

On Topic

Hazard and Risk: Know the Difference

Open your health and safety manual and two words that will appear frequently will be “hazard” and “risk”. They are often used interchangeably; however they each mean something very different. Is a wet floor in a workplace a hazard or a risk? Knowing what each of these terms means, and using them properly can help you better address workplace health and safety issues.

Hazard

There are many definitions for hazard but the most common when talking about workplace health and safety is that a hazard is any source of potential damage, harm or adverse health effects on something or someone. Some examples are: a wet floor, direct exposure to the sun, or exposure to toxic chemicals.

The CSA Z1002 Standard "Occupational health and safety - Hazard identification and elimination and risk assessment and control" defines harm as physical injury or damage to health and hazard as a potential source of harm to a worker.

Workplace hazards can come from a wide range of sources, such as a substance, product, process, or practice that can cause harm or an adverse health effect to a person or property. Examples include, a sharp knife, the process of welding, or bullying. These are considered hazards because they can cause harm. Knives cause cuts, welding fumes can cause metal fume fever, and bullying can have the effect of anxiety, fear and depression on the victim.

Practices or conditions that could release uncontrolled energy are also considered workplace hazards. For example, an object that could fall from a height is considered a hazard. When the object falls, it gains momentum from gravity and it could seriously harm whatever or whomever the object lands on. The potential entanglement of hair or clothing in rotating equipment caused by kinetic energy is another example of this type of hazard.

It can help to think of hazards in groups. Categories for classifying hazards include:

- **biological** - bacteria, viruses, insects, plants, birds, animals, and humans, etc.
- **chemical** - depends on the physical, chemical and toxic properties of the chemical

- **ergonomic** - repetitive movements, improper set up of workstation, etc.
- **physical** - radiation, magnetic fields, pressure extremes (high pressure or vacuum), noise, etc.
- **psychosocial** - stress, violence, etc.
- **safety** - slipping/tripping hazards, inappropriate machine guarding, equipment malfunctions or breakdowns

Risk

Risk is the chance or probability that a person will be harmed, or experience an adverse health effect, if exposed to a hazard. For example there is a risk of slipping on the wet floor and breaking a bone, or developing skin cancer from long-term exposure to the sun. It may also apply to situations with property or equipment loss, or harmful effects on the environment.

It's important to note that risk is not the same for everyone and there are many factors that influence the degree of risk. These factors include how much a person is exposed to a hazard (such as how many times a day a person walks across a wet floor or the level of exposure to hazardous products a worker experiences). The level of risk also depends on both the nature of the hazard and the nature of the exposure. For example, a product with a low hazard can pose a high risk if exposure is high. A product with a high hazard can sometimes pose less risk if exposure is low. However, the overall goal is to minimize exposure to hazards, and thereby minimize the risk.

Hazard Identification

We know that certain workplace conditions and work practices have the potential to cause incidents, injuries, or illness. Hazard identification is the process of finding, listing, and characterizing these hazards. Missing machine guards, chemical spills, poor workstation design, mould, and inadequate ventilation are just some of the many hazards that can be found in a workplace.

If a hazard is identified, you can work towards eliminating that hazard or work towards controlling the risk associated with that hazard by using a hierarchy of control methods.

The health and safety committee has a role to play by helping to recognize hazards and making recommendations for improvement. The committee's responsibilities may also include helping to determine the possible causes of health conditions reported by employees, informing employees about potential and actual hazards, recommending control measures to management, and participating in evaluating the effectiveness of control measures in ensuring a safe workplace.

Risk Assessment

A risk assessment considers the identification of hazards, and the analysis and evaluation of the risk. A risk assessment is the process where you:

- identify hazards and risk factors that have the potential to cause harm (hazard identification),
- analyze and evaluate the risk associated with that hazard (risk analysis, and risk evaluation), and
- determine appropriate ways to eliminate the hazard, or control the risk when the hazard cannot be eliminated (risk control).

A hazard is anything in the workplace that has the potential to cause damage, harm or adverse health effects to someone or to cause harm to something. Risk is the chance or probability that a person will be harmed if exposed, or the probability of damage or loss. Health and safety hazards vary greatly depending on what the workplace does, and the type of work involved.

Every workplace has hazards. To help protect the health and safety of workers, it's important that you identify the hazards and conduct risk assessments. And it all starts with understanding the difference between a hazard and a risk.

Resources:

- **Hazard and Risk** fact sheet, CCOHS
- **Health and Safety Committees Reference Guide** publication, CCOHS
- **Chemical Factsheets: Hazard Vs Risk: What is the difference?**, Assembly of First Nations
- **Risk versus Hazard**, Health Canada
- **CAN/CSA-Z1002-12 - Occupational health and safety - Hazard identification and elimination and risk assessment and control**, CSA Group