

WSR 23-14-042
PERMANENT RULES
DEPARTMENT OF
LABOR AND INDUSTRIES

[Filed June 27, 2023, 8:25 a.m., effective July 17, 2023]

Effective Date of Rule: July 17, 2023.

Other Findings Required by Other Provisions of Law as Precondition to Adoption or Effectiveness of Rule: This rule will become effective July 17, 2023, to ensure outdoor workers are adequately protected from the hazards associated with exposure to high ambient outdoor temperatures, and it's necessary for the preservation of public health, safety, and welfare.

Purpose: On June 28, 2021, the department of labor and industries (L&I) received a petition for rule making requesting changes to L&I's rules to include more specific requirements to prevent heat-related illness and injury. The petition for rule making was accepted recognizing the need to reexamine the current rules, especially in light of information suggesting the occurrence of heat illnesses below the current trigger temperatures and the increasing temperatures experienced in our state since the rule was first established in 2008.

L&I filed emergency rules related to outdoor ambient heat in the summer of 2021 and 2022 to protect outdoor workers from heat-related illnesses due to outdoor heat exposure. The current rules do not affirmatively address preventative measures to avoid overheating other than access to drinking water. The hazards of heat are well documented and research suggests the occurrence of heat-related illnesses below the current trigger temperatures. Research also documents increased temperatures in Washington since the rule was first established.

WAC 296-62-09510 and 296-307-09710 Outdoor heat exposure. Sets scope of the rule to apply to all outdoor work environments year-around rather than May through September. Removed redundant WAC citations. Scope no longer supplements or applies to chapter 296-305 WAC, Safety standards for firefighters.

WAC 296-62-09520 and 296-307-09720 Definitions. All definitions were numerated to aid in cross-referencing.

- Broadened definition of "acclimatization" to include period of time required to become acclimatized and when acclimatization can be lost.
- Added definition for "buddy system."
- Removed definition for "double-layer woven clothing" as it is no longer a key in trigger temperature table.
- Clarified definition of "drinking water" to be suitably cool in temperature.
- Clarified definition of "engineering controls" to be devices used to reduce heat exposure and aid in cooling, not including wearable items.
- Removed definition for "environmental factors for heat-related illness."
- Removed sentence in "outdoor environment" definition regarding construction activity that may be contradictory.
- Added definition for "risk factors for heat-related illness."
- Added definition for "shade."
- In "vapor barrier clothing" definition, replaced "nonbreathing" with "nonbreathable."

WAC 296-62-09530 and 296-307-09730 Employer and employee responsibility. Adds prescriptive requirements for the outdoor heat exposure safety plan. Adds requirement for preventative cool-down rest periods when employees begin to feel overheated. Adds Table 1 with trigger temperatures of 52°F and 80°F depending on clothing worn and PPE used. Specifies that employees must be allowed and encouraged to take a preventative cool-down rest in the shade or using another means provided by the employer to reduce body temperature when they feel the need to do so to protect themselves from overheating. Finally, adds employee requirement to take preventative cool-down rest periods when they begin to feel overheated.

NEW WAC 296-62-09535 and 296-307-09735 Access to shade. Adds requirement to provide one or more areas of shade for employees that is large enough to accommodate all employees during a meal or rest period that is not otherwise required to be compensated. The provided shade must also be as close as practicable to areas where employees are working. The rule also provides alternatives employers may use in lieu of shade.

WAC 296-62-09540 and 296-307-09740 Drinking water. Adds clarification that drinking water must be suitably cool in temperature which has been standard under department of operational safety and health (DOSH) Directive 10.15.

NEW WAC 296-62-09545 and 296-307-09745 Acclimatization. Adds requirement for observation for up to 14 days for newly assigned employees to ensure employees become accustomed to working at various temperatures. Adds definition of "heat wave" and adds requirement for close observation during the heat wave. Provides a "Note" that employers may consider additional acclimatization procedures recommended by NIOSH.

NEW WAC 296-62-09547 and 296-307-09747 High heat procedures. Adds requirement for rest periods when temperatures exceed 90°F or 100°F according to new Table 2. Adds requirement to closely observe employees for signs and symptoms of heat-related illness at and above 90°F. Provides exclusion for emergency response operations from mandatory cool-down rest periods in Table 2 when restoring or maintaining critical infrastructure at risk.

WAC 296-62-09550 and 296-307-09750 Responding to signs and symptoms of heat-related illness. Adds requirement for employers to ensure there is means for effective communication between employees and supervisors.

WAC 296-62-09560 and 296-307-09760 Information and training. Adds requirement for training to be effective and performed prior to outdoor work when occupational exposure to heat might occur. Adds defined environmental factors and other work conditions that may contribute to heat-related illness. Adds physical fitness, previous heat-related illness and pregnancy as conditions that may contribute to heat-related illness. Removed caffeine use and nicotine use as contributors to heat-related illness.

Adds the importance of acclimatization and considerations for cool-down rest periods, gradual increase of work in the heat and importance that employees are unable to build tolerance to working in the heat. Adds the importance of taking preventative cool-down rest periods, and mandatory rest periods when temperatures exceed 90°F. Adds training requirement for procedures for shade or other means to reduce body temperature, and employer's procedures for close observation of employees. Finally, adds the importance of considering the use of engineering or administrative controls to reduce exposure.

Citation of Rules Affected by this Order: New WAC 296-62-09535, 296-62-09545, 296-62-09547, 296-307-09735, 296-307-09745 and 296-307-09747; and amending WAC 296-62-09510, 296-62-09520, 296-62-09530, 296-62-09540, 296-62-09550, 296-62-09560, 296-307-09710, 296-307-09720, 296-307-09730, 296-307-09740, 296-307-09750, and 296-307-09760.

Statutory Authority for Adoption: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060.

Other Authority: Chapter 49.17 RCW.

Adopted under notice filed as WSR 23-07-123 on March 21, 2023 [and 23-13-038 on June 12, 2023].

Changes Other than Editing from Proposed to Adopted Version: **WAC 296-62-09510 and 296-307-09710 Outdoor heat exposure.** Scope no longer supplements or applies to chapter 296-305 WAC, Safety standards for firefighters.

WAC 296-62-09520 and 296-307-09720 Definitions. Definition of "engineering controls" now clarifies this does not include wearable items.

WAC 296-62-09530 and 296-307-09730 Employer and employee responsibility. Clarified the preventative cool-down rest period must be paid unless taken during a meal period that is not otherwise required to be compensated.

WAC 296-62-09547 and 296-307-09747 High heat procedures. Provides an exemption for emergency response operations from mandatory cool-down rest periods in Table 2 when aiding firefighting, protecting public health and safety, or restoring or maintaining critical infrastructure at risk. Employees under this exemption must still be permitted to take preventative cool-down rest periods when they think they need to. Clarified the mandatory cool-down rest period must be paid unless taken during a meal period that is not otherwise required to be compensated.

WAC 296-62-09560 and 296-307-09760 Information and training. Added training must include appropriate first aid as well as emergency response procedures.

A final cost-benefit analysis is available by contacting Carmyn Shute, Administrative Regulations Analyst, L&I, DOSH, P.O. Box 44620, Olympia, WA 98504-4620, phone 360-870-4525, fax 360-902-5619, email Carmyn.Shute@lni.wa.gov, website <https://lni.wa.gov/safety-health/safety-rules/rulemaking-stakeholder-information/ambient-heat-exposure-rulemaking>.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 6, Amended 12, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 6, Amended 12, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 0, Repealed 0.

Date Adopted: June 27, 2023.

Joel Sacks
Director

OTS-4162.7

AMENDATORY SECTION (Amending WSR 19-01-094, filed 12/18/18, effective 1/18/19)

WAC 296-62-09510 Scope and purpose. ~~((+1))~~ WAC 296-62-095 through 296-62-09560:

(1) Applies to all employers with employees performing work in an outdoor environment.

~~(2) ((The requirements of WAC 296-62-095 through 296-62-09560 apply))~~ Applies to outdoor work environments ~~((from May 1 through September 30, annually, only))~~ when employees are exposed to outdoor heat ~~((at or above an applicable temperature listed in Table 1)).~~

~~((Table 1~~

~~To determine which temperature applies to each worksite, select the temperature associated with the general type of clothing or personal protective equipment (PPE) each employee is required to wear.~~

~~Outdoor Temperature Action Levels~~

All other clothing	89°
Double-layer woven clothes including coveralls, jackets and sweatshirts	77°
Nonbreathing clothes including vapor barrier clothing or PPE such as chemical resistant suits	52°

Note: ~~There is no requirement to maintain temperature records. The temperatures in Table 1 were developed based on Washington state data and are not applicable to other states.)~~

~~(3) ((WAC 296-62-095 through 296-62-09560))~~ Does not apply to incidental exposure ~~((which exists when))~~. Incidental exposure means an employee is not required to perform a work activity outdoors for more than ~~((fifteen))~~ 15 minutes in any ~~((sixty-minute))~~ 60-minute period. This exception may be applied every hour during the work shift.

~~(4) ((WAC 296-62-095 through 296-62-09560 supplement all industry-specific standards with related requirements. Where the requirements under these sections provide more specific or greater protection than the industry-specific standards, the employer must comply with the requirements under these sections. Additional related requirements are found in))~~ Does not apply to work within the scope of chapter 296-305 WAC, Safety standards for firefighters ~~((and))~~ or chapter 296-307 WAC, Safety standards for agriculture.

AMENDATORY SECTION (Amending WSR 19-01-094, filed 12/18/18, effective 1/18/19)

WAC 296-62-09520 Definitions. (1) Acclimatization. The body's temporary adaptation to work in heat that occurs as a person is exposed to it over ~~((time-~~

~~Double-layer woven clothing.~~ Clothing worn in two layers allowing air to reach the skin. For example, coveralls worn on top of regular work clothes.) a period of seven to 14 days depending on the amount of recent work in the heat and the individual factors. Acclimatization can be lost after seven consecutive days away from working in the heat.

(2) **Buddy system.** A system where individuals are paired or teamed up into work groups so each employee can be observed by at least one other member of the group to monitor and report signs and symptoms of heat-related illness.

(3) **Drinking water.** Potable water that is suitable to drink (--) and suitably cool in temperature. Other acceptable beverages include drinking water packaged as a consumer product, and electrolyte-replenishing beverages (i.e., sports drinks) that do not contain high amounts of sugar, caffeine ((are acceptable)), or both such as energy drinks.

(4) **Engineering controls.** The use of devices to reduce exposure and aid cooling ((i.e., air conditioning)).

Environmental factors for heat-related illness. Working conditions that increase susceptibility for heat-related illness such as air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload (i.e., heavy, medium, or low) and duration, and personal protective equipment worn by employees. Measurement of environmental factors is not required by WAC 296-62-095), not including wearable items. Examples of engineering controls include fans, misting stations, air-conditioning, etc.

(5) **Heat-related illness.** A medical condition resulting from the body's inability to cope with a particular heat load, and includes, but is not limited to, heat cramps, heat rash, heat exhaustion, fainting, and heat stroke.

(6) **Outdoor environment.** An environment where work activities are conducted outside. Work environments such as inside vehicle cabs, sheds, and tents or other structures may be considered an outdoor environment if the environmental factors affecting temperature are not managed by engineering controls. ((Construction activity is considered to be work in an indoor environment when performed inside a structure after the outside walls and roof are erected.))

(7) **Risk factors for heat-related illness.** Conditions that increase susceptibility for heat-related illness including:

(a) Environmental factors such as air temperature, relative humidity, air movement, radiant heat from the sun and other sources, conductive heat sources such as the ground;

(b) Workload (light, moderate, or heavy) and work duration;

(c) Personal protective equipment and clothing worn by employees;
and

(d) Personal factors such as age, medications, physical fitness, and pregnancy.

(8) **Shade.** A blockage of direct sunlight. 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. 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 sitting in it, unless the car is running with air-conditioning.

(9) **Vapor barrier clothing.** Clothing that significantly inhibits or completely prevents sweat produced by the body from evaporating into the outside air. Such clothing includes encapsulating suits, various forms of chemical resistant suits used for PPE, and other forms of ((nonbreathing)) nonbreathable clothing.

AMENDATORY SECTION (Amending WSR 08-12-109, filed 6/4/08, effective 7/5/08)

WAC 296-62-09530 Employer and employee responsibility. (1) Employers of employees exposed to temperatures at or above (~~temperatures~~) those listed in (~~WAC 296-62-09510(2)~~) Table 1 of this section must:

(a) Address their outdoor heat exposure safety program in their written accident prevention program (APP) (~~(; and~~ ~~(b))~~), in a language that employees understand;

(b) Ensure the outdoor heat exposure safety program contains, at a minimum, the following elements:

(i) Procedures for providing sufficiently cool drinking water;

(ii) Procedures for providing shade or other sufficient means to reduce body temperature, including the location of such means and how employees can access them;

(iii) Emergency response procedures for employees demonstrating signs or symptoms of heat-related illness;

(iv) Acclimatization methods and procedures;

(v) High heat procedures; and

(vi) The specific method used by the employer to closely observe for signs and symptoms of heat-related illness as required under WAC 296-62-09545 and 296-62-09547(2);

(c) Ensure a copy of the outdoor heat exposure safety program is made available to employees and their authorized representatives;

(d) Encourage employees to frequently consume water or other acceptable beverages to ensure hydration (~~(; and~~); and

(e) Encourage and allow employees to take a preventative cool-down rest period when they feel the need to do so to protect themselves from overheating using sufficient means to reduce body temperature such as shade or other equally or more effective means. The preventative cool-down rest period must be paid unless taken during a meal period that is not otherwise required to be compensated. If an employee is showing signs and symptoms of heat-related illness during the cool-down rest period, the employer must comply with requirements under WAC 296-62-09550.

Table 1. To determine which temperature applies to each worksite, select the temperature associated with the general type of clothing or personal protective equipment (PPE) each employee is required to wear.

<u>Nonbreathable clothes including vapor barrier clothing or PPE such as chemical resistant suits</u>	52°F
<u>All other clothing</u>	80°F

Note: There is no requirement to maintain temperature records. The temperatures in Table 1 were developed based on Washington state data and are not applicable to other states.

(2) Employees are responsible for monitoring their own personal factors for heat-related illness including consumption of water or other acceptable beverages to ensure hydration, and taking preventative cool-down rest periods when they feel the need to do so to prevent from overheating.

NEW SECTION

WAC 296-62-09535 Access to shade. Employers of employees exposed to temperatures at or above those listed in Table 1 of WAC 296-62-09530 must:

(1) Provide and maintain one or more areas with shade at all times while employees are present that are either open to the air or provided with ventilation or cooling, and not adjoining a radiant heat source such as machinery or a concrete structure. The shade must be located as close as practicable to the areas where employees are working.

(2) Ensure the amount of shade present is large enough to accommodate the number of employees on a meal or rest period, so they can sit in a normal posture fully in the shade.

(3) In lieu of shade, employers may use other means to reduce body temperature if they can demonstrate such means are equally or more effective than shade. Some alternatives to shade may include the provision of misting stations, cooling vests, or air-conditioned areas.

AMENDATORY SECTION (Amending WSR 08-12-109, filed 6/4/08, effective 7/5/08)

WAC 296-62-09540 Drinking water. (1) Keeping workers hydrated in a hot outdoor environment requires that more water be provided than at other times of the year. Federal OSHA and research indicate that employers should be prepared to supply at least one quart of drinking water per employee per hour. When employee exposure is at or above an applicable temperature listed in WAC ((~~296-62-09510(2)~~) 296-62-09530 Table 1:

(a) Employers must ensure that a sufficient quantity of suitably cool drinking water is readily accessible to employees at all times; and

(b) Employers must ensure that all employees have the opportunity to drink at least one quart of drinking water per hour.

(2) 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 for replenishment during the shift.

NEW SECTION

WAC 296-62-09545 Acclimatization. Employers must closely observe employees for signs and symptoms of heat-related illness by implementing one or more of the close observation options under WAC 296-62-09547(2).

(1) For 14 days when employees:

(a) Are newly assigned to working at or above the applicable temperatures listed in Table 1 of WAC 296-62-09530;

(b) Return to work at the applicable temperatures listed in Table 1 of WAC 296-62-09530 after an absence seven days or more;

(2) During a heat wave. For purposes of this section only, "heat wave" means any day in which the predicted high temperature for the day will be at least the temperatures listed in Table 1 of WAC 296-62-09530 and at least 10 degrees Fahrenheit higher than the average high daily temperature in the preceding five days.

Note: Employers may also consider additional acclimatization procedures recommended by NIOSH:
- NIOSH Heat Stress: Acclimatization. <https://www.cdc.gov/niosh/mining/userfiles/works/pdfs/2017-124.pdf>
- NIOSH Criteria for a Recommended Standard for Occupational Exposure to Heat and Hot Environments: <https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf?id=10.26616/NIOSH PUB2016106>

NEW SECTION

WAC 296-62-09547 High heat procedures. The employer must implement the following high heat procedures when the temperature is at or above 90 degrees Fahrenheit, unless engineering or administrative controls (such as air-conditioning or scheduling work at cooler times of the day) are used to lower employees' exposure below 90 degrees Fahrenheit.

(1) Ensure that employees take at minimum the mandatory cool-down rest periods in Table 2. The cool-down rest period must be provided in the shade or using other equally or more effective means to reduce body temperature. The mandatory cool-down rest period may be provided concurrently with any meal or rest period required under WAC 296-126-092 and must be paid unless taken during a meal period that is not otherwise required to be compensated. Mandatory cool-down rest periods in Table 2 are not required during emergency response operations where rescue, evacuation, utilities, communications, transportation, law enforcement, and medical operations are directly aiding firefighting, protecting public health and safety, or actively protecting, restoring or maintaining the safe and reliable operation of critical infrastructure at risk.

Table 2

Air Temperature	Mandatory cool-down rest periods
At or above 90°F	10 minutes/2 hours
At or above 100°F	15 minutes/1 hour

Notes:

- Employers may also consider implementing more additional protective rest periods per NIOSH or ACGIH methods:
- NIOSH Criteria for a Recommended Standard for Occupational Exposure to Heat and Hot Environments: <https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf?id=10.26616/NIOSH PUB2016106>
- American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) for Heat Stress and Strain: <https://www.acgih.org/heat-stress-and-strain-2/>
- The department will review work-rest periods within three years after the outdoor heat exposure rule goes into effect. We will review applicable data including, but not limited to, heat-related illness claims, inspections, other national and state regulations, peer-reviewed publications, and nationally recognized standards.

(2) Closely observe employees for signs and symptoms of heat-related illness by implementing one or more of the following:

- (a) Regular communication with employees working alone, such as by radio or cellular phone;
- (b) A mandatory buddy system; or
- (c) Other effective means of observation.

AMENDATORY SECTION (Amending WSR 08-12-109, filed 6/4/08, effective 7/5/08)

WAC 296-62-09550 Responding to signs and symptoms of heat-related illness. (1) Employers must ensure that effective communication by voice, observation, or electronic means is maintained so that employees at the work site and their supervisor can contact each other to report signs and symptoms of heat-related illness and get medical attention when necessary. An electronic device, such as a cellular phone or text messaging device, may be used for this purpose only if reception in the area is reliable.

(2) Employees showing signs or demonstrating symptoms of heat-related illness must be relieved from duty and provided with a sufficient means to reduce body temperature.

~~((2))~~ (3) Employees showing signs or demonstrating symptoms of heat-related illness must be monitored to determine whether medical attention is necessary.

AMENDATORY SECTION (Amending WSR 08-12-109, filed 6/4/08, effective 7/5/08)

WAC 296-62-09560 Information and training. (1) ~~All ((training must be provided to)) employees and supervisors((7))~~ must be trained as required by this section prior to outdoor work where occupational exposure to heat might occur and at least annually after the initial training. Training must be provided in a language and manner the employee or supervisor understands((, prior to outdoor work which exceeds a temperature listed in WAC 296-62-09510(2) Table 1, and at least annually thereafter)).

~~((1))~~ (2) Employee training. Effective training on the following topics must be provided to all employees who may be exposed to outdoor heat ((at or above the temperatures listed in WAC 296-62-09510(2) Table 1)):

(a) The environmental factors and other work conditions (i.e., workload, work duration, personal protective equipment, clothing) that contribute to the risk of heat-related illness;

(b) General awareness of personal factors that may increase susceptibility to heat-related illness including, but not limited to, an individual's age, physical fitness, degree of acclimatization, medical conditions, drinking water consumption, alcohol use, ((caffeine use, nicotine use)) previous heat-related illness, pregnancy, and use of medications that affect the body's responses to heat. This information is for the employee's personal use;

(c) The importance of removing heat-retaining personal protective equipment such as nonbreathable chemical resistant clothing during all breaks;

(d) The importance of frequent consumption of small quantities of drinking water or other acceptable beverages;

~~((importance of))~~ acclimatization((7
~~((f))~~ requirements under WAC 296-62-09545, the concept of acclimatization, and the importance of the following considerations:

(i) Frequent cool-down rest periods;

(ii) Gradual increase of work duration in the heat; and

(iii) Employees are unable to build a tolerance to working in the heat during a heat wave;

(f) The importance of taking preventative cool-down rest periods when employees feel the need to do so in order to protect themselves from overheating;

(g) The mandatory cool-down rest periods under WAC 296-62-09547 when the outdoor temperature reaches or exceeds 90 degrees Fahrenheit;

(h) The employer's procedures for providing shade or other sufficient means to reduce body temperature, including the location of such means and how employees can access them;

(i) The different types of heat-related illness, the common signs and symptoms of heat-related illness; ((and

~~(g))~~ (j) The importance of immediately reporting signs or symptoms of heat-related illness in either themselves or in co-workers to the person in charge and the procedures the employee must follow including appropriate first aid and emergency response procedures ((-

~~2-))~~; and
(k) The employer's procedures for close observation of employees for signs and symptoms of heat-related illness.

(3) Supervisor training. Prior to supervising employees working in outdoor environments with heat exposure at or above the temperature levels listed in WAC ((296-62-09510(2-)) 296-62-09530(2) Table 1, supervisors must have training on the following topics:

(a) The information required to be provided to employees listed in subsection (1) of this section;

(b) The procedures the supervisor must follow to implement the applicable provisions of WAC 296-62-095 through 296-62-09560;

(c) The importance of considering the use of engineering or administrative controls such as air-conditioning and scheduling work during the cooler hours of the day in order to reduce employees' exposure to heat;

(d) The procedures the supervisor must follow if an employee exhibits signs or symptoms consistent with possible heat-related illness, including appropriate first aid and emergency response procedures; and

~~((d))~~ (e) Procedures for moving or transporting an employee(s) to a place where the employee(s) can be reached by an emergency medical service provider, if necessary.

OTS-4164.6

AMENDATORY SECTION (Amending WSR 20-21-091, filed 10/20/20, effective 11/20/20)

WAC 296-307-09710 Scope and purpose. ~~((1) WAC 296-307-097))~~
WAC 296-307-09710 through 296-307-09760:

(1) Applies to all employers with employees performing work in an outdoor environment.

(2) ((The requirements of WAC 296-307-097 through 296-307-09760 apply)) Applies to outdoor work environments ((from May 1 through September 30, annually, only)) when employees are exposed to outdoor heat ((at or above an applicable temperature listed in Table 1)).

~~((Table 1~~

To determine which temperature applies to each worksite, select the temperature associated with the general type of clothing or personal protective equipment (PPE) each employee is required to wear.

Outdoor Temperature Action Levels

All other clothing	89°
Double-layer woven clothes including coveralls, jackets and sweatshirts	77°
Nonbreathing clothes including vapor barrier clothing or PPE such as chemical resistant suits	52°

Note: There is no requirement to maintain temperature records. The temperatures in Table 1 were developed based on Washington state data and are not applicable to other states.)

(3) ~~((WAC 296-307-097 through 296-307-09760))~~ Does not apply to incidental exposure ~~((which exists when))~~. Incidental exposure means an employee is not required to perform a work activity outdoors for more than ((fifteen)) 15 minutes in any ((sixty-minute)) 60-minute period. This exception may be applied every hour during the work shift.
~~((4) WAC 296-307-097 through 296-307-09760 supplement all industry-specific standards with related requirements. Where the requirements under these sections provide more specific or greater protection than the industry-specific standards, the employer must comply with the requirements under these sections. Additional related requirements are found in chapter 296-305 WAC, Safety standards for firefighters and chapter 296-307 WAC, Safety standards for agriculture.))~~

AMENDATORY SECTION (Amending WSR 20-21-091, filed 10/20/20, effective 11/20/20)

WAC 296-307-09720 Definitions. (1) Acclimatization. The body's temporary adaptation to work in heat that occurs as a person is exposed to it over ~~((time.~~

~~**Double-layer woven clothing.** Clothing worn in two layers allowing air to reach the skin. For example, coveralls worn on top of regular work clothes.))~~ a period of seven to 14 days depending on the amount of recent work in the heat and individual factors. Acclimatization can be lost after seven consecutive days away from working in the heat.

(2) Buddy system. A system where individuals are paired or teamed up into work groups so each employee can be observed by at least one other member of the group to monitor and report signs and symptoms of heat-related illness.

(3) Drinking water. Potable water that is suitable to drink ~~((or))~~ and suitably cool in temperature. Other acceptable beverages include drinking water packaged as a consumer product, and electrolyte-replenishing beverages (i.e., sports drinks) that do not contain high amounts of sugar, caffeine ((are acceptable)), or both such as energy drinks.

(4) Engineering controls. The use of devices to reduce exposure and aid cooling ~~((i.e., air conditioning)).~~

~~**Environmental factors for heat-related illness.** Working conditions that increase susceptibility for heat-related illness such as air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload (i.e., heavy, medium, or low) and duration, and personal protective equipment worn by employees. Measurement of environmental fac-~~

~~tors is not required by WAC 296-307-097)), not including wearable items. Examples of engineering controls include fans, misting stations, air-conditioning, etc.~~

(5) **Heat-related illness.** A medical condition resulting from the body's inability to cope with a particular heat load, and includes, but is not limited to, heat cramps, heat rash, heat exhaustion, fainting, and heat stroke.

(6) **Outdoor environment.** An environment where work activities are conducted outside. Work environments such as inside vehicle cabs, sheds, and tents or other structures may be considered an outdoor environment if the environmental factors affecting temperature are not managed by engineering controls. ~~((Construction activity is considered to be work in an indoor environment when performed inside a structure after the outside walls and roof are erected.))~~

(7) **Risk factors for heat-related illness.** Conditions that increase susceptibility for heat-related illness including:

(a) Environmental factors such as air temperature, relative humidity, air movement, radiant heat from the sun and other sources, conductive heat sources such as the ground;

(b) Workload (light, moderate, or heavy) and work duration;

(c) Personal protective equipment and clothing worn by employees;
and

(d) Personal factors such as age, medications, physical fitness, and pregnancy.

(8) **Shade.** A blockage of direct sunlight. 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. 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 sitting in it, unless the car is running with air-conditioning.

(9) **Vapor barrier clothing.** Clothing that significantly inhibits or completely prevents sweat produced by the body from evaporating into the outside air. Such clothing includes encapsulating suits, various forms of chemical resistant suits used for PPE, and other forms of ~~((nonbreathing))~~ nonbreathable clothing.

AMENDATORY SECTION (Amending WSR 09-07-098, filed 3/18/09, effective 5/1/09)

WAC 296-307-09730 Employer and employee responsibility. (1) Employers of employees exposed to temperatures at or above ~~((temperatures))~~ those listed in ~~((WAC 296-307-09710(2)))~~ Table 1 of this section must:

(a) Address their outdoor heat exposure safety program in their written accident prevention program (APP) ~~((; and~~
~~(b)))~~, in a language that employees understand;

(b) Ensure the outdoor heat exposure safety program contains, at a minimum, the following elements:

(i) Procedures for providing sufficiently cool drinking water;

(ii) Procedures for providing shade or other sufficient means to reduce body temperature, including the location of such means and how employees can access them;

- (iii) Emergency response procedures for employees demonstrating signs or symptoms of heat-related illness;
- (iv) Acclimatization methods and procedures;
- (v) High heat procedures; and
- (vi) The specific method used by the employer to closely observe employees for signs and symptoms of heat-related illness as required under WAC 296-307-09745 and 296-307-09747(2);

(c) Ensure a copy of the outdoor heat exposure safety program is made available to employees and their authorized representatives;

(d) Encourage employees to frequently consume water or other acceptable beverages to ensure hydration((-)); and

(e) Encourage and allow employees to take a preventative cool-down rest period when they feel the need to do so to protect themselves from overheating using sufficient means to reduce body temperature such as shade or other equally or more effective means. The preventative cool-down rest period must be paid unless taken during a meal period that is not otherwise required to be compensated. If an employee is showing signs or symptoms of heat-related illness during the cool-down rest period, the employer must comply with the requirements under WAC 296-307-09750.

Table 1. To determine which temperature applies to each worksite, select the temperature associated with the general type of clothing or personal protective equipment (PPE) each employee is required to wear.

<u>Nonbreathable clothes including vapor barrier clothing or PPE such as chemical resistant suits</u>	52°F
<u>All other clothing</u>	80°F

Note: There is no requirement to maintain temperature records. The temperatures in Table 1 were developed based on Washington state data and are not applicable to other states.

(2) Employees are responsible for monitoring their own personal factors for heat-related illness including consumption of water or other acceptable beverages to ensure hydration, and taking preventative cool-down rest periods when they feel the need to do so to prevent from overheating.

NEW SECTION

WAC 296-307-09735 Access to shade. Employers of employees exposed at or above temperatures listed in Table 1 of WAC 296-307-09730 must:

(1) Provide and maintain one or more areas with shade at all times while employees are present that are either open to the air or provided with ventilation or cooling, and not adjoining a radiant heat source such as machinery or a concrete structure. The shade must be located as close as practicable to the areas where employees are working.

(2) Ensure the amount of shade present is large enough to accommodate the number of employees on a meal or rest period, so they can sit in a normal posture fully in the shade.

(3) In lieu of shade, employers may use other means to reduce body temperature if they can demonstrate such means are equally or more effective than shade. Some alternatives to shade may include the provision of misting stations, cooling vests, or air-conditioned areas.

AMENDATORY SECTION (Amending WSR 09-07-098, filed 3/18/09, effective 5/1/09)

WAC 296-307-09740 Drinking water. (1) Keeping workers hydrated in a hot outdoor environment requires that more water be provided than at other times of the year. Federal OSHA and research indicate that employers should be prepared to supply at least one quart of drinking water per employee per hour. When employee exposure is at or above an applicable temperature listed in WAC ((~~296-307-09710(2)~~)) 296-307-09730 Table 1:

(a) Employers must ensure that a sufficient quantity of suitably cool drinking water is readily accessible to employees at all times; and

(b) Employers must ensure that all employees have the opportunity to drink at least one quart of drinking water per hour.

(2) 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 for replenishment during the shift.

NEW SECTION

WAC 296-307-09745 Acclimatization. Employers must closely observe employees for signs and symptoms of heat-related illness by implementing one or more of the close observation options under WAC 296-307-09747(2).

(1) For 14 days when employees:

(a) Are newly assigned to working at or above the applicable temperatures listed in Table 1 of WAC 296-307-09730;

(b) Return to work at the applicable temperatures listed in Table 1 of WAC 296-307-09730 after an absence of seven days or more;

(2) During a heat wave. For purposes of this section only, "heat wave" means any day in which the predicted high temperature for the day will be at least the temperatures listed in Table 1 of WAC 296-307-09730 and at least 10 degrees Fahrenheit higher than the average high daily temperature in the preceding five days.

Note: Employers may also consider additional acclimatization procedures recommended by NIOSH:

- NIOSH Heat Stress: Acclimatization. <https://www.cdc.gov/niosh/mining/userfiles/works/pdfs/2017-124.pdf>

- NIOSH Criteria for a Recommended Standard for Occupational Exposure to Heat and Hot Environments: <https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf?id=10.26616/NIOSH PUB2016106>

NEW SECTION

WAC 296-307-09747 High heat procedures. The employer must implement the following high heat procedures when the temperature is at or above 90 degrees Fahrenheit, unless engineering or administrative controls (such as air-conditioning or scheduling work at cooler times of the day) are used to lower employees' exposure below 90 degrees Fahrenheit.

(1) Ensure that employees take at a minimum the mandatory cool-down rest periods in Table 2. The cool-down rest period must be provided in the shade or using other equally or more effective means to reduce body temperature. The mandatory cool-down rest period may be pro-

vided concurrently with any meal or rest period required under WAC 296-131-020 and must be paid unless taken during a meal period that is not otherwise required to be compensated. Mandatory cool-down rest periods in Table 2 are not required during emergency response operations where rescue, evacuation, utilities, communications, transportation, law enforcement, and medical operations are directly aiding firefighting, protecting public health and safety, or actively protecting, restoring or maintaining the safe and reliable operation of critical infrastructure at risk.

Table 2

Air Temperature	Mandatory cool-down rest periods
At or above 90°F	10 minutes/2 hours
At or above 100°F	15 minutes/1 hour

Notes:

- Employers may also consider implementing more additional protective rest periods per NIOSH or ACGIH methods:
 - NIOSH Criteria for a Recommended Standard for Occupational Exposure to Heat and Hot Environments: <https://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf?id=10.26616/NIOSH-PUB2016106>
 - American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) for Heat Stress and Strain: <https://www.acgih.org/heat-stress-and-strain-2/>
- The department will review work-rest periods within three years after the outdoor heat exposure rule goes into effect. We will review applicable data including, but not limited to, heat-related illness claims, inspections, other national and state regulations, peer-reviewed publications, and nationally recognized standards.

(2) Closely observe employees for signs and symptoms of heat-related illness by implementing one or more of the following:

- (a) Regular communication with employees working alone, such as by radio or cellular phone;
- (b) A mandatory buddy system; or
- (c) Other effective means of observation.

AMENDATORY SECTION (Amending WSR 09-07-098, filed 3/18/09, effective 5/1/09)

WAC 296-307-09750 Responding to signs and symptoms of heat-related illness. (1) Employers must ensure that effective communication by voice, observation, or electronic means is maintained so that employees at the work site and their supervisor can contact each other to report signs and symptoms of heat-related illness and get medical attention when necessary. An electronic device, such as a cellular phone or text messaging device, may be used for this purpose only if reception in the area is reliable.

(2) Employees showing signs or demonstrating symptoms of heat-related illness must be relieved from duty and provided with a sufficient means to reduce body temperature.

~~((2))~~ (3) Employees showing signs or demonstrating symptoms of heat-related illness must be monitored to determine whether medical attention is necessary.

AMENDATORY SECTION (Amending WSR 09-07-098, filed 3/18/09, effective 5/1/09)

WAC 296-307-09760 Information and training. (1) All ~~((training must be provided to))~~ employees and supervisors ~~((7))~~ must be trained as required by this section prior to outdoor work where occupational

exposure to heat might occur and at least annually after the initial training. Training must be provided in a language and manner the employee or supervisor understands (~~(, prior to outdoor work which exceeds a temperature listed in WAC 296-307-09710(2) Table 1, and at least annually thereafter)~~).

~~((1))~~ (2) Employee training. Effective training on the following topics must be provided to all employees who may be exposed to outdoor heat (~~(at or above the temperatures listed in WAC 296-307-09710(2) Table 1)~~):

(a) The environmental factors and other work conditions (i.e., workload, work duration, personal protective equipment, clothing) that contribute to the risk of heat-related illness;

(b) General awareness of personal factors that may increase susceptibility to heat-related illness including, but not limited to, an individual's age, physical fitness, degree of acclimatization, medical conditions, drinking water consumption, alcohol use, (caffeine use, nicotine use) previous heat-related illness, pregnancy, and use of medications that affect the body's responses to heat. This information is for the employee's personal use;

(c) The importance of removing heat-retaining personal protective equipment such as nonbreathable chemical resistant clothing during all breaks;

(d) The importance of frequent consumption of small quantities of drinking water or other acceptable beverages;

(e) The importance of acclimatization (~~(f)~~) requirements under WAC 296-307-09745, the concept of acclimatization, and the importance of the following considerations:

(i) Frequent cool-down rest periods;

(ii) Gradual increase of work duration in the heat; and

(iii) Employees are unable to build a tolerance to working in the heat during a heat wave;

(f) The importance of taking preventative cool-down rest periods when employees feel the need to do so in order to protect themselves from overheating;

(g) The mandatory cool-down rest periods under WAC 296-307-09747 when the outdoor temperature reaches or exceeds 90 degrees Fahrenheit;

(h) The employer's procedures for providing shade or other sufficient means to reduce body temperature, including the location of such means and how employees can access them;

(i) The different types of heat-related illness, the common signs and symptoms of heat-related illness; (~~and~~

~~(g)~~) (j) The importance of immediately reporting signs or symptoms of heat-related illness in either themselves or in co-workers to the person in charge and the procedures the employee must follow including appropriate first aid and emergency response procedures (~~(k)~~) ; and

(k) The employer's procedures for close observation of employees for signs and symptoms of heat-related illness.

(3) Supervisor training. Prior to supervising employees working in outdoor environments with heat exposure at or above the temperature levels listed in WAC (~~(296-307-09710(2))~~) 296-307-09730(2) Table 1, supervisors must have training on the following topics:

(a) The information required to be provided to employees listed in subsection (1) of this section;

(b) The procedures the supervisor must follow to implement the applicable provisions of WAC 296-307-097 through 296-307-09760;

(c) The importance of considering the use of engineering or administrative controls such as air-conditioning and scheduling work during the cooler hours of the day in order to reduce employees' exposure to heat;

(d) The procedures the supervisor must follow if an employee exhibits signs or symptoms consistent with possible heat-related illness, including appropriate first aid and emergency response procedures; and

~~((d))~~ (e) Procedures for moving or transporting an employee(s) to a place where the employee(s) can be reached by an emergency medical service provider, if necessary.