

**OCCUPATIONAL SAFETY  
AND HEALTH STANDARDS BOARD**

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**FINDING OF EMERGENCY  
GOVERNMENT CODE SECTION 11346.1  
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD  
READOPTION OF EMERGENCY AMENDMENTS TO TITLE 8  
CALIFORNIA CODE OF REGULATIONS  
SECTION 3395 OF THE GENERAL INDUSTRY SAFETY ORDERS**

The Occupational Safety and Health Standards Board (Board) hereby finds that the above-referenced emergency standard as codified in Register 2005, No. 52-Z, dated December 30, 2005, which took effect December 20, 2005, in Title 8 California Code of Regulations, as described in the Informative Digest below, constitutes an emergency standard pursuant to Government Code Section 11346.1. The emergency standard, Office of Administrative Law (OAL) File No. 05-1216-03EE, is proposed to be readopted for a third 120-day period. The objective of the emergency standard is to significantly reduce both the frequency and the severity of occupational heat-related illness in all outdoor places of employment. Labor Code Section 142.3 authorizes the proposed emergency standard, which for the reasons stated here is necessary for the continued and immediate preservation of public health and safety and general welfare.

With regard to the adoption of a permanent standard, the Board conducted advisory meetings on September 20, 2005, and November 14, 2005; received significant input from the regulated public; and publicly noticed the proposed permanent standard in the California Regulatory Notice Register 2006, No. 9-Z, dated March 3, 2006. The notice will provide sufficient time for a public hearing on April 20, 2006, and an anticipated adoption of a permanent standard prior to the expiration of the third emergency rule.

This finding of emergency is based on the following:

1. The occurrence of sustained extreme hot temperature conditions in the state during the summer of 2005 was accompanied by an unusual number of reports of occupational heat-related illnesses and deaths. Since July 12, 2005, when a farm laborer in Modesto was admitted to the hospital for heat-related illness, seven other possible cases of heat-related illness have been reported to the Division of Occupational Safety and Health (Division), including five fatalities. Of these eight cases of possible heat-related illness, three have been deemed as being due to exposure to work in heat based on a preliminary evaluation, with the remainder being possible cases. All eight cases occurred in outdoor occupations, specifically agriculture and construction. All eight cases remain under investigation by the Division. A July 20, 2004, (sic) memorandum of support for a new emergency standard from John Rea, Acting Director of the Department of Industrial Relations, listed heat related fatalities in the past 10 years. A majority of the cases involved employees in outdoor occupations. Prior to 2005, the largest annual total of possible heat-related investigations by the Division in the last 10 years was for the entire year of 1998 when there were four possible fatalities and

three non-fatal cases investigated. Of the cases in 1998, six were in agriculture and one case in construction.

2. Statistical information from the California Division of Workers Compensation's report on occupational injuries in heat-related illness from 2000 – 2004 find that at least 300 cases of heat-related illness annually are recorded by employers or are the subject of claims for Workers Compensation Insurance. These cases occur in a wide range of industries and occupations.

3. Several governmental agencies and nationally recognized organizations including the federal Occupational Safety and Health Administration, Environmental Protection Agency, National Institute of Occupational Safety and Health, American Conference of Governmental Industrial Hygienists, and the American Red Cross recognize that exposure to heat in outdoor work, especially under extreme conditions and lack of water, shade and training, can contribute to illnesses and possibly fatalities. All of these governmental agencies and organizations recommend that employees at risk of heat illness be provided adequate water, a shaded area to recover from the heat, and training. However, none of these recommendations are specifically required by an existing state or national occupational heat illness prevention standard.

4. It is necessary to renew the emergency standard to allow sufficient, additional time for adoption of a permanent rule while still ensuring coverage of workers in outdoor situations in those areas of the state where exposure to risk of heat illness can be present at any time of the year. A review of historic weather data for the state of California shows that several cities encounter temperatures in excess of 90 degrees Fahrenheit (F) even during the spring months. These cities and surrounding localities include Los Angeles, San Diego, Santa Maria, Coachella, Blythe, El Centro and Palm Springs. According to Weather.com, which the Board deems to be a reliable source of information, the historic high for the month of April was 106 in Los Angeles, 98 in San Diego, 103 in Santa Maria, 110 in Coachella, 115 in Blythe, 109 in El Centro, and 112 in Palm Springs.

A significant potential for heat illness occurs when temperatures exist in excess of 90 degrees F at commonly occurring humidity, i.e., 30% or higher, under light windy conditions. For example, according to the National Weather Service Heat Index, a temperature of 90 degrees at a humidity of 30% in the shade calls for a warning of “extreme caution” for heat illnesses such as sunstroke, heat cramps, and heat exhaustion. If the temperature in the shade rises above 100 degrees, the Heat Index characterizes the risk level for heat illness as “extreme danger.”

It is important to note that the temperature at which these warnings occur must be lowered as much as 15 degrees if the person under consideration is in direct sunlight. Therefore, for example, the “extreme caution” warning is called for at 75 degrees if a person is working in direct sunlight under the example given above, and the “extreme danger” warning is called for at temperatures over 85 degrees F. In many areas of California, the average high temperatures for April exceed these warning temperatures (e.g. the average high temperature for April is 88 in Coachella, 87 in Blythe, 86 in El Centro, and 88 in Palm Springs), therefore it is essential that the emergency standard continues to be effective. Moreover, spring and

early summer can be particularly problematic because day time temperatures rise throughout the state and employees are not acclimated to the hot weather, a recognized risk factor for heat illness. Even moderately high temperatures could prove hazardous to workers accustomed to working in cooler temperatures.

The risk of heat illness for workers increases with the amount of a person's exertion, and will also be increased if there is no air movement and/or protective clothing or equipment is being worn by the worker. See the web page of the National Weather Service on this topic (<http://www.crh.noaa.gov/dvn/tools/heatindex.pdf>). With respect to protective clothing, the ACGIH Documentation of the Threshold Limit Value for Heat Stress and Strain (2001) states, in part, "Evaporation of sweat from the skin is usually the predominant heat removal mechanism. Water-vapor-impermeable, air-impermeable, and thermally insulating clothing, as well as encapsulating suits and multiple layers of clothing, severely restrict heat removal. With heat removal hampered by clothing, metabolic heat may produce life-threatening heat strain even when ambient conditions are considered cool."

5. It is also necessary to renew the emergency temporary standard to ensure that its provisions stay in force with protections in place for the regulated public until a permanent rule is adopted. Continuation of coverage is necessary to ensure that employers with outdoor workplaces in all parts of the state recognize the need to be prepared to implement heat illness precautions whatever the time of year when ambient temperatures in those locations and other environmental risk factors for heat illness reach levels potentially hazardous to workers.

6. The standard also requires employees and their supervisors to be trained on heat illness prevention. The training for employees includes nine specific training topics and supervisors require eleven. Maintaining these provisions will make employers aware of the need to have training standards for their employees and supervisors on heat illness prevention in preparation for the days when the environmental risk factors are present, which may occur at any time.

#### INFORMATIVE DIGEST OF PROPOSED ACTION/POLICY STATEMENT OVERVIEW

The Occupational Safety and Health Standards Board proposes to readopt Section 3395 of the General Industry Safety Orders in Title 8 of the California Code of Regulations. This readoption is authorized by Labor Code Section 142.3. This emergency rulemaking is being initiated at the request of the Division of Occupational Safety and Health as a response to a significant increase in the number of heat-related illnesses and fatalities in California resulting from exposure to environmental heat.

Currently, a number of existing Title 8 sections address related requirements with respect to key factors in control of heat-related illness, including the development of an injury and illness prevention plan, provision of drinking water, and emergency first aid and medical response preparedness. These sections, for various industry sectors, include sections 1230, 1512, 1524, 3203, 3363, 3400, 3439, 3457, 6251, 6512, 6969, 6975, 8420 and 8602. The proposed standard includes a reference to the existing requirements of these standards along with specific control and training measures to reduce the risk of heat-related illness.

There is no existing federal OSHA standard that specifically and comprehensively addresses prevention of heat illness. Similar to related Title 8 requirements previously identified, there are federal OSHA standards for drinking water and first aid that would apply to the issue.

The effects of the emergency standard proposed to be adopted are outlined below:

### **Section 3395. Heat Illness Prevention**

The section proposed to be readopted as an emergency standard is in Article 10 Personal Safety Devices and Safeguards prior to the related section 3400 Medical Services and First Aid.

#### **Section 3395(a) Scope and Application**

This proposed subsection would provide that the requirements of the standard apply to all work outdoors where environmental risk factors for heat illness are present.

The proposed language includes two clarifying notes that are without direct regulatory effect and do not add any additional regulatory requirements. The first Note clarifies that employers may, if they choose, integrate the requirements of the proposed standard into their Injury and Illness Prevention Program that is required by section 3203. The second Note reaffirms the authority of the Division to enforce the proposed standard and references sections of the Labor Code that prohibit discriminating against employees for exercising their rights provided by this and other occupational safety and health standards.

The effect of the proposed language for Scope and Application is to limit the requirements of the proposed standard to the subset of employers with workers operating outdoors to prevent heat illness when environmental risk factors warrant. The proposed limitations on Scope and Application has the effect that employers not conducting outdoor work operations would not be covered by this standard. Also, employers with employees who were working outdoors but not affected by environmental risk factors would not be covered by the requirements for addressing heat illness prevention. The scope and application also states that related sections like section 3203 Injury and Illness Prevention Program, and other applicable Title 8 standards such as for the provision of drinking water and emergency medical services would not be superceded by this new standard.

#### **Section 3395(b) Definitions**

The proposed language includes definitions for six terms used in the standard.

- (1) A definition is proposed for the term “acclimatization.” The effect of the proposed definition is to clarify the topic to be addressed in the employee training requirement of proposed subsection (e).
- (2) A definition is proposed for the term “heat illness.” The definition gives examples of some of the forms of heat illness that are intended to be prevented by the proposed standard. The list is not all-inclusive and there are other conditions that can result from excessive exposure to work in heat. The effect of this definition is to indicate the types of illnesses intended to be prevented

by the proposed standard and thereby clarify the risk factors required to be controlled by the employer.

(3) A definition is proposed for “environmental risk factors for heat illness.” The definition describes the major environmental and work factors that need to be controlled in order to effectively reduce the risk of occurrence of heat illness. The list is comprehensive, but not all-inclusive, and there are other factors that can, in some circumstances, increase risk of occurrence of heat illness. The effect of this definition is to indicate the workplace factors that employers must assess and control as part of determining if the proposed section applies to their outdoor places of employment.

(4) A definition is proposed for “personal risk factors for heat illness.” The definition describes major personal factors that need to be controlled in order to effectively reduce the risk of occurrence of heat illness. The list is comprehensive, but not all-inclusive, and there are other factors that can in some circumstances increase risk of occurrence of heat illness. The effect of this definition is to indicate the factors that employees and supervisors must be aware of through training required by subsection (e).

(5) A definition is proposed for “preventative recovery period.” The definition describes the reason for providing access to shade in subsection (d) in order to effectively reduce the risk of occurrence of heat illness. The effect of this definition is to indicate the reasons for providing access to shade in their outdoor places of employment.

(6) A definition is proposed for “shade.” It is proposed to define shade as meaning blockage of direct sunlight. The definition clarifies that the devices or structures used to provide shade need not be of a permanent nature and can include canopies, umbrellas, and other temporary structures or devices. The proposed definition further clarifies that materials that allow passage of direct sunlight do not necessarily satisfy the definition for shade and that an indicator of effective shade is that objects do not cast a shadow when placed in the shaded area. Finally the definition clarifies that structures or objects that may block the sun but which also can contain heat, such as an automobile without the air-conditioning turned on, would not satisfy the definition of shade.

### **Section 3395(c) Provision of Water**

Proposed subsection (c) details requirements for provision of drinking water as a control measure for heat illness. The effect of this proposed subsection is to reference existing drinking water requirements and ensure exposed employees are provided with a suitable quantity of drinking water to prevent heat illness.

### **Section 3395(d) Access to Shade**

Proposed subsection (d) details a requirement for employees performing outdoor work to have access to a shaded area when a recovery period or preventative recovery period is needed from the heat for a period of no less than five minutes. The effect of the proposal is to ensure that employees suffering from heat illness or needing a preventative recovery period have a suitable place to get out of the direct sun and reduce their exposure to heat.

**Section 3395(e) Training**

Proposed subsection (e) details topics on which employees and supervisors are to be trained with respect to prevention of, and response to, heat illness and risk factors for heat illness. The effect of this proposed subsection is to clarify and make specific the training required to be provided to employees and supervisors with respect to prevention of, and response to, heat illness.

**Section 3395(f) Review**

Proposed subsection (f) specifies the date by which the Board shall review the feasibility of providing shade for all rest periods at outdoor places of employment. The effect of this proposed subsection is to require the Occupational Safety and Health Standards Board to review the feasibility of providing shade for all rest periods at outdoor places of employment by January 1, 2006.

**DOCUMENTS RELIED UPON**

Historic weather data for California cities available on the internet from Weather.com.

The Heat Index developed by the National Weather Service and available on their website at nws.noaa.gov.

ACGIH Documentation of the Threshold Limit Value for Heat Stress and Strain – 2001, American Conference of Governmental Industrial Hygienists.

Copies of these documents are available for review Monday through Friday from 8:00 a.m. to 4:30 p.m. at the Standards Board Office located at 2520 Venture Oaks Way, Suite 350, Sacramento, California.

**DOCUMENTS INCORPORATED BY REFERENCE**

Office of Administrative Law, Notice Publication/Regulations Submission, File No. 05-0812-01E, Heat Illness Prevention and all documents related to the filing.

Office of Administrative Law, Notice Publication/Regulations Submission, File No. 05-1216-03EE, Heat Illness Prevention and all documents related to the filing.

Copies of these documents are available for review Monday through Friday from 8:00 a.m. to 4:30 p.m. at the Standards Board Office located at 2520 Venture Oaks Way, Suite 350, Sacramento, California.