



## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

### PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS

Part 1910 of title 29 of the code of Federal Regulations is hereby amended as follows:

#### Subpart J — General Environmental Controls

##### § 1910.148 Heat Injury and Illness Prevention.

(a) *Scope and application.*

1. *The scope of the proposed standard applies to a wide range of sectors that include both indoor and outdoor work areas.*

(b) *Definitions*

1. *Indoor/indoors*
  - i. *Construction activity is considered to be work in an indoor environment when performed inside a structure after the outside walls and roof are erected.*
2. *Shade*
  - i. *Blockage of direct sunlight, such that objects do not cast a shadow in the area of blocked sunlight. Shade can be artificial or naturally occurring.*
3. *Vapor-impermeable clothing*
  - i. *Examples include encapsulating suits, various forms of chemical resistant suits, and other forms of non-breathable PPE.*
  - ii. *Vapor-impermeable clothing is also referred to as “vapor barrier” clothing. It is a type of protective clothing that employers may provide to employees to protect them from chemical, physical, or biological hazards for work tasks such as hazardous waste clean-up. Examples include metallic reflective clothing or chemical resistant clothing made from plastics such as vinyl or nylon-reinforced polyethylene.*
  - iii. *Materials made from 100% high density polyethylene (e.g., Tyvek®) that allow water vapor and gases to pass through are not vapor-impermeable, but lamination of the materials with some substances such as polyvinyl chloride (PVC) can change the breathability of the materials and render them vapor-impermeable.*
  - iv. *Since the proposed definition indicates “full-body clothing”, it would not include vapor-impermeable PPE that covers small areas of the body (e.g., gloves, boots, aprons, leggings, gauntlets).*
4. *Vehicle*
  - i. *Vehicle means a car, truck, van, or other motorized means of transporting people or goods.*



## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- ii. *Other examples may include a forklift, reach truck, tow truck, pallet truck, or bus, among others. In addition, vehicles may also include equipment such as a bulldozer, road grader, farm tractor, or crane. Under the proposed definitions, a vehicle would be a work area when a worker's work activities occur in the vehicle.*
- 5. *Work area*
  - i. *an area where one or more employees are working within a work site. This includes any area where an employee performs any work-related activity.*
  - ii. *A work area may be located at the employer's premises or other locations where an employee may be engaged in work-related activities or is present as a condition of their employment.*
- 6. *Work site*
  - i. *A physical location (e.g., fixed, mobile) where the employer's work or operations are performed. It includes outdoor and indoor areas, individual structures or groups of structures, and all areas where work or any work-related activity occurs (e.g., taking breaks, going to the restroom, eating, entering or exiting work).*
  - ii. *The work site includes the entirety of any space associated with the employer's operations (e.g., workstations, hallways, stairwells, breakrooms, bathrooms, elevators) and any other space that an employee might occupy in arriving, working, or leaving.*
  - iii. *A work site may or may not be under the employer's control.*

### **(c) Heat Injury and Illness Prevention Plan.**

- 1. *The employer must develop and implement a work site heat injury and illness prevention plan (HIIPP) with site-specific information.*
  - i. *If an employer has multiple work sites that are substantially similar, the HIIPP may be developed by work site type rather than by individual work sites so long as any site-specific information is included in the plan (e.g., phone numbers and addresses or site-specific heat sources).*
  - ii. *If an employer has developed a corporate HIIPP that includes information about job tasks or exposure scenarios that apply at multiple work sites, this information can be used in the development of HIIPPs for individual work sites.*
- 2. *The HIIPP must include:*
  - i. *A comprehensive list of the types of work activities covered by the plan. For example, a landscaping company could indicate that all employees conducting outdoor work at or above the initial heat trigger for at least 15 minutes in any 60-minute period (e.g., lawn care workers, gardeners, stonemasons, and general laborers) would be covered by the HIIPP.*





**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- about policies, programs, and protections implemented by their employers to protect them from hazardous heat exposure.*
- iv. *It is not OSHA's intent for employers to duplicate current effective HIIPPs, but each employer with a current HIIPP would have to evaluate that plan for completeness to ensure it satisfies all the requirements of this section.*
5. *The employer must designate one or more heat safety coordinators to implement and monitor the HIIPP. The identity of the heat safety coordinator(s) must be documented in any written HIIPP. The heat safety coordinator(s) must have the authority to ensure compliance with all aspects of the HIIPP.*
- i. *Any employee(s) capable of performing the role who receives the training required by proposed paragraphs (h)(1) and (2) can be designated heat safety coordinator(s).*
- ii. *This employee(s) does not need to be someone with specialized training.*
- iii. *The heat safety coordinator(s) could be a supervisor or an employee that the employer designates.*
- iv. *The heat safety coordinator(s) must have the authority to ensure compliance with all aspects of the HIIPP.*
- v. *The exact responsibilities of a heat safety coordinator(s) may vary based on the employer and work site.*
- vi. *Some possible duties of the heat safety coordinator(s) could include conducting regular inspections of the work site to ensure the HIIPP is being implemented appropriately and to monitor the ongoing effectiveness of the plan.*
6. *The employer must seek the input and involvement of non-managerial employees and their representatives, if any, in the development and implementation of the HIIPP.*
- i. *An employer could seek feedback from employees through a variety of means, including safety meetings, a safety committee, conversations between a supervisor and non-managerial employees, a process negotiated with the exclusive bargaining agent (if any), or any other similarly interactive process.*
- ii. *A large employer with many employees may find a safety committee with representatives from various job categories combined with anonymous suggestion boxes to be more effective than individual conversations between supervisors and non-managerial employees.*
7. *The employer must review and evaluate the effectiveness of the HIIPP whenever a heat-related illness or injury occurs that results in death, days away from work, medical treatment beyond first aid, or loss of consciousness, but at least annually. Following each review, the employer must update the HIIPP as necessary. The employer must seek input and involvement of non-managerial employees and their representatives, if any, during any reviews and updates.*





**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- v. *When there are multiple work areas at the same work site, the employer could use a single monitoring device to measure heat exposure for multiple work areas if there is no reasonable anticipation that the heat exposure will differ between work areas.*
  - vi. *employers could measure the exposure at the work area of the employee(s) reasonably expected to have the highest exposure and apply that value to all employees at the work site instead of measuring the exposure for each work area.*
2. *Frequency of outdoor monitoring: The employer must monitor with sufficient frequency to determine with reasonable accuracy employees' exposure to heat.*
- i. *Employers consulting forecasts would need to check the forecast as close to the start of the work shift as possible to determine whether and when the heat index at the work area may be at or above the initial or high heat triggers.*
  - ii. *Depending on the forecast or conditions at the work site, the employer then may or may not need to conduct further monitoring during the day.*
  - iii. *For example, the employer consulted the OSHA-NIOSH Heat Safety Tool before the work shift and it indicated that the heat index would exceed the initial heat trigger but not the high heat trigger during the last four hours of the work shift, the employer would need to either: 1) implement control measures in accordance with paragraph (e) for those four hours, or 2) consult the Heat Safety Tool again later in the day and implement control measures in accordance with paragraph (e) only for the hours during which real-time conditions reported by the application exceed the initial heat trigger (which may be more or less than four hours if the forecast earlier in the day underestimated or overestimated the heat index).*
  - iv. *Employers would need to use short-term forecasts (i.e., hourly) rather than long-term forecasts (e.g., weekly, monthly) to comply with proposed paragraphs (d)(1) and (d)(2).*
  - v. *Ultimately, the employer is responsible for ensuring that the controls required at the initial and high heat trigger are in place when those triggers are met, and they should make decisions regarding the frequency of monitoring with this in mind.*
  - vi. *Employers who conduct on-site monitoring in order to comply with paragraph (d)(1) will need to develop a reasonable measurement strategy that is adapted to the expected conditions.*
  - vii. *If forecasts provide no suggestion that the initial heat trigger could be reached during the work shift, an employer may not need to take any measurements.*
  - viii. *Where temperatures are expected to approach the initial or high heat triggers, several measurements may be necessary, particularly as the hottest part of the day approaches.*





**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- ix. *If there are multiple work areas where there is a reasonable expectation that employees are or may be exposed to heat at or above the initial heat trigger at a work site, the employer could conduct representative sampling instead of taking measurements at each individual work area. If using this approach, the employer would be required to sample the work area(s) expected to be the hottest.*
  - x. *If any changes occur that could increase employee exposure to heat (i.e., a change in production, processes, equipment, controls, or a substantial increase in outdoor temperature which has the potential to increase heat exposure indoors), proposed paragraph (d)(3)(iii) would require that the employer must evaluate any affected work area(s).*
  - xi. *Examples of changes that could increase employee exposure to heat include the installation of new equipment that generates heat in a work area that didn't previously have heat-generating equipment or a local heat wave that increases the heat index in a warehouse without air-conditioning.*
  - xii. *Employers would be required to involve non-managerial employees (and their representatives, if applicable) in the determination of which work areas have a reasonable expectation of exposing employees to heat at or above the initial heat trigger.*
  - xiii. *Employers would also be required to involve non-managerial employees (and their representatives, if applicable) in developing and updating the monitoring plan(s). One example of this involvement would be employees providing input in identifying processes or equipment that give off heat and times of the day or year when certain areas of the building feel uncomfortably hot and warrant monitoring.*
4. *Heat metric: The heat metric the employer chooses to monitor will determine the applicable initial and high heat triggers.*
    - i. *If the employer chooses to monitor heat index, they would be required to use the initial heat trigger of 80°F (heat index) and the high heat trigger of 90°F (heat index).*
    - ii. *If the employer chooses to use WBGT, they would be required to use the NIOSH Recommended Alert Limit (RAL) as the initial heat trigger and the NIOSH Recommended Exposure Limit (REL) as the high heat trigger. As outlined in paragraph (c), the employer would be required to identify which heat metric they are monitoring in their HIIPP.*
    - iii. *If they do not do this, proposed paragraph (d)(4) specifies that the initial and high heat trigger will be based on the heat index.*
  5. *Exemptions from monitoring.*
    - i. *Employers can choose to assume that their employees are exposed to heat at or above both the initial and high heat triggers.*





**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- ii. *In these cases, employers would not need to conduct monitoring, but they would be required to provide all controls outlined in paragraphs (e) and (f) while making this assumption. For the period of time that employers choose to make this assumption and are therefore exempt from monitoring requirements, they would not be required to keep records of monitoring data.*

**(e) Requirements at or above the initial heat trigger (80°F).**

1. *Timing: Requirements when employees are exposed to heat at or above the initial heat trigger.*
  - i. *The employer would only be required to provide the specified protections during the time period when employees are exposed to heat at or above the initial heat trigger. In many cases, employees may only be exposed at or above the initial heat trigger for part of their work shift.*
  - ii. *If their exposure is below the initial heat trigger from 9:00 a.m. until 12:00 p.m., and at or above the initial heat trigger from 12:00 p.m. to 5:00 p.m., the employer would only be required to provide the protections specified in this paragraph from 12:00 p.m. to 5:00 p.m.*
2. *Drinking water: The employer must provide access to potable water for drinking.*
  - i. *To ensure employees have sufficient drinking water whenever needed, the drinking water should be located as close as possible to employees, to facilitate rapid access. Employers could comply with this provision by providing water coolers or food grade jugs on vehicles if drinking water fountains or taps are not nearby, or by providing bottled water or refillable water bottles so that employees always have access to water.*
  - ii. *OSHA notes that water would not be readily accessible if it is in a location inaccessible to employees (e.g., the drinking water fountain is inside a locked building or trailer).*
  - iii. *Employers would be required to provide access to potable water that is suitably cool.*
  - iv. *OSHA has previously stated that to be suitably cool, the temperature of the water “must be low enough to encourage employees to drink it and to cool the core body temperature” (Field Sanitation, 52 FR 16050, 16087 (May 1, 1987)).*
  - v. *Employers could comply with this provision by providing drinking water from a tap or fountain that maintains a cooler temperature, providing water in coolers or by providing ice or ice packs to keep drinks cool.*
  - vi. *Employers could choose to offer electrolyte supplements or electrolyte-containing sports drinks, but they would not be required under the standard. Providing electrolyte supplements or sports drinks alone would not meet the proposed requirement.*



**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- vii. *Employers could be required to provide access to one quart of drinking water per employee per hour. Employers could comply with this provision by providing access to a drinking water tap or fountain that has a continuous supply of drinking water, or providing coolers or jugs that are replenished with water as the quantity diminishes.*
- viii. *OSHA is specifying the amount of water that employers need to provide to employees, not an amount that employees need to drink.*
- 3. *Break area(s) at outdoor work sites: Requirements for outdoor break areas when temperatures meet or exceed the initial heat trigger.*
  - i. *Employers would be required to provide one or more employee break areas at outdoor work sites that can accommodate the number of employees on break, is readily accessible to the work area(s) and has either shade (paragraph (e)(3)(i)), or air-conditioning if in an enclosed space (paragraph (e)(3)(ii)).*
  - ii. *Break areas that are not large enough to allow employees to move in and out freely or access necessary amenities, such as water and air-conditioning or shade, would also not be considered large enough to accommodate the number of employees on break.*
  - iii. *The proposal does not require that the break area(s) be able to accommodate an employer's entire workforce at the same time.*
  - iv. *The proposal would require that break areas be readily accessible to the work area(s).*
  - v. *OSHA does not expect the employer to have break areas located immediately adjacent to every employee and understands that exact distance may vary depending on factors such as the size and layout of the workplace, the number of employees, and the nature of the work being performed.*
  - vi. *For mobile work sites, such as in road construction or utility work, the employer would be expected to relocate the break area as needed to ensure it is readily accessible to employees or ensure each work site has its own break area for use.*
  - vii. *The provision would require that the break area have artificial shade (e.g., tent, pavilion) or natural shade (e.g., trees), **but not shade from equipment**, that provides blockage of direct sunlight and is open to the outside air.*
  - viii. *To ensure shade is effective, OSHA would require the shade to block direct sunlight for the break area. OSHA does not expect employers to measure shade density using shade meters or solarimeters.*
  - ix. *Shaded break area must be sufficiently open to the outside air to ensure that air movement across the skin (promoting the evaporation of sweat) can occur and to prevent the buildup of humidity and heat that can become trapped due to limited airflow and stagnant air.*



## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- x. *A pop-up canopy with one enclosed side would comply with the provisions for a shade structure; however, a closed trailer having four sides and a roof would not.*
  - xi. *Employers could also incorporate other cooling measures, such as fans or misting devices, in their shaded break area, although the proposed standard does not require them to do so.*
  - xii. *OSHA understands that in some mobile outdoor work environments shade structures may not be practical and employers may wish to utilize the flexibility of shade provided by large vehicles that are already on-site.*
  - xiii. ***Large vehicles** such as trucks and vans which are used to transport employees or goods to the work site, but not as part of the work itself could be used as shade as long as the vehicle is not running.*
  - xiv. *Shade provided by buildings could be used, provided it is reasonably accessible to employee work areas.*
  - xv. *A break area could be an area that has air-conditioning if that area is in an enclosed space like a trailer, vehicle, or structure.*
  - xvi. *Employers using air-conditioned vehicles as a break area would need to ensure that the vehicle remains readily available during work periods when the initial heat trigger is met or exceeded.*
4. *Break area(s) at indoor work sites: requirements for break areas at indoor work sites.*
- i. *The proposed rule would require that the employer provide one or more area(s) for employees to take breaks (e.g., break room) that is air-conditioned or has increased air movement and, if appropriate, de-humidification; can accommodate the number of employees on break; and is readily accessible to the work area(s).*
  - ii. *To ensure that the break areas are readily accessible, employers would need to make sure that employees can enter the break areas for heat-related breaks (e.g., keep the break room unlocked).*
  - iii. *OSHA is requiring de-humidification, if appropriate, in addition to increased air movement because humidity levels directly impact the body's ability to cool itself through evaporation.*
  - iv. *OSHA is only requiring de-humidification to be implemented in high temperature and high humidity environments when employers are relying on increased air movement to comply with this requirement.*
  - v. *Employers who operate in arid environments could use evaporative or “swamp” coolers as a form of air-conditioning.*
  - vi. *OSHA is not requiring employers install a permanent cooling system. The use of portable air-conditioning units or high-powered fans and portable dehumidifiers in designated break areas could also be used to comply with requirements for break areas under the proposed standard.*



**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- vii. *For indoor workplaces that experience temperatures above the heat triggers but have employees who spend part of their time in air-conditioned control booths or control rooms and part of their time in other, hotter areas of the facility, the employer could utilize the control booth/room as a break area and would not need to provide a separate break area for those employees.*
- viii. *These spaces would qualify as break areas for other employees provided that the requirements for size and location are met.*
- 5. *Indoor work area controls: requirements for indoor work area controls when temperatures meet or exceed the initial heat trigger.*
  - i. *OSHA understands that effective control methods can vary based on workspace circumstances and the nature of the heat source and is therefore giving employers options regarding indoor work area controls.*
  - ii. *Fans could be used to increase the air movement in the work area. Employers could use overhead ceiling fans, portable floor fans, or other industrial fans to comply. Employers could also increase the air flow using natural ventilation by opening doors and windows, or vents, to allow fresh air to flow into the space, but only when doing so would be comparable to the use of fans.*
  - iii. *Natural ventilation would not be acceptable if it does not produce air movement equivalent to a fan, or if the outdoor temperature is such that natural ventilation increases the work area temperature.*
  - iv. *If employees only work in a discrete area(s) of a facility, an employer may choose to only provide fans in those work areas. For example, the employer could place fans in the area where employees are stationed.*
  - v. *Employers using fans or relying on natural ventilation in humid environments would still be expected to decrease humidity levels where appropriate. OSHA is not proposing a specific temperature or humidity level be maintained in the work areas; however, employers should ensure that the combination of air movement and humidity level effectively reduces employees' heat strain.*
  - vi. *Portable air-conditioning units could be used throughout the facility to cool smaller areas where employees work.*
  - vii. *An employer could position portable evaporative coolers near the entrance of a loading dock to provide immediate relief from the heat when an employee is loading or unloading goods inside the building, or a machine shop may choose to use portable air-conditioners around the workstation to cool the employee.*
  - viii. *In indoor work areas with radiant heat sources, employers could choose to implement other measures that effectively reduce employee exposure to radiant heat in the workplace.*
  - ix. *Controls such as shielding or barriers, isolation, or other measures that effectively reduce employee exposure to radiant heat, in areas where employees*



## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

*are exposed to radiant heat created by heat-generating processes would be allowed.*

- x. *Options for complying with this proposed provision could include installing shielding or barriers that are radiant-reflecting to reduce the amount of radiant heat to which employees would otherwise be exposed; isolating the source of radiant heat, such as using thermal insulation on hot pipes and surfaces; increasing the distance between employees and the heat source; and modifying the hot process or operation.*
6. *Evaluation of fan use: Require employers using fans under certain conditions to determine if fan use is harmful.*
- i. *When ambient temperatures exceed 102°F (39.0°C), employers using fans to comply with paragraphs (e)(4) or (e)(5) would be required to evaluate the humidity levels at the work site and discontinue the use of fans if the employer determines that fan use is harmful.*
  - ii. *Researchers in the past 10 years have increasingly evaluated the conditions under which fan use becomes harmful, using both experimental and modeling approaches. Most of this work has assumed individuals are seated and at rest; to OSHA’s knowledge, only one paper has evaluated the threshold at which fans become harmful for individuals performing physical work.*
  - iii. *Researchers have demonstrated that neither heat index nor ambient temperature alone can be used to determine beneficial versus harmful fan use; instead, ambient temperature and relative humidity must both be known.*
  - iv. *The 102°F threshold in proposed paragraph (e)(6) is derived from Figure 4 of Foster et al. 2022a and represents the lowest ambient temperature at which fan use has been demonstrated to be harmful in the researchers' model.*
  - v. *The proposed rule does not specify how employers must make the determination whether fan use is harmful above this threshold. However, using the other results from Figure 4 of Foster et al. 2022a, OSHA has developed the following table which identifies scenarios where the agency believes fan use would or would not be harmful:*

	<b>Fan Speed: 3.5 m/s</b>	
<b>Ambient Temperature</b>	<b>Humidity Range: Fan Use Allowed</b>	<b>Humidity Range: Turn Off Fans</b>
102.2°F (39°C)	15-85%	< 15% or > 85%
104.0°F (40°C)	20-80%	< 20% or > 80%
105.8°F (41°C)	30-65%	< 30% or > 65%
107.6°F (42°C)	30-65%	< 30% or > 65%
109.4°F (43°C)	35-60%	< 35% or > 60%
111.2°F (44°C)	35-55%	< 35% or > 55%



**HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT**

113.0°F (45°C)	40-55%	< 40% or > 55%
>113.0°F (>45°C)	<b>Discontinue All Fan Use</b>	<b>Discontinue All Fan Use</b>

- vi. *Using the information from this table, an employer could identify the row most closely matching the ambient temperature of the work or break area and then find the corresponding humidity range for when fans are acceptable to use.*
- vii. *For example, if the ambient temperature of the work or break area is 104°F and the relative humidity is 50%, fans could be used. However, if the ambient temperature of the work or break area is 108°F and the relative humidity is 70%, fans should not be used.*
- viii. *OSHA understands the complexity and uncertainty around an evaluation of fan use and is therefore considering a simplified approach for employers to use. Factors such as acclimatization status, age, and medical history can influence sweat rates, which would influence when fan use is beneficial.*
- ix. *OSHA is requesting comments on this simplified approach and the assumptions underlying it.*
- x. *Foster et al. tested a fan with a velocity of 3.5 meters per second. OSHA has preliminarily determined that this is a reasonable assumption but acknowledges that varying wind velocity would also influence when fan use is beneficial.*
- 7. *Acclimatization: The proposed standard would establish requirements to protect new and returning employees who are not acclimatized.*
  - i. ***New employees:*** *The first option that an employer may choose, under proposed paragraph (e)(7)(i)(A) (**Option A**), is a plan that, at a minimum, includes the measures required at the **high heat trigger** set forth in paragraph (f), when the heat index is at or above the initial heat trigger during the employee’s first week of work.*
  - ii. *Proposed paragraph (f)(2) requires a minimum **15-minute paid rest break at least every two hours** in the break area that meets the requirements of the proposed standard, proposed paragraph (f)(3) requires **observation for signs and symptoms of heat-related illness**, and proposed paragraph (f)(4) requires providing **hazard alerts with specified information about heat illness prevention and how to seek help if needed**.*
  - iii. ***Option A*** *gives employers flexibility to choose an option that works best for their work site while still making sure that employees are informed, are under observation, and receive breaks, all of which will help better equip employers and employees to monitor and mitigate the effects of heat exposure in situations where the gradual acclimatization option may not be practical.*
  - iv. *If the temperature of the work site fluctuates such that the initial heat trigger is only exceeded for a portion (e.g., 2 hours) of the work shift on some or all of the*



**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

days during the initial week of work, employers choosing **Option A** would only be required to implement the requirements of paragraph (f) during those time periods.

- v. The second option that an employer may choose, under proposed paragraph (e)(7)(i)(B) (**Option B**), would require a gradual exposure to the heat at or above the **initial heat trigger** to allow for acclimatization to the heat conditions of the workplace.
- vi. The gradual exposure protocol would involve restricting employee exposure to heat to no more than 20% of a normal work shift exposure duration on the first day of work and increasing exposure by 20% of the work shift exposure duration on each subsequent day from day 2 through 4.
- vii. Employers may also fulfill this requirement through task replacement, whereby an employee completes another necessary task in an area that does not require exposure at or above the initial heat trigger.
- viii. If employers choose **Option B** for acclimatization, employers would need to coordinate the employees' heat exposure for those days with the parts of the day that are expected to meet or exceed the initial heat trigger.
- ix. **Returning employees:** The proposed rule would require that employers implement one of two options for an acclimatization protocol for returning employees who have been away from the job for **more than 14 days**, during their first week back on the job.
- x. The first option that an employer may choose, under proposed paragraph (e)(7)(ii)(A) (**Option A**), is an employer-developed plan, that at a minimum, includes the measures that would be required under proposed paragraph (f) whenever the **initial heat trigger** is met or exceeded, during the employee's first week of returning to work.
- xi. The second option that an employer may choose under proposed paragraph (e)(7)(ii)(B) (**Option B**), is a protocol that requires a gradual exposure to heat at or above the **initial heat trigger** to allow for acclimatization to the heat conditions of the workplace.
- xii. The gradual exposure protocol would restrict employee exposure to heat to no more than 50% of a normal work shift exposure duration on the first day of work, 60% on the second day of work, and 80% of the third day of work.
- xiii. Exception to acclimatization requirements. The proposed rule would set forth an exception to acclimatization requirements of (e)(7)(i) and (ii) if the employer can demonstrate that the **new employee consistently** worked under the **same or similar conditions** as the employer's working conditions within the **previous 14 days**.



## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- xiv. *Same or similar conditions* means that new employees must have been doing work tasks that are similar or higher in level of exertion to the tasks that are required in the new job and that they conducted these tasks in similar or hotter heat conditions than the new job (e.g., at or above the heat index for current conditions in the new job).
  - xv. OSHA intends **consistently** to mean the employee engaged in the task for at least two hours per day on a majority of the **preceding 14 days**.
  - xvi. To demonstrate that a **new employee** consistently worked under the same or similar conditions as the employer's working conditions within the prior 14 days, the employer could obtain information directly from the new employee to confirm the requirements of proposed paragraph (e)(7) are met considering the explanation of same or similar working conditions provided above.
  - xvii. The employer could ask questions verbally or in writing about the prior work (i.e., timing, location, duration, type of work).
8. *Rest breaks if needed: The proposed rule would require employers to allow and encourage employees to take paid rest breaks in break areas.*
- i. *Employees would be allowed to decide on the timing and frequency of unscheduled rest breaks to prevent overheating. However, unscheduled rest breaks must be heat-related (i.e., only if needed to prevent overheating).*
  - ii. *If the work process is such that allowing employees to leave their work station at their election would present a hazard to the employee or others, or if it would result in harm to the employer's equipment or product, the employer could require the employee to notify a supervisor and wait to be relieved, provided a supervisor is immediately available and relieves the employee as quickly as possible.*
  - iii. *An example of a scenario where an employee may decide they need a rest break is if the employee experiences certain symptoms that suggests the employee is suffering from excessive heat strain but does not have an HRI that would need to be addressed under proposed paragraph (g)(2) (e.g., excessive thirst, excessive sweating, or a general feeling of unwellness that the employee attributes to heat exposure).*
  - iv. *Employers can encourage employees to take rest breaks by periodically reminding them of that option.*
9. *Effective communication: proposed standard establishes requirements for effective communication at the initial heat trigger.*
- i. *Effective two-way communication provides a mechanism for education and notification of heat-related hazards so that appropriate precautions can be taken. It also provides a way for employees to communicate with the employer about*





**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

*signs and symptoms of heat-related illness, as well as appropriate response measures (e.g., first aid, emergency response).*

- ii. *In some cases, voice (or hand signals) may be effective, but if that is not effective at a particular workplace (e.g., if employees are not close together and/or not near a supervisor), then electronic means may be needed to maintain effective communication (e.g., handheld transceiver, phone, or radio).*
- iii. *If the employer is communicating with employees by electronic means, the employer must respond in a timely manner for communication to be effective (e.g., providing a phone number for employees to call would not be effective if no one answers or responds in a timely manner).*
- iv. *Employers must ensure that when it is necessary for an employee to leave a message (e.g., text) with the employer, the employer will respond, if necessary, in a reasonable amount of time.*

10. *Personal Protective Equipment (PPE): The proposed rule would require employers to maintain the cooling properties of cooling PPE **if** provided to employees.*

- i. *The proposed standard does not require employers to provide employees with cooling PPE.*
- ii. *However, if employers do provide cooling PPE, they must ensure the PPE's cooling properties are maintained at all times during use.*

**(f) Requirements at or above the high heat trigger (90°F): The proposed rule would establish requirements when employees are exposed to heat at or above the high heat trigger.**

1. *Timing: The employer would only be required to provide the protections specified in paragraph (f) during the time period when employees are exposed to heat at or above the high heat trigger.*
  - i. *If their exposure is below the high heat trigger from 9:00 a.m. until 2:00 p.m., and at or above the high heat trigger from 2:00 p.m. to 5:00 p.m., the employer would only be required to provide the protections specified in this paragraph from 2:00 p.m. to 5:00 p.m.*
  - ii. *Protective measures outlined in paragraph (e) Requirements at or above the initial heat trigger, would be required at any time when employees are exposed to heat at or above the initial heat trigger.*
2. *Rest breaks: The proposed rule specifies the minimum frequency and duration for rest breaks that would be required (i.e., 15 minutes every two hours) when the high heat trigger is met or exceeded and provides clarification on requirements for those rest breaks.*
  - i. *OSHA acknowledges uncertainties in determining a precise rest break frequency and duration, but preliminarily concludes that a minimum of a 15-minute rest break every two hours would be highly protective in many circumstances at or above the high heat trigger, while offering employers administrative convenience.*





**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- coordinator. If the employer chooses this option, proposed paragraph (f)(3)(ii) specifies that no more than 20 employees can be observed per supervisor or heat safety coordinator.*
- iii. Supervisors or heat safety coordinators would need to be in a position to observe the employees they are responsible for observing for signs and symptoms (e.g., in close enough proximity to communicate with and see) when observing for signs/symptoms.*
  - iv. The supervisor or heat safety coordinator could have other tasks or work responsibilities while implementing the observation role, but they must be able to be within close enough proximity to communicate with and see those they are observing and be able to check in with the employee regularly (e.g., every two hours).*
  - v. Employees who work alone at a work site do not have a co-worker, supervisor, or heat safety coordinator present who can observe them to determine if they are experiencing signs and symptoms of heat-related illness. For employees working alone at a work site, the employer would instead need to comply with proposed paragraph (f)(3)(iii) and maintain a means of effective, two-way communication with those employees and make contact with them at least every two hours. This means that employers must not only reach out to lone employees, but also receive a communication back from the employees. Receiving communication back from the employee allows the employee to report any symptoms. If no communication is received, this may be a sign that the employee is having a problem.*
- 4. Hazard alert: The proposed rule would require employers to issue a hazard alert to employees prior to a work shift or when employees are exposed to heat at or above the high heat trigger.*
- i. The hazard alert provision would require that employers provide information about prevention measures, including employees' right to take rest breaks if needed, at the employees' election, and the rest breaks required by paragraph (f)(2).*
  - ii. This requirement would also enable effective response in the event of a heat emergency by requiring employers to remind employees in advance of its heat emergency procedures.*
  - iii. The hazard alert would provision would require that prior to the work shift or upon determining the high heat trigger is met or exceeded, the employer must notify employees of specific information relevant to the prevention of heat hazards. Specifically, the employer would be required to notify employees of the following: the importance of drinking plenty of water; employees' right to, at employees' election, take rest breaks if needed and the rest breaks required by paragraph (f)(2); how to seek help and the procedures to take in a heat*



**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- emergency; and for mobile work sites, information on the location of break area(s) required by paragraph (e)(3) or (e)(4) and drinking water required by paragraph (e)(2).*
- iv. The hazard alert provision would require the employer to issue the hazard alert prior to the work shift or upon determining the high heat trigger is met or exceeded. However, issuing the alert prior to the start of the work shift would not be required unless exposures will be at or above the high heat trigger at the start of the work shift.*
  - v. If the start of the work shift is below the high heat trigger and the hazard alert is not issued at the start of the work shift, then the hazard alert must be issued when the high heat trigger is met and ideally before exposure occurs.*
  - vi. For example, if a work shift runs from 8 a.m. to 5 p.m. and the high heat trigger is not met until 10 a.m., the employer must either issue the alert at the beginning of the work shift, or issue the alert when the high heat trigger is met at 10 a.m.*
  - vii. If an employer regularly communicates with an employee via a particular means of communication and uses that form of communication to issue the alert, then the employer can presume the notification was received.*
  - viii. Employers could satisfy the requirements of this provision by posting signs with the required information at locations readily accessible and visible to employees. For example, some employers may choose to post signs at the entrance to the work site.*
  - ix. Employers may also satisfy the hazard alert notification requirement by issuing the alert electronically (e.g., via email, text message) or through verbal means (e.g., an in-person meeting, radio or voicemail).*
- 5. Excessively high heat areas: The proposed rule would require that employers place warning signs at indoor work areas with ambient temperatures that regularly exceed 120°F.*
- i. The term "regularly" means a pattern or frequency of occurrence rather than isolated incidents. This would mean that the indoor work areas experience temperatures exceeding 120°F on a frequent or recurring basis, such as daily during certain seasons or under specific operational conditions.*
  - ii. If, while monitoring, an employer determines temperatures in an indoor work area regularly exceed the 120°F threshold, then the employer would need to ensure that warning signs are placed at that work area to alert employees to the potential hazards associated with such extreme temperatures.*
  - iii. The warning signs must be legible, visible, and understandable to employees entering the work area.*
  - iv. Specifying the requirement for warning signs ensures that all employees and contractors at the work site are aware of areas with excessively high heat.*



## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- v. *The warning signs must be legible, visible, and understandable to employees entering the work areas.*
- vi. *The sign must be in a location that employees can clearly see before they enter the excessively high heat area.*
- vii. *To maintain visibility of the warning signs, employers must ensure that there is adequate lighting in the area to read the signs and that the signs are not blocked by items that would prevent employees from seeing them.*
- viii. *The proposed standard does not specify contents of the sign, but signs could include a signal word such as “Danger”, the hazard (e.g., “High Heat Area”), possible health effects (e.g., May Cause Heat-Related Illness or Death), information pertaining to who is permitted to access the area (e.g., Authorized Personnel Only), and what precautions entrants would have to take to safely enter the area.*
- ix. *Therefore, the signs must be printed in a language or languages that all potentially exposed employees understand.*
- x. *If it is not practical to provide signs in a language or languages spoken by all employees, employers still must ensure all employees understand what the signs mean. Employers could do this by training on what the warning signs mean and providing those employees with information regarding the extent of the hazardous area as indicated on the signs.*

**(g) Heat illness and emergency response and planning: The proposed rule would establish requirements for heat illness and emergency response and planning.**

- 1. *As part of their HIIPP, the employer must develop and implement a heat emergency response plan.*
  - i. *Employer would be required to develop and implement a heat emergency response plan as part of their HIIPP and specifies the elements that would be required in an employer’s emergency response plan.*
  - ii. *Only one plan would be required for each employer (i.e., for the whole company). However, if the employer has multiple work sites that are distinct from each other, the plan would be tailored to each work site or type of work site.*
  - iii. *Employers would be required employers to include a list of emergency phone numbers (e.g., 911, emergency services) in their emergency response plan. Examples of other phone numbers for assistance aside from 911 that employers might include in the plan are those for on-site clinicians or nurses.*
  - iv. *Employers would be required to include a description of how employees can contact a supervisor and emergency medical services in their emergency response plan.*



**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- v. *The proposed rule would require the emergency response plan to include the individual(s) designated to ensure that heat emergency procedures are invoked when appropriate.*
  - vi. *The proposed rule would require the emergency response plan to have a description of how to transport employees to a place where they can be reached by an emergency medical provider.*
  - vii. *The proposed rule would require the emergency response plan to include clear and precise directions to the work site, including the address of the work site, which can be provided to emergency dispatchers.*
  - viii. *The proposed rule would require the emergency response plan to include procedures for responding to an employee experiencing signs and symptoms of heat-related illness, including heat emergency procedures for responding to an employee with suspected heat stroke.*
  - ix. *The proposed standard does not require employers to develop a plan for each work site. However, the employer's emergency response plan(s) must contain all the information required by paragraphs (g)(1)(i)-(vi), some of which will vary based on work site.*
2. *If an employee is experiencing signs and symptoms of heat-related illness.*
- i. *The proposed rule would require employers to relieve from duty employees who are experiencing signs and symptoms of heat-related illness. Relieving the employee from duty would allow the employer to address the heat-related illness according to the procedures outlined in proposed paragraphs (g)(2)(ii)-(v).*
  - ii. *The proposed rule would require that employers monitor employees who are experiencing signs and symptoms of heat-related illness.*
  - iii. *The proposed rule would require employers to ensure that employees who are experiencing signs and symptoms of heat-related illness are not left alone.*
  - iv. *The proposed rule would require employers to offer employees who are experiencing signs and symptoms of heat-related illness on-site first aid or medical services before ending any monitoring.*
    - 1. *This provision would not add new requirements for staff to be fully trained in first aid. Employers would offer the first aid or medical resources they have available to employees on site to the extent already required by first aid standards.*
  - v. *The proposed rule would require employers to provide employees who are experiencing signs and symptoms of heat-related illness with means to reduce their body temperature.*
    - 1. *Examples of means to reduce body temperature are instructing those employees to remove all PPE and heavy outer clothing (e.g., heavy/impermeable protective clothing) and moving them to a cooled or*



## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- shaded area (e.g., the break areas required under paragraphs (e)(3) and (4)) where they can sit and drink cool water.*
2. *If the employer has cooling PPE (e.g., cooling bandanas or neck wraps, and vests and cooling systems such as hybrid personal cooling systems (HPCS), and fans) available on site, those could also be used to cool employees as well.*
  3. *If an employee is experiencing signs and symptoms of a heat emergency.*
    - i. *The proposed rule would require employers to take immediate actions to reduce the employee's body temperature before emergency medical services arrive.*
      1. *Immersion in ice water or cold water has been reported to have the fastest cooling rates. However, OSHA realizes that immersing an employee in a tub of ice/cold water is not an option that will be available at most work sites.*
      2. *Other possible approaches are treatment by dousing with cold water and rubbing of ice bags over major muscle groups, or the tarp-assisted cooling oscillation (TACO) method that involves wrapping the affected individual in a tarp with ice.*
    - ii. *The proposed rule would require employers to contact emergency medical services immediately for employees experiencing signs and symptoms of a heat emergency, and proposed paragraph (g)(3)(iii) would require employers to also perform the activities described in paragraphs (g)(2)(i) through (g)(2)(iv) to aid an employee during a heat emergency until emergency medical services arrives.*
- (h) Training: the proposed standard establishes requirements for training on HRI prevention.**
1. *Initial training.*
    - i. *The proposed rule would require employers to ensure that each employee receives, and understands, training on the topics outlined prior to the employee performing any work at or above the initial heat trigger, which include heat stress hazards.*
      1. *There are three major types of hazards which contribute to heat stress: (1) environmental factors such as high humidity, high temperature, solar radiation, lack of air movement, and process heat (i.e.,*
      2. *radiant heat produced by machinery or equipment, such as ovens and furnaces), (2) use of personal protective equipment or clothing that can inhibit the body's ability to cool itself, and (3) the body's metabolic heat (i.e., heat produced by the body during work involving physical activity and exertion).*
    - ii. *The proposed rule would require employers to provide training on heat-related injuries and illnesses. Examples of heat-related illnesses include heat stroke, heat exhaustion, heat cramps, heat syncope, and rhabdomyolysis.*







**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT

- applicable requirements of this standard, including the policies and procedures for monitoring heat conditions.*
- ii. The proposed rule would require the employer to train supervisors and heat safety coordinators on procedures they would have to follow if an employee exhibits signs and symptoms of heat related illness.*
  - 3. Annual refresher training: The proposed rule would require the employer to ensure that each employee receives annual refresher training.*
    - i. This provision would also require that each supervisor and heat safety coordinator additionally receive annual refresher training.*
    - ii. The employer must conduct the annual refresher training before or at the start of the heat season. This can vary depending on the weather conditions in the geographic region where the employer is located.*
      - 1. OSHA intends this requirement to be flexible and to allow employers leeway to determine the start of the heat season, so long as those determinations are reasonable.*
  - 4. Supplemental training: The proposed rule specifies when supplemental training would be required.*
    - i. This provision would require the employer to ensure that employees promptly receive and understand additional training whenever changes occur that affect the employee's exposure to heat at work (e.g., new job tasks, relocation to a different facility or area of a facility).*
    - ii. This provision would require that each employee promptly receives, and understands, additional training whenever changes occur in policies and procedures.*
    - iii. This provision would require that each employee promptly receives, and understands, additional training whenever there is an indication that an employee(s) has not retained the necessary understanding.*
    - iv. This provision would require that each employee promptly*
    - v. receives, and understands, additional training whenever a heat-related injury or illness occurs at the work site that results in death, days away from work, medical treatment beyond first aid, or loss of consciousness.*
  - 5. Presentation: The propose rule would require that all training is provided in a language and literacy level each employee, supervisor, and heat safety coordinator understands.*
    - i. The employer is not required to provide training in the employee's preferred language if the employee understands both languages; as long as the employee is able to understand the material in the language used, the intent of the proposed standard would be met.*



**AGC**  
THE CONSTRUCTION  
ASSOCIATION

## **HEAT INJURY AND ILLNESS DISCUSSION DOCUMENT**

- ii. *OSHA does not mandate testing or specific modes of ascertaining employee understanding of the training materials, but expects that all required training will include some measure of comprehension.*
  - iii. *The proposed provision does not specify the manner in which training would be delivered. Employers may conduct training in various ways, such as in-person (e.g., classroom instruction or informal discussions during safety meetings/toolbox talks), virtually (e.g., videoconference, recorded video, online training), using written materials, or any combination of those methods.*
  - iv. *This paragraph would require the employer to provide an opportunity for employees to ask questions regardless of the medium of training.*
  - v. *If it is not possible to have someone present or available during the training, employers could provide the contact information of the individual that employees can contact to answer their questions (e.g., an e-mail or telephone contact).*
- (i) Recordkeeping: The proposed rule would require certain employers to create written or electronic records of on-site temperature measurements and establishes the duration of time that employers must retain those records.**
- 1. *Specifically, it applies to employers that have indoor work areas only where there is a reasonable expectation that employees are or may be exposed to heat at or above the initial heat trigger, and that are therefore required to conduct on-site temperature measurements.*