"Heat Stress – A Panel Discussion on Various Aspects of Managing It"

MARCH 2023

Agenda

7:00 – 7:20 – Arrival, food distribution, and mingling
7:20 – 7:30 – Attendee Introductions
7:30 – 7:35 – Opening Remarks
7:35 – 7:40 – Bruce's Report
7:40 – 7:45 – Treasurer's Report
7:45 – 7:50 – Host Time (Introduced by Alex)
7:50 – 7:55 – Sponsor Time (Introduced by Jose)
7:55 – 8: 50 – Panel Introduction and Discussion (Bruce)
8:50 – 8:55 – Raffle and 50/50 (Alex and Martin)
8:55 – 9:00 – Preview of Next Meeting (Jose)
9:00 - Adjourn

Introductions

Bruce & Martin Report

Host

COAKLEY
WILLIAMS
CONSTRUCTION
BUILDING THE DMV

Sponsor

A KLEIN TOOLS® COMPANY

Panelist

BRUCE

Ergodyne

ALBERT D'AGOSTINO,

CBG Group

DAN BLANKFIELD

Miller and Long

FRANK TRUJILO

Chantilly Medicine

DR. MEHRA

Moderator

BRUCE DONATO

Temperature Heat Index vs. WBGT

BRUCE DONATO, CSP, CHMM, QEP, CECD

How can we evaluate hot conditions?

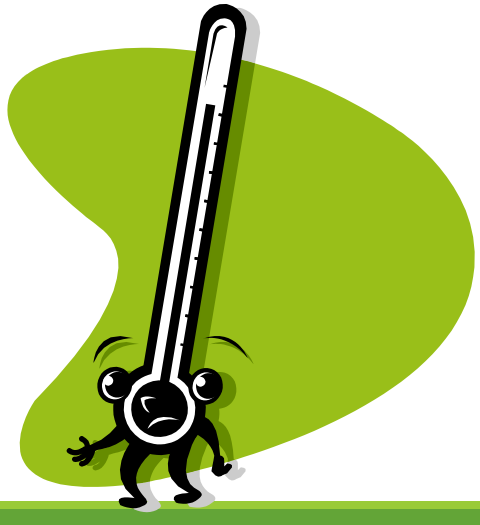
Heat Index

- No clear guidelines for work place application
- Used by National Weather Service since 1979

Wet Bulb Globe Temperature

- Recognized work/rest cycles
- Used by military since 1956

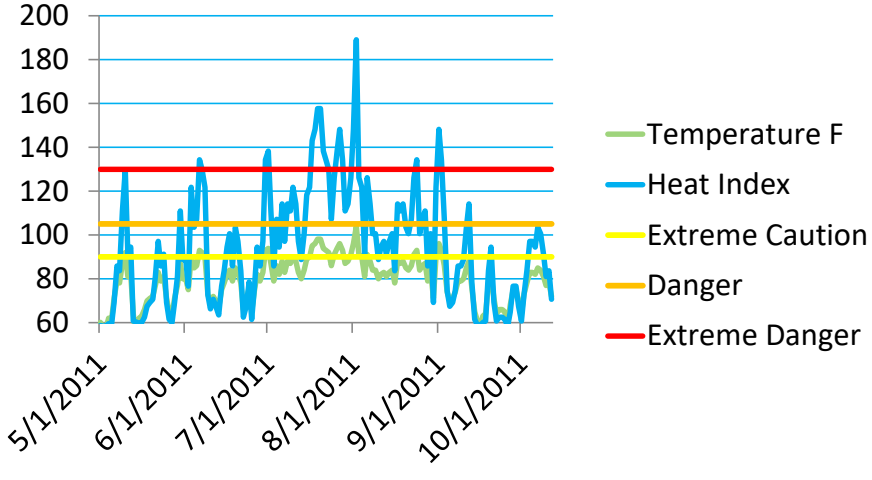
Why not just use a thermometer?



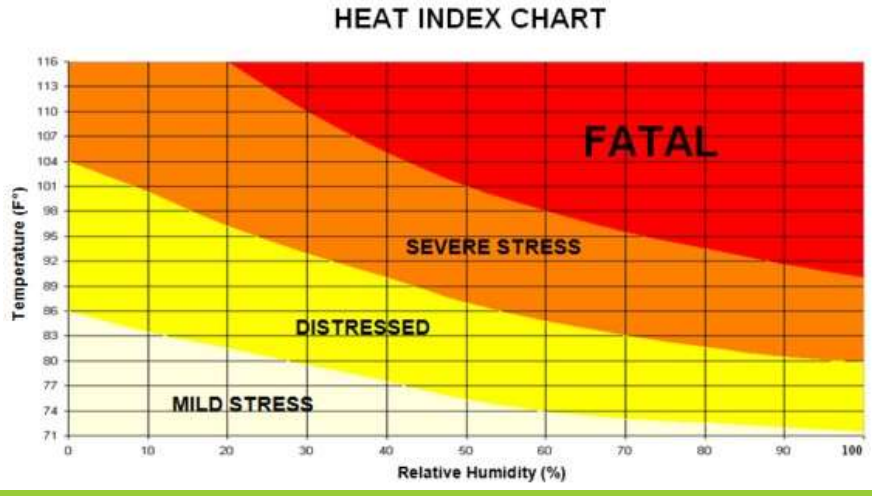
It's not the air temperature, it's the…

- Humidity
- Air movement
- Radiant heat sources
- Level of clothing & protective equipment
- Physical exertion
- Personal factors
  - Age, heath, medications, etc.

Temperature vs Heat Index



Heat & Humidity = Heat Index



What is WBGT?

- Looks like temperature or Heat Index but it is NOT the same
- NOT the same as Heat Index!
- NOT the same as air temperature!
- Should only be used in conjunction with applicable work/rest cycles!
- Basis for MN Workplace Heat Law
- Developed and used in military
- Best choice for OUTDOOR work

Work/Rest Cycle (WBGT only!)

TABLE III:4-2. PERMISSIBLE HEAT EXPOSURE THRESHOLD LIMIT VALUE

	Work Load*		
Work/rest regimen	**Light**	**Moderate**	**Heavy**
Continuous work	30.0°C (86°F)	26.7°C (80°F)	25.0°C (77°F)
75% Work, 25% rest, each hour	30.6°C (87°F)	28.0°C (82°F)	25.9°C (78°F)
50% Work, 50% rest, each hour	31.4°C (89°F)	29.4°C (85°F)	27.9°C (82°F)
25% Work, 75% rest, each hour	32.2°C (90°F)	31.1°C (88°F)	30.0°C (86°F)

*Values are in °C and °F, WBGT.

These TLV's are based on the assumption that nearly all acclimatized, fully clothed workers with adequate water and salt intake should be able to function effectively under the given working conditions without exceeding a deep body temperature of 38°C (100.4° F). They are also based on the assumption that the WBGT of the resting place is the same or very close to that of the workplace. Where the WBGT of the work area is different from that of the rest area, a time-weighted average should be used (consult the ACGIH *1992-1993 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices* (1992).

These TLV's apply to physically fit and acclimatized individuals wearing light summer clothing. If heavier clothing that impedes sweat or has a higher insulation value is required, the permissible heat exposure TLV's in Table III:4-2 must be reduced by the corrections shown in Table III:4-3.

Heat Category	WBGT Index, F°	Easy Work		Moderate Work		Hard Work	
		Work/ Rest	*Water Intake (Qt/H)*	*Work/ Rest*	*Water Intake (Qt/H)*	*Work/ Rest*	*Water Intake (Qt/H)*
1	78° - 81.9°	NL	½	NL	¾	40/20 min	¾
2 (GREEN)	82° - 84.9°	NL	½	50/10 min	¾	30/30 min	1
3 (YELLOW)	85° - 87.9°	NL	¾	40/20 min	¾	30/30 min	1
4 (RED)	88° - 89.9°	NL	¾	30/30 min	¾	20/40 min	1
5 (BLACK)	> 90°	50/10 min	1	20/40 min	1	10/50 min	1

Electronic WBGT

- Heat, Humidity & WBGT
- Visible Read-Out
- No data logging function
- Hand held

Extech 42270

- Heat & Humidity
- Visible read-out
- Data logging function
- Light weight
- Multiple data loggers can be used with one docking station

Extech RHT10

Small, easily portable

USB

no visible read-out

Heat & Humidity

No Heat Index

Data logger

Extech Heat Watch

Small, portable

Heat Humidity, Heat Index & timing functions

No data logging function

Visible read-out

ERGODYNE® HEAT STRESS SOLUTIONS

MARCH 2023

STANDARDS & REGULATIONS

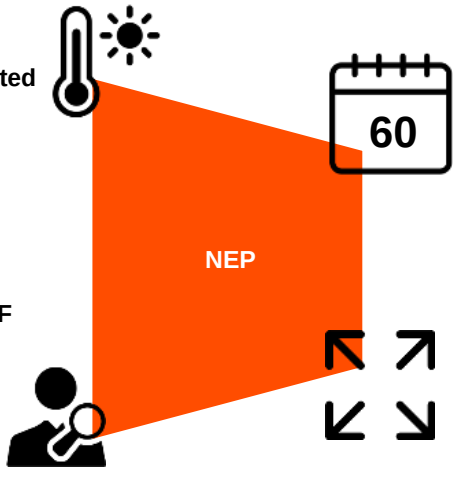
OSHA'S NATIONAL EMPHASIS PROGRAM (NEP)

Outdoor and indoor heat-related hazards

- Effective April 8, 2022
- Valid for no more than three years
- Applies OSHA-wide

Defines heat priority days
Heat index exceeds 80°F

Procedures for programmed and follow-up inspections



State plans must submit notice of intent within 60 days

Incorporates and expands on the heat initiative enforcement memo

CHILL-ITS® EVAPORATIVE

FIVE DIFFERENT TECHNOLOGIES. ONE PURPOSE.

Acrylic Polymer Crystals

Super absorbent polymers expand within 2-5 minutes

Polymer Embedded Batting Material

Super absorbent embedded polymers expand in batting material

PVA Cooling Towel (CT)

Hyper-evaporative Poly Vinyl Acetate material that's activated with water

Microfiber Towel (MF)

Wet microfiber material begins cooling within one minute

Dry Evaporative Technology

Fill with water for up to three days of evaporative cooling

CHILL-ITS® PHASE CHANGE

NO AIRFLOW REQUIRED.

Utilizes substances that maintain a constant temperature for 2-4 hours– regardless of outside environment.

PREMIUM
PHASE CHANGE VESTS + PACKS

64°F/18°C
4 hours

LIGHTWEIGHT
PHASE CHANGE VESTS + PACKS

59°F/15°C
2 hours

Chill-Its® Absorptive

TERRY CLOTH COOLING, SWEAT-ABSORPING GEAR

The average person has 2.6 million sweat glands!

Terry cloths, sponges, elastics, and high-performance technical fabrics trap or move sweat to keep it out of your eyes and off your hands.

6615

6550

6500

6609

6605

6630

SHAX® SHELTERS

POP-UP SHELTERS

Heavy Duty
6000/6015

EASY STORAGE & TRANSPORT

LARGE STORAGE BAG WITH WHEELS INCLUDED, FITS COLLAPSED TENT WITH CANOPY STILL ON

6000 – 10’ x 10’
6015 – 10’ x 20’

Health Care

DR. MEHRA

HEAT EXPOSURE RECOVERY EFFORTS

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Dr. Rajesh N. Mehra

Board Certified Family Medicine

30 Years Urgent Care and Occupational Health Experience

Light Duty and Return to Work Expert

OSHA Compliant Worker's Comp Resolution

Headquarters in Chantilly, VA

Serving more than 200 Metro DC companies

Preventing Heat Stroke and Exhaustion

- Ensure availability of a drinking water source such as a cooler, water fountain or chilled bottled water
- Allow workers to take regular breaks in the shade and encourage hydration
- Promote use of sunscreens to prevent sunburns
- Consider installing portable air cooling stations in the shaded rest areas
- Remind workers to drink water every 15-20 minutes when exposed to high temps

Treating Heat Stroke and Exhaustion

- The quickest method is cold water immersion, which is effective to reduce core body temperature
- Another effective and more accessible method is to wrap a person in a special cooling blanket
- Apply ice packs to areas of groin, armpits, neck and back to help reduce body temp
- If using ice packs, remember to wrap them in a thin cloth or paper towel to prevent ice burns
- Spraying cold water on the body while fanning warm air makes water evaporate and cool the body

Final Recommendations

- Proper First Aid Kit suitable for specific work environment
- **Important Note:** over cooling may result in body shivers, which actually increase the body temperature, making the treatment less effective. In this case, a muscle relaxer maybe prescribed and administered.
- Finally, implementing our “patented” 3 step program will help you avoid any overheating on the job site: 1) Hydration 2) Hydration and 3) Hydration

Dr. Rajesh N. Mehra
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GC Perspective

DAN BLANKFELD, CSHM, SMS, CSMP, CHST, CIT

VICE PRESIDENT

CBG

Best Practices

- Train employees to Recognize factors that lead to heat emergencies
- Train employees how to Respond to heat related emergencies
- Allow workers to Take Breaks, use heat reducing PPE, Rotation of Workers during elevated heat /humidity conditions
- Provide Shade and or Rest Areas for breaks and rest periods

Best Practices

- Start training in April to Prepare for Heat Emergencies
- Place heat policy posters all over the project
- Place urine color charts (Hydration Indication) posters in the porta-johns.
- Give cases of sugar free electrolyte drink mixes to the safety team to hand out on hot days, during their safety walks.

Best Practices

- Toolbox talks should focus on heat emergencies and work practices starting in April
- Ensure their Field Managers have up-to-date First Aid training that covers heat related emergencies.
- Evaluate proper clothing and PPE for high temperature work processes.
- Provide adequate fresh water supply for all employees, on a continual basis throughout the day. (1-cup every 20 min.)

Recommended Resources

T8 CCR 3395 – CA HEAT ILLNESS PREVENTION STANDARD

OSHA MODEL HEAT-ILLESS PREVENTION PLAN

OSHA HEAT ILLNESS PREVENTION PAGE

HEAT SAFETY TOOL (OSHA,DOL,CDC, NIOSH)

Subcontractor Perspective

FRANK TRUJILLO

MILLER AND LONG

The Specialty Contractor's Perspective
- The Basics

- Have a comprehensive program in place.
- Train ALL employees on the program and verify their understanding.
- Monitor for program implementation. Document your efforts. Make heat stress mitigation part of your audits.
- Enforce your program. Where appropriate, discipline employees for not following their training.

Have Established Communication Channels

Maintain Your People First Mentality

Weekly Safety Topic

Cooler cleaning procedure

1. Have dish soap, a brush or sponge

2. Rinse cooler and lid, then apply dish soap

3. Scrub thoroughly: cooler lid, cooler and the cooler spigot

4. Rinse all parts of the cooler until all soap is gone

The cooler will then be ready to be filled with fresh filtered water or an electrolyte additive (label as such).

Questions or Concerns?
Contact the Safety Department.

March 2023

Panel Questions

What is the number one hurdle you see to overcome to increase awareness about heat stress on the job site?

What are some hurdles in getting an effective heat stress program implemented?

How do you manage emergency responses to heat related illnesses?

How can we increase the awareness of the technology available, the need for a program, and being prepared for future regulations?

What are your recommendations to this group to address heat stress?

50 / 50

MARTIN & ALEX

May Meeting Preview

JOSE MAYEN

Thank you

DRIVE SAFE