Product Information Report

Heat Index and Safety Tools from OSHA

PIR

Overview

What is Heat Index?

Heat index is a single value that takes both temperature and humidity into account. The higher the heat index, the hotter the weather feels, because sweat does not readily evaporate and cool the skin. The heat index is a better measure than air temperature alone for estimating the risk to workers from environmental heat sources.

The United States Department of Labor OSHA website has great technical information and resources regarding a Heat Index.

This information can be found at:

https://www.osha.gov/heat/

The following is a summary of the information and is broken down into four key areas. A section on downloading a heat index smart phone app is located at the end of this document.

- Introduction
- About the Heat Index
- Using the Heat Index to Protect Workers
- Protective Measures to Take at Each Risk Level
- Smart Phone Apps

Introduction

This section introduces what heat index is and applies mainly towards the employer. The two primary sources of heat are outlined and the topic of heat related injury prevention is discussed. The heat index chart below is described in this section.

Workers become overheated from two primary sources:

1. The environmental conditions in which they work
2. The internal heat generated by physical labor.

Heat-related illnesses occur when the body is not able to lose enough heat to balance the heat generated by physical work and external heat sources. Weather conditions are the primary external heat sources for outdoor workers.

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

About the Heat Index

The U.S. National Oceanographic and Atmospheric Administration (NOAA) developed the heat index system.

The heat index combines air temperature and relative humidity into a single value that indicates the apparent temperature in degrees Fahrenheit (°F), or how hot the weather will feel. The higher the heat index, the hotter the weather will feel, and the greater the risk that outdoor workers will experience heat-related illness.

NOAA issues heat advisories as the heat index rises. To learn more about the heat index, visit NOAA's webpage on heat at **https://www.nws.noaa.gov/om/heat**. The effect of humidity and heat advisory warning examples are given in the table below:

NOAA'S NATIONAL WEATHER SERVICE HEAT INDEX

Relative Humidity, % \ Temperature, °F	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	126	130					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Caution | Extreme Caution | Danger | Extreme Danger

Why humidity matters

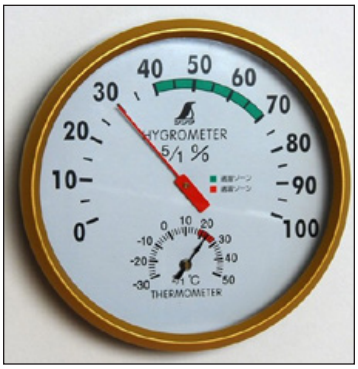
Relative humidity is a measure of the amount of moisture in the air. Sweat does not evaporate as quickly when humidity is high. Since evaporation of sweat from the skin is one of the ways the body cools itself on a hot day, high humidity reduces the natural cooling potential and it feels hotter. Low humidity can also be a problem for outdoor workers in hot, desert-like climates. Sweat evaporates very rapidly in low humidity, which can lead to severe dehydration if a person does not drink enough water throughout the day.

Prevention

Click on the web link below to find the protective measures described for each risk level to help you plan ahead. Schedule and train your workers so that everyone is prepared to work safely as the heat index rises.

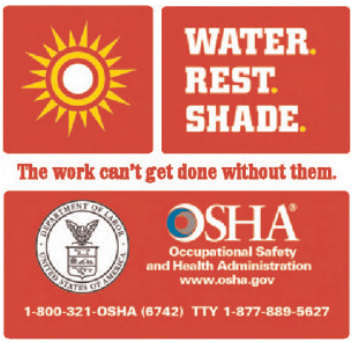
https://www.osha.gov/SLTC/heatstress/prevention.html

Campaign to Prevent Heat Illness in Outdoor Workers



Hygrometer
A gauge used for measuring atmospheric humidity

Using the Heat Index to Protect Workers



The heat index is an excellent tool that can be used to protect workers and will help determine appropriate steps to take in order to ensure worker safety. OSHA has come up with a four-step program to address an elevated heat index. Detailed information can be found on the here with a summary listed below.
https://www.osha.gov/SLTC/heatillness/heat_index/using_heat_protect_workers.html

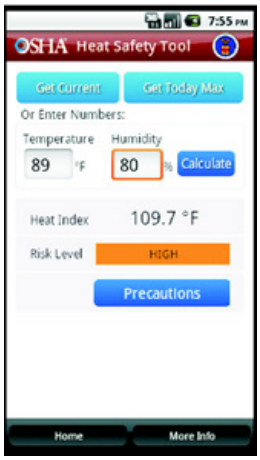
Step 1: Develop a heat-related illness prevention plan before heat index levels rise

Step 2: Train workers before it gets hot

Step 3: Track the weather for the worksite daily and assess the risk to workers

Step 4: Implement your plan when the heat index is at or above 80°F

Smart Phone Applications (Apps)



In order to provide awareness to workers and employers, OSHA has developed a handy app that can be downloaded to any Android, Blackberry or iPhone. Simply follow the link below to get the app for the Heat Safety Tool.

In addition, this app provides information regarding precautions, signs and symptoms, and first aid. It's a great app to have on the jobsite where it's needed most.
https://www.osha.gov/SLTC/heatillness/heat_index/heat_app.html