

ZWICK CONSTRUCTION COMPANY HEAT ILLNESS PREVENTION PROGRAM

Revised June 2015

1.0 | PURPOSE

The purpose of Heat Illness Prevention Plan is to meet the requirements set forth in California Code of Regulations, Title 8, and also to serve as a supplement to Zwick Construction Company's Injury and Illness Prevention Program (IIPP). This information is intended and must be used in conjunction with the IIPP. The Heat Illness Prevention Guide establishes procedures and provides information which is necessary to ensure that employees of Zwick Construction are knowledgeable in the prevention and recognition of heat stress to ensure their own safety and the safety of others. A copy of this HIPP is available in all Zwick office locations, all jobsite trailers of active sites, and online at: www.ZwickConstruction.com/HIPP.html



2.0 | HEAT ILLNESS PREVENTION

Heat related illnesses are avoidable if the employees are trained and the right actions are taken before, during, and after working in either indoor or outdoor hot conditions. High temperatures and humidity can stress the body's ability to cool itself making heat illness a big concern during hot weather months. Every employee whose job duties require them to work in the outdoors during summer months, are exposed to elevated heat conditions and therefore are susceptible to heat illness. The three major forms of heat illnesses are: heat cramps, heat exhaustion, and heat stroke. Heat stroke can be a life threatening condition. This document will outline those actions as well as describing the three major forms of heat illness, how to recognize them, and what actions to take to provide first aid before medical care is provided.

2.1 Heat Cramps

Description:

Heat cramps are the most common type of heat related injury and probably have been experienced by nearly everyone at one time or another. Heat cramps are muscle spasms which usually affect the arms, legs, or stomach. Frequently they do not occur until sometime later after work, at night, or when relaxing. Heat cramps are caused by heavy sweating, especially when water is not replaced quickly enough. Although heat cramps can be quite painful, they usually don't result in permanent damage.

Prevention/First Aid:

Drink electrolyte solutions such as Gatorade™ or plenty of water during the day and try eating more fruits such as bananas to help keep your body hydrated during hot weather.

Contact your supervisor, the project manager or call 911 immediately if the employee becomes ill.

2.2 Heat Exhaustion

Description:

Heat exhaustion is more serious than heat cramps. It occurs when the body's internal temperature regulating system is overworked, but has not completely shut down. In heat exhaustion, the surface blood vessels and capillaries, which originally enlarged to cool the blood, collapse from loss of body fluids and necessary minerals. This happens when you do not drink enough fluids to replace what you are sweating away.

Symptoms Include:

Headache, heavy sweating, intense thirst, dizziness, fatigue, loss of coordination, nausea, impaired judgment, loss of appetite, hyperventilation, tingling in hands or feet, anxiety, cool moist skin, weak and rapid pulse (120-200), and low to normal blood pressure.

Prevention/First Aid:

The employee suffering these symptoms should be moved to a cool location such as a shaded area or air-conditioned building. Have them lie down with their feet slightly elevated. Loosen their clothing, apply cool, wet cloths or fan them. Have them drink water or electrolyte drinks. Try to cool them down, and have them checked by medical personnel. Victims of heat exhaustion should avoid strenuous activity for at least a day, and they should continue to drink water to replace lost body fluids. Contact the project manager, Director of Safety and call 911 if the person becomes non-responsive, refuses water, vomits or loses consciousness.

2.3 Heat Stroke

Description:

Heat stroke is a life threatening illness with a high death rate. It occurs when the body has depleted its supply of water and salt, and the victim's core body temperature rises to deadly levels. A heat stroke victim may first suffer heat cramps and/or heat exhaustion before progressing into the heat stroke stage, but this is not always the case. **It should be noted that, on the job, heat stroke is sometimes mistaken for a heart attack.** It is therefore very important to be able to recognize the signs and symptoms of heat stroke - and to check for them anytime an employee collapses while working in a hot environment.

Symptoms Include:

A high body temperature (103 degrees F); a distinct absence of sweating (usually); hot red or flushed dry skin; rapid pulse; difficulty breathing; constricted pupils; any/all the signs or symptoms of heat exhaustion such as dizziness, headache, nausea, vomiting, or confusion, and possibly more severe systems including; bizarre behavior; and high blood pressure. Advance symptoms may be seizure or convulsions, collapse, loss of consciousness, and a body temperature of over 108 degrees F.

Prevention/First Aid:

It is vital to lower a heat stroke victim's body temperature. Quick actions can mean the difference between life and death. Pour water on them, fan them, and/or apply cold packs.

Call 911 and get the person medical aid as soon as possible.

3.0 | PRECAUTIONS TO PREVENT HEAT ILLNESS

The following procedures are provided to prevent our employees from illness due to heat. All Zwick Construction employees must be trained in this policy and procedures. The key elements of this program include the following:

- **Temperature / Weather Monitoring**
- **Employee Access to Water**
- **Employee Access to Shade**
- **High Heat Procedures**
- **Emergency Response Procedures**
- **Employee Acclimatization**
- **Employee & Supervisory Training**

Temperature Monitoring

The Zwick Construction Project Superintendent will monitor the temperature on the job site at least every hour using one or both of the following methods.

- An appropriate and accurate temperature tracking device located in an appropriate area on the job site, or
- 2. Using the following web site: www.nws.noaa.gov

The Zwick Construction Project Superintendent will use weather information to modify work schedule, increase number of water and rest breaks or cease work early if necessary.

Communication between the Zwick Construction Project Superintendent and all Zwick Construction employees will be maintained at all times on the Zwick Construction project regarding heat and changing weather conditions.

Employee Access to Water

Enough potable pure & cool drinking water will be made available on the job site in sufficient quantities to provide at least one quart of water per hour per employee.

All water sources used to refill drinking water will provide pure cool drinking water.

After filling, the water containers will be taped with red tape to prevent unauthorized access to the water and contamination.

Drinking water will be located at all times as close to where employees are working as is reasonably possible.

Employees are encouraged to drink as much water as possible throughout the day, but at least one quart per hour.

Supervisors will remind employees throughout the day to consume as much water as possible.

Employee Access to Shade

Adequate shade will be provided at all times on the job site to accommodate all Zwick Construction employees either on recovery or rest periods or for meal breaks. A shaded area will be provided in two separate locations on the job site. Shaded areas will be located at all times as close to where employees are working as is reasonably possible. Shaded areas will be provided in the form of appropriate canopies located in safe areas away from any or all other potential hazards.

The Zwick Construction Project Superintendent will encourage all employees to take cool-down rest periods in the shade of a minimum of five minutes per period. If the Zwick Construction Project Superintendent determines, based on temperature conditions, that more frequent or longer rest periods are called for, they will encourage and allow employees to take longer or more frequent rest periods.

The Zwick Construction Project Superintendent or their designate will monitor all Zwick Construction employees while on cool down rest by performing the following.

- Observe to determine if employees are showing signs of heat illness.
- Ask employees if they are experiencing symptoms of heat illness.
- If it is determined that one or more employees are experiencing any symptoms of heat illness, the Zwick Construction Project Superintendent will take appropriate first-aid steps or emergency response will be taken immediately.



High Heat Procedures (Temperature > 95 Degrees F)

The Zwick Construction Project Superintendent will implement the following procedures anytime the temperature on the project equals or exceeds 95 degrees F.

The Zwick Construction Project Superintendent will hold a pre-task planning meeting to discuss the following high heat procedures. During this meeting, the Zwick Construction Project Superintendent will initiate the following procedures.

- The Zwick Construction Project Superintendent or their designate will monitor employees constantly for alertness and signs and symptoms of heat illness.
- Initiate a mandatory buddy system.
- Designate one or more employees to call for emergency services.
- Give more frequent reminders to drink plenty of water.

Emergency Response

The Zwick Construction Project Superintendent will immediately respond to any signs or symptoms of possible heat illness exhibited by any Zwick Construction employee.

Employees exhibiting or reporting signs or symptoms of heat illness will be monitored by the Zwick Construction Project Superintendent or their designate and not left alone. Onsite first aid or appropriate emergency medical services will be offered.

If appropriate based on the signs and symptoms exhibited by the affected employee, the following emergency procedures will be taken.

The Zwick Construction Project Superintendent or their designate will immediately contact the designated emergency medical services and ensure that clear and precise directions to the site are provided.

Immediately move the employee to one of the designated shaded areas.

- Cool the victim immediately with any means at hand, or
- Wrap the victim in a wet sheet & keep it wet,
- Sponge the victim with cold water,
- Spray the victim with cold water,
- Put ice bags or cool packs beside the neck, armpits & groin.
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Employee Acclimatization

The Zwick Construction Project Superintendent or their designate will closely monitor all employees newly assigned to high heat areas for their first 14 days of employment on the project. The Zwick Construction Project Superintendent is authorized implement the following procedures to assist the employee to safely acclimate to the high heat.

- 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.

These employees will be encouraged to perform the following to help them safely acclimate to the higher heat.

- Take regular breaks in a cool environment
- Drink plenty of water/ (especially in remote areas)
- Make sure to eat properly and get a good night's sleep
- If working in direct sunlight, wear a wide brimmed hat, long sleeved, light-weight shirts that still allow heat to dissipate.

Employee & Supervisory Training

All Zwick Construction Project Superintendents will be trained in the procedures outlined in the Zwick Construction Heat Illness Prevention Program and in the Zwick Construction Heat Illness Awareness & Response Training.

All Zwick Construction Employees assigned to the project will be trained in the procedures outlined in the Zwick Construction Heat Illness Prevention Program and in the Zwick Construction Heat Illness Awareness & Response Training, during the new employee safety orientation training.

For additional information on Heat Illness Prevention, contact your supervisor or Chris Rongstad, Zwick Construction's Director of Safety at 801-484-1746.



Zwick Construction

Heat Illness Awareness & Response Training

- Workers can be exposed to the various types of heat illness/stress, especially during hot-weather months, which we experience throughout our working territory.
- Get to know your work environment, so that you can prepare for the hot-weather months.
- Supervisors should address this serious health exposure during a Weekly Safety Meeting prior to the start of the “hot season” in your area and continue to address this serious health exposure periodically throughout your area’s hot season.

Human beings need to maintain a constant body temperature if they are to stay healthy. Working in high temperatures will induce heat stress when more heat is absorbed into the body than can be dissipated out.

Heat illness from heat exhaustion or heat cramps are visible signs that people are working in unbearable heat. In the most severe cases, the body’s temperature control system breaks down altogether and body temperature rises rapidly. This is heat stroke, which can be fatal.

- Workers can experience heat rash when sweat ducts become plugged. This can be uncomfortable. Regular bathing and drying of skin will prevent this.
- Workers can experience heat cramps, which may result in painful cramps in the lower legs or stomach muscles.
- Heat cramps may occur along with heat exhaustion & heat stroke.
- To avoid heat cramps, stop the activity & sit quietly in a cool place.
- Drink a sports drink or water. Drinking salt water is no longer recommended.
- For leg cramps, stretch the muscle by extending the leg & flexing the ankle. Apply pressure to the cramped area.
- Workers can experience heat exhaustion if they fail to replace lost fluids, which may lead to dehydration & depletion of salt & electrolytes in the body.

Heat exhaustion can be serious.

- Workers experiencing heavy sweating, heat cramps, extreme weakness, nausea, headache and appear pale with clammy skin may be experiencing heat exhaustion.
- These workers should be moved immediately to a cooler area and should lie down.
- Loosen or remove any unnecessary clothing.
- Provide water or a sports drink to drink.
- Raise the feet 8 to 12 inches.
- Cool the victim by:
 - Placing wet cloths on the forehead or body,
 - Sponge the skin with cool water,
 - Spray the skin with water from a spray bottle & then fan the area.

Workers who have experienced heat exhaustion should remain in a cool area the remainder of the day.

- Heatstroke is the most serious form of heat stress and should be considered and treated as a life threatening medical emergency.
- Workers experiencing high body temperature, red, dry skin, rapid breathing and pulse, headache, nausea, vomiting, diarrhea, seizures, and mental confusion may be having a heat stroke.
- These workers must be moved immediately to a cooler area.
- Cool the victim immediately with any means at hand, or
 - Wrap the victim in a wet sheet & keep it wet,
 - Sponge the victim with cold water,
 - Spray the victim with cold water,
 - Put ice bags or cool packs beside the neck, armpits & groin.

Get medical assistance immediately!

There are three main stages of heat accumulation effects.

Stage	Signs & Symptoms
Stage 1 – Heat Cramps	<ul style="list-style-type: none"> ▪ Muscle cramps ▪ Nausea ▪ Dizzy ▪ Tired & weak ▪ Moist & cool skin
Stage 2 – Heat Exhaustion	<ul style="list-style-type: none"> ▪ Pale clammy skin ▪ Headache ▪ Slurred speech ▪ Confusion ▪ Light headed &/or fainting ▪ Nausea & vomiting ▪ Tired & weak ▪ Severe muscle cramping ▪ Thirst ▪ Loss of concentration ▪ Rapid breathing & pulse
Stage 3 – Heat Stroke	<ul style="list-style-type: none"> ▪ Hot dry skin ▪ Chills ▪ Staggering walk ▪ Shivering ▪ Headache ▪ Irritable ▪ Delirious ▪ Erratic behavior ▪ Mental confusion ▪ Convulsions ▪ Unconsciousness ▪ Death

What helps to prevent heat stress?

Have regular rest breaks

A ten minute break every hour, in a cooler area, helps the body cool, especially where the work is hard, physical work. The length of the break should be increased if the temperature is very high.

Drink Plenty of Water

Frequent small drinks of cooled water will help replace the water lost to your body through sweat, before dehydration begins. This is better than infrequent large drinks. Avoid coffee, tea and alcohol because they speed up water loss in the body.

Allow your body to Acclimate to the heat – Employees who may have been working in another cooler climate are at an increased risk of experiencing a heat related illness. When beginning work in a hotter climate, do not attempt to do too much too soon.

Heat stress is a medical emergency – Don't take chances!