FACT SHEET

The process heat exemption in the heat illness prevention rules

Oregon OSHA adopted heat illness prevention rules in May 2022, and in those rules, there is an exception related to process heat. Let's explore what that means and how it applies. There are two rules that relate to one another, when it comes to protecting employees from exposure to heat, whether from ambient heat or heat generated from a process: OAR 437-002-0156 (Heat illness prevention) and OAR 437-002-0144(2) (Division 2 – Temperature provisions).

What is process heat, and what workers are at risk?

Process heat is the use of thermal energy (i.e., heat) to make concrete, glass, steel, and many other manufactured goods. The heat necessary to make such goods can also put exposed workers at risk for heat-related illnesses. Most people think that heat stroke and heat exhaustion are conditions caused by overexposure to outdoor heat. But indoor workers exposed to process heat are also susceptible to heat-related illnesses. Indoor workplaces where workers have experienced heat-related illnesses caused by process heat include:

- Bakeries
- Iron mills, steel mills, and foundries
- Commercial kitchens
- Laundries
- Manufacturers using radiant heat sources, such as ovens and furnaces
- Warehouses

What is the most accurate way to assess process heat exposures at indoor workplaces?

Although the heat index is a useful tool for assessing outdoor heat exposures, employers should not rely on the heat index alone to assess heat exposure at indoor workplaces. A wet bulb globe temperature (WBGT) meter provides the most accurate measurements for assessing heat exposures at indoor workplaces, as it incorporates temperature, humidity, sunlight, and air movement into a single measurement. When evaluating indoor heat, multiple measurements from multiple areas on different days and times is preferred to a single WBGT measurement.

OAR 437-002-0144(2) states, "*Temperature Provisions. Where processes create harmful or hazardous temperature and humidity conditions, measures shall be taken to control the conditions or to control the effect on the employee.*" This means that when heat is generated by a process (such as occurs in bakeries, glass recycling, foundries, and commercial kitchens) the employer must take steps to either control the process heat by using either engineering and/or administrative controls or limit the effect of the process heat by protecting the employee directly with personal protective equipment. Many of the same controls exist in the heat illness prevention rules as well.

OSHA | Oregon OSHA
Department of Consumer and Business Services

Salem Central Office
350 Winter St. NE
Salem, OR 97301-3882

Phone: 503-378-3272
Toll-free: 800-922-2689
Fax: 503-947-7461

Some examples of engineering controls are:

- Use air conditioning
- Increase general ventilation
- Provide cooling fans
- Run local exhaust ventilation where heat is produced (i.e., laundry vents)
- Use reflective shields to block radiant heat
- Insulate hot surfaces (e.g., furnace walls)

Some examples of administrative controls are:

- Acclimatize workers starting the first day working in the heat
- Re-acclimatize workers after extended absences
- Schedule work earlier or later in the day
- Use work/rest schedules
- Limit strenuous work (e.g., carrying heavy loads)
- Use relief workers when needed

When engineering or administrative controls are not enough, alternative cooling methods may be used, such as:

- Water-cooled garments
- Air-cooled garments
- Cooling vests
- Wetted outerwear
- Sun hats
- Light-colored clothing

OAR 437-002-0156 addresses preventing heat-related illness in employees who are exposed to a heat index equal to or greater than 80 degrees Fahrenheit, whether indoors or outdoors, and contains this language:

(B) Exposures to heat generated from the work process – such as occurs in bakeries – is not subject to this standard. In such cases, employers must follow the requirements of OAR 437-002-0144(2). This does not mean that when heat is generated by a process, that workplaces where these situations exist are automatically exempt from the rest of the heat illness prevention rules (see examples on the following page).

OAR 437-002-0156 also contains this note: *When another applicable standard addresses other hazards that may be present, employers must comply with the requirements of that standard and this standard. Where the requirements of one standard are more protective than another for the same hazard, employers must follow the requirements that provide the higher level of employee protection.*

In the summary of comments and agency decision document published in May 2022, a note was added to clarify when the rule related to hot processes applies. It is Oregon OSHA's intention that heat generated only by processes will be covered by OAR 437-002-0144(2).

However, when additional heat is introduced into the workplace outside of the hot process, this rule would apply as well. When these two rules are compared to one another, the heat illness prevention rules provide the higher level of employee protection from experiencing a heat-related illness.

Though not required, employers are encouraged to monitor the indoor heat index to determine if ambient heat influences the heat index indoors when there is a process that generates heat. This can be done by monitoring the indoor heat index when processes that generate heat are shut down (such as during maintenance or cleaning), or by monitoring the indoor heat index when there's no influence from ambient heat (such as when the outdoor heat index is below 65 degrees Fahrenheit). Employers are encouraged to monitor the indoor heat index over a range of ambient temperatures; it's likely that as ambient temperature rises, the indoor heat index will also rise.

Does Oregon OSHA have rules that cover workers exposed to heat generated by a process?

Yes, Oregon OSHA has two rules that cover workers exposed to excessive process heat:

1. Oregon OSHA's Additional Rules for Environmental Controls require employers to control "harmful or hazardous temperature and humidity conditions" caused by process heat.
2. When the local outdoor heat index is 80 degrees Fahrenheit or higher, whether indoors or outdoors, then employers whose workers are exposed to process heat must follow our Heat Illness Prevention rules.

Q&A Example Scenarios:

Q: Inside a bakery, the heat index is above 80 degrees Fahrenheit, however, the ambient temperature outdoors is 50 degrees Fahrenheit. Which rule applies?

A: The temperature provisions rule (OAR 437-002-0144(2)) applies. It is unlikely that the ambient temperature is contributing to the indoor heat index.

Q: At a glass manufacturing facility, the indoor heat index is 85 degrees Fahrenheit, and the outdoor heat index is 95 degrees Fahrenheit. It's unknown whether the outdoor heat index is an influence on the indoor heat index. Which rule applies?

A: Because the outdoor heat index and the indoor heat index are both above 80 degrees Fahrenheit, the employer would be required to follow the heat illness prevention rules.

Q: The outdoor heat index is 100 degrees Fahrenheit and the indoor heat index is 85 degrees Fahrenheit. Which rule applies?

A: The heat illness prevention rules apply.

Visit Oregon OSHA

Workers

Your employer cannot retaliate against you for reporting a workplace health or safety concern or violation. For more information about your rights, visit the Oregon OSHA website.