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CONSTRUCTION EMPLOYER GUIDE

HEAT HAZARDS

Each year many construction workers suffer heat-related illnesses from hot and humid conditions on the job. Some of these workers may even lose their lives.

Heat illnesses and heat-related deaths are preventable. To reduce the risks from heat and hot weather it is important to understand the hazards of working in hot environments, what precautions to take, knowing the signs and symptoms of heat-induced illness – and what to do in an emergency.

Why is working in excessive heat hazardous?

An employee working in hot conditions must rid their body of excess heat to maintain a normal internal body temperature of 98.6 °F. The body does this through the act of sweating. However, when the air temperature is warmer than your body temperature, cooling off through sweating becomes more difficult. High humidity levels also prevent the body from cooling itself because sweat will not evaporate from the skin.

If the body cannot get rid of excess heat it will store it. When this occurs, the body's core temperature will begin to rise above 98.6 °F. This increases the risk for one of several heat-related illnesses. Since OSHA regulations require employers to provide a workplace free of known safety hazards, they must protect their workers from the hazard of extreme heat.

What are the risk factors for heat illness?

Construction workers can be exposed to both indoor and outdoor hot working conditions. Workers who are doing physically strenuous work are especially at risk. The risk factors for heat stress include:

- High temperatures
- The "Heat Index" (takes both temperature and humidity into account)
- Direct sun exposure, with no shade
- Limited air-movement, no breeze or poor ventilation
- Radiant heat
- Working with hot objects

In addition to environmental factors, personal factors also contribute to an increased risk for heat stress. Some personal factors include:

- Health conditions (obesity, diabetes, pregnancy, and medications)
- No tolerance for working in the heat (acclimatization)

- Dehydration, and not drinking enough water
- Wearing bulky, non-breathable personal protective equipment
- Wearing dark colored, non-breathable clothing

What are the common types of heat illness?

- **Heat Rash:** This is a skin rash or bumps caused by sweat that does not evaporate from the skin.
- **Heat Cramps:** Painful muscle spasms in the legs, arms, and abdomen caused by loss of bodily fluids and salt commonly occurring after physical work has stopped.
- **Heat exhaustion:** A very serious heat-related illness. Heat exhaustion is the body's response to excessive loss of water and salts due to heavy sweating. Besides excessive sweating, symptoms include cool, moist skin, weakness, headache, elevated body temperature, rapid heartbeat, lightheadedness and irritability.
- **Heat stroke:** This is a medical emergency and 911 should be called immediately. The body can no longer regulate core temperature and can no longer rid itself of heat. Symptoms include loss of consciousness, sweating has stopped, hot dry skin, body temperature above 104 °F and seizures.

How can heat-related illness be prevented?

Employers can implement the following safe work practices to prevent heat-related illness for construction industry employees, especially if engineering controls to make working conditions cooler are not feasible:

- Establish a heat illness prevention program.
- Provide workers with cool drinking water and frequent rest breaks in shaded areas.
- Plan for heat related illness emergencies and train workers on prevention.
- Acclimatize (gradually building exposure to working in heat). Increase workloads gradually and implement frequent rest breaks during the first week of work.
- Reduce the amount of strenuous and physically demanding work or schedule heavier work for cooler times of the day (early-morning – late afternoon).
- Encourage workers to drink water frequently. Avoid beverages containing caffeine and alcohol.
- Wear breathable, light-weight, and light-colored clothing.
- Know the symptoms of heat illness and what to do in the event of an emergency.
- Encourage workers to look out for each other.