

WINTER 2023

RISKmanager

INSIDE...

**STEP IT UP: CURBS,
STEPS AND OTHER
WALKING/WORKING
SURFACES**

PAGE 1

**RING SAFETY TEST
BEFORE MOUNTING
GRINDING WHEELS**

PAGE 3

**INTERNET OF
THINGS SENSOR
TECHNOLOGY**

PAGE 5

 **REGENT**TM
INSURANCE COMPANY



STEP IT

UP

Curbs, Steps and Other Walking/Working Surfaces *By Edgar Boord*

Trips and/or falls are among the most frequently recurring types of incidents, both inside and outside the workplace. The potential for an incident can and does exist almost anywhere an individual navigates from point A to point B. The reason for this is two-fold: First, a hazardous condition often exists, increasing the potential for an incident. Most often, a lack of awareness and caution completes the rest of the equation to this problem.

Let's look at the risks, as well as what can be done from both the employer and individual/employee perspective.

Risks

Injuries sustained from a trip/fall incident can easily keep an individual from enjoying their normal daily life. Trips and falls can result in a wide array of outcomes, ranging from a minor bump or bruise to a severe injury:

- Concussions resulting in long-term cognitive effects.
- Cuts/lacerations/impalements.
- Broken/fractured bones and joints with lengthy recovery and major physical limitations.
- Strain injuries leading to ongoing physical therapy and/or surgeries.
- They can even lead to other incidents. For example, spilling hot water on a co-worker after tripping over a mat.

Best Practices/Actionable Items

Routine Safety Assessments – Assessments and walkthroughs of the interior and exterior of the workplace (i.e., safety committee hazard assessments) are always the first step in reducing incident potential. Curbs, protruding or raised objects/fixtures, doorway landing steps and other abrupt variations in the walking/working surface are often hard to notice. Marking them with high-visibility paint, tape or other methods is a great way to warn individuals of the change in surface level. Adding lighting in a poorly lit area also enhances an individual's ability to recognize these variations.

Housekeeping – Housekeeping practices, or lack thereof, are also a major contributor to trips and falls. Maintaining an organized and clutter-free work area reduces the risk of a trip and fall—for you and everyone else. An effective housekeeping program that includes daily, weekly and even annual organizational efforts can greatly reduce this risk in the workplace. Storage space may even increase as an added benefit of routine housekeeping!

Heights – A fall while standing on the ground is one thing; however, injury severity increases drastically when falling from a height. Identifying working surfaces and areas that are at heights and implementing safety controls is imperative to an individual's safety. This includes stairs, loading docks, catwalks, lofts/mezzanines and any other situation requiring an employee to work from heights. For walking/working surfaces at a height of four feet or more, some type of fall protection must be provided [OSHA CFR 1910.28(b)(1)(i)]. This could be a guardrail system, personal fall protection system, safety net system or other approved control/system. Always be sure to inspect fall arrest and other protective systems before use. The condition of guardrail systems should also be included in routine hazard assessments to assure they are able to withstand the weight of and pressure from an individual without failing.

In addition to protective systems, open loading docks and stairs also increase the risk of an injury from heights. Be sure steps and stairs have anti-skid properties (i.e., anti-slip strips). Employees should be aware of safety procedures while working on and around loading docks and other areas that increase fall height.

Awareness – Lastly, it is up to the individual to take the necessary “steps” to avoid an incident. Constant awareness is imperative whether stepping up onto a curb or working along the edge of a roof while using a personal fall arrest system. Many trips and falls occur even when a physical hazard is not present. Proper footwear, foot placement, step clearance, position of nearby individuals, and environmental conditions can all have an impact on your safety. For instance, you may know the layout of your work area like the back of your hand; however, your co-worker needed to run an extension cord across the walkway for a task. Conditions constantly change, whether that be the weather, clutter from a recent task, excessive cracks in a sidewalk, or the new groundhog hole next to the playground where you stand to supervise recess. Taking the time to scan, identify and react accordingly will make all the difference in avoiding potential for an incident.

The factors that allow a trip and fall to occur are generally straightforward. A hazard exists, an individual is lacking awareness, or both issues occur simultaneously. With some proactive efforts, implementation of controls, and an enhanced level of awareness, trip and fall incidents can be greatly reduced. In addition, training and information on the topic can lead to enhanced safety controls and allows individuals to understand their role in avoiding an accident.



BLOG

Learn more about
managing risk at
cmregent.com/blog/.

Ring Safety Test

Before Mounting Grinding Wheels

By Mark Nease



Have a safety question?

Ask our experts at cmregent.com/risk-control/ask/

Many schools have bench grinders in their maintenance shops and Vocational Education classrooms. A bench grinder is a fixed machine mounted to a structural surface or pedestal. It allows the user to shape a workpiece by holding it against a fast rotating grinding wheel. A bench grinder is a dangerous piece of equipment, but with safety parameters in place, it can be operated safely.

Risks/Best Practices

Manufacturers have recognized the risks to the operators of bench grinders. Once staff mount a grinding wheel to a bench grinder, they may be protected from the grinding wheel and any flying debris by machine guarding—tongue guards, side guards and work rests.

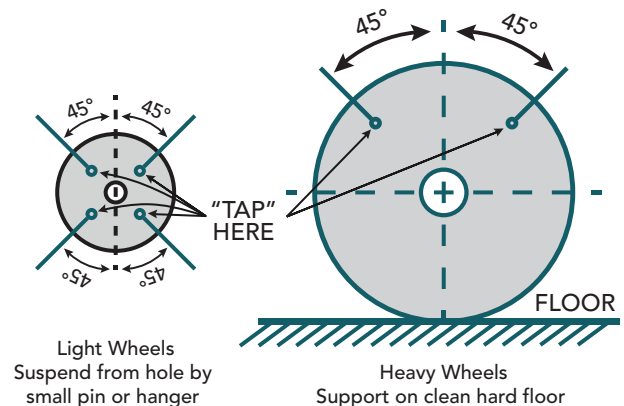
There is one risk of using a bench grinder that people typically don't consider—not realizing that a new grinding wheel could have internal damage. This damage can occur in many ways, such as through the manufacturing process, during shipping and (poor) handling or by someone dropping the grinding wheel as it was inventoried.

What can happen if you are grinding a piece of metal and as the grinding wheel wears away, your workpiece unexpectedly contacts a crack in that wheel? The answer is that the entire grinding wheel can suddenly disintegrate into a large wad of abrasive particles. Hopefully the guards would deflect this material, but if not adjusted properly, the guards may not fully protect you. All it takes is a few particles moving at high velocity to contact the operator or people nearby, and serious injuries could result. Wouldn't it be better to know that a new grinding wheel is internally damaged before you mount it to your bench grinder?

There is a technique specified in the ANSI B7.1 standard (Safety Code for the Use, Care and Protection of Abrasive Wheels), called the "ring test." When properly performed, you will hear a clear metallic tone to show that your grinding wheel is undamaged. If you perform the ring test procedure and hear a dull sound, your grinding wheel may be damaged internally, and should not be used.

Ring Test Procedure

1. Make sure your grinding wheel is dry and free of dirt or sawdust, as the ring test will not work effectively under these conditions. This test is applicable to grinding wheels made of vitrified and silicate materials and not applicable to grinding wheels comprised of organic material.
2. Place a wood dowel through the center hole of your grinding wheel and use one hand to hold the grinding wheel in front of you from that dowel.
3. Using a piece of hard plastic, tap the side of the grinding wheel at 45 degrees from the vertical and horizontal centerline and about 1–2 inches from the outside edge of the grinding wheel (see below). Note: ANSI B7.1 indicates that if you strike the wheel directly at the vertical or horizontal centerline instead of at 45 degrees, the sound may be muffled, giving you an erroneous test.



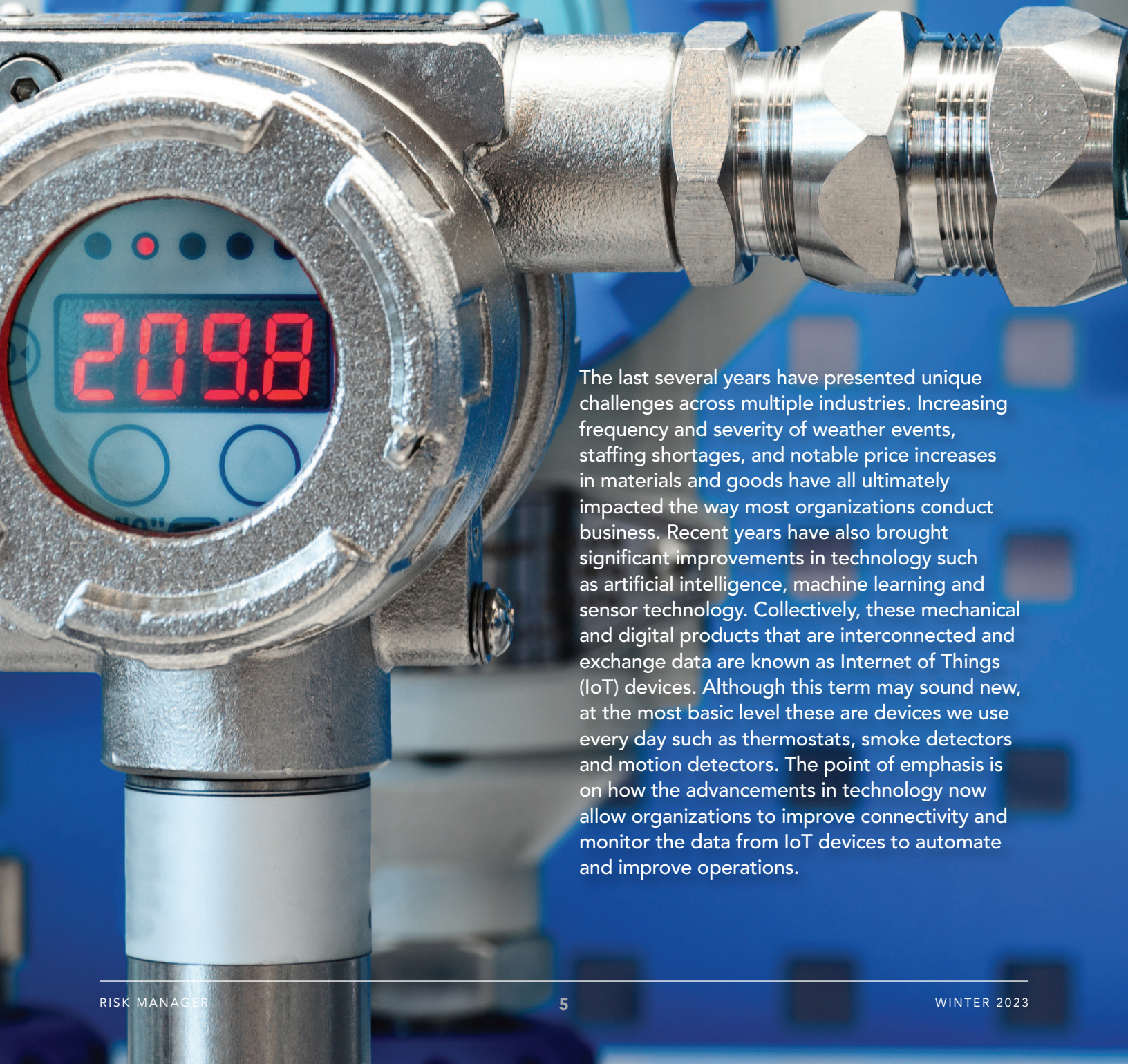
Source: ANSI B7.1 Ring Test - Safety Code for the Use, Care and Protection of Abrasive Wheels.

4. Listen carefully for the sound. Repeat for each quadrant on each side to confirm a clear metallic tone before mounting the wheel to your bench grinder. If you confirm a quadrant has a dull sound, discard that grinding wheel.

Don't assume your brand-new grinding wheel is in safe condition and OK to mount to your bench grinder. It can have internal damage you can't see and will in time present a dangerous condition. Always use the Ring Test Procedure first to verify the condition of the grinding wheel before mounting it to your grinder.

Internet of Things Sensor Technology

By Jake Ruziecki



The last several years have presented unique challenges across multiple industries. Increasing frequency and severity of weather events, staffing shortages, and notable price increases in materials and goods have all ultimately impacted the way most organizations conduct business. Recent years have also brought significant improvements in technology such as artificial intelligence, machine learning and sensor technology. Collectively, these mechanical and digital products that are interconnected and exchange data are known as Internet of Things (IoT) devices. Although this term may sound new, at the most basic level these are devices we use every day such as thermostats, smoke detectors and motion detectors. The point of emphasis is on how the advancements in technology now allow organizations to improve connectivity and monitor the data from IoT devices to automate and improve operations.

Risks

As we mentioned earlier, many organizations have had to change the way they do business over the last few years, and educational institutions are no exception. As a result, some emerging risks include:

- Staffing shortages, increasing overtime hours, and staff having to split their time between two or even three departments. These factors increase the risk of accidents from fatigue, rushing or not taking the proper steps to complete tasks, along with not being properly trained for added job responsibilities.
- Maintenance delays that lead to premature equipment failure and added costs for subsequent equipment replacement.
- Extensive water damage caused by pipe leaks, equipment failure or water intrusion during unoccupied hours.

Best Practices/Actionable Items

So how can IoT devices help solve these problems? Sensors, in conjunction with building management systems, can help organizations by providing around the clock monitoring of assigned equipment, building areas and utility systems data. These devices can also notify the appropriate personnel to abnormal conditions in the building. While these devices cannot replace the need for on-site facilities and maintenance technicians, they can allow staff to focus on higher priority tasks. Some devices and their application that are gaining popularity include:

WATER SENSORS

These sensors can be placed in strategic locations such as boiler rooms, electrical/mechanical rooms, bathrooms, gymnasiums or other areas of a building below grade that might be at risk for water intrusion. When they detect water, these devices can send out notifications through their internet connection, allowing assigned personnel to respond in a timely fashion.

VIBRATION SENSORS

These devices can be installed on HVAC equipment, water pumps and other mechanical equipment to detect issues before the equipment may fail entirely. Further integration into building management systems may allow the device to automatically trigger a notification for a preventative maintenance work order.

AIR QUALITY SENSORS

You may already have smoke, carbon monoxide and temperature monitoring in place; however, more air quality conditions may need to be considered, especially when school buildings are often unoccupied for extended periods of time. Consider looking into additional sensor technology that monitors for humidity, Volatile Organic Compounds (VOC) and other particulates. Several devices out now can even detect vape and THC.

SAFETY SENSORS

Safety sensors are becoming increasingly popular in educational buildings as these sensors can monitor and notify staff when they detect spoken keywords, gunshots and verbal signs of aggression, giving the appropriate personnel a faster response to emergency situations.

As we mentioned, IoT devices and sensor technology are not designed to be a total replacement for job responsibilities, but they can help alleviate existing conditions and allow staff to focus on higher priority tasks and respond to critical situations in a timely fashion. For further assistance, contact our Risk Control Department at CM Regent Insurance Company.



Have a safety question?
Ask our experts at
cmregent.com/risk-control/ask/

PARKING LOT/TRAFFIC SAFETY:

STAY IN YOUR LANE

By Patrick Rucinski



The school environment should be a sanctuary for learning and growth, but without proper safety measures in place, the risk associated with traffic and transportation can jeopardize the overall safety of the entire community. By prioritizing traffic management, implementing safety protocols and maintaining well organized parking lots, schools can create a secure and conducive environment that promotes safety, reduces accidents and fosters a sense of confidence for all stakeholders. With the ever-increasing number of vehicles and potential hazards on the road, schools must take initiative to ensure the safety of everyone entering and leaving the premises, making transportation safety an indispensable aspect of a comprehensive approach to education and well-being.

Risks

A few examples of how an organization can be impacted by the problem.

- The school has neglected replacing signage and repainting the lines (crosswalks, parking spots, bus lanes) throughout their parking lot. This lack of maintenance may create confusion for drivers and pedestrians, possibly leading to vehicle or pedestrian collisions because both parties may not be aware of the safe areas of travel within a parking lot.
- A school is short staffed on bus drivers. They decide to hire any driver with a commercial driver's license and skip training them due to time constraints. Without proper training and vetting, a school may experience an increase in motor vehicle or pedestrian collisions.
- Schools with parking lots not designed for accessibility may cause undue stress and strain to people with disabilities. Not only is the school required to provide accessible means of travel throughout a parking lot but is at risk of liability should a person with a disability become injured or unnecessarily burdened by using the schools' facilities.

Best Practices/Actionable Item

- **Security:** Parking lots and traffic patterns on school grounds should follow a "flow through" path when being designed, implemented, or remodeled. Traffic should follow a path of least resistance with as few entrances and exits as possible to deter drivers from making their own path. This will reduce the risk of not only motor vehicle incidents but protect students from unauthorized vehicles or persons.
- **Training and Review:** All drivers of vehicles considered school property should be professionally trained in the driving skills needed for the vehicle they are operating. A formal training schedule and course materials should be reviewed annually and after an incident, as well as evaluating each driver's motor vehicle records.

- **Accessibility:** Traffic patterns and parking lots should follow all applicable engineering practices to accommodate those with mobility challenges. Schools should consider specific cases where "outside the box" accessibility accommodations may be needed.
- **Signage:** Signs and paint throughout the property should be frequently posted and maintained to inform drivers of traffic patterns, speed limits, parking areas and areas reserved for emergency response vehicles. This will discourage driver and pedestrian ignorance toward defensive driving on school property.

Parking lots may seem like a section of asphalt used to store vehicles, but they play a pivotal role in pedestrian and driver safety, especially while transporting students. These areas should be well maintained and provide adequate information for all parties involved to allow for a seamless transfer of students/staff/parents to and from a school. Driver training and established safety protocols for drivers should be regularly reviewed to mitigate as many potential incidents as possible. Resources available with more information on this topic can be found via the Federal Motor Carrier Safety Administration (FMCA), the Partner Alliance for Safer Schools (PASS), and the International Parking and Mobility institute (IPMI). These organizations have many resources available for safe parking lot design and driver safety protocols.

BLOG

Learn more about community safety at cmregent.com/blog/.

Roof & Drain INSPECTIONS

By Derek Neubauer

Roof drains play a crucial role in protecting your school building from water damage by ensuring proper drainage. Over time, debris, leaves, sports equipment and other materials can accumulate in the drains, leading to clogs and potential water-related issues. Regular inspections and maintenance are key to preventing costly repairs and preserving the integrity of your roof.

Risks

- **Water damage:** Clogged or malfunctioning roof drains can cause water to accumulate on the roof, leading to leaks, structural damage and potential water infiltration into the building.
- **Roof deterioration:** If water is not properly drained from the roof, it can accumulate and cause the roofing materials to deteriorate over time. This can result in costly repairs or even premature replacement of the entire roof.
- **Mold and mildew growth:** Excess moisture trapped on the roof due to drainage issues can create a favorable environment for the growth of mold and mildew. These not only damage the roof but also pose health risks to the occupants of the building.
- **Increased maintenance costs:** Neglecting roof drain inspections can lead to more frequent and costly maintenance requirements. Regular inspections and cleaning can help identify and address issues early on, preventing them from escalating into major problems.
- **Safety hazards:** Standing water on the roof can create slippery conditions, increasing the risk of accidents and injuries for maintenance personnel or anyone accessing the roof.

Best Practices/Actionable Item

- **Roof Inspections:**
 - Conduct regular inspections at least twice a year, ideally in spring and fall.
 - Check for signs of damage, such as missing or cracked shingles, curling edges or sagging areas.

- Inspect flashings, vents and chimneys for any signs of leaks or deterioration.
- Clear debris, such as leaves and branches, from the roof surface and gutters.
- Ensure gutters and downspouts are securely attached and functioning properly.
- Be cautious when walking on the roof, using proper safety equipment and techniques.
- **Drain Inspections:**
 - Inspect drains regularly to identify any clogs or blockages.
 - Clear debris, such as leaves, twigs or dirt, from drain openings.
 - Use drain strainers or guards to prevent large objects from entering the drains.
 - Check for signs of water pooling or slow drainage, which may indicate a blockage.
 - Use plumbing snakes or augers to remove stubborn clogs.
 - Consider professional drain cleaning services for complex or recurring drain issues.

All inspections and repairs, whether done in-house or by a third-party contractor, should be documented and kept for the life of the specific roof system. This can be done by a work order system, if applicable, or a file established for each specific roof system.

Remember, regular roof drain inspections are an investment in the long-term health and functionality of your building. By proactively maintaining your drains, you can prevent costly repairs, meet your roof's lifespan goals and ensure the safety of your building occupants.



CM
REGENT[™]

INSURANCE COMPANY

300 Sterling Parkway, Suite 100
Mechanicsburg, PA 17050
Toll-free 844-480-0709

CMRegent.com



© 2023 Church Mutual Insurance Company, S.I. The information contained in these materials is intended solely to provide general guidance on topics that may be of interest to you. While we have made reasonable efforts to present accurate and reliable information, CM Regent Insurance Company and its affiliates disclaim all liability for any errors or omissions or for any actions you take or fail to take based on these materials. The information provided may not apply to your particular facts or circumstances; therefore, you should seek professional advice prior to relying on any information that may be found in these materials. NAIC # 12356