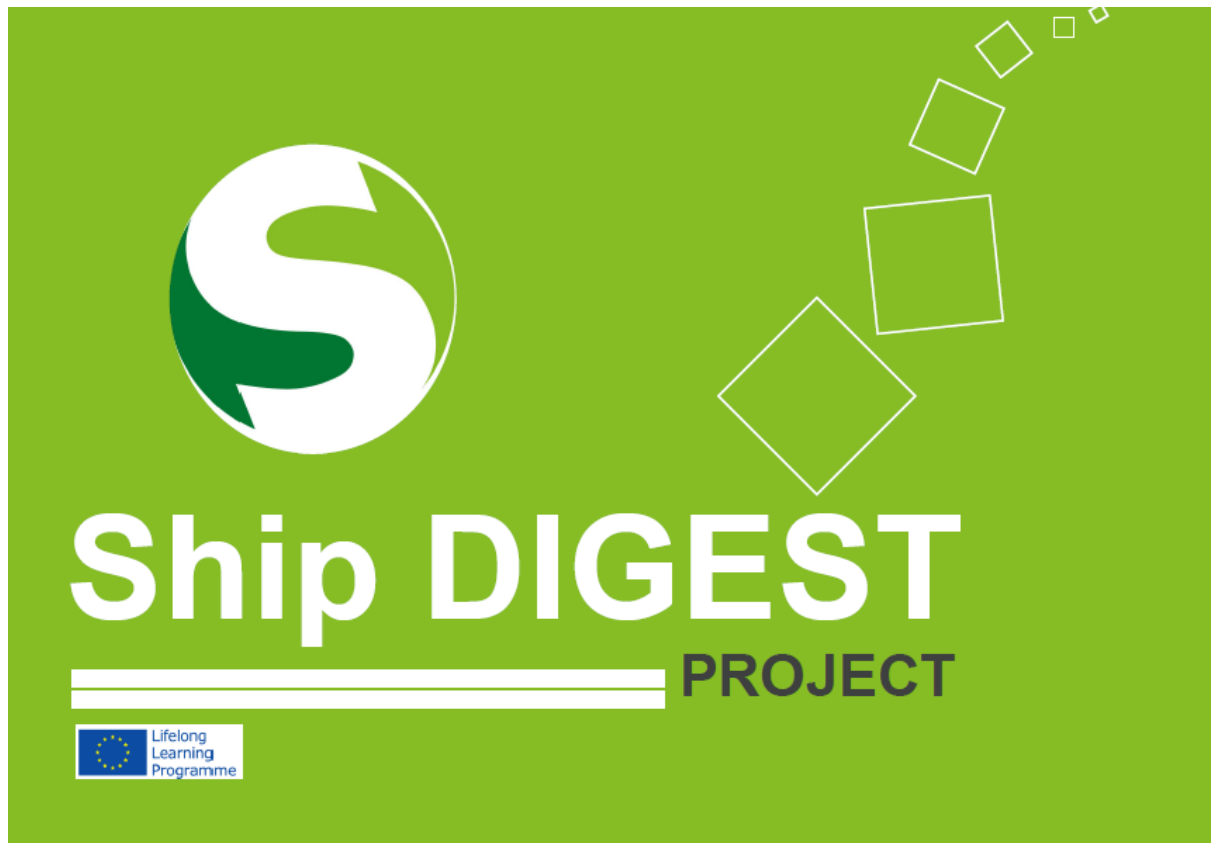




Ship Dismantling Training I

Personal Protective and Safety Equipment

Contents

SHIP DISMANTLING TRAINING I	1
UNIT TITLE: Personal Protective and Safety Equipment	3
UNIT SUMMARY:	3
ENTRY REQUIREMENTS:	3
1 Describe why it is important and a legal requirement to wear the correct Personal Protective Equipment (PPE)	4
1.1 Legal Requirements of the worker with regards to PPE and safety equipment	4
1.1.1 Practise Test	5
1.1.2 PowerPoint Notes	5
1.2 Legal requirements of the worker's employer with regards to PPE and safety equipment	15
1.2.1 PowerPoint Notes	16
1.3 Potential harm that can be caused through individuals not wearing/not correctly wearing PPE and safety equipment	29
1.3.1 PowerPoint Notes	29
2 Identify and describe which Personal Protective and Safety Equipment are required to be worn and utilised during Ship Dismantling job tasks.	50
2.1.1 PowerPoint Notes	50
3 Demonstrate and explain the importance of wearing and/or utilising Personal Protective and Safety Equipment in the correct manner.	103
3.1.1 PowerPoint Notes	103



Lifelong
Learning
Programme

SHIP DISMANTLING TRAINING I

UNIT TITLE: Personal Protective and Safety Equipment

UNIT SUMMARY: This unit is relevant to candidates who are employed in or involved in the Ship Dismantling industry at a practical level. Candidates who achieve this unit should have the ability to:

- Describe why it is important and a legal requirement to wear the correct Personal Protective Equipment (PPE)
- Identify which PPE to wear in everyday roles and in specialist situations
- How to wear PPE correctly

ENTRY REQUIREMENTS: Candidates should be familiar with Ship Dismantling practices.

CONTENTS:

- **Learning Outcome 1:** Describe why it is important and a legal requirement to wear the correct Personal Protective Equipment (PPE)
- **Learning Outcome 2:** Identify and describe which Personal Protective and Safety Equipment are required to be worn and utilised during Ship Dismantling job tasks.
- **Learning Outcome 3:** Demonstrate and explain the importance of wearing and/or utilising Personal Protective and Safety Equipment in the correct manner.

1 Describe why it is important and a legal requirement to wear the correct Personal Protective Equipment (PPE)

1.1 Legal Requirements of the worker with regards to PPE and safety equipment

Property, supply, usage and principles and procedures with regards to other issues of PPE is determined by "Directive of Using Personal Protective Equipment at Work" which is published and inured on dated 11.02.2004 when in cases preventing the risk at work or decreasing risks to acceptable level are not ensured with collective protection based on technical measures or work organization or working methods.

According to Directive personal protective equipment is defined as all equipment, means and device which are designed for protect worker against one or more potentially simultaneous risks which due to work undertaken at the workplace and affect health and safety, worn or held by worker.

Also within the scope of this definition following the below is counted as PPE;

a) A unit constituted by several devices or appliances, which have been integrally combined by the manufacturer for the protection of the individual against at the same time one or more potentially simultaneous risks.

b) A protective device or appliance combined, separable or inseparable, with personal non-protective equipment worn or held by an individual for the execution of a specific activity,

c) Also interchangeable PPE components which are essential to its satisfactory functioning and used exclusively for such equipment.

For PPE can be used by worker one of the important point is of course the worker's obligations in this regard. So, as required by article 19 of law no 6331 Occupational Health and Safety Law, in accordance with his training and the instructions given by the employer workers are obliged to:

a) make correct use machinery, apparatus, tools, dangerous substances, transport equipment and other means of production, use such safety devices correctly, refrain from changing or removing arbitrarily safety devices fitted,

b) make correct use of the personal protective equipment supplied to them and protect the PPE.

Also according to article 8 of "Directive of Using Personal Protective Equipment at Work" workers are obliged to inform the employer about any fault or shortcomings in PPE.

If worker fails to fulfil its legal obligation regarding using PPE, worker may be fined in accordance with article 38 of law no 4857 Labour Law with topic of deductions of fines from wages. But no employer may impose a fine on an worker's wage for reasons other than

those indicated in the employment contract/collective agreement. To give worker a fine, with employment contract/collective agreement or internal directive, determining such behavior objectively, it is necessary to know that which behaviour as a result of the how many will be the amount of the fine.

Deductions which must not exceed two days' wages in any one month, or in the case of piece work or amount of work to be done, the wages earned by the worker in two days are ensure with law no 4857 Labour Law. No doubt, the amount of the fine to be may exceed two days' wages of worker, but the amount of the deduction will be done in one mount, may not exceed two days' wages of worker. Deductions will be done as a penalty from worker's wages immediately must be reported to worker on grounds.

1.1.1 Practise Test

1) Which of the following legal obligations related to using the PPE by worker **is not**?

- a) Use machinery, apparatus, tools, dangerous substances, transport equipment and other means of production according to the rules at work
- b) Make correct use and maintain PPE is provided to them
- c) Determine the suitable PPE when needs to be used
- d) Inform the employer about any fault or shortcomings in PPE

1.1.2 PowerPoint Notes



Ship Dismantling Insight by Generating Environmental and Safety Training

Personal Protective and Safety Equipment

Legal requirements of the worker
with regards to PPE and safety
equipment

What is PPE?

PPE-**Personal** **Protective** Equipment

is defined as all equipment, means and device which are designed for protect employees against one or more potentially simultaneous risks which due to work undertaken at the workplace and affect health and safety, worn or held by employees.



The use of personnel protective equipment and safety equipment



WHAT THE LAW SAYS?

According to the article 19 of law no 6331 Occupational Health and Safety Law, in accordance with his training and the instructions given by the employer, workers are obliged to;

- a) **make correct use** machinery, apparatus, tools, dangerous substances, transport equipment and other means of production, use such safety devices correctly, **refrain from changing or removing arbitrarily safety devices fitted,**
- b) make **correct use** of the personal protective equipment supplied to them **and protect** the PPE.

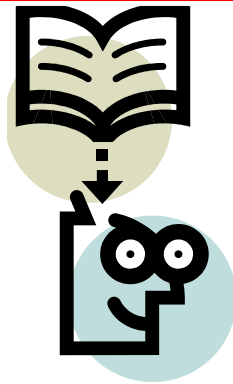
The use of personal protective equipments and safety equipments



Also, according to the Article 8 of the Directive on the Use of Personal Protective Equipment in Workplaces ;

-Employees are obligated to use of the personal protective equipment supplied to them in accordance with their training and the instructions.

-Employees are going to inform the employer about any fault or shortcomings in PPE.





If we **do not** use PPE?



- Article 38 of law no 4857 Labor Law, with the title of fines from wages, fine which will be given to employee for his crime is linked to specific provisions.
- Deductions which must not exceed two days' wages in any one month, or in the case of piece work or amount of work done, the wages earned by the employee in two days are taken under the terms with law no 4857 Labor Law.



we **do not** use helmets?



If we **do not** use ear plug?



If we **do not** use googles?

If we do not? (VIDEO)

In which situations PPE is used?

- PPE is used when the risks can not be prevented or exactly limited with technical measures or work organization and working methods to ensure public protection.*
- PPE is used to prevent occupational accident and occupational disease, avoid the health and safety risks, improve health and safety conditions.*
- The employer give priority based on collective protection measures than personal protection measures.*

* Directive on the Use of Personal Protective Equipment in Workplaces



GENERAL PROVISIONS



- Personal protective equipment is given **free** by the employer, **maintenance, repair and periodic checks are made** in accordance with the instruction manual provided by the manufacturer and needed parts are replaced and the PPE is protected under hygienic conditions and kept ready for use.
- Employer **informs employees** about the use of personal protective equipment against to which risks.
- The employer ensures the giving **practical training** on the use of personal protective equipment.

Where? Which PPE?



Employer determines occupational health and safety measures to be taken as a result of risk assessment and the personal protective equipment which should be used.

1.2 Legal requirements of the worker's employer with regards to PPE and safety equipment

GENERAL PROVISIONS

- ✓ Related to the use of personal protective equipment in workplaces shall be complied to the following subjects:

All PPE;

- 1) Suitable to prevent the associated risk without creating additional risk.
 - 2) Suitable for the existing conditions at work.
 - 3) Suitable for ergonomic requirements and health of worker.
 - 4) Fits to worker perfectly when necessary adjustments are done.
 - 5) Has **CE mark** and **Turkish user manual** in accordance with Directive of PPE.
- ✓ In cases where more than one source of risk and worker necessary use at the same time more than one PPE against those risks, PPE that are compatible with combination and their protection not be affected against that risks are selected.
 - ✓ When determining the conditions of use of PPE and especially usage duration, degree of risk, frequency of exposure, characteristics of workplace of worker and performance of PPE are taken into account.
 - ✓ When PPE which is suitable for using by a single person is used by several persons, to against health and hygiene problems due to that using every precautions are taken.
 - ✓ At work, adequate information which are related to issues laid down in lines (a) and (b) of the this Article stated for every PPE and this information can be reached easily.
 - ✓ PPE are given free by the employer, maintenance, repair and periodic checks are made in accordance with the instruction manual which is provided by the manufacturer and parts are replaced in need and are protected in hygienic conditions and are kept ready for use.
 - ✓ The employer shall inform workers about using PPE against to which risks.
 - ✓ The employer shall ensure that giving practical training in the use of PPE.
 - ✓ PPE except in exceptional and specific circumstances are only used for the purposes of.
 - ✓ PPE are stocked adequate amount and in place where worker can reach easily.
 - ✓ PPE are used in accordance with the instruction, maintenance and cleaning are made. Instruction must be understood by workers.

Informing of Workers

- ✓ In using PPE in accordance with articles 4 and 16 of Occupational Health and Safety Law, the employer shall give information to workers and workers' representatives about precautions to be taken in terms of health and safety.

Consultation with and Participation of Workers

- ✓ In accordance with articles 4 and 16 of law no 6331 Occupational Health and Safety Law the employer consults with and participates of workers or workers' representatives about matters referred to in this Directive and its annexes.
- ✓ The employer in advance shall ensure to take the consults of support staff and workers' representatives about issues of determining PPE should be used.

1.2.1 PowerPoint Notes



Ship Dismantling Insight by Generating Environmental and Safety Training

Legal requirements of the worker's employer with regards to PPE and safety equipment

□ Kişisel koruyucu donanımlara ilişkin yasal yükümlülükler

- Kişisel Koruyucu Donanımların Kullanımı
- İşverenlerin Yükümlülükleri
- Çalışanların Bilgilendirilmesi
- Çalışanların görüşlerinin alınması ve katılımının sağlanması

Bölüm 2

Mevzuat



**Kişisel Koruyucu Donanımların
İşyerlerinde Kullanılması
Hakkında Yönetmelik**

**Resmi Gazete Sayısı: 25370
Resmi Gazete Tarihi: 11.02.2004**

Kişisel koruyucu donanımların kullanımı

- Kişisel koruyucu donanım, risklerin, toplu korumayı sağlayacak teknik önlemlerle veya iş organizasyonu ve çalışma yöntemleriyle önlenemediği veya tam olarak sınırlandırılamadığı durumlarda kullanılır. Kişisel koruyucu donanım, iş kazası ya da meslek hastalığının önlenmesi, sağlık ve güvenlik risklerinden korunma, sağlık ve güvenlik koşullarının iyileştirilmesi amacıyla kullanılır. İşveren, toplu korunma tedbirlerine, kişisel korunma tedbirlerine göre öncelik verir.

Kişisel Koruyucu Donanımlar (İşverenin Yükümlülükleri)

İşveren, yapılacak risk değerlendirmesi sonucu alınacak iş sağlığı ve güvenliği tedbirleri ile **kullanılması gereken** kişisel koruyucu donanımı belirler.

GENEL HÜKÜMLER

Tüm kişisel koruyucu donanımlar;

- Kendisi ek risk yaratmadan ilgili riski önlemeye uygundur.
- İşyerinde var olan koşullara uygundur.
- Kullanan çalışanın ergonomik gereksinimlerine ve sağlık durumuna uygundur.
- Gerekli ayarlamalar yapıldığında kullanana tam uyar.
- KKD Yönetmeliğine uygun şekilde **CE işareti** ve **Türkçe kullanım kılavuzu** bulunur.
- ❖ Birden fazla riskin bulunduğu ve çalışanın bu risklere karşı aynı anda birden fazla kişisel koruyucu donanımı kullanmasının gerektiği durumlarda, bir arada kullanılması uyumlu olan ve söz konusu risklere karşı koruyuculuğu etkilenmeyen kişisel koruyucu donanımlar seçilir.

GENEL HÜKÜMLER



- Kişisel koruyucu donanımların kullanım şartları ve özellikle kullanılma süreleri belirlenirken riskin derecesi, maruziyet sıklığı, her bir çalışanın iş yaptığı yerin özellikleri ve kişisel koruyucu donanımın performansı dikkate alınarak belirlenir.
- Tek kişi tarafından kullanılması esas olan kişisel koruyucu donanımların, zorunlu hallerde birkaç kişi tarafından kullanılması durumunda, bu kullanımdan dolayı sağlık ve hijyen problemi doğmaması için her türlü önlem alınır.

GENEL HÜKÜMLER



- Kişisel koruyucu donanımlar, işveren tarafından ücretsiz verilir, imalatçı tarafından sağlanacak kullanım kılavuzuna uygun olarak bakım, onarım ve periyodik kontrolleri yapılır ve ihtiyaç duyulan parçaları değiştirilir ve hijyenik şartlarda muhafaza edilir ve kullanıma hazır bulundurulur.
- İşveren, çalışanı kişisel koruyucu donanımları hangi risklere karşı kullanacağı konusunda bilgilendirir.

GENEL HÜKÜMLER



- İşveren, kişisel koruyucu donanımların kullanımı konusunda uygulamalı olarak eğitim verilmesini sağlar.
- Kişisel koruyucu donanımlar, istisnai ve özel koşullar hariç, sadece amacına uygun olarak kullanılır. Kişisel koruyucu donanımlar çalışanların kolayca erişebilecekleri yerlerde ve yeterli miktarlarda bulundurulur.
- Kişisel koruyucu donanımlar talimatlara uygun olarak kullanılır, bakımı ve temizliği yapılır. Talimatlar çalışanlar tarafından anlaşılır olmalıdır.

Çalışanların bilgilendirilmesi



- İşveren kişisel koruyucu donanım kullanımında, sağlık ve güvenlik yönünden alınması gerekli önlemler hakkında çalışanlara ve temsilcilerine **bilgi ve eğitim** verir.

Çalışanların görüşlerinin alınması ve katılımının sağlanması



- İşveren, çalışanların veya temsilcilerinin görüşlerini alır ve katılımlarını sağlar.
- İşveren, destek elemanları ile çalışan temsilcilerinin, kullanılması gereken kişisel koruyucu donanımların belirlenmesi konularında önceden görüşlerinin alınmasını sağlar.

1.3 Potential harm that can be caused through individuals not wearing/not correctly wearing PPE and safety equipment

1.3.1 PowerPoint Notes



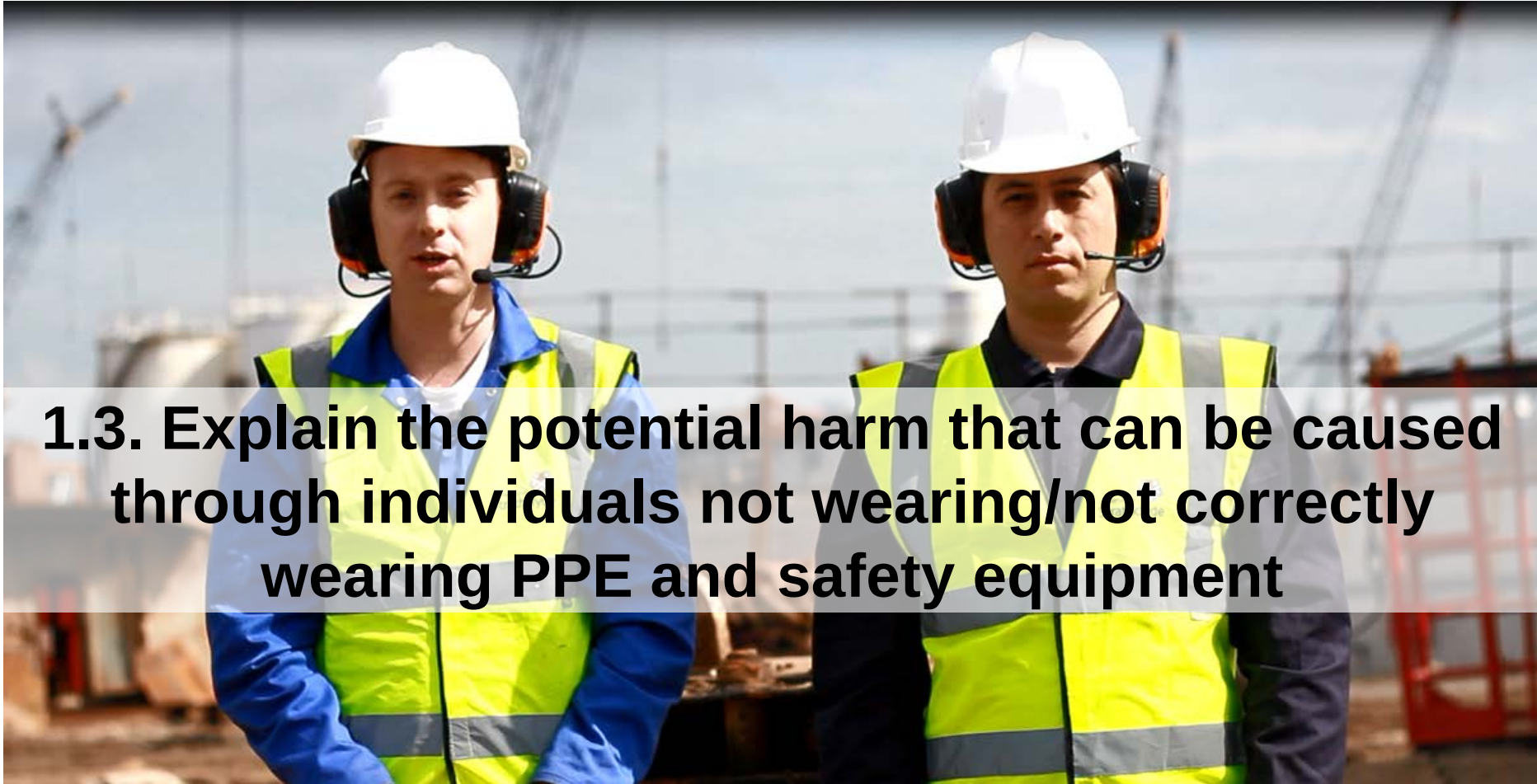
Ship Dismantling Insight by Generating Environmental and Safety Training

Personal Protective and Safety Equipment

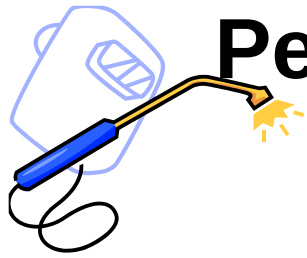
Training of Personal Protective and Safety Equipment



- This training program will deliver an overview of personal protective and safety equipments and the situations when they are not worn correctly . After completing this training, the student will;
 - Explain the potential harm that can be caused through individuals not wearing/not correctly wearing PPE and safety equipment



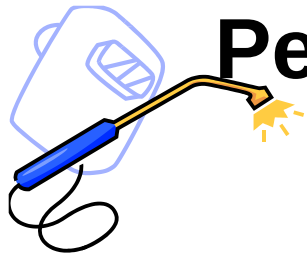
1.3. Explain the potential harm that can be caused through individuals not wearing/not correctly wearing PPE and safety equipment



Personal Protective and Safety Equipment



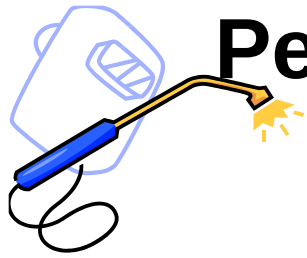
PPE is equipment that will protect the user against health or safety risks at work. It can include items such as safety helmets, gloves, eye protection, high-visibility clothing, safety footwear and safety harnesses. It also includes respiratory protective equipment.



Personal Protective and Safety Equipment



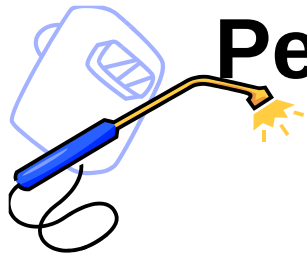
- The purpose of personal protective equipment is to reduce employee exposure to hazards when engineering and administrative controls are not feasible or effective to reduce these risks to acceptable levels.
- Any item of PPE imposes a barrier between the wearer/user and the working environment.



Personal Protective and Safety Equipment



- Personal protective equipment can be categorized by the area of the body protected, by the types of hazard, and by the type of garment or accessory
- A single item, for example boots, may provide multiple forms of protection: a steel toe cap and steel insoles for protection of the feet from crushing or puncture injuries, impervious rubber and lining for protection from water and chemicals, high reflectivity and heat resistance for protection from radiant heat, and high electrical resistivity for protection from electric shock.



Personal Protective and Safety Equipment



- ALWAYS
 - Ensure your PPEs are maintained in good condition
 - Check your PPEs for any damage

PPE by type



- **Head protection**
- **Eye and face protection**
- **Hand and arm protection**
- **Protective clothing**
- **High-visibility clothing**
- **Foot protection**
- **Drowning protection**
- **Personal fall protection**
- **Hearing protection**
- **Respiratory protective equipment**



Head protection



- A single head injury can handicap an employee for life, or it can be fatal!
- Falling, flying or thrown objects, are common causes of head injuries, as well as falling or walking into hard, fixed objects. These injuries include scrapes, lacerations, neck sprains, concussions, skull fractures, and even fatalities.
- Accidents involving electricity result in electrical shocks and burns.
- Potential splashes, spills and drips of toxic liquids such as acids, caustics, and molten metals that can burn or irritate skin, and scalp.
- There is also potential flammability and hair risk that fire may spatter to workers head or workers' hair may get caught or drawn into machine parts.



Eye and face protection



- Consequences of not wearing/ not correctly wearing could result in minor injuries such as particles in the eye, scratches or abrasion on the face and in some cases, burns to the eye or face.
- More serious injuries could involve projectiles lodged in the eye or face, severe burns to the eye or face from molten matter or chemical/acid splash.
- It is not beyond the realm of believability that any contact with the eye or face from an errant chip or particle could cause the most serious of injuries — *DEATH*.





Hand and arm protection



Aside from the head, hands and arms are the most exposed part of the body and can fall victim to a laundry list of injuries, such as:

- **Traumatic injuries:** Hands, fingers and arms can get caught, pinched, crushed and amputated in chains, wheels, rollers, gears or other types of machinery. They can be punctured, torn or cut by spiked or jagged tools and edges that shear or chop.
- **Contact injuries:** Hands and arms are injured through contact with solvents, acids, cleaning solutions, flammable liquids and other substances that can cause burns or injure tissue.
- **Repetitive motion or musculoskeletal injuries:** Hands and arms become injured when tasks require repeated, rapid hand movements for long periods of time, resulting in strains and sprains of the upper extremities.



Protective clothing



Examples of hazards which may require protective clothing

- Heat,
- Chemical or metal splash,
- Spray from pressure leaks or spray guns,
- Contaminated dust,
- Electrical hazards,
- Impact or penetration, cuts and hazards working with knives, machinery etc.
- Excessive wear or entanglement of own clothing



High-visibility clothing



In rainy days,

At night times,

When there is low light or poor visibility

There is high possibility risk that vehicles may crush workers which cause from minor injuries to even DEATH



Foot protection



- A heavy object falling on the foot
- A heavy object rolling over the foot;
- A sharp object penetrating the sole of the foot or cutting through the top
- Ignition of flammable or explosive vapours or dusts from static electricity discharged between the foot and walking surface
- Accidental contact with low or high voltage electrical systems
- Chainsaw usage (or similar cut hazard);
- Contact with chemicals, potentially infectious fluids
- Molten metals splashing on the foot
- Slips or falls due to wet or slippery surfaces, or rough terrain
- Environmental conditions (e.g., extreme heat/cold, etc.).



Drowning protection



- Disorientation from sun, wind, noise, or carbon monoxide is a contributing factor to a fall overboard.
- If the water is cold, the shock of immersion makes you gasp involuntarily and when this happens under the water that gasp can be your last breath.
- If you are able to survive sudden immersion and manage the first terrifying moments of hyperventilation you can still find your muscles seizing up and the simple act of keeping your head above the waves next to impossible.
- After a short time your limbs do not function properly and your feet sink. This condition is called **swim failure** and those who study the phenomenon have found that it happens to the strongest among us and the best of swimmers too.



Personal fall protection



Working at height without any protection may lead from minor injuries such as broken leg to major injuries and sometimes even *DEATH*



Personal fall protection



Personal fall protectors (such as full body harness) that are supposed to save people can also cause death after a fall.

– Suspension Trauma

- Occurs when a person suspended in air has been dangling in an upright position for more than five minutes. The blood accumulates at the bottom of the legs it deprives the heart of blood, causing the heart to malfunction and in some cases results in death, with the underlying cause called orthostatic incompetence.



Personal fall protection



– Lanyard Attachment

- A back attachment of a safety harness lanyard does not allow a secure self-rescue in the event of a problem. Having the attachment in the front can make the job itself difficult due to the rope getting in the way, but this can also save a life being. Always have another person lowering the rope and checking the consciousness of the person in the harness.

– Harness Straps

- Harness straps can put pressure on the leg veins, reducing the blood flow back to the heart. This can be dangerous because the straps need to be tightened to just the right tension for them to work properly without cutting off the blood supply.



Hearing protection



Noise

a combination of sound level and duration of exposure, very high-level sounds are a hazard even with short duration

When noise is too loud, it begins to kill the nerve endings in the inner ear. Prolonged exposure to loud noise destroys nerve endings. As the number of nerve endings decreases, so does your hearing. There is no way to restore life to dead nerve endings; the damage is permanent. The longer you are exposed to a loud noise, the more damaging it may be. Also, the closer you are to the source of intense noise, the more damaging it is.



Respiratory protective equipment



- Respiratory hazards can include airborne contaminants such as:
 - biological contaminants,
 - dusts,
 - mists,
 - fumes,
 - gases, or
 - oxygen-deficient atmospheres



2 Identify and describe which Personal Protective and Safety Equipment are required to be worn and utilised during Ship Dismantling job tasks.

2.1.1 PowerPoint Notes



Ship Dismantling Insight by Generating Environmental and Safety Training

Identify and Describe which Personal Protective and Safety Equipment are required to be worn and utilised during Ship Dismantling job tasks

Scope of Presentation



1. Identification of Personal Protective and Safety Equipment required for general Ship Dismantling job tasks
2. Identification of Personal Protective and Safety Equipment required for specialised Ship Dismantling job tasks
3. Identify and describe the required Personal Protective and Safety Equipment required for Emergency situations

Personal Protective and Safety Equipment



- Head protection
- Eye and face protection
- Hand and arm protection
- Protective clothing
- High-visibility clothing
- Foot protection
- Drowning protection
- Personal fall protection
- Hearing protection
- Respiratory protective equipment

Head Protection

- » Objects might fall from above and strike them on the head
- » You might bump your heads against fixed objects, such as exposed pipes or beams
- » There is a possibility of accidental head contact with electrical hazards



Head Protection



ALWAYS

- » Use an adjustable chinstrap
- » Clean the inside of the helmet
- » Check regularly that any damage to the outside is no more than shallow scratches
- » Throw head protection away after significant impact by a fixed or falling object
- » Wear the helmet so that the brim is level when the head is upright

Head Protection



- » **Never** use the hard hats with cracking or deformity
- » **Never** use the hard hats with indication of exposure heat, chemicals
- » **Never** use bump heads
- » **Never** wear head protection back to front
- » **Never** wear it sloping up or down
- » **Never** customise head protection

Eye and Face Protection

» Safety spectacles

- These may be separate lenses in a metal or plastic frame or have a single lens/frame moulding



» Goggles

- These are made with a flexible plastic frame and one or two lenses with a flexible elastic headband.



» Face shields

- These have one large lens with a frame and adjustable head harness or are mounted on a helmet.



Eye and Face Protection



ALWAYS

- » Make sure the eye/face protection fits the user and does not fall off easily
- » Use eye and face protections on a personal basis
- » Consider misting/fogging. Make anti-mist and ventilated eye protection is available
- » Store eye protection in a protective case
- » Follow the manufacturer's instructions on cleaning, not forgetting headbands and frames

Eye and Face Protection



- » **Never** use when visibility is noticeably reduced (eg the lenses are deeply scratched or worn) or the frame, headband or harness is deformed. Throw them away and replace them.
- » **Never** use sunglasses because they do not filter the extreme ultraviolet light as effectively. The plastic used in sunglass lenses will not protect your eyes from sparks.

Hand and Arm Protection

- » Protection from cuts and abrasions
- » To keep hands warm in cold weather
- » Danger from electrical hazards
- » Handling or coming into contact with chemicals
- » Handling radioactive materials
- » Handling hot or cold materials and work involving accidental contact with naked flames



Hand and Arm Protection



ALWAYS

- » Ensure they fit the wearer properly and are worn correctly for cutting job
- » Ensure users can handle and remove the gloves carefully to avoid contamination of the hands and the inside of the glove
- » Ensure users clean their hands thoroughly when they change gloves and moisturise their hands at least once a day
- » Do not wear a glove for extended periods as this can lead to the development of excessive moisture

Hand and Arm Protection



- » **Never** Wear a glove for extended periods
- » **Never** use pre-work creams, sometimes sold as barrier creams, as a replacement for carefully selected gloves. They are not PPE because:
 - they do not provide protection against hazards
 - workers may not apply them properly, leaving part of their skin uncovered
 - there is no information available on the rate of penetration of substances through pre-work creams
 - protection may be removed while working without workers noticing

Body Protection

Clothing can provide sufficient coverage, and be made of suitable materials, to minimize skin burns caused by sparks, spatter, or radiation

If disposable outer coveralls are used to protect a reusable coverall, ensure that they are also flame retardant



Body Protection



ALWAYS

- » Wear oil-free protective clothing made of wool or heavy cotton
- » Choose clothing that allows freedom of movement and covers all areas of exposed skin
- » Wear long sleeved shirts (no t-shirts), and button the cuffs, pockets, and collar
- » Keep clothing dry
- » Remove all flammables and matches and cigarette lighters from your pockets

Body Protection



- » **Never** wear synthetic (man-made) fabrics because they may burn easily, melt, stick to your skin, and cause serious burns
- » **Never** assume that fire protective clothing will always self-extinguish and make other provision available for extinguishing flame
- » **Never** exceed the highest temperature recommended by the manufacturer during laundering
- » **Never** use more aggressive cleaning agents

High-visibility Clothing

- » Most high-visibility clothing has a fluorescent yellow or orange background, made from materials impregnated with fluorescent pigments, with bands of shiny retroflective material
- » It is designed to make the wearer easy to see under any light conditions in the day and under illumination, for example by vehicle headlights in the dark



High-visibility Clothing



- » Select high-visibility clothing suitable for the task. Clothing that protects from other hazards such as cold weather is often available with a highvisibility option. Outdoor workers may need different clothing at different times of the year
- » Inspect before use for wear and tear, or loose seams.
- » Ensure only correct cleaning materials are used. Lack of cleanliness is a significant factor in loss of visibility

Foot Protection



» Safety boots or shoes

- These are the most common type of safety footwear. They normally have protective toecaps and may also have other safety features including slip resistant soles, penetration resistant midsoles and insulation against extremes of heat and cold



» Wellington boots

- These are usually made of rubber and used for working in wet conditions. They are also useful in jobs where the footwear needs to be washed and disinfected for hygiene reasons



Foot Protection



ALWAYS

- » Consider the comfort factors for the wearer
- » Inspect for wear and tear and loose seams before use
- » Measure both feet. “Most people are right-handed, and, usually, their right foot is a little bigger.”
- » Wear a normal work sock
- » Rotate between old and new shoes. When you get to three months, go get another pair and then start rotating them

Foot Protection



- » **Never** let your feet or legs get too close to moving parts
- » **Never** wear sandals or other shoes that expose any part of your feet
- » **Never** stand in the path of vehicles or other moving equipment that could run over your feet or toes and cause serious injury
- » **Never** jump from tractors or other equipment. That could lead to an awkward landing
- » **Never** wear leather-soled shoes that may cause you to slip

Drowning Protection

Buoyancy aids - Life jackets

Life jackets or buoyancy aids should be worn where there is a foreseeable risk of drowning when working near water.

Buoyancy aids

Buoyancy aids are worn to provide extra buoyancy to help a conscious person keep afloat. However, they will not turn over an unconscious person from a facedown position.



Life jackets

Life jackets provide enough buoyancy to turn even an unconscious person face upwards within five seconds (ten seconds if automatically inflated). The person's head should be supported with the mouth and nose clear of the water



Drowning Protection

Immersion suits

- » Immersion suits provide extended survival time in water by reducing the risk of cold shock and delaying the onset of hypothermia
- » They also make it easier to propel and get the wearer out of the water and make the wearer easier to find in the water to help aid recovery
- » Immersion suits come in two main types – constant wear and abandonment. Suits may be already insulated, or insulation may be provided by an inflatable liner. Uninsulated suits may be provided with a removable inner garment, or may require that specified clothing be worn to provide sufficient insulation to achieve expected survival times



Personal Fall Protection



- » **Work restraint systems**
- » **Work positioning systems**
- » **Rope access systems**
- » **Rescue systems**
- » **Fall arrest systems**

Work restraint systems

Work-restraint systems prevent the user from reaching zones where the risk of a fall exists. Such systems are usually incorrectly called ‘fall restraint’



Work positioning systems

Work positioning systems support the user in tension or suspension while a task is being undertaken in such a way that a fall is prevented or restricted.

Such systems allow the user to have both hands free for working. However, work positioning systems must always incorporate a backup system (typically a fall arrest system) designed to protect the user if the primary work positioning system fails



Rope access systems

Rope access systems use two separately secured subsystems, one as the means of support and the other as a safety backup for (specifically) getting to and from the place of work. Such systems become work positioning systems when the user is at the place of work. It is important to note that in such a system both ropes are static while the user moves up and down the rope. If the rope supporting the user moves with the user the system is a work positioning system not a rope access system

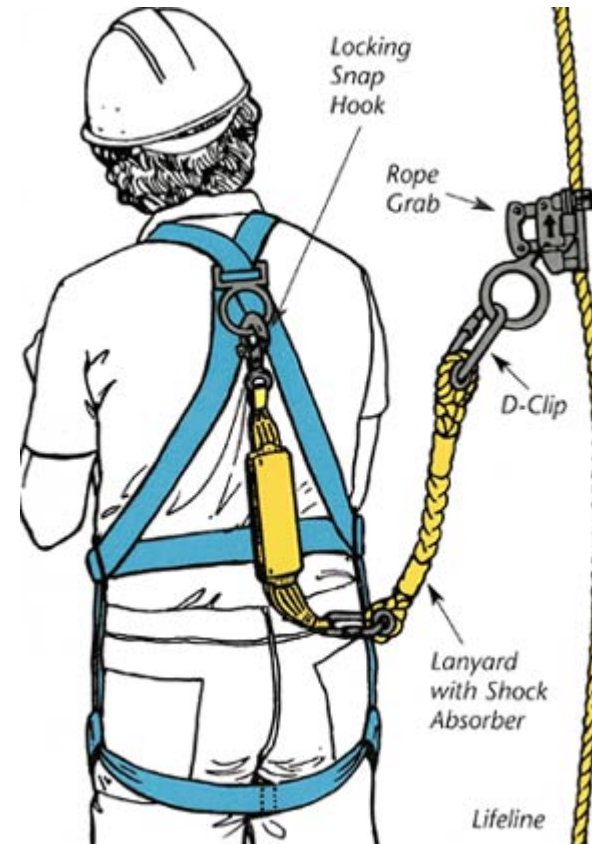


Fall arrest systems

Fall arrest systems are personal protective systems where the fall is arrested to prevent the user colliding with the ground or structure.

Such systems have energy absorbance capacity built into the system and are designed to limit the forces on the human body to no greater than 6 kN.

Examples are energy absorbing lanyards, inertia reel devices (when used correctly, ie anchored vertically above the user) or lead climbing using dynamic rope



Key Points



- » Consider all elements when selecting suitable equipment – the maximum descent height and load; safe and secure anchorage points; the length, type and number of ropes and lanyards
- » Inspect equipment at regular intervals
- » Special care needs to be taken when inspecting components made from webbing and rope because of the deterioration that can take place in these materials

Ear Protection

» Earplugs

- These fit into or cover the ear canal, to form a seal. They can be permanent (indefinite use), reusable (use only a few times) or disposable (use once).



» Earmuffs

- These are normally hard plastic cups, which fit over and surround the ears. They can be headband or helmet mounted and some can have communication equipment built into them.



Ear Protection



ALWAYS

- » Check hearing protection regularly for wear and tear.
- » Replace ear cushions or plugs that are no longer pliable.
- » Replace a unit when head bands are so stretched
- » Wash ear muffs with a mild liquid detergent in warm water, and then rinse in clear warm water
- » Use a soft brush to remove skin oil and dirt
- » Squeeze excess moisture from the plugs or cushions and then place them on a clean surface to air dry

Ear Protection



- » **Never** stand too close to noisy machinery for a long time
- » **Never** reuse disposable earplugs
- » **Never** share earplugs with your co-workers
- » **Never** use too loose or too tight earmuffs
- » **Never** use earmuffs with cracks or other damage
- » **Never** stuff cotton in your ears in place of earplugs

Respiratory Protection

Respirators that rely on filtering contaminants from workplace air

» Simple filtering face pieces



» Respirators



» Power assisted respirators



Respiratory Protection



ALWAYS

- » Use respirators in good working condition
- » Use all the straps provided
- » Fit two identical filters to a twin-filter respirator
- » Clean and store the respirators properly
- » Change filters as instructed by the manufacturer
- » Always check the fan is providing enough airflow before you use the device
- » Change all the filters on a multi-filter unit together

Respiratory Protection



- » **Never** use in oxygen-deficient atmospheres
- » **Never** use particle-only filters against gas/vapour, or gas/vapour-only filters against particulates
- » **Never** use if dirty, damaged or incomplete, or if not providing enough air
- » **Never** keep working if the fan stops or the flow rate falls. Leave the work area immediately

Tower Scaffolds

Mobile access towers are widely used and can provide an effective and safe means of gaining access to work at height

Never use a tower

- » As a support for ladders, trestles or other access equipment
- » In weather conditions which are likely to make it unstable
- » With broken or missing parts
- » With incompatible components



Mobile Elevating Work Platforms (MEWP)

Mobile elevating work platforms (MEWPs) can provide a safe way of working at height. They:

- » allow the worker to reach the task quickly and easily
- » have guard rails and toe boards which prevent a person falling
- » can be used in-doors or out



Mobile Elevating Work Platforms (MEWP)

These types of MEWPs, commonly known as cherry pickers, are designed to work in a variety of planes such that they can evade obstacles by deviating from the vertical plane. They come in a variety of sizes, boom reaches, traction set-ups and offer quick and easy access to working at height



Podium Steps

Podiums provide low-level height access offering a firm platform with adjustable height, and guardrail. Can be tubular self-erecting or folded prior to erection, so as to pass through standard doors and corridors



Leaning Ladder

- » Don't use any other ladder, including any brought from home or belonging to other companies
- » Every time you use a ladder check it beforehand to make sure it is safe to use
- » When erected, the ladder must be at an angle of 75° as this is the best angle for stability
- » If you cannot achieve this angle, because the ladder is too short, too long or something is in the way, then don't use it



Stepladder

A stepladder is a self supporting ladder providing swift access to low risk and short duration work

- » Only work on a stepladder for a maximum of 15 - 30 minutes at a time
- » Only carry light materials and tools (up to 10 kg)
- » Do not overreach - make sure your belt buckle (navel) stays within the stiles
- » Keep both feet on the same rung or step throughout the task
- » Make sure you have a safe handhold available on the steps



Trestle and Hop up

- » Trestles can be used if the risk assessment shows that the risk of a person falling and injuring themselves is low and the work on top of the trestle is in short bursts
- » 'Hop up' type platforms are intended for low-level access requirements



Key Messages



- » Follow the risk assessments you have carried out for work at height activities and make sure all work at height is planned, organised and carried out by competent persons
- » Follow the hierarchy for managing risks from work at height - take steps to avoid, prevent or reduce risks
- » Choose the right work equipment and select collective measures to prevent falls (such as guardrails and working platforms) before other measures which may only mitigate the distance and consequences of a fall (such as nets or airbags) or which may only provide personal protection from a fall

Key Messages

make sure that PPE:

- » is effective and gives adequate protection against the hazards in the workplace
- » is suitable and matches the wearer, the task and the working environment, so it does not get in the way of the job being done or cause any discomfort; does not introduce any additional risks, e.g. limits visibility;
- » is CE marked to confirm that it has been made to an appropriate standard;
- » is compatible with any other PPE that has to be worn. Safety spectacles may interfere with the fit of some respirators.



Emergency Situations



- » Fire
- » Explosion
- » Oil spill
- » Fall from height
- » Drowning
- » Fainting

Fire and Explosion



- » Take ALL fire alarms seriously and leave the ship immediately. Do not stop
- » Stay low when there is smoke, where the air is cleaner and cooler
- » If the alarm is on your way out, pull it
- » If your clothes are on fire, stop, drop, and roll
- » Quickly cool any burns with water and seek medical attention

Oil Spill

- » Contain the spill with booms and collect it from the water surface using skimmer equipment. Spilt oil floats on water and initially forms a slick that is a few millimetres thick
- » Use dispersants to break up the oil and speed its natural biodegradation
- » Introduce biological agents to the spill to hasten biodegradation



Fall from Height



- » Assess the situation before commencing a rescue operation
- » Request medical assistance
- » Identify proper position from which to carry out the operation.
- » Identify a point of safety to move the casualty to
- » Make sure all involved are aware of the procedure to be carried out and their role within it
- » Ensure personnel have been trained in rescue procedures are competent to carry out their role.
- » Carry out the rescue steadily and in a controlled manner.
- » Make sure communication is maintained at all times
- » Monitor the casualty's condition at all times and where possible provide the necessary first aid
- » Conduct a review of the whole situation identifying areas of improvement for the future

Drowning



- » Identify a drowning victim
 - Unable to call for help
 - Thrashing arms
 - Vertical in the water
 - Body is very low in the water, with the mouth just above the surface.
- » Alert help, if possible
- » Get a flotation device, if available
- » Begin the rescue
- » Place your arms under the victim's
- » Reassure the victim
- » Monitor the victim

Drowning



- » If the victim is close to the edge of the water, you can pull them to safety by:
 - Laying face down on the ground and reaching your hand or a flotation device out to the victim
 - Sitting on the ground and extending your leg out
 - Using a towel, shirt, fun noodle, tube, ring, etc. to reach to the victim
- » React quickly. It is important that you react quickly to an active drowning victim. It can take less than 1 minute for a victim to sink below the surface of the water
- » If the victim starts to drown you, swim downwards; they will not follow

Drowning



- » Do not rescue a victim if you cannot swim yourself! It would not be helpful to the victim or safe for you if you try to rescue a victim without knowing how to swim. Get help or throw a flotation device to the victim
- » Do not rescue a victim if you feel the victim is too large for you to bring to safety. It would not be helpful if you reach the victim but cannot move him/her
- » Do not leave an active drowning victim while you go to get help. Remember, it takes less than 1 minute for someone to drown

Fainting



Before fainting, a person may experience the following:

- Nausea
- Giddiness
- Excessive sweating
- Dim vision
- Rapid heart beat or palpitations

Fainting



- » Make them sit down or lie down
- » If sitting, position head between knees
- » When a person faints, position him on his back
- » Check to see if airways are clear
- » Restore blood flow by loosening clothing/belts/collars
- » Elevate feet above head level
- » Patient should become normal within a minute
- » If not, seek medical help

3 Demonstrate and explain the importance of wearing and/or utilising Personal Protective and Safety Equipment in the correct manner.

3.1.1 PowerPoint Notes



Ship Dismantling Insight by Generating Environmental and Safety Training

Demonstration and Explanation of the Importance of Wearing and/or Utilising Personal Protective and Safety Equipment in the Correct Manner

Presentation Outline



- » The dangers of not wearing and/or utilising Personal Protective and Safety Equipment in the correct manner
- » Why it is imperative that Personal Protective and Safety Equipment is to the required international standard and is customised to the individual and/or circumstance
- » Demonstration how to wear and/or utilise Personal Protective and Safety Equipment in the correct manner

Basic Health and Safety Requirements



Ergonomics

The PPE must be so designed and manufactured that in the foreseeable conditions of use for which it is intended the user can perform the risk-related activity normally whilst enjoying appropriate protection of the highest possible level

Highest level of protection possible

The optimum level of protection to be taken into account in the design is that beyond which the constraints imposed by the wearing of the PPE would prevent its effective use during the period of exposure to the risk or normal performance of the activity

Basic Health and Safety Requirements



Absence of risks and other "inherent" factors of nuisance effect

PPE must be so designed and manufactured as to preclude risks and other nuisance factors under foreseeable conditions of use

Suitable constituent materials

PPE materials and parts, including any of their decomposition products, must not adversely affect user hygiene or health. The materials constitutive of PPE and their possible products breakdown should not have harmful effects on hygiene or health of the user

Basic Health and Safety Requirements



Suitable constituent materials

PPE materials and parts, including any of their decomposition products, must not adversely affect user hygiene or health. The materials constitutive of PPE and their possible products breakdown should not have harmful effects on hygiene or health of the user

Satisfactory surface condition of all PPE parts in contact with the user

Any PPE part in contact or in potential contact with the user when such equipment is worn must be free of roughness, sharp edges, projections and the like which could cause excessive irritation or injuries

Basic Health and Safety Requirements



Maximum permissible user impediment

Any impediment caused by PPE to movements to be made, postures to be adopted and sensory perception must be minimized; nor must PPE cause movements which endanger the user or other persons

Adaptation of PPE to the user morphology

PPE must be so designed and manufactured as to facilitate correct positioning on the user and to remain in place for the foreseeable period of use, bearing in mind ambient factors, movements to be made and postures to be adopted.

Basic Health and Safety Requirements



Lightness and design strength

PPE must be as light as possible without prejudicing design strength and efficiency. Apart from the specific additional requirements, PPE must be capable of withstanding the effects of ambient phenomena inherent under the foreseeable conditions of use

Compatibility of different classes or types of PPE designed for simultaneous use

If the same manufacturer markets several PPE models of different classes or types in order to ensure the simultaneous protection of adjacent parts of the body, these must be compatible

Basic Health and Safety Requirements



Information supplied by the manufacturer

In addition to the name and address of the manufacturer established in the Community, the notes that must be drawn up by the former and supplied when PPE is placed on the market must contain all relevant information on

- » storage, use, cleaning, maintenance, servicing and disinfection. Cleaning, maintenance or disinfectant products recommended by manufacturers must have no adverse effect on PPE or users when applied in accordance with the relevant instructions
- » performance as recorded during technical tests to check the levels or classes of protection provided by the PPE in question

Basic Health and Safety Requirements



- » suitable PPE accessories and the characteristics of appropriate spare parts
- » the classes of protection appropriate to different levels of risk and the corresponding limits of use
- » the obsolescence deadline or period of obsolescence of PPE or certain of its components;
- » the type of packaging suitable for transport
- » the significance of any markings
- » the name, address and identification number of the notified body involved in the design stage of the PPE

Additional Requirements



PPE incorporating adjustment systems

If PPE incorporates adjustment systems, the latter must be so designed and manufactured as not to become incorrectly adjusted without the user's knowledge under the foreseeable conditions of use

PPE 'enclosing' the parts of the body to be protected

As far as possible, PPE 'enclosing' the parts of the body to be protected must be sufficiently ventilated to limit perspiration resulting from use; if this is not the case, it must if possible be equipped with devices which absorb perspiration

Additional Requirements



PPE for the face, eyes and respiratory tracts

Any restriction of the user's field of vision or sight by PPE for the face, eyes or respiratory tract must be minimized. The degree of optical neutrality of the vision systems of these PPE classes must be compatible with the type of relatively meticulous and/or prolonged activities of the user. If necessary, they must be treated or provided with facilities to prevent moisture formation. PPE models intended for users requiring sight correction must be compatible with the wearing of spectacles or contact lenses

Additional Requirements



PPE subject to ageing

If it is known that the design performances of new PPE may be significantly affected by ageing, the date of manufacture and/or, if possible, the date of obsolescence, must be indelibly inscribed on every PPE item or interchangeable component placed on the market in such a way as to preclude any misinterpretation; this information must also be indelibly inscribed on the packaging

If a manufacturer is unable to give an undertaking with regard to the useful life of PPE, his notes must provide all the information necessary to enable the purchaser or user to establish a reasonable obsolescence date, bearing in mind the quality level of the model and the effective conditions of storage, use, cleaning, servicing and maintenance

Additional Requirements



PPE subject to ageing

Where appreciable and rapid deterioration in PPE performance is likely to be caused by ageing resulting from the periodic use of a cleaning process recommended by the manufacturer, the latter must, if possible, affix a mark to each item of PPE placed on the market indicating the maximum number of cleaning operations that may be carried out before the equipment needs to be inspected or discarded; failing that, the manufacturer must give this information in his notes

PPE which may be caught up during use

Where the foreseeable conditions of use include in particular the risk of the PPE being caught up by a moving object, the PPE must possess an appropriate resistance threshold above which a constituent part will break and eliminate the danger

Additional Requirements



PPE for use in explosive atmospheres

PPE intended for use in explosive atmospheres must be so designed and manufactured that it cannot be the source of an electric, electrostatic or impact-induced arc or spark likely to cause an explosive mixture to ignite

PPE intended for emergency use or rapid installation and/or removal

These PPE classes must be so designed and manufactured as to minimize the time required for attachment and (or) removal. Any integral systems permitting correct positioning on, or removal from, the user must be susceptible of rapid and easy operation

Additional Requirements



PPE for use in very dangerous situations

The information notes supplied by the manufacturer together with PPE for use in the very dangerous situations must include, in particular, data intended for the exclusive use of competent trained individuals who are qualified to interpret them and ensure their application by the user.

They must also describe the procedure to be adopted in order to verify that PPE is correctly adjusted and functional when worn by the user. If PPE incorporates an alarm which is activated in the absence of the level of protection normally provided, this must be so designed and accommodated as to be perceived by the user in the conditions of use for which the PPE is marketed

Additional Requirements



PPE incorporating components which can be adjusted or removed by the user

Any PPE components which can be adjusted or removed by the user for the purpose of replacement must be so designed and manufactured as to facilitate adjustment, attachment and removal without tools

PPE for connection to another, external complementary device

If PPE incorporates a system permitting connection to another, complementary, device, the attachment mechanism must be so designed and manufactured as to enable it to be mounted only on appropriate equipment

Additional Requirements



PPE incorporating a fluid circulation system

If PPE incorporates a fluid circulation system, the latter must be so chosen, or designed, and incorporated as to permit adequate fluid renewal in the vicinity of the entire part of the body to be protected, irrespective of user gestures, posture or movement under the foreseeable conditions of use

Additional Requirements



PPE bearing one or more identification or recognition marks directly or indirectly relating to health and safety

The identification or recognition marks directly or indirectly relating to health and safety affixed to these types or classes of PPE must preferably take the form of harmonized pictograms or ideograms and must remain perfectly legible throughout the foreseeable useful life of the PPE. In addition, these marks must be complete, precise and comprehensible so as to prevent any misinterpretation; in particular, when such marks incorporate words or sentences, the latter must appear in the official language(s) of the Member State where the equipment is to be used.

Additional Requirements



PPE in the form of clothing capable of signalling the user's presence visually

PPE in the form of clothing intended for foreseeable conditions of use in which the user's presence must be visibly and individually signalled must have one (or more) judiciously positioned means of or devices for emitting direct or reflected visible radiation of appropriate luminous intensity and photometric and colorimetric properties

Multi-risk' PPE

All PPE designed to protect the user against several potentially simultaneous risks must be so designed and manufactured as to satisfy, in particular, the basic requirements specific to each of those risks

