

WINTER 2019

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Preventing Roof Collapses in Schools

by Derek Neubauer, risk control consultant

While most roof collapses we hear about every winter involve businesses, sometimes these property losses occur at schools. School officials, along with the safety committee, should develop an assertive game plan to ensure that a severe loss does not happen this winter.

Building Features

Certain types of construction are especially susceptible to roof collapses:

- Structures with large spans such as garages, auditoriums and gymnasiums.
- Insulated, nonheated or intermittently heated structures.
- Roofs that contain heavy equipment, such as heating and air conditioning units.
- Slightly sloped or flat roofs.
- Roofs shaded from direct sunlight or not exposed to wind.
- Roofs that tend to collect drifted snow.
- Roofs without drainage, with poor drainage or poorly maintained drainage systems.
- Structures that previously collapsed.

Structural Damage

Structural damage from the previous winter can be very difficult to detect. The odds of a roof collapsing has increased if:

- The roof leaked during the winter or last spring.
- There are ripples or bends in metal supports or cracks in wooden members.
- Popping noises have been heard, which indicates rivets may be broken.
- Water pools in areas of the roof where it never accumulated before.
- There are obvious deformations in the roof.

Roof Inspections

Inspect your roof and its supports for signs of structural damage and include any findings on your district's safety inspection check list. Note anything that might have been damaged or doesn't look structurally sound. Consult with structural engineers if you have concerns or prior to making repairs. Also check your drainage system to make sure it's clear and effective.

Developing Procedures

Your school district should develop procedures for dealing with the following problems:

- If a roof collapses or there's heavy snowfall, you should be prepared to use emergency bracing.
- Plans should be made to protect and salvage property that may become exposed to water, snow and other winter elements.
- Identify an alternate storage location in case a roof collapses.
- Snow removal without adding additional weight. Consider increasing indoor temperatures to enable the snow to melt, but be sure adequate roof drainage is available.
- Have staff perform regular inspections of all roofs and supports both during and after a heavy snowfall to check for signs of collapse. Most collapses occur in sections and sometimes happen very gradually.
- Protecting life is paramount. Don't allow anyone to enter a building that you suspect may be unsafe.

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OF KEEPING CLASSROOMS SAFE

By Mark Nease, risk control consultant

Follow this ABC primer for more tips to keep your classroom safe.

Appiances

Accidental misuse or forgetful use of appliances in the classroom can lead to an electrical shock injury or fire loss. Avoid the use of personal appliances inside classrooms.

Backpacks

Students may like to carry backpacks between class periods. A backpack set haphazardly in an aisle may cause someone to trip and fall. Instructors should designate and monitor proper placement of backpacks so they aren't a trip hazard.

Chairs

When you use a chair instead of a ladder, you dramatically increase your chance of suffering a work-related injury. Make a commitment today to only use chairs for their intended purpose, sitting.

Decorations

Avoid going overboard with decorations as they can be trip hazards, can block the vision of fire warning signs and can impede the flow of water from sprinkler heads.

Electrical Outlets

Avoid the use of multi-outlet adapters that allow the use of many corded plugs into one wall outlet. These adapters can overheat and catch fire. A safer practice is to install additional outlets/circuits inside the classroom.

Footwear

Choose your footwear wisely. Don't let your choice of footwear become the root cause of a debilitating slip/trip/fall injury.

Ground Plugs

Only use equipment that has a third-pronged grounding plug. This way, if a short occurs in the equipment's electrical circuit, the short will have an escape route through the third prong. Without a grounding plug, the electrical current can energize the equipment and shock anyone who comes into contact with it. Manufacturers also make tools where the electrical motor is double-insulated and a three-pronged grounding plug is unnecessary. Be sure your equipment is rated "Double Insulated" if the plug does not contain the third-pronged ground.

Handrails

A handrail is a safety device that is strategically designed and installed so that when grasped, allows that person to maintain stability. Practice the use of a handrail 100 percent of the time.

Inspections

Get into a habit of inspecting rooms throughout the day and correcting unsafe conditions that arise. Everybody plays a part in safety inspections.

Juggle

When you carry multiple items at the same time, you may find that you need to juggle those items to keep grasp of them. Juggling items when walking can lead to an accident. Try to minimize the number of things you carry.

Kiln

Only authorized persons should use the kiln. Remove all flammable liquids or combustible materials near the kiln. Remember that the fire triangle specifies that for a fire to exist, there needs to be a fuel source, heat and oxygen. Your best fire prevention technique with kiln use is to remove the fuel sources.

Ladders/step-stools

Select a suitable ladder or step-stool to safely access an area outside your normal reach.

Means of Egress

Everyone should be able to exit the classroom and building in a safe and timely manner. Inspect for bottlenecks that may hamper emergency egress. Remember tables, chairs or temporary student workstations in the halls create bottlenecks which impede a safe and timely exit. Building architects designed your hallways a certain width to accommodate emergency evacuations. Don't reduce the width of your hallways and create an unsafe condition.

Notification

Are staff notified of all safety rules? Notification is effective communication. When communication is impeded, the organization is less effective in reaching goals.

Objects (flying)

Practice being present in the moment. Stay alert when there are balls or other objects being used during physical activities or recess periods.

Personal Protective Equipment (PPE)

Eye, hearing, skin/hand and foot protective devices may be necessary to protect yourself. Use PPE wisely when job tasks require their use.

Quiz

How do you know if your coworkers understand safety rules/procedures? A verbal quiz may help reinforce safety to one another.

Refrigerators

Never store personal food items in refrigerators that are designated for laboratory supply storage. Nobody wants to get sick.

Strain Prevention

Use proper body mechanics and lifting techniques to prevent strain injuries.

Trip and Slip Hazards

Trip and slip hazards can suddenly arise. Be on the lookout for items such as spilled liquids, debris on the floor, folded mats and frayed carpets which can all lead to a slip/trip/fall accident. Situational awareness is also important working around students who can contribute to a slip/trip/fall accident.

Univents

Univents are devices installed in classrooms to allow air from the building's heating, ventilation and air conditioner (HVAC) to enter the classrooms to make a calculated air changes per hour (ACH) of circulated air. DO NOT ADJUST UNIVENTS! Adjusting a univent can reduce the amount of ACH of ventilation needed to maintain continuous fresh air inside the classroom during the school day.

Ventilation

Kitchens, industrial arts (welding stations), home economics and biology/chemistry classrooms should have ventilation hoods to capture air contaminants at their source, before they reach an operator's breathing zone.

Water

Water is a friend when contained and an enemy when uncontained. Correct conditions that allow water to become uncontained and a slip hazard.

X-periments

How safe are your experiments? An experiment performed incorrectly can have negative consequences. Choose experiments that with safety precautions, can both teach students and result with no injuries or illness.

Yearly

Safety committee members must receive the annual safety committee training each year by a certified trainer. This is a requirement specified by the Pennsylvania Department of Labor & Industry's Safety Committee Division. [Reference PA Code, Title 34, Chapter 129.1006(a).]

Zebra

Safety management is not always black and white like a zebra. Accident prevention techniques require participation by all staff.

Be sure to take time today to reflect on classroom safety.



LEAD EXPOSURE IN SCHOOLS

By Sharon Orr, manager, risk control services

Lead contamination in water sources in Flint, Michigan has resulted in increased national awareness of potential contaminants in drinking water. Several events lead to the issue with drinking water in Michigan: the water source was changed from Lake Huron to the Flint River, the new water source was not treated with an anti-corrosive, service lines leading into buildings contained lead, and as a result, the untreated water precipitated leaching of lead from pipes into the water.

Checking for Lead Exposure

Lead is a potent neurotoxin with no safe level in children. Facilities built prior to 1978 may contain multiple sources of lead. In light of recent events, Risk Control recommends following the Environmental Protection Agency (EPA) guidelines outlined below relating to checking several areas (not just water lines/sources) for potential lead exposure:

- **Interior painted areas.** Examine walls and interior surfaces to see if the paint is cracking, chipping, or peeling, and check areas on doors or windows where painted surfaces may rub together.
- **Exterior painted areas.** Check exterior paint as well. It can flake off and contaminate nearby soil where children may play.
- **Surrounding areas.** Be sure there are no large structures nearby with peeling or flaking paint that could contaminate the soil around play areas.
- **Playground equipment.** Older equipment can contain lead-based paint.
- **Water outlets.** Consider testing drinking or cooking water outlets in the facility and on the playground.

Site Prioritization

Understanding that school entities are faced with limited funds, prioritize sampling sites based on potential use and risk. Also, consider that actual use can change over time. The EPA recommends the following site priorities:

High Priority

- Drinking fountains, both bubbler and water cooler style
- Kitchen sinks
- Classroom combination sinks and drinking fountains
- Home economic rooms sinks
- Teacher's lounge sink, nurse's office sink
- Classroom sinks in special education classrooms
- Any sink known to be or visibly used for consumption (for example, coffee maker or cups are nearby)

Never use hot water for drinking or cooking. Lead leaches more easily into hot water than into cold water. The water may also sit in contact with lead components in hot water tanks.

Medium Priority

- Classroom sinks (potential for cups used for drinking, classroom cooking projects)
- Bathroom faucets (children may drink from these)

Low Priority

- Utility sinks and hose attachments, unless used to fill water jugs (i.e., for sports team practice)
- Hot water outlets

Know the School's Source of Water

EPA's action level is 15 parts per billion (ppb) for lead for public water sources (PWS).

For schools that receive water from a PWS, obtain a copy of the most current lead test results. Ask if the water is optimized for corrosion control.

Also ask if the PWS has a corrosion control permit. This information will assist determination of the appropriate remedies to any lead problems.

Short-term Measures

- **Flush the pipes.** Let the water run to bring in fresh water that has not been standing in the pipes. Do this over a night or weekend. Flushing times can vary based on the plumbing configuration. It also depends on whether your facility has lead service lines. If you are unsure of the appropriate flushing time, contact your water utility.
- **Provide bottled water.** Confirm that the source of bottled water is lead-free.

Permanent Remedies

First obtain an understanding of your water supply, including water characteristics. Also understand the lead conditions in the facility as a result of testing. Then examine permanent remedies and select the most appropriate to the situation.

- **Install corrosion control devices** for individual buildings, known as point-of-entry devices.
- **Install point-of-use devices** that control lead at the tap.
- **Find alternate grounding** for electrical wires that are grounded to water pipes.
- **Replace lead service line** and other lead pipes.
- **Replace outlets** where there is localized contamination with new, certified components. EPA recognizes NSF Standard 61, Section 9 as a performance standard. It limits leaching of lead into the drinking water. The standard regulates devices that dispense water for human ingestion.

For additional source information on lead exposure, consult www.epa.gov or contact **Sharon Orr, Manager of Risk Control Services** at sorr@cmregent.com or **844-480-0709**.

Static Working Positions

AND THEIR IMPACT ON HEALTH AND WORK PERFORMANCE

By Kyle Stewart, risk control consultant

As the temperatures hover below freezing, many people choose not to brave the elements. Typically, unless you have an abounding passion for cold weather activities, you are content to find alternative activities or just lounge within the comfort of a heated facility. Although resting after a strenuous activity promotes healing and rejuvenation, too much resting or prolonged static positions can have a negative impact on your health and work performance.

There are electronic gadgets equipped with monitors to track steps, sleep cycles, heart rate, etc. If you utilize one of these devices it can help you reduce the quantity of time spent in static working positions, in turn improving health and subsequently work performance.

In every educational entity, some personnel classifications are required to complete work tasks for extended periods while seated, standing, moving and/or a mixture of each. Consider the blended approach as an effective method of increasing movement to improve health and work performance by standing for short durations to complete applicable tasks while intermittently getting up and walking away from your workstation. More importantly, if your job primarily involves sedentary work, plopping in the recliner or your favorite seat in front of a television or tablet should not be the first thing you do when you arrive home. Consider implementing the following options in increments as part of your daily routine to improve body mechanics at work and home.

Sedentary Work Tasks

- **Maintain proper posture** at your workstation while seated, this includes in meetings.
 - Properly adjust workstation and chairs to maintain neutral body position. Follow the 90° rule for elbows, knees, hips and alignment of wrist-arm and neck-spine.
 - Don't slouch or lean when seated. This applies in office chairs and vehicles.
- **Limit the duration of seated tasks** to no more than two hours at a time.
- If facilitating a meeting or classroom lecture, **incorporate opportunities for staff and students to stand** while continuing the task(s).
- **Get up and move!** Take a short walk to the water cooler or down the hallway at least once every two hours.

Standing Work Tasks

- If equipped, **raise your workstation** to permit you to stand as you perform work tasks. You should stand for no more than 15-minutes at a time.
- When standing, **maintain proper posture and evenly distribute weight** on both legs.
- **Do not lean forward**, be conscientious that the neck is not bent while looking down at your workstation surface while reading and/or writing.

Poor Circulation

- Do you at times feel cold while seated at your workstation? This is an indication of **poor blood circulation**.
 - Reduced blood flow causes hands and feet to feel much colder than the rest of your body.
- If you're chilled, stand-up and **take a short walk** to assist in increasing blood circulation to your extremities.

Movement/Stretching

- **Stretching** reduces fatigue, increases flexibility and improves posture.
 - Most individuals stretch without even knowing it, for example after a long car ride or getting out of bed.
- Simple stretches for **core muscles** can be done within your work area.
 - Consult with your physician prior to engaging in stretching activities.



Lighting/Eye Fatigue

- **Lighting** in the workplace can affect your comfort level and performance.
- **Too much light** causes glare while **insufficient illumination** makes work, especially detailed tasks, difficult.
- **Eye fatigue and headaches** are often the result of glare or insufficient illuminated work spaces.
 - Utilize task lighting for dimly lit work spaces
 - Control screen glare through workstation set-up and adjusting exterior window blinds. Anti-glare filter screens may be required if the workstation layout cannot be adjusted.
- If you work behind a monitor for extended durations, periodically stand-up or move to **look at objects of varying distances** to reduce eye fatigue.

Expect the Unexpected When Working with Children

By Edgar Boord, risk control consultant

A common workmen’s comp issue is struck-by incidents, specifically those involving students. Aides and paraprofessionals are most affected by this, however, anyone working in a school setting and around children is exposed to the unexpected nature of children. It’s nearly impossible to prepare for everything a student may do that could result in bodily injury. Short of wearing full body armor, what can we do to avoid or prevent injury from bites, kicks, scratches or other unexpected behaviors?

Passive restraint and de-escalation trainings offer individuals specific methods for handling unruly children. Aides and paraprofessionals should attend this type of training with annual refreshers to stay up-to-date on techniques and methods. In fact, many schools have staff trained in these techniques. This allows better coverage across the district by having others available if an issue arises. Training staff in these methods and techniques should be the first step in reducing incident potential through an awareness approach.

Below are some techniques and controls that, if used or implemented, may reduce incident potential.

ISSUE	CONTROLS/CONSIDERATIONS
GENERAL	<ul style="list-style-type: none"> • Attempt to de-escalate a situation before an issue arises. • Always utilize de-escalation techniques before attempting passive restraint. • Understand a specific child’s behavioral tendencies/common actions. If unsure, ask someone who has worked with that child. • Remain attentive and aware of children and their actions.
SLIPS/ TRIPS/FALLS	<ul style="list-style-type: none"> • Be aware of your surroundings and any potential slip/trip issues such as: cords, chair/desk legs, protruding obstacles, clutter, other children, working at heights, ramps/sloped areas and spills/slippery surfaces. • Maintain stable footing, especially when a student is showing behavioral tendencies that may result in injury, for example pushing or pulling. • Wear footwear that allows you to maintain stable footing. Footwear should be selected based on environmental conditions and the work being conducted.
STRAIN POTENTIAL	<ul style="list-style-type: none"> • Regular exercise—take care of your back/other muscles and they will take care of you. • Remember to perform stretches after lengthy periods of sitting/standing. • Avoid lifting a child. • Always adjust stance/body positioning to accommodate situational changes. • To avoid neck strains, do not allow a student to hug you around your neck. • Utilize proper lifting procedures, let your knees and hips do the work (neck/back straight, bend at knees, etc.). • If lifting a child, understand their weight distribution and be sure to change grip and positioning as their weight shifts. Use momentum to your advantage to avoid unnecessary strain and exertion. • Avoid twisting at the waist, jerking/abrupt motions and awkward positions. • Always get assistance if a situation arises.
STRUCK-BY POTENTIAL (thrown objects, biting, scratching, striking, pushing, pulling)	<ul style="list-style-type: none"> • Know common behaviors of child and prepare by adjusting body position. • Always keep an eye on what a child is doing so you can react accordingly. • Be mindful when approaching, as well as how you interact with that child knowing their behavioral tendencies. • Utilize physical controls wherever possible: Bite guards and Kevlar sleeves/gloves.

Always be cautious when working with special needs children who may have unruly behavioral tendencies. Even a subtle movement, change in the tone of your voice or incidental contact may be enough to trigger a reaction from that child. ALWAYS ask for consent from the child you are working with before making any type of physical contact (i.e. hand on shoulder or back). Awareness and preparedness are vital in the prevention of a possible incident involving a student.

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