OSHA's Regulation on Heat Illness and Injuries

An Update and Peak "Under the Hood"

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Is This a Problem?

REGULATIONS | SAFETY & COMPLIANCE

Contractor Fined After Worker Dies of Heat Illness in Alabama

Don McLoud
Feb 12, 2024

Source: Getty Images

A contractor faces penalties of $12,098 after a worker died from heat illness while working on a construction site in Madison, Alabama, in extreme temperatures.

The 33-year-old worker had been an employee of XXX General Contractor for only three days on July 28 when he arrived on the jobsite. He was setting concrete forms by hand. He began stumbling, so a foreman directed him to sit in his truck to cool off.

Temperatures that day reached 94 degrees with 85% humidity, leading to a heat index of 107 degrees. According to OSHA, workers had been exposed to extreme heat during 10-hour shifts for the two previous days. On July 26, a worker experienced heat illness, including heat cramps and vomiting. On July 27, a worker suffered heat exhaustion, reported it to his foreman and left work early.

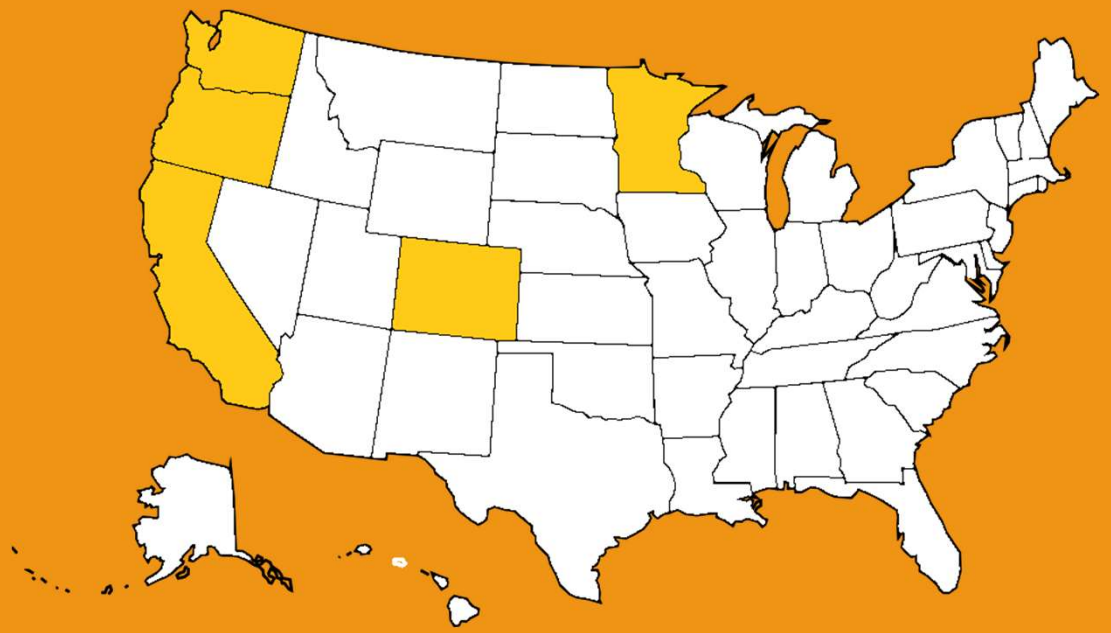
On the day of his death, the worker began smoothing out the curbing. At 2 p.m., he was seen staggering, and a lead man assisted him to his vehicle, applied ice, and called emergency services. He was also seen talking incoherently and vomiting. He later became unresponsive. He died two hours after being admitted to the hospital.

Where Are We?

- October 27, 2021 - OSHA published an Advance Notice of Proposed Rulemaking (ANPRM) for Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings
- Late 2021 – May 2022 – OSHA Conducts Outreach to Stakeholders
- May 2022 – OSHA Creates a Heat Injury and Illness Workgroup under NACOSH and received recommendations from members.
- August 2022 – OSHA Begins Small Business Advocacy Review Panel (SBAR) Process

Five States Have Adopted Heat Standards

- Minnesota
- California
- Washington
- Oregon
- Colorado



What did we learn from the SBREFA Process

- OSHA Created a Small Entity Representatives (SER) Background Document to inform the SBAR Panel

  "OSHA envisions a programmatic standard that could require employers to develop a heat injury and illness prevention plan to evaluate and control heat hazards in their workplace. The standard could allow for flexibility for employers to customize the plan to their workplace but could also include some elements that set specifications related to heat exposure levels."

Potential Elements and When Required

Potential Elements	All Covered Workplaces	At or Above Initial Heat Trigger	At or Above High-Heat Trigger
Hazard identification and monitoring (based on forecast or workplace measurements)	✹	✹	✹
Drinking water	✹	✹	✹
Emergency response procedures	✹	✹	✹
Training for employees and supervisors	✹	✹	✹
Heat injury and illness prevention plan	✹	✹	✹
Recordkeeping	✹	✹	✹
Shade or cool-down area		✹	✹
Indoor air movement and humidity control		✹	✹
Acclimatization for new or returning workers, and during heat waves		✹	✹
Rest breaks (as needed or 10 min every 2 hours)		✹	✹
Effective communication means with employees		✹	✹
Rest breaks (minimum 15 min every 2 hours)		✹	✹
Supervisor or buddy system to observe for signs and symptoms			✹*
Pre-shift meetings or employee notifications			✹

✹ & during acclimatization

Scope

OSHA is considering coverage of outdoor and indoor workers in any/all General Industry, Construction, Maritime, and Agriculture sectors where OSHA has jurisdiction.

OSHA is considering exempting short exposures to hazardous heat (e.g., 15 minutes of work every 60 minutes)

Heat Injury and Illness Prevention Program

- May require employers to create a written Heat Injury and Illness Prevention Program (HIIPP), developed with the input of employees:
- Identify when heat hazards including procedures for environmental monitoring and identifying work processes/factors that increase the likelihood of injury and illness
- Engineering controls
- Administrative controls, including drinking water, rest breaks in a cool and/or shaded area, acclimatization, and supervision for those with symptoms

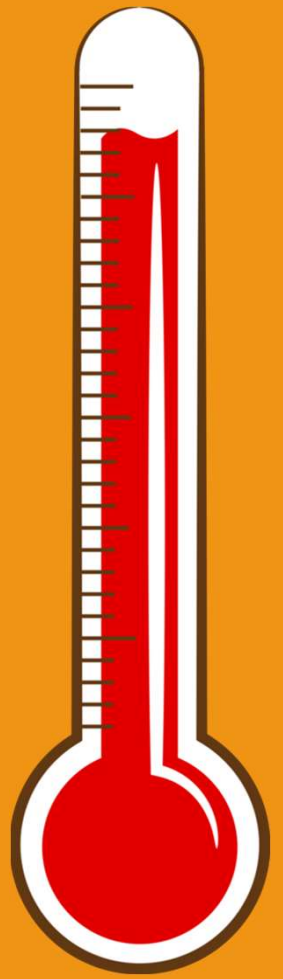
Heat Injury and Illness Prevention Program
(continued)

- Procedures for high heat
- Procedures when exhibiting symptoms of illness, and emergency response
- Training employees and supervisors
- Selection of individual(s) to implement the HIIPP, including environmental monitoring

Hazard Identification and Assessment

Possible Methods

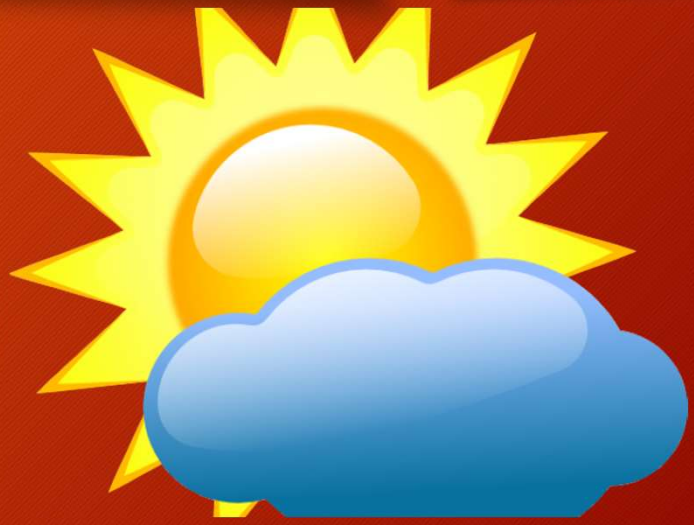
- Ambient temperature using a common thermometer
- Heat index combines ambient temperature and humidity “feels like” or “apparent” temperature
- WBGT incorporates air temperature, wind, radiant heat, and humidity



Outdoor Worksites

Options Under Review

- Track Local Forecasts
  - In dry climates (less than 30% humidity) may rely on ambient temperature
- Measure Work Area Heat Conditions
  - Track every day or when the forecast meets or exceeds relevant triggers
  - Use heat and humidity to calculate the index
  - Employers may have the option to use wet bulb measurements periodically near the work area
  - Employers may “assume” the worksite meets triggers and comply with prescribed control



Heat Trigger Options

	Initial Heat Triggers			High-Heat Triggers		
	Ambient	Heat Index	WGBT	Ambient	Heat Index	WGBT
When Using a Forecast	78˚F or higher	76˚F or higher	N/A	86˚F or higher	83˚F or higher	N/A
When Measuring Onsite	82˚F or higher	80˚F or higher	ACHIH AL or NIOSH RAL	90˚F or higher	87˚F or higher	ACHIH TLV or NIOSH REL

AL = Action Limit
RAL = Recommended Action Limit
TLV = Threshold Limit Value
REL = Recommended Exposure Limit

High Heat Triggers

In addition to high temperatures, OSHA is considering requiring high-heat procedures under the following circumstances:

- When workers wear vapor-impermeable clothing or additional clothing layers;
- When there is a “Heat Wave,” the National Weather Service issues a heat advisory, or daily temperatures exceed 90° F.

Hazard Prevention and Control Measures

Engineering Controls in Outdoor Environments

- Cool-down areas/Cooling Measures, such as:
  - Fans
  - Misting machines
  - Shade (complete blockage of the sun; large enough for on-site employees)
  - Air-conditioning (large enough for on-site employees)
- Vehicle Cabs

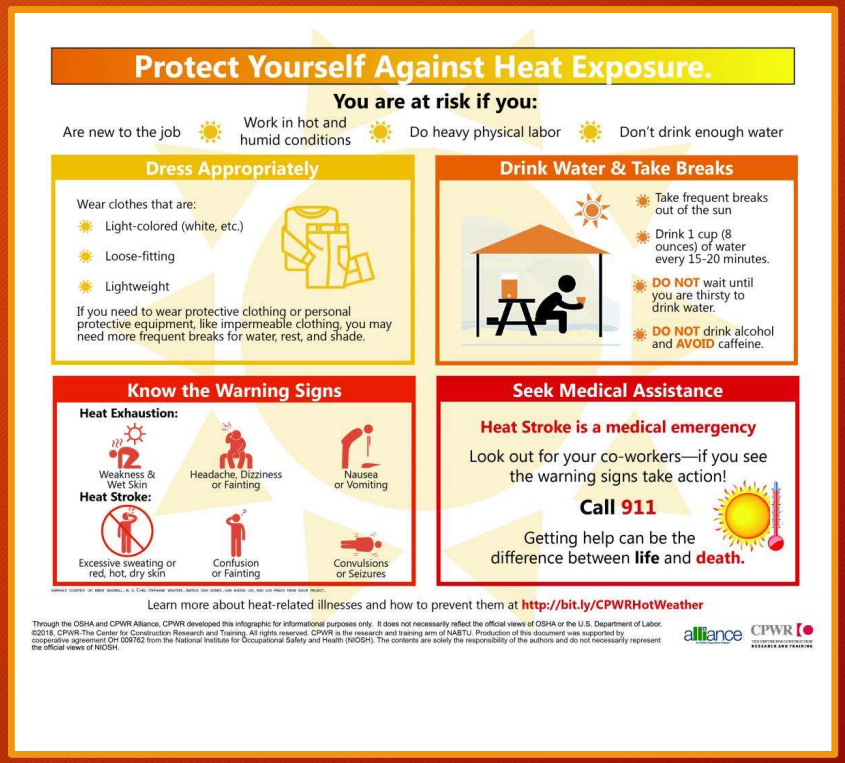
Hazard Prevention and Control Measures

Administrative Controls

- Duration
- Frequency
- Intensity

Including:

- Training
- Warnings



Hazard Prevention and Control Measures

Administrative Controls - Water

- 32 ounces/1 quart per hour
- “Suitably cool”
- Close as practical
- Available at all times
- Ample opportunities to drink

Hazard Prevention and Control Measures

Unacclimatized Workers

New, returning, and during a heat wave

70% of Deaths occur during the first few days of work

OSHA Mandated Plan

Training before work begins

Increased monitoring/com-munication during first week of work

Hazard Prevention and Control Measures *(continued)*

- **Unacclimatized Workers**
- **Employer Protocol**
- Consider Tasks
- Consider Clothing & PPE
- Consider Environmental Factors
- Use OSHA Minimum Protocol

Hazard Prevention and Control Measures *(continued)*

Unacclimatized Workers

Acclimatization Schedule

Rule of 20% for New Workers

Rule of 50% for Returning Workers

Consider Environmental Factors

Use OSHA Minimum Protocol

Hazard Prevention and Control Measures

Rest-Work-Rest

- Required breaks in a cool or shaded area
- Near drinking supplies
- *Near restroom facilities*
- As needed *or* 10 minutes every 2 hours; more time in high temperatures

Supervision and Observation

- At initial heat trigger, supervisors required to maintain communication (voice, observation, electronic means)
- At high-heat trigger, two possibilities
  1. Buddy System
  2. Supervisor Observation (20 employees maximum)

Other Administrative Controls

- Altered Work Schedules (times of day)
- When High-Heat Level Is Triggered
  - Notify workers
  - Hold pre-shift meetings
  - Remind workers of the need for- and location of water, breaks, and cooling
  - Designate workers responsible in a medical emergency (e.g. 911)

Personal Protective Equipment

OSHA Considering Two Requirements:

1. Employers to consider PPE hazards during risk assessment
2. Take additional precautions if PPE will increase heat hazard

PPE can be used to provide cooling benefits

1. May require use of PPE with cooling properties or wetted garments
2. Cooling properties must be maintained

Medical Treatment and Emergency Response

- May require written medical treatment and emergency response procedures to include:
  - Communication with sites
  - Communication devices
  - Supervisory contact with emergency medical services
  - Emergency transport
  - Procedures to remove employees with symptoms and lower body temperatures
  - First-aid, return to work or leave the work site

Worker Training

- Comprehensive training required covering:
  - Heat stress hazards
  - Types of injuries and illnesses
  - Risk factors
  - Signs and symptoms
  - First-aid and emergency response
  - Proper precautions
  - Location of water, cool-down areas, observation, communications, emergency medical services

Worker Training *(continued)*

- Importance of water consumption and breaks
- Proper use of PPE
- Employer acclimatization procedures
- Need to follow company procedures and policies
- Environmental monitoring program
- Location of written training materials

Frequency and language of training

Supervisor Training

All the worker training topics, plus:

- Implementing this OSHA standard
- Procedures if employees exhibit heat illness or injury symptoms
- Procedures for environmental monitoring

Recordkeeping

OSHA is considering requiring employers to maintain additional heat-specific records beyond what is already required by existing recordkeeping standards:

- Environmental Monitoring Data
- Heat-related Injuries and Illnesses
- Acclimatization Records

Communication on Multi-Employer Sites

This standard could require employers to:

- Establish and implement procedures to effectively communicate and coordinate with other employers at the same worksite;
- Describe procedures to protect ALL employees on site (including vendors, independent practitioners, etc.)
- Description of how their plan coordinates with that of the host employer

What's Next?

1. OSHA will issue a proposed rule.
2. The public will be invited to comment on it.
3. OSHA will consider the public comments (and perhaps revise the rule).
4. The rule will be sent to the White House Office of Information and Regulatory Affairs for review.
5. While the public will not see the proposed rule, a final period for comment will be opened.
6. OSHA will publish the final rule.

Thank You!

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