

Construction News Sense

Could BBS Help??
See page 2 for
NYC accidents



Summer is rapidly approaching, and it is important to remember heat stress can affect us all. Construction workers in particular, especially roofers, road crews, and laborers, are at high risk for heat-related illnesses.

For workers in the desert southwest climate, the primary contributors to heat-stress related illness are radiant energy (sun) and ambient temperature. Sweat evaporating from the skin is one of the body's primary heat removal mechanisms. This process can be hampered by high humidity or clothing other than normal work clothing.

Factors Leading to Heat Stress

- Lack of proper acclimatization to hot workplaces. Acclimatization takes approximately 10 consecutive work days and can be interrupted by vacations or working away from hot workplaces.
- High temperature and humidity
- Direct sun or heat
- Limited air movement
- Physical exertion
- Poor physical condition
- Some medications
- Improper diet and alcohol consumption
- Wearing water-vapor-impermeable, air-impermeable, and thermally insulating clothing that restricts heat removal



Heat exhaustion or heat stroke can occur when the body is unable to cool itself through sweating. Heat stroke can result in death.

Heat Exhaustion

Heat exhaustion results from the loss of body fluid through sweating when a worker fails to drink enough fluids and/or take in adequate salt. A worker suffering from heat exhaustion may still be sweating but also experiences:

- Headaches, dizziness, lightheadedness, or fainting
- Weakness and moist skin
- Mood changes such as irritability or confusion
- Upset stomach or vomiting

Heat Stroke

When the body's internal mechanism for regulating its core temperature fails, a worker may experience heat stroke, one of the most serious health problems for workers in hot environments. Signs and symptoms include:

- Dry, hot skin with no sweating
- Mental confusion or loss of consciousness
- Seizures or convulsions

Heat Cramps

Heat cramps, painful spasms of the muscles, are caused when a worker drinks large quantities of water but fails to replace the salt lost through sweating. Tired muscles – particularly those

used in actually performing the work -- are usually the most susceptible to cramps. Cramps may occur during or after working hours. They can be relieved by taking liquids by mouth or, if determined to be medically necessary, intravenous saline solutions.

Preventing Heat Stress

- Know the signs/symptoms of heat-related illnesses; monitor yourself and coworkers.
- Limit your exposure to hot working conditions and encourage coworkers to observe and detect signs and symptoms of heat stress in others.
- When possible, block direct sun or other heat sources on the work site.
- Work at cooler times of day. Roofers or those involved in paving/tarring operations should consider starting work as soon as daylight permits and quitting work during the hotter parts of the day.
- Use cooling fans/air-conditioning and rest regularly in a shaded, cool area.
- Drink plenty of water, about one cup (8 oz.) every 15 minutes.
- Wear lightweight, light-colored, loose-fitting clothes.
- Avoid alcohol, caffeinated drinks, and heavy meals.
- Follow recommended work/rest regimes.

What to Do for Heat-Related Illness

Call 844-0911 (or 911 from a SNL phone) at once.

While waiting for help to arrive:

- Move the person to a cool, shaded area.
- Loosen or remove heavy clothing.
- Provide cool drinking water; never force an unconscious person to drink.
- Fan and mist the person with water.

Construction Inspectors are provided with daily heat stress index reports. The heat stress index is a guidance measure for determining when dangerous heat conditions may exist and when stricter work/rest regimes should be implemented. Ask your Construction Inspector for daily updates on the heat stress index. The heat stress index is color coded.

- **Green** = environmental conditions in which most healthy adults can work without experiencing heat stress illnesses;
- **Yellow** = increased danger for heat stress; need to implement controls and increase observation;
- **Red** = heat stress illnesses are likely to occur if proper precautions are not observed.

In the case of potential yellow or red conditions, consult Industrial Hygiene (Diane Morrell – 284-9289) for guidance.

Diane Morrell, 04127

Why are Tower Cranes Falling?

Read the following passage below and ask yourself, would a Behavioral Based Safety Program (BBS) have made a difference?

"The accident is just unacceptable and we've got to figure out what happened here." — New York City Mayor Michael R. Bloomberg referring to the city's latest tower crane accident, the second within 75 days.

The first crane accident occurred on March 15, 2008. Seven people were killed and dozens more were injured. An investigation determined the process of raising the crane to another level led to the crane's collapse. The suspected primary cause of the accident has been identified as the failure of a \$70 nylon webbing sling commonly used for hoisting construction materials. The sling broke while lifting an 800-pound steel collar used to attach the crane to the building for stabilization. When the collar fell, it struck a lower attached collar causing it to detach from the building which destabilized the crane and allowed it to fall.

The second accident occurred on May 30, 2008, killing two New Yorkers. A tower crane located on 91st Street and First Avenue buckled and collapsed onto an adjacent high-rise apartment building shortly after 8:00 a.m. As it fell, the crane sheared off balconies, damaged 45 of 169 apartments, and sent debris raining onto the street below. The crane was being used for the construction of a new luxury high-rise apartment complex and Middle school. The tower crane operator, age 30, was in the cab when the tower crane toppled twenty stories to the ground; he died at the scene of the accident. A second man, age 27, was also killed.



Accounts from eye witnesses to this second event describe the tower crane as waving back and forth prior to the collapse. Some witnesses at the scene believe the crane was not adequately supported on the structure where it was operating. City officials are working to determine the cause of the accident and urgently attempting to reassure New Yorkers the cranes towering above the city are safe and pose no imminent threat to citizens below.

If the New York City Buildings Department had a BBS program initiative, could the two tower crane accidents have possibly been prevented? BBS was developed to supplement traditional safety practices by focusing on behaviors of individuals that can prevent accidents. BBS examines what people do, analyzes why they do it, and applies a strategy of intervention to improve worker behavior. Applied to construction activities, BBS provides a process for employees to identify and choose a safe behavior over an unsafe one, focusing on key behaviors such as Pre-Job Inspection, Eyes on Path/Task, and Tool and Equipment Use, etc.

A Pre-Job Inspection is critical in the construction industry because it allows workers to zero in on potential risk/hazards and provides an opportunity for construction crew members to discuss and plan for upcoming construction task. Eyes on Path/Task on the construction site is paramount to the workforce being cognizant of what is happening in the work environment. Using the proper tools and equipment for a job ensures team members are performing construction tasks in accordance with industry standards.

A BBS program within the workplace does not guarantee accidents will not happen on a construction site. A BBS program might not have prevented the tower crane accidents in New York but, had such a program been implemented, there might have been more safety awareness, which might have altered the outcome of these disastrous events.

Bryant Reeves, 04827

Wildlife Encounters in Wildland Work Areas

Working in the middle of wildlands or adjacent to wildlands can be a very enjoyable experience. Many people like outdoor work environments that are away from the heat of the city, with red-tailed hawks flying overhead, birds singing nearby, and coyotes in the distance. Heightened awareness of wildlife in construction work zones in such areas will help prevent injury to both humans and animals.



Construction work in these wildland areas will, of course, disturb animals that have made their homes in or near work zones. Most animals will move away because of the disturbance, but some may not be able to relocate, such as those raising young in active nests. Other animals, particularly reptiles, may observe the shade created by the construction equipment and nestle up in these shady locations at mid-day. Work zones may actually see a greater level of wildlife activity than normal for the area as animals investigate the disturbance for potential new homes or as they return to see if they can move back into their old homes.

Rattlesnakes pose the greatest health concern to humans in these areas. A rattlesnake bite, though extremely rare, can be dangerous. Be careful never to place any part of your body, especially hands and feet, into an area that you cannot easily see into. Use caution in difficult-to-observe areas where a rattlesnake may be sleeping, such as dark, tight spaces between pieces of equipment and in tall grass.

Properly storing food and waste at wildland construction sites is also an important precaution. If not stored and disposed of correctly, food will attract foraging small mammals, and these small mammals will attract rattlesnakes to the work zone.

Prior to the start of any work, a habitat evaluation of all proposed construction areas must be completed. This evaluation is to identify the presence of any species in the proposed area that may be under special federal, state, DOE, or DOD protections, such as nesting birds and prairie dogs.

If you encounter wildlife needing relocation (e.g., rattlesnakes, rabbits in un-earthed nests), contact Telecon at 844-4571. The following personnel in the Ecology Program may also be contacted: Stephanie Salinas (845-7711), Jennifer Payne (845-9849), Steve Cox (844-7054), or Ashli Maruster (845-9891).

Jennifer Payne, 04133



BEWARE of wildlife in Tech Area 1 also. There was a rattlesnake removed from the 894 equipment room.

Everybody will live happily and harmoniously ever after if these simple guidelines are followed.