

SELECT PAINTING & CONSTRUCTION

1. HEAT STRESS/ILLNESS PREVENTION PLAN

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SELECT PAINTING & CONSTRUCTION HEAT STRESS AND RELATED DISORDERS PREVENTION PLAN

1.1 PURPOSE

To establish a standard system for the prevention, notification and of accidents involving occupational injury or illness, related to heat stress. This standard applies to all work done outdoors at SELECT PAINTING & CONSTRUCTION.

1.2 OBJECTIVES

1. Eliminate or control unsafe acts and conditions before they result in accidents or exposures that may produce injury and/or illness.
2. Stimulate regular employee hazard detection and control activity.
3. Provide a mechanism for employees to formally report hazards and to make safety recommendations.

1.3 SUMMARY

The human body maintains a fairly constant internal temperature, even though it is being exposed to varying environmental temperatures. To keep internal temperatures within safe limits the body must expel its excess heat. This is done primarily through varying the amount of blood circulation through the skin and the release of liquid onto the skin by the sweat glands. Excessive exposure to hot work environments can bring about a variety of heat-induced disorders.

1.4 DEFINITIONS

“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.

“Heat illness” means a serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

“Environmental risk factors for heat illness” means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.

“Personal risk factors for heat illness” means factors such as an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body's water retention or other physiological responses to heat.

“Shade” means blockage of direct sunlight. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning. Shade may be provided by any natural or artificial means that does not expose employees to unsafe or unhealthy conditions and that does not deter or discourage access or use.

“Temperature” means the dry bulb temperature in degrees Fahrenheit obtainable by using a thermometer to measure the outdoor temperature in an area where there is no shade. While the temperature measurement must be taken in an area with full sunlight, the bulb or sensor of the thermometer should be shielded while taking the measurement, e.g., with the hand or some other object, from direct contact by sunlight.

1.5 DRINKING WATER

Water loss and dehydration are another major hazard for employees working in a hot environment. According to the National Institute of Occupational Safety and Health (NIOSH), workers may produce up to three gallons of sweat each day. NIOSH recommends that workers drink five to seven ounces of fluids every 15 to 20 minutes to replenish the body. Drinks (such as sports drinks) that replace electrolytes lost through perspiration are also effective. Additionally, it is recommended that workers drink cool water, which is more readily absorbed in the body, and avoid coffee, tea, alcohol, or soda, which act as diuretics that further deplete the body of fluid. The amount of sodium in the electrolytic drink should be monitored, as high sodium concentrations may affect employees with elevated blood pressure.

Heat acclimatized individuals will lose much less salt in their sweat than do workers who are not adjusted to the heat. The average diet contains sufficient salt for acclimatized people even when sweat production is high. Taking salt tablets is not recommended. Your normal diet should provide an adequate amount of salt.

1.6 PROVISION FOR WATER

SELECT PAINTING & CONSTRUCTION shall provide employees with access to potable drinking water meeting the requirements of Sections 1524, 3363, and 3457, as applicable.

- **Potable drinking water shall be:**
 - Fresh
 - Pure
 - Suitably cool
 - Provided to SELECT PAINTING & CONSTRUCTION employees free of charge.

- The water shall be located as close as practicable to the worksite.
- Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift.
- **SELECT PAINTING & CONSTRUCTION** employers may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water, as described in subsection (h)(1)(C), shall be encouraged.
- Potable water will be provided & refilled from a clean, safe source, (not from irrigation wells, sprinkler or firefighting systems).

1.7 PROCEDURES FOR WATER PROVISION

- Drinking water containers (of five to 10 gallons each) and/or cases of bottled water 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.
- Disposable cups and the necessary cup dispensers will be made available to workers and will be kept clean until used.
- As part of the Effective Replenishment Procedures, the water level of all containers will be checked periodically (e.g. every hour, every 30 min), and more frequently when the temperature rises. Water containers will be refilled with cool water, when the water level within a container drops below 50 percent. Additional water containers (e.g. five gallon bottles) will be carried, to replace water as needed.
- Ice will be carried in separate containers, so that when necessary, it will be added to the drinking water to keep it cool.
- Water containers will be placed as close as possible to the workers (given the working conditions and layout of the 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.
- Water containers will be relocated to follow along with the crew, so drinking water will remain readily accessible.
- Water containers will be kept in sanitary condition.
- Water will be fresh, pure, cool and located as close as possible to where employees are working, with exceptions when employers can demonstrate infeasibility.
- Daily, workers will be reminded by the jobsite foreman's of the location of the water coolers and of the importance of drinking water frequently. When the temperature exceeds or is expected to exceed 90 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.
- When the temperature equals or exceeds 95 degrees Fahrenheit or during a heat wave, the number of water breaks will be increased, and workers will be reminded throughout the

work shift to drink water. (See High Heat) Employees are also given the opportunity to go home for the day and/or management may make the decision to shut down the jobsite that day.

- During employee training and tailgate meetings, the importance of frequent drinking of water will be stressed.

1.8 ACCESS TO SHADE

Note: Follow the general guidance provided above, under the Provisions for Water (identify the person assigned the task and list the specific tasks that have to be carried out).

1. Shade shall be present when the temperature exceeds 80 degrees Fahrenheit. When the outdoor temperature in the work area exceeds 80 degrees Fahrenheit, SELECT PAINTING & CONSTRUCTION shall have and maintain one or more areas with shade at all times while employees are present that are either open to the air or provided with ventilation or cooling. The amount of shade present shall be at least enough to accommodate the number of employees on recovery or rest periods, so that they can sit in a normal posture fully in the shade without having to be in physical contact with each other. The shade shall be located as close as practicable to the areas where employees are working. Subject to the same specifications, the amount of shade present during meal periods shall be at least enough to accommodate the number of employees on the meal period who remain onsite.
2. Shade shall be available when the temperature does not exceed 80 degrees Fahrenheit. When the outdoor temperature in the work area does not exceed 80 degrees Fahrenheit employers shall either provide shade or provide timely access to shade upon an employee's request.
3. Employees shall be allowed and encouraged to take a preventative cool-down rest in the shade when they feel the need to do so to protect themselves from overheating. Such access to shade shall be permitted at all times.

An individual employee who takes a preventative cool-down rest

- a. shall be monitored and asked if he or she is experiencing symptoms of heat illness;
 - b. shall be encouraged to remain in the shade; and
 - c. shall not be ordered back to work until any signs or symptoms of heat illness have abated, but in no event less than 5 minutes in addition to the time needed to access the shade.
4. If an employee exhibits signs or reports symptoms of heat illness while taking a preventative cool-down rest or during a preventative cool-down rest period, the employer shall provide appropriate first aid or emergency response according to the emergency response subsection.

1.9 PROCEDURES FOR ACCESS TO SHADE

- Shade structures will be opened and placed as close as 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 at least 25 percent of the employees on the shift at any one time.
- 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. Employees may take a cool-down of no less than 5 minutes at a time if they begin to feel overheated.
- 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.
- 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.
- High-heat procedures (95 degrees) **SELECT PAINTING & CONSTRUCTION** shall ensure "effective" observation and monitoring, including a buddy system and regular communication with employees working by themselves. During high heat, employees must be provided with a minimum 10-minute cool-down period every two hours.
- 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, and of the steps that will be taken to provide shade upon request.
- In situations where it is not safe or feasible to provide shade, a note will be made 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.

1.10 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.

1. All employees shall be closely observed by a supervisor or designee during 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.
2. An employee who has been newly assigned to a high heat area shall be closely observed by a supervisor or designee for the first 14 days of the employee's employment.

1.11 HIGH HEAT PROCEDURES

High-heat procedures. **SELECT PAINTING & CONSTRUCTION** shall implement high-heat procedures when the temperature equals or exceeds 95 degrees Fahrenheit. These procedures shall include the following to the extent practicable:

1. Ensuring that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when necessary. An electronic device, such as a cell phone or text messaging device, may be used for this purpose only if reception in the area is reliable.
2. Observing employees for alertness and signs or symptoms of heat illness. The employer shall ensure effective employee observation/monitoring by implementing one or more of the following:
 - Supervisor or designee observation of 20 or fewer employees, or
 - Mandatory buddy system, or
 - Regular communication with sole employee such as by radio or cellular phone, or
 - Other effective means of observation.
3. Designating one or more employees on each worksite as authorized to call for emergency medical services, and allowing other employees to call for emergency services when no designated employee is available.
4. Reminding employees throughout the work shift to drink plenty of water.
5. Pre-shift meetings before the commencement of work to review the high heat procedures, encourage employees to drink plenty of water, and remind employees of their right to take a cool-down rest when necessary.

1.12 PROCEDURES FOR EMERGENCY RESPONSE

Emergency response procedures include effective communication, response to signs and symptoms of heat illness and procedures for contacting emergency responders to help stricken workers.

1. Ensuring that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor or emergency medical services when necessary. An electronic device, such as a cell phone or text messaging device, may be used for this purpose only if reception in the area is reliable. If an electronic device will not furnish reliable communication in the work area, the employer will ensure a means of summoning emergency medical services.
2. Responding to signs and symptoms of possible heat illness, including but not limited to first aid measures and how emergency medical services will be provided.

- a. If a supervisor observes, or any employee reports, any signs or symptoms of heat illness in any employee, the supervisor shall take immediate action commensurate with the severity of the illness.
 - b. If the signs or symptoms are indicators of severe heat illness (such as, but not limited to, decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior or convulsions), the employer must implement emergency response procedures.
 - c. An employee exhibiting signs or symptoms of heat illness shall be monitored and shall not be left alone or sent home without being offered onsite first aid and/or being provided with emergency medical services in accordance with SELECT PAINTING & CONSTRUCTION procedures.
3. Contacting emergency medical services and, if necessary, transporting employees to a place where they can be reached by an emergency medical provider.
 4. Ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders.
 - Prior to assigning a crew to a particular worksite, workers and the foreman will be provided a map of the site, 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.
 - Prior to the start of the shift, a determination will be made of whether or not a language barrier is present at the site and steps will be taken (such as assigning the responsibility to call emergency medical services to the foreman or an English speaking worker) to ensure that emergency medical services can be immediately called in the event of an emergency.
 - All foremen and supervisors will carry cell phones or other means of communication, 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).
 - At remote locations such as rural farms, lots or 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 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.
 - Employees and supervisors training will include every detail of these written emergency procedures.

1.13 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 (loss of consciousness, 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 (loss of consciousness, 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.

1.14 DOCUMENTATION & TRAINING

1. Employee training. Effective training in the following topics shall be provided to each supervisory and non-supervisory employee before the employee begins work that should reasonably be anticipated to result in exposure to the risk of heat illness:
 - a. The environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body caused by exertion, clothing, and personal protective equipment.
 - b. SELECT PAINTING & CONSTRUCTION procedures for complying with the requirements of this standard, including, but not limited to, SELECT PAINTING & CONSTRUCTION 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.
 - c. The importance of frequent consumption of small quantities of water, up to 4 cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties.
 - d. The concept, importance, and methods of acclimatization pursuant to SELECT PAINTING & CONSTRUCTION procedures.
 - e. The different types of heat illness, the common signs and symptoms of heat illness, and appropriate first aid and/or emergency responses to the different types of heat illness, and in addition, that heat illness may progress quickly from mild symptoms and signs to serious and life threatening illness.

- f. The importance to employees of immediately reporting to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves, or in co-workers.
 - g. **SELECT PAINTING & CONSTRUCTION** procedures for responding to signs or symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.
 - h. **SELECT PAINTING & CONSTRUCTION** procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider.
 - i. **SELECT PAINTING & CONSTRUCTION** procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders. These procedures shall include designating a person to be available to ensure that emergency procedures are invoked when appropriate.
2. Supervisor training. Prior to supervising employees performing work that should reasonably be anticipated to result in exposure to the risk of heat illness effective training on the following topics shall be provided to the supervisor:
- a. The information required to be provided by section (h)(1) above.
 - b. The procedures the supervisor is to follow to implement the applicable provisions in this section.
 - c. The procedures the supervisor is to follow when an employee exhibits signs or reports symptoms consistent with possible heat illness, including emergency response procedures.
 - d. How to monitor weather reports and how to respond to hot weather advisories.

Supervisors must receive training in the prevention of heat related illnesses prior to supervising employees working in heat. Supervisors will be trained in the **SELECT PAINTING & CONSTRUCTION** heat illness emergency response procedures to prevent heat illness and procedures to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

Communication for employees shall be in a form readily understandable by all affected employees.

SELECT PAINTING & CONSTRUCTION shall ensure all contractors, subcontractors, staffing companies, etc. employees (including temporary) working outdoors have been trained in heat illness prevention.

1.15 PROCEDURES FOR EMPLOYEE AND SUPERVISORY TRAINING

- Supervisors will be trained prior to being assigned to supervise other workers. Training will include this company's written procedures and the steps supervisors will follow when employees' exhibit symptoms consistent with heat illness.
- Supervisors will be trained on how to track the weather at the job site (by monitoring predicted temperature highs and periodically using a thermometer). Supervisors will be instructed on, how weather information will be used to modify work schedules, to increase number of water and rest breaks or cease work early if necessary.
- All employees and supervisors will be trained prior to working outside. Training will include the company's written prevention procedures.
- Employees will be trained on the steps that will be followed for contacting emergency medical services, including how they are to proceed when there are non-English speaking workers, how clear and precise directions to the site will be provided and the importance of making visual contact with emergency responders at the nearest road or landmark to direct them to their worksite.
- When the temperature exceeds 80 degrees Fahrenheit, short 'tailgate' meetings will be held to review the weather report, to reinforce heat illness prevention with all workers, to provide reminders to drink water frequently, to inform them that shade can be made available upon request and to remind them to be on the lookout for signs and symptoms of heat illness.
- New employees will be assigned a "buddy" or experienced coworker to ensure that they understand the training and follow company procedures.

1.16 DESIGNATED PERSONNEL

The following designated person or persons (Program Administrator Safety Coordinator/Supervisor/Foreman/Field Supervisor/Crew Leader) have the authority and responsibility for implementing the provisions of this program at this worksite.

Name/Title/Phone Number

NAME	TITLE	PHONE NUMBER
Lotte Franck	CFO	661-268-0800

1.17 PROCEDURES FOR MONITORING THE WEATHER

The supervisor will be trained and instructed to 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 numbers (see CA numbers 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 advance planning should take place all summer long.

CALIFORNIA Dial-A-Forecast

Eureka 707-443-7062
Hanford 559-584-8047
Los Angeles 805-988-6610 (#1)

Sacramento 916-979-3051
San Diego 619-297-2107 (#1)
San Francisco 831-656-1725 (#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 supervisor will monitor the weather (using <http://www.nws.noaa.gov> or with the aid of a simple thermometer, available at most hardware stores) 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 will be used at the jobsite to monitor for sudden increases in temperature, and to ensure that once the temperature exceeds 85 degrees Fahrenheit, shade structures will be opened and made available to the workers. In addition, when the temperature equals or exceeds 95 degrees Fahrenheit, additional preventive measures such as the High Heat Procedures will be implemented.

1.18 IF YOU MUST BE OUT IN THE HEAT

Drink more fluids (nonalcoholic), regardless of your activity level. Don't wait until you're thirsty to drink. Warning: If your doctor generally limits the amount of fluid you drink or has you on water pills, ask him how much you should drink while the weather is hot.

Don't drink liquids that contain alcohol or large amounts of sugar—these actually cause you to lose more body fluid. Also, avoid very cold drinks, because they can cause stomach cramps.

1.18.1 CLOTHING

While removing some clothing can increase airflow on the skin, it could also increase direct solar heat transfer into the body and lead to sunburn. Clothing that is lightweight, loose fitting and shields your skin (such as long sleeve cotton shirts and hats) can protect you from solar heat transfer and sunburn.

1.18.2 COOL DOWN

Employees must take a rest, or cool down in the shade for a period of no less than five minutes at a time when they feel the need to do so to protect from overheating. SELECT PAINTING & CONSTRUCTION will provide such shade if none is naturally available.

Employees taking a "preventative cool-down rest" must be monitored for symptoms of heat illness, encouraged to remain in the shade and not ordered back to work until symptoms are gone. Employees with symptoms must be provided appropriate first aid or emergency response.

Items such as cooling pads can be inserted into hardhats or around the neck areas to keep the head and neck cool. This can help workers reduce the negative affect of heat. Vented hard hats are another piece of equipment that can prevent heat buildup by allowing air to pass through. Neckbands soaked in cold water and worn during the day can help prevent the body's pulse points from overheating, and, wearing cooling vests may provide relief.

1.18.3 PERSONAL PROTECTIVE EQUIPMENT

Protective eyewear that features sufficient ventilation or antifog lens coatings is for use in hot environments to reduce lens fogging from the heat. Sweatbands can also be used to prevent perspiration from dripping into the eyes.

Gloves for hand protection can be cumbersome and increase the warmth when doing outdoor work. In her article, Copeland recommends that workers try to use gloves that offer breath ability. Gloves with leather palms and cotton or denim backs allow for increased airflow, yet still provide protection. Some gloves feature strips of nylon mesh or are perforated at the back of the hand for breath ability. Also helpful are string gloves that feature palms and fingers dipped in rubber but maintain open backs that allow for ventilation without sacrificing dexterity or protection against chemicals, punctures, and abrasions. As for gloves and perspiration, selecting a glove with a liner to absorb sweat would prevent perspiration buildup.

1.19 HEAT ILLNESS

1.19.1 HEAT STROKE

Heat stroke is the most serious of health problems associated with working in hot environments and is considered a medical emergency. It occurs when the body's temperature regulatory system fails and sweating becomes inadequate. The body's only effective means of removing excess heat is compromised with very little warning to the victim that a crisis stage has been reached.

A heat stroke victim's skin is hot, usually dry, red or spotted. Body is usually 105° F or higher, and the victim is mentally confused, delirious, perhaps in convulsions or unconscious. Unless the victim receives quick and appropriate treatment, death can occur.

Any person with symptoms of heat stroke requires immediate first aid. First call 911 or other appropriate medical emergency number. Then remove the victim to a cool area, thoroughly soaking

the clothing with water, and vigorously fanning the body to increase cooling. Further treatment at a medical facility should be directed. Early recognition and treatment of heat stroke are the only means of preventing permanent brain damage or death.

1.19.2 HEAT EXHAUSTION

Heat exhaustion includes several clinical disorders that resemble the early symptoms of heat stroke. Heat exhaustion is caused by the loss of large amounts of liquid by sweating, sometimes with excessive loss of salt. A person suffering from heat exhaustion still sweats but experiences extreme weakness or fatigue, giddiness, nausea or headache. In more serious cases, the victim may vomit or lose consciousness. The skin is clammy and moist, the complexion is pale or flushed and the body temperature is normal or only slightly elevated.

In most cases, first aid involves having the victim rest in a cool and shaded place while drinking plenty of liquids. Victims with mild cases of heat exhaustion usually recover quickly with this treatment. Severe cases may require extended care. There are no known permanent effects.

Early Warning Signs:

- Cramps
- Lack of Stamina
- Headache
- General Discomfort
- Dehydration
 - Progression to more serious symptoms can be rapid
 - Symptoms may occur after leaving the heated environment

Severe—heatstroke

- Dizziness
- Loss of Concentration
- High Body Heat
- Confusion
- Irrational actions
- Irritability
- Muscle Pain
- Rash
- Poor Concentration
- No sweating
- Rapid breathing
- Nausea
- Blurry vision
- Fainting
- Exhaustion
- Stroke
- Unconsciousness

1.20 OSHA QUICK CARD – PROTECT YOURSELF HEAT STRESS



Protect Yourself Heat Stress

When the body is unable to cool itself by sweating, several heat-induced illnesses such as heat stress or heat exhaustion and the more severe heat stroke can occur, and can result in death.

Factors Leading to Heat Stress

High temperature and humidity; direct sun or heat, limited air movement, physical exertion, poor physical condition, some medicines and inadequate tolerance for hot workplaces.

Symptoms of Heat Exhaustion

- Headaches, dizziness, lightheadedness or fainting.
- Weakness and moist skin.
- Mood changes such as irritability or confusion.
- Upset stomach or vomiting.

Symptoms of Heat Stroke

- Dry, hot skin with no sweating.
- Mental confusion or losing consciousness.
- Seizures or convulsions.
- Preventing Heat Stress

Know signs/symptoms of heat-related illnesses; monitor yourself and coworkers.

- Block out direct sun or other heat sources.
- Use cooling fans/air-conditioning; rest regularly.
- Drink lots of water; about 1 cup every 15 minutes.
- Wear lightweight, light colored, loose-fitting clothes.
- Avoid alcohol, caffeinated drinks, or heavy meals.

What to Do for Heat-Related Illness

- Call 911 (or local emergency number) at once.
- While waiting for help to arrive:
 - Move the worker to a cool, shaded area.
 - Loosen or remove heavy clothing.
 - Provide cool drinking water.
 - Fan and mist the person with water.

Protéjase del Estrés por calor

Cuando el cuerpo no puede bajar su temperatura mediante el sudor, pueden ocurrir varias enfermedades debido al calor, tales como estrés o agotamiento por calor e insolación o golpe de calor, las cuales pueden resultar en la muerte.

Factores que llevan al estrés por calor

Alta temperatura y humedad, calor o sol directo, movimiento limitado de aire, esfuerzo físico, pobre condición física, algunas medicinas y tolerancia inadecuada para lugares de trabajo calurosos.

Síntomas de agotamiento por calor

- Dolores de cabeza, mareos, vértigo o desmayo.
- Debilidad y piel húmeda.
- Cambios de humor como irritabilidad o confusión.
- Náuseas o vómitos.

Síntomas de insolación

- Piel seca y caliente sin sudor.
- Confusión mental o pérdida de conocimiento.
- Convulsiones o ataques.

Evita el estrés por calor

- Conozca las señales y los síntomas de las enfermedades relacionadas al calor; obsérvese a si mismo y a sus colegas.
- Bloquee el sol directo u otras fuentes de calor.
- Utilice ventiladores (abanicos) o aire acondicionado; descanse con regularidad.
- Beba mucha agua, como 1 taza cada 15 minutos.
- Vístase con ropa ligera, de colores claros y no ajustada.
- Evite el alcohol, bebidas con cafeína o comidas pesadas.

Qué hacer en caso de enfermedades relacionadas al calor

- Llame al 911 (u otro número local para emergencias) inmediatamente.

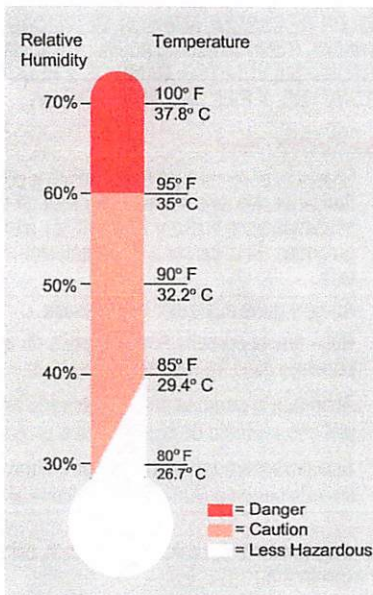
Mientras espera por ayuda:

- Mueva a la persona a un lugar fresco y sombreado.
- Suéltele o quitele la ropa pesada.
- Ofrézcale agua fresca para beber.
- Abanique y rocíe con agua a la persona.

THE HEAT EQUATION

**HIGH TEMPERATURE + HIGH HUMIDITY + PHYSICAL WORK
= HEAT ILLNESS**

When the body is unable to cool itself through sweating, **serious** heat illnesses may occur. The most severe heat-induced illnesses are **heat exhaustion** and **heat stroke**. If actions are not taken to treat heat exhaustion, the illness could progress to heat stroke and possible **death**.



HEAT EXHAUSTION

What Happens to the Body:

HEADACHES, DIZZINESS/LIGHT HEADEDNESS, WEAKNESS, MOOD CHANGES (irritable, or confused/can't think straight), FEELING SICK TO YOUR STOMACH, VOMITING/THROWING UP, DECREASED and DARK COLORED URINE, FAINTING/PASSING OUT, and PALE CLAMMY SKIN.

What Should Be Done:

- Move the person to a cool shaded area to rest. Don't leave the person alone. If the person is dizzy or light headed, lay them on their back and raise their legs about 6-8 inches. If the person is sick to their stomach lay them on their side.
- Loosen and remove any heavy clothing.
- Have the person drink some cool water (a small cup every 15 minutes) if they are not feeling sick to their stomach.
- Try to cool the person by fanning them. Cool the skin with a cool spray mist of water or wet cloth.
- If the person does not feel better in a few minutes call for emergency help (Ambulance or Call 911).

(If heat exhaustion is not treated, the illness may advance to heat stroke.)

HEAT STROKE—A MEDICAL EMERGENCY

What Happens to the Body:

DRY PALE SKIN (no sweating), HOT RED SKIN (looks like a sunburn), MOOD CHANGES (irritable, confused/not making any sense), SEIZURES/FITS, and COLLAPSE/PASSED OUT (will not respond).

What Should Be Done:

- Call for emergency help (Ambulance or Call 911).
- Move the person to a cool shaded area. Don't leave the person alone. Lay them on their back and if the person is having seizures/fits remove any objects close to them so they won't strike against them. If the person is sick to their stomach lay them on their side.
- Remove any heavy and outer clothing.
- Have the person drink some cool water (a small cup every 15 minutes) if they are alert enough to drink anything and not feeling sick to their stomach.
- Try to cool the person by fanning them. Cool the skin with a cool spray mist of water, wet cloth, or wet sheet.
- If ice is available, place ice packs under the arm pits and groin area.

How to Protect Workers

- Learn the signs and symptoms of heat-induced illnesses and what to do to help the worker.
- Train the workforce about heat-induced illnesses.
- Perform the heaviest work in the coolest part of the day.
- Slowly build up tolerance to the heat and the work activity (usually takes up to 2 weeks).
- Use the buddy system (work in pairs).
- Drink plenty of cool water (one small cup every 15-20 minutes)
- Wear light, loose-fitting, breathable (like cotton) clothing.
- Take frequent short breaks in cool shaded areas (allow your body to cool down).
- Avoid eating large meals before working in hot environments.
- Avoid caffeine and alcoholic beverages (these beverages make the body lose water and increase the risk for heat illnesses).

Workers Are at Increased Risk When

- They take certain medication (check with your doctor, nurse, or pharmacy and ask if any medicines you are taking affect you when working in hot environments).
- They have had a heat-induced illness in the past.
- They wear personal protective equipment (like respirators or suits).