10 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) is something that all construction workers wear. It is designed to protect them from physical dangers and/or health hazards.

Equipment such as hard hats, safety glasses, and safety boots are designed to prevent an injury or reduce the severity of an injury if one occurs. Other PPE, such as hearing and respiratory protection, is designed to prevent illnesses and damage to the worker's health.

It is important to remember that PPE only provides protection. It reduces the risk but does not eliminate the hazard. The best way of protecting workers is to control the hazard at the source or along the path. However, if that is not possible, controls need to be put in place at the worker. This concept is referred to as the "hierarchy of controls" (Figure 10-1).

The chapters in this manual on different kinds of PPE (Chapters 10 to 17) will enable users to

- assess hazards and select a suitable control method
- locate and interpret legislation related to PPE
- effectively use and maintain PPE.

Legal Requirements

While common to all trades, PPE varies according to individual, job, and site conditions. Legal requirements for personal protective equipment also vary, so consult appropriate sections of the Construction Projects regulation (O. Reg. 213/91) under the *Occupational Health and Safety Act* (OHSA).

Employers have a duty under the OHSA to provide their workers with the PPE prescribed by law (OHSA, s.25(1)). Although many workers take their own PPE to a job, the employer is ultimately responsible for making sure that the proper PPE is used and is maintained in good condition.

Workers have a duty under the OHSA to wear or use PPE required by the employer (28.(1)(b)). In some situations, the regulations may not require PPE but the employer has set additional health and safety standards for the jobsite, such as mandatory eye protection.

The Construction Projects regulation (O. Reg. 213/91, s.21) requires that a worker wear such protective clothing and use such equipment or devices "as are necessary to protect the worker against the hazards to which the worker may be exposed." It also requires that the worker be trained in the use and care of this equipment.

Engineering Controls

When considering ways to defend against a workplace hazard, personal protective equipment (PPE) should be the last option. PPE is a way to control hazards **at the worker.** Better options are engineering controls that eliminate or reduce as much of the risk as possible **at the source** or **along the path** to the worker (Figure 10-1).

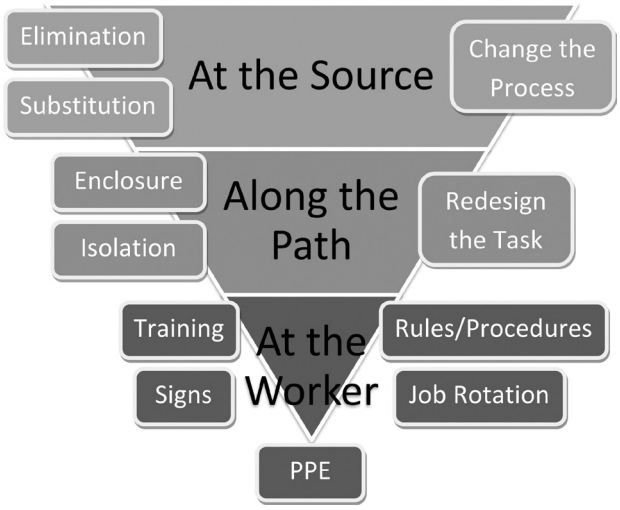

Figure 10-1: Hierarchy of Controls

Engineering controls fall into five categories:

1. Substitution
2. Alternative work methods
3. Isolation
4. Enclosure
5. Ventilation.

Substitution

Use a safer method or material that can do the same job (e.g., a less toxic chemical). A common example is the substitution of calcium silicate or fibreglass insulation for asbestos insulation.

Alternative Work Methods

Find another way to do the job in a way that is less hazardous. For example, brushing or rolling paint produces much lower vapour levels than spray painting. Similarly, wetting asbestos-containing material before removal releases up to 100 times less dust than dry removal. Make sure to check that the new work method is safer.

Isolation

Isolate the worker from the hazard. In a quarry, for example, the operator of a crusher can be isolated from dust by a filtered, air-conditioned cab.

Enclosure

Enclose a substance or procedure to contain toxic emissions. It may be as simple as putting a lid on an open solvent tank or enclosing an asbestos-removal project with polyethylene sheeting (Figure 10-2). Enclosures have also been built around compressors to reduce the noise level. Make sure they do not restrict access when maintenance is required.

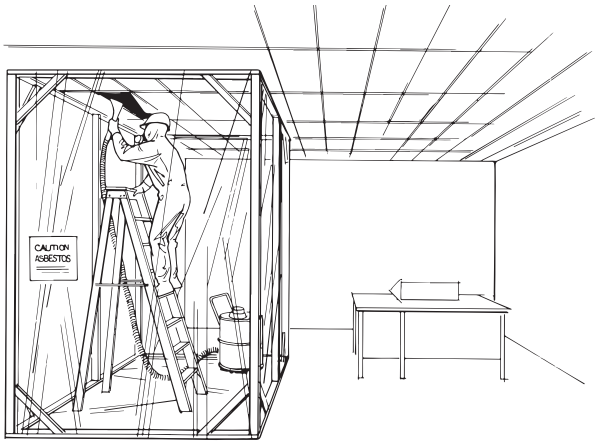

Figure 10-2: Enclosure

Ventilation

Control the amount of contaminant in the air by using ventilation. Local ventilation is better because it removes the contaminant. General ventilation dilutes the amount of contaminant by using large fans to move large volumes of air and increase air exchange. This method is not suitable for highly toxic materials.

Local ventilation captures and removes contaminants at their source. At a shop bench, a fume hood can be constructed to remove dusts and fumes. On sites, portable fume extractors (Figure 10-3) can be used. Remember: many filtering systems can only remove fumes—not gases or vapours.

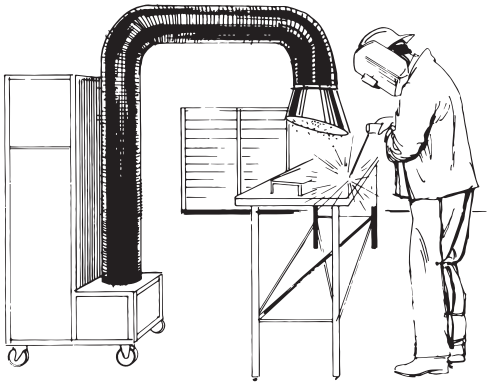

Figure 10-3: Fume Extractor

Personal Protective Equipment

When it is not possible to apply any of the five engineering controls, personal protective equipment may be the only option.

Regulations often refer to the Canadian Standards Association (CSA) or other equipment standards to identify equipment that meets the legal requirements and is acceptable. CSA-certified equipment can be identified by the CSA logo (Figure 10-4).

Figure 10-4: CSA Logo

There are CSA standards for different kinds of personal protective equipment such as these:

- Head Protection – CSA Z94.1-15
- Eye Protection – CSA Z94.3-15 and Z94.3.1-16
- Foot Protection – CSA Z195-14 and Z195.1-16

For respiratory protection, National Institute for Occupational Safety and Health (NIOSH) standards and approvals are usually referenced throughout North America.

For life jackets, Transport Canada certification is the standard reference.

You'll find information on specific types of PPE in the next few chapters.