



HEAT ILLNESS PREVENTION PROVISIONS

A.J. KIRKWOOD & ASSOCIATES, INC.

Purpose

A.J. Kirkwood & Associates, Inc.'s employees working in outdoor environments may be exposed to risks in regards to heat illnesses if they do not take the proper safety precautions. This program's intent is to give supervisors and employees awareness in regards to heat illness/injury prevention, heat illness/injury symptoms, and what to do if symptoms occur.

Any employee working on a job site, and foremen that supervise these employees, must follow the guidelines set forth in this program.

A.J. Kirkwood & Associates, Inc. strives to instill our guiding safety principal, "**Safety First, Safety Always!**"

This Heat Illness Prevention Plan (HIPP) applies to employees of A.J. Kirkwood & Associates, Inc., who work outdoors or on job tasks where the environmental risk factors for heat illness are present and are at risk for developing heat illnesses if they do not protect themselves appropriately.

Responsibility for Implementation of Jobsite HIPP:

It is the responsibility of the site foreman to implement and adhere to the provisions of the Heat Illness Prevention Program for their project. The Project Manager and Project Engineer may assist the foremen for compliance with the HIPP program.

Provision of Water:

- A.J. Kirkwood & Associates, Inc. will provide fresh, pure and suitable cool water, free of charge, as close as practicable to areas where employees are located. **Foremen** will visually examine the water to ensure purity. When conditions permit, delivery service and a cooler will be set up with our Arrowhead Water account for the jobsite. Otherwise, the **foreman** will work with their project team to ensure that 5-gallon water jugs or other water bottles are made available for the job-site crew.
- Drinking water containers (of five to 10 gallons each) will be brought to the site, so that at least two quarts per employee are available at the start of the shift. All workers whether working individually or in smaller crews, will have access to drinking water.
- Bags of disposable cups and the necessary cup dispensers will be made available to workers and will be kept clean until uses.
- As part of Effective Replenishment Procedures, the water level of dispensers or personal containers should be checked periodically (e.g. every hour), and more frequently when the temperature rises. Personal water containers need to be refilled with cool water when water level within a container drops below 50 percent. Additional water containers (e.g. five gallon bottles) will be stored to replenish water as needed. Employees are responsible for maintaining their personal water containers clean for consuming water.
- Water will be fresh, pure, and suitably cool and provided to employees free of charge. The foreman or another designated employee will visually examine the water and pour some on their skin to ensure that the water is suitably cool. During hot weather, the water must be cooler than the ambient temperature, but not so cool as to cause discomfort.

- Water containers will be located as close as practicable to the areas where employees are working (given the working conditions and layout of worksite), to encourage the frequent drinking of water. If field terrain prevents the water from being placed as close as possible to the workers, bottled water or personal water containers will be made available, so that workers can have drinking water readily accessible.
- Since water containers are smaller than shade structures, they can be placed closer to employees than shade structures. Placing water only in designated shade areas or where toilet facilities are located is not sufficient. When employees are working across large areas, water will be placed in multiple locations. For example, on a multi-story construction site, water should be placed in a safely accessible location on as many floors as possible where employees are working.
- All water containers will be kept in sanitary condition. Water from non-approved or non-tested water sources (e.g. untested wells) is not acceptable. If hoses or connections are used, they must be governmentally approved for potable drinking water systems, as shown on the manufactures label.
- Daily, workers will be reminded of the location of water coolers and of the importance of drinking water frequently. When the temperature exceeds or is expected to exceed 80 degrees Fahrenheit, brief 'tailgate' meetings will be held each morning to review with employees the importance of drinking water, the number and schedule of water and rest breaks and the signs and symptoms of heat illness.
- Use of employees' two-way radio will be used to remind employees to drink water.
- When the temperature equals or exceeds 95 degrees Fahrenheit or during a heat wave, pre-shift meetings before the commencement of work to encourage employees to drink plenty of water and remind employees of their right to take a cool-down rest when necessary, will be conducted. Additionally, the number of water breaks will be increased. Supervisors/foreman will lead by example and workers will be reminded throughout the work shift to drink water.
- Individual water containers or bottled water provided to workers will be adequately identified to eliminate the possibility of drinking from a co-worker's container or bottle.

ACCESS TO SHADE:

- Shade structures will be opened and placed as close to practical to the workers, when the temperature equals or exceeds 80 degrees Fahrenheit. When the temperature is below 80 degrees Fahrenheit, access to shade will be provided promptly, when requested by an employee.

Note: The interior of a vehicle may not be used to provide shade unless the vehicle is air-conditioned, and the air conditioner is on.

- Enough shade structures will be available at the site, to accommodate all of the employees who are on such a break at any point in time. During meal periods, there will be enough shade for all of the employees who choose to remain in the general area of work or in areas designated for recovery and rest periods. (At the discretion of the foremen, they may rotate employees in and out of meal periods, as with recovery and rest periods.)

- Daily, workers will be informed of the location of the shade structures and will be encouraged to take a five-minute cool-down rest in the shade. An employee who takes a preventative cool-down rest break will be monitored and asked if he/she is experiencing symptoms of heat illness and in no case will the employee be ordered back to work until signs or symptoms of heat illness have abated.
- Shade structures will be relocated to follow along with the crew and they will be placed as close as practical to the employees, so that access to shade is provided at all times. All employees on a recovery, rest break or meal period will have full access to shade so they can sit in a normal posture without having to be in physical contact with each other.
- In situations where trees or other vegetation are used to provide shade (such as in orchards), the thickness and shape of the shaded area will be evaluated, before assuming that sufficient shadow is being cast to protect employees.
- In situations where it is not safe or feasible to provide access to shade (e.g., during high winds), a note will be made of these unsafe or unfeasible conditions in the foreman's daily log, and of the steps that will be taken to provide shade upon request.
- For non-agricultural employers, in situations where it is not feasible to provide shade (mobile equipment and vehicle hazards, high winds), a note will be made in the foreman's daily log of these unsafe or unfeasible conditions, and of the steps that will be taken to provide alternative cooling measures but with equivalent protection as shade.

MONITORING THE WEATHER:

- The foremen will check in advance the extended weather forecast. Weather forecasts can be checked with the aid of the internet (<http://www.nws.noaa.gov/>), or by calling the National Weather Service phone number (see below) or by checking the Weather Channel TV Network. The work schedule will be planned in advance, taking into consideration whether high temperatures or a heat wave is expected. This type of planning should take place all year long depending on weather conditions.

CALIFORNIA DIAL-A-FORECAST

Los Angeles: (805) 988-6610 (#1)

San Diego: (619) 297-2107 (#1)

- Prior to each workday, the forecasted temperature and humidity for the worksite will be reviewed and will be compared against the National Weather Service Heat Index to evaluate the risk level for heat illness. Determination will be made of whether or not workers will be exposed at a temperature and humidity characterized as either "extreme caution" or "extreme danger" for heat illnesses. It is important to note that the temperature at which these warnings occur must be lowered as much as 15 degrees if the workers under consideration are in direct sunlight.
- Prior to each workday, the foreman will monitor the weather (using <http://www.nws.noaa.gov/> or with the aid of a simple thermometer) at the worksite. This critical weather information will be taken into consideration, to determine, when it will be necessary to make modifications to the work schedule (such as stopping work early, rescheduling the job, working at night or during the cooler hours of the day, increasing the number of water and rest breaks.)
- A thermometer may be used at the jobsite to monitor for sudden increases in temperature, and to ensure that once the temperature exceeds 80 degrees Fahrenheit, shade structures will be opened and made available to

the workers. Also, an applicable weather App on a smart phone that shows updated temperature conditions may be used. In addition, when the temperature equals or exceeds 95 degrees Fahrenheit, additional preventive measures such as the High Heat Procedures will be implemented.

PROCEDURES FOR HANDLING A HEAT WAVE:

For purposes of this section only, "heat wave" means any day in which the predicted high temperature for the day will be at least 80 degrees Fahrenheit and at least ten degrees Fahrenheit higher than the average high daily temperature in the preceding five days.

- During a heat wave or heat spike, the workday will be cut short or rescheduled (example conducted at night or during cooler hours).
- During a heat wave or heat spike, and before starting work, tailgate meetings will be held, to review the company Heat Illness Prevention Procedures, the weather forecast and emergency response. In addition, if schedule modifications are not possible, workers will be provided with an increased number of water and rest breaks and will be observed closely for signs and symptoms of heat illness.
- Each employee will be on the lookout for their co-workers for signs and symptoms of heat illness and to ensure that emergency procedures are initiated when someone displays possible signs or symptoms of heat illness.

HIGH HEAT PROCEDURES:

High Heat Procedures are additional preventative measures that A.J. Kirkwood & Associates, Inc. will use when the temperature equals or exceeds 95 degrees Fahrenheit.

- Effective communication by two-way radio, direct observation (applicable for work crews of 20 or fewer), and co-workers constantly looking out for one another, or other electronic means will be maintained so that employees at the worksite can contact a supervisor when necessary. If the supervisor is unable to be near the workers (to observe them or communicate with them), then an electronic device, such as a two-way radio, cell phone, or text messaging device, may be used for this purpose if reception in the area is reliable.
- Frequent communication will be maintained with employees working by themselves or in smaller groups (keep tabs on them via phone or two-way radio), to be on the lookout for possible symptoms of heat illness. The employee(s) will be contacted regularly and as frequently as possible throughout the day since an employee in distress may not be able to summon help on his or her own.
- Effective communication and direct observation for alertness and/or signs and symptoms of heat illness will be conducted frequently. When the supervisor is not available, a designated alternate responsible person must be assigned to look for signs and symptoms of heat illness. If a supervisor, designated observer, or any employee reports any signs or symptoms of heat illness in any employee, the supervisor or designated person will take immediate action commensurate with the severity of the illness.
- Employees will be reminded constantly throughout the work shift to drink plenty of water and take preventative cool-down rest break when needed.

PROCEDURES FOR ACCLIMATIZATION:

Acclimatization is the temporary and gradual physiological change in the body that occurs when the environmentally induced heat load to which the body is accustomed is significantly and suddenly exceeded by sudden environmental changes. In more common terms, the body needs time to adapt when temperatures rise suddenly, and an employee risks heat illness by not taking it easy when a heat wave strikes or when starting a new job that exposes the employee to heat to which the employee's body hasn't yet adjusted.

Inadequate acclimatization can be significantly more perilous in conditions of high heat and physical stress. Employers are responsible for the working conditions of their employees, and they must act effectively when conditions result in sudden exposure to heat their employees are not used to.

- The weather will be monitored daily. The foreman will be on the lookout for sudden heat wave(s) or increases in temperatures to which employees haven't been exposed for several weeks or longer.
- During a heat wave or heat spike, the workday will be cut short (example 12:00 PM), will be rescheduled (example conducted at night or during cooler hours) or if at all possible, cease for the day.
- New employees, or those employees who have been newly assigned to a high heat area, will be closely observed by the foreman or designee for the first 14 days. The intensity of the work will be lessened during a two-week break-in period (such as scheduling slower paced, less physically demanding work during the hot parts of the day and the heaviest work activities during the cooler parts of the day (early-morning or evening). Steps taken to lessen the intensity of the workload for new employees will be documented.
- The foreman, or the designee, will be extra-vigilant with new employees and stay alert to the presence of heat related symptoms.
- New employees will be monitored by existing crew members or other experienced coworkers to watch each other closely for discomfort or symptoms of heat illness.
- During a heat wave, all employees will be observed closely (or maintain frequent communication via two-way radio or phone), to be on the lookout for possible symptoms of heat illness.
- Employees and supervisors will be trained on the importance of acclimatization, how it is developed and how these company procedures address it.

PROCEDURES FOR EMERGENCY RESPONSE:

- Prior to assigning a crew to a particular worksite, workers and the foreman will be provided a map of the site from the GC, along with clear and precise directions (such as streets or road names, distinguishing features and distances to major roads), to avoid a delay of emergency medical services.
- Prior to assigning a crew to a particular worksite, efforts will be made to ensure that a qualified and appropriately trained and equipped person is available at the site to render first aid if necessary.
- All foremen and supervisors will carry cell phones and their two-way radio, to ensure that emergency medical services can be called. Checks will be made to ensure that these electronic devices are functional prior to each shift.
- When an employee is showing symptoms of possible heat illness, steps will be taken immediately to keep the stricken employee cool and comfortable once emergency service responders have been called (to reduce the progression to more serious illness). ***Under no circumstances will the affected employee be left unattended.***

- At remote locations such as undeveloped areas, the supervisor will designate an employee or employees to physically go to the nearest road or highway where emergency responders can see them. If daylight is diminished, the designated employee(s) shall be given a reflective vest or flashlights in order to direct emergency personnel to the location of the worksite, which may not be visible from the road or highway.
- During a heat wave or hot temperatures, workers will be reminded and encouraged to immediately report to their supervisor any signs or symptoms they are experiencing.

PROCECURES FOR HANDLING A SICK EMPLOYEE:

- When an employee displays possible signs or symptoms of heat illness, a trained first aid worker or supervisor will check the sick employee and determine whether resting in the shade and drinking cool water will suffice or if emergency service providers will need to be called.** A sick worker will not be left alone in the shade, as he or she can take a turn for the worse!
- When an employee displays possible signs or symptoms of heat illness and no trained first aid worker or supervisor is available at the site, emergency service providers will be called.
- Emergency service providers will be called immediately if an employee displays signs or symptoms of heat illness (decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior, incoherent speech, convulsions, red and hot face), does not look OK or does not get better after drinking cool water and resting in the shade. While the ambulance is in route, first aid will be initiated (cool the worker: place the worker in the shade, remove excess layers of clothing, place ice pack in the armpits and groin area and fan the victim).** Do not let a sick worker leave the site, as they can get lost or die before reaching a hospital!
- If an employee does not look OK and displays signs or symptoms of severe heat illness (decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior, incoherent speech, convulsions, red and hot face), and the worksite is located more than 20 minutes away from a hospital, call emergency service providers, communicate the signs and symptoms of the victim and request Air Ambulance.

NOAA's National Weather Service

Heat Index

Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution
 Extreme Caution
 Danger
 Extreme Danger

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, *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.



Health effects of heat

Two types of heat illness:

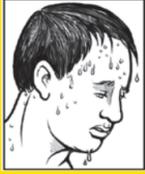
Heat Exhaustion



Dizziness



Headache



Sweaty skin



Weakness



Cramps



Nausea, vomiting



Fast heart beat



Heat Stroke



Red, hot, dry skin



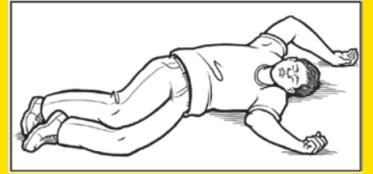
High temperature



Confusion



Convulsions



Fainting



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.

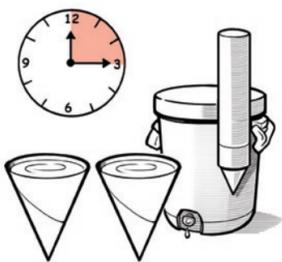
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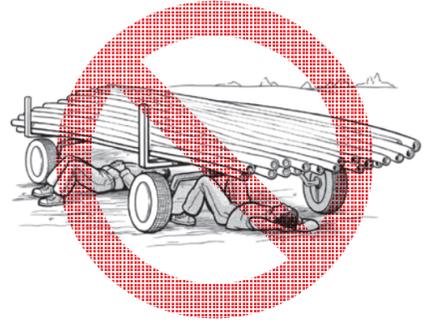
Stay safe and healthy!

WATER. REST. SHADE. *The work can't get done without them.*

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



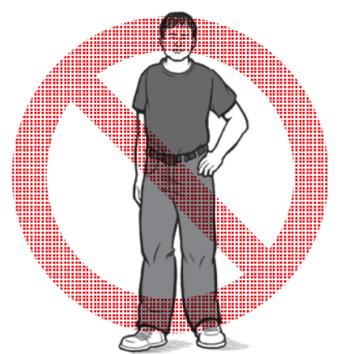
Rest in the shade.



Watch out for each other.



Wear hats and light-colored clothing.



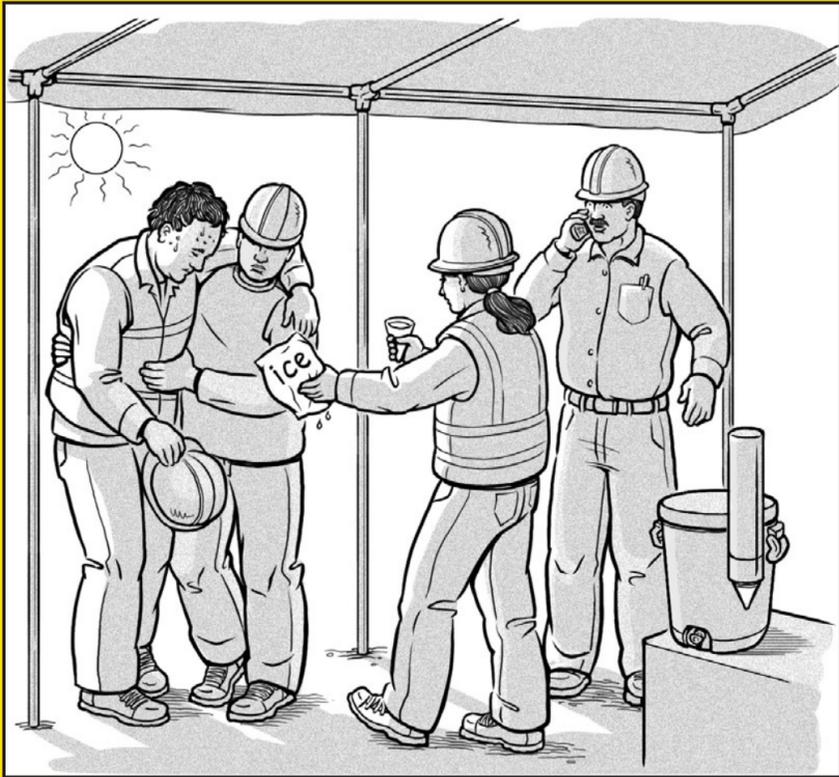
"Easy does it" on your first days of work in the heat. You need to get used to it. Rest in the shade — at least 5 minutes as needed to cool down.

2



Be prepared for an emergency

Heat kills -- get help right away!



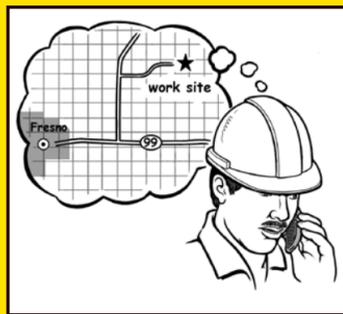
If someone in your crew has symptoms:

- 1) Tell the person who has a radio/phone and can call the supervisor – you need medical help.
- 2) Start providing first aid while you wait for the ambulance to arrive.
- 3) Move the person to cool off in the shade.
- 4) Little by little, give him water (as long as he is not vomiting).
- 5) Loosen his clothing.
- 6) Help cool him: fan him, put ice packs in groin and underarms, or soak his clothing with cool water.

When you call for help, you need to:

- Be prepared to describe the symptoms.
- Give specific and clear directions to your work site.

3

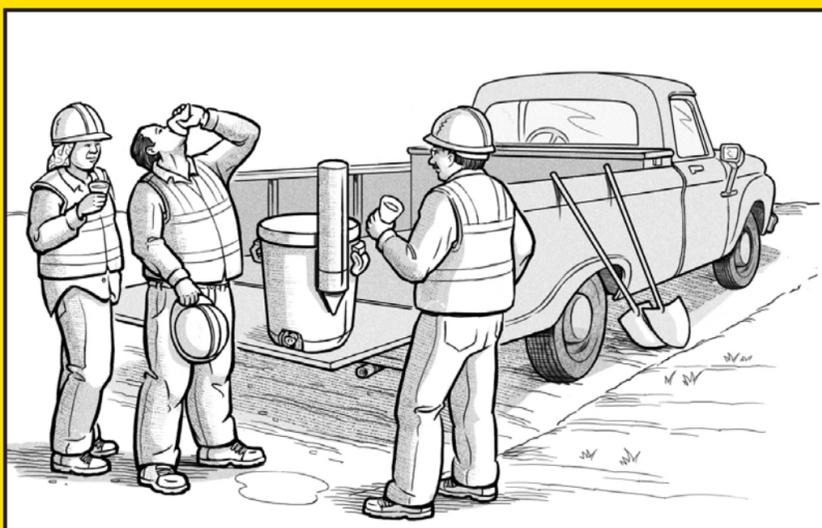


Workers do not pay for ambulances or medical care.



Heat illness can be prevented!

At our work site, we have:



Water



Shade to rest and cool down

We are extra careful when there is a heat wave or temperature goes up. Then we may change our work hours, and we all need more water and rest.



Training and emergency plan

4

Heat Kills



Heat illness includes heat cramps, fainting, heat exhaustion, and heatstroke.

Workers have died or suffered serious health problems from these conditions.

Heat illness can be prevented.



Know the symptoms of heat illness

Watch for symptoms in yourself and your coworkers. If you feel any symptoms, tell your coworkers and supervisor immediately because you may need medical help. Know who to talk to and how to get help before you start each workday.



Early symptoms

- Fatigue
- Heavy sweating
- Headache
- Cramps
- Dizziness
- High pulse rate
- Nausea/vomiting



Life-threatening symptoms

- High body temperature
- Red, hot, dry skin
- Confusion
- Convulsions
- Fainting



Preventing Heat Illness

Tell your supervisor if you are new to working in the heat or have had heat illness before.

Stay alert to the weather During a heat wave you are at greater risk of getting sick. You need to watch yourself and coworkers more closely, and may need to drink more water, take more breaks, and use other measures.



Drink enough cool, fresh water

Drink at least one 8-ounce cup (3 cones) every 15 minutes during your entire work shift. *Do not wait until you are thirsty to drink water.*

Do not drink alcohol.

Avoid coffee.

Choose water over soft drinks.



Take rest breaks in the shade to cool down.

Wear proper clothing Loose fitting, light-weight and light-colored cotton clothes, a wide-brimmed hat or cap, and a bandana.

Talk to your doctor if you have illnesses like diabetes, are taking medicines or are on a low salt diet.