



Indoor Heat Illness Regulation

Indoor Heat Illness Regulation

Written by Alex Miller, ARM, OHST

Cal-OSHA has created a new regulation called Indoor Heat Illness Prevention. It is intended to establish prevention methods for heat-related hazards found at workplaces indoors where the temperature inside reaches 82°F. For those who are familiar with it, like the outdoor heat illness regulation, this regulation requires employers to provide access to drinking water and cool-down areas, requires supervisors to closely observe employees during acclimatization, to train employees, and to provide timely emergency aid.

Like all new regulations, there are many questions that people will have relating to what they will have to do differently, and Cal-OSHA has put out some answers to these questions. Below are some of those questions and answers. To find more, you can go to the [Cal-OSHA Indoor Heat Illness Page](#).

There are quite a few new and important terms, so how do I know what Cal-OSHA means by these terms?

We will discuss the more important ones here and explain what the regulation means when they are using them.

What is meant by “indoor places of employment”?

- ▶ Indoor places of employment are spaces that are under a ceiling or overhead covering that restricts airflow and are enclosed along the entire perimeter by walls, doors, windows, dividers, or other physical barriers that restrict airflow, whether open or closed.
- ▶ Generally, any workplace with a roof and enclosed sides is considered an indoor workplace.
- ▶ Partial structures such as lean-tos and structures with one or more open sides are outdoor workplaces.

What is the appropriate way to measure our indoor temperature, and what is the “heat index”?

- ▶ The indoor temperature can be measured with a thermometer that is exposed to the air and shielded from radiating heat sources, such as the sun, heaters, or other heat-generating work equipment.
- ▶ The air temperature must be measured in the immediate area where people are located and documented.
- ▶ The “heat index” is what the temperature feels like to a person when the effect of relative humidity is combined with that of the air temperature.
- ▶ There are two ways to determine the heat index:
 - Use a heat index monitor that measures both temperature and relative humidity and utilizes National Weather Service heat index equations to determine the heat index.
 - Calculate the heat index by measuring the indoor temperature with a thermometer and relative humidity with a hygrometer, then use the chart found in [Appendix A of Title 8, Section 3396](#).



What is considered sufficient access to drinking water?

- ▶ Adequate water is always required and must be made available at no cost to the worker. The water must be potable (i.e., fit to drink), fresh, pure, suitably cool, and provided to employees free of charge.
 - To ensure that water is fresh, pure, and suitably cool, Cal-OSHA advises employers or supervisors to visually examine, smell/taste the water, and/or even pour some on their skin.
- ▶ Water must be located as close as possible to the areas where employees are working and in the indoor cool-down areas.
 - To encourage people to drink water often, potable drinking water must always be available in locations readily accessible to all employees.
 - If it is inconvenient to drink water, people will be less likely to drink enough water to prevent heat illness.
 - This may require placing water strategically in multiple locations, such as when employees are working in large areas.
 - For example, in a large warehouse, water should be placed in accessible locations throughout the building in all areas where employees are working.

What is considered a cool-down area?

- ▶ A cool-down area is an indoor or outdoor area that is blocked from direct sunlight and shielded from other high-radiant heat sources and is either open to the air or provided with ventilation or cooling.
 - Blockage is sufficient when objects do not cast a shadow in the area of blocked sunlight.
- ▶ The temperature in indoor cool-down areas must be maintained at less than 82°F unless the employer demonstrates it is not feasible.
- ▶ A cool-down area does not include a location where any of the following conditions exist:
 - Environmental risk factors do not allow the body to cool down.
 - Employees are exposed to unsafe or unhealthy conditions.
 - Employees are deterred or discouraged from accessing or using the cool-down area.

What is considered sufficient access to cool-down areas?

- ▶ Employers should always provide and maintain one or more cool-down areas that should be located as close as possible to people while they are working.
- ▶ Cool-down areas need to be large enough so that people can sit in a normal posture in the cool-down area without having to touch each other.
- ▶ Cool-down areas must also be large enough to accommodate the number of people on recovery or rest period, and the number of people who remain on site during the meal period.



What does Cal-OSHA mean by, “encouraging workers to rest in cool-down areas”?

- ▶ The employer must allow and encourage employees to take a cool-down rest in a cool-down area for a period of no less than five minutes at a time when they feel the need to do so to protect themselves from overheating.
 - Waiting until symptoms appear before taking a cool-down rest may be too late.
 - It is crucial that employees not be rushed while taking the cool-down rest, since the purpose of the cool-down rest is to reduce heat stress on the worker.
- ▶ Encouraging employees to take a cool-down rest in cool-down areas is especially important for workers who are paid on a piece-rate basis, as they would be less inclined to use this preventive rest.
- ▶ Water must be available in the cool-down area so that people are encouraged to drink more water.

What action does Cal-OSHA say the employer needs to take when a worker takes a preventative cool-down rest?

- ▶ The employer needs to monitor workers during a cool-down rest.
- ▶ The employer needs to ask if they are experiencing any symptoms of heat illness, including simple fatigue.
- ▶ If any signs or symptoms of heat illness are observed or reported, the employer must not order the worker back to work and must continuously observe the worker until the signs or symptoms have gotten better.

Common early signs and symptoms of heat illness may include:

- ▶ Pale skin
- ▶ Heavy sweating
- ▶ Headache
- ▶ Muscle cramps
- ▶ Fatigue

If no signs or symptoms of heat illness are observed or reported, monitoring may be periodic rather than continuous.

- ▶ If heat illness is suspected, appropriate first aid and emergency response procedures (if necessary) should be initiated without delay. No worker with signs or symptoms of heat illness should be left unattended or sent home without being offered onsite first aid or provided emergency medical services.

What is acclimatization, and how does Cal-OSHA explain how to address it under the new regulation?

- ▶ If an employer monitors the PM 2.5 levels at the worksite using a direct reading instrument, the employer must do so in accordance with the information contained in [Appendix A of § 5141.1](#) and is required to use the following table to convert the PM 2.5 concentration to the AQI for PM 2.5:
- ▶ There is an adjustment period the body needs to become accustomed to a new environment, and people are more likely to develop heat illness if they have not yet become acclimatized to the hotter environment.
- ▶ According to Cal-OSHA, acclimatization is typically achieved for most people within four to 14 days of regular work involving at least two hours per day in the heat.
- ▶ As per the new regulation, a supervisor or a designated employee must closely observe employees who have been newly assigned to any of the following, for the first 14 days of assignment:
 - A work area where the temperature or heat index, whichever is greater, reaches at least 87°F.
 - A work area where the temperature or heat index, whichever is greater, reaches at least 82°F where employees wear clothing that restricts heat removal.
 - A high-radiant-heat area where the temperature reaches at least 82°F.
- ▶ According to §3396, (b)(10), a “heat wave” is:
 - “...any day in which the predicted high temperature for the day will be at least 80°F and at least ten degrees Fahrenheit higher than the average high daily temperature for the preceding five days...”
- ▶ When there is a heat wave, all employees must be close when there are no effective engineering controls used to control the effect of outdoor heat on indoor temperature.



Best practices to find ways to lessen the intensity of employee’s work include:

- ▶ During a heat wave.
- ▶ During the 14-day acclimatization periods of new employees.
- ▶ Those employees who have been newly assigned to a high-heat area.

The following are frequently asked questions provided by the division regarding the regulation.

Does this regulation apply to me?

With exceptions, this standard applies to all indoor work areas where the temperature equals or exceeds 82°F when employees are present.

These exceptions do not apply to:

- ▶ Vehicles without effective and functioning air conditioning.
- ▶ Shipping or intermodal containers during loading, unloading, or related work.

What are the exceptions?

- ▶ Outdoor working conditions that fall under the scope of Title 8, §3395, Outdoor Heat Illness.
- ▶ Prisons, local detention facilities, and juvenile facilities.
- ▶ Places of employment where employees are teleworking that are not under the control of the employer.
- ▶ Emergency operations that are directly involved in the protection of life or property.
- ▶ Incidental heat exposures where a worker is exposed to temperatures at or above 82°F and below 95°F for less than 15 minutes in any 60-minute period.

Since the regulation *does* apply to my organization, what do we have to do?

The employer must develop, put in writing, and implement procedures that include the following subsections of Title 8, §3396:

- ▶ Procedures for providing sufficient water, as described in Title 8, §3396 (c).
- ▶ Procedures for providing access to cool-down areas, as described in Title 8, §3396 (d).

- ▶ Procedures to measure the temperature and heat index and record whichever is greater, identify and evaluate environmental risk factors for heat illness, and implement control measures, as described in Title 8, §3396 (e).
- ▶ Emergency response procedures, as described in Title 8, §3396 (f).
- ▶ Acclimatization methods and procedures, as described in Title 8, §3396 (g).
- ▶ A heat illness prevention plan must be specific a customized to the employer's operational environment.
- ▶ Employees and supervisors must be trained in these procedures so they understand and can implement the employer's plan.
 - The written program must be written in English and the language understood by the majority of employees.
- ▶ It must be available to employees at the work site, as well as to representatives of Cal/OSHA upon request.
 - The plan will be considered available at the work site if, for example, it is accessible on a cell phone or other electronic device that is available for employees to use for this purpose upon request.
- ▶ The HIPP may be integrated into the employer's Injury and Illness Prevention Program required under Title 8, §3203.

Now that we know what to do, is there something that will trigger these requirements to kick in?

The regulation will kick in when one or more of the following conditions exist

- ▶ The temperature equals or exceeds 87°F when employees are present.
- ▶ The heat index equals or exceeds 87°F when employees are present.
- ▶ Employees wear clothing that restricts heat removal and the temperature equals or exceeds 82°F.
- ▶ Employees work in a high radiant heat area and the temperature equals or exceeds 82°F.

Are there training requirements for this new regulation?

Employers need to provide training to both employees and supervisors on the topics outlined below:

- ▶ Environmental and personal risk factors for heat illness.
- ▶ The employer's procedures for complying with this regulation.
- ▶ The importance of frequent water consumption.
- ▶ The importance and methods of acclimatization.
- ▶ Signs and symptoms of the different types of heat illness.
- ▶ The importance of people immediately reporting to the employer signs and symptoms of heat illness in themselves or co-workers.
- ▶ The employer's procedures for responding to signs and symptoms of heat illness, such as first aid.
- ▶ Emergency response procedures, including contacting emergency medical services with clear directions to the worksite.

- ▶ Prior to supervising employees that should reasonably be anticipated to result in employee exposure to heat illness, the supervisor must be trained in:
- ▶ All the information listed above and how to monitor and respond to hot weather reports if the work area is affected by outdoor temperatures.

How will I know I am doing what Cal-OSHA wants me to do with respect to training?

Cal/OSHA evaluates training compliance by examining both content and how it is presented. The following is the test of "compliance":

- ▶ Training has occurred.
- ▶ Required content has been provided.
- ▶ Training has been effective in communicating the information to employees.
- ▶ Training must be provided before beginning any work involving a risk of heat illness.
- ▶ Training must be accurately documented.
- ▶ To be effective, training must be given in a language and at an educational level the employees understand



Comparison of Indoor and Outdoor Heat Illness Prevention Standards

Requirement	Cal-OSHA Outdoor Heat Regulation	Cal-OSHA Indoor Heat Regulation
Scope and Application	Applies to outdoor workplaces.	Applies to indoor workplaces when the temperature inside is 82°F or more.
Provide Clean Drinking Water	<ul style="list-style-type: none"> ▶ Provide access to drinkable water that is fresh, suitably cool, and free of charge. ▶ Located as close as possible to where people are working. 	<ul style="list-style-type: none"> ▶ Provide access to potable water that is fresh, suitably cool, and free of charge. ▶ Located as close as possible to work areas and cool-down areas.
Access to Shade and Cool-Down Areas	<ul style="list-style-type: none"> ▶ For outdoor workplaces, shade must be present at 80°F or more. ▶ When less than 80°F, shade must be available upon request. ▶ Shade areas must be: <ul style="list-style-type: none"> • Large enough to hold the number of people on rest breaks so they can sit comfortably without touching each other. • Close as possible to work areas. • Blocked from direct sunlight 	<ul style="list-style-type: none"> ▶ For indoor workplaces, provide at least one cool-down area which must be kept at a temperature below 82°F. ▶ Cool-down areas must be: <ul style="list-style-type: none"> • Shielded from high-radiant heat sources. • Large enough to hold the number of people on rest breaks so they can sit comfortably without touching each other. • Close as possible to work areas. • Blocked from direct sunlight.
Cool-Down Rest Periods	<ul style="list-style-type: none"> • Encourage employees to take preventative cool-down rest periods. • Allow employees who ask for a cool-down rest period to take one. • Monitor employees taking rest periods for symptoms of heat-related illness. 	
High-Heat Procedures	<ul style="list-style-type: none"> ▶ Implement written procedures to address heat at or above 95°F. ▶ Procedures include: <ul style="list-style-type: none"> • Observing employees for heat illness symptoms. • Reminding people to drink water and take cool-down rest breaks. 	<i>Not applicable to indoor workplaces.</i>

Comparison of Indoor and Outdoor Heat Illness Prevention Standards

Requirement	Cal-OSHA Outdoor Heat Regulation	Cal-OSHA Indoor Heat Regulation
Assessment and Control Measures	<i>Not applicable to outdoor workplaces.</i>	<ul style="list-style-type: none"> ▶ Measure the temperature and heat index. ▶ Record whichever is greater whenever the temperature or heat index reaches 87°F (or temperature reaches 82°F for employees working in clothing that restricts heat removal or high-radiant-heat areas). ▶ Implement control measures. <ul style="list-style-type: none"> • Feasible engineering controls must be implemented first.
Monitoring the Weather	<ul style="list-style-type: none"> ▶ Monitor outdoor temperature. ▶ Ensure that once the temperature exceeds 80°F, shade structures are made available to employees. ▶ At 95°F, implement high-heat procedures. ▶ Train supervisors on how to check weather reports and how to respond to weather advisories. 	For indoor workplaces that are affected by outdoor temperatures, train supervisors on how to check weather reports and how to respond to hot weather advisories.
Emergency Response Procedures	Provide first aid or emergency response to anyone showing heat illness signs or symptoms, including contacting emergency medical services.	
Acclimatization	Closely observe new employees and newly assigned employees working in hot areas during a 14-day acclimatization period, as well as all employees working during a heat wave.	
Training	<ul style="list-style-type: none"> ▶ Provide training to all employees. ▶ Provide additional training for supervisors to address their responsibilities. 	
Heat Illness Prevention Plan	Establish, implement, and maintain an effective written outdoor heat illness prevention plan that includes procedures for providing drinking water, shade, preventative rest periods, close observation during acclimatization, high-heat procedures, training, and prompt emergency response.	Establish, implement, and maintain an effective written indoor heat illness prevention plan that includes procedures for providing drinking water, cool-down areas, preventative rest periods, close observation during acclimatization, assessment, and measurement of heat, training, prompt emergency response, and feasible control measures.