

437-002-XXXX Heat Illness Prevention

(1) Scope and Application. This standard applies whenever an employee performs work activities, whether in indoor or outdoor environments, ~~where~~ and the heat index temperature (apparent temperature) equals or exceeds 80 degrees Fahrenheit. When any other applicable standard addresses other hazards that may be present, employers must comply with the provisions of that standard and this standard. Where the requirements of one standard are more restrictive than the other, employers must follow the more stringent requirements. Employers subject to other activity-specific standards, such as OAR 437-007-1300 ~~et seq~~ (Wildland Fire Suppression and Prescribed Fire), must comply with these standards to the degree feasible.

(a) The rule does not apply to incidental exposure that exists when an employee is not required to perform covered work activities for more than 15 minutes in any sixty-minute period.

~~(b)~~ Exposure to heat that is generated only from the work process – such as occurs in foundries – is not subject to this standard. In such cases, employers must follow the requirements of OAR 437-002-0144(2).

~~(c)~~ Associated support activities for wildland firefighters such as fire camp services and fire management are exempt only from the requirements of section (7).

~~(b)(d)~~ Employers whose employees work remotely from a home office without air conditioning are subject only to the training requirements in section (9).

~~(e)~~ Employers whose employees perform either “rest” or “light” workloads (see 1 – Metabolic heat and workloads - in the non-mandatory Appendix) are exempt from the requirements of this standard.

~~(d)(f)~~ The rule does not apply to those buildings or structures that have a working mechanical cooling system that keeps the heat index temperature below 80 degrees Fahrenheit.

~~(e)~~

~~(f)~~

~~(g)~~

~~(h)~~

~~Employers whose~~The rule

~~Note: Oregon OSHA has determined that a workplace hazard exists whenever the heat index temperature is less than 91 degrees Fahrenheit (the “caution” risk level based on federal OSHA guidance) and that a more serious hazard exists whenever the heat index temperature is between 91 and 103 (the “moderate” risk level.~~

Note: Employees are protected from discrimination or retaliation under ORS 654.062(5). This includes protections for actions against employees for opposing any practice forbidden under the Oregon Safe Employment Act and related statutes and rules (including this rule), making a complaint or causing any proceeding to be instituted under the Oregon Safe Employment Act, or exercising any rights under the law, including those conferred by this rule.

## (2) Definitions

**Acclimatization** - temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within sevenfour to fourteen days of regular work for at least two hours per day in the heat. This time frame applies to fit individuals with no underlying medical conditions.

**Drinking water** - potable water that is suitable to drink and that is cool (66°F - 77°F) or cold (35°F - 65°F). Drinking water packaged as a consumer product and electrolyte-replenishing beverages that do not contain caffeine (for example, sports drinks) are acceptable substitutes, but should not completely replace the required water.

**Feasibility** - the ability of an employer to implement any requirement in a rule. Oregon OSHA rules never prohibit work. Whether feasibility is mentioned in a provision of the rule or not, if the employer can demonstrate that it is functionally impossible to comply or if doing so would prevent completion of the work, the employer need not comply, but must take any available reasonable alternative steps to protect the employees involved.

**Heat Illnesses** - medical conditions resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

**Shade** - blockage of direct sunlight. One indicator that blockage is sufficient 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 a working air conditioning. Shade may be provided by any natural or artificial means that does not expose employees to unsafe or unhealthy conditions and that does not deter or discourage access or use.

(3) Access to shade. Employers whose work activities are covered by this rule must:

(a) Establish and maintain one or more shade areas that are immediately and readily available when the outdoor heat index temperature in the work area equals or exceeds 80 degrees Fahrenheit.

(A) The shade area must either be open to the air or provide mechanical ventilation for cooling.

(B) The amount of shade present must be at least enough to accommodate the number of employees on recovery or rest periods, so that they can sit in a normal posture fully in the shade.

(C) The shade must be located as close as practical to the areas where employees are working.

(D) Shade present during meal periods must be large enough to accommodate the number of employees on the meal period that remain onsite.

(b) If trees or other vegetation are used to provide shade (such as in orchards, or forests), ensure the thickness and shape of the shaded area provides sufficient shadow to protect employees.

(c) When the employer can demonstrate that providing access to shade is not safe or feasible in a particular situation (for example, during high winds or when an employee is walking through range

land), employers must identify and implement alternative cooling measures that provide equivalent protection e.g. cooling vests (either with fans or ice packs, water-dampened cotton clothing (this may not work when the humidity is very high), etc.

(4) Drinking water. Employers whose work activities are covered by this rule must ensure that an adequate supply of additional drinking water is ~~readily accessible~~ immediately and readily available to employees at all times and at no cost when heat index temperature in the work area equals or exceeds 80 degrees Fahrenheit.<sup>7</sup>

(a) Ensure there is an adequate supply of drinking water that is either cool or cold.

(b) Employers must supply each employee enough water to enable them to consume 32 ounces per hour. Employers are not required to supply the entire quantity of drinking water needed to be supplied for all employees on a full shift at the beginning of the shift. Employers may begin the shift with smaller quantities of drinking water if effective procedures are established to replenish the water consumed during the shift.

(c) Employers must ensure that employees have ample opportunity to drink water supplied under this section.

(5) High Heat Practices - Employer must implement high heat procedures when the ambient heat index temperature equals or exceeds 90 degrees Fahrenheit.

(a) Employers must ensure that effective communication occurs, in a language and vocabulary readily understood by all employees, by voice ~~or electronic means,~~ so that employees at the worksite can contact a supervisor when necessary. An electronic device, such as a cell phone, may be used for this purpose only if reception in the area is reliable.

(b) Employers must ensure that employees are observed for alertness and signs and symptoms of heat illness and monitored to determine whether medical attention is necessary by implementing one or more of the following:

(A) Regular communication with employees working alone, such as by radio, cellular phone, or other alternative means, or

(B) Create a mandatory buddy system, when feasible, or

(C) Implement other equally effective means of observation or communication.

(c) Employers must designate and equip one or more employees at each worksite as authorized to call for emergency medical services, and must allow other employees to call for emergency services when designated employees are not immediately available (such a practice supplements existing requirements to ensure that emergency medical care is immediately available in all workplaces, per OAR 437-002-0161).

~~(d) Employers must ensure that each employee takes 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.~~

(d) When employers have employees working in buildings or structures that do not have a mechanical ventilation cooling system, employers must either measure the temperature and humidity in these places to determine the heat index temperature, or use NIOSH’s heat index app to determine the heat index temperature outside and assume that it is the same inside buildings or structures that do not have a mechanical ventilation cooling system. However, if the structure is designed or otherwise known to affect outdoor humidity (for example, hoop houses and greenhouses in nursery operations), the employer must measure and use the actual humidity inside the structure. (See 2 – NIOSH Heat index app - in the non-mandatory Appendix)

Note: The preventative cool-down rest period required by this paragraph may be provided concurrently with any other meal or rest period required by policy, rule or law if the timing of the preventative cool-down rest period coincides with the otherwise required meal or rest period; however, the preventative cool-down rest period must be calculated using only the time spent in the shade and not performing work other than light work such as that performed in an office setting. Except when such a rest period coincides with the existing unpaid meal break, the preventative cool-down rest period is a work assignment and must be compensated accordingly. The preventative cool-down period ~~only~~ has to occur only during the time of the shift that the ambient heat index temperature equals or exceeds 90 degrees Fahrenheit.

Note: Oregon OSHA has determined that a workplace hazard exists whenever the heat index temperature is less than 91 degrees Fahrenheit (the “caution” risk level based on federal OSHA guidance) and that a more serious hazard exists whenever the heat index temperature is between 91 and 103 (the “moderate” risk level.

(6) Heat illness prevention breaks. Employers must choose between (a) and (b) below.

(a) \_\_\_\_\_

<u>Heat index temperature (° F)</u>	<u>Length of heat illness prevention breaks</u>
<u>90 &gt;</u>	<u>10 minutes/2 hours</u>
<u>95 &gt;</u>	<u>20 minutes/hr</u>
<u>100 &gt;</u>	<u>30 minutes/hr</u>
<u>105 &gt;</u>	<u>40 minutes/hr</u>

(b) In lieu of (a) above, the employer may choose instead to implement NIOSH heat prevention recommendations (See 3 – NIOSH work/rest schedule - in the non-mandatory Appendix), provided that the employer documents the decision to rely upon the NIOSH recommendations in writing and can demonstrate how its decisions are consistent with those recommendations.

Note: Employers must be aware that the numbers in the NIOSH work/rest schedule are unadjusted ambient temperatures (°F) and employers must adjust for humidity, following the instructions on page 2.

~~(76)~~ Emergency Medical Plan

(a) Develop and implement an effective emergency response plan per OAR 437-002-0042. Agricultural employers, follow OAR 437-004-0450. In addition to the requirements of Emergency Response Plan, the procedures must include and address the following:

(A) Responding to signs and symptoms of possible heat illness, including but not limited to first aid measures and how emergency medical services will be provided.

(i) \_\_\_\_ If a supervisor observes, or any employee reports, any signs or symptoms of heat illness in any employee, the supervisor must take immediate action appropriate to the severity of the illness.

(ii) If a supervisor observes signs or an employee reports symptoms of heat illness, the employee must be relieved from duty and provided with a sufficient means to reduce body temperature. Examples include, but not limited to: cooling blankets, cooling vests, and fans.

(iii) If the signs or symptoms are indicators of severe heat illness (such as, but not limited to, decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior or convulsions), immediately implement the emergency response procedures.

(iv) An employee exhibiting signs or symptoms of heat illness must be monitored and must not be left alone or sent home without being offered onsite first aid and/or being provided with emergency medical services in accordance with the employer's procedures.

(b) Contacting emergency medical services and, if necessary and instructed to do so by the medical professionals, transporting employees to a place where they can be reached by an emergency medical provider.

(c) Ensuring that, in the event of an emergency, clear and precise directions to the work site is provided for first responders to quickly navigate to the location of the worker.

~~(87)~~ Acclimatization Plan.

(a) All new employees shall be closely observed by a supervisor or designee for the first 14 days of the employee's employment.

(b) Develop and implement effective acclimatization procedures in writing when feasible. These procedures must include:

(A) A schedule for gradually increasing exposure time over a period of 7 to 14 days. This can be determined based on the physical fitness of the individual employees, workload and activity, and recent acclimatization history at the worksite.

(~~cb~~) For new workers, the work schedule must be no more than 20% of the usual duration of work in the hot environment on day 1 and a no more than 20% increase on each additional day.

(~~de~~) For workers who have had previous experience with the job, the acclimatization regimen must be no more than 50% of the usual duration of work in the hot environment on day one, 60% on day two, 80% on day three, and 100% on day four.

(~~ed~~) Employers may choose to develop their own acclimatization plan in writing. The plan must be effective in preventing heat-related illnesses. Employers should be aware that acclimatization to heat takes longer for unfit individuals compared to fit individuals.

Note: Oregon OSHA recognizes that there is no “one-size-fits-all” optimal acclimatization plan, based upon the variable weather patterns across the state.

(~~98~~) Heat Illness Prevention Plan.

(a) The employer must develop, implement, and maintain, an effective heat illness prevention plan, in writing. The plan must be made available at the worksite to employees and to Oregon OSHA upon request. The plan must, at a minimum, contain:

(~~A~~) Information about how employees will be trained on the hazards of heat exposure, steps to prevent heat-related illnesses, how to recognize the symptoms of dehydration, and how to respond to suspected heat-related illnesses in others.

(~~B~~) Information about how adequate amounts of cool, potable water in work areas will be provided.

(~~C~~) Information about how employees will be provided frequent opportunities and encouragement to stay hydrated by drinking water.

(~~D~~) Information about how employees will be provided a cool, climate-controlled area where heat-affected employees may take their breaks and for recovery when signs and symptoms of heat-related illnesses are recognized.

(~~E~~) Information about how adequate space in shaded areas will be provided for affected employees at hot worksites where they may take breaks and cool off.

(~~F~~) Information about the employer will implement a work/rest regimen when necessary to keep employees safe. (See 3 in the non-mandatory Appendix)

(~~G~~) Information about how the employer will implement heat acclimatization procedures for new employees or employees returning to work from absences of three or more days.

(~~H~~) Training information about personal risk factors (e.g. chronic obstructive pulmonary disease, asthma, kidney disease, obesity, etc) that may be aggravated by exposure to excessive heat.

(b) If an employer determines that it is not safe or feasible to provide shade and provides an alternative cooling method to shade (as in (3)(c)), the Heat Illness Prevention Plan (section 8) needs to address the use, care, and maintenance of the alternative cooling methods.

(109) Training

(a) Supervisor and employee training. Train all employees, including new employees, supervisory, and non-supervisory employees in the following topics, in a language and vocabulary readily understood, before employees begin work that should reasonably be anticipated to expose employees to the risk of heat illness:

(A) The environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body caused by exertion, clothing ([See 4 – Clothing adjustment factors - in the non-mandatory Appendix](#)), and personal protective equipment.

(B) The employer's procedures for complying with the requirements of this standard, including, but not limited to, the employer's responsibility to provide water, provide heat index information (including the risks to experiencing a heat-related illness), shade, cool-down rests, and access to first aid as well as the employees' right to exercise their rights under this standard without fear of retaliation.

(C) The importance of frequent consumption of small quantities of water, up to 32 ounces per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties.

(D) The concept, importance, and methods of the acclimatization plan pursuant to the employer's procedures under section (7)

(E) The different types of heat illness, the common signs and symptoms of heat illness, and appropriate first aid and/or emergency responses to the different types of heat illness, and in addition, that heat illness may progress quickly from mild symptoms and signs to serious and life-threatening illness.

(F) The importance to employees 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.

(G) The employer's procedures for responding to signs or symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary.

(H) The employer's procedures for contacting emergency medical services, and if necessary and instructed to do so by the medical professionals, for transporting employees to a point where they can be reached by an emergency medical service provider.

(I) The employer's procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders. These procedures must include designating a person to be available to ensure that emergency procedures are invoked and followed when appropriate.



(J) The effects of nonoccupational factors (drugs, alcohol, obesity, etc.) on tolerance to occupational heat stress.

(K) Ensure all employees are trained annually. Ensure all employees are trained annually. The employer must verify compliance with this section by preparing and maintaining written certification training records that can be provided to Oregon OSHA upon request. The written certification record must contain the name or identification of each employee trained, the date(s) of the training, and the name of the person who conducted the training.

The language below will be placed at the end of the OAR 437-004-1120

(27) Heat in Labor Housing:

(a) Cooling Areas. If rooms where people sleep are not able to maintain an indoor temperature of 78 degrees Fahrenheit or less (using air conditioners, evaporative coolers, air purifiers with coolers, or other reliable means), employers must provide an area(s) for occupants to cool off whenever the heat index outside the housing units is at or above 80 degrees Fahrenheit. The cooling area(s) must be large enough to allow use by at least 50% of the occupants at the labor housing at any one time and must use either or any combination of the following two approaches:

(A) Giving occupants continual access to one or more common rooms that are maintained at or a below a temperature of 78 degrees Fahrenheit (using air conditioners, evaporative coolers, air purifiers with coolers, or other reliable means). This can be done by making use of existing common rooms, otherwise unused housing units, or other available indoor spaces that do not present additional risks to the occupants.

(B) Giving occupants continual access to outdoor rest areas (located away from work areas or activities that could create a hazard). The rest areas must:

(i) Be shaded by any natural or artificial means, so that occupants can sit or stand in a normal posture fully in the shade;

(ii) Provide water misters, cooling vests, cooling towels, or equally effective means of relief. If relying upon items that can only be used by one individual at a time, enough must be provided to satisfy the 50% requirement and they must not be shared without being washed.

(iii) Locate available chairs, benches, and other seating in a manner that encourages use.

Note: Although employers are permitted to use either or any combination of the approaches listed in (A) and (B), they are encouraged to provide at least some of the required space using the methods listed in (A).



(b) Minimizing Heat in Housing Units. If rooms where people sleep are not able to maintain an indoor temperature of 78 degrees Fahrenheit or less (using air conditioners, evaporative coolers, air purifiers with coolers, or other reliable means), employers must take the following steps:

(A) Optimize the ability to keep housing cool by ensuring that windows can be protected from direct sunlight in a manner that minimizes radiant heat during all hours of the day, whether through the use of natural or artificial shade, the provision of window coverings must deflect the sun and not simply absorb the heat, or other equally effective measures. Such measures must not interfere with the ability to open and close windows or create another hazard.

(B) Make fans available at no cost for any housing occupants who wish to use them.

(c) Temperature Awareness. To ensure that housing occupants can remain aware of the effects of heat on the indoor environment, both immediately and on an ongoing basis, employers must provide a thermometer that displays the temperature in both Fahrenheit and Celsius in each individual housing unit. Employers are encouraged, but not required, to provide a device that also measures humidity.

(d) Employee and Occupant Information. In addition to ensuring that employees have received the training required by OAR 437-004-1130(5), the employer must display the "Heat Risks in Housing" poster provided by Oregon OSHA in one or more prominent locations that housing occupants would normally see and must add the necessary emergency contact information to the poster, allowing housing occupants to contact emergency services as necessary.

(e) Access to Emergency Services. Employers must ensure that occupants have access at all times to a working telephone that can be used to contact emergency services. An electronic device, such as a cell phone, may be used for this purpose only if reception in the area is reliable.

Note: Employees are protected from discrimination or retaliation under ORS 654.062(5). This includes protections for actions against employees for opposing any practice forbidden under the Oregon Safe Employment Act and related statutes and rules (including this rule), making a complaint or causing any proceeding to be instituted under the Oregon Safe Employment Act, or exercising any rights under the law, including those conferred by this rule.

## Non-Mandatory Appendix Informational Appendix

### Protection from excessive heat

To protect the health and safety of employees from heat-related illnesses, employers should consider utilizing the resources below.

1. Most heat-related illnesses affect workers who do strenuous physical activity. When workers engage in intense work, their bodies create heat. This "metabolic" heat combines with environmental heat (from temperature, sunlight, humidity, etc.) so workers' core temperature can rise to dangerous levels. To prevent a hazardous combination of environmental and metabolic heat, employers should be aware of workers' activity level. Workload can be classified as rest, light, moderate, heavy, or very heavy.

Metabolic Heat and Workload (by physical activity level); <https://www.osha.gov/heat-exposure/hazards>

2. The OSHA-NIOSH Heat Safety Tool is a useful resource for planning outdoor work activities based on how hot it feels throughout the day. Featuring real-time heat index and hourly forecasts, specific to your location, as well as occupational safety and health recommendations from OSHA and NIOSH.

<https://www.osha.gov/heat/heat-index/using-heat-protect-workers>

<https://www.nalco.org/workplace-issues/body/OSHA-All-in-One-Heat-Guide.pdf>

3. The NIOSH work/rest schedule is based on air temperature, with adjustments for direct sunlight and humidity. It may not be applicable to all worksites.

4. Work-rest schedule, by workload;

<https://www.cdc.gov/niosh/mining/UserFiles/works/pdfs/2017-127.pdf>Some workers wear clothing that prevents heat dissipation. Examples include coveralls, or protective gear. Clothing adjustment factors; <https://www.osha.gov/heat-exposure/hazards>