

Evaluation and control of workplace hazards and PPE

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Risk assessment

A **risk assessment** is simply a careful examination of **what**, in your work, could **cause harm to people**, so that you can weigh up whether you have taken enough precautions or should do more to prevent harm



How to perform an assessment

Step 1

- Identify the hazards

Step 2

- Decide who might be harmed and how

Step 3

- Evaluate the risks and decide on precautions

Step 4

- Record your findings and implement them

Step 5

- Review your assessment and update if necessary



HAZARD

A **hazard** is anything that may cause harm, such as chemicals, electricity, working from ladders, an open drawer etc.



Risk

The **risk** is the chance, high or low, that somebody could be harmed by these and other hazards, together with an indication of how serious the harm could be.



Identifying and evaluation of hazards



Identifying hazards

- First you need to work **out how people could be harmed**. When you work in a place every day it is easy to overlook some hazards, so here are some tips to identify the ones that matter.
- **Walk around** the workplace and look at what could reasonably be expected to cause harm.
- **Ask the employees** or their representatives what they think of hazards and workparctices. They may have noticed things that are not immediately obvious to you



Identifying hazards

- **Get more information** on the type of hazards (call NIOSH, University, use internet)
- **Check manufacturers' instructions** or material safety data sheets (MSDS) for chemicals and equipment as they can be very helpful in spelling out the hazards and putting them in their true perspective.



Evaluation

- Have a look at **accident and ill-health records** – these often help to identify the less obvious hazards.
- **Remember to think about long-term hazards to health** (e.g. high levels of noise or exposure to harmful substances) as well as safety hazards.



Evaluation - Who will be harmed...

- For each hazard you need to be clear about **who might be harmed** (It will help you identify the best way of managing the risk).
- Identifying **groups of people** (e.g. ‘people working in the storeroom’ or ‘passers-by’).
- In each case, identify **how they might be harmed**, i.e. what type of injury or ill health might occur. For example, ‘shelf stackers may suffer back injury from repeated lifting of boxes’.



Evaluation - Special employees

- Some workers have particular requirements (**Vulnerable groups**), e.g. new and young workers, new or expectant mothers and people with disabilities may be at particular risk.
- Extra thought will be needed for some hazards; cleaners, visitors, contractors, maintenance workers etc, who may not be in the workplace all the time; members of the public, if they could be hurt activities;
- If the workstation is shared, think about how the work affects others present, as well as how their work affects the staff – talk to them; and ask the staff if they can think of anyone missed.













Working at heights...



Recommendation

- Having spotted the hazards, decision has to be made as to what to do about them.
- The law requires to do everything 'reasonably practicable' to protect people from harm.
- First, look at **what is being done already**, think about **what controls in place** and how the work is organized. Then compare this with the **good practices** and see if there's more that could be done to bring up to standard.



Some queries and answers

- Can we get rid of the hazard altogether (**Eliminate**)? If not, how can we control the risks so that harm is unlikely?

When controlling risks, apply the principles below, if possible in the following order:

- Try a less risky option – **substitution** (e.g. switch to using a less hazardous chemical);
- **Prevent access** to the hazard (e.g. by guarding);
- Organize work to reduce exposure to the hazard – **Administrative** (e.g. put barriers between pedestrians and traffic);
- Issue **personal protective equipment** (e.g. clothing, footwear, goggles etc);



Some issues related to solutions

- **Do simple changes considering the risks.**
Failure to take simple precautions can cost a lot more if an accident does happen.
- **Involve staff and employees**, so that it is sure that what is proposed to be done will work in practice and won't introduce any new hazards.
- **Provide welfare facilities** (e.g. first aid and washing facilities for removal of contamination).



Recording findings

- Putting the results of your risk assessment into practice will make a difference
- **Write down the results** and share them with your staff,
- It is useful to write down so that you can **review it at a later date**
- if, for example, something changes.
- Keep it simple,
- A risk assessment **can not be perfect**, but it must be suitable and sufficient.
- A **good plan of action** often includes a mixture of different things such as: a few cheap or easy improvements that can be done quickly, perhaps as a temporary solution until more reliable controls are in place; long-term solutions to those risks most likely to cause accidents or ill health; long-term solutions to those risks with the worst potential consequences;
- Arrangements must be made for **training employees** on the main risks that remain and how they are to be controlled;
- **Regular checks** to make sure that the control measures stay in place; and
- **Clear responsibilities** – who will lead on what action, and by when.
- Remember, **prioritise** and tackle the most important things first.



Review the assessment

- **Few workplaces stay the same.** Sooner or later, they will bring in new equipment, substances and procedures that could lead to new hazards
- **Look at risk assessment again.** Have there been any changes? Are there improvements you still need to make? **Have workers spotted a problem?**
- **Have all learnt anything from accidents or near misses?**
- When one is running a business it's all too easy to forget about reviewing your risk assessment – until something has gone wrong and it's too late.
- Set a review date for this risk assessment



Personal Protective Equipment



PPE

Refers to **protective** clothing, helmets, goggles, or other garment designed to protect the wearer's body or clothing from injury by **electrical hazards**, **heat**, **chemicals**, and **infection**, for job-related occupational safety and health purposes, and in sports, martial arts, combat, etc. Personal armor is combat-specialized protective gear.



Respiratory protection

- Filter mask
- Gas mask
- Air-purifying respirator
- Self Contained Breathing Apparatus,
including scuba sets

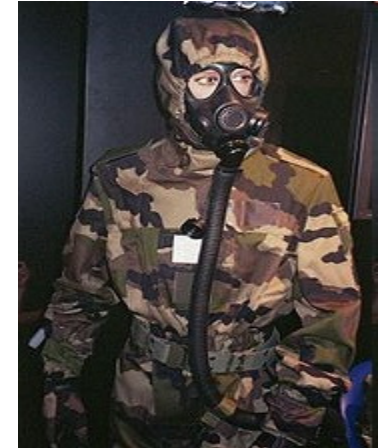


Air purifying protectors

Air-purifying respirators are used against particulates (such as smoke or fumes), gases, and vapors that are at atmospheric concentrations less than immediately dangerous to life and health.



Gas mask



A **gas mask** is a mask worn over the face to protect the wearer from inhaling "airborne pollutants" and toxic gases. The mask forms a sealed cover over the nose and mouth, but may also cover the eyes and other vulnerable soft tissues of the face. Some gas masks are also respirators, though the word *gas mask* is often used to refer to military equipment (e.g. Field Protective Mask, etc.) (The user of the gas mask is not protected by gas that the skin can absorb.)



Self contained breathing apparatus

- **A self contained breathing apparatus, or SCBA, sometimes referred to as a Compressed Air Breathing Apparatus (CABA) or simply Breathing Apparatus (BA)**
- **SCUBA - self contained underwater breathing apparatus**



Protective headgear

➤ Hard hat



➤ Inside of a hard hat



Eye protection

- **Eye protection** is **protective gear** for the eyes, which comes in many types depending upon the threat that is to be reduced



Types of eye protection

- Welding goggles



- Welding mask



- Safety glasses



Ear protection

➤ Ear plugs



➤ Ear muffs



➤ Ear defenders



Hand protection

Gloves are available to protect against:

- Chemicals, contamination and infection (e.g. disposable latex/vinyl/nitrile gloves)
- Electricity, when voltage is too high
- Extremes of temperature (e.g. oven gloves, welder's gloves)
- Mechanical hazards (e.g. rigger gloves, chainmail gloves)
- Lacerations and other wounds from sharp objects



Protective garments

Many types

➤ Boiler suit



➤ Fire fighter suit



PPE Program

If PPE is to be used, a PPE program should be implemented. This program should address the hazards present; the selection, maintenance, and use of PPE; the training of employees; and monitoring of the program to ensure its ongoing effectiveness.



Thank you...!

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