
OSHA Health Standards Update

John Dimos, CIH

April 12, 2023

Objectives

At the End of This Talk, You Should be Able to:

- State the Potential Changes to the Silica Standards
- State the Potential Change to the Lead Standards
- Describe the Potential Heat Standards

Silica

Lawsuits

(2016)

- Labor
 - North American Building Trades Unions Filing in D.C.
 - UAW, USWA, AFL-CIO Filing in the 3rd Circuit
- Industry
 - National Stone, Sand & Gravel Association (NSSGA)
 - NSSGA Partnered With Its Georgia Affiliate Filing in the 11th Circuit in Georgia
 - American Foundry Society and the National Association of Manufacturers Filing in the 5th Circuit
 - Other Industry Groups Had Filed Challenges in the 8th & 10th Circuits

Lawsuits

- Lawsuits “Bundled” Into One Suit, North America’s Building Trades Unions v. OSHA
- U.S. Court of Appeals for the D.C. Circuit
 - August 17, 2017, Order: Court Provided the Parties a Total of 90 minutes for Oral Arguments
 - Oral Arguments On September 26, 2017
 - Decision December 22, 2017

Court Decision Site

- Remanded Back to OSHA
 - Medical Removal Protection
- Found for OSHA
 - Rule Continues As Is
 - No Challenges to the US Supreme Court

<https://www.cadc.uscourts.gov/internet/opinions.nsf/OpinionsByRDate?SearchView&Query=silica&Start=1&Count=10&SearchOrder=1&SearchWV=TRUE>

RFI August 14, 2019

Trade Release



U.S. Department of Labor
Occupational Safety and Health Administration
Office of Communications
Washington, D.C.
www.osha.gov

For Immediate Release
August 14, 2019
Contact: Office of Communications
Phone: 202-693-1999

CORRECTED

U.S. Department of Labor's OSHA Requests Information on Table 1 of the Silica Standard for Construction

WASHINGTON, DC – The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) is requesting information and comment on Table 1 of the agency's [Respirable Crystalline Silica Standard for Construction](#). OSHA seeks information on additional engineering and work practice control methods to effectively limit exposure to silica for the equipment and tasks currently listed on Table 1. The agency is also requesting information about other construction equipment and tasks that generate silica that it should consider adding to Table 1, along with information about their associated engineering and work practice control methods.

In addition, OSHA is seeking comments about whether to revise paragraph (a)(3) of the [Respirable Crystalline Silica Standard for General Industry](#) to broaden the circumstances under which general industry and maritime employers would be permitted to comply with Table 1 of the silica standard for construction.

Unified Agenda

<https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202110&RIN=1218-AD18>

Other Controls

- Saw Cutting
- Drywall Sanding
- Mixing Mortar

Stationary Saw



Cut-Off Saw



DustBull Universal Dust Shroud for Cut Off Saws, by Dustless Technologies

Drywall Finish Grinding

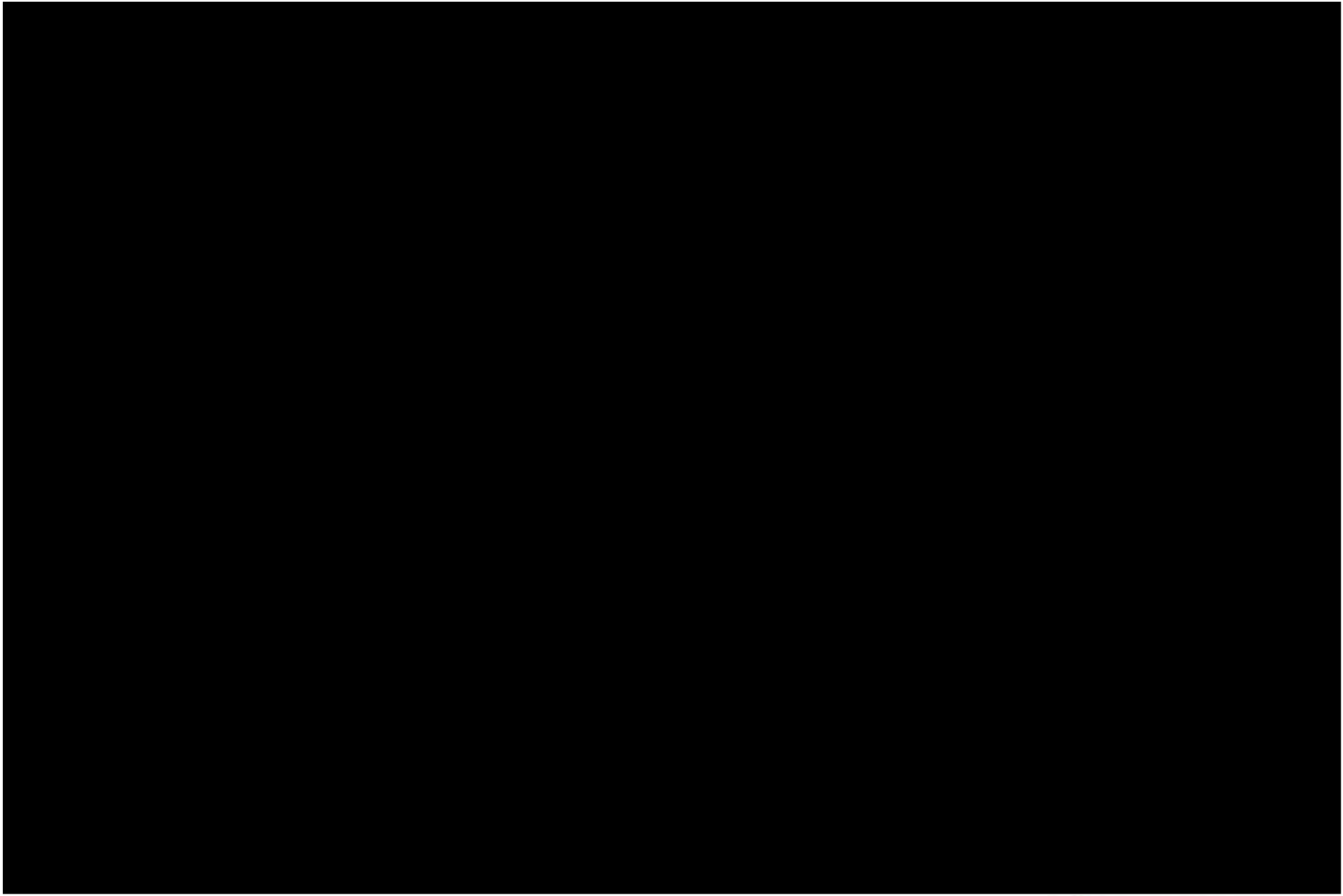
- Preamble to OSHA Respirable Crystalline Silica Rule
 - *“No silica-containing joint compound”*
- Standard Joint Compounds Can Result in Exposures Above Both the AL and the PEL
- “Lite” or “Lightweight” & “Low Dust” Compounds Typically <AL

Drywall Sanding



PORTER + CABLE
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ONLINE RETAILER





Mortar Mixing

- Usually Not Enough Force to “Fracture” Silica to Respirable Size
- Still Dusty, Both Total (PNOR 15 mg/m³) & Respirable (5 mg/m³)

Mixing Mortar/Grout



Use When Mixing • Mortar • Grout • Self-Leveling Products



Universal Slot Fits Standard
1, 3 & 5 Gallon Buckets



Align Slot
Over the Rim



Snap Straight
Down Onto the Rim



Connect the
Shop Vac Hose



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in the USA



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2/28/2020

Whole tail osha complianc NC.webp (900X1274)



EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
 Phone/Fax: (800) 220-3875 /
<http://www.EMSL.com> / IndustrialHygiene@emsl.com

EMSL Order ID: 281706613
 Customer ID: MISC-ACCT
 Customer PO: CC-059622
 Project ID:

Attn: Joel Beaton

1060 West Water Street
 Elmira, NY 14805

Proj:

Phone: (507) 207-3690

Fax:

Collected: 11/25/2017

Received: 11/28/2017

Analyzed: 12/01/2017

**Test Report: Respirable Silica, Crystalline Analysis of Air Samples Performed by X-Ray Diffraction
 and Respirable Dust Analysis (Gravimetric) of Air Samples NIOSH 0600, Issue 3, 1/15/98
 Via NIOSH Method 7500 (Modified), Issue 4, 3/15/2003**

XRD-Silica

Sample ID	Collected	Location / Description	Volume (L)	Respirable Dust (mg) (mg/m ³)		Silica	% Silica	Weight (mg)	Conc. (mg/m ³)	Analytical Sensitivity (mg/m ³)
P1 281706613-0001	11/25/2017	Elmira, NY	000	<0.060	<0.060	o-Quartz	N/A	<0.005	<0.006	0.035
						Cristobalite	N/A	<0.010	<0.010	0.010
						Tridymite	N/A	<0.010	<0.010	0.010

Comment: Customer



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ARDEX DUSTFREE™

Dust-Reducing Unit for ARDEX Mixing Barrels

When placed on an ARDEX T-10 Black Mixing Barrel and connected to a standard shop vacuum, the ARDEX DUSTFREE™ will help eliminate dust.

Key Features

- Promotes cleaner, greener job site for improved working conditions
- Reduces airborne dust from mixing with drill
- Easy to use – fits standard ARDEX T-10 Black Mixing Barrel



HOSE ADAPTER INCLUDED!



Mortar Mixing

Results of the air monitoring is shown in the table below:

Employee Name	Job Title	Air Contaminant	Measured Concentration (mg/m ³)	OSHA PEL (mg/m ³)	ACGIH TLV (mg/m ³)
Winterized Grout	Operator	Quartz	0.012	.05	.025
		Cristobalite	ND	.05	.025
		Tridymite	ND	.05	NA
		Respirable Dust	0.62	5	3
Open Mortar	Operator	Quartz	<0.0052	.05	.025
		Cristobalite	ND	.05	.025
		Tridymite	ND	.05	NA
		Respirable Dust	0.19	5	3

Medical Surveillance

Unified Agenda

<https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202110&RIN=1218-AD31>

Enforcement

Enforcement

- 2018-2022 US DOL Strategic Plan Addresses High Risk Industries
 - > 2,000,000 Workers at Risk to RCS >AL
 - About 1,097,000 in Construction
 - About 948,100 Workers at Risk to RCS >PEL
 - About 847,700 in Construction
- OSHA States PEL is Not “Safe”

NEP

February 4, 2020

2020 NEP

“Because occupational exposures to silica continue to pose a significant risk to a large population of workers, and because OSHA’s sampling data continue to show a high rate of noncompliance (i.e., employee overexposures), OSHA has determined that this NEP is warranted.

This NEP will aid OSHA’s efforts to address workplace exposures to RCS in accordance with the 2016 standards goal will be accomplished by a combination of inspection targeting, outreach to employers, and compliance assistance.”

2020 NEP

- State Plans Included
- No Need for LEP
- 2% of Inspections in Each Region
- Most in Construction (Highest Exposures)

2020 NEP

- Follow-Ups Necessary to Ensure Abatement
- Programmed Inspections Based on North American Industry Classification System (NAICS) Codes
- Area Offices Develop “Target Lists” (Randomized)
- Referrals & Complaints

Table 2. Targeted Industries in Construction by 2017 NAICS

NAICS Code	Industry
236100	Residential Building Construction <i>236115 New Single-Family Housing Construction (except For-Sale Builders)</i> <i>236116 New Multifamily Housing Construction (except For-Sale Builders)</i> <i>236117 New Housing For-Sale Builders</i> <i>236118 Residential Remodelers</i>
236200	Nonresidential Building Construction <i>236210 Industrial Building Construction</i> <i>236220 Commercial and Institutional Building Construction</i>
237100	Utility System Construction <i>237110 Water and Sewer Line and Related Structures Construction</i> <i>237120 Oil and Gas Pipeline and Related Structures Construction</i> <i>237130 Power and Communication Line and Related Structures Construction</i>
237200	Land Subdivision <i>237210 Land Subdivision</i>
237300	Highway, Street, and Bridge Construction <i>237310 Highway, Street, and Bridge Construction</i>
237900	Other Heavy and Civil Engineering Construction <i>237990 Other Heavy and Civil Engineering Construction</i>
238100	Foundation, Structure, and Building Exterior Contractors <i>238110 Poured Concrete Foundation and Structure Contractors</i> <i>238120 Structural Steel and Precast Concrete Contractors</i> <i>238130 Framing Contractors</i> <i>238140 Masonry Contractors</i> <i>238150 Glass and Glazing Contractors</i> <i>238160 Roofing Contractors</i> <i>238170 Siding Contractors</i> <i>238190 Other Foundation, Structure, and Building Exterior Contractors</i>
238200	Building Equipment Contractors <i>238210 Electrical Contractors and Other Wiring Installation Contractors</i> <i>238220 Plumbing, Heating, and Air-Conditioning Contractors</i> <i>238290 Other Building Equipment Contractors</i>
238300	Building Finishing Contractors <i>238310 Drywall and Insulation Contractors</i> <i>238320 Painting and Wall Covering Contractors</i> <i>238330 Flooring Contractors</i> <i>238340 Tile and Terrazzo Contractors</i> <i>238350 Finish Carpentry Contractors</i> <i>238390 Other Building Finishing Contractors</i>
238900	Other Specialty Trade Contractors <i>238910 Site Preparation Contractors</i> <i>238990 All Other Specialty Trade Contractors</i>

Construction Activities that May Involve RCS Exposure

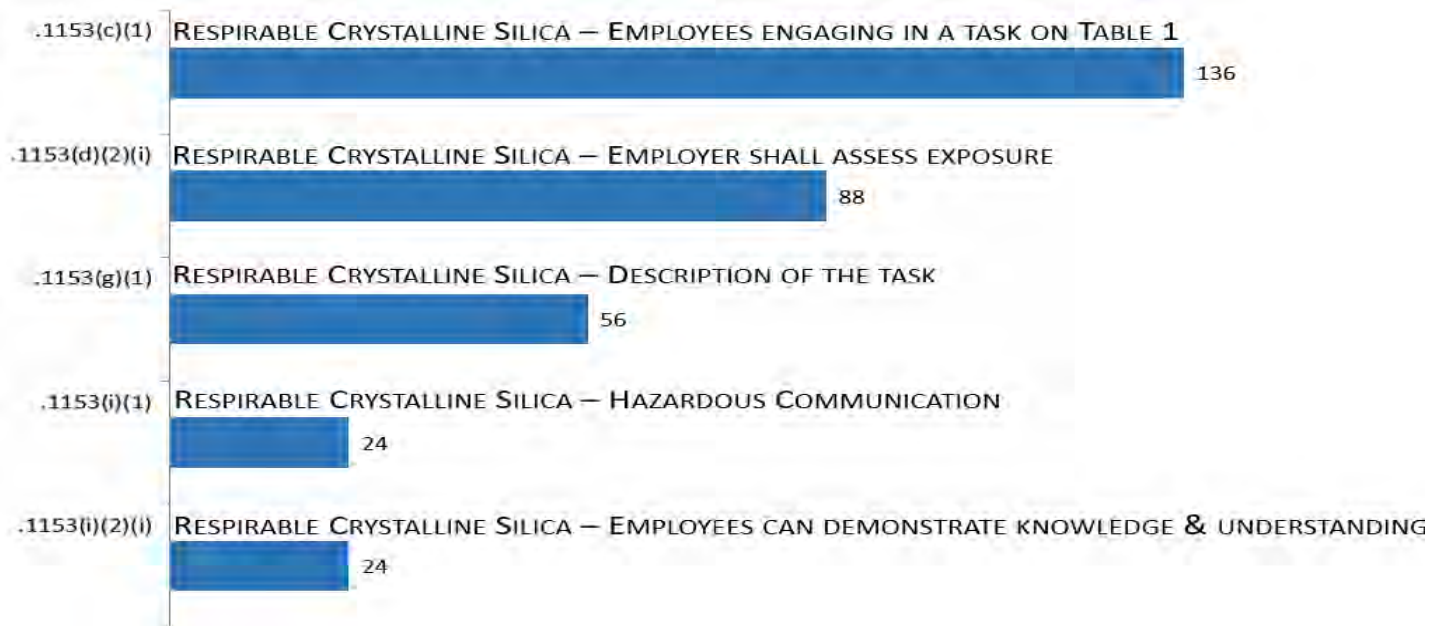
The following list is provided to help Area Offices with targeting of construction work sites by listing operations likely to have exposures to RCS, as described in the preamble, pages 16406 and 16459:

- Abrasive blasting
- Drywall finishing
- Earth drilling
- Heavy equipment operations (excavating, grading, abrading, or fracturing silica-containing materials, or demolishing concrete or masonry structures)
- Concrete and masonry hole drilling using handheld or stand-mounted drills
- Jackhammering and powered, handheld, chipping of concrete and masonry
- Masonry, concrete, or fiber-cement board cutting using portable saws, walk-behind saws, drivable or ride-on saws, rig-mounts core saws and drills, or stationary saws
- Milling of asphalt using portable or mobile machines, such as walk-behind milling machines, floor grinders, or drivable milling machines
- Rock and concrete drilling using vehicle-mounted drilling rigs and dowel drilling rigs
- Mobile concrete crushing machines
- Tuckpointing and grinding using handheld grinders for mortar removal and other than mortar removal

(Reference: 81 FR at 16406, 16459)

Toxic & Hazardous Substances [1926.1100 – .1152]

29 CFR 1926.



Subpart Z



Questions?

Lead

Measures of Lead

- Air
 - Permissible Exposure Limit (PEL) $50 \mu\text{g}/\text{m}^3$
 - Action Level (AL) $30 \mu\text{g}/\text{m}^3$
- Blood
 - Blood Lead Level (BLL) $\mu\text{g}/\text{dl}$
 - ~ Two Weeks
 - Stored or Excreted
 - Zinc Protoporphyrin (ZPP)
 - 90 to 120 Days
 - Life of Red Blood Cell

Normal BLL

- Adults, No Lead Exposure at Work
 - < 3 $\mu\text{g}/\text{dl}$
- Workers
 - 10 to 15 $\mu\text{g}/\text{dl}$
- CDC Target
 - As Low As Reasonably Achievable (ALARA)
 - < 5 $\mu\text{g}/\text{dl}$

Medical Surveillance

- Blood Testing
- Physical
- Medical Removal
- Multiple Physician Review
- Medical Removal Benefits

Blood Testing

- Initially
- Every 2 Months for the 1st Six Months
- Every Six Months After
- Unless
 - BLL > 40 $\mu\text{g}/\text{dl}$, Back to Every 2 Months
 - BLL > 50/60 $\mu\text{g}/\text{dl}$, Remove
 - ZPP > 100

Blood Testing & Results

- Employee Has Right to Select Own Physician to Test Blood in Addition
- If Results Differ, a Third Physician Reviews
- Consensus Reached
- Employer Pays, Unless Employee Does Not Request in Fifteen Working Days
- Employer Must Notify Employee of Rights

Medical Removal

- BLL > 50/60 $\mu\text{g}/\text{dl}$, ZPP > 100
- Blood Tested Every Month
- 2 Consecutive Below 40 $\mu\text{g}/\text{dl}$, Can Return to Work
- Works at Job with **NO** Lead Exposure
- If No Other Job, Compensated for Up to 18 Months or Duration of Job, Whichever is Shorter

Updates

- MiOSHA Medical Removal
 - 30 $\mu\text{g}/\text{dl}$
 - 15 $\mu\text{g}/\text{dl}$ Can Return to Work

Updates

- CalOSHA
 - PEL 10 $\mu\text{g}/\text{m}^3$
 - AL 2 $\mu\text{g}/\text{m}^3$
 - CDPH Blood Test $>20 \mu\text{g}/\text{dl}$, Reports to CalOSHA
 - CalOSHA Treats as Potential Serious Violation & Leads to Inspection

Unified Agenda

<https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202110&RIN=1218-AD10>

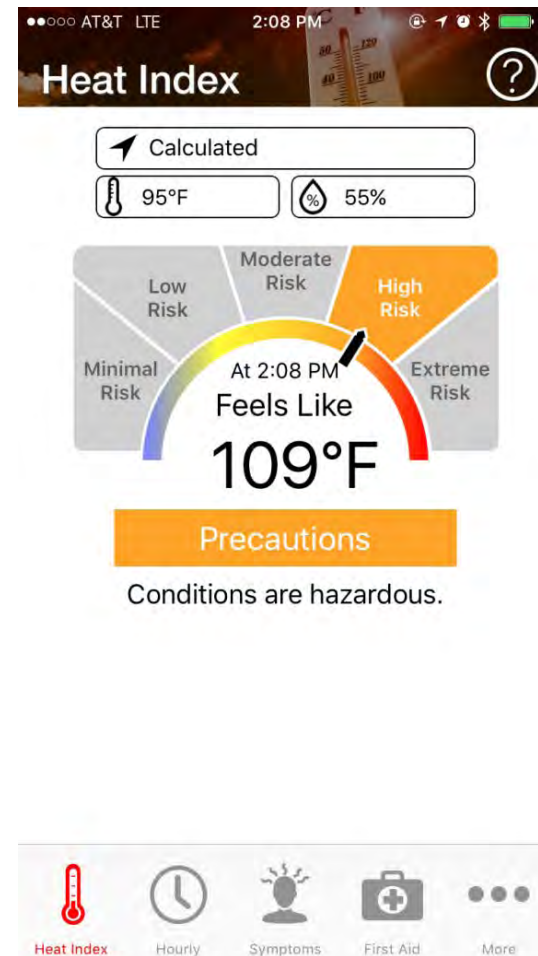
Enforcement

https://www.osha.gov/sites/default/files/enforcement/directives/CPL_03-00-0009.pdf



Questions?

Heat Stress



<https://www.cdc.gov/niosh/topics/heatstress/heatapp.html>



Unified Agenda

<https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202110&RIN=1218-AD39>



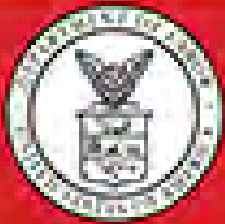
<https://www.osha.gov/heat-exposure>

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



**WATER.
REST.
SHADE.**

The work can't get done without them.



OSHA
Occupational Safety
and Health Administration
www.osha.gov

1-800-321-OSHA (6742) TTY 1-877-889-5627



Heat exposure can be dangerous



Signs of a medical emergency!



- Abnormal thinking or behavior
- Slurred speech
- Seizures
- Loss of consciousness

Take these actions

- 1** » CALL 911 IMMEDIATELY
- 2** » COOL THE WORKER RIGHT AWAY WITH WATER OR ICE
- 3** » STAY WITH THE WORKER UNTIL HELP ARRIVES





Heat illness signs and symptoms

Watch for signs of heat illness and act quickly. When in doubt, call 911.

If a worker experiences:

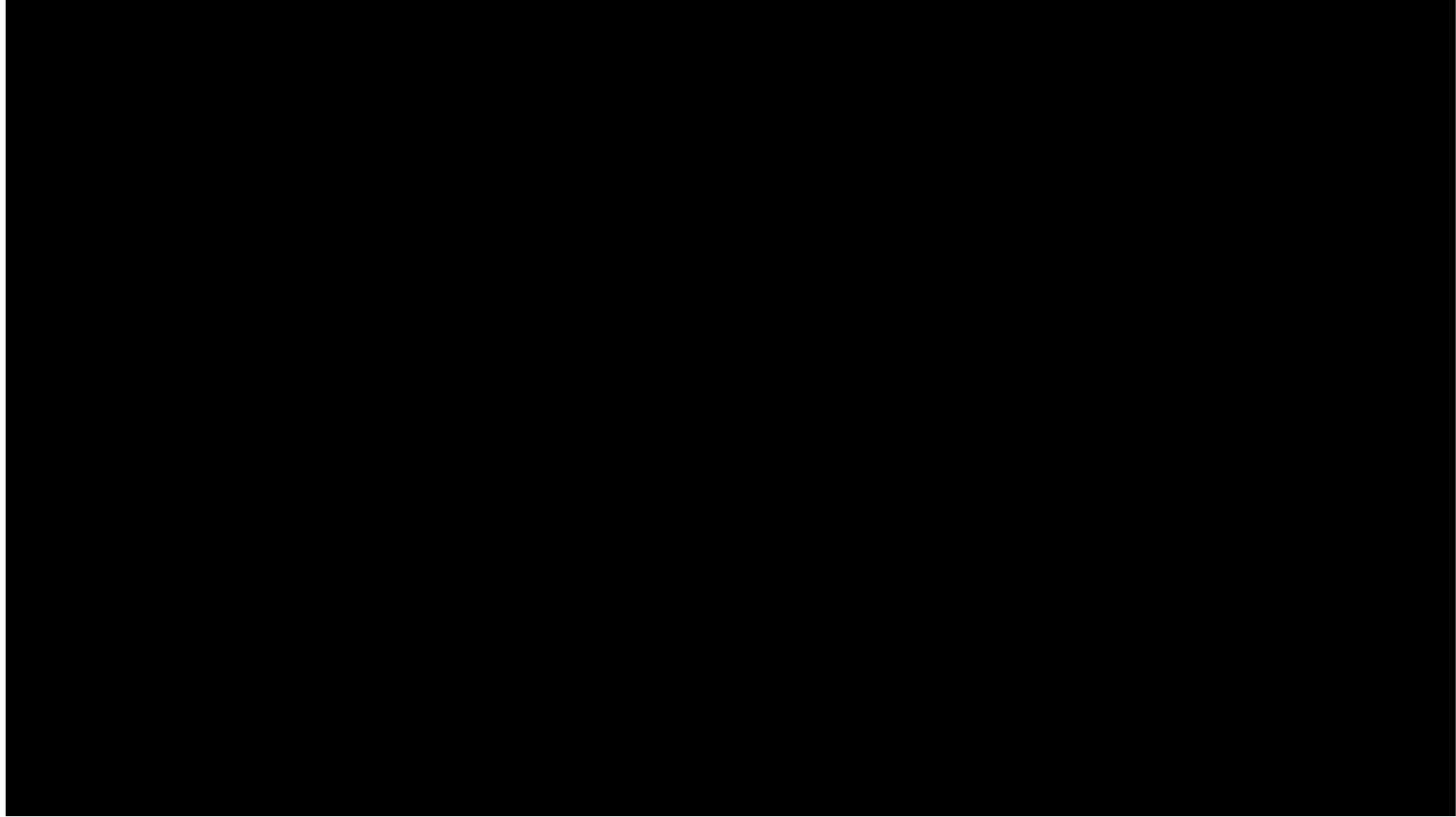
Headache or nausea
Weakness or dizziness
Heavy sweating or hot, dry skin
Elevated body temperature
Thirst
Decreased urine output



Take these actions:

- » Give cool water to drink
- » Remove unnecessary clothing
- » Move to a cooler area
- » Cool with water, ice, or a fan
- » Do not leave alone
- » Seek medical care (if needed)





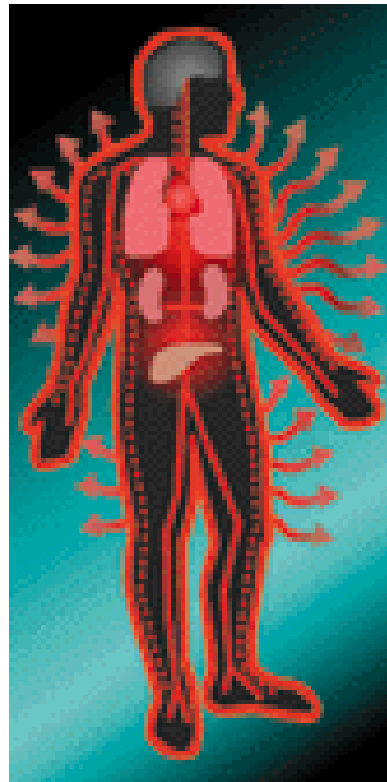
<https://youtu.be/Kr2ouLj1oW0>

Natural Cooling of the Body

Convection



Evaporation



Blood Vessels

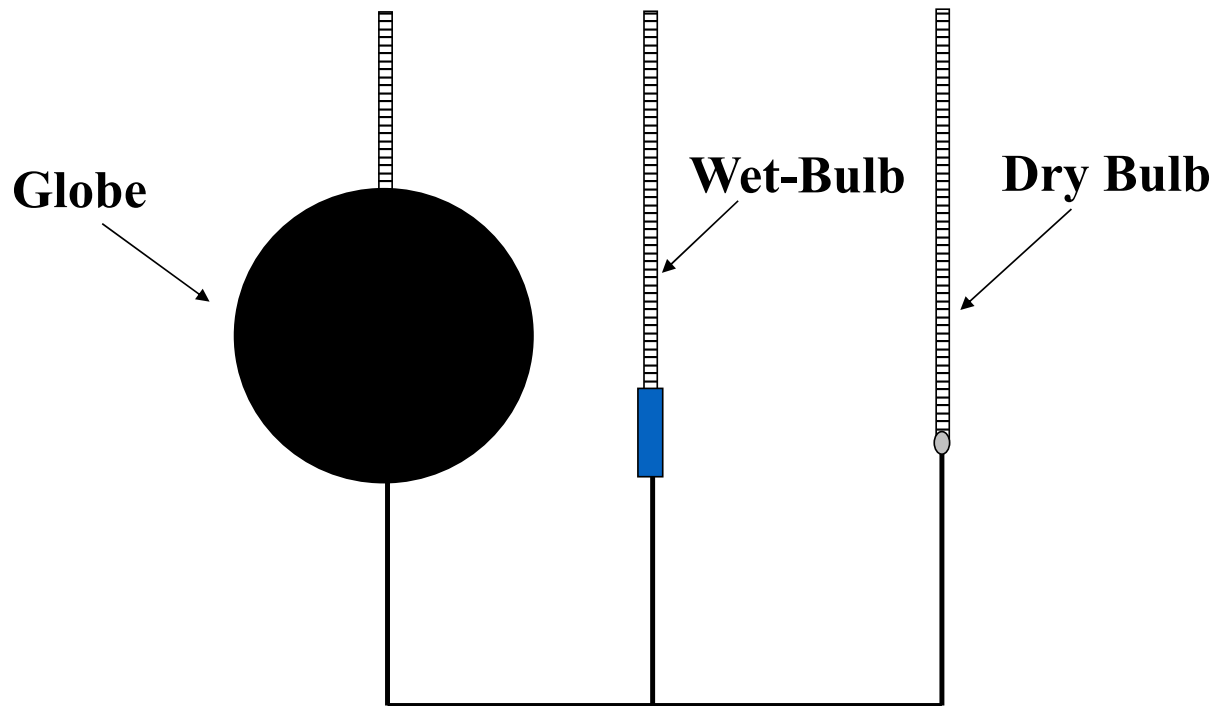


Environmental Factors

- Temperature
- Humidity
- Radiant Heat (Such As the Sun)
- Air Velocity

Measurement

Wet-Bulb Globe Thermometer



WBGT



HEAT STRESS DAILY FORECAST			
Wednesday, August 3, 2022		Peak Predictions	
AM		PM	
WBGT °F	85.6	WBGT °F	86.8
Heat Index °F	98	Heat Index °F	102
Wednesday, August 3, 2022		Notes	
Reschedule outdoor work or work involving protective clothing in non-climate-controlled areas for a cooler time period if at all possible. Chance of T-Storms and Breezy.			
Thursday, August 4, 2022		Peak Predictions	
AM		PM	
WBGT °F	80.3	WBGT °F	79.4
Heat Index °F	78	Heat Index °F	79
Thursday, August 4, 2022		Notes	
Chance of T-Storms and Showers.			

Friday, August 5, 2022		Peak Predictions	
AM		PM	
WBGT °F	79.6	WBGT °F	82.5
Heat Index °F	79	Heat Index °F	87
Friday, August 5, 2022		Notes	
Sunny.			
WBGT will exceed 85F			
WBGT will be between 77F and 85F			
WBGT will be less than or equal to 77F			
NOTES:			
1) When the Wet Bulb Globe Temperature (WBGT) value is > 77°F, either indoors or outdoors, or is not known for a given task, and the potential for heat stress exists (based on work effort and/or personal protective equipment use), contact WSH-Occupational Health if assistance is needed to evaluate the workplace and provide recommendations to control heat stress conditions.			
2) If PPE (e.g. Tyvek coveralls, arc flash PPE, turnout gear, level A hazmat, etc.) that restricts air movement or heat transfer is worn, then a clothing adjustment factor must be added to the WBGT value. Contact WSH-Occupational Health for additional information.			
3) The WBGT uses the additional factors of radiant heat and air movement and is more accurate than Heat Index in determining the magnitude of the heat stress hazard present. By contrast, "Heat Index" is a screening tool that uses only temperature and relative humidity to calculate an adjusted temperature that represents how conditions "feel" other than just the ambient temperature alone.			
Contact WSH-Occupational Health at heatstressafety@anl.gov for assistance with heat stress evaluations or to be added / removed from this email distribution list.			




HEAT STRESS DAILY FORECAST

Thursday, September 15, 2022		Peak Predictions	
AM		PM	
WBGT °F	75.5	WBGT °F	77.4
Heat Index °F	74	Heat Index °F	82
Thursday, September 15, 2022		Notes	
Sunny.			
Friday, September 16, 2022		Peak Predictions	
AM		PM	
WBGT °F	75.1	WBGT °F	78.7
Heat Index °F	77	Heat Index °F	85
Friday, September 16, 2022		Notes	
Partly Sunny.			

Saturday, September 17, 2022		Peak Predictions	
AM		PM	
WBGT °F	76.0	WBGT °F	79.1
Heat Index °F	81	Heat Index °F	86
Saturday, September 17, 2022		Notes	
Mostly Sunny.			
WBGT will exceed 85F			
WBGT will be between 77F and 85F			
WBGT will be less than or equal to 77F			
NOTES:			
1) When the Wet Bulb Globe Temperature (WBGT) value is > 77°F, either indoors or outdoors, or is not known for a given task, and the potential for heat stress exists (based on work effort and/or personal protective equipment use), contact WSH-Occupational Health if assistance is needed to evaluate the workplace and provide recommendations to control heat stress conditions.			
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Contact WSH-Occupational Health at heatstressafety@anl.gov for assistance with heat stress evaluations or to be added / removed from this email distribution list.			

Protect Yourself Against Heat Exposure.

You are at risk if you:

Are new to the job  Work in hot and humid conditions  Do heavy physical labor  Don't drink enough water

Tip 1: Know the Warning Signs

Heat Exhaustion:



Weakness &
Wet Skin



Headache, Dizziness
or Fainting



Nausea
or Vomiting

Heat Stroke:



Excessive sweating or red,
hot, dry skin



Confusion
or Fainting



Convulsions
or Seizures

Learn more about heat-related illnesses and how to prevent them at <http://bit.ly/CPWRHotWeather>

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Protect Yourself Against Heat Exposure.

You are at risk if you:

Are new to the job  Work in hot and humid conditions  Do heavy physical labor  Don't drink enough water

Tip 3: Seek Medical Assistance

Heat Stroke is a medical emergency

Look out for your co-workers—if you see the warning signs take action!

Call 911

Getting help can be the difference between **life** and **death**.



Learn more about heat-related illnesses and how to prevent them at <http://bit.ly/CPWRHotWeather>

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Prevention/Risk Reduction

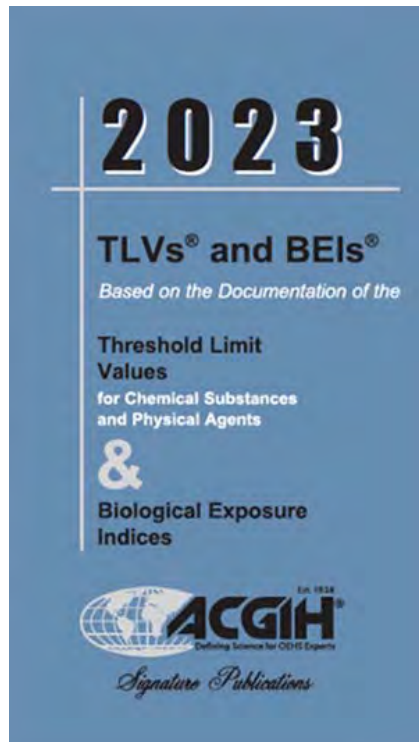
Engineering Controls

- General Ventilation
- Spot Cooling by Local Exhaust Ventilation at Points of High Heat Production
- Shielding As Protection From Radiant Heat Sources
- Evaporative Cooling
- Mechanical Refrigeration
- Cooling Fans Can Also Reduce Heat in Hot Conditions

Administrative

- Work Rest Regimens
- Getting Acclimated to Working in the Heat

ACGIH TLVs/BEIs



Format: Print/Digital

Price: Member - \$43.96

NonMember - \$54.95

<https://www.acgih.org/publications/digital-pubs/>

Other Controls

- Equipment Modifications
- Use of Power Tools to Reduce Manual Labor
- Personal Cooling Devices or Protective Clothing



Ice Vest



Circulating Vest



Evaporative Vest

Protect Yourself Against Heat Exposure.

You are at risk if you:

Are new to the job ☀️ Work in hot and humid conditions ☀️ Do heavy physical labor ☀️ Don't drink enough water

Tip 4: Dress Appropriately

Wear clothes that are:

- ☀️ Light-colored (white, etc.)
- ☀️ Loose-fitting
- ☀️ Lightweight



If you need to wear protective clothing or personal protective equipment, like impermeable clothing, you may need more frequent breaks for water, rest, and shade.

Learn more about heat-related illnesses and how to prevent them at <http://bit.ly/CPWRHotWeather>

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Protect Yourself Against Heat Exposure.

You are at risk if you:

Are new to the job ☀️ Work in hot and humid conditions ☀️ Do heavy physical labor ☀️ Don't drink enough water

Tip 2: Drink Water & Take Breaks



- ☀️ Take frequent breaks out of the sun.
- ☀️ Drink 1 cup (8 ounces) of water every 15-20 minutes.
- ☀️ **DO NOT** wait until you are thirsty to drink water.
- ☀️ **DO NOT** drink alcohol and **AVOID** caffeine.

Learn more about heat-related illnesses and how to prevent them at <http://bit.ly/CPWRHotWeather>

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CalOSHA

CalOSHA

- Effective Written Heat Illness Prevention Plan w/ Emergency Response Procedures
- Training
- Drinking Water: Fresh, Pure, Suitably Cool; Free; at Least 1 qt/hr; & Encouraging Workers to Do So
- Cool-Down/Rest in Shade at Least 5 min When Felt Needed to Protect Themselves
- Proper Shade $>80^{\circ}\text{F}$
- Workers Have Right to Request and Be Provided Shade at Any Time

Enforcement

OSHA NEP

Safety+Health.
an IFSC publication

<https://www.safetyandhealthmagazine.com/articles/22554-on-safety-oshas-nep-on-outdoor-indoor-heat-hazards>



**Occupational Safety
and Health Administration**

https://www.osha.gov/sites/default/files/enforcement/directives/CPL_03-00-024.pdf

Cold Stress

Protect Yourself from the Cold

❄️ You are at risk if you work outside or in cold conditions ❄️

Step 1: Dress Appropriately

Wear clothes meant for cold, wet, and windy conditions such as:

- ❄️ Loose-fitting layers
- ❄️ Hats, socks, shoes, and gloves
- ❄️ Outerwear that will keep you dry

Extreme exposure to the cold can eventually lead to **hypothermia**.



GRAPHICS COURTESY OF: BRENT MARWELL, NICK GREEN, CREATIVE SHILL FROM NOUN PROJECT.

Work in pairs so that you and a co-worker can spot danger signs in each other. ❄️ Follow these tips and stay safe in the cold. ❄️

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Protect Yourself from the Cold

❄️ You are at risk if you work outside or in cold conditions ❄️

Step 2: Drink Warm Beverages & Take Breaks



❄️ Take frequent breaks in heated areas, if possible.

❄️ Drink plenty of warm, sweet beverages (sugar water, sports drinks).

❄️ **AVOID** caffeine (in coffee, tea, sodas, or hot chocolate) and alcohol.

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Step 3: Know the Warning Signs

Health Problems:



Trench Foot



Frostbite



Hypothermia

Hypothermia—Don't ignore the signs!



Uncontrollable Shivering



Slurred Speech



Clumsiness



Fatigue



Confusion

Work in pairs so that you and a co-worker can spot danger signs in each other.

❄️ Follow these tips and stay safe in the cold. ❄️

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Step 4: Seek Medical Assistance

Hypothermia is a medical emergency

Call **911**

Getting help can be the difference between **life** and **death**.



You are at a higher risk if you take certain medications, are in poor physical condition, or suffer from illnesses such as diabetes, hypertension, or cardiovascular disease.

Work in pairs so that you and a co-worker can spot danger signs in each other.

❄️ Follow these tips and stay safe in the cold. ❄️

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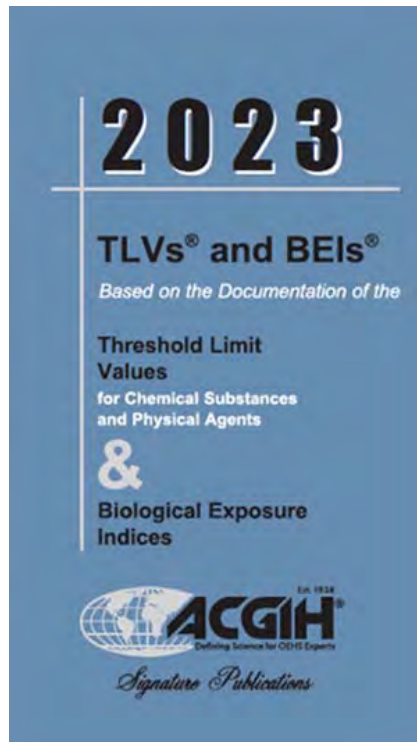
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Administrative

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Questions?

Review

Who Can:

- State the Potential Changes to the Silica Standards
- State the Potential Change to the Lead Standards
- Describe the Potential Heat Standards

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**THANK
YOU**