Facilitator’s Guide

PPE – AN INTRODUCTION

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PPE
An Introduction

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INTRODUCTION TO THE FACILITATOR’S GUIDE

PPE – An Introduction

The aim of this Facilitator’s Guide, when used in conjunction with the Video program, is to provide the facilitator with discussion points important to the overall development of the program and to allow participants the opportunity of discussing the impact the program may have on current work practices and whether in fact changes may be required.

The time allocated to the program will be determined by which areas are seen as important to each Organisation, the time taken to develop the points made in the program and whether other data specific to your own environment is included in addition to, or instead of, the program examples.

EACH FACILITATOR SHOULD CAREFULLY READ THE GUIDE DISCUSSION NOTES SUGGESTED AND PREPARE THEIR OWN INPUT ACCORDINGLY.

The program transcript is included to allow your Organisation to fully research the program content and develop specific examples critical to the performance of your own workforce.

Where the Video program is made available to small or remote sections of your Organisation, some other examples or discussion points may be preferred to suit the needs of these people and if so, should be developed prior to distribution of the program. Maximum benefit will then be obtained by your people.

All information included in the Facilitator’s Guide may be copied and distributed with the exception of the transcript of the Video program. Any information which is copied or distributed must only be used internally by the Organisation that purchased the guide.

SCREEN SHOT FROM THE VIDEO PROGRAM
INTRODUCTION TO THE VIDEO PROGRAM

Duration: 17 minutes

Not all workplace hazards can be fully controlled or eliminated.

When hazards in the work environment cannot be 'engineered out', or when guards, shields and other safety devices have limited effectiveness, there will often be a need to wear personal protective equipment.

It is important to understand that personal protective equipment is not a substitute for hazard control, but the last safety option to be implemented after all other practical safety measures have been considered and applied.

Personal protective equipment therefore is rarely used in isolation and is often incorporated into safety procedures as an added protection should an accident occur.

This program examines in detail:

- Eye and Face Protection
- Head Protection
- Respiratory Protection
- Hearing Protection
- Protective Clothing

In each section we examine why, when and how the protection is worn.

Long and short term illness, major and minor injuries, poisoning, electric shock and so on, can all be prevented at times with the use of appropriate personal protective equipment.

This program is designed for all personnel who are required to wear personal protective equipment. It is a general program suitable for induction or to reinforce the need to wear items of personal protection.
Not all workplace hazards can be fully controlled or eliminated.

When hazards in the work environment cannot be ‘engineered out’, or when guards, shields and other safety devices have limited effectiveness, there will often be a need to wear Personal Protective Equipment.

It is important to realise that personal protective equipment is not a substitute for hazard control, but the last safety option to be implemented after all other practical safety measures have been considered and applied.

Personal Protective Equipment therefore, is rarely used in isolation and is often incorporated into safety procedures as added protection, should an accident occur.

Personal Protective Equipment is used in a wide variety of applications, but can be grouped broadly under the following headings:

- Head Protection
- Hearing Protection
- Eye & Face Protection
- Respiratory Protection
- Hand & Arm Protection
- Foot & Leg Protection
- Skin Protection
- Trunk & Abdomen Protection
- Whole Body Protection

As well as the widely used and well accepted items such as protective helmets, safety glasses, ear plugs, respirators, gloves and safety footwear, there are numerous other items that have a place in personal protection. Here are just some examples.

- Reflective Clothing
- Protective Aprons & Waistcoats
- Body Belts
- Safety Harnesses
- Instep Protectors
- Kneepads
- Oversleeves
- Specialised Goggles
- Barrier Creams
- Sun Screens, and so on.
In this program we are going to examine Personal Protective Equipment by looking at the five major groups involved.

**EYE AND FACE PROTECTION**

Vision is something most of us take for granted. Rarely do we stop and think what it would be like if we lost our eyesight.

This lack of appreciation often leads to complacency which sees us taking unnecessary risks that could damage our eyes. The fact is that the majority of eye injuries which occur in the workplace could have been prevented.

In order to protect people from eye hazards it is important to select appropriate eye or face protection according to the activities being performed and their associated hazards.

**Why is Eye and Face Protection Worn?**

As well as offering protection from serious eye injuries that could lead to permanent blindness, eye and face protection is used to help prevent:

- Flash burns to the eyes from welding equipment
- Burns to the eyes and face from hot or molten metals
- Ptterygiums caused by excessive exposure from the sun and dust
- Partial loss of vision caused by embedded objects, impact and penetrating eye injuries
- Chemical burns, and steam burns to the eyes and face
- Light burns from laser equipment, and
- General protection from cuts and scratches, and even with some face shields, protection from extremes of temperature.

**When is Eye and Face Protection Worn?**

Eye protectors and or face shields should be worn whenever a person is required to enter or work in an area where eye hazards are present.

These areas should be designated and have appropriate signs indicating the need to wear protection but unfortunately, this is not always the case.

Protection should be worn in areas containing hazardous materials such as chemicals, solvents, gases, fumes, dust and mists, and hazardous processes like drilling, welding, chipping, hammering, cutting, grinding, sawing, and spraying.

**How is Eye and Face Protection Worn?**

The most imperative aspect with eye and face protection is that you must have a good fit.
Safety glasses should rest comfortably on your nose and snug enough not to keep slipping down when you bend over.

Safety Goggles need to be fitted tight enough to obtain a seal around the rim of the goggles. This is critical when working with impact hazards and splashing chemicals.

Face Shields of the adjustable head band type obviously need to be adjusted for each individual. Other attachments must be suitable for the make and type of the shield.

**HEAD PROTECTION**

In the workplace there are three widely used types of head protection:

- Cap and Hairnets
- Industrial Scalp protectors, often referred to as bump caps, and
- Industrial Safety Helmets

**Why is Head Protection Worn?**

Caps and Hairnets are worn to protect against scalping and entanglement, bump caps can also offer protection from striking fixed objects.

Safety helmets or hard hats not only offer protection from striking fixed objects but protect from falling objects.

Caps and hairnets are worn whenever there is a danger of the hair becoming caught in moving equipment OR if required for purposes of hygiene.

Helmets should be worn in any situation where there is the possibility of falling objects.

Because helmets also provide general protection to the head, many industrial plants and sites have policies of wearing hard hats at all times at these locations.

**How is Head Protection Worn?**

The most important considerations here are to:

- Select the most appropriate design, for example, a helmet with a short peak will allow better upward vision.
- Make sure the equipment is in good condition, for example, it has not been modified or left in direct sunlight for extended periods, and finally
- Make sure it fits properly

SAFEY CARE
**RESPIRATORY PROTECTION**

Airborne contaminants such as dusts, fumes, mists, gases and fibres are some of the most common hazards found in the workplace today.

In many cases, in order to protect people from the harmful effects of these hazards, it is necessary to choose and wear appropriate respiratory protection.

Respirators range from self-contained breathing apparatus to airline types through to the much more widely used air purifying types.

Both of the self-contained breathing and airline types should only be used by properly trained personnel.

However, the air purifying types are used by a wide variety of people.

There are two types of air purifying respirators, the disposable mask type, such as these, and the non-disposable type which can be fitted with a range of different filters and cartridges for different applications.

**Why is Respiratory Protection Worn?**

Although respirators are sometimes used when dealing with non-toxic but unpleasant smells and odours, the main reason for their use is far more important.

Respirators are principally worn to protect against hazardous airborne contaminants, and to help prevent their absorptions into the body through the respiratory system.

**When is Respiratory Protection Worn?**

Respiratory protection is worn when it is designated for the job task or the work area, commonly this will be when the type and concentration of the contaminants are known, such as when spraying.

There are however, two other circumstances when respiratory protection may be required, when conducting investigations or corrections, and in emergency situations.

In both of these situations, types and levels of concentrations of contaminants may be unknown and careful selection of the appropriate respiratory protection equipment is very important. If unsure, check with your supervisor.

**How is Respiratory Protection Worn?**

It is critical to wear respiratory protection correctly so that it provides the protection it was designed to give.
One fundamental rule that applies to all males is that the wearer must be clean shaven. In some cases even a few hours growth can considerably reduce the effectiveness of the seal, and

It is pointless wearing respiratory protection if you don't have a good seal.

Before beginning any work period with a respirator, the following procedure should be carried out:

- Check that the mask is clean and hygienic
- Check that there are no cracks or damage to the body of the mask
- Carefully examine the outer rim for damage - any damage here could prevent an adequate seal
- Check that the inhalation and exhalation valves are functional and clean
- Where applicable, ensure the visor is clean and does not have scratches that will restrict or obscure vision
- If applicable, check that the speaking diaphragm is fitted correctly
- Check that the filter cartridge being used is the correct one for the job and it is not past its expiry date, and finally
- Check that the filter, or cartridge is correctly seated in the retainer and the retainer is tightened in position.

So, having checked the mask, how should it be fitted? Although different types and makes of respirators will require different techniques, the principles should be as follows:

- Ensure that straps are loosened
- Bend forward and hang the mask over your face
- Then, evenly pull up and out on the bottom straps so that the mask cups nicely into the chin
- Next, evenly tighten the middle straps and finally, the top straps
- The straps should appear like this, evenly positioned around the head

Now fitted, it is important to conduct a leakage, or fit test. There are a number of acceptable fit tests that can be used; the negative fit test is one that is commonly used:

- Unscrew the filters or cartridges from the mask body
- Hold your palms firmly over the inhalation connectors and breathe in and hold your breath for about five seconds
- You should feel the mask collapse slightly on your face
- If you have a leak you should be able to feel air coming in through the mask somewhere, or if it is a particularly bad fit you may hear it "hissing".

If you have any leaks try to re-fit the mask. If it re-occurs you will need to use a mask with different contours which will enable a good seal.
Never use a mask that does not give a proper seal. You will not be protected.

HEARING PROTECTION

Noise Induced Hearing Loss is a major concern in the industrial workplace. It usually develops gradually over a long period of time when people are exposed to high noise levels.

It can also result from sudden loud noises such as explosions or from loud impacts.

Unfortunately, many people are unaware of a gradual hearing loss and discover the problem too late, when irreparable damage has already been done.

Personal Hearing Protection comes in two forms - ear plugs and ear muffs.

There are numerous types and brands offering not only different levels of protection but choices for individual comfort.

Why is Hearing Protection Worn?

Frequently, hearing protection is worn because engineering controls have not been effective in reducing general noise to an acceptable level.

Also, hearing protection is worn as a precaution in situations where noise levels may vary or there is the possibility of loud sudden noises.

Finally, when using particular pieces of equipment or tools such as a nail gun where there is a known noise hazard.

When is Hearing Protection Worn?

Hearing protection should be worn whenever a person is required to enter or work in an area where noise levels can cause hearing damage.

Hearing protection should also be worn whenever a designated area is signposted. Remember, in operating plants noise levels can vary significantly depending upon what job functions are being carried out.

How is Hearing Protection Worn?

Hearing protection will not function properly if it is not worn correctly and have the appropriate attenuation.

Having first checked that the plug is appropriate and hygienic, it should be fitted like this:

- Roll the plug between thumb and forefinger to approximately this size
- Pull the ear out and back and insert it into the ear and ear canal
With ear muffs, ensure they are clean, comfortable and they provide a good seal. Also, make sure, if they are worn with other protection, they are of the type which will not interfere with their fit.

In our final category of Protective Clothing, we are going to include, not only apparel, but also gloves and footwear.

**Why is Protective Clothing Worn?**

Broadly speaking, protective clothing affords protection from:

- Thermal and chemical burns
- Contact with hazardous substances and items
- Protection from hot and cold atmospheric conditions, and
- In some instances increased visibility.

Safety Footwear can help prevent:

- Crushing and impact injuries
- Puncture Wounds
- Electrical shock, and
- Chemical burns or poisoning

Gloves can help in the prevention of:

- Abrasions and cuts
- Burns
- Infection
- Dermatitis, and
- Injuries associated with extremes of temperature

**When is Protective Clothing Worn?**

As with all forms of Personal Protective Equipment, Protective Clothing should be worn whenever one of the following conditions apply:

- Whenever it is specified in a safe working procedure in your workplace
- Whenever you enter an area that has been signposted .... and finally,
- Whenever YOU are performing a task where YOU believe that Protective Clothing is necessary

**How is Protective Clothing Worn?**

Regardless of the item of PERSONAL PROTECTIVE EQUIPMENT required, there are four basic rules that must be adhered to:

1. It must be suited specifically to the task
2. It must be inspected prior to use
3. It must be worn correctly, and
4. It must fit properly

Failure to apply these rules can often lead to ineffective protection.

With recent advances in technology many improvements have been made in both the design and the level of protection offered by many types of personal protective equipment.

Add to this an ever increasing range of products and in many cases far greater levels of comfort, it is difficult to understand why the wearing of appropriate Personal Protective Equipment is often ignored.

Many items of Personal Protective Equipment have become widely accepted over recent years: seat belts, hard hats, and even sun screen, are just three examples.

Long and short term illness, major and minor injuries, poisoning, burns, electric shock and so on, can all be prevented at times with the use of appropriate personal protective equipment.

If you have a need to wear protective equipment, make it part of your routine - check its suitability, its condition, AND WEAR IT.
PART ONE
EYE AND FACE PROTECTION

Lack of thought about what we are doing together with complacency, are our biggest problems in planning against facial injury.

Too many people think they can avoid an injury, perhaps by turning their head, shielding with their hands and arms or even blinking their eyes. The fact is that most facial injuries occur in a fraction of a second, long before our minds and bodies can react.

Why is Eye and Face Protection Worn?

Obviously if there is no time to avoid injury our only option is to take preventative measures.

Appropriate eye and face protective equipment can help prevent the serious, and sometimes, lifelong consequences of eye and facial injury.

When is Eye Protection Worn?

Many workplaces have areas which are clearly designated as Eye Hazard areas and protective equipment should be worn before entering those areas.

It is important, however, to wear eye and face protection based on the hazards presented by the job task rather than necessarily being in an area designated for wearing Personal Protective Eye or Face Protection.

How is Eye Protection Worn?

People will not usually continue to use equipment which is uncomfortable and the items will be discarded - sooner rather than later.

It is important therefore that a reasonable amount of time is spent on selecting the best possible fit for your size and shape. The seal between your face and the safety equipment may be critical in providing the protection you need.
DISCUSSION

Your organisation may have a number of separate work zones identified for eye and face protection to be worn. There may be other areas not identified which may at times require people to wear Eye and Face Protection.

It may be worthwhile to include discussion in both types of work zones, (A) to emphasise past experiences and (B) to allow participants to suggest their own views on their future safety needs.

Discussion should start with why protective equipment is worn, then, through to When and How, concluding on the benefits to the wearers.
PART TWO
HEAD PROTECTION

Three widely used types of head protection are:

- Caps and Hairnets
- Industrial Scalp Protectors
- Industrial Safety Helmets

Why is Head Protection Worn?

Caps & hairnets and industrial scalp protectors are worn to protect against being caught up in machinery in some work environments, to protect against causing infection in the food industry and to maintain a sterile environment in places such as laboratories and hospitals.

In many cases the wearing of head protection equipment is an established part of an organisation's safety procedure.

How is Head Protection Worn?

Head Protection must be:

- Designed to suit the application.
- In good condition, eliminate those with fractures, badly worn areas and undesirable modifications
- The right fit. The fit of head protection equipment is critical as otherwise it will not remain in place or will hurt the wearer. A poor fitting hard hat could cause more damage than the object you strike!

DISCUSSION

In organisations where head protection equipment is worn it may be worthwhile at this point to discuss and issue your safety policy.

Alternatively, select a known industry and request participants to develop their own safety policy to cover why, when and how head protection should be worn. Conclude with benefits to all wearers.
The need for respiratory protection may be due to the manufacturing process, the product content or finish, chemical fall-out or by the surrounding environment.

Even when exhaust or extraction facilities are installed the need may remain for those most at risk to wear some form of respiratory protection.

**Why is Respiratory Equipment Worn?**

The simple answer is to provide the wearer with clean air for a specified period of time when working in an unsafe atmosphere.

**When is Respiratory Equipment Worn?**

The issue of respiratory equipment is usually designated for the task after careful analysis of the hazard. (ie: spraying, emergency situations and confined spaces.)

**How is Respiratory Equipment Worn?**

Critical to all respiratory equipment is the need for an effective fit. The seal provides the basis on which the equipment's function is designed.

Second in importance is the maintenance of the equipment and this responsibility should be with trained personnel. Even in the best of circumstances, all parts of the equipment must still be inspected and physically checked by the operator immediately before use.

In the work scenario there is only a few minutes before a person may be overcome and collapse when working in contaminated air and for this reason the standard No 1 Rule for all instances where Respiratory Equipment is used is: DO NOT WORK ALONE!
DISCUSSION

(A) In organisations where respiratory equipment is used regularly it may be desirable to introduce a range of the equipment used and demonstrate their use to participants as shown in the video. Alternatively, there may be a local organisation providing this specialised equipment, who could participate.

(B) Request participants to nominate examples where respiratory equipment would be of personal benefit either in work or elsewhere.
PART FOUR
HEARING PROTECTION

Unfortunately, many people are unaware of a gradual hearing loss and discover the problem too late when the damage has already been done.

Why is Hearing Protection Worn?

Engineering design and controls cannot always be effective in the production of goods at reasonable noise levels. Also hearing protection may be required for unpredictable and/or intermittent noise intrusions, ie: detonation and power tools.

When is Hearing Protection Worn?

Hearing protection is now compulsory in many industrial areas and these should be signposted to ensure the correct equipment is worn. These areas should include areas where intermittent activities are likely to create noise hazards.

In some cases where noise levels are marginally below recognised levels it may be optional for those working in the area to wear protection, however, it may be necessary to check the time spent in those and other areas to decide if protection is necessary.

How is Hearing Protection Worn?

As Ear Plugs are inserted inside the ear, it is important that only clean and hygienic plugs are used. Ear infections are extremely painful and can incapacitate workers for extended periods.

DISCUSSION

1. Discuss noise levels in various areas of the organisation including why an area should be designated a problem zone.
2. Discuss when workers should wear the equipment including optional situations.
3. Using the various types of equipment you have assembled, demonstrate the correct use with selected group members.
PART FIVE
PROTECTIVE CLOTHING

The original concept of protective clothing was something tough to resist long hours of hard work. Today items of protective clothing are designed for quite specific tasks and protective roles.

Why is protective clothing worn?

Some 15 examples are given in the video of the application of protective clothing, footwear and gloves. There are many more examples that have not been shown where the correct clothing has played a major part in preventing or minimising injury.

When is protective clothing worn?

- When specified within the safe working procedures in your workplace
- When entering an area already signposted
- When performing a task where you believe protective clothing is necessary

How is protective clothing worn?

There are four basis rules which apply to the wearing of ALL protective clothing:

1. It must be suited specifically to the task
2. It must be inspected prior to use
3. It must be worn correctly
4. It must fit properly

With continual improvements in technology, materials and design it is now possible to obtain much higher levels in comfort and protection in Personal Protective Equipment.

DISCUSSION

Request participants to select one or more items of personal protective equipment introduced in recent years (e.g. seat belts) and discuss the consequences of the change
ASSESSMENT – PPE: AN INTRODUCTION

Name: ..........................................................

Date: ..........................................................

I.D. (if applicable): ..........................................

Score

1. Personal Protective Equipment is ____.
   a) Unnecessary
   b) Guaranteed to eliminate all possible hazards
   c) Used only to prevent head injuries
   d) The last safety option after all other measures have been implemented

2. What will eye and face protection not protect against?
   a) Muscle strain
   b) Flash burns from welding equipment
   c) Cuts and scratches
   d) Light burns from laser equipment

3. What is the most crucial factor in eye and face protection?
   a) A good fit
   b) Wear goggles at all times in industrial locations
   c) Get the largest possible face shield
   d) Sunscreen

4. Caps and hairnets are worn to protect against ____.
   a) Airborne contaminants
   b) Falling objects
   c) Chemical burns
   d) Scalping and entanglement

SAFETYCARE
5. When should head protection be worn?
   a) Where there is a possibility of falling objects
   b) Where there is a danger of hair getting caught in moving equipment
   c) For purposes of hygiene
   d) All of the above

6. Apart from when it is designated for the job task or work area, what is another situation when respiratory protection may be appropriate?
   a) In extreme temperatures
   b) When conducting investigations
   c) When there is the possibility of falling objects
   d) When using tools such as nail guns

7. Never wear a respirator mask that does not have ____.
   a) A proper seal
   b) A self contained breathing apparatus
   c) A leak
   d) Protection from burns

8. How many kinds of Personal Hearing Protection are there?
   a) One
   b) Two
   c) Three
   d) Four

9. What can gloves help protect against?
   a) Cuts
   b) Infection
   c) Burns
   d) All of the above

10. What is not one of the four basic rules of wearing Personal Protective Equipment?
    a) It must be suited specifically to the task
    b) It must fit properly
    c) It must be inspected before using
    d) It must not be worn with other kinds of Personal Protective Equipment
ANSWERS

1. ANSWER: d) The last safety option after all other measures have been implemented. Personal Protective Equipment is rarely used by itself, but incorporated into safety procedures as additional protection if an accident occurs.

   If the wrong answer is given: It is important to realise that personal protective equipment is not a substitute for hazard control, but the last safety option to be implemented after all other practical safety measures have been considered and applied.

2. ANSWER: a) Muscle strain. Eye and face protection protects against serious eye injuries as well as things such as burns, penetrating eye injuries, cuts and scratches and extreme temperatures.

   If the wrong answer is given: As well as protecting the wearer from serious eye injuries, eye and face protection can help protect against flash burns to the eyes from welding equipment, burns from hot or molten metals, excessive exposure to sun and dust, impact and penetrating eye injuries, chemical burns and cuts and scratches, among other hazards.

3. ANSWER: a) A good fit. Safety glasses should rest comfortably on your nose and snug enough not to keep slipping down when you bend over. Safety Goggles need to be fitted tight enough to obtain a seal around the rim of the goggles. Face Shields of the adjustable head band type need to be adjusted for each individual.

   If the wrong answer is given: You must always ensure that all eye and face protection fits correctly.

4. ANSWER: d) Scalping and entanglement. Caps and hairnets are worn whenever there is a risk of getting hair caught in moving machinery, and also for purposes of hygiene.

   If the wrong answer is given: There are three widely used types of head protection. Caps and Hairnets are worn to protect against scalping and entanglement. Industrial scalp protectors can also offer protection from striking fixed objects. Safety helmets or hard hats not only offer protection from striking fixed objects but protect from falling objects.

5. ANSWER: d) All of the above. Head protection, in the form of helmets or industrial scalp protectors, can also guard against striking fixed objects.

   If the wrong answer is given: Caps and hairnets are worn whenever there is a danger of the hair becoming caught in moving equipment OR if required for purposes of hygiene. Helmets should be worn in any situation where there is the possibility of falling objects.
6. ANSWER: b) When conducting investigations. When conducting investigations or corrections, and in emergency situations, types and levels of concentrations of contaminants may be unknown, and special care must be taken in selecting suitable respiratory protection.

If the wrong answer is given: Respiratory protection is worn when it is designated for the job task or the work area, which is commonly when the type and concentration of the contaminants are known, such as when spraying. There are however, two other circumstances when respiratory protection may be required – when conducting investigations or corrections AND in emergency situations.

7. ANSWER: a) A proper seal. Once a respirator is fitted, a fit test must be carried out to ensure a good seal. There are various acceptable fit tests; one of the most commonly used is the negative fit test.

If the wrong answer is given: It is vital to wear respiratory protection correctly so that it provides the protection it was designed to give. It is pointless wearing any respiratory protection if you don’t have a good seal.

8. ANSWER: b) Two. Personal Hearing Protection includes ear plugs and ear muffs. Ear plugs should be appropriate, hygienic, and correctly fitted. Ear muffs must be clean, comfortable and provide a good seal.

If the wrong answer is given: Personal Hearing Protection includes ear plugs and ear muffs.

9. ANSWER: d) All of the above. Gloves can help prevent cuts and abrasions, burns, infection, dermatitis and injuries from extreme heat and cold.

If the wrong answer is given: Gloves can help prevent cuts and abrasions, burns, infection, dermatitis and injuries from extreme heat and cold.

10. ANSWER: d) It must not be worn with other kinds of Personal Protective Equipment. The four rules are: it must be suited specifically to the task; it must be inspected prior to use; it must be worn correctly; and it must fit properly.

If the wrong answer is given: Regardless of the item of PERSONAL PROTECTIVE EQUIPMENT required, there are four basic rules that must be adhered to:

1. It must be suited specifically to the task
2. It must be inspected prior to use
3. It must be worn correctly, and
4. It must fit properly