

Division of Occupational Safety and Health (Cal/OSHA)

Heat Illness Prevention



**Presented by
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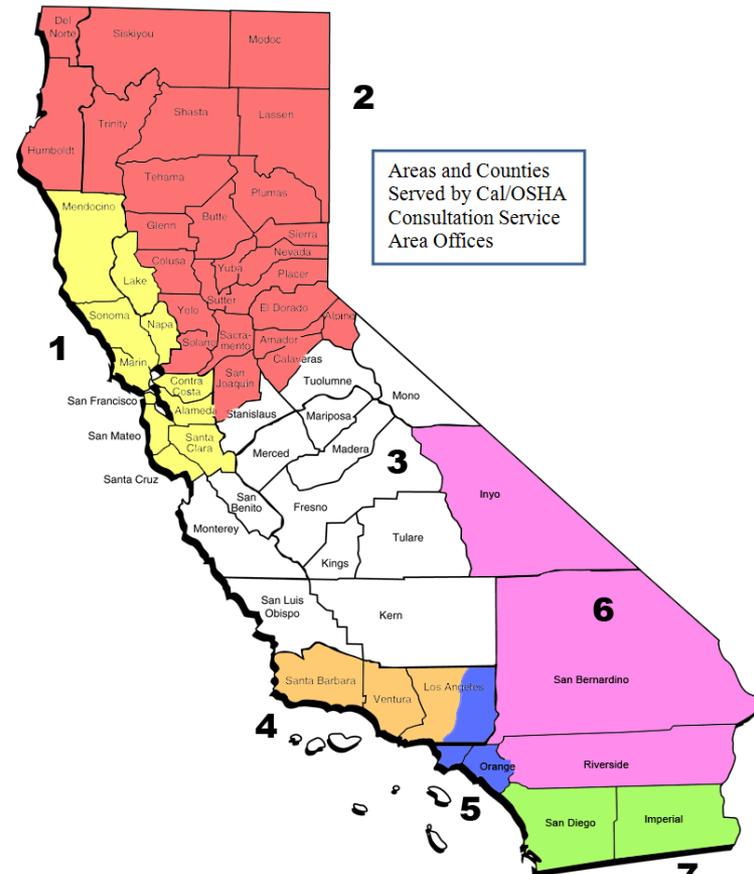
State of California
Gavin Newsom
Governor

Overview

- ❖ Cal/OSHA's roles in California
- ❖ Heat illness regulation in California, a brief history
- ❖ Title 8 CCR, Section 3395 – Heat Illness Prevention
- ❖ Common heat program compliance issues
- ❖ The difficulty of implementing a program / AC Transit decision
- ❖ Indoor heat
- ❖ Heat Illness Prevention Resources
- ❖ Respirable Crystalline Silica

Cal/OSHA's Role in CA

- The Cal/OSHA has jurisdiction over every employment and place of employment in California
- Enforcement
 - 26 Field Offices
 - Workplace Accidents
 - Complaints
- Consultation
 - On-site Visits
 - Offsite Consultation (Telephone Support)
 - Educational Materials



Heat Illness in California: A brief history

- ❖ 2005: Repeated heat waves began having a major impact on California workers. Cal/OSHA developed an emergency regulation. OSHSB adopted the regulation in August 2005.
- ❖ 2006: Permanent regulation (Title 8 CCR, Section 3395) takes effect July 2006.
- ❖ 2010: Section 3395 is amended to add specific provisions during high heat periods (when temps >95 degrees).
- ❖ 2015: Section 3395 is amended to address how employers must prevent and respond to serious, heat-related medical conditions.
- ❖ 2019: Indoor heat standard rulemaking

The difficulty of a mobile workforce

- ❖ AC Transit case – operators getting too hot in their non-air-conditioned buses
- ❖ Non-fixed establishments – often more difficult to provide shade, water, emergency procedures, and training



July 2010 - Photo by Richard Sitagi

Title 8 CCR, Section 3395 - Heat Illness Prevention

- ❖ **Requirements of the standard:**
 - ❖ **Access to Water (c)**
 - ❖ **Access to Shade (d)**
 - ❖ **Weather Monitoring and Acclimatization**
 - ❖ **High Heat Procedures (e)**
 - ❖ **Employee and Supervisory Training (h)**
 - ❖ **Written Procedures Including Emergency Response (i)/(f)**

(c) Access to Water

- ❖ Potable drinking water must be made available at no cost to the employee.
- ❖ Maintain, at all times, sufficient quantities of pure and cool potable drinking water (i.e. enough to provide at least one quart per employee per hour for the entire shift).



(c) Access to Water



- ❖ Water must be fit to drink. Water containers **CAN NOT** be refilled from non-potable water sources (e.g. irrigation wells, sprinkler or firefighting systems).
- ❖ Care must be taken to prevent contamination of the drinking water supplied to the workers.

(c) Access to Water

- ❖ Implement and maintain effective replenishment procedures when beginning the shift with smaller quantities.



Unacceptable

(c) Access to Water

- ❖ Locate the water containers as close as practicable given the working conditions and layout of the worksite.
- ❖ Keep it readily accessible, move it with the workers!
- ❖ Encourage the frequent drinking of water.

Remind workers not to wait until they are thirsty!



(d) Shade Up:

When the temperature exceeds 80° F

- ❖ Have and maintain one or more areas of shade at all times, when employees are present.
- ❖ Locate the shade as close as practical to the area where employees are working.
- ❖ Remember: Access to shade must be permitted at all times.



(d) Access to Shade



- ❖ Encourage employees to take a cool-down rest in the shade.
- ❖ Monitor employees on cool down rests
- ❖ Ask them if they're experiencing symptoms of heat illness
- ❖ Don't order back to work until symptoms abated, allow at least a 5 minute rest
- ❖ Take appropriate first aid steps or emergency response as necessary



(d) Access to Shade



- ❖ Shaded area must not cause exposure to another health or safety hazard. Areas underneath mobile equipment (e.g. tractor), or areas that require crouching in order to sit fully in the shade are not acceptable.



If temperature is below 80° F

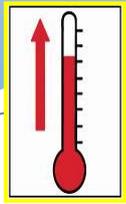


- ❖ When the temperature does not exceed 80° F, provide timely access to shade upon request.

When Infeasible or Unsafe



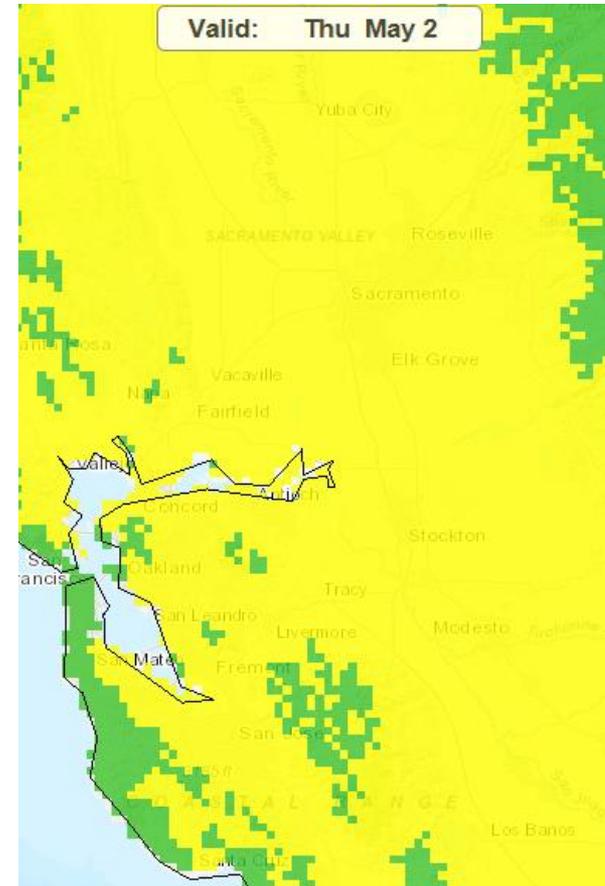
- Where the employer can demonstrate that it is not safe or feasible to provide shade, an employer can utilize alternative procedures for providing access to shade if they provide equivalent protection.
- For non-agricultural employers, alternative cooling measures that provide equivalent protection may be used. (Ag employer must provide shade – such as trailers.)



Monitor the Weather

www.nws.noaa.gov

- ❖ Instruct supervisors to track the weather of the job site [by monitoring predicted temperature highs and periodically using a thermometer.]
- ❖ Determine, and instruct supervisors, on how weather information will be used to modify work schedule, increase number of water and rest breaks or cease work early if necessary.
- ❖ NWS Heat Risk site:
<https://www.wrh.noaa.gov/wrh/heatrisk/>



(e) High Heat Procedures

(a) Scope and application

(2) List of industries subject to all provisions of this standard, including High Heat Procedures (subsection (e)):

- ❖ **Agriculture**
- ❖ **Construction**
- ❖ **Landscaping**
- ❖ **Oil and Gas Extraction**
- ❖ **Transportation or delivery of agricultural, construction materials or other heavy materials.**

When the temperature equals or exceeds 95° F

You must implement additional preventive measures:

- ❖ Ensure effective communication (by voice, observation or electronic means).



When the temperature equals or exceeds 95° F

You must implement additional preventive measures:

- ❖ Observe employees for alertness and signs and symptoms of heat illness.



- ❖ Supervisory or designee observation of 20 or fewer employees
- ❖ Mandatory buddy system
- ❖ Ensure effective communication (by voice, observation or electronic means).
- ❖ Other effective means

When the temperature equals or exceeds 95° F



- ❖ Designate one or more employees to call for emergency services
- ❖ Give more frequent reminders to drink plenty of water.
- ❖ Hold pre-shift meetings on prevention

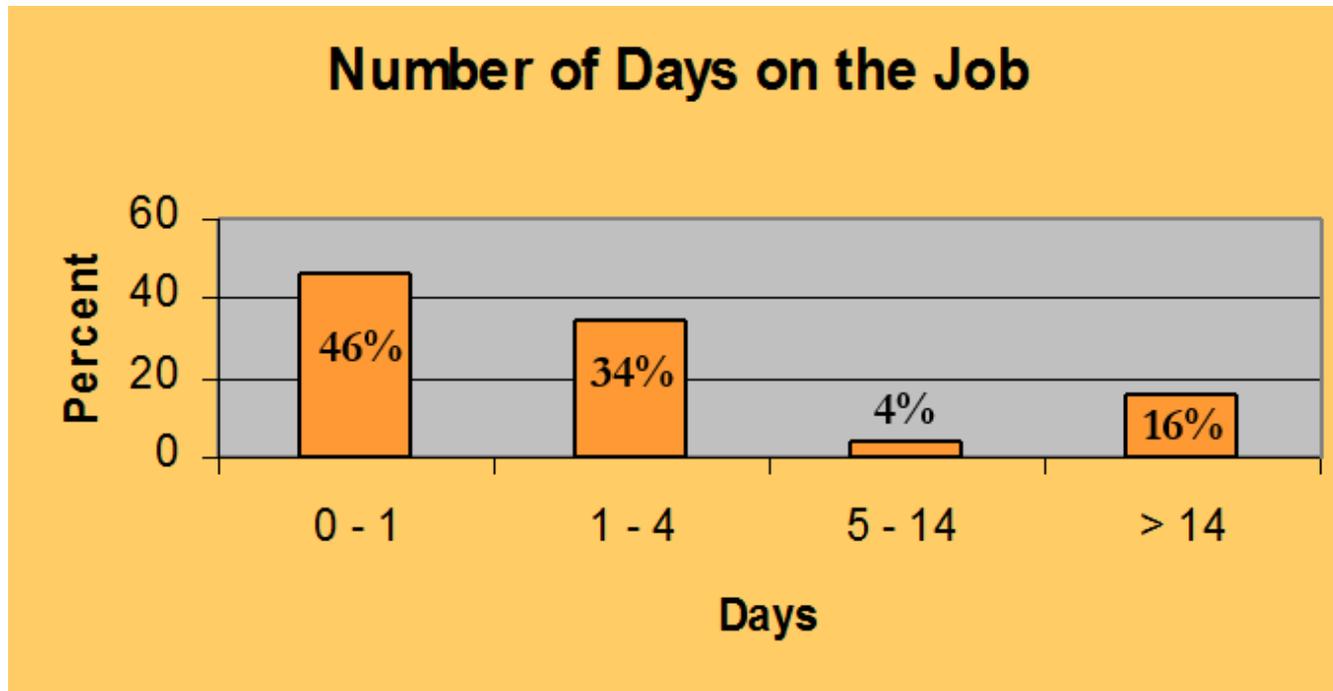
(f) Emergency Response Procedures

- ❖ Ensure effective communication
- ❖ Respond to signs and symptoms of possible heat illness
 - Supervisor to take immediate, appropriate action
 - If indicators of serious heat illness, implement emergency response procedures
 - Employees exhibiting or reporting signs or symptoms of heat illness shall be monitored and not left alone. Onsite first aid or appropriate emergency medical services shall be offered.
 - Contact emergency medical services and ensure that clear and precise directions to the site can be provided



(g) Acclimatization

- ❖ Per Section 3395(b): “Acclimatization” means temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.



(g) Address Lack of Acclimatization

- ❖ As an employer, you are responsible for the working conditions of your employees, so you must act effectively when conditions result in sudden exposure to heat that your workers are not used to.
- ❖ All employees shall be closely observed by a supervisor or designee during heat waves.
- ❖ Employees newly assigned to high heat areas shall be closely observed by a supervisor or designee for the first 14 days of employment

(g) Address Lack of Acclimatization

- ❖ **Thus, determine how your company will:**
 - **lessen the intensity and/or shift length of the newly-hired employees' work during a two or more week break-in period;**
 - **modify the work schedule or reschedule non essential duties, during the hot summer months;**
 - **be extra-vigilant with your employees to recognize immediately symptoms of possible heat illness.**

(h) Employee & Supervisor Training

Ensure all employees and supervisors:

- ❖ Are trained before beginning work that should reasonably be anticipated to result in a heat illness.



(h) Employee Training

- ❖ The environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body



(h) Employee Training

- ❖ Your company's heat illness prevention procedures
 - Including, but not limited to, the employer's responsibility to provide water, shade, cool-down rests, and access to first aid as well as the employees' right to exercise their rights under this standard without retaliation



(h) Employee Training

- ❖ Importance of frequent consumption of small quantities of water
- ❖ Different types of heat illness, common signs and symptoms; and appropriate first aid or emergency response
- ❖ Knowledge that heat illness may progress rapidly

 **Stay safe and healthy!**
WATER. REST. SHADE. *The work can't get done without them.*

Drink water even if you aren't thirsty – every 15 minutes.
 

Rest in the shade.
 

Watch out for each other.


Wear hats and light-colored clothing.
 

2

"Easy does it" on your first days of work in the heat. You need to get used to it. Rest in the shade – at least 5 minutes as needed to cool down.

 **Health effects of heat**
Two types of heat illness:

Heat Exhaustion


Heat Stroke




1

Watch out for early symptoms. You may need medical help.
People react differently – you may have just a few of these symptoms, or most of them.

(h) Employee Training

- ❖ The concept, importance, and methods of acclimatization

Training must include the importance of acclimatization, how it is developed, and how your procedures address it.

- ❖ Importance of immediately reporting signs or symptoms of heat illness to a supervisor
- ❖ Procedures for responding to possible heat illness



(h) Employee Training

- ❖ Procedures to follow when contacting emergency medical services, providing first aid, and if necessary transporting employees.
- ❖ Procedures that ensure clear and precise directions to the work site, including designating a person to be available to ensure that emergency procedures are invoked when appropriate.



(h)(2) Supervisor Training

Supervisors must also be trained on the following:

- ❖ All the employee training topics (covered in (h)(1))
- ❖ The procedures they must follow to implement the requirements
- ❖ Procedures to follow when a worker exhibits or reports symptoms consistent with possible heat illness, including emergency response procedures and first aid.
- ❖ How to monitor weather reports and how to respond to hot weather advisories.

(i) Written Procedures

- ❖ As long as they are effective, your Heat Illness Procedures can be integrated into the IIPP.
- ❖ Maintain the procedures on site or close to the site, so that it can be made available to employees and representatives of Cal/OSHA upon request.
- ❖ Plan in English and the language understood by the majority of the employees

EMPLOYER SAMPLE PROCEDURES FOR HEAT ILLNESS PREVENTION

Cal/OSHA Publications Unit

Rev. April 2019



California employers with any outdoor places of employment must comply with the Heat Illness Prevention standard, California Code of Regulations, title 8, section [3395](#) (8 CCR 3395). These procedures have been created to assist employers in establishing their own heat illness prevention procedures and to reduce the risk of work-related heat illnesses to their employees.

These procedures are not intended to supersede or replace the application of any other title 8 sections, particularly 8 CCR [3203](#), Injury and Illness Prevention Program (IIPP), which requires an employer to establish, implement, and maintain an effective IIPP. You may integrate your heat illness prevention procedures into your IIPP. You must also be aware that other standards also apply to heat illness prevention, such as the construction, agriculture, and general industry requirements to provide drinking water, first aid, and emergency response.

Note: These procedures describe the minimum essential heat illness prevention steps applicable to most outdoor work settings. In work environments where there is a higher risk for heat illness (e.g., during a heat wave or other severe working or environmental conditions), you must exercise greater caution and employ protective measures beyond what is listed in this document, as needed to protect employees.

To effectively establish your company procedures, carefully review the key elements listed in this document, as well as the examples provided, then develop written procedures applicable to your workplace. The Heat Illness Prevention Plan must be written in English and the language understood by the majority of the employees and must be available at the worksite. Implement procedures, train employees and supervisors on your company procedures, and follow-up to ensure your procedures are fulfilled.

To tailor these procedures to your work activities, evaluate and consider the specific conditions present at your site such as:

1. The size of the crew.
2. The length of the work-shift.
3. The ambient temperature (which can either be taken using a simple thermometer or estimated by monitoring the weather).

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HIPP/Sample Procedures

Rev. 04.2019

(i) Written Procedures

Detail how **your company** will:

- ❖ Provide access to water & shade.
- ❖ Monitor the weather.
- ❖ Implement high heat procedures
- ❖ Address acclimatization methods and procedures.
- ❖ Train all employees and supervisors.
- ❖ Respond to heat illnesses without delay, provide first aid and emergency services.
- ❖ Provide clear and precise directions to the worksite.

Serious Hazard

You risk a serious citation if the outdoor temperature in the work area exceeds 80° F and any of these required elements is not present at the site:

- ❖ Drinking water
- ❖ Shade
- ❖ Trained employees or supervisor
- ❖ Emergency response procedures

Imminent Hazard Don't Risk an OPU!

You may also risk an Order Prohibiting Use (OPU) and a Serious Citation if the heat and lack of facilities create an imminent hazard.

An OPU may be issued if:

- ❖ The temperature is $\geq 95^{\circ}$ and water, shade, training or emergency procedures are not in place;
- ❖ The temperature is $\geq 80^{\circ}$, and there is a heat wave, heavy workload or other critical factor putting employees in danger.

An OPU:

- ❖ Will shut down the operation, and;
- ❖ Work will not be allowed to resume until the employer demonstrates that the imminent hazard has been corrected.

Common Heat Program Compliance Issues

Examples of items found during inspections:

- ❖ Program is not accessible at the worksite
- ❖ Program is outdated and is missing 2015 update elements
- ❖ Water issues – No enough, not provided, not encouraged
- ❖ Shade up at 80 degrees F / Monitoring the weather
- ❖ Locating shade as close as practicable (site layout)
- ❖ Appropriate first aid/emergency response as necessary
- ❖ Acclimatization of employees / supervisor observation
- ❖ Training / Training before work that could result in heat illness

The challenge of mobile work crews

AC Transit case study:

- ❖ Inspection in 2007 – cited employer for:
 - ❖ 3395(c) – adequate supply of water not supplied to bus drivers
 - ❖ 3395(d) – shade (meeting requirements of standard) not made available for drivers operating non-air-conditioned vehicles
 - ❖ 3395(e) [now (i)] – no written heat illness prevention program
- ❖ Employer appealed the case



Outdoor places of employment ≠ interior of buses

- ❖ February 2009: ALJ issued a decision stating, “the Division has not established that the term “outdoor places of employment”, as used in §3395, means only workplaces “outside of a building.” The safety order’s reasonably ascertainable meaning is that its application is limited to outdoor places of employment, which do not include the interiors of municipal transit buses such as those used by AC Transit as they travel their routes.”
- ❖ Cal/OSHA appealed this decision.
- ❖ June 2013: The Appeals Board issued a decision after reconsideration (DAR) stating, “We find that the interior of a transit bus is not an “outdoor place of employment.””

However, the journey continues...

Outdoor means “not in a building”

- ❖ Cal/OSHA appeals again – with a Petition for Writ of Mandate with the Alameda County Superior Court.
- ❖ In 2014, the Judge granted Cal/OSHA’s Petition for Writ of Mandate, reversing the Appeal Board’s DAR, saying the term “outdoor” is properly defined as “out of doors” or “not in a building”.
- ❖ Currently, this ruling stands, but both the Appeals Board and AC Transit appealed the Superior Court’s decision.

Court of Appeals decision

- ❖ Court of Appeals issued a decision on August 13, 2018.
 - ❖ “non-air-conditioned vehicle interiors could be deemed outdoor places of employment”
 - ❖ “section 3395 is intended to apply to ‘all outdoor places of employment in California year round, whether or not there is any risk of heat illness.’”
- ❖ 4 possible next outcomes....
 - ❖ A party can petition the CA Supreme Court
 - ❖ Supreme Court can review on its own motion
 - ❖ The decision could be unpublished
 - ❖ None of the above – the case gets remanded to the Superior Court, where they will issue a new judgment.

In the meantime..

- ❖ All the while, Cal/OSHA cited AC Transit again (in 2009) – for not providing water to employees (under 3363) and not evaluating potential heat illness hazards under the IIPP standard, Section 3203.
 - ❖ ALJ agrees with the citations.
 - ❖ “Employer neither reimburses drivers for water purchases, nor supplies them with water bottles or water containers on the buses.”
 - ❖ ALJ held “Employer's evidence that water was available failed to satisfy its obligation to "provide" water, which means to pay for water.”
 - ❖ Appeals Board agrees with the citations.

AC Transit implements a Heat Illness Prevention Program

- ❖ AC Transit provides all bus operators with water bottles.
- ❖ Operators can use their own or the company supplied bottled.
- ❖ On their way into the field, the gate attendant verifies they have their water.
- ❖ Air-conditioned buses are used on the hotter routes.
- ❖ Operators are given a list of locations they can get water and use the bathrooms. AC Transit contracts with stores for use of their restrooms.
- ❖ Internal temperature gauges are installed in non-AC buses. Operators contact headquarters at 80 degrees and stop the buses at 84 degrees.
- ❖ Training provided for all bus operators and supervisors.

Proposed Indoor Heat Regulation

- SB1167 – Requires an advisory board to proposed regulation for minimizing heat-related illness among workers in indoor places of employment.
- Draft of Heat Illness Prevention in Indoor Places of Employment is submitted April 22, 2019 draft
- “Cal/OSHA is preparing rulemaking documents based on this draft. No further changes prior to rulemaking are anticipated.”
- Go to website <https://www.dir.ca.gov/dosh/doshreg/Heat-illness-prevention-indoors/>
- Conduct an internet search using the phrase, “Cal osha indoor heat regulation”
- Contact [Amalia Neidhardt](#) at (916) 574-2993 for more information.

Proposed Indoor Heat Reg

- April 22, 2019 draft
 - 82/87 degree “triggers”
- Similar to Section 3395
 - (a) Scope/Application
 - (b) Definitions - indoors/outdoors
 - (c) Water
 - (d) Access to Cool-down Areas
 - (e) Assessment and Control Measures (at 87F)
 - Using hierarchy of controls
 - Implement feasible engineering controls
 - (f) Emergency Response Procedures
 - (g) Close Observation during Acclimatization
 - (h) Training
 - (i) Written HIPP

Additional Heat Information

Visit the Cal/OSHA Heat Illness Webpage:
<http://www.dir.ca.gov/DOSH/HeatIllnessInfo.html>

State of California
Department of Industrial Relations

Press room | Index

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Heat Illness Prevention [en Español](#)

YOUR EMPLOYER MUST PROVIDE WATER. SHADE. REST. it's the law. 877-99-CALOR

California employers are required to take these four steps to prevent heat illness:

- 1. Training**
Train all employees and supervisors about heat illness prevention.
- 2. Water**
Provide enough fresh water so that each employee can drink at least 1 quart per hour, or four 8 ounce glasses, of water per hour, and *encourage them to do so*.
- 3. Shade**
Provide access to shade and encourage employees to take a cool-down rest in the shade for at least 5 minutes. *They should not wait until they feel sick to cool down.*
- 4. Planning**
Develop and implement written procedures for complying with the Cal/OSHA Heat Illness Prevention Standard.

Quick Links

- File a workplace safety complaint
- Obtain a free consultation
- Important Cal/OSHA updates
- Public records requests

Cal/OSHA Branches & Units

Branches

- Enforcement
- Consultation Services

Units

- Amusement Ride and Tramway
- Asbestos and Carcinogen
- Census of Fatal Occupational Injuries
- Communications Program

Contact us by email:
heat@dir.ca.gov

Respirable Crystalline Silica Materials

<http://www.dir.ca.gov/dosh/respiratory-silica-FAQ.html>

What is the action level for respirable crystalline silica?

The action level for respirable crystalline silica is 25 micrograms per cubic meter ($\mu\text{g}/\text{M}^3$) of air. This is the concentration of respirable crystalline silica in air, as an eight-hour time-weighted average, at or above which employers must assess employee exposures, as prescribed in sections 1532.3 and 5204, and conduct medical surveillance, as prescribed in section 5204.

What are the broad categories of requirements in sections 1532.3 and 5204?

The broad categories of requirements are as follows:

Broad Categories of Requirements	Section 1532.3	Section 5204
Methods of exposure control or compliance	1532.3(c) or (d)(3)	5204(a)(3) or (f)
Exposure assessments	1532.3(d)(2)	5204(d)
Respiratory protection	1532.3(e)	5204(g)
Housekeeping	1532.3(f)	5204(h)
Restricted or regulated areas	1532.3(g)(1)(D)	5204(e)
Written exposure control plans	1532.3(g)	5204(f)(2)
Medical surveillance	1532.3(h)	5204(i)
Communication of respirable crystalline silica hazards to employees	1532.3(i)	5204(j)
Recordkeeping	1532.3(j)	5204(k)

Cal/OSHA Consultation

Area Office Locations and Contact Information

1. San Francisco Bay Area Manager: Nick Gleiter OaklandConsultation@dir.ca.gov	1515 Clay Street, Suite 1103 Oakland, CA 94612 (510) 622-2891
2. Northern California Manager: John Husmann Sacon@dir.ca.gov	2424 Arden Way, Suite 410 Sacramento, CA 95825 (916) 263-0704
3. Central Valley Manager: Eugene Glendenning Fresnoconsultation@dir.ca.gov	2550 Mariposa Mall Room 2005 Fresno, CA 93721 (559) 445-6800
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6. San Bernardino Manager: Ray Acree SanBernConsultation@dir.ca.gov	464 W. 4th Street, Suite 339 San Bernardino, CA 92401 (909) 383-4567
7. San Diego Manager: Carmen Cisneros Sandiegoconsultation@dir.ca.gov	7575 Metropolitan Drive, Suite 204 San Diego, CA 92108 (619) 767-2060

Questions?

Cal/OSHA

Consultation and Training

559-445-6800