



# THE SSE ELUCIDATOR

*"Elucidate: to give clarity through explanation and analysis."*

## OSHA NEWS

### *OSHA Workplace Posters: Free for the Asking*

Advertisements suggesting that OSHA workplace posters must be purchased from private companies to avoid fines may be misleading employers. All official OSHA posters and many OSHA publications are available at no cost. Downloading or ordering posters and publications is now easier than ever. For a copy of OSHA's poster, visit OSHA's website at <http://www.osha-slc.gov/Publications/poster.html>. For the Spanish version, see <http://www.osha-slc.gov/Publications/poster2.html>. Employers can order multiple copies online by visiting [www.osha.gov](http://www.osha.gov), then Newsroom, then Publications. Complete the order form online, and fax your request to Publications at (202) 693-2498. You can also call (202) 698-1888 or write to: U.S. Department of Labor/OSHA, OSHA Publications, P.O. Box 37535 Washington, D.C. 20013-7535.

The official OSHA poster was redesigned last year to make it easier to read and understand. The new poster, called "It's the Law!" is available in English and Spanish. Employers need not replace older posters with the new ones, if they prefer to use them. Employers are required to display one of the two posters in a prominent location.

The OSHA poster informs workers of their rights to a safe and healthful workplace, how to file a complaint, report an emergency, and seek OSHA advice, and advises them of their right to confidentiality. It also lists the toll free number for OSHA, 800-321-OSHA, as well as phone numbers for regional OSHA offices around the country.

### *New Pandemic Flu Guidance for Healthcare Workers*

On May 21, OSHA unveiled a new workplace safety and health guidance document that will help em-

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ployers in the healthcare industry and their employees prepare for an influenza pandemic. Pandemic Influenza Preparedness and Response Guidance for Healthcare Workers and Healthcare Employers includes technical information on infection control and industrial hygiene practices to reduce the risk of infection in healthcare settings, workplace preparations and planning issues, and OSHA standards having special importance to pandemic preparedness planners and responders in the industry. The guidance document can be found at [http://www.osha.gov/Publications/OSHA\\_pandemic\\_health.pdf](http://www.osha.gov/Publications/OSHA_pandemic_health.pdf).



**Job Safety and Health**  
**It's the law!**

**OSHA**  
Occupational Safety and Health Administration  
U.S. Department of Labor

**EMPLOYEES:**

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.
- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the OSH Act.
- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violations.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records and records of your exposures to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.

Free assistance in identifying and correcting hazards or consulting with standards is available to employers, without citation or penalty, through OSHA-supported consultation programs in each state.

1-800-321-OSHA  
[www.osha.gov](http://www.osha.gov)



**Pandemic Influenza Preparedness and Response Guidance for Healthcare Workers and Healthcare Employers**

## HEAT STRESS HAZARDS

### *Don't Overlook the Hazards of Heat Stress*



If the dangers of heat stress are well known, why do workers keep getting hurt, or even killed, by the heat?

Heat stress is a common, yet often ignored hazard in the workplace. While it is widely recognized that heat stress can pose a serious health hazard to workers, employers may not realize that working in hot environments also increases safety risks.

Research conducted by the National Institute for Occupational Safety and Health (NIOSH) shows that work in hot environments is linked with lower mental alertness and physical performance, and subsequently, more injuries. Factor in elevated body temperature and physical discomfort and it's easy to see how workers can divert their attention from hazardous tasks and overlook common safety procedures.

Sources of heat stress range from the hot summer sun to the body heat generated inside a hazardous material suit worn during the cleanup of a toxic chemical spill. While often considered a summer or southern states problem, many companies need to take precautions throughout the year regardless of where they are located.

### *Heat-Related Slips*

The safety hazard of heat stress is overlooked partly because the "accidents" that result from it are often not properly recorded, according to Mike Wurm, vice president of engineering at Oconomowoc, Wis.-based Quest Technologies Inc., a manufacturer of industrial hygiene and safety instrumentation. Loren Tapp, M.D., a medical officer at NIOSH, agreed. "If a person trips or breaks an ankle, there's not an emphasis on finding out if the person was heat-stressed," she said. "There needs to be more awareness about that."

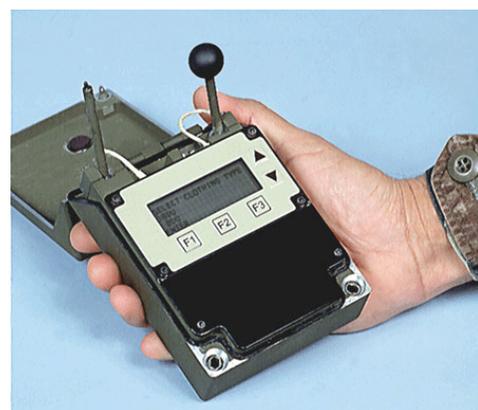
### *Monitoring the Heat*

Wurm and Tapp both say that awareness of heat stress is growing. However, even where the problem is recognized, many companies "have a long way to go as far as training employees to work in heat, surveillance and medical screening."

Medical screening of workers can help identify those who are more vulnerable to heat stress, such as workers who are older, overweight or taking medications that affect their ability to handle exertion in hot weather.

Tapp recommends that employers monitor hot environments by using a wet bulb thermometer, an essential component in obtaining the wet bulb globe temperature (WBGT).

"Use of WBGT is essential, because it allows you to measure not just the air temperature, but humidity in the air, radiant heat and wind velocity," said Tapp. All four factors are crucial in determining the risk of heat stress. The level of work activity, plus the clothes and the condition of the employee, are additional factors that must be considered.



**Pocket sized heat stress monitor:** Sensors for air temperature, humidity, wind speed, solar/radiant load, and atmospheric pressure and then calculates optimal work/rest cycle limits, hourly water consumption needs, and maximum safe work time.

## HEAT STRESS HAZARDS (continued)

The American Conference of Government Industrial Hygienists (ACGIH) uses WBGT in its threshold limit value (TLV) for heat exposure. Research confirms that WBGT mirrors how hot a person will become in any given environment, according to Thomas Bernard, vice chair of ACGIH's TLV physical agents committee.

"People have looked at bio-physical models of heat exchange, and they find that WBGT behaves much as a human behaves," said Bernard, a professor at the College of Public Health in the University of South Florida.

Bernard cautioned however, that the critical missing piece from WBGT measurements is how hard somebody is working. "In order to decide if heat stress is of concern, you must know the time-weighted average of the metabolic demands and the time-weighted average of the WBGT, and compare that to the TLV table."

### *Northern Hazards*

An additional reason heat stress may be overlooked is that many people living in the northern part of the U.S. think the issue does not affect them, according to Bernard. A person's ability to withstand the heat is affected by whether the individual has "acclimatized" to high temperatures. That's why sudden hot spells in traditionally cooler areas may pose more acute risks than heat in southern climates.

In addition, many employees are exposed to indoor high-heat environments and northern regions may lack proper ventilation or air conditioning because such precautions are not normally needed.

Simple precautions, such as those listed on OSHA's Heat Stress Card, can prevent many heat-related deaths and injuries. Available in both English and Spanish, these laminated, fold-up cards are offered free to employers to distribute to their workers.

### *The tips on the OSHA cards recommend that you:*

- ◆ Encourage workers to drink plenty of water about 1 cup of cool water every 15 to 20 minutes, even if they are not thirsty and to avoid alcohol, coffee, tea and caffeinated soft drinks that dehydrate the body.
- ◆ Help workers adjust to the heat by assigning a lighter workload and longer rest periods for the first 5 to 7 days of intense heat. This process needs to start all over again when a worker returns from vacation or absence from the job.
- ◆ Encourage workers to wear lightweight, light-colored, loose-fitting clothing. Workers should change their clothes if they get completely saturated.
- ◆ Use general ventilation and spot cooling at points of high heat production. Good airflow increases evaporation and cooling of the skin.
- ◆ Train first-aid workers to recognize and treat the signs of heat stress and be sure all workers know who has been trained to provide aid. Also train supervisors to detect early signs of heat-related illness and permit workers to interrupt their work if they become extremely uncomfortable.
- ◆ Consider a worker's physical condition when determining fitness to work in hot environments. Obesity, lack of conditioning, pregnancy and inadequate rest can increase susceptibility to heat stress.
- ◆ Alternate work and rest periods, with rest periods in a cooler area. Shorter, more frequent work-rest cycles are best. Schedule heavy work for cooler times of the day and use appropriate protective clothing.
- ◆ Monitor temperatures, humidity and workers' responses to heat at least hourly.

## PROTECTIVE FOOTWEAR



Safety shoes are a vital piece of Personal Protective Equipment (PPE), offering the last line of defense against the crushing weight of heavy objects or the hazards of dangerous chemicals. Are your workers' shoes still protecting them?

The purpose of this article simply is to raise awareness of two important safety issues: knowing when workers should replace their safety footwear and knowing the best ways to care for safety footwear in order to extend its life as long as possible.

### *If in Doubt, Throw it Out*

Choosing the appropriate shoe for the specific demands of the job is essential to ensuring that a safety shoe provides the proper protection. But selecting the correct shoe for the job is only half the battle. The other half is monitoring safety footwear for signs that the shoe may need to be "retired."

There's no one-size-fits-all formula for knowing exactly when it's time to replace safety shoes, as there are many variables to consider such as the job hazards, how often the boot is worn and the size and weight of the worker.

Even within the same industry, the length of a safety shoe's service depends on the job task. A good rule of thumb, though, is if there's any question that the shoe can no longer do what it was intended to do, then you should dispose of it.

When inspecting safety footwear to see if it needs to be replaced, shoes with steel toecaps will offer more tactile clues than shoes with composite material toecaps. For example, if a heavy object falls on a steel toe shoe, the steel cap will be dented and will not "spring back," indicating that the shoe must be replaced. Composite material shoes, on the other hand, could be "irrevocably damaged" in the same incident and still maintain their form.

That's one reason why experts recommends replacing impact-resistant safety footwear anytime something heavy is dropped on it. Even if there's only "mild impact," if there's any doubt that the shoe will be able to offer protection next time something falls on it, the shoe should be replaced.

### *Wear and Tear*

The criteria for replacing shoes due to excessive wear and tear is subjective, but there are some red flags, such as when a shoe's steel toe or other protective components such as the steel midsole, the steel shank or the metatarsal guard is showing. (In all four scenarios, the shoe needs to be replaced immediately.)

The National Safety Council, in its "Selection and User Guide for Protective Footwear," recommends immediately replacing impact- and compression-resistant shoes if there's "evidence of physical damage" to the toe area or the shoe. For shoes with metatarsal guards, shoes should be replaced after an impact has occurred or when the metatarsal guard is exposed from wear and tear, according to the guide.

For waterproof or chemical-resistant footwear made with rubber or PVC materials, boots should be immediately replaced if there is any separation of the rubber or PVC parts, including the outsole, foxing (the piece of material that protects the joint between the outsole and the upper) or toe cover.

Common sense is the best guide. If shoes are tattered and worn, the toes are poking through the sides, the steel toe is visible through the leather, then common sense tells you it's time to get a new pair of shoes.

The same could be said for evaluating the tread on a slip-resistant safety shoe. Once tread, or outsole, shows signs of damage or wear, the shoe likely is reaching retirement age.

If an area of the shoe's tread is worn smooth or the tread design is not visible, then the need to replace the shoe becomes urgent, as the shoe isn't providing the slip protection it was purchased for.

## PROTECTIVE FOOTWEAR (continued)

Even though about 80 percent of the "slip-resistant magic" in slip-resistant shoes is attributed to the compound found in the tread with the grid pattern itself only accounting for about 20 percent of the slip-resistant properties, the tread's design still presents an important visual clue for replacement.

If the grid is in place, the shoe will still function. However, if the grid is completely eradicated, then it's slip-resistance been compromised.

### *Check for Leaks*

Something important to look for when evaluating the fitness of a rubber safety shoe or boot is the presence of cuts, cracks or punctures on the footwear, which could cause leaking.

A leak can undermine the ability of safety footwear to keep water or harmful chemicals from reaching the foot, and replacement is the safest course. The National Safety Council recommends discarding leather or rubber safety shoes when cracks or punctures appear. However, in cases in which exposure to hazardous chemicals is not an issue, patching the shoe with a rubber or PVC patch kit could be an option. Such kits are readily available at shoe retailers or the shoe section of stores such as Wal-Mart or Target.

There are two relatively easy ways to test a rubber shoe or boot for leaks: The first method involves removing the shoe's insole and filling the shoe with water. Place the shoe on a newspaper and look for leaks. Unfortunately, once the test is complete, the boot needs time to dry before it can be worn again. The second method involves lining the inside of the shoe with a paper towel or cloth, placing a heavy object on top of the towel or cloth to hold it in place and then filling a bucket with water so that the water level is only a few inches from the top of the shoe. (Do not let the water overflow into the opening at the top of the shoe.) Leave the shoe in the bucket overnight. The next day, take out the paper towel or cloth and check for dampness which would indicate a leak.

### *Getting More Mileage From Safety Footwear*

Dedicating a few minutes each day to the care and maintenance of safety footwear can go a long way toward extending the life of workers' shoes. While workers always should consult the manufacturer's instructions first, the following tips will help get the optimal performance and life out of a pair of safety shoes.

*Rotate shoe:* If it's feasible, purchase two pairs and rotate between the two pairs. On average, a worker can perspire as much as 200 milliliters of moisture into a boot or shoe when involved in heavy activity. Such moisture not only can eat away at the boot but also can cause discomfort and blisters for the workers. By giving each pair of boots a day to rest, you allow the moisture to evaporate and dry out.

*Keep footwear clean:* After each use, safety footwear should be sprayed off with a hose; dipped in water; or cleaned with soap, water and a cloth or brush, depending on the type of shoes and how dirty they are. (For full-grain leather, clean with a damp cloth or sponge and a mild detergent.) Cleaning footwear not only protects the shoe from deterioration but also makes it easier to detect signs of physical damage.

*Keep leather supple:* If you wear safety footwear made with leather, use shoe grease, oil or other moisturizing cream available at shoe stores and other retailers to prevent drying out and cracking. As always, consult the manufacturer's instructions first. If there are no instructions, visit the manufacturer's Web site or a shoe retailer.

*Purchase a new sock liner:* If footwear doesn't show physical signs of deterioration, a new sock liner can breathe new life into an old pair of boots, increasing the comfort of boots that have been worn for a while.

*Choose the right shoe:* Often when safety shoes fail to meet expectations it's because the shoes weren't appropriate for the job task. Safety professionals can ensure that workers are outfitted with the right shoes or boots by conducting a hazard assessment for each job task to determine what kind of foot protection is needed for each job.

## DO'S AND DON'TS OF PEST CONTROL



Sooner or later, we're all pestered by pests. Whether it's ants in the kitchen or weeds in the vegetable garden, pests can be annoying and bothersome. At the same time, many of us are concerned that the pesticides we use to control pests can cause problems too. How can pests be controlled safely? When and how should pesticides be used?

Today, you can choose from many different methods as you plan your strategy for

controlling pests. Sometimes a non-chemical method of control is as effective and convenient as a chemical alternative. For many pests, total elimination is almost impossible, but it is possible to control them. Knowing your options is the key to pest control. Methods available to you include pest prevention, non-chemical pest controls, and chemical pesticides.

In most cases, there are several things you should do before even thinking about chemical pest control. Pests need food, water, and shelter. Often, the problem may be solved just by removing these key items. Reducing or preventing pest invasions often starts with the following:

- ◆ Fixing leaky plumbing and look for other sources of water, such as trays under house plants.
- ◆ Making sure food and food scraps are tightly sealed and garbage is regularly removed from the home.
- ◆ Don't leave pet food and water out overnight.
- ◆ Closing off entryways and hiding places (caulking cracks and crevices around cabinets or baseboards, for example).

If you hire any outside persons to help control pests, ask them to find and correct the source of the problem before applying pesticides. For exam-

ple, you might have to repair a leaky toilet to remove a water source. Ask them to use baits and crack and crevice treatments when feasible.

Once these preventive steps are completed, traps or bait stations can be used against some pests. These are often effective and can be used with low risk of exposure to the pesticide, as long as they are kept out of the reach of children and pets.

Other relatively low-risk pesticides are available for some pests. Consult your local cooperative extension service office for recommendations suitable for your area and only apply chemicals approved for use in homes. Do not use outdoor chemicals indoors. Many chemicals intended for use outdoors are dangerous to use indoors because they will remain toxic longer inside than they would outdoors.

Once identifying the appropriate pesticide for your pest, always read and follow the pesticide label's instructions and safety warnings. The label will list where the chemical may be used. It's advisable to write down the name and EPA registration number of any chemical used by someone you hire. You will need this information if you decide to look up more information on the pesticide. The pest control operator should be able to provide information about the chemical, such as the material safety data sheet.

Chemicals should only be applied to cracks and crevices, not sprayed over the whole room. Use fogging devices only when absolutely necessary. It is also advisable to use ready-to-use products (i.e., no mixing needed) whenever possible.

Always store pesticides in their original containers and never transfer pesticides to other containers. Also, don't use empty pesticide containers to store anything else. Children and others have been poisoned by accidentally consuming pesticides stored in food or beverage containers. No matter how well you wash the container, it could still contain remnants of the pesticide and could harm someone.

Once the pesticide has been applied, dispose of leftover pesticides and pesticide containers properly

## DO'S AND DON'TS OF PEST CONTROL (continued)

by reading the label to find out how to dispose of the pesticide and the container. Many communities have household hazardous waste collections that accept unwanted pesticides. Call your waste disposal authority for information for your community.

Finally, never use illegal pesticide products that contain unregistered pesticides that have not been approved for use by the EPA. While they often come in familiar shapes and packages, illegal pesticides are often much more toxic than registered pesticides posing a threat to your family. You may have seen people selling them on the street or in small neighborhood stores. They go by names like *Tres Pasitos* or Chalk, and they come with a guarantee to kill roaches, mice and other household pests like nothing else on the market. But most such products are illegal.

Common illegal pest products include naphthalene moth repellent products (mothballs), deltamethrin insecticide chalk, foreign labeled, unregistered versions of the common pet products Advantage and

Frontline, *Tres Pasitos* (uses the extremely toxic chemical aldicarb for roaches, mice, and rats), anti-bacterial products that are not registered with the EPA. To prevent buying an illegal pesticide, always look for the EPA registration number on the container, make sure that it lists its active ingredients on the label, and that the label states that it safe to use inside your home.



For additional information visit <http://www.epa.gov/pesticides/controlling/home.htm>. You can also contact the EPA Regional Pesticide unit that covers your location. Find your Regional Pesticide unit by visiting <http://www.epa.gov/pesticides/local/index.htm>. You can also call the National Pesticide Information Center at 1-800-858-7378.

## REVISED SOLID WASTE DEFINITION

EPA has issued a proposed rule to modify the definition of solid waste rule to exclude certain hazardous secondary materials and provide for the recycling of such materials as solvents, metals, and certain other chemicals. The proposed rule provides exclusions for:

- ◆ Materials that are generated and reclaimed under the control of the generator;
- ◆ Materials that are generated and transferred to another person or company for reclamation under specific conditions; and
- ◆ Materials that EPA deems nonwaste through a case-by-case petition process.

The proposal also defines legitimate recycling activities. Defining legitimate recycling ensures that only authentic recycling, and not treatment or disposal under the guise of recycling, receives the benefits of streamlined regulations. In order to be

legitimately recycled, the:

- ◆ Material must provide a useful contribution to the recycling process; and
- ◆ Recycling must make a valuable new product.

In addition, the recycled material must be managed as a valuable product, and must not contain toxic constituents at significantly greater levels than non-recycled product. Materials that are inherently wastelike, or used in a manner constituting disposal, or are burned for energy recovery would not be eligible.

**CFR References:** 40 CFR 260, 261

**Further Information:** Marilyn Goode, Office of Solid Waste, Hazardous Waste Identification Division, EPA, (703) 308-8800, [goode.marilyn@epa.gov](mailto:goode.marilyn@epa.gov). Full text of the document can be found at <http://a257.g.akamaitech.net/7/257/2422/01jan2007180/edocket.access.gpo.gov/2007/E7-5159.htm>

**THE ELUCIDATOR**

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*Visit us at:*

<http://mrmc-www.army.mil>

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***Reminder***

*For all accidents, no matter how minor,  
specific forms documenting the incident must be submitted to your Safety Office.*

*Military: DA Form 285-AB-4*

*Civilian: DOL Claims Forms CA-1 or CA-2*

*All employees requiring medical attention must visit your local Occupation Health Clinic as soon as possible post mishap.*