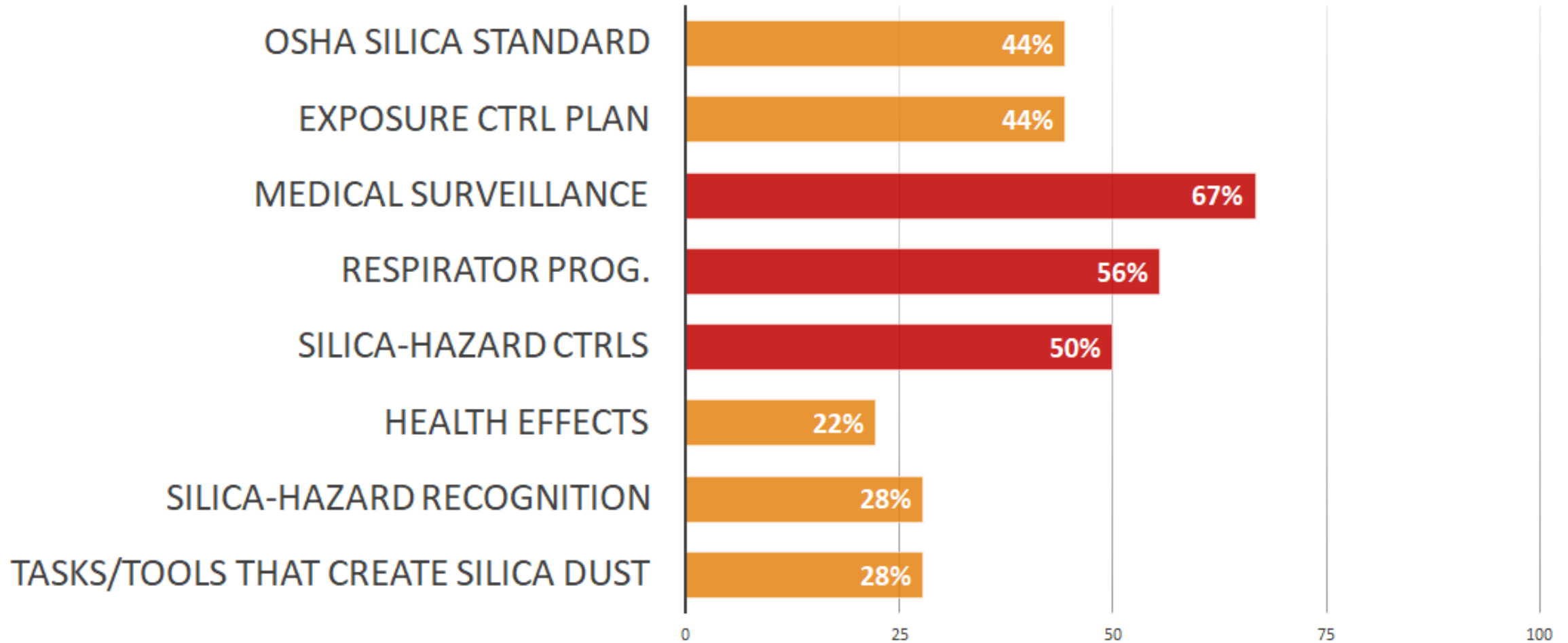
Survey Results (n=38)

- 95% are still using SBCTC materials
- 67% have trained 50+ people

-“Laura, Nazima and the team at SBCTC are top shelf”



Topics for Further Trainings



Worksite Visits with Interviews

- 32 Interviews:

- Worker
- Supervisor/Foreman
- Union representative



BAC LOCAL 3
NORTHERN CALIFORNIA

Pankow

THINKING BEYOND THE BUILDING

- Questions:

- What workers know about silica
- 2017 Silica Standard compliance
- How to better educate

SWINERTON



-“Safety is very important to me because I have a wife and kids to go home to at night”



Laborer sanding drywall wearing a respirator



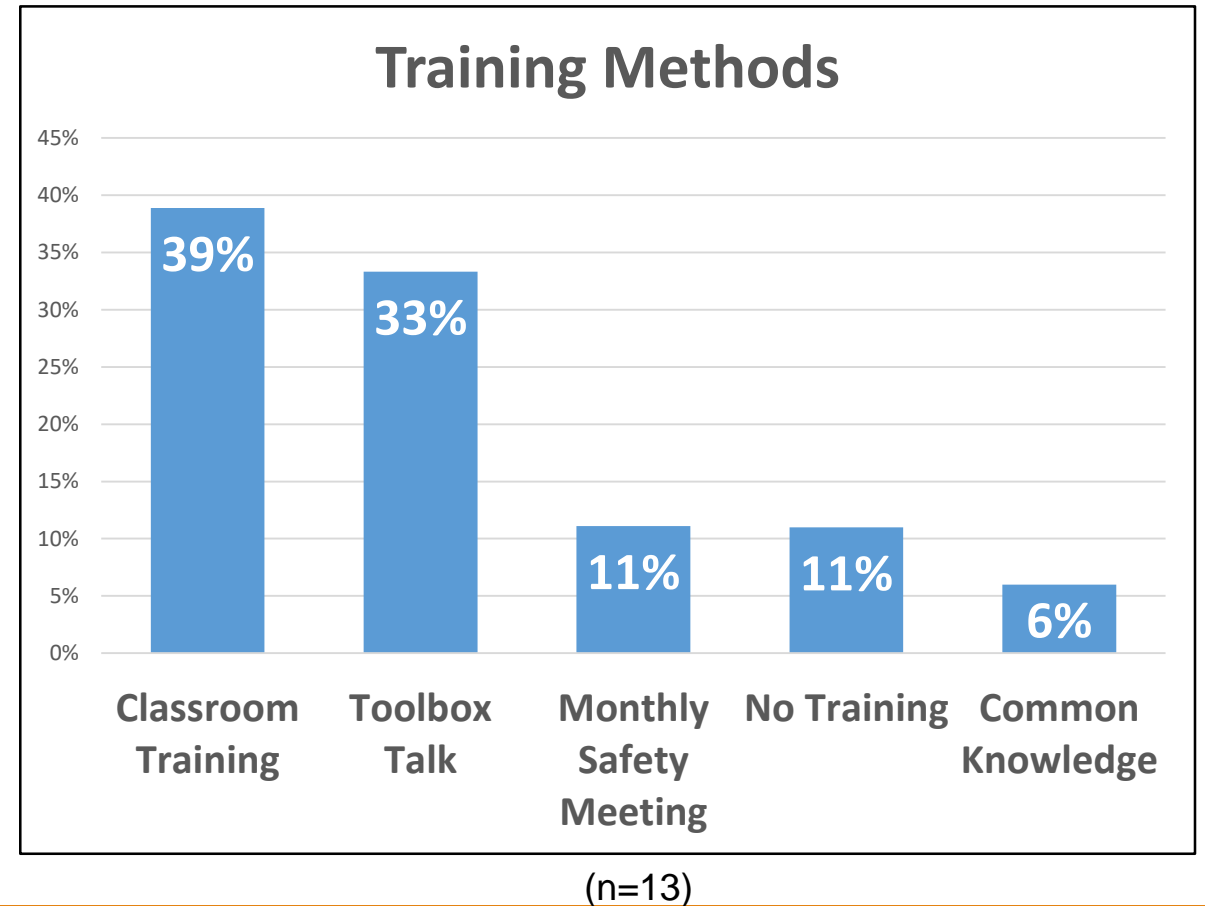
Interviewing tile layers about silica



Worker wet-cutting a piece of stone

Worksite Interview Results

- 93% of workers knew of the term “silica”
- 70% of workers wear a respirator
- Only 44% have been properly fit tested
- Classroom and toolbox talk most common training



Giveback



- **SBCTC**
 - Survey results and analysis
- **Union reps, safety supervisors & workers**
 - Silica checklist (with reference)
 - CPWR Toolbox talk handout
 - Hard hat sticker

<u>Silica Exposure Checklist</u>	
<input type="checkbox"/> Competent person on site? Name: _____ Job title: _____	<input type="checkbox"/> Written silica exposure control plan in place?
<input type="checkbox"/> Do you see dust in the air?	<input type="checkbox"/> Controls being used: <ul style="list-style-type: none"><input type="checkbox"/> Water delivery system<input type="checkbox"/> Vacuum dust collection
<input type="checkbox"/> Tasks being performed: <ul style="list-style-type: none"><input type="checkbox"/> Abrasive sandblasting<input type="checkbox"/> Concrete demolition<input type="checkbox"/> Sawing/masonry cutting<input type="checkbox"/> Drilling/coring<input type="checkbox"/> Concrete finishing (grinding)<input type="checkbox"/> Tuck-pointing<input type="checkbox"/> Mixing plaster/cement/stucco<input type="checkbox"/> Sweeping/housekeeping<input type="checkbox"/> Jack hammering	<input type="checkbox"/> Workers trained on silica hazards and controls?
	<input type="checkbox"/> PPE: <ul style="list-style-type: none"><input type="checkbox"/> Dust mask<input type="checkbox"/> Half face respirator<input type="checkbox"/> Full face respirator

Recommendations

- Further disseminate SBCTC materials
- Refresher silica course:
 - Respirator program
 - Medical surveillance
- Utilize pre-existing silica toolbox talks



Silica

Silica is in many materials common at construction sites, such as sand, concrete, rock, mortar, and brick. During tasks that disturb these materials (cutting, grinding, blasting, and jackhammering, for example), dust containing crystalline silica can be released into the air. Workers who inhale this dust are at risk of developing serious, sometimes fatal illnesses such as a lung disease called silicosis, lung cancer, and chronic obstructive pulmonary disease (COPD). It has also been linked to illnesses such as kidney disease.

Frank's Story

Frank has been a laborer for 22 years. His work frequently involved cutting, jackhammering, and drilling concrete. Water or vacuums were not used to control the dust, and he rarely was given a respirator. He began to have shortness of breath, wheezing, and tiredness after even short periods of work. Frank went to the doctor and told him about his work history. The doctor had Frank's x-ray read by a certified Class B reader because of the possible silica exposure. The results helped in diagnosing Frank's silicosis.

✘ **Have you ever been exposed to silica dust from the work you were doing or from work going on nearby?**

✘ **How could this illness have been prevented?**

Remember This

- Use vacuums and/or water to reduce dust at the source, before it becomes airborne. When these controls are not enough, use respiratory protection.
- Keep dust control systems in good working order, and check vacuum filters and hoses regularly to make sure they are not clogged.
- Do not use sand (or other substances containing more than 1% crystalline silica) for abrasive blasting. Substitute less hazardous materials.
- If a less hazardous material is not available, use the appropriate respiratory protection.
- Avoid eating, drinking, and smoking in areas where there is silica dust. A good practice is to first leave the dusty area and wash your hands and face.
- Avoid bringing dust home. Vacuum the dust from your clothes or change into clean clothing before leaving the work site. Do not brush or blow dust off.
- To learn more, visit www.silica-safe.org.

How can we stay safe today?

What will we do at the worksite to control and prevent exposure to silica dust?

1. _____

2. _____

OSHA Regulations: 1926.1153 Respirable crystalline silica



Reflections

Challenges?

Successes?



Acknowledgements

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THE CENTER FOR CONSTRUCTION
RESEARCH AND TRAINING



Stakeholders:

BAC Local 3, HILTI, Pankow Builders,
Swinerton Builders



ASSOCIATION OF OCCUPATIONAL AND ENVIRONMENTAL CLINICS

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Thank you!

