

Why Employees Forget 70% of their Training and What You Can Do

Unlock the Potential of a Better LMS

**Become a 10X Better Safety
Trainer in 2018**

Heat Illness Prevention, Compliance and Training – How to Tackle the Summer's Most Frequent Cited Standard

Building Safety Checklist

There's no one-size-fits-all fix for business resumption following a fire, earthquake or other disaster. However, the American Society of Safety Engineers (ASSE) has published some useful general information that can help companies before, during and

after disasters.

- Structural integrity of a building or facility must be determined by a qualified professional before anyone is allowed to enter it.
- The condition of drain, fill, plumbing and hydraulic lines on processes and machinery must be tested. Plumbing lines should be evaluated and tested to detect any hazardous gases.
- Appropriate government agencies should be contacted to gain approval to resume occupancy of a building. Entry should not be permitted until proper clearances have been obtained.
- Clean-up and business resumption processes must be carried out in a safe and healthful manner. Hazardous waste disposal issues must be evaluated before clean-up begins. Appropriate PPE must be used during clean-up and restarting processes. Fire and smoke alarms must be cleaned and tested before re-occupancy is permitted.
- Air quality assessments must be undertaken to ensure asbestos and other chemical and toxic agents are not present before business operations resume.
- Vents need to be checked to ensure water heaters and gas furnaces are clear of dust and debris and operable. Heating, ventilation and air-conditioning systems must be inspected before being restarted.
- Ensure no interior wall or ceiling materials are in danger of falling. Check for cracked windows and any loose or damaged exterior materials that could fall and injure people. Broken glass, debris or other materials with sharp edges should be safely gathered and disposed of immediately. Don't wait until your company's regular collection day.
- Electrical systems, computer cables and telecommunications equipment must be checked for damage. Wiring inspections should be conducted from the outside in to ensure nothing is shorting out because of water or other types of damage. Lighting, including emergency lighting, should also be tested. If there is no access to electricity on the site, do not use fueled generators or heaters indoors. Ensure there are no gas or sewer leaks. Check with your local utilities.

- Have sanitation facilities inspected to guard against potential employee exposures to toxic agents. Unused food should be discarded, and oven hoods and other kitchen ventilation devices should be inspected to ensure they are not clogged.
 - Office furniture should be inspected to ensure it can withstand expected loads. Storage devices screwed or bolted onto walls must also be checked for stability following an explosion, earthquake, fire or other disaster.
 - Create a new emergency plan and distribute it to employees as soon as they return to work. Make sure that employees can quickly evacuate a building and those fire extinguishers are fully charged. Ensure they know where to meet or call during emergencies, so everyone can be accounted for. Frequently update lists of emergency names and telephone numbers.
 - Check flooring surfaces to ensure they are acceptable and free from possible slip, trip and fall hazards.
 - Use existing federal guidelines provided by agencies such as FEMA (Federal Emergency Management Agency) and NIOSH for additional start-up.
-

Infection Control During Hospital Construction

Infection control is an important topic. If you've ever done work as a contractor inside a healthcare setting, such as a renovation, you no doubt had to take infection control precautions.

Now there's a Canadian voluntary standard for infection control—the first of its kind anywhere.

CSA-Z317.13-07

For all of you American and other international readers, in Canada we have something called the Canadian Standards Association. Some

of you may be familiar with the CSA because it's a fairly well known organization. The CSA sets standards for all kinds of things in all different kinds of industries.

In 2003, in an almost quiet way, CSA established a new standard for infection control during construction or renovation in healthcare facilities, CSA-Z317.13-03. Since then, the standard has undergone a second revision, released one year before a regular standard would be. The 2007 edition of the CSA infection control standard, CSA-Z317.13-07, is even more descriptive than the original edition.

The Response to the Standard

Within our industry, we are seeing a culture evolve around the standard that is worth our attention. Many other countries are taking notice of this development and medical professionals from around the world have been lining up to buy the new standard from the CSA.

Why has there been much interest in the new standard? There are many reasons. For one thing, the CSA standard is the first of its kind. For a long time, there has been a demand for a universal standard for infection control for construction work in healthcare settings. Contractors have really needed such a standard, and so have hospitals. The average contractor taking on a hospital job is up against a whole mess of variables that it probably wasn't aware of until it actually got into the building. This is especially true for renovation jobs. So having a standard in place should save both the contractor and the facility a lot of time, energy and aggravation and make the work much easier.

Patient Deaths & the Liability Perspective

The main reason for all the interest in the standard is because it's very detailed and specific about what it requires from the contractor. As a result, it goes a long way to protect both sides from liability.

There's a long history of unexplained and unexpected deaths to patients in healthcare facilities that have occurred during

construction or maintenance projects. Investigations have been able to link some of these deaths to the construction work and the failure of the person doing the work to take the necessary infection control precautions.

There have also been countless situations where construction work was the suspected cause of patient death but the suspicion was impossible to prove. Why? Because if a patient is extremely ill, inhaling even a tiny amount of the wrong type of dust can cause a fatal infection. In Canada, roughly 250,000 patients a year experience hospital acquired infections, resulting in 8,000-12,000 deaths. It would take an incredible amount of resources and qualified individuals to investigate even half of the patient infections that occur.

How the Standard Helps Both Parties

It wouldn't be fair to blame all of the infections on the contractor. Hospital workers also have a key role to play in infection control. One thing the CSA standard does is educate hospital staff very quickly even if they know next to nothing about construction. The standard includes a user friendly table that lists the construction activity type, the population group at risk from the activity, i.e., type of patients in the area and the preventive measures required. There are even detailed diagrams of how to construct infection control barriers, which must be constructed outside of renovation areas. With a little training, any infection control practitioner can assess most situations to see if they're being done in compliance with the standard.

The standard is also of great value to contractors and safety professionals performing healthcare facility renovation or maintenance projects. First of all, the hospital might require you to work in accordance with the new CSA standard. Even if it doesn't, you should read and consider following the standard anyway. Many of the practices within the standard are of great benefit to contractors not only in ensuring safety but in documenting that they showed due diligence.

Conclusion

Adopting the CSA standard is voluntary. But it would go a long way toward meeting the company's obligation—in both the U.S. and Canada—to protect against known risks. More importantly, it will help healthcare facilities protect patients against infection.

Personal Liability of CEOs for OSHA Violations

Make sure your CEO understands that he or she can be held personally liable for certain safety violations. Give your CEO this briefing to make your case.

OSHA cited two New Jersey corporations for willful violations. One citation carried a \$96,300 fine; the other a \$196,000 fine. In both cases, OSHA also cited the father-and-son team that owned the corporations. The father was the president and the only officer and director of both corporations. The son, a lawyer whose only clients were the corporations, ran the corporate offices out of his basement.

Corporate officers normally aren't personally liable for the OSHA violations of their companies. But in this case OSHA argued that because the corporations had no "distinct personalities," the father and son should be personally liable for the fines. The Administrative Law Judge (ALJ) in the \$96,300 case agreed; but the ALJ in the other case didn't. The Occupational Safety and Health Review Commission is currently considering both cases [*Sec. of Labor v. Avcon, Inc.*; *Sec. of Labor v. Altor, Inc.*].

The Threat Of Individual Liability

The *Avcon* and *Altor* cases show that OSHA intends to be more aggressive in seeking to "pierce the corporate veil"—that is, holding individual directors, officers and shareholders (which, for simplicity sake, we'll refer to collectively as "officers")

personally accountable for the safety violations their companies commit. The Secretary of Labor in these cases is advancing a theory that would make it much easier for OSHA and courts to pierce the corporate veil. If she succeeds, individual officers may find themselves writing checks for hefty fines, and maybe even spending time in prison.

The Solution

How can you keep OSHA and the courts from piercing the corporate veil? Answer: Keep your corporation's legal identity separate from your own. You have to engage in an ongoing analysis of the way the corporation conducts its business, and the way officers interact with the company. Specifically, there are three questions you need to ask to determine if you're doing enough to protect against individual liability:

1. Are you and the other officers observing all corporate formalities?
2. Are you keeping your personal assets separate from the company's business assets?
3. Are you avoiding conduct that could suggest that the corporation is your alter ego?

The Explanation

Here's why you should ask and how you can answer each of these questions to assess your vulnerability to piercing of the corporate veil:

1. Corporate Formalities

Corporations are organized under state corporation laws. The people who create and run a corporation must observe certain formalities to ensure the corporation is treated like a separate legal entity under the corporation laws including:

- Filing all incorporation papers;
- Filing all annual reports;
- Holding shareholder meetings at least once a year;
- Holding director meetings at least once a year;

- Keeping minutes of all shareholder and director meetings;
- Properly documenting all issuances of corporate stock;
- Issuing consents in lieu of meetings for actions taken without a formal meeting; and
- Keeping other records.

Keeping Corporate and Personal Assets Separate

The corporation is supposed to be a distinct “person” under the law, one that’s separate from its owners. For a corporation to be treated as a separate person, its assets must be truly its own and not the personal assets of its officers. The corporation’s assets must be kept separate from and not “commingled” with the officers’ assets. Accordingly, you should make sure the corporation:

- Has its own bank accounts;
- Maintains separate offices;
- Owns or leases its own equipment;
- Documents any loans to or from officers; and
- Refrains from paying the officers’ personal obligations.

Treating the Corporation as Your Alter Ego

Officers need to understand that if they act like the corporation is there to serve their personal interests, OSHA and the courts may consider the corporation their alter ego, pierce the veil and hold them personally liable for the corporation’s OSHA fines and criminal penalties.

When officers act in the corporation’s name, those actions should be for legitimate business purposes. They shouldn’t be for the officer’s personal gain. And, one person shouldn’t be the sole officer, director and shareholder of the corporation. Otherwise, OSHA and the courts may find that there’s no real difference between the shareholder and the corporation; that the corporation was in fact that individual’s “alter ego.”

Seven Statistics on Crane Incidents

While cranes can handle some pretty spectacular lifting feats, when things go wrong, watch out. Here are seven statistics relating to crane incidents

1. Between 2002 and 2006 there were 632 crane-related construction deaths across the US. (Bureau of Labor Statistics)
2. Of those 632 deaths, 25 percent involved electrocution from crane contact with overhead power lines.
3. Eight percent of all crane incidents are caused by the boom on a crane collapsing or buckling. (Occupational Safety and Health Administration)
4. Three types of crane-related injuries/fatalities involve electrocution as a result of a crane boom touching overhead power lines, being caught in or crushed in rotating/moving parts or by the swinging superstructure of the crane, and being struck by a falling or swinging load.
5. 90 percent of crane incidents occur as a result of human error. (Crane Inspection and Certification Bureau)
6. 80 percent of crane upsets are caused by operators exceeding their cranes' operational capacities. (Crane Inspection and Certification Bureau)
7. Following the January 2008 crushing death of a 22-year-old crane operator in a tip-over incident in Vancouver, BC, WorkSafeBC fined two companies a total of \$315,000, one of the highest such penalties ever imposed in Canada. WorkSafeBC said the worker's death was linked to insufficient supervision, experience and training.

Cranes are capable of amazing lifting feats, but when lifts go wrong, devastating things can happen not only to workers, but to anyone else in the area. Here are some statistics relating to crane injuries and fatalities.

Seven Statistics on Electrical Hazards

Many people take electricity for granted and their complacency can come back to zap them, sometimes fatally so. Here are seven statistics relating to electrical safety.

1. Electrical hazards cause more than 300 deaths and 4,000 injuries in workplaces across the US every year. (Electrical Safety Foundation International)
2. As little as 100 milliamps of current passing across the chest for a couple of seconds can put the heart into a fatal rhythm. (Ohio State University)
3. The degree of injury from an electrical shock depends on three things: The part of your body that receives the current; the duration of the shock; and the amount of current passing through your body.
4. Your chances of being electrocuted increase under these four conditions: When standing in a pool of water; when wearing wet clothing; when working in highly-humid conditions; and when you are perspiring.
5. Two conditions that will cause you to experience an electric shock are: when touching a live wire and an electrical ground; and when touching a live wire and another wire at a different voltage. (OSHA)
6. The number one non-fatal electrical injury is an electrical burn. (OSHA)
7. Contact with overhead power lines accounts for about 42 percent of all on-the-job electrical deaths. (National Institute for Occupational Safety and Health (NIOSH))

As with many other conveniences, reliance on electricity is so common that people tend to become complacent about the hazards associated with its use. Mistakes people make—such as assuming that because an electrical item has been switched off, it poses no

danger—frequently result in serious injury or death. Here are seven statistics related to electrical hazards:

Seven Statistics on Aerial Lift Equipment

Aerial lifts are useful tools for moving workers close to elevated work spaces that would otherwise be tricky to access. But this equipment can also be dangerous, as the following statistics show.

1. **Four** causes of injuries and deaths involving aerial lifts are falls from lifts, collapses, tip-overs and electrocutions.
2. Boom lifts account for nearly **70** percent of aerial lift worker fatalities. (eLCOSH)
3. **50 percent** of the falls from boom lifts involve workers being thrown from buckets struck by vehicles, crane loads or falling objects, or as the result of jerky movements. (eLCOSH)
4. **1** type of aerial lift incident resulting in injuries or fatalities involves a worker being caught between a bucket edge and an object such as a beam, while repositioning a bucket.
5. **3** contributing causes of aerial lift deaths are a lack of training, misuse of equipment or not following the manufacturer's instructions.
6. A Canadian automotive and industrial parts manufacturer, Martineau International Inc., was fined **\$250,000** after a worker died in a scissor lift tip-over caused by wind gusts.
7. **8** conditions that can result in injuries or deaths during aerial lift operations are: exceeding a lift's load capacity, falls from elevated levels, objects or items falling from lifts, electrical hazards, contact with objects such as walls, ceilings or pipes, high winds and uneven

terrain. (University of Central Oklahoma)

Aerial work platforms are useful tools for moving workers close to elevated work spaces that would otherwise be tricky to access. But if they are not operated by trained and qualified workers, these machines can easily cause deaths or serious injuries. Here are seven statistics relating to aerial lifts:

Click the  button below to Download the PDF.

Download



Seven Statistics on Aging Workers

More people are working later in life today, for financial or personal reasons. Here are seven statistics relating to older workers and some of the age-related safety and health challenges they face.

1. Seven signs of aging that can begin to affect workers as young as 40 are reduced physical strength and range of joint movement; reduced breathing capacity; poorer posture and balance; sleeping disorders; reduced ability to regulate body temperature; vision problems; and hearing loss.
2. By 2021, nearly 25 percent of Canadian workers will be 55 or older. (Statistics Canada)
3. On average, people lose 15 to 20 percent of their strength between the ages of 20 and 60. (Canadian Centre for Occupational Health and Safety)
4. In the United States in 2011, 77 percent of workers aged 55 and older held full-time employment, while 23 percent worked part-time. (US Centers for Disease Control and Prevention)

5. In 2013, American workers aged 65 and older had the lowest incidence of non-fatal injuries and illnesses, at 89 cases per 10,000 full-time workers. However, they required the longest time away from work to recover from injuries or illnesses—a median 14 days. (Bureau of Labor Statistics)
6. Older workers are 3 times more likely to suffer a fracture or severe fall compared to younger workers. (University of British Columbia study)
7. The 3 most commonly reported injuries among older workers are same-level falls, overexertion and contact with objects or equipment.

For a variety of reasons, including financial inability to retire and the need to stay socially active and have a sense of purpose, people are working later in life today. Older workers, generally categorized as being 55 and older, bring a wealth of experience to the workplace, although there are some challenges that come with aging. Here are seven statistics on older workers:

Seven Statistics on CPR

Cardiac arrest – an electrical malfunction in the heart that causes an irregular heartbeat (arrhythmia) and disrupts the flow of blood to the brain, lungs and other organs – is a leading cause of death.

1. Cardiac arrest – an electrical malfunction in the heart that causes an irregular heartbeat (arrhythmia) and disrupts the flow of blood to the brain, lungs and other organs – is a leading cause of death. Each year, more than 350,000 out-of-hospital cardiac arrests occur in the United States and Canada.
2. **90-95%** of sudden cardiac arrest victims die before reaching the hospital. But, immediate CPR can double a victim's chance of survival.

3. When someone needs CPR, **ANY CPR IS BETTER THAN NO CPR**, without it a victim's chances of survival fall 7-10% every minute they go without CPR and defibrillation.
 4. Oxygen rich blood must reach the body's vital organs within **5 minutes** or systems will begin to fail. The chest compressions of CPR can keep the blood moving. During CPR, you should push on the chest at a rate of 100 to 120 compressions per minute. The beat of "Stayin' Alive" is a perfect match for this.
 5. If you are called on to give CPR in an emergency, you will most likely be trying to save the life of someone you love: a child, a spouse, a parent or a friend. **70%** of out-of-hospital cardiac arrests happen in homes.
 6. Unfortunately, less than **50%** of people who experience an out-of-hospital cardiac arrest get the immediate help that they need before professional help arrives.
 7. Over **100,000** people a year are saved by CPR in North America.
-

Seven Statistics on Confined Spaces

Confined spaces, found in a wide variety of work settings, potentially contain a host of hazards. Here are seven statistics to know about these potentially deadly areas.

1. **1** confined space fatality occurs every four days on average in workplaces across the United States. (US Department of Labor)
2. Toxic gases present **2** risks: chemical asphyxiation (smothering) and irritation to the human respiratory system, skin and eyes.
3. **4** dangers of confined spaces are oxygen deficiency or oxygen enrichment; fire/explosion; the potential to drown in

liquids or solids; and toxic atmospheres.

4. **10** examples of confined spaces are vessels, tanks, storage bins, silos, vaults, pits, manholes, sewers, septic systems and pipelines.
5. About **50** percent of deaths in confined spaces in Canada result from insufficient oxygen. (Labour, Government of Canada)
6. **60** percent the people who die in confined spaces are would-be rescuers attempting to help fallen co-workers. (OSHA)
7. **61** percent of confined space fatalities in the US occur during construction, repair or cleaning activities. (US Department of Labor)

Click the  button below to Download the PDF.

Download



Understanding Solar Panels: Flooded vs Sealed Lead Acid

Understanding Solar Panels: Intro to Off-Grid

Understanding Solar Panels: Lithium

Understanding Solar Panels: Off-Grid Components

Understanding Solar Panels: Off-Grid Inverter

Understanding Solar Panels: Battery Wiring Methods

Understanding Solar Panels:

Off-Grid Inverter – Low vs High Frequency

Understanding Solar Panels: RV Considerations

Understanding Solar Panels: What are RV/Marine Solar Systems?

Understanding Solar Panels: What Will I Need For My RV

Understanding Solar Panels: Mono vs Poly

Understanding Solar Panels: Production Ratings