HEAT STRESS

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BACKGROUND

Pursuant to Section 5(a)(1) of the OSH Act, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm.

Emergency Preparedness Guides are based on presently available information. The procedures and practices discussed in Emergency Preparedness Guides may need to be modified when additional, relevant information becomes available or when OSH Act standards are promulgated or modified.

WORKING IN OUTDOOR AND INDOOR HEAT ENVIRONMENTS

Most outdoor fatalities, 50% to 70%, occur in the first few days of working in warm or hot environments because the body needs to build a tolerance to the heat gradually over time. Lack of acclimatization represents a major risk factor for fatal outcomes.

Occupational risk factors for heat illness include heavy physical activity, warm or hot environmental conditions, lack of acclimatization, and wearing clothing that holds in body heat.

OSHA CITATIONS

Roofing Contractor Cited for Heat-related Illness

Tri-State Roofing and Sheet Metal Co. has been issued one general duty clause citation and one serious citation

The Heat is Off... Review Commission Reverses Decision in Heat Stress Case

Monday, April 15, 2019

On February 28, 2019, the Occupational Safety and Health Review Commission (OSHRC) issued a much anticipated decision in the case of *Secretary of Labor v. A.H. Sturgill Roofing, Inc.* The case involved two citations, one brought by OSHA under Section 5(a)(1), the general duty clause, that alleged Sturgill exposed its employees to "excessive heat"

MORE CITATIONS

Heat-Related Death in Nebraska Leads to OSHA Citation for Maine Employer

By Guy Burdick | Nov 7, 2019 | Contractor Safety, Enforcement and Inspection, Injuries and Illness

Preventing Heat Illness

OSHA instructed Smith Mount Investments to establish a heat stress management program based on guidelines from the agency and the National Institute of Occupational Safety and Health (NIOSH).

An effective heat stress management program includes:

- Determining whether employees are exposed to heat hazards based on temperature and humidity, clothing, and workload;
- Providing employee training on the health effects of heat stress, symptoms of heat-related illnesses, and methods of preventing such illnesses;
- Implementing procedures for acclimatizing employees who are unaccustomed to working in hot conditions;
- Implementing a work/rest regimen to allow workers to become acclimatized to extreme heat;
- Screening employees for health conditions that could become aggravated by hot conditions;
- Rescheduling work for cooler periods of the day;
- Providing equipment such as cooling vests and cooling bandanas to prevent overheating;
- Providing shaded or air-conditioned areas for breaks;
- Utilizing heat assessment tools like NIOSH's Heat app; *and*
- Providing effective means of communications and utilizing methods for contacting emergency responders, especially for worksites in rural areas.

CITATIONS AND LAWSUITS

Postal Workers Are Dying In Heat Waves.

Grumman Postal Vehicles 'An Easy Bake Oven On Wheels'
'This Is Costing The Company Money We Don't Have'
For USPS, 'A Lesson Unlearned'

MAY 25, 2017

$1.5 Million Jury Verdict Entered After Worker Dies of Heat Exhaustion

https://www.huffpost.com/entry/postal-workers-heat-waves-climate-change_n_5efcc1ddc5b6ca9709180c2d

USEFUL LETTER OF INTERPRETATION

OSHA does not have a specific regulation regarding heat stress. However, feasible and acceptable methods can be used to reduce heat stress hazards in workplaces. These include, but are not limited to:

1. Permitting workers to drink water at liberty;
2. Establishing provisions for a work/rest regimen so that exposure time to high temperatures and/or the work rate is decreased;
3. Developing a heat stress program which incorporates the following:
    a. A training program informing employees about the effects of heat stress, and how to recognize heat-related illness symptoms and prevent heat-induced illnesses;
    b. A screening program to identify health conditions aggravated by elevated environmental temperatures;
    c. An acclimation program for new employees or employees returning to work from absences of three or more days;
    d. Specific procedures to be followed for heat-related emergency situations;
    e. Provisions that first aid be administered immediately to employees displaying symptoms of heat-related illness.

We have included a Heat Stress Card (OSHA Publication 3154), which you may find interesting. You may also find additional outreach materials on heat stress on OSHA's web page at http://www.osha.gov/SLTC/heatstress/index.html.

Although OSHA does not have a specific regulation covering heat stress hazards, the "General Duty Clause," Section 5(a)(1) of the Occupational Safety and Health Act of 1970 (the Act), requires each employer to, **"furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm."** OSHA has previously used the General Duty Clause to cite employers that have allowed employees to be exposed to potential serious physical harm from excessively hot work environments.

WORK REST CYCLES

Shorten work periods and increase rest periods:

- As temperature rises
- As humidity increases
- When sun gets stronger
- When there is no air movement
- When protective clothing or gear is worn
- For heavier work

Heat Index	Risk Level	Protective Measures
Less than 91°F	Lower (Caution)	Basic heat safety and planning
91°F to 103°F	Moderate	Implement precautions and heighten awareness
103°F to 115°F	High	Additional precautions to protect workers
Greater than 115°F	Very High to Extreme	Triggers even more aggressive protective measures

ASSESSMENT OF ENVIRONMENTS

3rd floor form deck in DC

4th floor occupied building

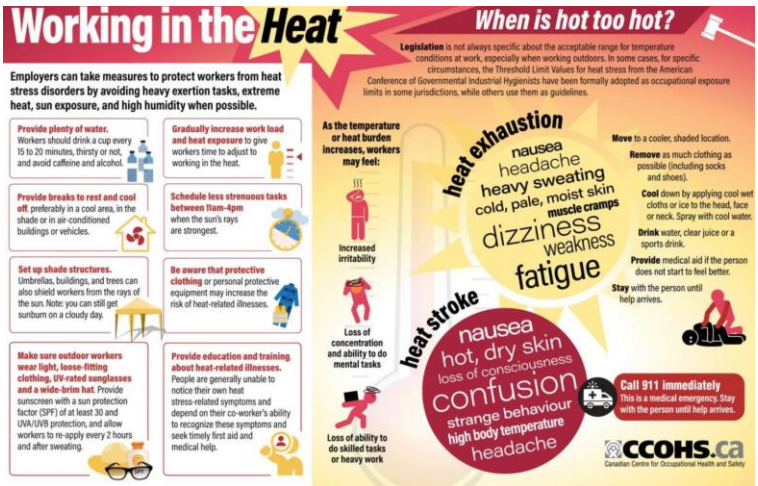
ASSESSMENT OF ACTIVITIES

TRAINING

Content for Training

- General explanation of the hazard
  - What is it, when does it apply
- Signs and Symptoms
  - Heat Stroke and Heat Exhaustion
- Planning for the hazard
  - Knowing heat stress sensitive acitvites
  - Planning for the environment
- Engineering Controls
  - Improve airflow, shade, temperature, etc
- Work Practice Controls
  - Work-rest Cycles, Work shift changes, etc.

USEFUL INFOGRAPHICS



COVID IMPACT ON HEAT STRESS

Health Concerns with Mask Usage

- Hinders adequate intake of Oxygen and exhalation of Carbon Dioxide
- Increases heart rate and blood pressure
- Elevates core body temperature
- Increases fluid loss by excessive sweating
- Lowers ability to drink water (and electrolytes) to replenish fluid loss
- Increases respiratory hazards to individuals who smoke or have underlying medical conditions, such as diabetes, COPD, asthma, heart conditions, etc.

HEAT STRESS VS COVID

Half-Face

N95

KN95

Cloth

Gaiters

HEAT STRESS IMPROVEMENTS

Heat Index	Risk Level	Protective Measures
<90°F	Low	• Ensure adequate amount of drinking water is provided for all employees including subcontractors and DAVIS personnel • Plan work around possible high heat periods of the workday • Strategically locate large fans in areas with minimal air flow and/or around high-density work areas
91°F to 100°F	Moderate	Follow previous requirements listed above as well as: • Provide adequate drinking water for all employees • Remind workers to drink water often (about 4 cups/hour) • Ensure that adequate medical services are available (first aid) • Review heat-related illness topics; how to recognize, prevent and what to do if someone gets sick • Schedule frequent breaks in cool, shaded areas if possible
101°F to 105°F	High	Follow previous requirements listed above as well as: • Alert all workers of high-risk conditions prior to each shift • Implement work/rest cycle for all employees • 1 hour of work = 15 minutes of rest • Require tents, shaded areas or air-conditioned spaces for workers • Ensure adequate amount of cold drinking water is provided for subcontractor and DAVIS personnel • Require large fans for areas that have restricted air flow • Use cooling techniques if possible, such as misting fans • Reschedule activities to a time when heat index is lower, if possible • Have electrolyte replenishing liquids available • Face coverings may be removed when not working within 6 feet of others • High visibility safety vests are optional unless required per OSHA
106°F to 110°F	Very High	Follow previous requirements listed above as well as: • Implement work/rest cycle for all employees • 1 hour of work = 30 minutes of rest • Must have minimum 3 bags of ice or cold packs available • Use cooling techniques if possible, such as misting fans
>111°F	Extreme	• Absolutely **NO** work performed

REASONABLE PREVENTION PRODUCTS

Outdoor Misting System, White (50ft)

$67.99 Misting System

The Outdoor **Misting** Cooling System has multiple diffe

SUNHEAT CoolZone 51 in. H x 18 in.

$249.99 Ace Hardware **91%** positive (251,753)

★★★★☆ 39 product reviews

Whether you have friends over for a summer barbeq

Misting Fan · Sunheat

Other style options: Red

Quest Q36 Backpack Canopy

$59.99 DICK'S Sporting Goods | Con

The Quest Q36 Backpack Canopy is extren

Other style options: Blue

Cooling Neck Gaiter - Blue: Fac...

Techniche Cooling Vest, 5 to 10 hr. Cooling ...

Chill-its By Ergodyne Cooling Vest, 4 hr ...

QUESTIONS