

NABTU Safety and Health Planning Resource – Heat Illness

Written Heat Illness Prevention Plan

At a minimum, when workers have the potential for exposure to a heat index that equals or exceeds 80°F, the employer shall develop, implement, and maintain a site-specific Heat Illness Prevention Plan. Which includes but is not limited to:

- Heat Risk Assessment
- Heat Illness Risk Controls including sufficient amounts of drinking water, shade and the implementation of rest breaks
- Training
- Procedures for acclimatization to working conditions
- High-heat practices
- Safe Practices for Working Alone
- First Aid and Emergency Response Plan

Note: *These procedures describe the minimum heat illness prevention steps applicable to most outdoor and indoor work settings. You may need to exercise greater caution and employ greater protective measures to protect workers.*

Introduction

This heat-related illness prevention and management plan has been developed and implemented by: *[Name of Company]* _____

This plan is available in the following locations for review by any interested employee:
[Locations Where Available] _____

The plan and all required written procedures are available in the following languages:

The following designated person(s) (e.g., program administrator, safety coordinator, supervisor, foreman, field supervisor, crew leader) has/have the authority and responsibility for implementing the provisions of this plan at this worksite:

Name	Title	Phone Number

Cooling and Control Measures

List and describe all cooling and control measures provided at the worksite and how they will be maintained: (below is a list of commonly used control measures)

On Site	Control Option	Description	Maintenance
	Engineering Controls		
☐	Air conditioning (such as air-conditioned crane or construction equipment cabs, air conditioning in break rooms)		
☐	Increased general ventilation		
☐	Cooling fans		
☐	Local exhaust ventilation at points of high heat production or moisture		
☐	Reflective shields to redirect radiant heat		
☐	Elimination of steam leaks		
☐	Use of mechanical equipment to reduce manual work		
☐	Misting fans that produce a spray of fine water droplets		
☐	Other:		
	Work Practices		
☐	Modify work schedules and activities for workers who are new to warm environments.		
☐	Schedule shorter heat work for newly hired workers and unacclimatized existing workers. Gradually increase heat work over the first 1-2 weeks.		
☐	Require mandatory rest breaks in a cooler environment (such as a shady location or an air-conditioned building). The duration of the rest of the breaks should increase as heat stress rises.		
☐	Scheduling work at a cooler time of day, such as early morning or late afternoon.		
☐	Reduce physical demands as much as possible by planning the work to minimize manual effort (such as delivering material to		

	the point of use so that manual handling is minimized).		
☐	Rotate job functions among workers to help minimize exertion and heat exposure.		
☐	Provide an adequate amount of water or electrolyte-containing fluids.		
☐	An emergency plan that specifies what to do if a worker has signs of heat-related illness and ensures that medical services are available if needed.		
☐	Training to identify symptoms of heat-related illness and prepared to contact someone to administer appropriate first aid to anyone who is developing a heat-related illness.		
☐	Administer appropriate first aid to any worker who is developing a heat-related illness.		
☐	Conduct physiological monitoring of workers		
☐	Implement a buddy system for new workers and in heat stress environments.		
☐	Discourage drinking hot beverages during lunch and afternoon breaks		
☐	Other:		
	Personal Protective Equipment (PPE)*		
☐	Insulated suits		
☐	Reflective clothing		
☐	Infrared reflecting face shields		
☐	Cooling neck wraps		
☐	Vest that receives cooled air from a vortex tube connected to an external compressed air source		
☐	Jackets or vests with reusable ice packs or phase change cooling packs in the pockets.		
☐	Other:		

*NOTE: Wearing certain types of PPE and clothing can increase the risk of heat-related illness.

HEAT STRESS TASK HAZARD ANALYSIS

As part of the pre-task safety and health planning process, each contractor shall perform a heat stress task hazard analysis before beginning work on any task that could result in heat illness. Employers shall use the task hazard analysis to determine which heat illness prevention measures to implement based on the hierarchy of controls. The analysis shall include input from employees and ensure that unacclimatized workers and other workers susceptible to heat illness are protected. Employers shall monitor the heat index throughout the work shift in areas where employees perform work.

Describe how you will consider the risk for heat illness using each of the following factors:

Risk Factor	Description
Ambient air temperature	
Radiant heat from sun	
Wind speed	
Humidity	
<u>For the above, select how you will measure the risk factors:</u>	☐ <u>DIRECT MEASUREMENT</u> of the temperature and humidity in all areas where employees perform work. Instrument(s) or equipment used to monitor heat and humidity (e.g., Wet bulb globe temperature): _____ <u>Heat index</u> is (select from below): ☐ Displayed on the instrument(s) listed above ☐ Calculated using the National Weather Service Heat Index Calculator or Chart ☐ Calculated using the OSHA Heat Safety Tool ☐ <u>USE OF LOCAL WEATHER DATA</u> reported by the National Weather Service or other recognized source to determine the heat index ☐ <u>USE OF THE OSHA-NIOSH HEAT SAFETY TOOL APP</u> developed by the Occupational Safety and Health Administration and the National Institute for Occupational Safety and Health What device(s) will the app be accessible on?
Other sources of radiant heat, (e.g., hot asphalt, mechanical rooms, space heaters, steam piping, etc.)	
Physical demands of the work	
Clothing and PPE	
Other:	

List the different types of job classifications, tasks performed, associated locations, and methods for monitoring the heat index where employees could be exposed to a heat index that equals or exceeds

80°F: _____

On-site monitoring of the heat index will be conducted by: _____

How often will the heat index be monitored? (e.g., hourly in each work area, when it's reasonably expected to be 10 degrees or more above previous measurements)

Drinking Water

Employees shall be provided drinking water free of charge that is fresh, pure, and suitably cool. The water shall be located as close to the work area as feasible. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity to provide one quart per employee per hour for drinking during the entire shift.

Procedure	Details
How drinking water will be kept cool and palatable?	
How sufficient quantities of drinking water will be made available throughout the workday?	
How drinking water will be made available as close to the work area as practicable?	
How employees will be provided with opportunities and encouragement to stay hydrated, including bathroom access?	

Shade Access

Employers shall provide shaded rest break areas and require employees to take a minimum ten-minute preventative cool-down rest period in the shade at least every two hours, regardless of the overall length of the shift. Hourly scheduled rest breaks shall be instituted when the heat index equals or exceeds 90 °F. The length and frequency of rest breaks should increase as the risk of heat illness increases, based on the seven factors accounted for in the heat stress task hazard analysis.

Rest breaks should be in a location that is cooler than in working conditions. Length of rest breaks shall be determined by the heat index at the break location.

Describe the types of shade or cool, climate-controlled areas that will be made available to exposed employees: _____

Where shade cannot be implemented due to infeasibility or unsafe work conditions, the following alternative cooling and control measures will be made available: _____

Describe how employees will be provided recovery breaks they feel the need to take a break to protect themselves from overheating, including monitored by a supervisor and asked if they are experiencing symptoms of heat illness and not ordered back to work until signs or symptoms of heat illness have abated, but not less than 10 minutes after arriving in the shade area: _____

Note: Shaded areas must be: outside, open, and exposed to air on at least three sides; prevent contributing heat sources from reducing effectiveness; be sufficiently sized for the number of employees to sit in normal posture; and accommodate the removal and storage of personal protective equipment (PPE) during periods of use. Enclosed, cool, climate-controlled areas may be provided as an alternative to shade.

[Include any other additional procedures or information for shade access.]

Acclimatization

Employers shall develop and implement acclimatization procedures that allow employees to adapt and build tolerance to working in the heat over a period of at least 4 days. This can be achieved by gradually increasing physical demands and/or the amount of time spent working in the heat each day. Full acclimatization, as a general principle, takes 7 to 14 days. At a minimum, employees shall be acclimatized when the heat index equals or exceeds 80 °F and any of the following conditions are also met:

- *New or returning employee*
- *High-heat conditions*
- *When the physical intensity of the work increases significantly (e.g., carrying heavy loads instead of flagging traffic)*
- *During a heat wave*
- *New requirement for heavy or full-body PPE*

Select from the methods below to indicate how employees will be acclimatized to the working conditions:

- ☐ A schedule that gradually increases exposure time over a 4–14-day period, with a maximum 20 percent increase each day
- ☐ A schedule that uses the current [National Institute for Occupational Safety and Health's recommendations for acclimatization](#)
- ☐ A schedule that uses gradual introduction and/or alternative cooling and control measures that acclimate an employee to the heat, as listed below:

Note: *The schedule shall consider acclimated and unacclimated employees, the environmental conditions and anticipated workload, the impact of required clothing and PPE, personal risk factors, and alternative cooling and control measures.*

The responsibility for developing and maintaining acclimatization schedules has been assigned to: _____

Implementing acclimatization schedules at the jobsite is the responsibility of: _____

Describe how employees newly exposed to heat in the workplace will be provided a period of acclimatization: _____

Describe how employees returning to work after 7 or more consecutive days of absence from the workplace will be re-acclimated to the working conditions: _____

Select from the following types of work that can be assigned to workers outside of the heat to allow for acclimatization: Note these are examples and not a complete list.

- ☐ **Assign Cooler Tasks:** When not assigned to work in the heat, workers can do cooler tasks or work in shaded, ventilated, or air-conditioned areas.
- ☐ **Preparation & Setup Tasks:** Organizing tools and equipment, sorting and staging materials, setting up safety barriers, signage and cones, preparing workstations or storage areas
- ☐ **Administrative & Support Tasks:** Reviewing safety procedures and onsite orientation, assisting with inventory checks and logging deliveries, filling out daily reports/checklists, learning site plans and blueprints
- ☐ **Maintenance & Cleaning:** Cleaning tools and equipment, sweeping and tidying up work areas, organizing storage containers and toolboxes, performing basic maintenance on equipment
- ☐ **Light Indoor or Shaded Work:** Assembling components in shaded areas, pre-cutting or measuring materials, painting or priming small parts in ventilated spaces, installing insulation or drywall in cooler interior zones
- ☐ **Training & Observation:** Shadowing experienced workers, participating in toolbox talks or safety briefings, watching demonstrations of equipment or techniques, practicing skills in controlled environments
- ☐ **Other:** _____
- ☐ **Use Early Mornings:** Schedule the most physically demanding outdoor tasks for the cooler parts of the day, like early morning.
- ☐ **Rotate Tasks:** Rotate workers between hot and cooler tasks to balance productivity and safety.
- ☐ **Use Teams:** Pair less-acclimatized workers with experienced ones who can help monitor and support them.
- ☐ **Other:** _____

Describe the methods used to observe and monitor employees during the acclimatization period for signs of heat-related illness through regular communication:

[Include any other additional procedures or information for acclimatization.]

High-Heat Procedures

Employers shall implement high-heat procedures when the heat index reaches or exceeds 90 degrees Fahrenheit in the work area and shall include a work-rest schedule to protect employees from heat-related illness.

The responsibility for developing and maintaining our high-heat procedures in writing has been assigned to: Implementing high-heat procedures at the jobsite is the responsibility of: _____

Select from the methods below to indicate the work/rest schedule that will be implemented when high-heat procedures are in place:

- ☐ A minimum rest period of 10 minutes for every 2 hours worked where employees are exposed to a heat index between 90- and 100-degrees Fahrenheit
- ☐ A minimum rest period of 15 minutes for every hour worked where employees are exposed to a heat index above 100 degrees Fahrenheit
- ☐ A work/rest schedule as provided for in the current National Institute for Occupational Safety and Health recommendations for managing heat exposures
- ☐ Alternative measures: _____

Notes:

- ***Work/rest schedules must take into consideration the environmental conditions, workload, duration of work, impact of required clothing or PPE, and alternative cooling and control measures.***
- ***In circumstances where prescribed rest breaks may be infeasible, alternative cooling and control measures must be utilized and documented below.***
- ***Where alternative cooling and control measures are utilized, these measures must be effective, maintained, and made readily available and accessible to all employees at all times work is being performed.***

Describe how employees will be observed for alertness and signs and symptoms of heat illness and monitored to determine whether medical attention is necessary: _____

Describe how rest breaks and/or alternative cooling & control measures will be implemented:

Describe how employees will be encouraged and permitted to take rest breaks to prevent heat illness: The following locations are available to employees for rest breaks: _____

Describe how effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when necessary:

Describe how a buddy system will be established, or implement other equally effective means of observation or communication between employees:

[Include any other additional procedures or information for high-heat procedures.]

Safe Practices for Working Alone

Working alone shall be avoided whenever possible. Where working alone is necessary, employers shall provide lone employees with a daily work plan so that it is known where the employee will be and when.

Describe when employees will be working alone and required regular check-in procedures:

Situation	Procedure
A visual check schedule that specifies how often and to whom the employee must contact.	
Call-in schedule that specifies how often and to whom the employee must contact	
Call-in schedule that specifies how often and to whom the employee must contact	

Describe how the check-in procedure will change with high heat:

EMERGENCY RESPONSE PROCEDURES

Employers shall implement an emergency response plan.

Describe the methods of 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: _____

Describe procedures for immediately reporting signs and symptoms of heat-related illness to supervisors, managers, and employer representatives: _____

Describe procedures for responding to and providing care for employees who are exhibiting signs and/or symptoms of heat-related illness: _____

How does the procedure ensure employees are not left alone or sent home without being offered first aid or emergency medical services: _____

List any first aid procedures and resources available onsite for employees experiencing signs and/or symptoms of heat-related illness: _____

Describe the procedures for contacting emergency medical services and providing prompt transportation and treatment, including clear and precise directions to the work site or transporting employees to a place where they can be reached by an emergency medical provider: _____

[Include any other additional procedures or information for emergency response procedures.]

TRAINING

Employers shall provide and implement a training program.

Describe how initial heat stress training will be presented to employees and supervisors before employees begin work when the heat index equals or exceeds 80 °F. (i.e., format, materials used, etc.): _____

In what language will the training be provided and does this match the need of the employees and supervisors? _____

Describe when and how re-training will be presented to employees annually and after a suspected or confirmed heat-related illness (i.e., format, materials used, etc.): _____

Describe the elements of the training program: _____

Note: *At a minimum, the training program must include:*

- a) *The hazards of heat-related illness.*
- b) *How to avoid heat-related illnesses by recognizing and avoiding situations that can lead to heat-related illnesses.*
- c) *How to mitigate heat stress using the hierarchy of controls.*
- d) *The environmental risk factors that increase the risk of heat illness.*
- e) *How exertion, clothing, and personal protective equipment can increase the risk of heat illness.*
- f) *The concept, importance, and methods of acclimatization.*
- g) *The importance of removing heat-retaining personal protective equipment, such as impermeable chemical resistant clothing, during breaks.*

- h) *The importance of frequent consumption of small quantities of drinking water.*
- i) *The effects of personal factors (age, medications, alcohol, etc.) on susceptibility to heat illness. This information is for the employee's personal use. Employees should be encouraged to discuss risk factors for heat illness with their primary medical care provider and to notify their medical provider about occupational exposure to heat*
- j) *The different types of heat illness, including heat rash, heat cramps, heat syncope (fainting or dizziness), heat exhaustion, heat stroke, and rhabdomyolysis.*
- k) *How heat illness may progress quickly from mild symptoms and signs to serious and life-threatening illness.*
- l) *The common signs and symptoms of heat-related illness and the importance of early recognition, including recognition of confusion as a key indicator of severe heat illness that requires immediate first aid, rapid cooling of the employee, and emergency response.*
- m) *The importance of employees immediately reporting symptoms or signs of heat illness in themselves, or in co-workers, without fear of reprisal or retaliation.*
- n) *The employer's procedures for complying with this standard, including but not limited to those relating to hydration, shade, rest breaks, the buddy system, high-heat practices, reporting procedures, first aid, and emergency response.*
- o) *Additional training for supervisors shall cover the procedures to follow when an employee exhibits signs or reports symptoms of heat illness, how to monitor weather reports, and how to respond to hot weather advisories.*
- p) *First-aid procedures.*
- q) *Employer's program to address heat-related illnesses.*
- r) *Employer's policy to not take adverse employment action against an employee for reporting, or failing to recognize the signs of, heat-related illness.*

[Include any other additional procedures or information for training.]

IMPORTANT – Training records must be maintained for **one year** and shall include:

1. The names of the persons trained
2. The dates of the training sessions
3. A summary or outline of the content of the training sessions