

HEAT ILLNESS PREVENTION PROPOSAL - DRAFT 7
to be submitted by WORKSAFE! on September 20, 2005

§3395. Heat Illness Prevention.

(a) **Scope and Application.** This section applies to the control of risk of occurrence of heat illness. This section applies to all places of employment at those times when the occupational risk factors for heat illness, as defined in (b), are present. This section shall apply at all times when employees are using impermeable or protective clothing and all other times when the natural environmental conditions, climate control technology (including heating ventilating and air conditioning systems), or other engineering controls, do not prevent employees from being exposed to ambient temperatures which exceed 80 degrees Fahrenheit for more than two hours on any day or which exceed 100 degrees Fahrenheit for more than 15 consecutive minutes on any day. This section is not intended to exclude the application of other sections of Title 8, including, but not necessarily limited to, sections 1230(a), 1512, 1524, 3203, 3363, 3400, 3439, 3457, 5142, 5143, 5157, 5192, 6251, 6512, 6969, 6975, 8420 and 8602(e).

(b) **Definitions.**

"Acclimatization" means a temporary adaptation of the body's systems 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 heat. A noticeable loss of acclimatization begins after four days of discontinuation of exposure to conditions of heat stress.

"Cooled area" means a cooled indoor rest and recovery area where the temperature is maintained at or below 80F or where the combination of temperature and humidity are maintained at a Heat Index value below 90 F.

"Decontamination facilities" means facilities, other than handwashing laboratories, for the removal of hazardous substances from employees and their equipment to the extent necessary to preclude the occurrence of foreseeable adverse health effects.

"Heat Illness" is a serious medical condition that results from the body's inability to cope with a particular heat load, and includes, but is not limited to, heat cramps, heat exhaustion, heat syncope and heat stroke.

"Heat Wave" means a three-day weather forecast of unseasonably hot and/or humid weather, during which the Heat Index falls within the National Weather Service category of "Extreme Caution", or a one-day forecast during which the Heat Index falls within the National Weather Service categories of "Danger" or "Extreme Danger" as set forth in Appendix XXX (this appendix will be a reiteration of what is currently found at <http://www.nws.noaa.gov/om/brochures/heatwave.pdf> - if the website goes away, we'll still have it in writing).

"Impermeable clothing" means clothing designed to prevent free movement of air or vapors including chemical protective clothing.

"Occupational risk factors for heat illness" means working conditions that affect 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, and degree of acclimatization. Employers are encouraged to use the National Weather Services Heat Index as a guide to determine when temperature and humidity create a danger, but this shall not exempt the employer from other provisions of this regulation including responding to indications of the risk for, or presence of, heat illness.

"Palatable water" means potable water that does not have an offensive taste or odor which interferes with adequate water consumption.

"Potable water" means water that meets the primary standards for drinking purposes found in Title 22 California Code of Regulations, Division 4, Chapter 15.

"Protective clothing or equipment" means uniforms, smocks, or other work clothing that, relative to cotton shirt and trousers, substantially reduces the ability of the body to exchange heat with the environment through the evaporation of sweat and convection.

"Rest and Recovery Period" means a period of time to rest and recover from the heat in order to prevent heat illness, including a rest or meal break in a shaded outdoor or cooled indoor area.

"Shade" means complete blockage of direct sunlight. Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is complete 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.

(c) Heat Illness Prevention. Every employer shall establish, implement and maintain procedures to prevent the occurrence of heat illness. This section applies to all places of employment at all times when the risk factors for heat illness as defined in (b), are present, unless the employer can demonstrate that there is no reasonable likelihood that heat illness may occur. The Heat Illness Prevention Program shall include the following elements:

(1) Hazard Identification. The employer shall establish, implement and maintain effective procedures for identifying and evaluating workplace hazards associated with heat illness.

(2) Hazard Prevention, Control and Correction. The employer shall establish, implement and maintain effective measures to prevent, control and correct hazards associated with the occurrence of heat illness, in a timely manner, based upon the severity of the hazard and based upon occupational risk factors.

Exception to subsection (c)(2): Employers of employees engaged in firefighting and other emergency response operations may meet the requirements of this subsection by developing, implementing and maintaining effective procedures for a) monitoring employees for heat stress, b) providing access to water, c) controlling work/rest cycles, d) providing personal protective equipment that reduces heat stress as far as is practicable (or feasible), and e) providing where practicable, cooled or shaded relief areas.

These measures shall include at least the following:

(A) Provision of Water.

1. All employees shall have access to potable drinking water meeting the requirements of Sections 1524, 3363, and 3457, as applicable. The water shall be fresh, palatable and suitably cool.

2. The water shall be placed in locations readily accessible to all employees, and access to such drinking water shall be permitted at all reasonable times without fear of reprisal. Workers in contaminated areas where drinking is prohibited shall have ready access to water in uncontaminated areas. In areas in which drinking of water is prohibited because of the presence of contamination, and where employees exiting the work area must pass through decontamination facilities in order to reach drinking water and toilet facilities, the employer shall develop effective procedures to ensure that employees are provided sufficient opportunities to drink water and access toilet facilities in order to maintain adequate hydration.

3. Water 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. 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.

4. The frequent drinking of water, as described in (3)(B)2.a. shall be encouraged.

(B) Rest and Recovery Periods. The employer shall provide adequate rest and recovery periods to prevent heat-related illness. The employer shall at least evaluate temperature, humidity and the exertion level of the work when determining adequate rest and recovery periods, and may choose to rely upon the National Weather Service Heat Index as set forth in Non-Mandatory Appendix A (see <http://www.crh.noaa.gov/pub/heat.php> for what will be in this index). Whenever the employer relies on a temperature humidity index, the employer shall add 15 degrees to the heat index for direct sun exposure. Rest and recovery periods shall be permitted at all times, without fear of reprisal.

NOTE: The employer may choose to rely upon on the American Conference of Governmental Industrial Hygienists Heat Stress Threshold Limit Value, which relies upon wet bulb globe temperature values as set forth in Non-Mandatory Appendix B to determine rest or recovery periods.

1. Rest periods shall meet the following minimum requirements:

a. Shaded outdoor or cooled indoor rest and recovery areas shall be provided for all rest and meal periods. The rest and recovery areas shall be readily accessible, and shall, if possible, be within a one-minute walk of the work area. The rest and recovery area shall be adequate to accommodate all workers on any given rest and meal break. specifies.

b. Whenever the combined air temperature and relative humidity yield a heat index value of "Extreme Caution" as defined by the National Weather Services, not less than 10 minutes per hour in a shaded outdoor area or a cooled indoor area.

c. Whenever the combined air temperature and relative humidity yield a Heat Index value of "Danger" as defined by the National Weather Services, not less than 15 minutes per hour in a shaded outdoor area or in a cooled indoor area.

NOTE: Employees working on a piece-rate basis shall be compensated for rest and recovery periods in an amount equal to the average piece-rate wage for that person in each pay period, or portion of a pay period, in which the person was employed on a piece-rate basis.

NOTE: The employer may schedule a group break, stagger breaks or provide a floating relief person who moves through the workforce to meet the rest or recovery period requirements.

2. Shade shall be provided, if possible, for work performed outdoors.

(C) Communication and Scheduling. **[NO WORKER LEFT BEHIND]**

1. Employers shall account for all workers during and at the end of a work-shift.

2. Employers shall provide a system of communication so that non-acclimatized employees, at all times, and other workers whenever the combined air temperature and relative humidity yield a Heat Index value of "Danger" as defined by the National Weather Services, shall have contact with an employer representative at regular intervals during working hours and have capacity for making contact at any time during working hours.

(D) Other measures

1. In extremely hot weather, as defined by NOAA's National Weather Service Heat Index Danger and Extreme Danger Conditions, as set forth in Non-Mandatory Appendix A, non-urgent operations outdoors shall, if possible, be conducted prior to 10 a.m. (or 11 a.m.) or after 4 p.m.

2. SOMETHING ABOUT IMPERMEABLE CLOTHING - USE PERFORMANCE BASED LANGUAGE

3. The employer shall control sources of heat, as practicable or feasible, through ventilation, shielding, or other equivalent measures.

4. The employer shall annually check ventilation systems before the hot weather season.

a. The ventilation system shall be inspected at least annually (during the period March through April?) and problems found during these inspections shall be corrected within a reasonable time.

b. The employer shall develop, implement, and maintain effective procedures for protecting employees from the risk of heat illness during periods when the ventilation system is not capable of being operated.

c. Inspections and maintenance of the ventilation system shall be documented in writing. The employer shall record the name of the individual(s) inspecting and/or maintaining the system, the date of the inspection and/or maintenance, and the specific findings and actions taken. The employer shall ensure that such records are retained for at least five years.

d. The employer shall make all records required by this section available for examination and copying, within 48 hours of a request, to any authorized representative of the Division (as defined in Section 3207), to any employee of the employer affected by this section, and to any designated representative of said employee of the employer affected by this section.

(E) Emergency Medical Response. The employer shall include in the procedures required in subsection (c) a plan for prompt emergency medical attention for cases of heat related illness, including but not limited to heat exhaustion or heat stroke, and shall ensure that all supervisory personnel or other agents directing the employees are fully aware of, and authorized to implement, the plan. At a minimum, the plan shall provide for an immediate rest and recovery period in a shaded or cooled area and prompt first aid for any employee suspected to be suffering from heat illness; the employee shall not be left unattended. The plan shall also specify when an immediate medical response is required, and at a minimum, shall require immediate medical attention whenever symptoms of loss of consciousness for any period of time, mental confusion or vomiting are present.

(3) Heat Illness Prevention Training

(A) The employer shall provide to and document training for all employees prior to assignment to work and annually where the risk factors for heat illness are present. Training shall be provided in a language and manner each worker understands.

(B) Employee training. The employer shall provide training addressing at least the following topics to all supervisory and non-supervisory employees.

1. The occupational and other risk factors for heat illness;

NOTE: The employer may utilize the information in non-mandatory Appendix C as guidance for the risk factors for heat illness.

2. The employer's procedures for identifying, evaluating, and controlling exposures to the occupational and other risk factors for heat illness, including but not limited to the following:

- a. The importance of frequent consumption of water, at least 4 cups per hour when the risk factors for heat illness are present, which shall be permitted without fear of reprisal;

- b. The employees right to a rest and recovery period pursuant to this regulation, and the importance of adequate rest or recovery periods in a shaded or cooled area when the employee experiences any signs and/or symptoms of heat illness, which shall be permitted without fear of reprisal,

NOTE: The employer may utilize the information in non-mandatory Appendix B as guidance for determining the appropriate intervals for rest breaks and recovery periods when working in heat, with and without protective clothing.

[APPENDIX B should also contain a copy of a plain language explanation of the ACGIH Heat Stress Threshold Limit Value.]

- c. The importance of and procedures for acclimatization;

NOTE: The employer may utilize the information in non-mandatory Appendix D as guidance for the procedures for acclimatization.

3. The different types of heat illness, the common signs and symptoms, and the consequences of heat illness;

NOTE: The employer may utilize the information in non-mandatory Appendix E as guidance for the different types of heat illness, the common signs and symptoms of heat illness, and the consequences of heat illness.

4. How the employee may monitor his or her heart or pulse rate to determine if he or she should take an additional rest or recovery periods, and emphasizing the importance of such self-monitoring when an employee wears protective clothing and/or equipment which interferes with the body's cooling mechanisms.

5. The importance 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;

6. The employer's procedures for responding to signs or symptoms of possible heat illness, or the onset of heat illness, including when emergency medical care is required and first aid is not adequate, and how emergency medical services, care and transportation, will be provided should they become necessary.

7. 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;

8. How to provide clear and precise directions to the work site.

9. The applicability of Labor Code sections 6310, 6311 and 6312 with respect to the employee's rights to rest and recovery periods and all other aspects of this regulation.

(C) Supervisor training. Prior to assignment to supervision of employees who may work where the risk factors for heat illness are present, the employer shall provide training on the following topics:

1. The information required to be provided by section (3) (B) above.
2. The procedures the supervisor is to follow to implement the applicable provisions in this section.
3. The procedures the supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.
4. First Aid procedures for heat illness equivalent to the American Red Cross procedures.

NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

Non-Mandatory Appendix A
National Weather Service Heat Index
see <http://www.crh.noaa.gov/pub/heat.php>

Non-Mandatory Appendix B
ACGIH Heat Stress and Strain Threshold Limit Value TLV
<http://www.worksafe.org/images/contentEdit/docs/ACGIH%20heat%20stress%207th%20edition.pdf>

Non-Mandatory Appendix C
Risk Factors for Heat Illness
(to be prepared by Cal/OSHA)

Non-Mandatory Appendix D
Procedures for Acclimatization
(to be prepared by Cal/OSHA)

Non-Mandatory Appendix E
Types of Heat Illness, Common Signs and Symptoms and Consequences
(to be prepared by Cal/OSHA)

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